Sardar Patel University

(Re-accredited with 'A' Grade by NAAC, CGPA-3.11)

3rd Research Scholars Meet

26th – 28th December, 2024

Organized by

Research and Development Cell (RDC)

About the Research & Development Cell (RDC)

The Research and Development Cell (RDC) at Sardar Patel University established on June 2, 2022, serves as a cornerstone for promoting a culture of innovative and impactful research within the institution. The RDC aligns its objectives with the vision of Atma Nirbhar Bharat and the National Education Policy (NEP) 2020. The cell is committed to fostering a multidisciplinary, transdisciplinary, and translational research ecosystem that addresses industrial and societal challenges.

In its mission to create a sustainable research environment, the RDC has undertaken several key activities. The RDC organized programs, seminars, and workshops to provide faculty and students with platforms for knowledge exchange and skill enhancement. One of its significant initiatives was the allocation of SEED money project proposal grants to university faculty, encouraging innovative research and development.

Through these efforts, the RDC is shaping a robust research ecosystem, emphasizing knowledge generation, technological innovation, and meaningful contributions to society, in alignment with the broader national agenda of self-reliance and academic excellence.

Prof. Niranjan P. Patel
Vice-Chancellor

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Message from Vice Chancellor

Dear Research Scholars,

It is my pleasure to welcome you to the **Third Research Scholars' Meet (SPURSM-2024) – 'अनुसन्धान,' A National Conference on Multidisciplinary Research for Viksit Bharat 2047.**

This event, entirely organized and managed by the research scholars of our university, provides a unique platform for academic exchange and collaboration across diverse disciplines. It reflects the commitment and leadership of our scholars in creating opportunities for meaningful engagement and innovation.

The theme for this year, **'Viksit Bharat 2047,'** highlights the role of research in addressing global challenges while contributing to the vision of a developed and self-reliant India. This year, with over 380 abstracts, from universities and institutes across Gujarat and other states, the event has truly attained national significance.

I am confident that this meet will inspire valuable discussions, promote innovation, and strengthen collaboration among participants. My best wishes to the organizers and all participants for the success of this event.

Date : 26th December 2024

Place: Vallabh Vidyanagar

(Prof. Niranjan P. Patel)

Vice Chancellor

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Prof. (Dr.) Bhagwan Singh Chaudhary
Chairman
Department of Geophysics,
Kurukshetra University, Kurukshetra, Haryana
Email: bschaudhary@kuk.ac.in

Academic Qualifications
- Ph.D. in Integrated Land and Water Resources Management
- M.Tech. in Applied Geophysics

Professional Experience
- Scientist, Haryana Space Application Centre (HARSAC), Hisar, India *1990 - 2004*
- Founder Registrar, Chaudhary Bansi Lal University, Bhiwani
- Registrar, Kurukshetra University, Kurukshetra

Research Focus & Publications
- **Publications:** Over 100 research papers
- **Books Edited: 4**
- **Key Research Areas:** Geospatial Technology Applications in Hydrogeology, Water Resources Management, Disaster and Environmental Management & Geostatistics

Awards & Recognition
- **Best Researcher (Collaboration) Award** – Kurukshetra University, 2022
- **Special Honour for Outstanding Contribution in Geospatial Technology in Hydrogeology** – International Conference organized by INC IAH and CSMU, 2024
- **Best Paper Award** – 18th ISPRS Conference, Vienna, Austria
- **DAAD Fellowship** – University of Freiburg, Germany

National and International Exposure
- Swachhata Saarthi Fellowship under the Waste to Wealth Mission and Jal Jeevan Mission under the Aegis of the Principal Scientific Advisor to Government of India.
- International academic and scientific exposure & collaborated with institutions in countries like the USA, UK, Austria, Germany (multiple visits), France, Netherlands, China, South Africa, Indonesia, Bangladesh, Sri Lanka, Nepal, Thailand, and others.

Professional Memberships
- Fellow of Indian Water Resources Society
- Fellow of South Asian Association of Economic Geologists
- Fellow of Society of Earth Scientists
- Life Member of various National/International Scientific Societies & Academic Associations
- Secretary, Indian National Committee of International Association of Hydrogeologists
- Member of Editorial Board/Reviewer over dozen national and international scientific journals.
- Executive Editor of the E-journal of Geohydrology, INC of IAH since 2019.
- Springer-published books Co-editor, geospatial technologies and natural resource management.

Keynote Talk Focus: Role of Space Technology for Vikasit Bharat

Space technology has emerged as a vital force for Vikasit Bharat, shaping its economic, social, and environmental landscape. The Department of Space, Government of India (GoI), has been at the forefront of leveraging space technology to address national challenges and enhance the quality of life for its citizens. This abstract explores how space technology acts as the wheel of development for Bharat, highlighting its multifaceted impact on various sectors. Viksit Bharat is a comprehensive vision plan by the GoI aimed at transforming the country into a developed nation by 2047, marking the 100th anniversary of its independence. The vision encompasses various aspects of development, including economic growth, social progress, environmental sustainability, and good governance. Space technology fosters economic growth by enabling advancements in telecommunications, broadcasting, and internet services. Satellite communication ensures connectivity in remote and rural areas, bridging the digital divide and promoting inclusive development. Moreover, space-based technologies support e-commerce, banking, and other industries, driving economic activities and creating job opportunities. Remote sensing satellites provide critical data for precision agriculture, helping farmers monitor crop health, soil moisture, and weather patterns. This information enables efficient resource management, higher crop yields, and reduced environmental impact, contributing to food security and rural prosperity.

Satellites play a crucial role in disaster management by providing early warning systems for natural calamities such as floods, cyclones, and earthquakes. Real-time satellite imagery assists in assessing damage, coordinating relief efforts, and planning disaster mitigation strategies, thereby saving lives and minimizing economic losses. Space technology aids in environmental conservation by monitoring deforestation, water bodies, and air quality. It provides valuable data for climate change research, helping policymakers implement sustainable practices and mitigate the impacts of global warming. Geospatial data from satellites is essential for urban planning, infrastructure development, and smart city initiatives. Telemedicine and tele-education services, facilitated by satellite communication, expand access to healthcare and educational resources in underserved regions. These services improve health outcomes and educational standards, promoting social equity and overall well-being. Satellites contribute to national security by providing surveillance, reconnaissance, and navigation capabilities. They enhance border security, disaster response, and strategic planning, ensuring the safety and sovereignty of the nation.

To conclude, space technology acts as a catalyst for Bharat's development, driving economic growth, improving agricultural productivity, enhancing disaster management, supporting environmental conservation, and advancing urban planning. By harnessing the power of space technology, India is poised to achieve its vision of becoming a Viksit Bharat (Developed India), ensuring sustainable and inclusive progress for all its citizens.

Key Words: Space technology, Sustainable development, Geospatial Technology, Satellite communication, Disaster Management, Telemedicine, Tele-education and Boarder security

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Department of Economics
Central University of Jammu
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E-mail: shaveta.eco@cujammu.ac.in

Academic Qualifications

- Ph.D awarded by Department of Economics, Panjab University17.08.2014
- Diploma in Co-operative Education and Development, National Cooperative Union of India.
- Short Term Course Study in Sustainable Development

Institutional Responsibilities: HoD (Incharge), Warden, Girls' Hostel, Asst. Director, Sports, CUJ, Asst., Dean Students' Welfare, Member, BoS (Economics), Member, Skill Development & Career Counselling, Member, Equal Opportunity Cell, Member, SPARSH, Member, Anti-Ragging & Various Committees, Convener, University Badminton Team; Member of IQAC, NAAC SSR, Admission, Safety, Grievance Committees.

Research Focus

- Ph.D. Awarded **03**; Pursuing **05**
- M.Phil. Awarded **01**
- MA Dissertations **38**
- Project Work **05**
- Publications- **30+**

Professional Memberships

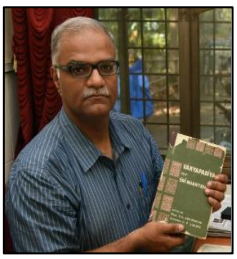
- Member of Editorial Board "Focus: An International Journal of Social Sciences".
- Edited one volume of Journal entitled "Empirical Economic Letters".
- Member of International Association for Feminist Economics (IAFFE)
- Indian Economic Association
- The Indian Econometric Society (L/2746/17-18)
- Member of The Association for Women's Rights in Development
- Member of Agricultural Economics Research Association

Awards

- 3rd rank PG Diploma Cooperative Education and Development.
- 3rd rank in the University in PG Diploma in Statistics
- 1st position in Union Ministry of Environment and Forests and P.S.C.S.T sponsored competition on "Keep our Water Resources Clean" Under N.E.A.C.
- The International Publishing House, The World"s most leading biographical specialists awarded The Best Citizens of India Award 2016.
- Global Economic Progress and Research Association awarded National Citizenship Gold Medal Award for excellence in "Individual Achievements & National Development".

Expert Session Topic: Transforming India: Addressing Gender Gaps for Inclusive and Sustainable Development

Prof. Malhar Arvind Kulkarni
Professor
Sumati and Atmaram Kotwal Sanskrit Acharya Chair Professor
Department of HSS, IIT Bombay.



Professional Experience

- Dipartimento di Lingue, Lettere e Beni Culturali, coltà di Studi Umanistici, University of Cagliari, Italy, 2019.
- Faculty of Oriental and Middle Eastern Studies, University of Cambridge, UK, 2015-18

Research Focus

- Ph.D. - 13 awarded and 10 under progress.
- Publications- **7 books**, **100+ articles**

Projects

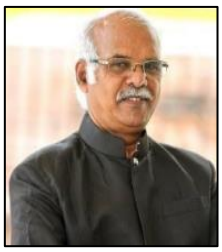
- Sanskrit Wordnet (1.0) project, sponsored by Central Institute of Indian Languages, Mysore.
- Indian Language Corpora project and Development of Dependency Tree Bank for Indian Languages, sponsored by Ministry of IT.
- Currently, working on Shabdamitra: A digital aid in teaching and learning Hindi project sponsored by Tata Centre for Technology Development LG-soft.
- Successfully completed project towards a critical edition of the Kasikavrtii, in collaboration with University of Cambridge, UK, sponsored by British Academy, UK.

Awards and Recognition

- Sumati and Atmaram Kotwal Sanskrit Acharya Chair Professor, IIT Bombay since February 2022
- Mahakavi Kalidas Sanskrit Sadhana Puraskara of the Government of Maharashtra, 2020.
- Institute Chair Professorship at IIT Bombay November 2018-2021.
- Received Excellence in Teaching Award from IIT Bombay in 2017.
- Member of the Committee to review recommendations of the 1st Sanskrit Commission in 2012-13
- Received Latkar Shastri Award from Maharashtra SevaSangh, Mumbai in 2013.
- Received Joint Research Award from British Academy, UK in 2011.
- Received Indo-Swiss Joint Research Award from Government of Switzerland for teaching & research work, 2010.
- Received Pt. Satavalekar Award from Satavalekar Pratishthan, Pune in 2010
- Received Indo-Swiss Joint Research Award from Government of Switzerland for teaching & research work in 2009.
- Received the Maharshi Badarayan Vyas Award from the President of India for the year 2009.
- Member of the Executive Council for BharatGen, Department of Science and Technology Government of India, 2024.

Expert Session Topic: **New Vistas of Research on Languages in Vikasita Bharata**

Prof. Panch Ramalingam
Professor cum Director,
UGC-Malaviya Mission Teacher Training Centre,
Pondicherry University, Puducherry – 605 014.
President, Indian School Psychology Association,
President, Asia Pacific School Psychology Association (APSPA), Malaysia
Email: panchramalingam@gmail.com



Academic Qualifications
- **Ph.D.** and **M.Phil.** in Educational Counselling Psychology, Annamalai University
- **Diploma in Pharmacy**, Madurai Medical College (Registered Pharmacist)

Professional Experience
- **Director (i/c)** *UGC – Malaviya Mission Teacher Training Centre (Formerly UGC-HRDC), Pondicherry UniversityPuducherry, India*, *2020 – Present*
- **Visiting Faculty** *Klagenfurt University, Klagenfurt, Austria 2014*
- **Course Coordinator, PG Diploma in Guidance and Counselling** *Pondicherry University Community College 1999–2004*
- **NSS Programme Officer** *Pondicherry University*, *6 years*

Research & Publications
- Authored/edited **80+ books**
- Published **52 research papers** in reputed journals.
- Regular presenter at Indian Academy of Applied Psychology conferences

Awards & Recognition
- Best Book Award (1991 & 1995) for his books *Child and Cognitive Development* and *Role of Venkatasubbah Reddiar in French India Liberation Movement*
- French-India Liberation Writer Award & Best Writer Award (2005)
- IAAPPPA Best Psychologist Award (2011)
- Prof. B. Viswanatham Best Book Award (2010 & 2015)
- Cal Catterall Award (2009 & 2010)
- Best Paper Award (2010)

International Engagements & Collaborations
- Delivered guest lectures and presented research at international conferences in Austria, Singapore, Sri Lanka, Japan, Malaysia, Bangladesh, Australia, Mauritius, Germany & others.
- Editor-in-Chief of the *International Journal of Asia Pacific School Psychology* (Founded in 2020) and *InSPA Journal of Applied and School Psychology* (Founded in 2019).
- Visiting scholar at institutions like University of Malta, Trinity University Dublin, University of Basel, University of Tokyo.
- Conducted school psychology programs- Malaysia, Sri Lanka, Bangladesh, Japan & Australia

Professional Affiliations
- Fellow, Indian Academy of Applied Psychology (IAAP) (2023)
- Member, International School Psychology Association (ISPA), USA
- Member, American Psychological Association (APA), Washington
- Editor, *Journal of the Indian Academy of Applied Psychology* (2016–2020)

Expert Session Topic: Indian Knowledge Tradition: Challenges and Opportunities

Prof. Manmohan Kapur
Department of Chemistry,
Indian Institute of Science Education and Research,
Bhopal, MP, India
E-Mail: mk@iiserb.ac.in

Academic Background:

- **Ph.D. (2003)**: National Chemical Laboratory, Pune
- **Postdoctoral Research**:
  - **2003-2004**: Wayne State University, Detroit, USA
  - **2004-2006**: Institut für Organische Chemie, Universität Tübingen, Germany
    - **Awarded Alexander von Humboldt Postdoctoral Research Fellowship**

Experience:

- Industrial Experience
- **2009 - Present**: Professor, Department of Chemistry, IISER, Bhopal

Research Interests:

- **Total Synthesis of Natural Products**: Employing transition-metal catalysis as a key step.
- **Synthesis of Natural Products with Peptide-based Backbones**: Special focus on anti-mycobacterial agents.

Awards and Honors:

- **Bronze Medal**, Chemical Research Society of India (CRSI) - 2020
- **SERB-STAR Award** - 2020
- **Golden Jubilee Visiting Fellowship**, Institute of Chemical Technology (ICT) Mumbai - 2021-2022

Professional Affiliations:

- **Fellow**, The National Academy of Sciences, India (NASI), Prayagraj
- **Member**, International Advisory Board, *Asian Journal of Organic Chemistry*

Editorial Board Member, *Tetrahedron* and *Tetrahedron Letters*

Expert Session Topic: Palladium-Catalyzed Distal C-H Functionalization

Dr. Jigar Inamdar
Chairman,
Governing Body,
Ramanujan College, University of Delhi

Academic Qualifications

- PhD in Public Administration *Veer Narmad South Gujarat University, Surat* (2019)
- Executive Program in Leadership and Management *Indian Institute of Management (IIM) Calcutta* (2021-2022)

Professional Experience:

Current Roles:

- **Chairman**, Governing Body, Ramanujan College, University of Delhi
- **Member**, Advisory Committee, Centre for Global Studies, University of Delhi
- **Convener**, Samanway Pratishthan
- **Visiting Fellow**, India Foundation
- **Advisor**, Wardwizard Foundation
- **Director**, Samlaya Cotton Ginning & Pressing Union (April 2003 - Present)
- **Director**, Alindra Group Cotton Farmers Union (April 2003 - Present)
- **Trustee**, Veer Savarkar Smruti Kendra

Former Roles:

- **Senate Member** and **Syndicate Member** The Maharaja Sayajirao University (MSU) Baroda
- Director & Advisor, Institute of Leadership & Governance (2016-2023) & Advisor, Trivenidevi Kashinath Agrawal Management Development Centre, MSU,Baroda (2018-2023)
- **Consultant cum Regional Director**, Sub Zonal Office Ahmedabad, Indian Council for Cultural Relations (ICCR), Ministry of External Affairs, Government of India (2016-2022)
- **Convener**, Swami Vivekananda Gujarat State Youth Board, Ministry of Youth Affairs, Government of Gujarat (2018-2021)
- **State General Secretary and State Secretary**, Gujarat State Youth BJP (BJYM)
- **Member**, Governing Body, Dyalsingh College, University of Delhi (2021-2023)

Public Life & Leadership Roles:

- **Bharatiya Janata Party (BJP) Involvement:**
  - Booth Incharge (1995), Ward no. 8 BJP Secretary (1998), Vadodara District Youth BJP Secretary (1999-2002)
  - Gujarat State Youth BJP Secretary (2006) & General Secretary (2007-2010)
  - Contested for MLA (2007) from Savli Constituency
- **Initiatives Taken at BJP Youth Wing:**
  - Created the documentary *"1857- JAAG UTHAA HINDUSTAN"*
  - Designed *"Kranti Gaatha Yatra"* to commemorate 150 years of India's First Freedom Fight
  - Launched *"Vistarak Yojna"* and *"Grass-root level Abhyaas Varg"* across Gujarat
- **Rashtriya Swayamsevak Sangh (RSS):** Trutiya Varsh Shikshit Swayamsevak & Shariric Pramukh of Savli (2002-2005)

Expert Session Topic: Global Leadership and Diplomacy for Viksit Bharat 2047

Dr. Rajesh Makwana
Professor and Chairperson
Centre For Gujarati Studies, School of Language,
Literature and Culture Studies
Central University of Gujarat, Gandhinagar
Email:

Academic Qualifications: Ph.D. M. Phil in Gujarati Literature

Professional Experience

- **Professor,** Central University of Gujarat, Gandhinagar *Since May 21, 2020*
- **Associate Professor,** Municipal Arts and Urban Science College, Mehsana *1998 – 2020*
- **Research Fellow**, Saurashtra University, Rajkot *July 5, 1995 – September 16, 1998*
- **Associate Faculty**, Hemchandracharya North Gujarat University, Patan *2004 – 2020*

Awards and Honours

- **First Prize for Essay**, 'Dr. Babasaheb Ambedkar: Yugpurush', 2007
- **Best Book Award** for *Lokvangmay: Swaroop Sandarbh*, Gujarat Sahitya Academy, 2007
- **Best Book Award** for *Uttar Gujarat nu Saint-Panth Sahitya*, 2014

Research and Publications

- **Minor Research Project (UGC-funded):** 'Saint Literature of North Gujarat' (2004)
- **Major Research Project (UGC-funded):** 'Literature of the Oral Tradition of the Subaltern Community in North Gujarat' (2015)
- **Books Published: 16**
- **Peer-Reviewed Articles:** 36

Research Guidance

- **Ph.D. Supervision:** Guided 17 Ph.D. students
- **M.Phil. Supervision:** Guided 52 M.Phil. students
- **M.A. Dissertation Supervision:** Guided 29 dissertation projects

Seminars and Workshops

- Delivered lectures at 42 state-level, 58 national, and 8 international seminars.
- Resource person in various refresher courses, short-term courses, and workshops on Gujarati language and literature.
- Expert in debates and discussions on platforms like Doordarshan Kendra, Ahmedabad

Professional Contributions

- **Coordinator:** UGC-sponsored NET-SET Coaching Center (2011-2019)
- **Member of Editorial Boards:** *Shabdsrustri*, *Lokgurjari*, *Tadrthya*, and more
- **Board Member:** Member of the Board of Studies at various universities, including University of Mumbai, Hemchandracharya North Gujarat University, and Central University of Gujarat

Skills and Expertise

- Expertise in Gujarati Literature, Dalit Studies, Folk Literature, and Cultural Studies
- Strong research, publication, and teaching experience
- Skilled in seminar organization, academic guidance and mentoring students
- Leadership and management experience in academic settings

Expert Session Topic: Bhartiya Sahityama Gyaan Sarakshanni Bhumika

Dr. R.B. Zala

Professor & Head.
Department of English and Comparative Studies
Saurashtra University, Rajkot.
Email: rbzala@sauuni.ac.in

Research & Publications

- **Research Projects:** Completed UGC Major Research Project on **'Retrieving Partition Memories in Rajkot District'** (2018)
- **Research Guidance:**
  - **PhD Scholars Awarded:** 11
  - **M.Phil Scholars Awarded:** 15
- **Publications:**16

- **Books Published:**

1. Shi Natanagopala Nayaki Swami Kirtanas: Gujarati Transcription and English Translation (Gujarati Sahitya Akademy, 2023).
2. Sourashtra Vocabulary: With Transcription and Translation into Gujarati and English (2015).
3. Development of Pre-independence Gujarati Short Story: A Monograph (SU Press, 2010

Professional Appointments

- Member, Executive Council (EC), Central University of Gujarat
- Member, Board of Studies, English, Saurashtra University, Rajkot
- Member, Board of Studies, CCLTS & TTSLLC, Central University of Gujarat
- Member, Board of Studies, English, KSKV University, Bhuj
- Member, Board of Studies, Centre for Diaspora Studies, CUG, Gandhinagar

Coordinatorship

- Coordinator, Sourashtra Heritage Chair, Saurashtra University, Rajkot

Skills & Expertise

- **Teaching & Mentorship**: Extensive experience in teaching English and Comparative Studies at the undergraduate and postgraduate levels.
- **Research & Academic Writing**: Expertise in researching and publishing on diverse topics, particularly in Gujarati literature and language, as well as comparative studies.
- **Cultural Preservation**: Active involvement in the preservation of Sourashtra heritage and language.

Expert Session Topic: Indian Narrative Tradition and Making of Indian Novel

Dr. Umesh Shaligram
Executive Director
Serum Institute of India Pvt. Ltd.

Professional Experience:

- **Executive Director & Board Member**, Serum Institute of India Pvt. Ltd. (SIIPL)
  - Spearheading scientific development, manufacturing, and commercialization of vaccines (especially COVID-19 vaccines) and biologics (including biosimilars and biobetters).
  - Oversight of global disease burden reduction and disease elimination strategies through unique "Detect, Treat, and Prevent" models.

Key Responsibilities:

- Leadership in development and manufacturing of vaccines, including **COVISHIELD®** (India's first indigenously manufactured COVID-19 vaccine) and **Covovax/Neuvaxovid** (first vaccine supplied from India to the USA).
- Led efforts to secure international regulatory approvals for SIIPL vaccines from agencies like the **US-FDA**, **EMA**, **MHRA**, and others.
- Focus on disease eradication and elimination, including programs for **TB**, **Malaria**, **Pertussis**, **HPV**, **AMR** and **Point of Care CART-cell therapies**.
- Steering the global efforts to address various public health challenges, utilizing trace and track modules.

Research and Publications:

- Over **50 peer-reviewed publications** in high-impact international journals.
- Holder of more than **15 patents** in vaccine and biologics technology.

Awards and Recognitions:

- Recognized nationally and internationally for contributions to **COVID-19 pandemic**
- Featured at the **London Science Museum** as part of an exhibition highlighting his leadership and contributions to science and public health.
- Acknowledged by the **National Council of Science Museum**, Ministry of Culture, Government of India for his value-added contributions in science and healthcare.

Leadership and Vision:

- **Leadership in Global Health**: Instrumental in shaping and directing SIIPL's focused efforts toward eradicating diseases such as **TB**, **Malaria**, **Pertussis**, and **HPV**, and addressing **AMR (Antimicrobial Resistance)**.
- **Commitment to Innovation**: Forefront of implementing cutting-edge technologies in vaccine and biologics development, ensuring the delivery of high-quality vaccines and therapeutics to fight infectious diseases.

Expert Session Topic: Revolutionising Healthcare Through Technology

Prof. (Dr.) Sanjay Kumar Srivastava
Senior Principal Scientist
CSIR-National Physical Laboratory, New Delhi
Academy of Scientific & Innovative Research (AcSIR), Ghaziabad
Email I'd: srivassk@nplindia.org

Academic Qualifications
- Ph.D. in Physical Sciences
- Master of Science (M.Sc.) in Physics

Professional Experience:
- Leading research in the development of silicon-based solar cells
- Established key facilities for photovoltaic and energy-related applications
- Executed multiple research projects on silicon PV, testing/calibration and related applications.
- **Honorary Professor** -Academy of Scientific & Innovative Research (AcSIR), Ghaziabad

Awards and Recognitions:
- CSIR-Young Scientist Award 2013 in Physical Sciences
- BOYSCAST Fellowship, Department of Science and Technology (DST), Government of India for research at Max Planck Institute for the Science of Light, Erlangen, Germany.
- Young Investigator Award in 'Next Generation Solar Energy' in Germany.
- Visiting Fellow at Max Planck Institute for the Science of Light and PTB Germany.

Key Projects and Contributions:
- Black Silicon Solar Cells Development
- Primary Standard Facility for Solar Cell Calibration
- Mega Projects under CSIR for advancing solar technology in India

Publications and Patents:
- **Publications:** 100+
- **Book Chapters:** 10
- **Conference Proceedings:** Published several peer-reviewed international conference papers.

Technical Skills:
- Advanced techniques in solar cell fabrication and characterization
- Expertise in photovoltaic metrology and testing
- Experience with nanotechnology, including nanowires and nanopillars
- Proficiency in MATLAB, LabVIEW, and other simulation/analysis tools
- Skilled in scientific writing and communication

Expert Session Topic: Solar Photovoltaic: A Promising Renewable Energy Technology for Vikshit Bharat

Prof. Peeyush Chandra
Retired as Professor (HAG) in 2015

Academic Qualifications:
M. Sc. (1971) – Mathematics from IIT Kanpur, Kanpur
Ph. D. (1976) – IIT Kanpur in the area of Biomechanics.

Professional Experience
- **Professor (HAG), Department of Mathematics and Statistics**, IIT Kanpur *1982 – 2015*
  - Head of Department, Mathematics and Statistics, *2005 –2008*
- **Assistant Professor**, Mehta Research Institute, Allahabad (now HRI) 1*976 – 1980*
- **Assistant Professor**, IIT Kanpur, *1982 – 2015*

Research Focus
- **Area of Interest:** Biomathematics
- **Specialization** Biofluid Mechanics, Mathematical Ecology & Mathematical Epidemiology
- Published over 90 research papers in leading journals.
- **Research Supervision:** 12 research scholars

Recognitions and Awards
- Fellow of the National Academy of Sciences, India
- President, Bharat Ganita Parishad, Lucknow
- President, Indian Society for Mathematical Modeling and Computer Simulation
- Past President, Indian Mathematical Society (April 2009 – March 2010)
- Past President, Indian Society of Theoretical and Applied Sciences (ISTAM), 2012
- Distinguished Service Award, Vijnana Parishad of India, 2012
- Life-Long Achievement Award, Vijnana Parishad of India, 2023

Editorial Roles
- **Editor-in-Chief**, *Journal of the Indian Mathematical Society* (April 2022 – present)
- **Member of Editorial Boards:**
  - National Academy Science Letter (1981–82)
  - Differential Equations and Dynamical Systems (Springer Journal, 2008–2018)
  - Proceedings (A), National Academy of Sciences, India (2005–present)
  - Journal of the Indian Mathematical Society (JIMS)
  - JNANABHA - Journal of the Vijnana Parishad of India

Committee Roles:
Served on various committees for the Department of Science and Technology (DST), Science and Engineering Research Board (SERB), and Council of Scientific and Industrial Research (CSIR)

Expert Session Topic: Modelling Infectious Diseases with Mathematics- Why and How!

Dr. Shyam Singh Inda
Assistant Advisor, NAAC

Education

- **PhD**
- **MHRM** (Master of Human Resource Management)
- **PGDHRM** (Post Graduate Diploma in Human Resource Management)
- **PGSDOM** (Post Graduate Diploma in Supply Chain and Operations Management)
- **BA in Russian** with Honors in Economics

Professional Experience

- **Assistant Advisor**: **National Assessment and Accreditation Council (NAAC)** ***Present***
  - Lead initiatives to enhance accreditation and quality assurance systems in higher education institutions.
  - Provide strategic guidance on accreditation processes & policy implementation.
  - Collaborate with international organizations contributing to global accreditation efforts.
  - Conduct extensive research and data analysis to support institutional improvements.
- **Faculty, HRM**
  - Conducted academic research, supervised thesis work, and mentored students in HRM.
  - Contributed to curriculum development and pedagogy for HRM programs.
  - Focused on imparting advanced knowledge and practical insights into HR Management
  - Organized workshops, seminars, and conferences for professional development.
  - Developed and published research on emerging trends in HRM.
- **Officer,** Nationalized Bank,
  - Managed banking operations, focusing on customer relationship management & financial analysis.
  - Executed strategic initiatives for improving customer satisfaction and operational efficiency.
- **Officer,** Central Government,
  - Supported various government projects, ensuring compliance with regulations and improving service delivery.
  - Contributed to administrative functions and public policy implementation.

Publications & Research

- Authored and edited over **70 research articles**
- Published **6 books** on HRM, accreditation, and quality assurance.
- Contributed to international forums like **NAAC** and **APQN**.

International Exposure

- Represented India at global forums in Japan, Singapore, Kazakhstan, and Russia.
- Engaged in cross-cultural academic exchanges and developed global partnerships in education and research.

Certifications

- UGC-NET in HRM
- Various professional certifications in data analytics and research methodology

Expert Session Topic: Internationalization of Higher Education

BIOSCIENCES

"Life is nothing but the development of mind"
-Jagdish Chandra Bose

Sardar Patel University

Vallabh Vidyanagar, Anand, Gujarat

Abstract ID: RSMOBIO01

Antioxidant and Anticancer Potential of Young and Ripe Mulberry (*Morus alba* L.) Fruit Extracts Against Lung Cancer Cells

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Cancer being the second leading cause of global mortality, it is essential to investigate natural compounds like phytochemicals for therapeutic benefits. The study investigates the potential of *Morus alba* L. (mulberry) young and ripe fruit extracts against lung cancer cells. The study showed presence of phytochemicals and antioxidant activity of both young (MAF-Y) and ripe (MAF-R) mulberry fruit extracts. Results revealed presence of various secondary metabolites, particularly high phenolic content and antioxidant properties in MAF-R. Both extracts demonstrated significant anticancer activity against lung adenocarcinoma cells (A549), with IC_{50} 18.4 ± 3.01µg/ml (MAF-R) and 29.41 ±3.6 µg/ml (MAF-Y). Moreover, the extracts effectively inhibited cell migration. Treatment of extracts elevated reactive oxygen species (ROS) production which resulted in disruption of mitochondrial membrane potential, and induced the process of apoptosis in lung carcinoma cells. This was evidenced through various assays including differential staining and DNA fragmentation analysis. These findings underscore the potential of mulberry fruit extracts as promising candidates for cancer prevention and treatment due to their antioxidant properties, cytotoxic effects, and ability to induce apoptosis in lung cancer cells.

Keywords: Anticancer activity; Antioxidant activity; Apoptosis; Lung cancer; *Morus alba* L.

Abstract ID: RSMOBIO02

Toxicity study of an alkaloid Arecoline found in areca nut on *Saccharomyces cerevisiae*

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People in developing countries like India, Malasia, Indonesia, Myanmar, etc are addicted to smoking of tobacco, chewing of tobacco and Arecanut. Areca nut chewing is carried out in the form of Bittle quid, Pan masala, Mava-masala and is one of the leading causes of Oral Potentially Malignant Disorders (OPMD). This collection of disorders may lead to oral carcinoma. International Agency for Research on Cancer (IARC) has declared Arecanut as Class I carcinogen. Arecoline is a major alkaloid found in Arecanut and it might be the leading cause of Arecanut toxicity and carcinogenicity. To study arecoline toxicity we have extracted the arecoline from Arecanut from local market and compared its effect with pure arecoline on the model organism *Saccharomyces cerevisiae*. To evaluate the toxicity, techniques like viability assay, Acridine orange/ Ethidium bromide staining, and DNA fragmentation assay were used. Extract was prepared using methanol which resulted in 8.7 % yield. Viability assay was carried out with or without membrane permeability inducing compound Polyethylene glycol using exclusion dye trypan blue. Viability of yeast cells was found to be 100% as compared to positive control. To assess the genotoxic effects of arecoline, cells were stained with fluorescent dyes, and DNA was extracted for fragmentation analysis. It was found out that arecoline is non-toxic to the *Saccharomyces cerevisiae* cells upto the 10mM concentration. In conclusion arecoline might not be the sole inducer of toxicity of Arecanut.

Keywords: *Saccharomyces cerevisiae,* arecoline, toxicity, apoptosis, oral carcinoma

Abstract ID: RSMOBIO03

Taxonomy and ethnobotanical significance of rare and threatened medicinal plant *Corallocarpus conocarpus* (Dalz. & Gibs.) CL.

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Plants provide humans with a multiple of health benefits and life support. The present study focusses on the taxonomy and ethnobotanical importance of *Corallocarpus conocarpus* (Dalz. & Gibs.) CL. which is rare plant and recorded only in few states of India. A total of three species of the Genus *Corallocarpus* are recorded in India, among which *Corallocarpus conocarpus* (Dalz. & Gibs). CL. is a rare, threatened and less explored medicinal plant in Gujarat state. It is differentiated from its relative species by sessile fruits, lobed leaves and margined seeds. The fruits and leaves are traditionally used as vegetable in Saurastra and North Gujarat regions. In the wild, plant populations are quite small, recorded from bare land along road sides and primarily found on hedges of agricultural land. This climber has become scarce as a result of overexploitation, low seed germination rates, and anthropogenic activities. Due to low population in the wild and limited distribution, urgent need to conservation is required for this species through *in vivo* or/and *in vitro* methods to increase plant population in its natural habitat.

Keywords: *Corallocarpus conocarpus*, rare, threatened, medicinal plant

Abstract ID: RSMPBIO01

Diversity, Abundance, and Behavior of Spider Fauna Across Three Habitats: A Seasonal Study

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The aim of this study was to investigate the diversity and abundance of spider species across three distinct habitats. Spiders are a highly diverse group of invertebrates. The primary objectives of this study were to compile a checklist of spider species and examine their distribution within the study area. To assess spider diversity, a range of scientifictechniques, including hand-picking and active searching, were employed. Spider identification was carried out usingvarious standard references and field guides. The study was conducted during the monsoon and winter seasons. A totalof 12 families and 36 genera were recorded from the P.G. Department of Biosciences, 12 families and 29 genera from the Botanical Garden of Sardar Patel University, and 7 families and 12 genera from Malataj, an agricultural area. Behavioral observations of spiders were also part of the study. The study focused on the web-spinning behavior of theCrab Spider and Kidney Garden Spider.

Key Words: Spider diversity, Arthropods, Botanical Garden, Agricultural land, Web spinning, Foraging Behavior

Abstract ID: RSMPBIO02

Characterization of *Bacillus velenzensis* CGS1.1 for biocontrol of bacterial soft rot disease

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Bacillus velezensis CGS1.1 is reported as a poultry probiotic. Its whole genome sequence is annotated (GenBank under the accession number JAHCXE000000000.1) and reveals it to be a bacterial antagonist. The present study was undertaken to explore its plant growth promoting (PGP) and biocontrol potential of CGS1.1 against phytopathogen *Pectobacterium carotovorum subsp. carotovorum*, a causative agent of soft rot disease in potato. Bacterial isolate CGS1.1 exhibits phosphate solubilization, siderophore production and secretes extracellular enzymes such as amylase, protease, xylanase, cellulase, pectinase and esterase. The antibacterial activity of CGS1.1 against *Pectobacterium carotovorum* was confirmed by spot overlay method. The antibacterial metabolite could be extracted from CGS1.1 culture supernatant using acidified ethyl acetate and maximum activity was observed in 96 h old liquid culture of CGS1.1. The antibacterial metabolite in acidified ethyl acetate extract of CGS1.1could be separated on silica gel by thin layer chromatography (TLC) using $CHCl_3$: Methanol: H_20 (3.5:1.5:01) and detected in antibiogram. The CGS1.1 did not secrete any quorum quenchers tested against *Chromobacterium violaceum*. In potato maceration assay, extract of CGS1.1 was demonstrated to effectively control control the soft rot by *Pectobacterium carotovorum* by in vitro assay using on potato slices. This study demonstrates the prospects of *Bacillus velenzensis* CGS1.1 as a biocontrol agent for control of bacterial soft rot disease in potatoes.

Keywords: ***Bacillus velezensis,*** **Biocontrol, plant growth promoting, soft rot,** ***Pectobacterium carotovorum***

Abstract ID: RSMPBIO03

"ENDOPHYTES" THE MICROBIAL RESERVOIR LOCATED IN PLANTS WITH NOVEL APPLICATIONS

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Endophytes are microorganisms living inside the plant tissue like leaves, stems, roots, etc. Endophytes establish themselves inside the host without harming the plants. The relationships in between endohpytes with host plants may be symbiotic, mutualistic, and at times partially pathogenic. Approximately one million endophytic species are present in the plant kingdom. The symbiotic and endophytic organisms are interdependently stocked with host plants providing better quantification and qualification to those host plants. Many types of bacteria, fungi, mycoplasma, and actinomycetes that are placed inside are considered endophytes. Endophytes can accumulate metals and convert them into nanoparticles. These particles can produce phytohormones like auxin, cytokinin, gibberellins, etc. Thus, it enhances the growth of the host plant by surpassing the biotic and abiotic stress as compared to the untouched plant by the endophytes. It can able to release the effect of abscisic acid, modifying jasmonic acid, and water stress conditions. Apart from that, endophytes can generate antimicrobial agents like antibiotics, antifungal and antiviral molecules. They are potent in producing antidiabetic, anticancerous, antioxidants, and immunosuppressesent, along with saprophytic decomposing activities. In addition, endophytes work as bioremediating agents to decompose toxic and heavy metals present in the soil. Endophytes can reduce sodium toxicity and mitigate stress by nullifying glutathione, polyphenol oxidase, peroxidase, catalase, etc. The symbiotic association of endophytes and the host plant can benefit the stress tolerance capacity of plants. Hence, endophytes have great contributions to the development of sustainable agricultural practices for the enhancement of plant and animal productivity by reducing synthetic inputs.

Keywords: Bioremediation, Endophytes, Nanoparticle, Phytohormones, Stress

Abstract ID: RSMPBIO04

Diversity and Density of Order Odonata in and around Sardar Patel University Campus

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The objective of the present study was to examine the diversity and density of Odonata species in and around Sardar Patel University Campus. Dragonflies and damselflies are highly sensitive to environmental changes and thus may offer valuable insights into the ecological health of aquatic ecosystems. Systematic surveys were carried out in various microhabitats, such as gardens, ponds, and open fields, during both morning and evening hours. A total of seventeen species from two distinct families were recorded. The highest species richness and abundance were observed near aquatic habitats, highlighting the importance of water bodies for their reproduction and survival. Substantial correlation was found between the diversity and density indices, alterations in habitat structure, and the physicochemical characteristics of the water. Anthropogenic pressures including habitat degradation and pollution may have impacted the community structure as several sensitive species were found to be less in disturbed areas suggesting the potential of Odonata as bioindicators.

Keywords: Odonates, Dragonflies, Damselflies, Bioindicator, habitat

Abstract ID: RSMPBIO05

Comparative study of the avian diversity in Vallabh Vidyanagar and Pariej Lake

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The present study provides a comprehensive analysis of avian diversity in two distinct habitats: in Vallabh Vidyanagar and Pariej Lake. The primary goal was to examine the composition, abundance and distribution of bird species and to determine physicochemical properties of water.
Field observations involved systematic bird count surveys and species identification based on their morphological traits and behavioural observations. The species were classified into migratory, resident, and seasonal categories which offers a detailed understanding of the temporal and spatial patterns of avian distribution. Additionally, water quality was assessed by examining key physicochemical parameters that are vital for sustaining aquatic life and thus may fulfil the basic needs of bird populations. The study revealed a diverse avian community in both areas with notable differences in species abundance and distribution. Pariej Lake with its larger size and abundant water resources hosted a greater variety of waterfowl and migratory species while Vallabh Vidyanagar primarily attracted resident species adapted to the local environment. This study highlights the vital role of these wetlands in preserving biodiversity and the need for sustainable management to ensure their conservation.

Abstract ID: RSMPBIO06

Understanding the microbial diversity and cancer-fighting ability of probiotics isolated from the Indian population

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Recent research has shed light on the close association between humans and the human-associated microflora that exists in various niches throughout the human body. This microflora is involved in several processes, including aiding digestion, protecting against infection, and training the immune system. New research further suggests that the human microbiome is also responsible in part in regulating such complex systems as mood and the hormonal system. Further, many microorganisms have been shown to be involved in disease etiologies and may play a role in the treatment of disease, including diabetes, various bowel disorders, and cancer. However, the microbiome of an individual is known to depend on several factors, including diet, geography, genetics and environment. In this context, it is important to study the microbiome of individuals from the Indian population, as few studies have isolated bacterial samples from the Indian microbiome. Here, we report the isolation of 100+ bacteria from microbiome and food samples taken from three distinct regions of India. We use the MTT assay in determining the anticancer potential of isolated bacteria. We show that isolates taken from these sources include some with good anti-cancer activity, including isolates of the genera *Enterococcus* and *Pediococcus*, while other isolates do not possess strong anti-cancer activity for example those of the genus *Staphylococcus*. We also report a novel, yet not reported, isolate with anticancerous activity isolated from the Indian population.

Keywords: cancer, human microbiome, probiotics

Abstract ID: RSMPBIO07

HEXAVALENT CHROMIUM TOXICITY IN DEVELOPING CHICKEN EMBRYOS: ULTRASTRUCTURAL CARDIAC CHANGES DRIVEN BY OXIDATIVE STRESS

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Hexavalent chromium (Cr(VI)), a known environmental pollutant, poses well-documented health risks for humans and animals. However, its specific cardiotoxic effects in broiler chickens remain under-investigated. This study explores the impact of *in ovo* exposure to potassium dichromate (0.70 µg/egg and 1.4 µg/egg) on cardiac health and development in broiler embryos. Embryonic assessments on days 7, 11, and 14 post-exposure evaluated hemolysis, crown-rump length, cardiomyocyte count, level of lipid peroxidation, level of enzymic and non-enzymic antioxidants, histopathological and ultrastructural changes in cardiac muscle, collagen deposition, and expression levels of marker enzymes of cardiac damage (LDH and cTnI). The findings revealed , significant dose-dependent alterations in Cr(VI)-exposed groups. Histopathological and ultrastructural analyses demonstrated notable cardiac changes, including Z band irregularities, increased vacuolation, reduced myofibrillar content, and elevated collagen fraction area. Additionally, biochemical assays indicated elevated serum LDH and IMA, increased lipid peroxidation, and depleted non-enzymic (GSH) and enzymic (SOD, GPx) antioxidants, pointing to oxidative stress-related cardiac impairment. The significant rise in hemolysis further underscores Cr(VI)'s detrimental impact on cardiac health. This research highlights Cr(VI) as a potential cardiotoxic agent with adverse effects on early cardiogenesis, emphasizing the risk posed by this heavy metal to cardiac development.

Keywords: Hexavalent chromium (Cr(VI)), cardiac toxicity, cardiogenesis, hemolysis, collagen, oxidative stress

Abstract ID: RSMPBIO08

Isolation and screening of plant growth promoting bacteria from the rhizosphere of *Glycine max L.*

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Soybean [*Glycine max (L.) Merrill*] is a crucial global crop, valued for its significant role as a source of protein and oil that is essential for both human and animal nutrition. To meet the future food requirements of an expanding population, it is crucial to substantially enhance current crop yields. This study examines the potential of plant growth-promoting rhizobacteria (PGPR) as a sustainable alternative to chemical fertilizers, with the aim of improving soil health and increasing soybean productivity. A total of 52 bacterial isolates were sourced from the rhizospheres of soybean plants from different regions of Gujarat, India. Among these, there were 32 gram-positive and 20 gram-negative strains. These isolates were assessed for their plant growth-promoting activities, revealing that strains SV05 and SV50 produced high levels of Indole-3-acetic acid (IAA), ammonia and also showed potassium and phosphate solubilization ability. The findings shortlisted at least five cultures, which could be used as effective biofertilizers. Further characterization of these strains is recommended to better understand their mechanisms of action and explore their potential applications in sustainable agricultural practices. This research highlights the significant contribution of PGPR to enhance soybean yields.

Keywords: PGPR, IAA, Potassium, Phosphate, Ammonia, Soybean

Abstract ID: RSMPBIO09

***In vitro* propagation of *Corallocarpus epigaeus* (Arn.) Cl. through nodal explants**

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People have remained constantly dependent on the native plants for their primary needs of food and healthcare. *Corallocarpus epigaeus* (Arn.) Cl. is an important tuber medicinal plant. Traditional people are used in the treatment of diabetes, snake bites, respiratory disorders, leprosy, and typhoid fever. According to the IUCN Red Data List 1997, this plant is categorized as threatened. The present study deals with the *in vitro* micropropagation of *Corallocarpus epigaeus,* which belongs to the family Cucurbitaceae. The nodal part of this plant was used as explants and cultured on Murashige and Skoog's (MS) medium with different concentrations of NAA, IAA, IBA, and BAP alone and different combinations (0.5 to 5.0 mg/L) for micropropagation. The maximum number of shoots (8–10) produce from nodal explants was obtained on BAP (3 mg/L) after 15 days of inoculation, while the maximum length (7 cm) of the shoot was shown in BAP (0.5 mg/L) after 20 days. IBA (4.5 mg/L) produced the maximum number of roots from the nodal explant when secondary roots were formed in IBA (5 mg/L) inoculated on MS media. The combination (BAP 2.5 mg/L: IBA 1.5 mg/L) of PGR shows the positive of shoot multiplication and root formation obtained after 20 days of inoculation. Rooted results plants were acclimatized in pots containing a mixture of soil, compost, and sand (1:1:1). The present study revealed the successful micropropagation of *Corallocarpus. epigaeus.* Further study required for the large-scale production of propagules required the standardization.

Keywords: *Corallocarpus epigaeus*, Medicinal plant, Threatened, Micropropagation

Abstract ID: RSMPBIO10

Effects of salinity stress on medicinal plants: *A Review*

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Salinity stress is a major environmental factor affecting medicinal plants, compromising both their growth and the production of bioactive compounds essential for therapeutic applications. High salt levels induce osmotic and ionic stress, leading to disruptions in water uptake and nutrient balance, which can severely impact the quality and yield of medicinal plants. This review explores the physiological, biochemical, and molecular responses of medicinal plants to salinity stress, highlighting how stress impacts the synthesis of key secondary metabolites such as alkaloids, phenolics, and flavonoids. These compounds, vital for medicinal uses, are often synthesized in reduced or altered amounts under saline conditions, affecting the plants' medicinal properties. To combat salinity stress, medicinal plants employ adaptive mechanisms such as osmotic regulation through compatible solutes, antioxidant defence systems to counteract reactive oxygen species (ROS), and selective ion compartmentalization to maintain cellular ion balance. This review synthesizes current research on these adaptive mechanisms and biotechnological strategies, emphasizing the need to develop salt-tolerant medicinal plants to ensure sustainable secondary metabolite production and quality in saline-prone regions. By understanding these responses, researchers and practitioners can improve cultivation practices for medicinal plants, safeguarding the availability of high yield bioactive compounds under challenging environmental conditions.

Keywords: Salinity stress, abiotic stress, stress responses, plant adaptation, sustainable agriculture, crop improvement

Abstract ID: RSMPBIO11

To study Determinants of Nutritional Status among Children under 5 in India by using NFHS data (2015-16 and 2019-2021)

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Malnutrition remains a critical issue among children under 5 in India, with high rates of underweight, stunting, and wasting observed across different regions.Objectives: To compare nuttional india data using NFHS surveys 2015 and 2021.Methods: A retrospective study using NFHS data (2015-2021). Data was collected from the DHS website, cleaned, and analyzed to identify trends and spatial patterns of malnutrition.Results: Significant variations in stunting, wasting, and underweight were noted across states. No significant gender differences in BMI were found.Conclusion: The study provides insights into malnutrition trends, highlighting the need for targeted interventions to address nutritional deficiencies among children under 5 in India.

Keywords: Malnutrition, Children under 5, India, NFHS

CHEMISTRY

"The only part of the early concept of the elements that has survived is that elements have distinctive properties."

— C. N. R. Rao

Sardar Patel University

Vallabh Vidyanagar, Anand, Gujarat

Abstract ID: RSMOCHEM01

Nano-Silver Decorated Zn(II) Metallogel: An Effective Catalyst for Sunlight Mediated Reduction of Nitro Compounds

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A novel Zn(II) based supramolecular metallogel [Zn(II)MA-MG] has been synthesized using malonic acid as a low molecular weight gelator (LMWG). The mechanical property of [Zn(II)MA-MG] has been studied through rheological investigations. The structure, composition, crystalline nature and thermal stability of xerogel of Zn(II)MA-MG have been explored through Single Crystal X-ray Diffraction, FT-IR spectroscopy, Powder XRD, Mass spectrometry, Energy Dispersive X-Ray analysis and Thermogravimetric analysis. The FESEM microstructural study reveals the hierarchical morphology with self-assembled architecture. The metallogel has been utilized as a template for the synthesis of bimetallic nanocomposite with silver [Zn(II)MA@Ag] and it is proven to be an excellent scaffold to stabilize silver nanoparticles in its network structure forming a bimetallic nanocomposite. This is the first example of LMWG based metallogel being stable scaffold to reduce and stabilize nanoparticles. The synthesized nanocomposite has shown good catalytic reduction property for nitro derivatives.

Keywords: Low Molecular Weight Gelator, Hierarchical Morphology, Zn-Ag Nanocomposite, Reduction Reaction

Abstract ID: RSMOCHEM02

EXPLORING BASE-FREE ACCEPTOR-LESS DOUBLE DEHYDROGENATION OF PRIMARY AMINES USING TETRAZOLE-LINKED BIMETALLIC Ru(II) COMPLEXES

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The catalytic double dehydrogenation (DDH) of primary amines is a clean and efficient method for the synthesis of nitriles. Further, the utilization of bimetallic catalytic system for DDH has proven to be more efficient than its monometallic counterpart. However, its large scale adoption for industrial application is limited owing to the usage of expensive and environmentally adverse catalytic conditions. In this context, the present study describes the first example of tetrazole-derived two bimetallic Ru(II)-arene complexes [(η^6-*p*-cymene)$_2$Ru$_2$Cl$_3$(L1)] [Ru-1] and [(η^6-benzene)$_2$Ru$_2$Cl$_3$(L1)] [Ru-2] (where, L1 = 4-(1H-tetrazole-5yl)benzoic acid) for acceptor-less double dehydrogenation of primary amines under oxidant and base free conditions. The results suggest that the electron rich [Ru-1] has outperformed due to its high solubility, high electron density and more charge separation as compared to [Ru-2]. The mechanistic studies reveal that electrophilic centre of [Ru-1] easily associates with substrate, whereas nucleophilic metal centre abstracts β-hydrogen of primary amine via thermodynamically more favourable six-membered transition state as compared to traditional four membered transition state in monometallic system. Further, the catalytic investigation proves that electron rich aromatic primary amines and aliphatic amines are more powerful than bidentate substrates which deactivate the catalyst suggesting the bimetallic dehydrogenation pathway for primary amines. Overall, this research opens the possibility of exploring tetrazole linked bimetallic complexes as an industry efficient solution for transition of primary amines to nitriles.

Keywords: Ru(II)-arene complex; Bimetallic catalyst; Acceptor-less Double Dehydrogenation; Milder condition

Abstract ID: RSMOCHEM03

Synthesis and Structural Analysis of Novel 2-(4-(3-(4-formylphenoxy)propyl)-1*H*-1,2,3-triazol-1-yl)-N-phenylacetamides

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A series of new 2-(4-(3-(4-formylphenoxy)propyl)-1*H*-1,2,3-triazol-1-yl)-N-phenylacetamides was successfully designed and synthesized via the click reaction. The alkyne agent 4-(pent-4-yn-1-yloxy) benzaldehyde was prepared from 4-hydroxybenzaldehyde and 5-chloropent-1-yne. Meanwhile, the 2-azido-N-phenylacetamides were obtained by the azidation of 2-chloro-N-phenylacetamides which was formed from aromatic amine and chloroacetyl chloride. The novel compounds were characterized by FT-IR, $^{1}H/^{13}C$ NMR, MS, HRMS and elemental analysis.

Keywords: 1,2,3-triazol, phenylacetamide, benzaldehyde, 5-chloropent-1-yne, Click reaction

Abstract ID: RSMOCHEM04

$CuFe_2O_4$ Doped Graphitic Carbon Nitride as an Efficient Visible Light Active Photocatalyst for Pinacol Coupling Reaction

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In the present work, we have developed visible light active photocatalysts by incorporating copper ferrite (CuFe2O4) as a dopant (with varying loadings, viz., 3, 5, and 10%) onto graphitic carbon nitride (g-C3N4) nanosheets prepared via urea and barbituric acid as precursors to form CuFe2O4/ g-C3N4 catalysts. These photocatalysts showed impressive results in the Pinacol coupling reaction using a visible LED light (200W), surpassing that of pure g-C3N4. In order to characterize photocatalysts, various techniques have been used, such as FTIR, XRD, XPS, TEM, Mott-Schottky, EIS and UV−vis DRS. Based on the results, CuFe2O4/ g-C3N4 (5%) has shown an outstanding performance with 99.5% conversion and 98.3% selectivity. Furthermore, the catalyst showed minimal drop-in activity after five cycles of recyclability. This study highlights CuFe2O4/g-C3N4 as a promising and sustainable photoactive material for efficient photocatalytic applications.

Keywords: graphitic carbon nitride (g-C3N4), CuFe2O4, photocatalyst, visible light, Pinacol coupling reaction

Abstract ID: RSMOCHEM05

Tailoring Isosorbide-modified Chitosan derived Copper Nanocomposite as Efficient Peroxidase Mimic for Colorimetric Detection of Glucose

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Glucose plays a vital role in metabolic pathways, and its fluctuations are closely linked to diseases like diabetes. Developing cost-effective and reliable glucose sensors is critical since traditional enzyme-based systems are expensive and prone to denaturation. In this study, a copper nanocomposite (Cu@CIF) was synthesized as a low-cost enzyme mimic using a chitosan modified with isosorbide ester as crosslinker for in-situ reduction of copper salt to nanoparticles. The Cu@CIF was thoroughly characterized using SEM, TEM, XRD, EDAX, and TGA to confirm its morphological and physicochemical properties. TEM and SEM revealed a uniform dispersion of copper nanoparticles, averaging 60 nm in size. The peroxidase-like activity of the Cu@CIF was evaluated via a colorimetric assay using 3,3',5,5'-tetramethylbenzidine as a chromogen. Optimization of reaction parameters such as pH, temperature, reaction time, and nanozyme concentration revealed optimal peroxidase activity at pH 4, 40 °C, and 3.5 mg of nanozyme, achieved within 20 minutes. The detection limit for glucose was 0.087 µM, with a linear detection range of 1–100 µM for glucose and 0.25–50 µM for H_2O_2. The Cu@CIF demonstrated stable and efficient peroxidase activity across a broad pH and temperature range, effectively catalyzing the conversion of in-situ generated H_2O_2 to radical ions. This study highlights Cu-NC as a cost-effective and reliable alternative to natural enzymes for glucose detection, with promising applications in medical diagnostics and biotechnology.

Keywords: Copper nanocomposite, glucose sensing, non-invasive, peroxide mimic

Abstract ID: RSMOCHEM06

Electrochemical Construction Of Pyrazolo[5,1-B]Quinazoline-3-Carboxylates: Potential Inhibitors Of Antiproliferative Activity

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Nitrogen-containing compounds have long been a focus in chemistry due to their crucial role in medicine and pharmaceuticals.[1,2] Many biologically active molecules, such as pyrazole, pyrimidine, quinazoline, triazole, and pyridine, feature nitrogen-rich five- and six-membered heterocyclic structures, which are pivotal in various applications.[3-5] Among these, pyrazole and quinazoline frameworks are particularly noteworthy for their biological significance, demonstrating activities like anti-inflammatory, antitumor, antihyperglycemic, and CNS effects.[6,7] Herein, an electrochemical approach was implemented to synthesize pyrazolo[5,1-b]quinazoline-3-carboxylates (**PQCs**) by reacting ethyl 3-amino-1*H*-pyrazole-4-carboxylate with various aldehydes and cyclohexane-1,3-diones in the presence of an acid catalyst. The synthesis of PQCs was carried out under ambient conditions using an undivided electrochemical cell with stainless-steel electrodes functioning as both the anode and cathode. This electrochemical protocol proceeded smoothly, resulting in the target compounds with good to excellent yields. All the synthesized PQC derivatives were characterized using various analytical tools such as ^{1}H NMR, ^{13}C NMR, and mass spectrometry. To expand the pharmaceutical eminence, all the PQCs were evaluated for *in vitro* study against six different human tumor cell lines (A549, SW1573, HBL-100, T-47D, HeLa, and WiDr). Most of the PQCs showed good GI_{50} value and few PQCs showed superior antiproliferative activity (GI_{50} < 10 µM).

Keywords: Antiproliferative, Electrochemistry, Green Approach, Pyrazoloquinazolines

Abstract ID: RSMOCHEM07

ONE-POT SYNTHESIS AND BIOLOGICAL STUDIES OF SOME NEW HER INTERACTIVE INDOLYL-DIBENZO[1,4][b,e]DIAZEPINONE SCAFFOLDS

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Diazepine-based heterocycles, especially those with an aryl/hetero-aryl fragment, have shown significant biological properties such as antioxidant, antimicrobial, and antiproliferative effects[1]. These compounds have therapeutic potential as inhibitors of hepatitis C virus (HCV) NS5B polymerase[2] and HIV protease[3]. While the aryl fragment is commonly studied, the heteroaryl as a tethering unit to dibenzo[b,e][1,4]diazepin-1-ones is less studied. Combining heterocycles with a diazepine ring has led to the development of new and interesting biological properties. In view of this, a one-pot synthesis of new indolyl-dibenzo[*b*,*e*][1,4]diazepinone scaffolds has been achieved by reacting *N*-(allyl/alkyl/propargyl)indole-3-carbaldehydes with dimedone and *O*-phenylene diamines, in the presence of glacial acetic acid in dry ethanol at room temperature. This method has consistently produced high yields of new diazepinones, confirmed through single-crystal X-ray diffraction and DFT studies. Many compounds exhibited antibacterial activity comparable to the standard ciprofloxacin against Gram +ve *Bacillus subtilis* and Gram -ve *Pseudomonas aeruginosa*. Additionally, these compounds exhibited good antioxidant properties with FRAP(ferric reducing antioxidant power) values in the range of 235-255 A.A. mM/100 gm sample, as well as anti-proliferative activities against human solid tumour A549(lung), Hela(cervix) and T-47D (breast) cell lines with GI_{50} values in the 14-25 µM range. Finally, *in silico* ADME analysis indicated that all compounds comply with Lipinski's rule of five. Docking studies revealed that many of these compounds possess structural features analogous to human estrogen receptor (HER) antagonists, validating their potential in pharmacology.

Keywords: Indolyl-diazepinone scaffolds, 1,4-diazepine, antiproliferative activity, HERα antagonist

Abstract ID: RSMOCHEM08

Construction of Pharmacologically Significant Diversely Substituted Pyrazolo-Quinolines Using DIPEA-PTS: A Green Perspective

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Heterocyclic compounds are foundational to organic chemistry, playing pivotal roles in medicinal chemistry, materials science, and agriculture.[1] Their presence in macromolecules such as enzymes, vitamins, and biologically active compounds underscores their significance. These compounds form the backbone of numerous therapeutic agents in the pharmaceutical industry. Among these, pyrazolo-quinoline derivatives are particularly noteworthy for their potent anticancer and antioxidant activities. These compounds interact with biological targets to inhibit DNA synthesis, promote oxidative stress, and induce apoptosis in cancer cells, making them promising candidates for novel cancer therapies.[2] In parallel, Green chemistry principles, which emphasize the reduction of hazardous substances and the development of sustainable processes, are increasingly crucial.[3] Within this context, Multicomponent reactions (MCRs) and ionic liquids (ILs) are critical strategies for advancing sustainable chemical processes. MCRs reduce the number of synthetic steps and overall reaction time, contributing to more environmentally friendly practices. Similarly, ILs, with their low volatility and recyclability, offer a promising alternative to traditional organic solvents and significantly reduce volatile organic compound (VOC) emissions.[4] Aligned with our ongoing efforts to develop biologically significant pyrazolone-based frameworks under environmentally benign conditions,[5] we report the efficient synthesis of novel pyrazolo-quinoline derivatives using diisopropyl ethyl ammonium p-toluene sulfonate (DIPEA-PTS) as both a solvent and a catalyst. Mild reaction conditions, broad substrate scope, short reaction time, no column chromatography, good to excellent yields, large-scale synthetic applicability, reusability of reaction media, high atom-economy and low E-factors are the key findings of this protocol. Furthermore, in vivo, antiproliferative studies on six cancer cell lines revealed promising activity, with particularly notable effects against the lung cancer cell line (*A549*).

Keywords: Antiproliferative, Diisopropyl ethyl ammonium *p*-toluene sulfonate ionic liquid, Green chemistry, Multicomponent reactions, Pyrazolo-quinolines

Abstract ID: RSMOCHEM09

A green approach toward water purification: Exploring the potential of sugar-based Honey mimicking deep eutectic solvent as a forward osmosis draw solute

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Purification of contaminated water has always attracted the focus of researchers. However, techniques like RO, which have the highest market share among the other water purification techniques, come at the cost of high energy consumption, high membrane fouling, and high maintenance. To overcome these challenges, researchers have always been curious about finding techniques which are more sustainable and low maintenance. Forward osmosis a technique with low energy consumption, low maintenance cost and lower fouling has always attracted attention of researchers. In this work, low energy consuming forward osmosis technique has been used with an edible sugar based honey mimicking deep eutectic solvent as a draw solute along with ultra thin polyamide RO (UTRO) membrane. This deep eutectic solvent with different concentration (40%, 50%, 60%) was employed for the flux measurement and dye water separation application. Characterization like scanning electron microscopy, FT-IR, Contact angle, were used for the better understanding of membrane and draw solute. the DES produces an excellent flux with both the triple-distilled water and dye-contaminated water. As the DES contains components which are edible, recovery step can be avoided which further reduces the cost of separation hence the technique. The study has shown that low-concentration DES can be a practical substitute for the current generation of DS.

Keywords: Forward osmosis, deep eutectic solvents, Sugar-based, Dye separation, Draw solute

Abstract ID: RSMOCHEM10

A New Domino/Knoevenagel-Michael- Dehydrative-Cyclization Synthetic Sequence As A Green Protocol To Synthesize Pyrazole-Appended Xanthene Diones

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Xanthene compounds are structures that contain a pyran ring. Many naturally occurring and synthetically derived xanthene derivatives are found as important sources of materials for various medicinal applications such as anticancer[1], antimicrobial[2], antimalarial[3], antioxidant agents[4], anti-SARS-CoV-2 agent, antitumor, anti-inflammatory[5], neuropeptide Y5 receptor antagonists, trypanothione reductase. Additionally, many compounds in this group are used as dyes and fluorescent materials, which help create probes for cell imaging. As a result, researchers have become increasingly interested in developing new chemical systems containing the xanthene core in the past decade. The present work demonstrates 'Knoevenagel-Michael-dehydrative cyclization (DKMDC)' as a new and efficient synthetic route to 9-(3-methyl-1-phenyl-2-(allyl/prenyl/geranyl/methyl)-5-pyrazolone)-1*H*-xanthene-1,8(2*H*)-diones as new pyran-fused complex structures. Here, 3-methyl-1-phenyl-2-(allyl/prenyl/geranyl/methyl)-5-pyrazolone-4-carbaldehyde was heated with dimedone/cyclohexane-1,3-dione in ethylene glycol at 110°C. The method is highly efficient, producing the desired compounds with higher yields in a shorter reaction time. Ethylene glycol is a renewable feedstock material, making this method environmentally friendly. Additionally, this metal-free reaction made workup easier and reduction of waste satisfies a need to develop eco-friendly methodologies. The DFT studies were done to calculate energies theoretically. The proposed structures of these new compounds are confirmed based on single-crystal X-ray data of representatives.

Keywords: Domino, Knoevenagel, Michael, Xanthene, Catalyst-free, Ethylene glycol

Abstract ID: RSMOCHEM11

Algae as a cathode Material in Rechargeable Zn ion Batteries

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Electrochemical energy storage devices like batteries and supercapacitors play an important role in balancing energy generated from renewable sources like solar, wind, and hydrothermal power. These devices help in the storage and transportation of energy to the specific time and place where it is required. Additionally, batteries have increased demand due to their application in portable electronics. To make the fabrication of batteries more sustainable, biomass has been employed as an electrode material. One such commonly available source is algae due to advantages associated in utilizing it such as, rapid growth rate in versatile condition, reduces land and freshwater use, low environmental impact and most importantly use of algae biomass doesn't affect the food chain. In general, utilization of biomass as an energy storage electrode material required very high temperature (700-1000 °C) processing in inert atmosphere which is major drawback due to high electrical energy consumption. In the said concern, here we have implemented non-carbonization route of processing which included low-temperature acidic treatment of dried algae at 100 °C for only an hour at room ambient, which improved the properties and capacitive performance of the material in exceptional way. We have compared the properties of the material via elemental characterization like EDS (Energy Dispersion X-Ray Scattering), ICP-OES (Inductive coupled plasma Optical Emission Spectroscopy), functional group characterization via FT-IR (Fourier Transformed Infra-Red) and Raman spectroscopy, Thermal stability with TGA (Thermo-gravimetry Analysis) and structural properties by XRD (X-Ray Diffraction Spectroscopy) and surface morphology by BET (Brunauer–Emmett–Teller), SEM (Scanning Electron Microscopy) and optical mapping. Aqueous rechargeable Zn-ion battery (ARZIB) is prepared using treated material on cathode. The prepared ARZIB is examined for its energy storage capacity and durability. It has delivered specific capacity of 896 mAh g^{-1} with 80 % capacity retention over 500 charging-discharging cycles.

Key words: Algae, biomass, Sustainable process, Aqueous Rechargeable Zn ion battery

Abstract ID: RSMOCHEM12

A Self-Healing, antibacterial, on-demand removable hydrogel as Smart Wound Dressing

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Wound care is a flourishing branch of healthcare wherein great amount of research is devoted to develop competent wound dressings. Safe, cost effective and biocompatible dressings aid in wound healing without inflicting external trauma and subsequent scar formation. This work explores the development of a robust wound dressing material with self-healing and antibacterial properties. Self-healing property was introduced by crosslinking chitosan with 4-formyl phenylboronic acid (4-FPBA) and in-situ generated dehydroascorbic acid (DHA) utilizing the dynamic imine and boronate ester linkages. Displaying a channelled microstructure in the SEM micrographs, the hydrogel exhibits a massive water uptake capacity of ~900% at acidic pH. The hydrogel could completely self-heal within 3 min and the results are further supported by rheological analysis. By virtue of positive surface charge, it shows promising tissue adhesive property. In practical healthcare situations, removal of wound dressing often causes trauma to the wound which may lead to scar formation. Thus, pain free removal of dressings may be an added advantage to wound care. This engineered hydrogel affords a clean and compliant removal from the wound surface via dissolution induced by dopamine, to potentially reduce secondary scarring from peeling of wound dressings. The dressing could significantly act against skin infections caused by *S. aureus* bacteria with enhanced antimicrobial efficiency via loading of antibiotic drug, tetracycline hydrochloride. A sustained release of tetracycline and Curcumin was observed which demonstrated the release ability for hydrophilic and hydrophobic bioactive agents. In-vitro studies revealed 93% cell viability with a hemolytic ratio as low as 2.5% and wound healing capacity of 30% within 24 h, thereby presenting a good self-healing and biocompatible material.

Keywords: Self-healing, wound healing, hydrogel, chitosan

Abstract ID: RSMOCHEM13

Green Synthesis of Potent Antimicrobial 1,2,4-Triazolo[1,5-a]pyrimidine Derivatives Using Indian Gooseberry (Phyllanthus Emblica) Extract as a Natural Catalyst

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Antimicrobial resistance (AMR) poses a critical global health challenge, necessitating the development of novel therapeutic agents. In alignment with the principles of green chemistry, this study presents an eco-conscious synthesis of 25 novel 1,2,4-triazolo[1,5-a]pyrimidine derivatives catalyzed by Indian gooseberry (Phyllanthus Emblica) fruit extract. Rich in organic acids and polyphenolic compounds, gooseberry juice acts as an environmentally sustainable catalyst, enabling a one-pot, solvent-free synthetic route. This method not only reduces environmental impact but also enhances the reaction's efficiency, achieving high yields in significantly less time compared to conventional methods. The synthesized compounds were rigorously evaluated for their antimicrobial activity against a spectrum of clinically relevant microorganisms, including Chromobacterium violaceum, Klebsiella pneumoniae, Escherichia coli, Staphylococcus aureus, Bacillus subtilis, Candida albicans, Cryptococcus neoformans, and Aspergillus niger. Additionally, cytotoxicity assessments were performed on HEK-293 cells, ensuring the biocompatibility of the compounds. Notably, compounds B-1, B-6, B-7, B-14, and B-15 demonstrated potent antimicrobial activity, low cytotoxicity, and high cell viability, highlighting their potential for further pharmaceutical development. This research underscores the importance of sustainable synthesis in antimicrobial drug discovery, offering a green alternative to traditional synthetic methods while addressing the pressing issue of AMR. By integrating natural catalysts and solvent-free processes, this study contributes to a more sustainable future in pharmaceutical innovation.

Keywords: 1,2,4-triazolo-[1,5-a]pyrimidine, amla (*Phyllanthus emblica)* fruit extract, challenging conventional paradigms, anti-micorbial drug discovery

Abstract ID: RSMOCHEM14

Valorization of Dry Biomass to Bimetallic Magnetic Hydrochar: A Dual-Action Water Remediation Material for the Removal of Pharmaceutically Active Substances (PAS)

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The current scenario of severe water contamination necessitates the development of effective and sustainable remediation strategies as well as sustainable waste valorisation. The present study focuses on the synthesis of hydrochar from pistachio shell powder via hydrothermal carbonization process which is further modified into magnetic-bimetallic composite. The hydrochar (PHC) and its magnetic composite (MHC and BMHC) were characterized using several microscopic and spectroscopic techniques. To check the sustainability of the synthesis procedure, LCA was performed. BMHC was used as dual action materials for the removal of contaminants via adsorption and degradation. Batch adsorption experiments revealed rapid and substantial removal of PAS, with maximum removal efficiencies exceeding 95%. Compared to pristine hydrochar, magnetic hydrochar demonstrated superior adsorption capabilities. Owing to the magnetic nature of the hydrochar, easy separation of the adsorbents from the treated water can be achieved demonstrating potential practical applications. Furthermore, the degradation potential of the magnetic hydrochar through peroxymonosulfate (PMS) activation was studied. Results demonstrated that the magnetic hydrochar effectively activates PMS, leading to efficient degradation of adsorbed contaminants. Studies also exhibited potential adsorption and degradation performance for multiple cycles. Hence, this strategy demonstrated effective valorisation of the bio-waste for sustainable water treatment solutions.

Keywords: Waste valorization; Hook-and-Destroy strategy; Life cycle assessment; In-silico toxicity; Regenerative Degradation

Abstract ID: RSMOCHEM15

TARGET ISOLATION AND ANTI-PROLIFERATIVE POTENCY OF FUROCOUMARIN DERIVATIVE FROM *AEGLE MARMELOS* FRUIT PULP

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Aegle marmelos is a member of the Rutaceae family and a source of diverse biological properties. Most studies have focused on the extract from the dried fruit pulp, but the fresh pulp remains unexplored. To the best of our knowledge, our study has been the first to report the crystal isolation of a furocoumarin derivative from fresh fruit pulp using ethyl acetate extract. Different spectroscopic techniques such as single crystal-XRD, 1H NMR, 13C NMR, and mass spectrometry confirmed the structure of 9-((3-methylbut-2-en-1-yl) oxy)-7H-furo[3,2-g]cccchromen-7-one widely referred as imperatorin. Quantitative measurement revealed that ripe fruits contained significantly higher levels of imperatorin compared to unripe fruits. The dimer of imperatorin exhibited an anti-proliferative activity against breast cancer cells, with a GI50 of 21 µM. Continuous live cell imaging of HeLa cells exposed to the compound showed apoptosis as the mode of cell death.

Keywords: Anti-proliferative activity, Continuous live cell imaging, Crystal structure, Imperatorin

Abstract ID: RSMOCHEM16

Fabrication of Calix[4]arene-Functionalized Fluorescence Sensor for Recognition of Herbicide from Agricultural Produces

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The construction of fluorescence sensor L1 for cyanazine (CNZ) [1 – 4] by using calix[4]arene [5 – 7] scaffold allied with 9-Aminoacridine moiety has been reported. The recognized triazine herbicide CNZ decreased the fluorescence intensity of L1 by exhibiting "turn-off" phenomenon having detection limit to be 7.79 µM obtained from emission study. The quenching response of L1: CNZ was observed between the range of 5 – 105 µM possessing binding constant calculated to be 9.201 × 106 M^{-1}. The spiking experiment of CNZ into L1 has also been performed to evaluate potency of L1 using vegetables and cereals. Also, a paper-based device has been prepared in order to implement this strategy for on-spot monitoring of CNZ. The L1:CNZ binding has been confirmed by conducting ^{1}H NMR, FT – IR, MALDI- TOF, PXRD investigation and computational analysis. Thus, our developed indigenous technique can be utilised to recognize CNZ from agricultural produces, which will surely be advantageous to many farmers.

Keywords: calix[4]arene, computational study, cyanazine, fluorescent probe, real sample analysis

Abstract ID: RSMOCHEM17

Cyclotriaguaicyclene-based integrated supramolecular materials for liquid crystals and self-assembly behavior

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Nowadays, Researchers are increasingly focusing on developing light-emitting liquid crystalline compounds derived from supramolecular materials. [1,2] An advanced tri-substituted supramolecular material was synthesized via the conversion of cyclotriveratrylene to cyclotriguaiacyclene with further esterification reaction with fluorescein unit embedded with side arms.[3] These supramolecular materials were prepared in good yield and further confirmed by using FT-IR, ^{1}H-NMR, ^{13}C-NMR, and MALDI-TOF. All four luminescent materials exhibited columnar hexagonal-type mesophase in both heating and cooling conditions. The materials with hexadecyloxy and octadecyloxy tail group exhibit liquid crystalline behavior at room temperature indicating the presence of a mesophase even under ambient conditions. The thermal behaviors and optical textures were identified by using DSC and POM study and the molecular packing arrangement in the mesogenic state was checked by high temperature XRD study.[4] The CTG core, with its highly fluorescent nature and columnar hexagonal self-assembly, is ideal for device applications due to its superior thermal stability. The photophysical and computational study provides the importance of the optical and electronic nature of the compounds.

Keywords: Liquid crystal, Cyclotriguaiacyclene, Fluorescent, Self-assembly

Abstract ID: RSMOCHEM18

(*R*/*S*)-2-thioxo-3,4-dihydropyrimidine(TDHPM)-5-carboxanilides: QSAR, Antimicrobial and Antiproliferative Study

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The 3D-QSAR analysis of all the isolated (R/S)-2-thioxo-DHPM-5-carboxanilides exhibiting antimicrobial activity was carried out. Forty-six compounds were used in the screening process in which 70% of molecules were assigned as training tests and 30% as test sets. The best-scoring model with the top statistical values was considered for bacterial and fungal targets *B. subtilis* and *C. albicans*. As a result of 3D-QSAR analysis, compounds **4v**-(*S*)- and **4v**-(***R***)-isomers were found to be more potent compared to the standard drugs tetracycline and fluconazole, respectively. In addition, *in vitro* analysis shows that the compounds **4q**, **4d'**, **4v**, **4q'**, **4n**, **4q'**, **4c**, and **4p'** were found to be more potential than tetracycline and fluconazole to inhibit the bacterial and fungal growth against *B. subtilis*, *S. proteolyticus*, *C. albicans*, and *A. niger*, respectively. Molecular docking analysis with the glide score of -10.261 kcal/mol shows that **4v**-(***R***)-isomer was found to be more potent against the antifungal target *C. albicans* and may target the 14-α demethylase than fluconazole. Furthermore, compound **4o'**-(***S***)-analogue shows more potency against all six solid tumour cell lines. Following the excellent outcomes of **4o'** towards the *HeLa* cell line, its kinetics and live cell imaging studies were carried out. These outcomes highlight the acceptance, safety and potential of these compounds to be effective antiproliferative and antifungal agents.

Keywords: (*R*/*S*)-2-thioxo-DHPM-5-carboxanilides, 3D-QSAR, Antimicrobial, Antiproliferative, Molecular Docking Study, Pharmacophore modelling

Abstract ID: RSMOCHEM19

α-C_{sp3}–H Functionalization of BCT Carbonyls: Synthesis of 2-Arylidene Cycloalkanones and 2-Halocycloalkanones

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Cyclotrimerization reaction has been widely used to form Benzocyclotrimers (BCTs)[1] which have potential applications to build graphene or fullerene fragments, molecular tweezers, baskets, cages, bowls, and others.[2-5] BCTs can also be designed to be used as trapping / sensing agents for guests in molecular recognition.[6] BCTs such as trindane and dodecahydrotriphenylene (DDHTP) have gained significant importance as key synthons for higher polycyclic aromatic systems. Their unique and aesthetically pleasing architectures make them ideal candidates for the construction of intricate and higher-order carbocycles. However, there are limited reports on these ring systems since their functionalization is a formidable task. Our personal engagement with these scaffolds prompted us to explore the synthesis of novel, synthetically valuable derivatives of these interesting carbocycles. In this study, we present a new series of derivatives *via* functionalization of the α-position of these cycloalkanones. We employed Claisen-Schmidt condensation reaction as well as a α-C_{sp3}–H halogenation protocol using suitable agents.[7] α, β-Unsaturated carbonyl compounds are still often employed to create bio-active compounds, materials, flavours, perfumes as well as optically active molecules. Moreover, such α, β-enone functionalities are favourable candidates for dipolar cycloadditions and nucleophilic 1,4-additions. On the other hand, organohalogenated compounds particularly α-halo, α, α–dihaloketones and various other *gem*–dihalides are key synthons for the synthesis of numerous pharmaceuticals, agrochemicals and natural products

Keywords: α, β-enones, Halocycloalkanones, Claisen-Schmidt condensation, Trindane, Dodecahydrotriphenylene

Abstract ID: RSMOCHEM20

Transformation of *Acalypha indica* weed to develop fluorescent carbon dot derived nitrite sensing films.

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The detection of nitrite (NO_2^-) in water is crucial due to its significant health threats and environmental concerns. This warrants the development of materials and methods for effective nitrite detection. Weeds, generally seen as waste or unwanted plant, are rich in bioactive molecules and hence offer an innovative and eco-friendly method for synthesizing Carbon dots (CDs). Hence the present study introduces the development of green fluorescent biogenic carbon dots (WCDs) synthesized from *Acalypha indica* weed. The synthesized WCDs exhibit exceptional stability and high photoluminescence quantum yield, making it ideal fluorometric probe for nitrite detection. Sensing studies using pristine CDs demonstrated their excellent sensitivity and selectivity for nitrite detection, with a detection limit of 36 nM. Additionally, WCD coated paper-based kits were developed by coating CDs on Whatmann filter paper and fluorescent films were also fabricated by incorporating WCDs into chitosan cross-linked matrix. Detection was achieved using these kits and films too, which significantly improves the practical applicability of the method for real-world applications. Real sample studies performed further confirms its applicability. The fluorescence-based sensing with these biogenic CDs its composites offer a cost-effective, user-friendly and effective detection approach compared to traditional techniques, including colorimetry and chromatography, which require expensive equipment and complex procedures. This study highlights the untapped potential of weeds for advanced environmental sensing technologies and green chemistry, marking a significant step forward in improving water quality monitoring and environmental safety.

Keywords- weeds, c-dot, fluorescence, nitrite sensing, paper-based kit, film.

Abstract ID: RSMOCHEM21

REPURPOSING THE DOMESTIC BIO-WASTE INTO BLUE EMISSIVE N-DOPED GRAPHENE QUANTUM DOTS: A SUSTAINABLE ZERO WASTE PROCESS FOR SELECTIVE SENSING OF CARCINOGENIC Cr(VI), AND ORGANIC POLLUTANT 4-NITRO PHENOL AND IT'S USE AS A FLUORESCENT INK

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In recent years, the development of bio-waste derived sustainable and green carbon quantum dots (CQDs) with wide range of applications, is a fascinating and environment friendly approach to overcome the limitation of chemical synthesis techniques. Among them, Graphene Quantum Dots (GQDs) have emerged as a rising star in the field of nanomaterials due to their facile low-cost synthesis, non-toxicity, biocompatibility, water solubility and highly tunable photoluminescence properties making them promising next generation sensing materials. In this study, we have demonstrated the synthesis of domestic biowaste *Cajanus Cajan pods* derived GQDs *via* green and simple pyrolysis route. Further, we have blended *Cajanus Cajan pods* with Urea as nitrogen source to prepare nitrogen doped GQDs with ratios of 1:1 (N_1-GQDs) and 1:2 (N_2-GQDs). Here, doping of nitrogen allowed more active sites on the surface of GQDs causing large-bathochromic shift in the emission peak resulting in tremendous enhancement of luminescent properties of N_2-GQDs. The resultant N_2-GQDs exhibited bright blue photoluminescence in the range of 300 to 450 nm, corresponding to relative photoluminescence quantum yield (PLQY) of 12.58%. All GQDs were characterized using Fluorescence spectroscopy, UV-Visible spectroscopy, FT-IR spectroscopy, and Elemental analysis. The structural and phase properties of N_2-GQDs were explored by powder XRD analysis. The crystalline nature, hexagonal graphene sheet-like arrangement and 2-8 nm size of N_2-GQDs were deduced from HR-TEM and SAED pattern. The synthesized N_2-GQDs showed significant stability over a long time. Further, N_2-GQDs were utilized for selective sensing of carcinogenic Cr(VI) metal, and organic pollutant 4-Nitro phenol. N_2-GQDs were also used as fluorescent ink without any chemical alteration. The material developed in this study could be a promising candidate for the development of bio-waste derived emerging materials.

Keywords: Graphene quantum dots, Nitrogen-doped GQDs, Cr(VI) metal sensing, 4-Nitro phenol sensing, Luminescent ink

Abstract ID: RSMOCHEM22

PILLAR[5]ARENE-BASED ESTER DERIVATIVES FOR NEMATIC LIQUID CRYSTALLINE BEHAVIOR

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Four multifunctional supramolecular systems (PB_1–PB_4), based on Pillar[5]arene linked[1,2] to 4-n-alkoxy benzoic acid with varying alkyl chain lengths, were synthesized and thoroughly characterized. The microscopic and thermal properties of these compounds were examined using polarized optical microscopy (POM), differential scanning calorimetry (DSC), and thermogravimetric analysis (TGA). All four pillar[5]arene-ester macrocyclic derivatives exhibited nematic mesophases[3], characterized by schlieren and droplet-like textures. These compounds demonstrated enantiotropic mesogenic behavior with broad temperature ranges and excellent thermal stability. Notably, the materials with longer alkyl chains exhibited nematic phases at lower temperatures compared to those with shorter alkyl chain substitutions. The structure property relationships were explored to understand the impact of substitutions on the rigid core of pillar[5]arene and their role in modulating liquid crystalline behavior.

Keywords: Pillar[5]arene, Macrocycle, Mesophase, Supramolecule, Nematic phase, Thermal stability

Abstract ID: RSMOCHEM23

0Magnetic sodium alginate/*β*-cyclodextrin containing hydrogels: an insight into swelling and adsorption efficiency for the removal of triphenylmethane cationic dyes

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Water contamination is one of the most concerning issues of the current era and many researchers are focusing on the treatment of contaminated water resources using effective and cost effective methods. Adsorption is one of such methods providing cheaper and effective technique to remove the contaminants from the water. In the present work, we have synthesized Sodium alginate/*β*-cyclodextrin based magnetic hydrogels for the removal of triphenylmethane cationic dyes. Influence of feed composition variation on the swelling and malachite green adsorption effectiveness of the hydrogels was investigated to compare the relation between swelling performance and dye adsorption performance of the composite hydrogels. The results indicated high adsorption of Sodium alginate/*β*-cyclodextrin composite hydrogel for cationic dye removal.

Keywords: Adsorption, Dyes, Hydrogel, Sodium alginate, Swelling

Abstract ID: RSMOCHEM24

Enhancing PVC Soft Films: The Plasticization Power of Bio-Based Seed Oil

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Simarouba Glauca seed oil (SGO), a sustainable non-edible vegetable oil, was extracted using traditional methods and its fatty acid composition was analyzed via gas chromatography. The oil was then epoxidized and utilized as a plasticizer in polyvinyl chloride (PVC) films, formed using solution casting in THF at 60°C. The physicochemical properties, thermal stability, and spectral characteristics of both SGO and its epoxidized form (ESGO) were evaluated. ESGO exhibited superior thermal stability compared to SGO, making it a suitable alternative plasticizer. Comparative studies on PVC films plasticized with ESGO, conventional dioctyl phthalate (DOP), and their mixtures revealed that ESGO enhances thermal stability, mechanical properties, and maintains the polymer's crystallinity. Kinetic models were used to assess activation energies, confirming higher thermal stability in ESGO-plasticized films. Additionally, ESGO demonstrated better resistance to plasticizer migration in water, suggesting its potential as a DOP substitute in PVC applications.

Key Words: Epoxidation, Plasticizer, Poly (vinyl chloride), Sustainable oil, Computational study, Thermo-kinetic analysis.

Abstract ID: RSMOCHEM25

Design and Application of Redox-Active Triazine-Thiophene Functionalized Covalent Organic Framework for High-Performance Aqueous Supercapacitors

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Covalent Organic Frameworks (COFs) are designed through the covalent bonding of two organic building blocks and can be synthesized using various methods. These materials exhibit tunable pore sizes, low density, high surface area, excellent electrical conductivity, and remarkable thermal and chemical stability. These properties make COFs highly suitable for a wide range of electrochemical applications, particularly in energy storage devices such as supercapacitors and batteries. In this study, we report the synthesis of novel nitrogen- and sulfur-enriched triazine-thiophene functionalized two-dimensional (2D) COFs, which are electrochemically redox-active. The synthesis was performed using reflux and solvothermal methods. The resulting COFs were characterized using techniques such as SEM, TEM, IR spectroscopy, BET surface area analysis, XRD, UV-Vis spectroscopy, TGA, and DSC. These COFs were then utilized as electrode materials in symmetrical aqueous supercapacitors. Electrochemical cyclic voltammetry measurements revealed a rectangular profile, indicative of an electrochemical double-layer charge storage process. Furthermore, galvanostatic charge-discharge tests showed that the COF-based electrodes delivered an excellent specific capacitance of 471.1 F g^{-1} at a current density of 2 A g^{-1}, with excellent cycling stability over 96% capacitance retention after 10,000 cycle. This study highlights a novel approach for leveraging redox-active COFs in energy storage applications.

Keywords: Covalent Organic Frameworks (COFs), Aqueous Supercapacitors, Solvothermal Method

Abstract ID: RSMOCHEM26

COLLOIDAL BIOGENIC SILVER NANOPARTICLES FOR FLOW ENHANCEMENT OF CEMENT COMPOSITES AND ITS MECHANISM

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Nanomaterials recently used in the concrete industry due to their tremendous properties but its large-scale application is limited because of adverse effects on flow and high replacement dosage requirements. To overcome this issue, the required nanomaterial should be small in size and dispersed with superplasticizing properties. To keep these things in mind, the present study focuses on the development of biogenic silver nanoparticles using *Lablab purpureus* (L.) pods *via* green synthesis method, and its detailed characterization. Silver nanoparticles containing phytochemicals as a capping agent can enhance the flow properties of cement composites which was confirmed by contact angle and surface tension measurements. The performance of silver nanoparticles was compared with the commercially available silica nanoparticles. Compared to silica nanoparticles, silver nanoparticles increase the flow by 80 % and decrease superplasticizer dosage by 150 %. Its binding with cement composites and microstructural studies were carried out using FT-IR, TGA, FE-SEM, HR-TEM, and EDS. From the above studies, it was concluded that 0.5 and 1.0% are the optimal dosages for the cement and blended paste with enhanced flow and reduced water demand without compromising the strength. The developed silver nanoparticles are environmentally friendly, and sustainable, and can be used for large-scale applications in cement concrete.

Keywords: Silver nanoparticles, Silica nanoparticles, Flow enhancement, Microstructure, Nanostructure

Abstract ID: RSMOCHEM27

Sustainable Multi-Component Synthesis and absorption spectral investigations for the biomolecular interaction activities of heterocyclic spiranes

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Spectroanalytical techniques are widely used in the research area nowadays to characterize any compounds and as well as for the determination of the biological potency of synthesized compounds. The current study highlights using a green catalyst to make novel spiro quinoxaline-pyrimidone-based heterocyclic compounds. To be potentially active against cancer the compound should effectively bind with the DNA. To determine the binding affinity of all the compounds with the calf-thymus (CT) DNA and bovine serum albumin (BSA), all the compounds were screened for absorption titration study using a UV-visible spectrophotometer. The binding constant values of all the compounds (QP 1 – QP 12) with CT-DNA and BSA were found in the range of 0.61 - 1.45 × 10^5 M^{-1} and 0.16 - 2.19 × 10^4 M^{-1}, respectively. Molecular docking analysis was also conducted to determine the interaction of spiro compounds with biomolecules, i.e., 1 BNA and BSA and topoisomerase II using autodock vina software. Anticancer activity was carried out on MCF-7 in terms of IC_{50} value, which ranges between 76.67-138.34 µg/mL. Quinoxaline-pyrimidone based moieties showed good antimicrobial activity and cytotoxic nature against five bacteria and artemia cysts, respectively . The MIC and LC_{50} values of all the compounds were obtained between 135-195 µM and 6.26-10.91 µg/mL, respectively. To determine the drug-likeness of all the synthesized compounds, the pharmacokinetic profile was evaluated using online platforms SwissADME and admetSAR.

Keywords: Spectral characterization, Green synthesis, Biomolecular interaction, Docking analysis

Abstract ID: RSMOCHEM28

One-Pot Synthesis of 4,7-Dihydro-[1,2,3]thiadiazolo[5,4-b]pyridine-6-Carboxamides Using Acetic Acid and Their Pharmacological Evaluation

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A series of 4,7-dihydro-[1,2,3]thiadiazolo[5,4-b]pyridine-6-carboxamides (4a–o) were synthesized through a one-pot reaction involving 5-amino-[1,2,3]thiadiazole, various aromatic aldehydes, and different acetoacetanilides, catalyzed by glacial acetic acid. The reaction produced the compounds in moderate to good yields. All the newly synthesized derivatives were tested for antimicrobial activity. Among them, compound 4e exhibited remarkable effectiveness against the Gram-negative bacteria *Salinivibrio proteolyticus*, outperforming ciprofloxacin. Compound 4d showed the greatest potency against the fungal strain *Candida albicans*, surpassing amphotericin B. The physicochemical properties of compounds 4d and 4e were evaluated, and docking studies revealed that 4e exhibited a higher binding affinity (−7.2 kcal/mol) within the receptor's binding cavity. These results highlight the promising antimicrobial potential, safety, and effectiveness of the newly synthesized DHTDAPy compounds against both bacterial and fungal infections.

Keywords: Multicomponent reactions, [1,2,3]thiadiazolo[5,4-b]pyridine, Antimicrobial, Dockin

Abstract ID: RSMOCHEM29

ARTIFICIAL NEURAL NETWORK MODELLING OF AP/$LaMn_{0.4}Fe_{0.6}O_3$'s THERMAL DECOMPOSITION STUDY.

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There are continuous efforts to improve the thermal decomposition of ammonium perchlorate (AP) by incorporating small amount of metal oxides. In this work, thermal decomposition of composition of AP containing 1% by mass tri-metal based perovskite oxide $LaMn_{0.4}Fe_{0.6}O_3$ have been investigated at four distinct heating rates (β=5, 10, 15, and 20° C min^{-1}). Perovskite oxide $LaMn_{0.4}Fe_{0.6}O_3$ has been synthesized via citrate sol gel method. Artificial neural networking (ANN) was trained to forecast the thermal decomposition of AP/$LaMn_{0.4}Fe_{0.6}O_3$ composition. In the present work, ANN were trained using weight % and temperature data at 5, 10, and 20°C min^{-1} heating rates to predict the weight % of the thermal decomposition of AP/ $LaMn_{0.4}Fe_{0.6}O_3$ composition at 15 °C min^{-1}. Moreover, the activation energy of AP/ $LaMn_{0.4}Fe_{0.6}O_3$'s decomposition was calculated using Kissinger- Akahira- Sunose (KAS) model and the obtained values have been used to train ANN to predict the activation energy output. The R-value and MSE value were used for optimizing the effectiveness of the trained model. A similar approach was used to train the dataset for predicting the KAS activation energy (E_α). The BR (Bayesian Regularization) and LM (Levenberg-Marquardt) model showed only 0.01% and 0.04% error in overall R value for TG W% values while 0.15% and 5.79% error in the E_α values were observed. The outcome of this work can be helpful to predict the thermal decomposition behaviour of novel AP/$LaMn_{0.4}Fe_{0.6}O_3$ composition at given heating rate.

Keywords: Thermal decomposition, nanomaterial, perovskites, artificial neural network

Abstract ID: RSMOCHEM30

TAILORED POROUS SILICA ELECTRODES: BRIDGING EFFICIENCY AND DURABILITY IN SUPERCAPACITORS

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The development of electrode materials with high porosity and tailored morphology for enhanced electrochemical performance is a critical and challenging area of research, especially for energy storage devices. These devices are gaining attention due to their rapid charge-discharge capability, extended cyclability, and high-power density, making them pivotal in reducing reliance on fossil fuels. A key focus in this field is the synthesis of advanced electrode materials and electrolytes that exhibit desirable properties for energy applications. Functionalized mesoporous silica materials (-Cl) synthesized using the amphiphilic block copolymer ($(PEO)_{20}$-$(PPO)_{70}$-$(PEO)_{20}$) as a templating agent via a sol-gel process have shown remarkable potential. The material was characterized by TGA, FT-IR, XRD, SEM, UV-Vis spectroscopy, and electrochemical techniques such as CV, Mott-Schottky analysis, and EIS, exhibit an n-type character with excellent electrical conductivity and thermal stability. The porous and ordered structure of these materials facilitates effective ion and molecule hosting, making them suitable for use in pseudosupercapacitors. Cl-functionalized silica (Cl-OFPS) have been screened through electrochemical performance in a three-electrode setup with a 6M KOH electrolyte and specific capacitance of 995 F g^{-1} was achieved. In symmetric capacitor design, Cl-OFPS exhibited a power density of 78.125 W kg^{-1}, specific capacitance of 283 F g^{-1}, and 96% retention over 2000 cycles. The facile synthesis, tunable porous structure, and excellent electrochemical properties of these organofunctionalized mesoporous silica materials underscore their potential as high-performance electrode materials for symmetric pseudosupercapacitors in energy storage applications.

Keywords: Porous materials, Functionalized mesoporous silica, Symmetric supercapacitor, Flexible supercapacitor

Abstract ID: RSMOCHEM31

BIOCHAR AS A MULTIFUNCTIONAL RENEWABLE RESOURCE: INTEGRATING CARBON SEQUESTRATION, ENERGY STORAGE AND SOIL ENHANCEMENT IN CLEAN TECHNOLOGIES

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Biochar research is advancing as a key technology in renewable energy, sustainable development, and clean technology. Created through pyrolysis and similar thermochemical processes, biochar converts biomass waste into a carbon-rich, highly versatile material with broad applications. With growing concerns about carbon credits and sustainable waste management, biochar production has captured global interest for its support of circular economy practices. Its carbon-sequestering properties align with climate goals by reducing atmospheric CO_2, directly contributing to carbon credit systems and broader climate mitigation strategies. In clean energy, biochar shows significant potential as an energy storage material. Its porous structure and high surface area make it ideal for energy storage in devices like supercapacitors and batteries, positioning biochar as a sustainable alternative to traditional materials. This capacity expands its utility in energy conversion technologies, helping to improve efficiency and sustainability in renewable energy systems. Biochar is also explored as a biocomposite component, which can enhance material performance in devices like fuel cells while reducing dependency on fossil-based materials. Beyond energy storage, biochar offers agricultural benefits. As a soil amendment, it enhances soil quality by increasing carbon content, which promotes long-term soil fertility and reduces the need for chemical fertilizers - supporting both agricultural sustainability and pollution reduction. Research efforts focus on optimizing biochar's physicochemical traits to maximize its applications in carbon sequestration, pollutant adsorption, and soil improvement. The increase in biochar patents and commercial interest highlights its market potential, especially in biomass-rich countries like Brazil. Here, biochar serves as a renewable and sustainable energy solution with environmental and economic advantages. Its scalability and versatility make biochar an increasingly valuable tool in global clean energy innovation, addressing urgent issues in carbon management, waste valorization, and energy efficiency. In this way, biochar embodies the convergence of environmental stewardship, technological progress, and economic opportunity in sustainable development.

Keywords: Carbon sequestration, Circular economy, Energy storage, Renewable energy, Soil amendment, Sustainable development.

Abstract ID: RSMPCHEM01

Synthesis, characterization and biological activity of 1,2,3-Triazole compounds

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1,2,3-Triazole is a well-known scaffold that has a widespread occurrence in different compounds characterized by several bioactivities, such as antimicrobial, antiviral, and antitumor effects[1]. Moreover, the structural features of 1,2,3-triazole enable it to mimic different functional groups, justifying its wide use for the synthesis of new active molecules[2, 3]. Organic molecules of triazoles were synthesized and well-characterized by using C,H, N-elemental analysis, ^{1}H NMR spectroscopy, IR spectroscopy, and mass spectrometry. The molecular docking and fluorescence quenching studies using DNA and BSA were used to perform compound's bimolecular interaction activities[4]. The compounds were screened against three strains of Gram-negative (*Serratia marcescens*, *Pseudomonas aeruginosa,* and *Escherichia coil*) and two strains of Gram-positive bacteria (*Staphylococcus aureus*, and *Bacillus subtilis*). The SwissADME webserver study indicates that most synthetic compounds adhere to the drug-likeness standards[5].

Keywords: Triazole, Molecular docking, ADMET, Cytotoxicity, DNA and BSA binding, Antibacterial activity

Abstract ID: RSMPCHEM02

Synthesis and Biological Activity of Imidazo[5,1-b]quinazoline Derivatives: Antimicrobial Studies

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In this work, imidazo[5,1-b]quinazoline derivatives 4(a–t) were synthesized through a three-component reaction involving 5-aminoimidazole-4-carbonitrile, 1,3-cyclohexanedione derivatives, and various aromatic aldehydes, using glacial acetic acid as the reaction medium. This method offers mild reaction conditions, operational simplicity, and excellent yields within a shorter reaction time, eliminating the need for chromatographic purification. The resulting derivatives 4(a–t) were then evaluated for their antimicrobial activity against various pathogenic strains. Most compounds displayed moderate to good antibacterial effects, with compounds 4c and 4e demonstrating particularly promising minimum inhibitory concentrations (MICs) of 25 µg/mL against S. pyogenes and E. coli, outperforming the standard antibiotics ampicillin and chloramphenicol, respectively. Additionally, the derivatives were tested for antifungal activity against C. albicans, A. niger, and A. clavatus, as well as antimalarial activity against P. falciparum. Notably, compounds 4c, 4h, 4k, and 4r exhibited strong antifungal activity (MIC = 250 µg/mL) against C. albicans, surpassing the activity of the standard antifungal drug griseofulvin. Compound 4k also demonstrated promising antimalarial potency (IC50 = 0.28 µg/mL) against P. falciparum, comparable to the standard drug quinine (IC50 = 0.27 µg/mL).

Keywords: Multicomponent reaction, antimicrobial activity, column chromatography free

Abstract ID: RSMPCHEM03

Synthesis of Pyrazolo[5,1-b]quinazoline-3-carboxylates using Meglumine based Deep Eutectic Solvent as a Chemosenser

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Volatile organic compounds (VOCs) are non-renewable fossil resources which leads to environmental destruction. Due to emissions of VOCs we are facing the climate change, hence decay of plants and having negative effects on human and animal health.[1-3] To prevents the environment spoilage, it is necessary to replace VOCs by environmental friendly solvents. Meanwhile DESs are having biodegradability, negligible vapor pressure and high polarity, thus organic and inorganic compounds are easily solubilize in it.[1-5] Pyrazolo-quinazoline having heterocyclic core which have biological activity like kinase inhibitors, phosphodiesterase 10 A inhibitors, selective polo-like kinase 1 inhibitors.[6] Copper play necessary role in biological process like metabolism, signalling,[7] and particular amounts of copper is essential for good health of human, animal and plants. Copper is also necessary for ATP production, iron absorption and mitochondrial reactions.[8]

A novel deep eutectic solvent (3c-DES) MegPAc was synthesized using meglumine, p-toluene sulfonic acid (PTSA), and acetic acid. The MegPAc is a renewable, and non-toxic solvent which was used here as an eco-friendly catalyst for the synthesis of pyrazolo[5,1-b]quinazoline-3-carboxylates (PQCs). The most important point is that MegPAc served the dual role of solvent as well as catalyst, and gives the title components with yields 69–94% within 67–150 minutes. The all newly synthesized PQCs were characterized using spectroscopic techniques like ^{1}H NMR, ^{13}C NMR, MS spectroscopy ande single crystal XRD. Metal sensing using newly synthesized PQCs was studied. The UV visible, ^{1}H NMR titration study and density functional theory (DFT) calculations revealed that one of our synthetic probe is useful for selective detection of Cu^{2+}ions due to electrostatics interaction of sensing probe and Cu^{2+} ions. This protocol demonstrates the first use of a meglumine based 3c-DESs as a bio-renewable system to synthesize PQCs.

Keywords: Meglumine, DES, Cu^{2+} ions, Pyrazoloquinazolines, Chemosenser

Abstract ID: RSMPCHEM04

Access to Novel Quinoline Clubbed 1,2,3-Triazole Hybrids Synthesized Through 1,3-Dipolar CuAAC " Click" Reaction: Biomolecular Interaction and Pharmacokinetic Assessment Through Spectral and Computational Implements

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The cycloaddition reaction of an alkyne with various substituted azides in the presence of copper(I)-catalyzed [3+2] cycloaddition reactions yields a variety of triazoles (1–11), including 1,4-disubstituted 1,2,3-triazoles. The cycloaddition of organic azides and terminal alkynes is the most effective click reaction. In the current study, some novel 1,2,3-triazole conjugates were created using click chemistry. The copper-catalyzed azide-alkyne cycloaddition (CuAAC) reaction is one of the most popular click chemistry reactions[1]. This reaction involves the coupling of an azide group and an alkyne group, resulting in the formation of a triazole linkage[2]. The CuAAC reaction has been widely used in drug discovery and bioconjugate synthesis. The compounds were characterised by IR spectroscopy, ^{1}H NMR spectroscopy and mass spectrometry. The biological activity of the compounds was assessed using fluorescence quenching, Molecular docking, viscosity, MIC, LC_{50}, and IC_{50} activities were studied using DNA and BSA[3]. The compounds were screened bacteriostatically using three sets of Gram-negative and two sets of Gram-positive bacteria[4]. The ADME study used the online platforms SwissADME and admetSAR to evaluate the pharmacokinetic profile of all synthesised compounds[5].

Keywords: Triazole based compounds, DNA binding, Molecular docking, Antibacterial study, ADMET

Abstract ID: RSMPCHEM05

Efficient Levofloxacin Removal from Wastewater via a Novel Eco-Friendly Gum acacia-g-poly(N,N-dimethylacrylamide)/$NiCoFe_2O_4$ Nanocomposite Hydrogel: Synthesis, Characterization, and Adsorption Analysis

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Water scarcity poses a significant global challenge, exacerbated by contamination of water resources with pharmaceutical wastes, including antibiotics like levofloxacin (LVX). Levofloxacin in aquatic environments can lead to the development of antibiotic-resistant bacteria, adversely impacting ecosystems and human health. To address this, we developed a biopolymer-based Gum acacia-*g*-poly(N,N-dimethylacrylamide)/$NiCoFe_2O_4$ nanocomposite hydrogel by free radical copolymerization technique using N,N-dimethylacrylamide (DMA) monomers and $NiCoFe_2O_4$ (NCF) nanofillers for efficient adsorption of LVX from wastewater. The hydrogel was structurally characterized using FT-IR and powder XRD, while its surface morphology was examined through FEG-SEM. Thermal properties were assessed using TGA and DTG analyses, and BET surface area measurement provided insights into its porosity. Zeta potential studies revealed the surface charge behaviour across various pH levels. XRD analysis revealed a semi crystalline structure with distinct peaks corresponding to $NiCoFe_2O_4$, indicating increased crystallinity upon the addition of NCF nanoparticles. SEM images showed a porous surface morphology with NCF dispersed throughout the hydrogel matrix. Optimization of adsorption parameters, including pH (3-11), adsorbent dose (10-100 mg), initial LVX concentration (25-225 mg L^{-1}), and contact time (2-24 hours) was performed to maximize removal efficiency. Adsorption studies indicated that the Langmuir isotherm model provided the best fit, with a maximum adsorption capacity (q_{max}) of 99.5023 mg g^{-1}. Kinetic studies showed that the adsorption process followed a pseudo-second order model, suggesting chemisorption as the rate-limiting step. The hydrogel exhibited excellent reusability, with minimal decrease in adsorption capacity over four regeneration cycles. These results demonstrate the hydrogel's potential as an effective and sustainable adsorbent for the removal of levofloxacin from contaminated water, offering a promising solution for mitigating pharmaceutical pollution and enhancing water quality.

Keywords: Gum acacia, Hydrogel, $NiCoFe_2O_4$, Nanocomposite, Levofloxacin, Adsorption

Abstract ID: RSMPCHEM06

GG-g-P(NIPAM-co-AA)/GO synthesis and assessment of adsorption activity for metformin and diclofenac

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Graphene oxide (GO) was added after the biopolymer gum ghatti (GG) was grafted over the PNIPAM and PAA. Combining the adsorption of sodium diclofenac (SD) and metformin (MF) by the hydrogels under the impact of different parameters is the aim of this work. Due to its maximum swelling capacity, the adsorbent GG-g-P(NIPAM-co-PAA)/GO (3 mg) was selected for adsorption activity.At 100 mg/L concentration, 30 °C, 24 hours, and pH 6, the maximal adsorption capacity was reported at 40 mg of adsorbents for both pharmaceuticals, according to the influence of the amounts of both adsorbents, GG-g-P(NIPAM-co-PAA) and GG-g-P(NIPAM-co-PAA)/GO (3 mg). After that, the adsorbents remained stable. At 25 mg/L concentration, 24 hours of contact duration, 30 °C, 40 mg of both adsorbents, and pH 6, both medicines were eliminated in larger quantities. Adsorption effectiveness increased as time increased from 2 hours to 12 hours (100 mg/L concentration, 30 °C, 40 mg of both adsorbents, and pH 6). After that, time increased had little effect on adsorption activity. As the temperature rose (100 mg/L concentration, 12 hours, 40 mg of both adsorbents, and pH 6), the hydrogels' adsorption ability decreased. While MF adsorbed in weakly acidic circumstances (100 mg/L concentration, 30 °C, 12 hours, and 40 mg quantity of both adsorbents), SD was more readily adsorbed under acidic conditions. Basic circumstances, however, had an impact on SD's adsorption activity but little on MF's adsorption. The kinetic model and adsorption isotherm indicated that adsorption is chemical and uniform. For SD and MF, the maximum adsorption capacity (qm) was determined to be 289.01 and 154.55 mg/g, respectively.

Abstract ID: RSMPCHEM07

Design and Synthesis of Novel Alkoxy-Functionalised Dihydropyrimido[4,5-*b*]quinolinones as Anti-Proliferative and Anti-Invasive Agents

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We report the synthesis of a bioactive novel series of Alkoxy-functionalised Dihydropyrimido[4,5-*b*]quinolinone derivatives using a multicomponent microwave-assisted reaction scheme. Anti-glioma bioactivity was observed in specific molecules within the library of 20 derivatives. Out of the compounds, **6c** had the most potent anti-proliferative activity with half maximal effective concentration of less than 3 micromolar against primary patient-derived glioblastoma cells and was selected for further study. Compound **6c** effectively inhibited invasion and tumor growth of 3D primary glioma cultures in a basement membrane matrix. This suggests that the novel compounds could inhibit both the proliferation and invasive spread of glioma. Through our current work, we establish a promising series of Dihydropyrimido[4,5-*b*]quinolinone based lead compounds with anti-cancer activity.

Keywords: Microwave-assisted reaction, Multicomponent reaction, Pyrimido[4,5-*b*] quinolinone, Anti-proliferative, Anti-invasive agents

Abstract ID: RSMPCHEM08

METAL FREE AQUEOUS ZINC ION RECHARGEABLE BATTERY WITH ANOLYTE LAYER FOR UNIFORM NUCLEATION OF ZINC

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Due to the low cost, nonflammability and eco-friendliness; aqueous rechargeable zinc-ion battery (ARZIBs) is one of the sustainable approaches to overcome the existing issues of commercially available Li-ion battery. But then the ARZIBs faces issue of low energy density due to the utilization of thick zinc metal anode as the source of zinc, which consists of almost ten times higher amount of zinc than the practical requirement. This also raises a doubt amongst researchers i.e. is thick metal anode truly required? Hence, with the continuous efforts in improving the energy density of the battery, metal free design is considered to be a unique strategy in not only increasing the energy density but also to overcome the notable issue like dendrite growth, side reactions etc. that causes low coulombic efficiency and poor cycling stability in aqueous zinc-ion batteries. Here in, an anode-free aqueous zinc-ion battery (ARZIBs) having zinc-rich cathode without going through the process of zincification is designed. ZnI_2 serves as the Zn-ion source intercalated into the MnO_2 matrix serves as a working cathode. The fabricated device consists of an anolyte gel applied on the anodic copper current collector serves here as the nucleation layer for uniform zinc deposition during cycling processes. With an operating voltage of 1.4 V, the device has performed well up to 100 cycles with minimal degradation, delivering the specific capacity of 103 $mAhg^{-1}$. Moreover, the electrochemical studies shows redox peaks with stable charge-discharge characteristics over a range of current densities. On considering the low cost and simple electrode material preparation, this work concludes a stable anode-free zinc ion battery, without using zinc metal foil with good reversible behavior. Thus, it is providing a new direction in the possible commercial application of zinc-based energy storage systems.

Keywords: Metal free, Anode free, Zn- rich cathode, zinc ion battery, ARZIBs

Abstract ID: RSMPCHEM09

Resorcin[4]arene-based Supramolecular Liquid crystals: Functionalization on the Lower Rim for controlled self-assembly

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Researchers' focus has recently shifted to the design and synthesis of valuable supramolecular substances with the ability to self-assemble and stabilize mesogenic properties.[1] These compounds are very interesting from a technological standpoint.[2] They become useful in the fabrication of various devices like OLED, organic photovoltaic cells, organic field-effect transistors, gas sensors, and organic solar cell applications.[3] Here, bowl-shaped supramolecular mesogens based on resorcin[4]arene with octa-substituted alkyl arms were synthesized using a straightforward two-step procedure. The display of the materials mesogenic behavior is affected differently when an alkoxy tail group is added at their peripheries. The liquid crystalline characteristics and molecular self-assembly type behavior of these functionalized supramolecular compounds were studied. The lower alkyl-arm substituted supramolecules show SmC-type mesogenic properties, while higher alkyl-arm substituted compounds display columnar hexagonal-type mesogenic properties. This research suggests that the calix[4]resorcinarene core is a better candidate to fabricate supramolecular materials to achieve liquid crystalline properties with higher thermal stability. Different techniques like FT-IR, CHN analysis, ^{1}H NMR, ^{13}C NMR, and MALDI-TOF have attained the structural conformation and characterization of resorcinarene-based materials.

Keywords: Mesophase, Resorcin[4]arene, Self-assembly, Liquid crystal

Abstract ID: RSMPCHEM10

Synthesis, in silico and in vitro study of pyrazolo-pyridine-tetrazolo-pyrimidine hybrids as potential anticancer and antimicrobial agents

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Nitrogen containing fused heterocycles in one molecule which has attracted much attention.[1] Medicinal chemists are trying to construct new bioactive molecules by using different heterocycles such as, pyrazoles, pyrroles, pyrimidines, imidazoles, tetrazoles and pyridines to improve the biological profile of the compounds.[2] Among them, tetrazoles showing attention due to their wide range applications across various scientific disciplines. Tetrazoles are used in photography,[3] explosives,[4] ligands and chelating agents,[5] and employed as plant growth regulators.[6] Additionally, tetrazoles exhibit a broad spectrum of biological properties, including: antineoplastic,[7] antimicrobial, anti-inflammatory, antihypertensive, antiallergic, antibiotic, anticonvulsant, analgesic, antinociceptive, antimycobacterial, and antidiabetic.[8] Furthermore, pyrazolo-pyrimidines and pyrazolo-pyrido-pyrimidines are prominent class of nitrogen-containing fused heterocycles, have emerged as a valuable scaffold for designing and synthesizing numerous bioactive compounds. Diverse range of biological activities were exhibited by these molecules.

Using catalyst-free synthetic protocol, polyfunctionalized pyrazolo-pyridine-tetrazolo-pyrimidine hybrids were synthesized successfully with moderate to good yields. All the newly synthesized compounds were characterized using spectroscopic techniques like ^{1}H NMR, ^{13}C NMR, and Mass spectrometry. The cytotoxicity screening was performed against MCF-7 and HEK-293 cells using MTT assay method for synthesized compounds. Among them one of the synthesized compound showed very good potency (IC_{50}–23.83 µM) against MCF-7 cells, while another one demonstrated excellent cytotoxicity (IC_{50}– 14.46 µM) against HEK-293 cells. Further, synthesized compounds were evaluated for antibacterial as well as antifungal activities and majority of the compounds showed better antibacterial activity compare to antifungal activity. Computational studies were also conducted including, DFT calculations, molecular-docking, molecular dynamics and drug-likeness assessments. The results of the computational studies were in accordance with the in vitro analysis results.

Keywords: **anticancer, antimicrobial, tetrazole, DFT, molecular-docking**

Abstract ID: RSMPCHEM11

Design, Synthesis, and Biological Evaluation of Pyrazole-Annulated Benzimidazole Hybrids

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Pyrazole derivatives are renowned for their broad spectrum of biological activities, including analgesic, anti-inflammatory, antipyretic, antibacterial, and antineoplastic effects. Similarly, benzimidazole derivatives, exhibit a wide range of pharmacological activities such as antitumor, antifungal, antiviral, antiparasitic, and anti-inflammatory properties. Therefore, in the present work, we have annulated pyrazole with benzimidazole to enhance biological activity. Pyrazole-annulated benzimidazoles were synthesized through a multistep process. Initially, a nucleophilic substitution reaction occurred between substituted pyrazoles and various amines, followed by condensation with substituted o-phenylenediamine derivatives. The structures of synthesized heterocycles were characterized using IR, ^{1}H NMR, ^{13}C NMR, and mass spectrometry. Furthermore, the in-vitro antioxidant activity of the synthesized compounds was evaluated by using the Ferric Reducing Antioxidant Power (FRAP) assay. All compounds demonstrated significant to moderate antioxidant potential relative to the standard ascorbic acid, with compound F53 exhibiting remarkable antioxidant activity, reflected by a FRAP value of 167.56. Future studies will focus on assessing the anticancer potential of these synthesized heterocyclic scaffolds against solid human tumor cell lines, aiming for novel therapeutics with antioxidant and anticancer properties.

Keywords: **Pyrazole, Benzimidazole, antioxidant, anticancer**

Abstract ID: RSMPCHEM12

Development of pH-sensitive biopolymeric composite hydrogels reinforced with silver nanoparticles for controlled drug delivery of vitamin B_2

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Recently, the application of stimuli responsive hydrogels for the conception of drug delivery matrices has attracted widespread interest. In this context, we synthesized a chitosan (CTS)-based hydrogel using microwave irradiation as a green approach to create cross-linked hydrogels. The objective was to develop pH-sensitive nanocomposite hydrogels, combining biocompatible CTS biopolymer with silver nanoparticles (Ag NPs) to enable controlled release of the model drug, vitamin B_2. Swelling studies demonstrated pH-dependent behaviour, with the highest swelling ratio observed at pH 8. Analysis of the point of zero charge (pHpzc) indicated a range between 6.5 to 8 for the fabricated matrix system. Structural characterization was performed using FTIR and RAMAN spectroscopy, while other physicochemical characteristics were analysed through TGA-DTA, DSC, particle size measurements, porosity percentage, and XRD. Furthermore, morphological features of material were explored using optical microscopy and SEM. The electronic structures, geometries, and global quantum molecular descriptors (QMDs) of the hydrogels were analysed through density functional theory (DFT) calculations at the B3LYP/6-311++G** level. Reactive sites within the matrix were identified using molecular electrostatic potential (MESP) mapping, and theoretical vibrational modes derived from DFT were compared with experimental IR spectra. The *In -vitro* drug release behaviour of the hydrogels was evaluated in different pH environments, revealing a tri-phasic release profile with significantly enhanced release in acidic media. Moreover, the presence of Ag NPs within the hydrogel network, effectively improved the thermal stability and prolonged the release rate of vitamin B2. Given the system's ability to release the drug more effectively in acidic conditions, it shows potential for gastrointestinal drug delivery applications.

Keywords: biopolymer, microwave synthesis, DFT, *In-vitro* release

Abstract ID: RSMPCHEM13

Eco-Friendly Catalysts and Solvents in Heterocyclic Synthesis

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The use of green chemistry techniques in the synthesis of heterocyclic compounds has generally drawn the attention of numerous researchers recently. For synthetic chemists, using green synthetic procedures and methodologies is crucial since they tend to use less hazardous and environmentally harmful materials or generate less of them. The traditional method of synthesizing heterocyclic frequently involves the use of hazardous or poisonous organic solvents, catalysts, or other substances that are declared trash when the reaction is finished. New green chemistry synthesis techniques were created to lessen the use of such hazardous materials. One of these techniques is the use of microwaves to speed up the synthesis of desired molecules, produce higher-quality products with higher yields, and work in softer environments. Heterocyclic organic synthesis frequently uses solvent-free synthesis because it is simpler, uses fewer hazardous materials (organic solvents), and is less expensive. Solvent-free synthesis is commonly carried out in conjunction with heating, mixing, and ball milling, as well as using ultrasound and microwaves. Additionally, using ultrasound to synthesize heterocyclic compounds is a green way where the sonic cavitation causes the chemical reaction. In the past ten years, deep eutectic solvents and ionic liquids have also gained a lot of popularity as synthesis media, offering good synthesis conditions for heterocyclic derivative synthesis. Because their physical and chemical properties may be adjusted based on the components used in combination, both deep eutectic solvents and ionic liquids are referred to as designer solvents. These environmentally friendly techniques have all been effectively applied to the synthesis of different heterocyclic derivatives, either alone or in combination with other techniques.

Keywords: heterocyclic compounds, water, surfactant, green chemistry, environmental impact,eco-friendly catalysts

Abstract ID: RSMPCHEM14

Synthesis and characterization of novel Re(I) complexes containing pyrazole-based ligands: DNA/BSA interactions, computational study, and cytotoxic activity

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Rhenium(I) complexes (C^1 - C^6) were synthesized using various substituted ligands based on (2-(3, 5-dimethyl-1H-pyrazol-1-yl)-1H-benzo[d]imidazol-1-yl)(phenyl)methanone (L^1 - L^6). The complexes were characterized through spectroscopic techniques, including ^{1}H NMR, FT-IR spectroscopy, and mass spectrometry. The binding affinity and interaction mechanism between CT-DNA and the complexes were assessed using absorbance titration, fluorescence quenching, and viscosity measurement methods[1]. The results imply that the compounds use a partial intercalation mode to interact with DNA. Fluorescence analysis of the complexes revealed a strong binding between the proteins, with a static quenching mechanism. The compound's binding sites on DNA, BSA, and topoisomerase II were determined by molecular docking study[2]. The online programs SwissADME and admetSAR were used to assess each synthesized compound's pharmacokinetic profile as part of the ADME analysis. Utilizing B3LYP/LANL2DZ, a density functional analysis was performed to examine the electrostatic potential structure, HOMO-LUMO energy gap, and optimized structure[3]. The broth dilution method evaluated the compound's antibacterial activity against three Gram-negative and two Gram-positive bacteria[4]. The MTT assay was used to evaluate the compounds' cytotoxic on MCF-7 cell lines, and the results showed significant cytotoxic effects[5]. The overall toxicity of the compounds was further assessed using the brine shrimp lethality assay.

Keywords: Re(I) organometallic complexes, DFT, Docking, and ADME study, Cytotoxicity, DNA and BSA binding, Anticancer activity, Antibacterial activity

Abstract ID: RSMPCHEM15

Synthesis & Mechanisms of Active and Inactive S_N2 Reaction Protocol of Pro-Chiral 2-acetyl-*N*-subtituted-phenyl-2-(prop-2-yn-1-yl)pent-4-ynamides/-2-allyl-4-enamides: Bridging Theoretical Kinetics with Experimental Insights

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Herein, we synthesise pro-chiral 2-acetyl-*N*-subtituted-phenyl-2-(prop-2-yn-1-yl)pent-4-ynamide/-2-allyl-4-enamide 5(a-n) over 4-enamide-*N*-(prop-2-yn-1-yl)pent-4-ynamide/-*N*-allyl-4-enamide (4) involving bimolecular nucleophilic substitution (S_N2) reaction. In this S_N2 reaction, a nucleophile is charged at the carbon atom of the substrate, displacing the leaving group. In this study, density function theory (DFT) is used to investigate the kinetic and mechanistic features that determine reaction profiles at active and inactive sites of acetoacetanilides, resulting in the final product as stabilized molecules. We provide a new C-C bond formation between allyl and acetoacetanilide derivatives, as well as a mechanistic research involving alkyne for the first time. The desymmetrization of these analogues has been underway, and cell line investigations will benefit from it.

Keywords: Reaction pathways, Unveiling the Mechanisms of Active and Inactive, Band-gap analysis, Crystallographic investigation

Abstract ID: RSMPCHEM16

EVALUATE THE QUALITY OF SURFAC AND GROUNDWATER IN SPECIFIC REGIONS OF GUJARAT, INDIA USING GIS, MULTIVARITE STATISTICS, WATER QUALITY INDEX, AND PHYTOREMEDIATION AS AN INTEGRATED APPROACH.

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Water quality is a critical concern for sustainable development, particularly in regions like Gujarat, India, where both surface and ground water sources are essential for agriculture, drinking, and industrial purposes. This study aims to evaluate the water quality in selected regions of Gujarat using an integrated approach that combines Geographic Information Systems (GIS), multivariate statistical analysis, Water Quality Index (WQI), and phytoremediation. GIS is employed to spatially map water quality parameters, such as pH, turbidity, Total Dissolved Solids (TDS), heavy metals (like lead, arsenic), and nutrients (such as nitrates and phosphates) across the region. Multivariate statistical techniques, including Principal Component Analysis (PCA) and Cluster Analysis (CA), are utilized to identify patterns and correlations between these parameters, providing a deeper understanding of the spatial and temporal variability of water quality. The Water Quality Index (WQI) is then calculated to simplify and standardize the water quality data, allowing for a comprehensive assessment of water suitability for different uses. Finally, phytoremediation strategies are explored as a cost-effective and sustainable approach to mitigate water pollution, particularly for areas identified with high levels of contaminants. The results of this integrated approach offer valuable insights into the spatial distribution of water quality in Gujarat, highlight areas requiring immediate attention, and provide sustainable solutions to improve water quality through natural treatment processes. This study contributes to the growing need for more holistic and region-specific water management practices in India.

Abstract ID: RSMPCHEM17

Design, Synthesis, Antimicrobial Evaluation, and Molecular Docking Study of Novel Oxindole-Indole Clubbed 1,2,3-Triazole Hybrids

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A series of novel indole-oxindole-linked 1,2,3-triazole hybrids (5a-o) was strategically designed and synthesized using the copper-catalyzed azide-alkyne cycloaddition (CuAAC) click reaction, capitalizing on the diverse medicinal properties of indole, oxindole, and 1,2,3-triazole scaffolds. All the synthetics were characterized through ^{1}H-NMR, ^{13}C-NMR and mass spectrometry. The antimicrobial properties of these hybrids were assessed through the broth microdilution method against a range of pathogens, including three gram-negative bacteria (*Escherichia coli*, *Pseudomonas aeruginosa*, and *Klebsiella pneumoniae*), three gram-positive bacteria (*Bacillus subtilis*, *Staphylococcus aureus*, and *Streptococcus pyogenes*), and two fungal strains (*Candida albicans* and *Aspergillus niger*). Among all the tested compounds, 5e demonstrated the strongest antibacterial activity, achieving a minimum inhibitory concentration (MIC) of 25 µg/ml against *Escherichia coli*. Molecular docking studies provided additional insights, revealing significant interactions between compound 5e and the active site of DNA gyrase.

Keywords: Indole-Oxindole, 1,2,3-Triazole, Click reaction, Antimicrobial activity, Molecular Docking study

Abstract ID: RSMPCHEM18

Synthesis and characterization of nanomicellar system from curcumin for targeted breast cancer therapy

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Conventional chemotherapy for cancer treatment often suffers from limitations such as non-specificity, Multi Drug Resistance (MDR), poor drug circulation and rapid metabolism. Designing nanocarrier system with targeting ability may aid in efficiently delivering chemotherapeutic agents with high specificity. This work deals with synthesis of biotin conjugated nanomicellar carrier derived from curcumin bearing pH, enzyme and redox responsive linkages. It was preliminarily characterized using FTIR, ^{1}H-NMR,^{13}C-NMR and GPC and the size and morphology was studied using TEM and DLS measurement. They can self-assemble into spherical micelles of diameter 80 nm at a minimum concentration (CMC) of 21 µg/ml. It exhibits drug loading efficiency (DLC) of 51% and drug loading efficicency (DLE) of 6.4% and subsequent stimuli triggered drug release in response to variation in pH, enzyme and glutathione concentration. It shows complete and sustained drug release profile *in-vitro* under simulated tumor microenvironment (TME). When 50 µg/ml drug was encapsulated into the micelles, the cell death increased from 53% to 62% in breast cancer cell line (MCF-7) as compared to free drug at the same concentration. This signifies the role of curcumin incorporated in the micellar core which acts synergistically with the chemotherapeutic agent for enhancing its tumor killing efficiency.

Keywords: Nanomicelle, Curcumin, targeted drug delivery, breast cancer, stimuli response

Abstract ID: RSMPCHEM19

Spectroscopic and Computational Analysis of Benzoxazine Derivatives from methyl gallate: Insights from DFT Calculations, Molecular Simulation and Docking Studies

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A series of eight benzoxazine derivatives of methyl gallate, were synthesized and characterized using various spectral analyses (FTIR, ^{1}H, ^{13}C NMR, and Mass), referred to as 1a-1g. The assessment of their antioxidant properties showed that some compounds exhibited moderate activity in comparison to the standard ascorbic acid. Notably, compound 1g demonstrated very strong antioxidant capability (IC_{50} = 3.68 ± 0.94 µg/mL) when evaluated against the standard ascorbic acid (IC_{50} = 1.25 ± 0.86 µg/mL). Compounds 1a, 1c, and 1h also showed significant antioxidant effects in DPPH free radical scavenging assay. The reactive characteristics of the compounds were studied through a combination of DFT calculations, ADMET studies, molecular docking, molecular dynamics simulations and evaluations of drug likeness parameters, along with computations of molecular electrostatic potential (MEP). In vitro analysis and docking studies targeting the active site of Human peroxiredoxin 5 (PDB ID: 1HD2) were conducted to investigate possible interactions between these compounds and the receptor. Additionally, molecular dynamic simulations were carried out. These simulations confirmed the stability of compound 1g when bound to 1HD2. The findings indicate that it presents a promising structure for future drug development, owing to its simple synthesis and significant bioactivity.

Keywords: Benzoxazine, DFT, Docking, Molecular simulations, Antioxidant activity

Abstract ID: RSMPCHEM20

"Development of multifunctional cellulose-based hydrogel nanocomposite and simultaneous release of soil amendment"

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In agriculture and horticulture, hydrogels can be addressed for effective operation of water management and simultaneous release of soil amendment. In this regard, we sought to design a multifunctional hydrogel material based on carboxymethyl cellulose (CMC) polysaccharide which could simultaneously release soil nutrient and pesticide in the surrounding. The respective hydrogel based on CMC-g-P(NVI-co-AAm) was fabricated by copolymerizing hydrophilic monomers onto CMC biopolymer, using free radical mechanism. Afterwards, the nano composite of prepared hydrogel was developed via incorporating nano-chitosan powder. All of the synthesized materials were characterized using a variety of analytical techniques, including FTIR, TGA-DTG, DSC, Raman Spectroscopy, and particle size analyzer while the morphology of the materials were examined using an optical microscope. The various characteristic of hydrogels were examined such as swelling studies, sol-gel content, grafting kinetics, water retention and the respective data were recorded. The pHpzc test demonstrated a point of zero charge in the range of 7.17 to 7.73, while degradability test revealed hydrogel's weight loss of about 52 % in 80 days. The release property of materials were determined using urea and crystal violet (CV) as model fertilizer and pesticide respectively. The experimental finding implies that the CMC-based hydrogel is a promising material for the **simultaneous delivery** of soil amendment, and also able to retain large quantity of water for considerable periods of time.

Keywords: polysaccharide, amendment, multifunctional, degradable

Abstract ID: RSMPCHEM21

A CHITOSAN *N*-IUM ACETATE-CATALYZED MICHAEL-ALDOL-DEHYDRATION-IMINO-DIELS-ALDER REACTION: EFFICIENT, ONE-POT SYNTHESIS OF ACRIDINE-FUSED HETEROCYCLES

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The acridine-fused heterocycles are known to have revealed photophysical properties and practical applications as charge-transfer materials[1] as well as therapeutic agents[2]. Benzo-, and quino-fused-acridines-diones are notable examples of these heterocycles. Benzo[a]acridine is a topoisomerase poison, and pyranoacridone available from acronycine alkaloid are promising anticancer agents. Although, there are many synthetic routes are studied for acridine-heterocycles, domino synthetic routes are less.[3] In present work, the Michael-aldol-dehydration-*imino*-Diels Alder (MAD-IDA) synthetic sequence has been explored to afford various new V-shaped acridine heterocycles. The MAD intermediate undergoes IDA reaction with arylamine that is liberated after the slow reduction of nitroarene used initially. The MAD intermediate was generated after stirring 2-mercapto-quinoline-carbaldehydes/2-mercapto-pyridine-carbaldehyde/2-hydroxy-naphthaldehyde with citral/croton-aldehyde in presence of chitosan *N*-ium acetate in aqueous ethanol at room temperature. The NaSH and nitroarene were also added in the same pot to trigger the IDA reaction. The proposed structures of the compounds are confirmed by ^{1}H NMR, and ^{13}C NMR and 2D NMR studies of representatives.

Keywords: Domino reaction, MAD-IDA, Michael, Chitosan *N*-ium acetate

Abstract ID: RSMPCHEM22

NOVEL VINYL ACRYLIC CO-POLYMER BASED ON SCHIFF BASE, SYNTHESIS, CHARACTERISATION AND ANTIMICROBIAL SCREENING.

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This abstract demonstrates a novel synthesized series of homo- and co-polymers were obtained by using 4-{[4-chlorophenyl) imino] methyl} phenyl-2-methacrylate (MSB) and methyl acrylate (MA), various feed ratios of DMF as a solvent and AIBN as an initiator were utilized within temperature range of 70ºC. The MSB monomer was synthesized using Schiff Base and methacryloyl chloride in presence of ethanol and NaOH. In addition, the monomer reactivity ratios were calculated using the standard linearization techniques of Fineman-Ross and Kelen-Tudos. FT-IR, ^{1}H-NMR and HPLC techniques were employed for the characterization of polymers obtained. TGA and DTA were used for the assessment of thermal properties of homo- and co-polymers. Each polymers were examined in order to determine whether they possessed antimicrobial properties against various kind of pathogenic microbes

Keywords: Co-polymers, Reactivity Ratio, Thermal Analysis, Antimicrobial Properties

Abstract ID: RSMPCHEM23

Amine adsorbed TiO_2 for Efficient Methylene Blue Degradation Under Visible Light irradiation

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Titania (TiO_2) is a promising photocatalyst for the removal of organic pollutants from industrial wastewater by photocatalytic degradation. However, its large band gap (**~3.2 eV**) and fast recombination of photo-induced charge carriers limit its effectiveness. The adsorption of aromatic amines having electron donating groups improves the performance for photocatalytic degradation of methylene blue (**MB**) under visible light irradiation. However, the adsorption of an aromatic amine having an electron withdrawing group adsorbed on TiO_2 exhibited similar efficiency as pristine TiO_2. The modification by adsorption of aniline or the aromatic amines having an electron donating group on TiO_2 tailors the band gap of titania allowing it to harness the visible light and also improves the stability of the material by reducing the recombination rate of charge carriers. This surface modification of TiO_2 by adsorption of aromatic amines could be useful for tailoring the band gap of other photocatalysts for visible light driven photocatalysis.

Keywords: **Titania; amine adsorption; band gap tailoring; photodegradation; methylene blue, kinetic modelling**

Abstract ID: RSMPCHEM24

Turn on fluorescence sensor Linked with calix[4]arene scaffold for Bi^{3+}: Computational and electrochemical investigation

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We have synthesized a novel calix[4]arene based fluorescence probe using dansyl acid moiety for the selective recognition of Bi^{3+} with a minimum detection limit of 4.5×10^{-7} M. The proposed fluorescence probe was characterized by absorption study, FT-IR, MALDI-TOF, ^{1}H NMR and ^{13}C NMR spectroscopy. Here, the recognition event was monitored by fluorescence spectroscopy, UV-visible spectroscopy, Cyclic voltammetry and Differential pulse voltammetry. The binding confirmation of Bi^{3+} into L was confirmed by FT-IR, MALDI-TOF, ^{1}H NMR and PXRD. In supporting evidence with experimental work, we have carried out computational work with Gaussian09 software which exhibits an impactful energy gap between HOMO-LUMO of L+Bi^{3+} (for $\alpha = 6.7350$ eV and $\beta = 6.2934$ eV). The analytical application of the proposed synthesized L was investigated by emission and absorption titration with an industrial waste water sample by spiking the Bi^{3+} ion concentration. The linear relationship with fluorescence intensity and absorbance will provide great interest for the routine analysis of Bi^{3+} ion.

Keywords: Calix[4]arene, Fluorescence sensor, Bi^{3+}, PCT mechanism, HOMO-LUMO analysis

Abstract ID: RSMPCHEM25

Electro-Analytical Method of Analysis for Differentiating Estrus and Anestrus in Buffaloes with Reproductive Challenges

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Underdeveloped reproductive organs in buffaloes significantly impact fertility and reproductive efficiency, stemming from genetic, nutritional, environmental, and hormonal factors. Genetic predispositions introduced through selective breeding can result in abnormalities affecting organ development. Nutritional deficiencies, particularly in proteins, essential vitamins (A, E), and minerals (calcium, phosphorus), hinder reproductive function and maturation. Environmental stressors such as heat, overcrowding, and poor housing conditions disrupt hormonal balance, impairing estrous cycles and reproductive organ functionality. Hormonal imbalances further complicate these issues, emphasizing the need for non-invasive diagnostic tools for assessing reproductive status. This study investigated urinary conductivity as a potential biomarker to differentiate estrus and anestrus in buffaloes. Samples were stored at -20°C and analyzed within 24 hours to ensure accuracy, with conductivity measured after dilution with HPLC water. A threshold value of 1.5 mS was established, with samples above this value classified as estrus and those below or equal categorized as anestrus. This approach offers a practical, non-invasive means of assessing reproductive health, particularly in buffaloes affected by developmental challenges.

Keywords: **Underdeveloped organs, Urinary conductivity, Estrus detection, Anestrus identification, Reproductive biomarkers**

Abstract ID: RSMPCHEM26

Cs_2CO_3-promoted one-pot synthesis of novel tetrahydrobenzofuran-4 (2*H*)-ones: *In vitro* antimicrobial, antimalarial activity and *in silico* docking study

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A diverse set of tetrahydrobenzofuran-4(2*H*)-one derivative **4(a-o)** were synthesized using a one-pot treatment of dimedone, 3-(1*H*-imidazol-1-yl)benzaldehyde, and different phenacyl bromide by utilizing cesium carbonate as a cost-effective catalyst in acetonitrile under mild reaction condition. During the synthesis of compounds, two carbon–carbon (C–C) bonds and one carbon–oxygen (C–O) bond are formed. All the compounds were obtained with moderate to good yield. The synthesized compounds underwent screening to assess their antimicrobial and antimalarial properties. Compounds **4 l** (**117 µM**) and **4d** (**145 µM**) exhibited the highest potency against *A. baumannii* and *Car. Resistant P. aeruginosa* in comparison to the standard drug chloramphenicol (**155 µM**), respectively. Compound **4 l** (**234 µM**) displayed the highest efficacy against *C. albicans* than that of the standard drug, fluconazole (**327 µM**) while **4f** (**1018 µM**) showed greater efficacy against *A. niger* than griseofulvin (**1417 µM**). In addition, all the titled compounds displayed good antimalarial activity. Among them, **4f** (**1.60 µM**) has the highest efficacy against *P. falciparum* than quinine (**2.71 µM**). Since compound **4 l** exhibits a strong antibacterial and fungal action among all synthetics, it shows remarkable binding affinities of -8.4 kcal mol^{-1} and -9.1 kcal mol^{-1} with *A. baumannii* and *C. albicans* respectively[1].

Keywords: Multicomponent reactions, Tetrahydrobenzofuran-4(2*H*)-one, Cs_2CO_3

Abstract ID: RSMPCHEM27

SYNTHESIS, CHARATERISATION AND MICROBIAL SCREENING OF ACRYLIC CO-POLYMERS BASED ON SCHIFF BASE.

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In this research, the co-polymers were prepared by using a newly chlorine containing MSB and ethyl acrylate (EA). The MSB monomer was synthesized using schiff base and methacryloyl chloride. Homo- and co-polymers of MSB with EA were obtained with different feed composition ratios using N,N-di-methyl formamide as a solvent and 2,2'-azobis isobutyronitrile as a free radical initiator at 70±2°C. The composition and characterization of the resultant polymers were ascertained using ^{1}H-NMR, IR and HPLC techniques while thermal properties of homo- and co-polymers were evaluated through thermogravimetry analysis-differential thermal analysis (TGA-DTA). Further, the traditional linearization technique of Fineman-Ross and Kelen-Tudos was used to calculate the monomer reactivity ratios. All the polymers were tested for their antimicrobial properties against various microorganisms.

Keywords: copolymers, reactivity ratio, thermal analysis, antimicrobial properties

Abstract ID: RSMPCHEM28

One-pot synthesis of new pyrazolo-fused oxygen-containing 8-membered ring heterocycles

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Many benzo-fused oxygen-containing ring compounds have been identified as intriguing biomolecules in the literature. For instance, 1-benzoxepines, benzo-fused oxygen-containing 7-membered ring compounds represented by radula in L 9, are fascinating bibenzyl scaffolds isolated from *Radula complanata*[1]. Benzo-fused 8-membered ring 1,5-dioxocin-containing compounds have shown cholesteryl ester transfer protein (CETP) inhibitive property, a promising target for dyslipidemia treatment.[1] In view of the significance of oxygen-containing 8-membered ring compounds, it is therefore worthwhile to explore new compounds of this class. In present work, 1-phenyl-3-methyl-5-chloro-pyrazol-4-carbaldehyde, the hydroxy compound containing a methyl ketone in the side chain, and a mercapto-aryl derivative were stirred in an alkaline condition in ethanol at room temperature. It led to the discovery of a new aldol-Michael-hydrochlorination cyclization synthetic sequence, allowing us to synthesize **6** pyrazole-fused oxygen-containing 8-membered ring compounds. The method is efficient, as the product was precipitated out from the reaction mass after the workup in water, eliminating the need for further chromatography for purification. Proposed structures are confirmed based on mass and ^{1}H NMR spectral data of the representative compounds.

COMPUTER SCIENCE & TECHNOLOGY

"People embrace false magical theories in the hope something good will come out of them. In the most extreme of these, good comes out of them only at the end of this life, in paradise."

– Subhash Kak

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Abstract ID: RSMOCOM01

COLOR CRYPTOGRAPHY: AN INNOVATIVE APPROACH FOR TEXTUAL ENCRYPTION

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In world of technologies, at most all the communication is done directly or indirectly on the network or through the network. While communicating on network fears come in many different forms. Most common threat is cyberattacks. To provide security to network communication, traditional approach used is encryption and decryption. Almost all traditional encryption methods use substitution and switch. This paper proposes a method which generates random color blocks for text. Here we are using innovative approach of generating stronger cipher than the existing algorithms. This encryption approach will generate an RGB color image as cipher text. RGB color will be generated randomly so that it creates difficulties for the unintended users to identify original text.

Keywords: Encryption, Decryption, Cipher text, plain text

Abstract ID: RSMOCOM02

Revolutionizing Parking Management Using Fuzzy Logic and Visual Detection

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Effective parking management is an escalating requirement in metropolitan regions characterized by constrained parking availability and a continually rising vehicle population. In reality, numerous issues exist concerning parking facilities, particularly those associated with commercial malls or hospitals. Individuals are encountering difficulties locating parking due to the abundance of vehicles there. It consumes a significant amount of their time and reduces their productivity. The manual parking approach is haphazard due to individuals' lack of awareness regarding the locations of available spaces. This study introduces a Smart Parking System that combines security cameras and fuzzy logic to enhance parking space distribution. Surveillance cameras oversee parking lots in real time, while fuzzy logic evaluates multi-criteria decisions including slot dimensions, proximity, and user preferences. The technology automates the identification of available parking spaces and recommends the most appropriate options to drivers, thereby minimizing the time allocated to searching for parking. In order to optimize parking spot distribution, this paper develops a Smart Parking Solution that combines fuzzy logic with security cameras. The technology automates the identification of available parking spaces and recommends the most appropriate options to drivers, thereby minimizing the time spent seeking for parking. Experimental findings indicate substantial enhancements in resource efficiency and user convenience.

Keyword: Fuzzy Logic, Camera, Parking Slot

Abstract ID: RSMOCOM03

A Comprehensive Review and Classification of Meta-Heuristic Task Scheduling Algorithms in Cloud Computing

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Cloud computing has transformed the way computational resources are delivered offering a revolutionary approach to access and utilise technology. With the growing complexity of task and the dynamic behaviour of cloud resources a range of pivotal challenges developed like load balancing, resource utilisation, task allocation and system performance. Poor scheduling gives rise to troubles such as uneven resource distribution leading to either over utilisation or underutilization which results in degraded service quality or wastage of resources. This study mainly focuses on examining and assessing the complications related to task allocation among limited cloud resources emphasizing on elements like resource utilisation, reliability, makespan time, cost, energy consumption, availability, response time and other key performance metrics with aim of building an effective cloud scheduling method, these metrics need to be fine-tuned. This paper presents a detailed and organised literature review on task scheduling in cloud computing unveiling a new classification structure in addition to comparative analysis of different techniques. This structure classifies mateheuristic scheduling techniques influenced by scheduling algorithms, nature of the problem, task types, core scheduling objectives, task resource mapping, scheduling restrictions and testing environments. This study furnishes an in-depth review, categorization and inspection of various scheduling systems contemplating their strengths and constraints. It also portrays forthcoming research path to aid current researchers and investigators.

Keywords: Cloud computing, Task Scheduling, Resource allocation, meta-heuristic technique, makespan

Abstract ID: RSMOCOM04

OVERVIEW OF PRIVACY PRESERVING RECORD LINKAGE

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In today's era massive data sets having large and complex structure with the difficulties of storing, analyzing and visualizing for further processes or results. The voluminous data, especially personal data in multiple sources, present large opportunities and insight for businesses for analysis and investigating the value of linked and integrated data. Privacy is a major concern while we share or link data through networks of different organizations. Privacy Preserving Record Linkage (PPRL) aims to address this problem by identifying and linking records that correspond to the same real world entity across several data sources held by different parties without revealing any sensitive information about these entities. Data de-duplication is intelligent comparison or single instance storage. It is a process that eliminates redundant copies of data and reduces storage overhead. In this article, we provide an overview of the research literature in privacy-preserving record linkage, discuss the different types of techniques that have been proposed. We conclude this work with an overview of PPRL techniques.

Keywords: Privacy, Data- Linkage, Record Linkage,Data - analysis, Dat-a comparison

Abstract ID: RSMOCOM05

Decoding Smart Contract Security: A Systematic Investigation of Smart Contract Vulnerabilities in Blockchain Ecosystems

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In the current era of Industry 4.0, we have witnessed transformative advancements in cyber-physical systems. A key aspect of this evolution is the rise of digital currencies, specifically cryptocurrencies, which function without the need for third-party involvement. The potential of blockchain technology lies in its immutable distributed databases, decentralized architecture, cryptographic techniques, and robust security features, which collectively enable a trustworthy and secure approach to information sharing. A smart contract is a self-executing program that operates automatically upon the fulfillment of specific predetermined conditions and is deployed on an immutable blockchain. Despite the design of smart contracts to ensure security and self-execution, there are multiple vulnerabilities that attackers can exploit at various stages, including both pre-deployment and post-deployment phases. However, smart contract security is a complex issue that needs to be explored from a multi-dimensional perspective so that it become trustworthy and make transparency between different nodes involved in blockchain network. This study explores the underlying principles of blockchain technology, the distinct stages involved in the life cycle of smart contracts, the different types of attacks targeting smart contracts, and the analytical tools both pre-deployment and post-deployment available for detecting security vulnerabilities in smart contracts, focusing on factors such as gas consumption, timestamps, access control and stage change after external calls based on evaluating their capabilities and drawbacks. Furthermore, we classify each topic and conclude with a discussion of the challenges that have yet to be addressed, as well as possible directions for future research directions.

Keywords: Blockchain, Smart Contract, Smart contract Vulnerabilities, Analysis tools

Abstract ID: RSMOCOM06

Innovative Attention based Deep Learning Smile Prediction of Human faces from Video Sequence

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Emotion Detection of facial expression from human face from video sequences plays a vital role to study the state of emotion that an individual exhibits during couse of action. Smile detection is significant and challenging statement that attracts attention in affectice computing domain. Video Surveillance is the best platform to detection the real emotion which is spread across video sequneces . Smile potrates basic emotion such as happiness which is the state of being satisfied. According to psychology, facial expression of Human face confirs 55% contribution for emotion detection in affetcuve computing. To address positive impact of happiness in the society, this research model has been developed. We have constructed a model using Deep Learning for smile detection that helps for creating positive environment in the different flavours of life. An attention based deep convolutional neural networks aling with DensNet is applied to accomplish the experiment that uses a compound coefficient to uniformly scale an image's depth, width, and resolution. When compared to other computation-intensive decision-making models, the system offers a less complicated but nearly accurate model for recognizing the intensity of a smile. Smile Intesnity is calculated to measure the effective smile out of the region of interest from the video sequence using Kalman filter. This research paper extend real time smile detection from video sequences on CK+ Data set. Experimental findings demonstrate that the suggested approach outperforms cutting-edge deep neural networks in terms of performance on CK+ Data set. The proposed model reduces computational requirements, including computational time, memory, and space, in order to concentrate on accurately identifying smiles from video sequences. This proposed model achieves the accuracy of 95% with respect to the other existed models present in the domain.

Keywords: Smile Detection, Video Surveillance, Intensity, Deep Learning, Attention, DensNet

Abstract ID: RSMOCOM07

NLP Techniques Used for Document Clustering

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Natural Language Processing (NLP) is central to document clustering, a task focused on grouping documents with similar content without pre-defined labels. Document clustering is crucial for various applications, including information retrieval, content categorization, and data mining, and is widely used in areas like news aggregation, academic research, legal analysis, and social media monitoring. Traditional clustering algorithms, such as k-means, hierarchical clustering, and DBSCAN, often rely on basic text representations like bag-of-words or TF-IDF. However, these methods struggle to capture the deeper semantic meaning and contextual relationships in text. Recent advances in NLP, including the development of word embeddings (e.g., Word2Vec, GloVe) and deep learning models (e.g., BERT, GPT), have significantly improved document clustering by creating dense, context-aware vector representations that capture both syntax and semantics. This article offers an in-depth review of the key NLP techniques used in document clustering, covering both classic and contemporary methods. It highlights the role of recent innovations like attention mechanisms, transfer learning, and self-supervised learning in transforming document clustering tasks. The challenges of handling large datasets, multilingual clustering, and ensuring interpretability of clustering results are also discussed. Finally, the article outlines future research directions aimed at enhancing clustering performance, scalability, and adaptability through advanced NLP techniques.

Keywords: **Document Clustering, Natural Language Processing, Word Embeddings, Deep Learning, Self-Supervised Learning, Information Retrieval**

Abstract ID: RSMOCOM08

Optimizing YOLO for Real-Time Mosquito Bite Detection: A Deep Learning Computer Vision Approach with Application to Teledermatology

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Over the course of the last decade and after Covid-19 Telemedicine, a remote healthcare tool has proven to be highly effective in dermatology due to its use of visual data. Recent studies have highlighted the practicality and reliability of teledermatology, enabling patients worldwide to access dermatological care. Advancements in technology have allowed healthcare providers to efficiently treat diverse patient populations without increasing costs. Teledermatology has been utilized for delivering clinical services, monitoring patients, providing consultations, and offering educational materials, primarily targeting real time Skin diagnosis and managing skin lesions. Medical science has demonstrated that certain severe illnesses, such as West Nile virus, malaria, yellow fever, and dengue fever, can be spread through Mosquito bites,. In this paper we have evaluated the effectiveness of image processing using YOLO a computer vision model for detecting and identifying real-time Mosquito Bite Swelling objects in various real-time image processing and video scenarios up to 45 frames per second with resolution of 480 PX maximum on our custom image dataset generated using open-sourced LabelImg Computer Vision Annotation Tool. As per our discoveries, YOLOv8 accomplished the most noteworthy mean Normal Accuracy score, Our research marks a major advancement in the remote identification of skin lesions represents from a distance also opening the door for easier and more effective teledermatology diagnostic techniques.

Keywords: Teledermatology, YOLO, Computervision, Deeplearning, Skinlesions

Abstract ID: RSMOCOM09

DEVELOPING CORE ELEMENTS OF WORD SENSE DISAMBIGUATION FOR GUJARATI LANGUAGE

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A language is the principal way of communication used by human beings. It expresses thoughts, has a proper formation and has meaning. Natural Language Processing is concerned with the development of computational model of aspects of human language processing. It is easier for a machine to identify semantic correctness of a sentence when all words are tagged using their appropriate meaning but, there are certain words which have more than one meanings. Those words are known as polysemous words. It is such a case where the lexicon is associated with two or more different meanings. An assignment of a meaning from more than one meaning of the polysemous word considering the context of the text is known as Word Sense Disambiguation(WSD). The integration of WSD systems into educational tools presents a significant opportunity to enhance language comprehension and vocabulary learning in multilingual educational settings. We propose a method to solve the problem using knowledge-based approach which uses gujarati wordnet as lexical resource. This approach takes multiple meanings of word from WordNet and generate context from the input text. This information is then used by the fitness function of genetic algorithm. Fitness function calculates fitness of the candidate solution using context information and fuzzy logic to tag words in input sentences with the best suitable sense. We have performed experiments on a dataset with 25 gujarati sentences containing total 1380 words. Out of which 6 sentenses are from news domain. For evaluation, we manually tagged all the words with appropriate wordnet senses and 'Part of speech'. We have used Accuracy, Precision, Recall and F1-score for performance evaluation. These metrics are calculated for the system considering 1)only overlap of context words, 2)considering overlap and matching of POS tags. After aggregating them using Fuzzy system for fitness function. We have achieved 83.25% accuracy using our proposed method.

Abstract ID: RSMPCOM01

NAVIGATING INNOVATION: DESIGNING LOCATION-BASED RECOMMENDATION SYSTEMS FOR TRAVELLERS

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As the travel and tourism industry continues to embrace digital transformation, location-based recommendation systems have emerged as a key tool for enhancing the traveler experience. These systems provide personalized, context-aware suggestions for activities, services, and points of interest based on a user's geographic location, preferences, and real-time circumstances. Location-based recommendation systems (LRS) have become integral tools for enhancing the travel experience by providing personalized, context-aware suggestions based on a user's geographical location, preferences, and real-time conditions. This paper explores the design and implementation of LRS tailored specifically for travelers, focusing on the challenges and opportunities involved in creating dynamic, intuitive, and efficient systems. The study delves into the integration of geospatial data, machine learning algorithms, and real-time contextual information to offer personalized recommendations for accommodations, attractions, dining, and activities. Key challenges such as data privacy, scalability, and system adaptability are examined, along with strategies for overcoming these barriers while ensuring a seamless user experience. By analyzing existing LRS platforms and case studies, the paper highlights the role of emerging technologies like the Internet of Things (IoT), Artificial Intelligence (AI), and Machine Learning (ML) in shaping the future of travel-based recommendation systems. Additionally, the research discusses how LRS can benefit from user feedback loops and adaptive learning to continuously refine recommendations and improve accuracy. The paper concludes by proposing a novel framework that combines collaborative filtering, content-based filtering, and context-aware recommendation strategies to optimize user engagement and satisfaction. Ultimately, this research aims to guide the development of innovative, user-centered location-based systems that enhance travelers' journeys while addressing the complexities of data management, privacy concerns, and system scalability.

Keywords: **Location-Based Recommendation Systems, Personalization, Geospatial Data, Collaborative Filtering, Content-Based Filtering, Adaptive Learning**

ELECTRONICS

"I am the master of my failure. If I never fail, how will I ever learn?"

– Sir C. V. Raman

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Abstract ID: RSMOELE01

IoT Alternative to Digital Holography for Thermal Gradient Mapping with Multiple Contact Sensors

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Real-time monitoring systems are advanced tools for monitoring and analyzing various parameters viz, temperature, humidity, flow, and pressure very comfortably and conveniently. Hardware and software can suitably connected via different communication protocols. This will allow hardware and software to interact with each other and share data smoothly. This research paper presents the Design & Development of the prototype model of "IoT Alternative to Digital Holography for Thermal Gradient Mapping with Multiple Contact Sensors". In this design, the advanced microcontroller ESP32 is used which combines the features of The Internet of Things. IoT is an emerging technology that connects, controls, and monitors various data. In this developed prototype, Total Six K-type thermocouples are used as a temperature sensor to monitor temperature of material surface at six different points. It has a wide temperature measuring range of -200°C to 1260°C with stability, linear response, accuracy, and precision. A data acquisition system is also integrated to collect the data of the temperature sensors for analysis. It will store the measured values either in an Excel Sheet or on the Cloud as per user requirements. IoT-integrated mobile application has also been developed for the real-time monitoring of temperature data. This information will be used to study the characteristics of thermal distribution in different material mediums. This setup is developed with a total of six sensors to measure the temperature at different points of the same surface simultaneously. Data collected from this experiment is used in comparison with digital holographic images. As a result, it is very much useful to detect surface and sub-surface thermal gradients in material.

Keywords: Real-Time Monitoring, Internet of Things, Digital Holographic Image, Thermocouple, Data Acquisition, Thermal Gradient

Innovative IoT – Driven Intelligent Controller of LED Light with ON/OFF Time Period Implemented in Tissue Culture Rack

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The growth of plants is dependent on various parameters like sunlight, nutrients, water, and temperature. Many plants require a special environment to grow because, in a normal environment, their growth is not possible or may be slow. To accelerate the growth of plants artificial environment is required with monitoring and controlling of various parameters like light intensity, temperature and light duration. This research paper includes the development of "Innovative IoT – Driven Intelligent Controller of LED Light with ON/OFF Time Period Implemented in Tissue Culture Rack". To monitor and control these parameters high-tech ESP32 Controller is taken. In-built Analog and Digital blocks are used to process the signals from sensors to the controller. RTC module becomes an asset in keeping Timings on track for real-time applications. For Light Intensity measurement the Light sensors TSL2561 are used in High Resolution Mode 2 with good precision. For remote control mobile application is developed with IoT platform interface. This instrument is designed with 4 LED Lights, all LED lights can be set at different intensities at the same time. The ON/OFF timings of each LED light are independently and effortlessly adjusted as per requirements. Also, have the flexibility of changing the LED light intensity in the range of 90 – 800 lumens. The design and developed instrument brings different aspects of research on growth in plant tissue culture. Additionally, the system is designed in a way to optimize power consumption.

Keywords: LED Lights, Microcontroller, Internet of Things, Plant Tissue Culture, Artificial Environment

HOME SCIENCE

"There is no treasure equal to contentment and novirtue equal to fortitudeAnnai"

-Sarada Devi

Sardar Patel University

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Abstract ID: RSMOHOME01

A study on nutritional status of adolescent girls in Jujomura block, Sambalpur district, Odisha

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Adolescence is a crucial stage in the life of a female and is considered as a backbone of healthy and progressive family. They are future mothers for building of the positive health of community. During this period, good nutrition is very important for their proper physical, mental, cognitive and overall growth and development. Nutritional status of adolescent girls is valuable for achieving efficient physical activity and healthy reproductive outcome. A community based cross-sectional study was performed in Jujomura block, Sambalpur district, Odisha. A total of 120 adolescent girls aged twelve to nineteen years were included in the study. A standard questionnaire was developed and employed for collection of data. The data was then processed and nutritional status of respondents were studied. It was found that 12 per cent of respondents were overweight and 20 per cent were obese while 16 per cent of them belonged to underweight category. 96 per cent girls were facing constipation problem, 20 per cent of them reported of having loose and dry skin while 24 per cent girls were unable to see clearly at night or dim light. 40 per cent girls responded about their emotional state i.e. feeling sad all the time while 28 per cent were feeling irritability. Hence, this study strongly felt the need of nutrition education for the adolescent girls in order to correct their nutritional deficiencies and to mitigate the complications.

Key words: Adolescent girls, nutritional status, malnutrition

Abstract ID: RSMOHOME02

Commerce With Conscience: Enzyme Discharge Printing for Sustainable Fashion and Reduced Environmental Impact

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The global fashion industry is under increasing scrutiny for its environmental footprint, particularly due to the toxic chemicals and waste generated during textile processing. Discharge printing, widely employed for intricate textile designs, often involves hazardous chemicals like formaldehyde sulfoxylate, which pose significant environmental and health risks. The study objective is to develop an environmentally friendly enzyme discharge printing process, assess its environmental impact that aligns with sustainable development goals. Specifically, the study explores the use of acid cellulase enzymes for discharge printing on natural dyed fabrics, minimizing harmful chemical use while maintaining design quality and aesthetic appeal. The methodology integrates experimental trials of enzyme formulations varying pH, time, temperature, and enzyme concentration on natural dyed cotton fabric. Technical evaluation of this enzyme-assisted discharge printing method was done by spectrophotometer analysis, tensile strength testing, and Chemical Oxygen Demand (COD) in waste water, demonstrating its effectiveness in achieving desired aesthetic effects, preserving fabric integrity, and supporting eco-friendly textile production compared to conventional discharge printing methods. Results indicate that enzyme-assisted processes achieve effective colour removal with a tone-on-tone effect on natural dyes, except indigo, while reducing chemical usage, demonstrating compatibility with natural dyes and enhanced biodegradability. This approach not only reduces environmental hazards but also supports circular fashion practices by promoting safer, sustainable alternatives. The study concludes that enzyme discharge printing has the potential to revolutionize sustainable textile production, offering a viable pathway for businesses to adopt commerce with conscience. It advocates for the integration of such innovations into fashion supply chains, fostering a balance between profitability and environmental stewardship.

Keywords: Sustainable fashion, enzyme-assisted discharge printing, natural dyes, acid cellulase, eco-friendly textiles, environmental impact reduction

Abstract ID: RSMPHOME01

Design Education to Kutch Tangaliya Weavers

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One of the most notable products created in India is handloom, which is distinctive. Each Indian state produces unique handloom textiles. The Pashmina shawl, the Kutch shawl, the Naga weaves, and the Kanchipuram saree are examples of these. One of Gujarat's finest traditions is the "*Tangaliya*" handloom weaving technique. Tangaliya weavers reside in the villages that are located in Surendranagar district of Gujarat, as well as in the villages that are located along the route that connects Kutch and Surendranagar. When it comes to the design and marketing of Tangaliya products, it has been observed that the weavers from the Kutch region and the ones from Surendranagar are much behind. Additionally, the researchers found that there was a limited range of motifs and layouts for the products available for the Kutch Tangaliya weaving. Having sufficient awareness of products that come in a variety of kinds is vital in today's handcrafted sector. To address this issue, researchers created a method for educating weavers on the importance of textile design. To educate weavers, digital training charts with diverse design aspects were created. The use of a pre- and post-preference schedule allowed evaluation of weaver awareness. The educational workshop resulted in an unanticipated increase in the use of Tangaliya goods for textile design. Contemporary weavers with design knowledge create products with higher average lifespans.

Keywords: Tangaliya, Weaves, Handloom, Kutch, Design, Education

RSMPHOME02

A study on consumption and cooking practices of millet based recipes in Anand District

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Millets are one of the oldest foods known to humans & possibly the first cereal grain to be utilised for domestic purposes. They are rich in dietary fiber, micronutrients, and beneficial phytochemicals. Post green revolution, Indian diets have white rice and wheat as the most common consumed staples due to easy availability and accessibility. The consumption of refined grains, is shown to be associated with non-communicable diseases, such as type II diabetes mellitus and obesity. This has led to an increasing emphasis worldwide on consuming whole grains. There is a growing interest in reviving millets in India and also around the world, owing to their nutrition content and ability to thrive in harsh climatic conditions due to their climate efficient characteristics. This transition phase during which perceptions of millets are changing and there is increased health consciousness among individuals, it is the appropriate time to assess current knowledge, perceptions, and practices related to millets, which will lay the groundwork for planning to promoting millets as a staple effectively in the coming years. So, this study is attempted to understand public knowledge and practices of consuming millets and its recipes in Anand district which was conducted with 165 conveniently sampled individuals using structured questionnaire. The most commonly consumed millet in the study population is bajra followed by sorghum. Millets are commonly consumed in the form of rotlo and Khichdi. In conclusion, this study can be helpful in providing the existing state of knowledge regarding the pre processing, processing and cooking techniques of millet based food products among the population residing in Anand district of Gujarat.

Keywords: Millet Recipes, Millet Cooking Practices, Millet Consumption, Millets in Gujarat

Abstract ID: RSMPHOME03

"A comparative study of cases filed and withdrawal cases of Consumer Commission of Anand and Kheda District."

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We are consumers from birth to death, and it is important to recognize our rights and responsibilities in this role. In today's market, the consumer is often viewed as a victim. Amidst a busy lifestyle, sellers and producers typically prioritize profit. Therefore, the Consumer Commission serves as a vital resource for those who voice concerns about unfair trade practices. This study examines cases where consumers filed complaints due to dissatisfaction with their purchases, particularly focusing on those that were resolved through the withdrawal process. It specifically analyzes the number of cases registered in the Anand and Kheda districts, as well as the timeliness of these withdrawals. Secondary data was obtained from the official website of the Consumer Commission, and the findings were analyzed using percentages and visual graphs for clarity. While the population and literacy rates in the Anand and Kheda districts are relatively similar, the number of complaints submitted to the Consumer Commission in Anand exceeds that in Kheda for various reasons. The result shows that in the year 2018cases withdrawal of the cases before 90 days and in 90 days are more than any other year. The results of this study highlight the urgent need for increased consumer awareness regarding the complaint withdrawal process. By educating consumers about their rights and the mechanisms available for resolving disputes, we can reduce the backlog of complaints and foster greater satisfaction and trust in the marketplace.

Keywords: consumer, consumer rights, consumer forums, consumer redressal, registered cases

Abstract ID: RSMPHOME04

Roasting-Induced Changes in Antioxidant and Mineral Profiles of Hemp Seeds: Implications for Functional Foods

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Hemp (*Cannabis sativa* L.), primarily cultivated for its seeds, fibers, and oil, has gained prominence due to its extensive applications in the food, health, and manufacturing industries. Studies have also highlighted antioxidant properties of hemp seeds, attributing these benefits to their phenolic and flavonoid content, which contributes to their potential in promoting cardiovascular health, skin health, and overall wellness. Consequently, hemp seeds are increasingly recognized as a valuable ingredient in functional foods and nutraceuticals, supporting both dietary needs and wellness goals. This study examines the effects of roasting on the antioxidant capacity, mineral content, and functional properties of hemp seeds, aiming to determine influence of roasting on their suitability for functional foods. 80% acidified methanol was used as an extracting solvent and one extracting technique (shaking) was used for investigation for both raw and roasted samples. The extract was estimated for Total Phenols, Flavonoids, Ferric Reducing Antioxidant Power Assay (FRAP), 2,2-dipheny1-1-picrylhdrazyl radical scavenging activity (DPPH-RSA) and 2,2-aziinobis,3-ethyl benzo-thiazolin,6-sulphonic acid radical scavenging activity (ABTS-RSA). Results indicate a significant increase ($p \leq 0.05$) in Total phenols (47.00 mg GAE/100g in raw seeds to 120.10 mg GAE/100g in roasted seeds), while Flavonoids exhibited a non significant variation. Antioxidant activities via FRAP and ABTS assays were enhanced post-roasting, with FRAP levels increasing from 61.12 mg TE/100g in Raw seeds to 85.18 mg TE/100g in Roasted Seeds. Furthermore, roasting raised mineral contents, notably phosphorus (173.75 to 406.61 mg/100g), along with oil-holding and water absorption capacities. Regression analysis indicated a positive and significant relationship of Total phenolic content with Flavonoid (Raw- p value= 0.00, $R^2 = 1$ and Roasted – p value 0.00, $R^2 = 1$). These findings underscore the potential of roasted hemp seeds as a nutritionally enriched ingredient for nutraceutical and functional food applications.

Key words: Hemp seeds, antioxidants, mineral, functional property

Abstract ID: RSMPHOME05

Food consumption pattern of Tribal People of Dang District

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Gujarat is home to a diverse range of tribal communities with rich cultural practices, including unique food habits. The tribal communities of the Dang district in Gujarat, India, possess distinct cultural practices, including unique food consumption patterns influenced by environmental, economic, and socio-cultural factors. This study aims to explore and document the food consumption patterns of the tribal people of Dang district focusing on their dietary patterns, seasonal availability and inclusion of foods, traditional food practices. A cross-sectional survey was conducted involving 120 people from 15 villages of Dang district. Data were collected on respondents' personal details, dietary practices during regular days and special occasions, and a food frequency questionnaire through field visits and structured interviews. Seasonal availability of food and preferences for local versus non-local foods were also assessed. The findings of the survey revealed that the majority of the respondents had three major meals in a day; breakfast, lunch and dinner. Commonly consumed grains and pulses are rice, wheat, ragi, red gram dhal and black gram dhal. Seasonal foods are significant part of their diet like tubers in winter, locally grown leafy vegetables and tubers in monsoon. Seasonal fruits like mango, sapota, watermelon, amla, mulberries, blackberry and other locally grown fruits are widely consumed. Cottonseed oil is primarily used for cooking. Although fast foods and packaged items are generally rare in their diet, biscuits and chips are relatively commonly consumed. In conclusion, the tribal people of Dang district consume food in a unique way that combines traditional dietary practices with locally available resources and culturally relevant food.

Key words: Food consumption pattern, Seasonal Foods, Tribal People

Abstract ID: RSMPHOME06

Probiotic properties of *Lactobacilli delbrueckii* species isolated from Adult's feces

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The potential of utilizing microbes to promote health and prevent diseases has been a fundamental topic in microbiology. This study evaluated the probiotic potential of Lactobacillus strains isolated from the feces of elderly individuals, specifically examining their gram staining catalase test, acid and bile resistance, antimicrobial activity, antibiotic susceptibility, and surface hydrophobicity. Three strains identified as *Lactobacillus delbrueckii* were gram-positive and catalase-negative, These strains demonstrated a good tolerance to acidic conditions and bile salts. Antimicrobial assays revealed that these strains effectively inhibited selected pathogenic microorganisms, while also displaying sensitivity to penicillin, chloramphenicol, and gentamicin. Additionally, the strains exhibited high surface hydrophobicity, a key characteristic for strong adhesion to intestinal surfaces. Therefore, these *Lactobacillus* strains hold potential as viable probiotic candidates for incorporation into functional food applications

Keywords: *Lactobacillus delbrueckii*, Probiotics, Antimicrobial activity

RSMPHOME07

Effect of Starch- based Edible Coatings on Colour Parameters and Enzymatic Browning of Fresh-Cut Apples

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Edible coatings are thin layers made from consumable materials that are applied to the surfaces of whole or cut fruits to minimize gas exchange, prevent moisture loss, preventing microbial contamination, oxidation reactions and slow down the natural aging process. The structural matrix of edible films and coatings is mainly constituted by polysaccharides, proteins and/or lipids. Polysaccharides are one of the commonly used materials for the development of edible coatings. The present study aims at investigation of the effect of starch based edible coating on the colour parameters and enzymatic browning of minimally processed fresh cut apples. The edible coating was done by dipping method in coating solutions prepared from corn starch (CS), raw banana starch (BS) and corn starch - raw banana starch (CBS 50:50). The samples were analyzed for colour parameters namely L*, a* and b*; browning index as well as for, peroxidase (POD) and polyphenol oxidase (PPO) enzyme activity at regular intervals during 8 days of storage. Result revealed that each treatment shows a significant difference in lightness over time, with uncoated sample consistently having the lowest L* value, indicating it is the darkest, while CBS 50:50 has the highest values, indicating the lightest. The lowest a* and b* values were observed for fresh cut apples with CBS 50:50 while the highest observed for uncoated samples. This trend remains consistent during storage period. CBS 50:50 has the lowest browning index. Both peroxidase and polyphenol oxidase activity were significantly inhibited in coated samples with most effective in CBS 50:50 treatment over time. The study concludes that among the starch-based coating treatments, CBS 50:50 found to be the most effective to reduce browning and may be better suited for longer storage.

Key words: Edible coating, color parameters, browning index, peroxidase, polyphenol oxidase

Abstract ID: RSMPHOME08

Menstrual Hygiene, Beliefs and Practices Among Tribal Adolescent girls

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Tribal populations account for around 8% of India's overall population. Geographical remoteness, socioeconomic deprivation, and limited health services make them more prone to various disorders. Adolescence is a crucial stage in girl's development, transitioning from girlhood to womanhood. In Indian society, menstruation is often connected with filth. Menstruating girls sometimes endure seclusion and constraints in their homes, perpetuating unfavourable views about menstruation. The view of menstruation differs among religions and cultures. Adolescent girls, who will become mothers in future, have a tremendous impact on their reproductive health. Menstruation is a normal process for women. It marks the natural beginning of puberty. However, it is associated with taboos and myths throughout civilisations. Menstrual taboos not only exclude women from social activities, but also negatively impact their emotional, mental, and physical health. Changing strongly held views about puberty, menstruation, and reproductive health poses significant hurdles, especially among tribal girls who lack understanding. To address these difficulties, a strategic strategy is needed. This study explores menstrual hygiene, beliefs and practices among tribal adolescent girls in India, their negative influence on women's life, the significance of addressing them in primary care, and measures to counteract them. This study provides measures to promote menstrual health and cleanliness for tribal teenage girls. The study also indicates that cultural and societal views about menstruation are impacted by factors such as girl's education, home environment, cultural background, and beliefs.

Keywords: Tribal, Adolescent Girls, Menstrual Beliefs, Menstruation, Reproductive Health, Puberty

RSMPHOME09

Participation And Health Hazards of Tribal Women In Agricultural Sector In Odisha

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In Odisha, tribal communities, which constitute a significant part of the population, have historically relied on agriculture as a primary livelihood source. Tribal women play a crucial role in this sector, engaging in a range of agricultural tasks that contribute significantly to household food security, income generation, and sustainable resource management (Panda and Majumder, 2020). Their participation spans across sowing, weeding, harvesting, and post-harvest processing, where they leverage indigenous practices that enhance biodiversity conservation and ecological balance (Dash and Sarangi, 2019). Despite their integral role, tribal women face considerable challenges, including limited access to modern agricultural inputs, training, credit and market linkages. Tribal women participation in agriculture is essential to rural livelihoods and food security, yet they face numerous health hazards due to the nature of their work, exposure to pesticides, and lack of protective equipment (Panda and Mishra, 2022). The prevalence of respiratory issues, musculoskeletal disorders, skin disease and chemical exposure related ailment among these women underscores significant health hazards (Mohanty and Behera, 2019). Limited access to healthcare and sanitation, along with cultural and social restrictions, compounds these health challenges, often making treatment inaccessible (National Institute of Rural Development, 2021). This review paper highlights the increased participation of tribal women in agriculture sector and their health risk which demands urgent need for focused health and safety measures to protect tribal women, supporting sustainable agricultural participation in Odisha.

Keywords: Tribal women, Participation in agriculture, Health hazards, Agriculture sector

MATERIAL SCIENCE

"The only part of the early concept of the elements that has survived is that elements have distinctive properties."

— C. N. R. Rao

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Abstract ID: RSMOMAT01

Efficient Green One-Pot MOF Synthesis for Ultra-Fast Wastewater Treatment and Industrial Catalytic Bag

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This research introduces a silver-based metal-organic framework (Ag-MOF) for wastewater treatment. This new catalyst is synthesized through an innovative one-pot, green method which supports the idea of sustainable solutions. Our study focuses on the photocatalytic degradation of industrial dyes under visible light, leveraging 1,3,5-triazine as a critical host linker within the Ag-MOF structure. The unique synthesis process eliminates the need for harmful solvents and high-energy conditions, thereby enhancing its practicality and environmental friendliness. Comprehensive characterization of the Ag-MOF confirms its robust structural and chemical properties, with exceptional photocatalytic activity demonstrated through the rapid degradation rates of multiple dyes such as Methyl Orange, Congo Red, Janus Green B (JG), Eriochrome Black T (EBT), Acridine Orange (AO), and Rhodamine-B (RB). Notably, the catalyst maintains high efficiency over multiple cycles, showcasing its potential for reusability in industrial applications. The synthesis of Ag-MOF not only offers a new pathway for creating cost-effective and highly efficient photocatalysts but also holds significant promise for scaling up to meet the demands of large-scale environmental remediation.

Keywords: One-pot green MOF synthesis, Characterization, Photocatalytic wastewater treatment, Recyclability of catalyst, Catalytic bag for industrial applications

Abstract ID: RSMOMAT02

Electrochemical Performance of Lanthanum-Cerium Oxide For Pseudocapacitor Application

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Metal oxides are promising materials for various electrochemical applications such as energy storage, sensors and catalysis. This study investigates the synthesis and electrochemical investigation of Lanthanum Cerium Oxide (bimetallic oxide) for potential use in energy storage devices. Bimetallic oxide was synthesized using a mixture of metallic salt solutions, which is directly heated in a vertical quartz tube furnace at 700°C. Synthesized oxide was characterized by X-ray diffraction (XRD) and particle size analysis. The XRD analysis revealed well-defined crystalline phase and the particle size analysis showed an average particle size of 340 nm. Electrochemical analysis like cyclic voltammetry (CV), galvanostatic charge-discharge (GCD) and electrochemical impedance spectroscopy (EIS) were performed using a three-electrode setup with Pt as the counter electrode, Ag/AgCl as the reference electrode and working electrode (WE) fabricated on Ni foam substrate. The WE consists of 8:1:1 ratio of bimetallic oxide, carbon black and PVDF coated on Ni foam using NMP as solvent. CV revealed pseudocapacitive behaviour with a potential window of 0.1–0.55 V. The highest specific capacitance was achieved i.e. 42.47 F/g at a current density of 0.5 A/g, with an active material loading of 2.5 mg/cm². EIS analysis and Nyquist plot demonstrated low equivalent series resistance and efficient charge transfer. The facile synthesis of bimetallic oxide exhibited good electrochemical performance, indicating potential as a pseudocapacitor electrode material.

Keywords: Lanthanum Cerium Oxide, XRD, Electrochemical analysis, Pseudocapacitors

Abstract ID: RSMOMAT03

Cotton Plant Waste as A Low-Cost Adsorbent for The Removal of Methylene Blue Dye

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Selection of raw materials and further processing are very important aspect in the field of materials science. Removal of dyes from the waste water is one of the biggest concerns at present time. The growing demand for better adsorbent material is prime requirement to provide economical solution in terms of low-cost and regeneration capabilities of adsorbent materials. India is the largest producer of cotton in the world. In this study, cotton plant waste was utilized as low-cost biosorbent for the removal of a cationic dye namely, methylene blue from aqueous solution using a batch adsorption process. Firstly, a characterization of the biosorbent was carried out in terms of bulk density, ash content, moisture content and its point of zero charge. The point of zero charge (pH_{pzc}) was found 5.60. The impact of various operating conditions like biosorbent dose, dye concentration, contact time and solution pH in the adsorption process was investigated. Increasing pH resulted in an increase of percent dye adsorption and the adsorption mechanism was occurred by electrostatic attraction between negative adsorbent surface and positive dye molecules. The kinetic data obtained at different concentrations were analysed using a pseudo-first-order and pseudo-second-order equation. Obtained results showed that cotton plant waste could be better choice and comparatively cheaper material then expensive adsorbents used to remove dyes from effluents.

Keywords: Cotton plant waste, Biosorbent, Adsorption kinetics, Methylene blue dye (MB), Adsorption

MATHEMATICS

"Without mathematics, there's nothing you can do. Everything around you is mathematics. Everything around you is numbers"

– Shakuntala Devi

Sardar Patel University

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Abstract ID: RSMOMATH01

A Study of Morris-Thorne Wormhole in Einstein-Cartan Theory

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This paper focuses on the Einstein-Cartan theory, an extension of general relativity that incorporates a torsion tensor into spacetime. The differential form technique is employed to analyze the Einstein-Cartan theory, which replaces tensors with tetrads. A tetrad formalism, specifically the Newmann-Penrose-Jogia-Griffiths formalism, is used to study the field equations. Also, the energy-momentum tensor is determined, considering a Weyssenhoff fluid with anisotropic matter. The spin density is derived in terms of the red-shift function. Additionally, our findings demonstrate that the radial sound speed within the wormhole throat exceeds the speed of light, suggesting the existence of superluminal matter, while the tangential sound speed indicates near-light-speed propagation, particularly within the throat, emphasizing the significance of exotic matter in comprehending wormhole properties. The results also extend to examining the energy conditions at the throat of a Morris-Thorne wormhole, shedding light on the properties of wormholes within the context of the Einstein-Cartan theory, including the energy conditions at the throat.

Keywords: Wormhole, Differential Forms, Newmann-Penrose-Jogia-Griffiths Formalism, Energy conditions, Einstein-Cartan Theory

Abstract ID: RSMOMATH02

An Overview of Financial Derivatives

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Financial Mathematics underpins a variety of tools used for pricing and risk management in markets. Central to this field are derivatives, particularly call and put options. A call option grants its holder the right (but not the obligation) to purchase an asset at a specified price (strike price) within a set timeframe, while a put option allows the holder to sell the asset under similar conditions. These derivatives are essential for market participants, who are often categorized as hedgers, speculators, and arbitrageurs. Hedgers use derivatives to reduce risk, speculators aim to profit from market movements, and arbitrageurs seek risk-free profit opportunities by exploiting price discrepancies across markets.

The Black-Scholes-Merton (BSM) model, developed in 1973, is a groundbreaking formula for pricing European-style options. By incorporating factors like the asset price, strike price, time to expiration, volatility, and risk-free interest rate, the model calculates the option's fair value. This innovation revolutionized financial risk management and earned Scholes and Merton the 1997 Nobel Prize in Economic Sciences (Black was ineligible due to his passing).

Keywords: Hedgers, Speculators, Arbitrageurs, BSM-Model

Abstract ID: RSMOMATH03

A Fractional Epidemic Model for Exploring Effect of Awareness, Vaccination and Stability on Hepatitis A Virus

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Hepatitis B and C are chronic infections but hepatitis A(HA) is not chronic, however sometimes several life-threatening complications occur mainly in old aged patients. Also, most of children suffer it due to poor sanitation and hygiene. Since, the evolution of the model is found to be influential by the past, it is appropriate to use Caputo derivative in place of integer order derivative, fractional order derivative also provide an alternate novel approach to the model formulation. Hence, we attempted to formulate a fractional order mathematical model for dynamics of hepatitis A. Vaccination and awareness are incorporated into the model as prevention measures. Further boundedness and positivity of the model have been investigated, local stability has been executed using Jacobian matrix of the model and global stability has been performed by defining suitable Lyapunov functions. For supporting the results, numerical simulation has been carried out and as well for determining sensitive parameters normalized forward sensitivity analysis has been performed. Finally, it has been concluded that Caputo derivatives are helpful to reveal reasonable and accurate predictions based on history the disease dynamics. Moreover, applying vaccination and awareness against the disease has significant impact to reduce or eliminate the disease among population. It is suggested that policy makers can concentrate on awareness and vaccination for making the world free of HAV.

Keywords: Caputo derivatives; Hepatitis A virus; Awareness; Vaccination; Lyapunov function; Simulation

Abstract ID: RSMOMATH04

Some Properties of Mittag-leffler Functions of Two Parameters

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We go over the definition of the Mittag-Leffler function and several generalized variations. We explain its relationship to several other functions, including the Laplace transform, summation formula, integral representation, Mittag-Leffler function derivatives, and various integral forms.

Keywords: The Mittag-leffler Function, Laplace Transformation

RSMOMATH05

Generalized Differential Operators and Applications

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In this paper, the authors present generalized differential operators defined as $\theta = x^a(s + xD)$, where a and s are arbitrary and $D = \frac{d}{dx}$ and examine various properties of these operators. The study also examines bilateral generating functions, with the authors deriving new finite summation formulae for a certain class of polynomials and investigating the connection between these operators and Konhauser polynomials of the second kind. Additionally, the paper explores the behavior of sequences of functions under the action of these operators, addressing properties such as recurrence relations and asymptotic behavior. Furthermore, the paper investigates sequences of functions and their associated properties. Finally, the special cases of these operators are also discussed.

Keywords: Differential Operators, Konhouser polynomials, Bilateral generating function, Finite summation formule, Bessel-Maitland function, Mittag-Leffler function

RSMOMATH06

Approximation By Non-Linear Type Operators Of Max-Product Kind

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The Mihesan operators generalize established positive linear operators, including Bernstein operators, Szasz-Mirakjan operators, Baskakov operators, and Lupas operators. In order to expand the theory of positive operators beyond the linear framework, the inclusion of nonlinear positive operators is crucial. This note presents the introduction of non-linear Mihesan operators and examines the approximation properties of Truncated Mihesan operators, detailing all steps involved.

Abstract ID: RSMOMATH07

Generalized Multi-Moduli Rsa: A New Approach Towards Increasing the Security of Multi-Prime Rsa

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The popular RSA cryptosystem, based on the problem of integer factorization can widely be seen in practice even today. Since its inception, several enhancements and generalizations of RSA are proposed including its several multi-prime variants where the RSA modulus is a product of more than two primes. Here we propose a generalized multi-moduli RSA cryptosystem (GMMRSA) which is a multi-prime RSA but with more than one modulus. We show that this multi-moduli approach yields a more secure cryptosystem than a multi-prime RSA with a single modulus without compromising its computational and time efficiencies.

Keywords: RSA cryptosystem, multi-prime RSA, multi-moduli RSA, key-size, security

Abstract ID: RSMOMATH08

The Basic Hypergeometric Series

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In this paper, we discussed the Heine's basic hypergeometric series, which is a q-analogue of the Gauss' infinite series. In this context, the generalized basic hypergeometric series is defined and its convergence is also studied. Then, a q-gamma function is defined using which a q-analogue of the Legendre's duplication formula and a q- analogue of the Gauss multiplication formula are also derived. Additionaly, a q-beta function is defined and by using it, the q-binomial theorem is obtained. Some important definitions and relevant results on q-calculus like q-exponential function, q-analogue of sine and cosine functions are also discussed. The important results of q-calculus like Heine's transformation formula, Heine's q-analogue of the Gauss' summation formula, Jackson's transformation formula, q-analogue of the Saalschütz's summation formula and the Bailey-Daum summation formula are also studied. At last, the q-derivative operator and several definitions of q-integral are defined and the q-integral representation of ${}_2\varphi_1\,[z]$ function is also proved.

Keywords: Basic Hypergeometric Functions, q - gamma functions, q- beta functions, q- identities, q - exponential function, q - derivative operator, q - integrals.

Abstract ID: RSMPMATH02

Mikusinski Type Operational Calculus for the Non-local Fractal Differential Operators

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We develop a Mikusinski-type operational calculus for non-local fractal differential operators. This newly constructed calculus is utilized to derive closed-form solutions for initial value problems involving non-local fractal differential equations. These solutions are expressed in terms of the three-parameter fractal Mittag-Leffler function.

Keywords: Operational Calculus; Non-local fractal derivatives; Non-local fractal differential equations; Fundamental theorems of non-local fractal calculus

Abstract ID: RSMPMATH03

Asymptotic Series Expansion Of Some Special Functions

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Special Functions viz Gamma functions, Beta functions, Bessel functions, hypergeometric functions, exponential functions, and orthogonal polynomials like Legendre and Hermite. Asymptotic series expansions are powerful tool for approximating these functions, particularly in cases where direct evaluation is challenging or impractical. This presentation provides a fundamental overview of asymptotic expansion techniques and their application to various Special Functions and the criteria for truncating the series to achieve the best approximation.

Keywords: Asymptotic series, Special Functions, Stirling's Approximation

Abstract ID: RSMPMATH04

A Comprehensive Survey on Positive Linear Operators in Approximation Theory

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With an emphasis on their use in numerous branches of approximation theory and mathematical analysis, this presentation provides an extensive overview of the approximation features of positive linear operators. In approximation issues, where they are essential tools for creating approximations to continuous functions, positive linear operators play a crucial role in the study of function spaces. Numerous positive linear operators are examined in the survey, such as the Lupaş operators, the Bleimann-Butzer-Hahn operators, the Bernstein polynomials, and many more. Their convergence characteristics, pace of approximation, and the circumstances in which they produce the best results are highlighted. The significance of these operators on domains like functional approximation, interpolation, and approximation in spaces of continuous or integrable functions is also reviewed in the work. Recent developments in the theory of positive linear operators and the generalization of classical results are also discussed. For scholars and practitioners interested in approximation theory, this overview offers a cohesive viewpoint on the theoretical underpinnings, real-world applications, and open problems in the area.

Keywords: Positive Linear Operators, Bernstein polynomials, Lupaş operators, Binomial distribution

Abstract ID: RSMPMATH05

Some Aspects of Cosmological Study

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Cosmology means it's study of large scale structure of the universe. It deals with evolution of various celestial bodies. The main force involve in the interaction in the universe is gravity, the modern study of cosmology is done in the frame work of general relativity and other theories of gravity. The primitive models of the universe are static models, their inadequacy is observed using modern telescopes. The data in observed cosmology needs analysis for further predictions. In the poster we will briefly describe standard cosmological models and various parameters useful in cosmological study.

Keywords: Hubble Parameter, Energy Conditions, Various EoS Parameter, Modified Theories

Abstract ID: RSMPMATH06

An Overview of Fluid Flow through Porous media

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This Poster presents an overview of fluid flow through porous media which includes types of porous media, fluids and flow of fluids. To observe the fluid movement we discuss some properties like and permeability to check behavior of fluid flow through porous media. Also we discuss Darcy's Law, which describes the relationship between fluid flow rate, permeability, and pressure gradients. From these overview, we get idea about the interactions within porous structures and their implications for real-world applications.

Keywords: porous media, porosity, permeability

Abstract ID: RSMPMATH07

Fractional Calculus and its Applications

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Fractional calculus is a generalization of classical calculus that extends the concept of differentiation and integration to non-integer (fractional) orders. This field provides a powerful mathematical framework to model complex phenomena that cannot be described adequately by traditional integer-order calculus. This poster provides an overview of the fundamental concepts of fractional calculus, including definitions and key operators such as the Riemann-Liouville and Caputo derivatives. The applications of fractional calculus in modeling real-world systems with memory and hereditary properties are explored, highlighting the advantages of fractional-order models over classical models. Through visual examples and mathematical insights, this work aims to showcase the relevance and growing impact of fractional calculus in contemporary research and applied science.

Keywords: Riemann-Liouville Fractional Integral, Riemann-Liouville Fractional Derivative,

Abstract ID: RSMPMATH08

RSA CRYPTOSYSTEM, RSA DIGITAL SIGNATURE AND SOME ATTACKS ON RSA

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While transmitting sensitive information over the unsafe communication network such as internet, the security of the information is difficult to manage, and it takes a careful work to keep it safe. When sharing our information, we might require a secure method to keep it safe. Cryptography is one of the many techniques to secure data on a network. RSA is the most commonly used cryptographic algorithm for providing privacy and ensuring authenticity of digital data. In this poster, we will discuss the RSA algorithm, RSA digital signature and some attacks on the RSA cryptosystem.

Keywords: RSA Algorithm, RSA Digital Signature, RSA security, attacks on RSA, factorization

PHYSICS

"I am the master of my failure. If I never fail, how will I ever learn?"

– Sir C. V. Raman

Sardar Patel University

Vallabh Vidyanagar, Anand, Gujarat

Abstract ID: RSMOPHY01

Fabrication and Characterization of $AgBiS_2/WSe_2$ Heterostructure

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Transition metal dichalcogenide materials have gained significant attention from the researchers owing to its remarkable electronic and optoelectronic properties. In this study, we synthesized Tungsten Diselenide (WSe_2) crystals using Direct Vapor Transport (DVT) method and Silver Bismuth Sulfide ($AgBiS_2$) thin films were deposited on to freshly cleaved surface of WSe_2, using thermal evaporation method. Energy Dispersive X-Ray Analysis (EDAX) with Elemental Mapping, X-Ray Diffraction (XRD) and RAMAN Spectroscopy are used to study structural and chemical properties, confirming the successful material growth. Scanning Electron Microscopy further reveals surface morphology of both the materials having layered structure. A good rectification properties as seen from the V-I characteristics confirms the formation of type two heterojunction between p-WSe2 (Eg = 1.2-1.4 eV) / n-$AgBiS_2$ (Eg = 1.6 eV). Heterojunctions have properties that support high frequency operation of device having applications in the field of fast photo-detection and high frequency signal processing circuits.

Keywords: TMDCs, PN Heterojunction Device

Abstract ID: RSMOPHY02

Leptonic decays of charmed mesons in Quark Model framework

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Charmed mesons has searved as a important probe for uncerstanding of CKM matrix which is fundamental quantity in the Standard Model of Particle Physics. In particular, weak decays of D and D_s mesons are the ideal candidates to probe $c \to s$ and $c \to d$ transitions. In present work, we study the leptonic decays of charmed meson within the covariant confined quark model (CCQM) framework which is the effective quantum field theoretical approach for studying the hadronic transition with builtin infrared confinement. Computed leptonic decay constants and bracnching fractions of vector mesons are compared with the most recent experimental observation from BESIII collaboration and other theoretical approaches.

Keywords: weak decays, charmed mesons, quark model

Abstract ID: RSMOPHY03

QUANTUM SENSING WITH NV CENTER QUBIT IN DIAMOND

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Nitrogen-vacancy (NV) centers in diamond are promising for quantum sensing and quantum information applications due to their exceptional spin properties, including coherence times lasting for milliseconds at room temperature. This work investigates how dipolar interactions within NV spin ensembles, influenced by surrounding spin baths, affect coherence properties such as dephasing time T_2^* and spin-echo time T_2. That work introduces a model describing the NV center's interactions with P1 spins and the resulting spin bath correlation time (τ_c). And mitigation techniques such as dynamical decoupling sequences, are introduced to extend coherence times and minimize dipolar-induced decoherence. This approach enhances quantum sensing by improving understanding of spin dynamics.

Keywords: NV center, Dipolar interaction, Spin bath, Coherence time, Dynamical decoupling

Abstract ID: RSMOPHY04

Structural, vibrational and optical properties of Bridgman grown $SbSnS_3$ crystal

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Ternary metal chalcogenides are known for their versatile electronic and thermal properties and therefore have become the topic of significant interest for advanced materials research. Looking at the literature survey, this seems to be the first report on the growth of a $SbSnS_3$ crystal with a 5.8 cm length and 1.0 cm diameter by the vertical Bridgman technique. The validation of the orthorhombic structure of $SbSnS_3$ is confirmed by the outcomes of powder X-ray diffraction pattern. The Raman spectra at room temperature depicted a prominent peak at 313.22 cm^{-1} which is attributed to the B_{2g} mode whereas that recorded at 80 K to 300 K revealed the red shifting in the prominent peak and also supports our XRD results. Optical reflectance spectroscopy substantiated that the $SbSnS_3$ crystal possesses a direct bandgap of 1.54 eV, rendering it a suitable candidate for potential solar cell applications. These findings provide a basis for exploring the potential applications of the $SbSnS_3$ crystal in thermoelectric and photo-response applications.

Keywords: $SbSnS_3$, crystal, Vertical Bridgman technique, XRD, Raman analysis

Abstract ID: RSMOPHY05

Defect Characterization in a Composite Slab Using Digital Holographic Interferometry.

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Early detection of defects or inhomogeneity and its characterization up to a good accuracy without damaging the material or its function is the demand of the present day industry, as it leads to lowering of failure costs, timely repairing or restoring of functionality, and hence a better circular economy. Digital Holographic Interferometry or DHI in transmission mode is used in present research as a non-destructive technique to characterize the thickness of inhomogeneity in between layers of a 25x25x24 mm glass-acrylic-glass composite with each layer of 8mm thickness. The air above the sample is heated using a heating rod with a tip diameter of 0.8mm thickness to provide stimulus to the sample, as it is moved at each step of 0.1mm along thickness of composite material. Using DHI technique holograms were recorded and upon reconstruction results shown an abrupt change in phase maps at the transition layers at 8mm and 16mm along thickness of composite which marked presence of defect or inhomogeneity. Although there are other optical techniques which are used in studying structure and microstructures of defect, they are usually limited to 2D. Our DHI technique in 3D was able to characterize defect or adhesive inhomogeneity thickness in between composite layers up to a good accuracy of 0.2mm and 0.3mm at transition interfaces from glass-acrylic and acrylic-glass respectively. To check the robustness of our technique the composite sample was also studied under microscope and the results were compared. The results and the research work serves as a bench mark to study any multilayer composite and characterize location of defect with the primary limitation for the material to be transparent or semi-transparent in nature.

Keywords: digital holographic interferometry, composite, defect characterization, transmission mode, optical technique

Abstract ID: RSMOPHY06

Highly sensitive TiO_2/MCM-48 humidity sensor as wearable multifunctional device

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A high-performance humidity sensor was fabricated using a mesoporous TiO_2/MCM-48 hybrid nanocomposite, demonstrating its efficacy in monitoring human breath patterns under varying physical conditions and enabling contactless gesture detection for the first time. The TiO_2/MCM-48 hybrid exhibited exceptional sensitivity across a wide range of humidity levels (11–98 %RH), achieving a remarkable four orders of magnitude change in resistance. This enhanced humidity sensing performance is attributed to the synergistic effects of TiO_2 and the high specific surface area provided by the mesoporous structure of MCM-48. The sensor displayed rapid response (8 s) and recovery (11 s) times, surpassing the performance of many state-of-the-art humidity sensors. Additionally, it exhibited minimal hysteresis, excellent repeatability, and long-term stability over 30 days, underscoring its potential for commercial and industrial applications. Notably, the TiO_2/MCM-48-based sensor demonstrated remarkable sensitivity in detecting finger proximity (~3 mm), swiping gestures, and human breathing patterns. It also proved capable of detecting subtle variations associated with sleep apnea, highlighting its versatility and applicability across diverse sensing scenarios.

Keywords: hybrid nanocomposite, response time, recovery time, hysteresis, sensitivity

Abstract ID: RSMOPHY07

Exploring WO_3-Based Mesoporous Silica Nanostructures for Humidity Sensing and Photo-catalytic Applications

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This investigation highlights the diverse applications of WO_3/KIT-5 nanostructures, offering an innovative approach to meet the increasing demand for advanced nanomaterials in environmental monitoring and remediation. The study examines the dual-functional capabilities of these nanostructures in humidity sensing and photocatalysis, capitalizing on the unique properties of KIT-5, a mesoporous silica framework known for its exceptional surface area (near about 800 m^2/g) and porosity, as an ideal host for tungsten doping. Synthesized via a hydrothermal method, the materials were comprehensively characterized to confirm the successful formation of KIT-5. Humidity sensing evaluations conducted across a wide relative humidity range (11–98%) reveal the outstanding performance of the WO_3/KIT-5 sensor, demonstrating a significant resistance drop with a 4.5-fold magnitude change, along with rapid response and recovery times. Additionally, leveraging the redox activity of tungsten within the nanostructures for photocatalytic reactions, the study reports enhanced efficiency in degrading organic pollutants under UV light. The nanostructures achieve superior catalytic performance, with up to 88% degradation of RB (Rose Bengal) dye, outperforming pristine silica, which exhibits a modest 49% adsorption efficiency.
This work emphasizes the versatility of WO_3/KIT-5 nanostructures, showcasing their potential to address contemporary challenges in humidity sensing and sustainable photocatalysis.

Keywords: WO_3, photocatayst , mesoporous materials , dye degradation

Abstract ID: RSMOPHY08

Defect induced magnetism in CuO nanostructures for magnetic and super-capacitive applications

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Nanotechnology, the framework of the next industrial revolution has shown tremendous applications in the field of magnetism.[1] The distinctive characteristics of magnetic nanostructures such as exchange bias effect, large uniaxial magnetic anisotropy (UMA) as compared to bulk materials have opened avenues for the evolution of novel devices like magnetic supercapacitors, ultrahigh density data storage devices and recording media.[2] In the present study, CuO nanorods has been synthesized by cost effective hydrothermal method and further treated with Ar gas environment. From XRD studies, no noticeable change was observed in pristine and Ar gas treated CuO nanostructures. The FESEM images reveal that the morphology has been changed from nano rods to sheet like after Ar gas treatment. The XPS and optical studies confirm the formation of point defects/oxygen vacancies in Ar treated CuO nanostructures. Magnetic measurements have been performed by SQUID magnetometer and exhibit enhanced magnetization in Ar treated CuO nanostructures, possibly due the change in morphology and formation of point defects/oxygen vacancies. super capacitive studies of Ar treated CuO nanostructures show enhanced energy storage as compare to untreated nanostructures.

Abstract ID: RSMOPHY09

Hydrogen bonding and Molecular Interaction in aqueous D-arabitol solution using a Time Domain Reflectometry Technique

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This research employs Time Domain Reflectometry (TDR) to demonstrate the intricate spectra of complex permittivity for aqueous d-arabitol solution across an extensive frequency spectrum ranging from 10 MHz to 30 GHz. The spectra corresponding to complex permittivity, derived from experimental data, were subjected to analysis through the application of the Cole-Davidson Model, utilizing a non-linear least squares fitting approach to determine the parameters associated with dielectric relaxation. The experimental measurements were performed at four discrete temperatures and different mole fractions of d-arabitol dissolved in water. The analysis of the dielectric parameters reveals that the relaxation time (τ) increases with increasing mole fraction of meso-erythritol (Xery) and the dielectric constant (ε0) somewhat decreases, suggesting increased interaction with solutes and decreased mobility of water molecules. This study investigates intermolecular interactions through the application of the Kirkwood correlation factor in conjunction with thermodynamic parameters. The theoretical dielectric constant of the mixture was calculated utilizing the hydrogen bonding model given by Alenka Luzar, which integrated various molecular parameters.

Keywords: Complex permittivity spectra, sugar alcohol, D-arabitol

Abstract ID: RSMOPHY10

Cu_2SnS_3 Nano-spheres as a Potent Therapeutic Agents: Exploring Their Antibacterial, Antioxidant, and Cytotoxic Competencies

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Cu_2SnS_3 (CTS) is potent substitute for conventional compounds due to adjustable bandgap, conductivity of p-type, adaptable morphology, easy to synthesize and superior thermoelectric properties. In this work, the CTS nano-spheres are synthesized by hydrothermal technique. The synthesized CTS nano-spheres are employed for the antibacterial, antioxidant, and cytotoxic application. Structural analysis by X-ray diffraction confirms cubic unit cell structure of CTS nano-spheres. The energy-dispersive X-ray analysis showed CTS nano-spheres to be copper-rich and tin-deficient. Scanning electron microscopy images revealed nano-spheres with needle-like surface features. The CTS nano-spheres possess direct bandgap of 1.58 eV, confirmed by diffuse reflectance spectroscopy. The antibacterial activity shows 100% activity index with higher zone of inhibition in *Listeriamonocytogenes* and *Staphylococcus aureus.* The antioxidant activity of CTS nano-spheres determined using the DPPH assay showed IC_{50} value of 61.60 µg/mL stating moderate antioxidant efficiency. The in-vitro cytotoxic analysis is carried out by employing A549 lung cancer cell lines. The in-vivo and vitro cytotoxic analysis provided the potent cytotoxicity of CTS nano-spheres, as reflected in LC_{50} value of 40·40 µg/ml and IC_{50} value of 57·75 ± 2·34 µg/ml. The mechanistic evolution of CTS nano-spheres for their antibacterial activity is proposed in this work. The leaching behavior of CTS nano-spheres revealed higher leaching of Sn^{4+} ions than Cu^{+} ions, contributing to their strong antibacterial activity. The zeta potential of CTS nano-spheres is found to be –30·70 mV, which showed less agglomeration of CTS nano-spheres, depicting an efficient antibacterial activity. The obtained results are rigorously analyzed and supported with relevant data.

Keywords: Cu_2SnS_3, hydrothermal method, antibacterial activity, antioxidant, in vivo/vitro cytotoxicity

Abstract ID: RSMOPHY11

Design And Simulation Of A Thin Galilean Beam Expander Using Metalens

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Various optical elements are used in applications such as microscopes, telescopes, cameras etc. Most of these elements are glass-based and are bulky, which complicates the creation of cost-effective, portable optical instruments. Metalenses, however, are two-dimensional, planar materials that provide excellent phase control with resolution exceeding the diffraction limit, allowing them to replace bulky glass-based elements. Beam expanders are one such commonly used elements in optical systems, but they are often large, with even the smallest models reaching up to 50mm in dimensions. In this study, a Galilean-type beam expander based on a single-substrate doublet metalens with a magnification of 4X is presented. The beam expander consists of a single SiO_2 substrate and polarization-insensitive TiO_2 nanopillars. To save computational cost, the size of the metalens doublet was kept at 3µm diameter for convex lens and 0.75µm for the concave lens, further, their focal lengths were in a ratio of 4:1 and numerical aperture of 0.44 for each lens. The entire simulation domain was 50×3.5×3.5µm and simulations were conducted using cloud-based Tidy3D. Beam intensity, diameter, and phase profiles were analysed at various planes to support our findings. Good correlation was observed between the beam diameter at different z-planes, with all three planes having beam profile FWHM of 2.9632µm, 2.8344µm and 2.7055µm respectively, even after propagating over a distance of 12µm. Further to verify the magnification, beam diameter was calculated from intensity profile at the out port and compared with the input beam diameter, in this study we obtained magnification of 3.779 (5.52% error) against the target magnification of 4. This study demonstrates how metalenses can potentially be used to create very compact optical elements that are otherwise bulky and costly, with comparable or superior performance to conventional elements.

Keywords: metamaterial, metalens, beam expander, diffraction limit, collimation, portable

Abstract ID: RSMOPHY12

Lateral Shearing Digital Holographic Microscope as Hematology Analyzer

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The purpose of disease diagnosis is being aided by many Digital holographic microscopy (DHM) techniques for stain-free and non-invasive study of human erythrocytes among which Lateral Shearing Digital Holographic Microscope (LSDHM) is the easiest self-referencing geometry [1]. The advantages include less no. of components thus making it both lightweight and cost-effective. It is temporally stable and works aptly for nanometer level thickness fluctuations. Using LSDHM, it was shown that the membranes of healthy red blood cells (RBCs) and sickle cell disease RBCs may fluctuate at different frequencies leading to classification of the cells [2]. A laser light passing through the sample kept on a translational stage followed by a microscope objective. A fused silica glass plate kept at an angle 45° to create 2 laterally sheared versions of object wavefront from the front and back surface of the plate. The interference pattern thus created is captured on a CCD. Holograms of object and area on glass slide not containing any object part are recorded and phase profiles extracted by subtracting one from another. Samples of Sickle-cell disease patients as well as those of healthy volunteers were collected. Thin blood smears from these samples were prepared and holographic images as well as videos of 20s collected for each sample. Physical and Mechanical Parameters extracted from the images and videos respectively are fed to machine learning algorithms [3]. The algorithm then classifies them into Sickle-positive and Sickle-negative cells and cluster based on the differences in parameters. Feature extraction techniques are applied to improve the classification accuracy.

Keywords: red blood cells, Digital Holographic Microscope, hologram, machine learning, disease

RSMOPHY13

Effect Of Different Light Sources on The Photocatalytic Efficiency Of Synthetic TiO_2-ZnO Hybrid Nanostructure

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In an attempt to counter the problem of treating wastewater more efficiently, we report the study on photocatalytic properties of metal oxide nanostructures under different light sources. A novel sonication-assisted refluxing method was employed to synthesize a binary heterostructure consisting of TiO_2 and ZnO. XRD and EDS analysis of synthesized materials confirm the presence of both TiO_2 and ZnO. Also, the change in the intensity of XRD peaks and elemental composition are well observed with a change in molar concentration of Ti and Zn. HR-TEM micrographs show nanostructures having hybrid Janus and Core-shell type structures. Raman spectra confirm the smaller ZnO particles attached over agglomerated TiO_2 as a shell layer as depicted in TEM results. Optical studies exhibit the modification in the band structure of the materials due to the formation of the heterostructure. The synthesized hybrid catalyst shows impressive results in photocatalytic performance. The catalytic potency of the prepared heterostructures under UV light is similar to Anatase while it performs better with an increment of Zn content under visible light. The photocatalytic performance of synthesized materials under sunlight shows their potential to be utilized as commercial catalysts for direct application in wastewater treatment. The kinetic study of the degradation data reveals interesting facets of the catalysis. It suggests that the photo-corrosion of the catalyst inordinately changes the rate of photocatalytic reaction which ultimately affects the photocatalytic efficiency of the catalyst. The study also discusses the role of kinetic and validation parameters in the selection of the best-fitted kinetic model with realistic arguments.

Keywords: TiO_2-ZnO, Core-Shell, Sonication-Refluxing, Photocatalysis, Wastewater treatment

RSMOPHY14

Hadronic weak decay $B_s^0 \rightarrow D_s^- \pi^+$ in covariant confined quark model

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Weak decays of B_s meson are one of the most interesting studies to test Standard Model and also in search for Physics beyond Standard Model. Particularly nonleptonic decays are important probe for the study of CP violation and indirect search of New Physics. With this motivation we study the weak hadronic decay $B_s^0 \rightarrow D_s^- \pi^+$ in the framework of covariant confined quark model that has built-in infrared confinement. We determine necessary transition form factors in complete kinematical range of momentum transfer. The form factors thus deduced are further used to compute branching fraction of the decay under study by employing naive factorization approach. We compare our result with latest precise measurements by LHCb as well as other available theoretical studies.

Keywords: Covariant confined quark model, weak decay, infrared confinement, factorization

Abstract ID: RSMOPHY15

Exploring concentration and temperature dependent Physico-chemical properties of methanol, Valeronitrile and their binary mixtures

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Pure methanol and Valeronitrile and their mixtures are credited most important polar solvents for advances in pharmaceutical, thermal, chemical, biological, and material technologies. A rigorous study for the characterization of hydrogen bonded heterogeneous intermolecular structures that formed in a mixed solvent based on alcohol with nitrile groups molecules is crucial to specific technological and industrial applications. Hence, in this work, The physico-chemical experimental approaches including the measurements of Refractive index (n), density (ρ) and viscosity (η) are applied and analyzed to explore the molecular interaction in mixtures over the entire concentration range (0.0, 0.1,…1.0) at different temperatures. The determined values n, ρ and η of binary mixtures were employed to calculate various derived parameters namely, molar refraction, atomic polarization, molecular radii, and internal pressure. We also computed excess parameters, such as excess refractive index, excess Gibb's free energy of activation as well as excess molar refraction, which can be either positive or negative depending on the properties of liquid mixes and have been explored in terms of molecular interactions and structural alterations. In order to predict the refractive index (n) and viscosity (η) for binary mixtures several mixing rules were applied and their validity have been tested for the same.

Keywords: Binary Mixtures, Molecular Interaction, Mixing Models, Refractive index, Viscosity

RSMOPHY16

Dielectric Relaxation Study of Methyl Acetate-Dimethyl Sulfoxide Binary Mixture Using Time Domain Reflectomtry (TDR)

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The Complex permittivity spectra of methyl acetate – dimethyl sulfoxide binary mixtures were measured across various concentrations at 25^0C within the frequency range of 10 MHz to 30 GHz. The static permittivity and relaxation time were obtained by applying the Cole–Davidson relaxation model to the complex permittivity spectra using the Least Squares fit method. To better understand the molecular interactions in the MeOAc–DMSO system, the Bruggeman factor, Kirkwood correlation factor were analyzed.

Keywords: Time domain reflectometry (TDR), methyl acetate, static dielectric constant, relaxation time and Bruggemna factor

Abstract ID: RSMOPHY17

Electron impact ionization cross section of ethyl amine and propyl amine

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In this study, we investigate the electron impact ionization cross section from ionization energy to 5000 eV using two formalisms, CSP – ic [1] and BEB [2]. The findings presented herein shed light on fundamental electron-amine interactions, offering valuable insights for diverse fields ranging from chemical kinetics to astrophysics.

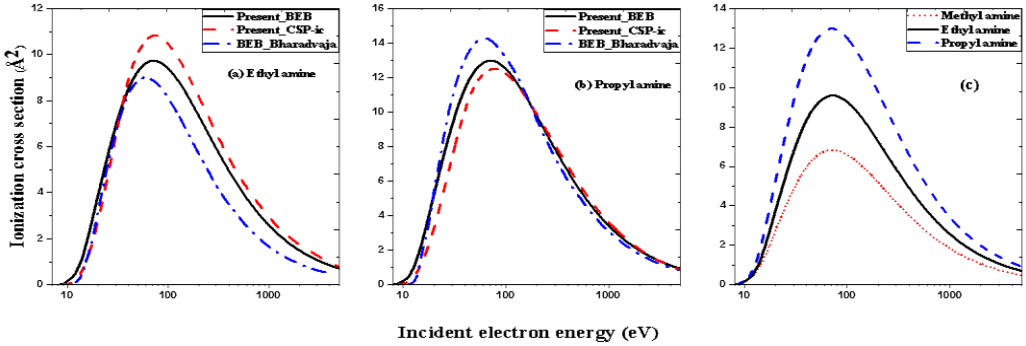

Figure 1. Ionization cross section (ICS) In the figure (a) and (b) Black solid line represents the calculated ICS with BEB, red dash line represents the calculated ICS with CSP-ic, blue dash dot line represent the BEB results of Bharadvaja et al.[3] for ethyl amine and propyl amine. Figure (c) represents the comparison of ICS among three amines methylamine (red short dot line), ethylamine (black solid line) and propyl amine (red dash line) obtained using BEB method.

Figure 1 (a, b) depicts the ICS for ethyl amine and propyl amine spanning from the IP to 5 KeV, computed using two distinct methodologies: BEB and CSP-ic. The ICS obtained through two distinct methodologies namely BEB and CSP-ic exhibit overall good consistency. Focusing on the ICS of ethyl amine, a comparison of the ICS values obtained from the CSP-ic and BEB methods indicates a general consistency across the energy range, although there is a minor deviation in the peak ICS.

Keywords: BEB, Ionization cross – section, amines, SCOP

Abstract ID: RSMOPHY18

Digital holographic imaging of thermal signatures: Heat flow visualization for sample detection

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Thermal loading induces a spatiotemporally varying temperature distribution in a test sample, leading to a spatiotemporal refractive index distribution. Digital holographic interferometry can be used for high contrast quantitative phase imaging of spatially and temporally evolving refractive index variations in dielectric mediums, arising due to temperature changes. Phase retrieved from numerically processed digital holograms recorded at different time instances can be compared to obtain this information. Since the thermal conductivity varies for materials, the thermal diffusion and hence the refractive index across them will also vary. Time varying optical path length distributions of the test sample under thermal stress, obtained from the phase maps retrieved from the recorded holograms, can be used to obtain this information. This leads to detection of regions having different thermal conductivities and hence identification of inhomogeneities in the test sample. Lens less Fourier transform digital holographic interferometry is a perfect tool to quantify optical path length distributions with nanometre accuracy to quantify spatiotemporally evolving refractive index distributions. In this technique, a single Fourier transform of the recorded hologram yields the spatial distribution of object phase, making it ideal for real time imaging and applications. Here we describe our efforts in the development lens less Fourier transform digital holographic interferometric technique for the imaging and quantification of spatiotemporally evolving refractive index distributions in test samples under thermal stress and its application in detection of surface and sub-surface inhomogeneities.

Keywords: Thermal loading, Spatiotemporal refractive index distribution, Digital holographic interferometry, Thermal conductivity, Lensless Fourier transform, Inhomogeneities detection

Abstract ID: RSMOPHY19

Cross Sections Studies For e^-- SiF_2

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Electron impact collision data are in increasing demand due to their utility in diverse fields of applied physics. Interest in electron interactions with highly reactive radicals, such as SiFx (x=1, 2, 3), etc., has grown recently in view of their importance in developing plasma devices. It is well known that a plasma environment is composed of many species such as electrons, molecules (in their ground and excited states), neutral radicals, ionic fragments, etc. Knowledge of the cross sections for electron interactions with these constituents is important in determining plasma properties and therefore is useful for plasma modeling. [1] Total cross section data is particularly important at low, intermediate and high energy due to the need for such data in modeling industrial plasmas and in ionosphere simulations. Here we have presented theoretical studies of electron impact various cross sections for SiF_2 for the incident energies starting from 0.1 eV- 2 keV range using two different formalisms. For low energy range starting from 0.1 eV- 15 eV we have used molecular R-Matrix formalism and after that we have employed Spherical Complex Optical Potential (SCOP) formalism. The results are compared with the available other results [2].

Key Words: Scattering,Total Cross Sections (TCS), Differential Cross Sections (DCS), Ionization, Cross Section (ICS), R-Matrix, Spherical Complex Optical Potential (SCOP)

Abstract ID: RSMOPHY20

Application of GIS in mapping the spatial distribution patterns of the Harappans and other Chalcolithic cultures in Gujarat, India

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Geography played a critical role in determining the settlements in the past. Therefore, a more comprehensive understanding of the relationship between heritage and its environment can be obtained by analyzing the heritage sites with a focus on various geographical factors. This can uncover distinct patterns of spatial distribution. Through the use of maps to present this information to the public, the knowledge thus acquired may prove essential for educating and creating public awareness. Anticipating this, the current study set out to determine the geographical factors that influence the spatial distribution patterns of Chalcolithic cultural heritage sites, such as the Harappan sites, and other sites, in Gujarat. The state of Gujarat shows a remarkable distinctiveness of Chalcolithic cultures such as the Anarta, Padri, Prabhas, Lustrous redware, Micaeous redware, and so on. The Sorath Harappan in Gujarat is also a unique regional culture that can be differentiated from the urban Harappan culture found elsewhere. Data regarding the sites and their location were obtained through a rigorous literature review and referring to different archaeological databases. The methodology used includes a number of tools available in ArcGIS 10.7, such as the Global and Local spatial autocorrelation methods like Moran's I and Getis ord, as well as other tools such as Nearest neighbour analysis and multi-ring buffer. The analysis done revealed the clusters and hotspots of different Chalcolithic cultural sites and their geographical background, such as geomorphology, distance to roads, distance to rivers, and so on. The GIS tool helped in overlaying different layers and analysing individual factors. A detailed understanding of the geomorphic contexts of the sites gave us information about the dominant geomorphic unit influencing the distribution of sites, eventually giving information pertaining to the environmental dynamics. Moreover, the distance from the roads derived can become useful in finding out the accessibility parameter while planning heritage tourism. The study provide a glimpse to the spatial distribution patterns of the Chalcolithic sites that will not only help planners to get a better picture of the heritage tourism potential but also will provide the general public with a readable and understandable broader perspective of the discoveries that have been made over the numerous decades of research, perhaps fostering a connection between people and their heritage.

Abstract ID: RSMPPHY01

Large-Area PEC-Type Photodetectors with Rapid Photo-response by Exploiting Band Bending at the $SnSe_2/Na_2SO_4$ Interface

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Due to ever-growing concerns about the energy crisis, self-powered devices have captured the prime focus of researchers. To address these concerns, $SnSe_2$ was selected for the fabrication of large-area self-powered photodetectors due to its exceptional photo-sensing properties and low temperature growth compared to other metal chalcogenides. In this study, $SnSe_2$ thin films were deposited using physical vapour deposition (PVD), which makes the fabrication process economic and easy to scale. The deposited thin films were annealed to improve the conductivity and crystallinity and then they were used as working electrodes for Photoelectrochemical-type photodetectors (PEC-PDs). It was observed that generation of internal electric field due to bend banding at the semiconductor/electrolyte interface resulted in accelerated separation of charge carriers leading to exceptional rapid photo-response. We achieved responsivity of (23.48 ± 0.8) µA/W, detectivity of (1.30 ± 0.05) x 10^8 Jones, rise time of 45 ms and decay time of 27 ms without applying any external bias. Our work showcases a cost-effective and scalable way to fabricate large-area PEC-type photodetectors with swift self-powered operation.

Keywords: Photo-detector, $SnSe_2$, Photo-electrochemical, TMDC, Thin-film

Abstract ID: RSMPPHY02

Enhanced Electrical and Photo-response Properties of Indium-Doped ZnO Thin-Film Transistors via Au Nanoparticle Decoration

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Metal-Oxide (MOS) Thin Films are of increasing interest for the next generation electrical device application. Enhancing the electrical properties of MOS thin films plays important role for the improved quality of the devices. Herein we present the influence of Au Nanoparticles (Au-NPs) on the electrical properties of Indium doped Zinc Oxide thin films transistors (IZO-TFT). Single side polished, highly doped N-type (with resistivity <0.0005 Ωcm) Si wafer (100 orientation) was considered as the substrate in our experiment, which acts as a gate metal in IZO-TFTs. Three IZO-TFT samples were prepared, one without Au-NPs, second with Au-NPs between the interface of Si-SiO_2 substrate and IZO thin film and third on the surface of IZO thin films. Deposition of multilayer IZO thin film was carried out using sol-gel spin coating method. Au-NPs was deposited on Si-SiO_2 substrate and on IZO thin film substrate using thermal evaporation technique. Step annealing of all the IZO deposited films were carried out 400°C in N_2 atmosphere. Source-Drain contacts were patterned on the samples with Ti-Au using photolithography process. Thin film characterizations such as FESEM, XRD, Resistivity via 4-probe measurement and TFT characterizations such as Temperature-Dependent Electrical Measurements, Transfer, Output and Photo-response Characteristics were studied on the fabricated Au decorated IZO-TFTs.

Keywords: Au Nanoparticles, IZO thin film transistor, Sol-gel Spin coating, photolithography, electrical characteristics and photo-response.

Abstract ID: RSMPPHY03

Growth and thermal analysis of $SnSe_{0.1}Te_{0.9}$ single crystals

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In the present investigations, attempts were made to grow the single crystals of SnSe mixed with Te (Tellurium) with proper stoichiometric proportion (abbreviated as $SnSe_{0.1}Te_{0.9}$). The growth of semiconducting single crystals was achieved by direct vapour transport technique. As thermal analysis provide valuable information on materials selection, measurement condition optimization, performance prediction and quality improvement of grown sample, in this present work, thermogravimetric analysis (TGA), derivative thermogravimetry (DTG) and differential thermal analysis (DTA) were used to determine the thermal behavior and purity of the grown crystals. Thermodynamic parameters such as activation energy (E_a), enthalpy (DH), entropy (DS) and Gibbs free energy (DG) , change of the decomposition were calculated using Coats-Redfern and Broido models.

Abstract ID: RSMPPHY04

Designing Of 3d Printed Digital Holographic Microscopic(Dhm) System

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Many applications of digital holography have been proposed in the last two decades such as in the fields of biomedical imaging, surface metrology, etc. It's adoption at an industrial scale remains limited due to complexity of setup, cost of high precision components, real-time processing challenges, portability and scalability issues. In this abstract, a design of low-cost and field-portable digital holography microscopic system is presented with dimensions of $13.5cm \times 9cm \times 15cm$ in vertical configuration with about 90% 3-D printed components. The entire structure is made up of ABS (Acrylonitrile Butadiene Styrene) which is strong, durable and versatile and could hold temperatures up to to 105℃. The overall design is very light because 1CC of the ABS material weights just 1.03 grams. The entire 3D geometry is constructed on a single base making it less prone to misalignment. Some of the components offer modularity and could be removed or replaced as per requirements. Vibration isolation for the system is achieved using a insulating base.

Keywords: DHM, 3-D design, portable, compact, vibration isolation

Abstract ID: RSMPPHY05

Quantification Of Fluid Flow Velocity Using Laser Speckle Contrast Imaging

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Laser Speckle Contrast Imaging (LSCI) is widely used for analyzing motion by studying speckle contrast variations. LSCI has been used earlier to visualize blood flow in tissues. It is mostly limited to flow visualization rather than quantification. More accurate quantification of fluid flow in biology and industry could be of great importance and it could potentially provide information on viscosity, temperature changes, etc., with minimal optical elements in a contactless manner. This study uses a laser light source and a beam expander to illuminate the fluid tube, and an imaging camera to capture the images. For this, we chose milk as a sample because its particles scatter light effectively, generating speckle patterns. Flow was controlled using a medical-grade syringe pump. Laser speckle contrast images were retrieved from raw speckle images at various flows by using the spatial contrast analysis method. Further from spatial contrast, we have calculated the decorrelation time. Then the decorrelation time was used to estimate the flow velocity of the milk. The velocities obtained from the experiment ranged from 1.93 to 2.08 mms^{-1}, corresponding to actual velocities in the range of 1.77 to 2.48 mms^{-1}, with a maximum error of ±8%. This approach indicates the usability of LSCI in quantification of fluid flows, in a non-contact, non-invasive manner. Its relatively simple setup ensures cost reductions and a compact system.

Keywords: **Laser Speckle Contrast Imaging, flow velocity, spatial contrast, decorrelation time**

Abstract ID: RSMPPHY06

Anisotropic Self-Biased Photodetector based on $ReSe_2$ Single Crystals

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Transition Metal Dichalcogenides (TMDCs) have garnered significant attention for their versatility across fields like optoelectronics, photonics, sensing, and energy applications. These two-dimensional materials exhibit remarkable properties such as tunable band gaps, high carrier mobility, strong light absorption, and efficient exciton generation, making them ideal for advanced technological applications [1,2]. Among TMDCs, Rhenium Diselenide ($ReSe_2$) stands out as a relatively underexplored material with unique properties, including a direct band gap, optical biaxiality, and pronounced in-plane anisotropy[3,4]. This study focuses on the growth of $ReSe_2$ crystals using the DVT technique, with comprehensive basic characterizations conducted to validate the properties of the synthesized compound. These fundamental characterizations encompass Powder X-ray Diffraction, Scanning Electron Microscopy, Energy Dispersive X-ray Spectroscopy (EDAX), Raman Spectroscopy, and UV-VIS Spectroscopy. Leveraging the unique properties of $ReSe_2$ crystals, we developed a high-performance anisotropic self-biased photodetector. The photodetection capabilities of the crystals were systematically evaluated under varying conditions, including different white light intensities, bias voltages, and wavelengths spanning the visible and infrared regions. The study also delves into the anisotropic behavior arising from the material's distinctive layered structure in the context of in plane and out of plane contacts. The promising results underscore $ReSe_2$ as a strong candidate among 2D TMDCs for advanced electrical and optoelectronic applications.

Keywords: TMDC materials (2D materials), $ReSe_2$, Direct Vapor Transport (DVT), Basic characterizations, Photodetector

Abstract ID: RSMPPHY07

Estimation Of Micro-Structural Parameters of $Mose_2$ Crystal: A Comparative Approach Across Various Models

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In recent years, layered transition metal dichalcogenides (TMDCs) have gained significant attention due to their remarkable chemical and physical properties, making them prominent candidates for applications in optoelectronics, energy storage, photocatalysis, etc[1]. Molybdenum diselenide ($MoSe_2$) is one of the popular members of the TMDC family due to its layer-dependent optical properties. The direct vapor transport technique is employed for the synthesis of $MoSe_2$ crystals. The structural characterization was performed using the powder X-ray diffraction technique, which revealed that the grown crystal has a 2H-hexagonal structure. Crystallite size is one of the important parameters that influences the physical and chemical properties[2].For that, various models with different assumptions were analyzed, including the Modified Scherrer, Williamson-Hall (Uniform deformation model, Uniform stress deformation model, Uniform deformation energy density model), Halder-Wagner, and Size-strain models[3]. The obtained crystallite sizes from various models were compared.The strain and dislocation density were also determined using some of the models.

Keywords: TMDCs, Molybdenum diselenide($MoSe_2$), Williamson Hall plot, Crysatallite size

Abstract ID: RSMPPHY08

Optimized Liquid Phase Exfoliation of $TiSe_2$ in NMP for Nanoflakes Synthesis

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The emergence of layered 2D materials, particularly the transition metal chalcogenides (TMDCs) have attracted significant interests from both scientific and technological perspectives in the field of electronic and optoelectronic devices[1,2]. Their van der Waals layered structure provides the excellent material integrity with dangling bond free surface and higher carrier mobility, even when their thickness reduces from bulk to monolayer[3,4]. Among, TMDCs titanium diselenide ($TiSe_2$) offers remarkable properties such as large interlayer spacing, tuneable bandgap, higher electrical conductivity and high thermodynamic stability[5,6]. Despite these exciting physical attributes, $TiSe_2$ has not been explored much previously. In the present study, we demonstrate the synthesis and characterization of $TiSe_2$ nanoflakes for potential applications in future electronic and optoelectronic devices. Bulk crystalline $TiSe_2$ powder was synthesized using the direct vapor transport technique. To confirm its crystallinity, vibrational properties, and surface morphology, we performed powder X-ray diffraction (PXRD), Raman spectroscopy, and field emission scanning electron microscopy (FESEM), with energy-dispersive X-ray spectroscopy (EDAX) for elemental analysis. Subsequently, $TiSe_2$ was exfoliated via sonication in liquid phase (LPE), followed by centrifuged to obtain nanoflakes. The resulting $TiSe_2$ nanoflake solution was further characterized using Raman spectroscopy and high-resolution transmission electron microscopy (HRTEM) to confirm the nanoflake and its crystallinity.

Keywords: 2D materials, TMDCs, $TiSe_2$, Liquid phase exfoliation, Electronic and Optoelectronic Devices

Abstract ID: RSMPPHY09

Collective Excitation in Zr-based Multi-Component Metallic Glasses

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This study investigates the vibrational dynamics of Zr-based multi-component metallic glasses through phonon dispersion analysis derived from the spectral function, obtained via the Fourier transform of the mass-current correlation function. The dispersion curves reveal distinct longitudinal and transverse acoustic branches, enabling the extraction of sound velocities, elastic moduli, and insights into dynamic stability. The influence of composition on vibrational density of states and energy dissipation is examined, highlighting the role of atomic-scale interactions in governing mechanical and thermal properties. These findings advance the understanding of vibrational behaviour in metallic glasses and inform their design for advanced applications.

Keywords: Metallic Glasses, Vibrational Dynamics, Molecular Dynamics Simulation, Mass-Current Autocorrelation Function, Phonon Dispersion

Abstract ID: RSMPPHY10

Remote And Non-Contact Spatial Temperature Variation Assessment Using Digital Holographic Interferometry

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Digital holography offers comprehensive three-dimensional information about an object, capturing both its intensity and phase data. It can detect even minute deformations at the nano-meter scale with high sensitivity and precision. This capability is leveraged for studying thermal expansion on metal surfaces by comparing phase profiles extracted from recorded digital holograms of the thermally loaded object (metal plate) at different time intervals. By calibrating the deformation of the metal surface with temperature changes, it becomes possible to measure temperature variations remotely and without physical contact across the object's surface. Lens-less Fourier transform digital holography is employed for this purpose due to its simple hologram recording setup and the rapid numerical reconstruction of the hologram. The process involves only a single inverse Fourier transform calculation of the recorded digital hologram to extract the object's phase at any given moment. This efficient method allows for near real-time temperature variation measurements.

Abstract ID: RSMPPHY11

Investigation of Red Blood Cell Behavior in Fluids: A Combined Simulation and Experimental Approach

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Red blood cell (RBCs) membrane demonstrates dynamic and adaptive physiological responses to the varying surrounding fluidic environments. The pH (osmolality) of the fluidic environment affects the physical (volume, surface area etc.) and mechanical properties (elasticity, bending modulus etc.) of the cell membrane and the cell shape. Therefore, these of the cell are the first-hand pointers to the health of the cells and play an important role in precursory diagnosis of RBC related diseases. Digital holographic microscopy (DHM) is a high-resolution, label-free imaging technique that captures the 3D structural changes in RBCs. The time series of the optical phase recorded in the holograms can be used to extract information on localized lateral and axial changes of the cell membrane and, hence, the mechanical properties. The present study integrates the DHM experimental investigations and computational simulations to examine the change in the RBC membrane properties and shape under different fluidic environments.

Keywords: Red Blood Cell, DHM, dynamics

Abstract ID: RSMPPHY12

Temperature-Dependent Rf Dielectric Response of Tungsten Diselenide (Wse_2)

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The transition metal chalcogenides have attracted considerable attention during the past few years due to distinctive and remarkable properties based on the significant degree of anisotropy of the layered crystal structures. These MX_2 (M:transition metal; X :chalcogen) compounds are formed by a layer of transition metal atoms between two layers of selenium atoms. WSe_2 consists of single Se and W layers. These materials are used in diverse applications such as catalysis, batteries, lubricants, fabrication of photoelectrochemical (PEC) solar cell for solar energy conversion and electrodes for supercapacitor. The dielectric properties of WSe_2, however, remain underexplored. This prompted us to carry out detailed study of its dielectric response at different temperatures and frequencies, which includes the measurement of complex dielectric permittivity (ε*), complex electric modulus (M*), complex impedance (Z*), and complex conductivity (σ*) in the radio frequency (RF) range. The variation of these parameters provides insights into the material's electrical behaviour under various conditions, such as temperature and frequency, and are crucial for understanding how WSe_2 behaves in electronic and energy-related applications. This study can contribute the gap between existing literature and guide the way for further applications in energy devices and fabrication of electronic components.

Keywords: WSe_2, Complex dielectric permittivity, Complex impedance, Complex conductivity

Abstract ID: RSMPPHY13

Compositional Dependence of Al Alloyed Zr-Cu Metallic glass on Thermodynamical and Physical Properties.

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Bulk Metallic Glasses (BMGs) are formed by rapidly cooling molten alloys to avoid crystallization. Despite advances, the dynamic arrest phenomenon, where atomic mobility dramatically slows as the material transitions from a supercooled liquid to a glassy solid remains poorly understood. Here, we performed classical MD simulation of $Zr_{50}Cu_{50-x}Al_x$ and $Cu_{50}Zr_{50-x}Al_x$ where (x = 5,10,15,20,25,20,40) to analyse effect of Al alloying in structure and thermodynamics. The specific heat (Cp) is found to be maximum for $Cu_{50}Zr_{35}Al_{15}$. The excess entropy S_2 calculated for both the system shows $Cu_{50}Zr_{50-x}Al_x$ has higher entropy (so called High entropy metallic glass) as compared to $Zr_{50}Cu_{50-x}Al_x$. The physical properties like Bulk modulus, Shear modulus and Yield strength for both the system has been carried out and result shows $Cu_{50}Zr_{50-x}Al_x$ system has durable physical properties compared to $Zr_{50}Cu_{50-x}Al_x$. The study of composition dependence of structure and thermodynamics elucidate the correlation between physical and thermodynamical properties.

Keywords: Bulk Metallic Glass, Classical MD, Excess Entropy, Specific Heat, Bulk Modulus, Yield Strength

Abstract ID: RSMPPHY14

Thermal Decomposition Study of Cadmium Oxide (CdO) Nanoparticles

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The CdO nanoparticles (NPs) are synthesized by co–precipitation method using sodium hydroxide as a precipitating agent and cadmium nitrate as a precursor. The process involves the formation of cadmium hydroxide as an intermediate, which is subsequently calcined to yield the CdO NPs. Cubic unit cell structure and crystallite size of synthesized CdO NPs areconfirmed by X-ray diffraction analysis. Thermal decomposition study of synthesized CdONPs is carried out by thermogravimetric, differential thermal and differential thermogravimetric analysis. The thermocurves are recorded simultaneously in N_2 atmosphere for four different heating rates of 5, 10, 15 and 20 $K \cdot min^{-1}$. Calculation of kinetic parameters such as activation energy (E a), phonon frequency factor (A), enthalpy change (ΔH*), entropy change (ΔS*) and Gibbs free energy change (ΔG*) are carried out by employing Kissinger-Akahira-Sunose and Flynn-Wall-Ozawa methods. The obtained results are discussed indetail.

Keywords: CdO, nanoparticles, thermal decomposition, thermal parameters

Abstract ID: RSMPPHY15

Investigation Of Dielectric Response of Binary Mixtures of N, N-Dimethylacetamide And N-Nonanol

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A precision LCR meter fitted with a liquid dielectric cell was used to determine the complex dielectric function, $\varepsilon*(\omega) = \varepsilon' - j\varepsilon''$, of binary mixtures of n-Nonanol and N, N-dimethylacetamide (DMA). Measurements were conducted across a frequency range of 100 Hz to 2 MHz, maintained at a constant temperature of 293.15 K. Binary mixture systems of these polar liquids were prepared in hermetically sealed glass bottles at 11 different concentrations, varying the mole fraction of Dimethylacetamide (DMA) in n-Nonanol. The electrical and dielectric properties of the liquid samples are defined through intensive quantities, including the complex permittivity spectra (ε'(ω) & ε''(ω)), complex modulus spectra (M'(ω) & M''(ω)), and complex conductivity spectra (σ'(ω) & σ''(ω)), as well as the extensive quantity of complex impedance spectra (Z'(ω) & Z''(ω)). The value of ε' decreases with increasing frequency and then remains constant beyond a certain frequency. The ε'' values in the spectra for DMA, n-Nonanol, and their binary mixtures exhibit a linear decrease with increasing frequency. These study reveals various processes influencing the electrical and dielectric properties of mixtures containing two polar liquids.

Keywords: Precision LCR meter, Dimethylacetamide (DMA), n-Nonanol, Complex Permittivity Spectra, Dielectric Properties

Abstract ID: RSMPPHY16

Thermal Stability and Kinetic Analysis of Mixed-Phase Anatase-Bronze TiO_2 and Its Cr- and Ce-Doped Variants

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This study examines the thermal stability and decomposition kinetics of mixed-phase (MP) titanium dioxide, comprising anatase and bronze phases, along with its Cr- and Ce-doped variants. X-ray diffraction (XRD) analysis confirmed the phase composition and structure, with slight shifts in 2θ angles observed in the doped samples, indicating successful Cr and Ce incorporation. Thermogravimetric profiles recorded from ambient to 1200 K under a nitrogen atmosphere revealed a two-step weight change profile for MP, Cr-doped, and Ce-doped TiO_2. Kissinger's method was applied to evaluate thermodynamic parameters, including activation energy (E_a), Arrhenius constant (A), enthalpy (ΔH*), entropy (ΔS*), and Gibbs free energy(ΔG*), for all three materials. The analysis conveyed the non-spontaneous disintegration of each sample. This comprehensive thermal study highlights the stability and kinetic behavior of MP TiO_2 and its doped variants.

Keywords: Titanium Dioxide, Metal Oxide, Chromium, Cerium, X-Ray Diffraction, Thermal Analysis

Abstract ID: RSMPPHY17

Comparative Analysis of 2D Grid and 1D (Horizontal and Diagonal) Sinusoidal Fringe Patterns for Phase Reconstruction Accuracy in Deflectometry

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In optical deflectometry, accurate phase reconstruction is essential for 3D reconstruction and surface profiling. This study compares 2D (grid) and 1D (horizontal and diagonal) sinusoidal fringe patterns to assess their phase reconstruction accuracy. 2D Gaussian surface of peak height 10 rad is simulated and the mean absolute error (MAE) in the reconstructed phase using the 2D, 1D horizontal, and 45° oriented (diagonal) are calculated as 2.91×10^{-5} radians, 0.23 radians, and 0.22 radians, respectively. An experiment is also performed to check the feasibility of using a 2D sinusoidal grid pattern for the surface profiling of a 5cm focal-length plano-convex lens. Both experimental and simulation results showed that type and geometry of fringe pattern play a significant role in phase reconstruction accuracy, with 2D sinusoidal grid pattern giving the best results for detailed phase information.

Keywords: Horizontal Sinusoidal Pattern, Diagonal Sinusoidal Pattern, 2D Sinusoidal Grid Pattern, Deflectometry

Abstract ID: RSMPPHY18

Electrical and Optical Properties of Indium-Doped SnSe Crystals for Enhanced self-bias Photodetection Applications

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This research explores alloy engineering as a strategy, with a focus on the impact of indium (In) doping on their properties. Using the direct vapor transport (DVT) technique, indium-doped SnSe crystals were synthesized successfully. Energy Dispersive X-ray Analysis (EDAX) confirmed the elemental composition of the synthesized crystals, while Scanning Electron Microscopy (SEM) revealed flat surfaces with layered growth in the $In_XSn_{1-X}Se$ (X = 0.25, 0.50) crystals. Structural analyses using X-ray Diffraction (XRD) and High-Resolution Transmission Electron Microscopy (HR-TEM) confirmed the orthorhombic structure of the ternary alloys, with indium doping causing slight shifts in diffraction and Raman peaks. Raman spectroscopy showed a shift to higher wavenumbers upon indium doping, indicative of lattice modifications. Anisotropic charge conduction was observed through temperature-dependent measurements of in-plane and out-of-plane resistivity, further highlighting the impact of doping. The optical bandgap of the $In_XSn_{1-X}Se$ (X = 0.25, 0.50) crystals, measured via UV-Visible spectroscopy, suggests their suitability for photodetection applications. Notably, $In_{0.5}Sn_{0.5}Se$ exhibited high photodetection performance under polychromatic light in self-bias mode. Key photodetection parameters, including photoresponsivity (R) and spectral detectivity (D*), were evaluated, underscoring the potential of indium-doped SnSe crystals for advanced photodetector applications.

Keywords: In-doped SnSe; Structural properties; Electrical and optical properties; self-driven Photodetector application

Abstract ID: RSMPPHY19

Fabrication and Characterizations of Low Powered Photoelectrochemical Type Photodetector Based on $AgBiS_2$ Thin Film

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Dimetal chalcogenides are ternary compounds that find extensive use in memory applications, photovoltaic systems, optoelectronics, and thermoelectric generators [1]. $AgBiS_2$ (silver bismuth sulfide) is a promising novel semiconductor for high performance photovoltaic applications as charge transporter due to its suitable bandgap and high absorption coefficient. In the present study, $AgBiS_2$ compounds were successfully grown using the direct vapor transport (DVT) technique and thin film deposition of $AgBiS_2$ using the thermal evaporation method. Structural and morphological characterizations of grown film were carried out using XRD, FE-SEM with EDAX, and Raman spectroscopy. We have fabricated photoelectrochemical type photodetector based on the $Na_2SO_4/AgBiS_2$ interface and determined evaluation parameters such as rise time, decay time, responsivity, and detectivity at different intensities and biases under a 405 nm laser source.

Keywords: Decay time, Detectivity Thermal evaporation, Rise time, Responsivity, Detectivity

Abstract ID: RSMPPHY20

Studies on Structural and Optical Characterization of Indium Selenide (InSe) grown by Direct Vapour Transport (DVT) Technique

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Direct vapor transport (DVT) technique has emerged as a promising method for growing high-quality semiconductor crystals, particularly for compounds with complex stoichiometry. In this research, we present a systematic investigation of Indium Selenide synthesis using the DVT method under precisely controlled growth parameters. High-purity Indium metal ingot (99.98%) and Selenium (99.99%) powder in stoichiometric ratio were thoroughly mixed and sealed in a quartz ampoule under high vacuum conditions (10^{-6} torr) to prevent oxidation and ensure phase purity. The growth process was executed in a custom-designed dual-zone horizontal furnace, where precise temperature gradients were maintained between the source and growth zones to facilitate controlled crystallization via reaction in vapour phase and mass transport to the growth zone. The structural characterization of the grown ingot was comprehensively analysed using Powder X-ray diffraction (PXRD) technique. Detailed structural analysis was performed by extracting various crystallographic parameters. The crystallite size (D) was calculated using Scherrer's formula, while micro strain (ε) and dislocation density (δ) were evaluated to assess crystal quality and defect concentration. The lattice parameters were refined and compared with standard JCPDS card data #00-034-1431 to confirm the phase purity and structural configuration. Phase analysis confirmed the formation of single-phase Indium Selenide (InSe) ingot with nearly defined crystallographic orientation. This study not only demonstrates the successful implementation of the DVT technique for growing high-quality Indium Selenide ingot but also provides a comprehensive understanding of their structural properties through detailed XRD analysis. Optical studies also shows optical bandgap nearly same as per earlier reports. The grown ingot show promising characteristics for potential applications in optoelectronic devices, photodetectors, and next-generation electronic components.

Keywords: DVT, Indium Selenide, PXRD, crystallite size, optical bandgap

Abstract ID: RSMPPHY21

Synthesis and Characterization of Er_2O_3/KIT-6 Nanocomposite for Humidity Sensing Applications

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Humidity sensing materials are vital in a wide range of applications, including environmental monitoring, industrial processes, and healthcare. In this study, the synthesis and characterization of an Erbium oxide Er_2O_3/KIT-6 nanocomposite for use in humidity sensors is reported. KIT-6, a mesoporous silica material with a three-dimensional cubic structure, was chosen as the host matrix due to its large surface area and uniform pore size distribution, enhancing the dispersion and functionality of Er_2O_3 nanoparticles. The nanocomposite was synthesized via a hydrothermal method, ensuring a uniform distribution of Er_2O_3 within the KIT-6 framework. The structural properties of the nanocomposite were analyzed using X-ray diffraction (XRD), which confirmed the crystalline phase of Er_2O_3 and the retention of the ordered mesoporous structure of KIT-6. Small-angle X-ray scattering (SAXS) further verified the integrity of the KIT-6 framework and provided insights into the meso-structural organization. The Brunauer-Emmett-Teller (BET) method was employed to measure surface area, pore size, and pore volume, demonstrating significant textural properties crucial for humidity sensing. The functional performance of the nanocomposite as a humidity sensor was evaluated, revealing high sensitivity, rapid response/recovery times, and excellent reproducibility across a wide range of relative humidity levels. This comprehensive study highlights the synergistic advantages of combining Er_2O_3 with KIT-6, providing a promising pathway for developing advanced nanocomposite-based humidity sensors with enhanced performance and stability.

Keywords: Mesoporous silica, Humidity sensors, Recovery time, Response time, Hydrothermal method

Abstract ID: RSMPPHY22

Investigations Of The Optical Properties Of $Cofe_2o_4$ Nanoparticles Synthesized Via Auto Combustion Sol-Gel Method

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The $CoFe_2O_4$ (cobalt ferrite) nanoparticles prepared by citric auto combustion sol-gel method. $CoFe_2O_4$ nanoparticles are synthesized using ferric nitrate, cobalt nitrate and citric acid using. This study explores the optical properties of synthesized $CoFe_2O_4$ nanoparticles, mainly determining parameters such as extinction coefficient, skin depth, optical density, refractive index, Urbach energy, and dielectric constant. The optical bandgaps were determined, direct and indirect bandgap values of 5.46 eV and 5.25 eV, respectively. The Urbach energy found as 5.16 eV, indicating significant band tailing. The wavelength corresponding to the intersection of the real and imaginary dielectric functions is 205nm, closer to the absorption band edge 202 nm. These findings provide insights into the optical behavior and potential applications of in optoelectronic and magnetic devices.

Keywords: $CoFe_2O_4$ nanoparticles, UV-Vis spectroscopy, Optical band gap, Urbach Energy

Abstract ID: RSMPPHY23

Smartphone Camera and Geometry Setting in Colorimetric Measurement for analyte detection

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Smartphone-based colorimetry offers a promising solution for low-cost and low-resource laboratory methods; however, its accuracy is often limited by experimental geometry and camera settings. This study evaluates the influence of these parameters on colorimetric measurements where color changes on varying the concentration, focusing on the stability of color spaces such as HSV and CIELab. The chemically impregnated Albumin sensor from urine dipsticks was employed to observe colorimetric variations under five distinct camera exposure settings (-1.3 to +1.3) and varying geometric arrangements. Results indicate that “Hue” in HSV and “a” and “b” in CIELab exhibit minimal variability, highlighting their potential for robust colorimetric analysis. The findings underscore the critical need to standardize camera exposure and experimental geometry for precise analyte quantification in smartphone-based diagnostic applications. This study provides valuable insights into optimizing smartphone-based colorimetry for reliable and reproducible measurements.

Keywords: smartphone-based colorimetric, HSV, CIEL*a*b color space, RGB

Abstract ID: RSMPPHY24

Study Of Photocatalytic Activity Of Wo_3 Nanoparticles Synthesized By Hydrothermal Method

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In this study, we synthesized tungsten oxide (WO_3) nanoparticles (NPs) using the hydrothermal method, with sodium tungstate dihydrate ($Na_2WO_4•2H_2O$) as a precursor material and hydrochloric acid (HCl) as a precipitating agent. Structural properties of the WO_3 NPs were characterized using Powder X-ray Diffraction, Raman Spectroscopy and UV-Vis Spectroscopy with the band gap estimated from Tauc's Plot. The photocatalytic activity of the WO_3 NPs was investigated for the degradation of Rhodamine B (RhB), Methylene Blue and Methyl Orange organic dyes under UV light exposure. Comparative studies were conducted to analyze the photocatalytic performance of the synthesized WO_3 nanoparticles across these different organic dyes.

Keywords: nanoparticles, hydrothermal method, organic dyes, photocatalytic activity

Abstract ID: RSMPPHY25

Analysis Of Multi-Wavelength in Digital Holography for Phase Reconstruction

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Digital holography is a powerful imaging technique widely used for phase reconstruction, offering a robust and non-invasive method to analyse surface topography and optical properties. This study explores the role of single-wavelength illumination in digital holography and aims to show a practical relationship between wavelength selection and phase reconstruction accuracy. A Michelson interferometer is simulated using the optical engineering software FRED by photon engineering. In the simulation setup, the object arm consists of a diffusive surface with a step height to introduce surface irregularities. Holograms are generated for wavelengths in the range of 400-670 nm using one wavelength at a time and the accuracy of reconstructed phases is analysed. This approach was used to correctly analyse the phase reconstruction for multiple wavelengths and highlight the impact of wavelength selection on resolving the features of irregularities. The results provide insights into wavelength-specific behaviour in digital holography, offering a better understanding of designing holographic systems suited for applications like surface metrology, material analysis, and biomedical imaging.

Keywords: digital holography, phase reconstruction, Michelson interferometer

Abstract ID: RSMPPHY26

Synthesis, Characterization And Application Of Niobium Pentoxide (Nb_2o_5) Nanoparticles As A Photocatalyst

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This study investigates the synthesis, characterization and photocatalytic application of niobium pentoxide (Nb_2O_5) nanoparticles. The nanoparticles were synthesized using the co-precipitation method, followed by calcination at 700°C to achieve the orthorhombic phase structure.Comprehensive characterizations were performed to study the structural, optical and vibrational properties of synthesized Nb2O5 nanoparticles. X-ray diffraction (XRD) analysis confirmed the orthorhombic phase, while UV-visible spectroscopy was utilized to determine the optical bandgap using Tauc's plot, yielding a direct bandgap of 2.4 eV. Raman spectroscopy further supported the structural confirmation, with a prominent vibrational peak at 684.36 cm^{-1} attributed to Nb-O-Nb bridging in the distorted NbO_6 octahedra. The photocatalytic efficiency of the synthesized Nb_2O_5 nanoparticles was evaluated by studying the degradation of Rhodamine B (RhB) dye under UV light in a photocatalytic reactor. The results demonstrated an 85% degradation of RhB dye after 5 hours of UV exposure, highlighting the material's potential as an effective photocatalyst for organic pollutant remediation.

Keywords: Nb_2O_5, Photocatalysis, Photocatalytic Reactor, Co-Precipitation method, RhB Dye

Abstract ID: RSMPPHY27

"Effect of Hydroxyl Group Configuration on the Dielectric Behavior of Alcohols"

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This research explores the influence of hydroxyl group number and position on the dielectric properties of mono-, di-, and tri-hydric alcohols. Time-domain reflectometry (TDR) was employed to measure dielectric constants (ε_0) and relaxation times (τ) over a frequency range of 10 MHz to 30 GHz at 25°C. The study reveals a clear correlation between the number and arrangement of hydroxyl groups and the dielectric behavior. Alcohols with multiple hydroxyl groups exhibit higher ε_0 and τ values, attributed to increased hydrogen bonding and dipole-dipole interactions. The effect of number of carbon abom on the dielectric properties of alcohols was also studied. The Krickwood correlation factore was studied to understand the effect of hydroxyl group on the orientation of electric dipoles. These findings have significant implications for materials science, electronics, and chemical engineering, enabling the design of materials with tailored dielectric properties and the optimization of alcohol-based processes.

Keywords: Hydroxyl group, Kirkwood correlation factor, TDR, Dielectric permittivity

Abstract ID: RSMPPHY28

Laser speckle-based sensor for sub-micrometer deformation measurements

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Laser speckle patterns provide valuable insights into the state and deformation of a sample by capturing minute changes in its surface or position. Speckle patterns, inherently random and unique to the sample's surface characteristics, undergo observable variations when the sample experiences deformation or displacement. These changes can be effectively quantified to measure even minute deformations. In this approach, a device incorporating a diode laser source and a webcam array is employed to track speckle decorrelation, a phenomenon that reflects the degree of variation in the speckle pattern over time. This setup is particularly useful in analysing small deformations, such as those occurring in a cantilever subjected to mechanical stress. By monitoring the speckle decorrelation, the system can accurately capture and quantify the deformation dynamics of the cantilever. This method also enables the determination of material properties, such as elasticity and stiffness, by correlating the observed speckle pattern changes with the applied stress and resultant strain. The simplicity and cost-effectiveness of using a diode laser and webcam array, combined with the high sensitivity of speckle decorrelation analysis, make this technique a powerful tool for studying mechanical properties and detecting subtle deformations in various materials. The adaptability of this method holds potential for applications in fields like material science, structural engineering, and biomedical diagnostics, where precise deformation measurement and non-invasive analysis are critical.

Keywords: Laser speckles, objective speckle pattern, rough object, correlation coefficient, deformation measurement

Abstract ID: RSMPPHY29

Curvature and Strain Analysis of Human Red Blood Cell Models

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We present mathematical simulations of shapes of red blood cells (RBCs) and their cytoskeleton when they are subjected to linear strain. The cell surface is represented by a quartic equation in three-dimensional (3D) cartesian space(Fung & Tong, 1968; Kuchel et al., 2021; Skalak et al., 1973)[1][2][3]. Using recently available functions in Mathematica to triangularize the surfaces we computed four types of curvature of the membrane. We also mapped changes in mesh-triangle area and curvatures as the RBCs were distorted. The profoundly deformable erythrocyte (RBC) answers precisely forced shape changes with upgraded glycolytic transition and cation transport. A key observation is the extent to which the maximum and minimum Principal Curvatures are localized symmetrically in patches at the poles or equators and distributed in rings around the main axis of the strained RBC. The model was revised by introducing a spring network object immersed in fluid for efficient blood cell simulations, validated through calibration using a computational method. With the help of curvature analysis and spontaneous curvature, we can calculate the Helfrich energy of the equilibrium model.

Abstract ID: RSMPPHY30

Investigate the interaction of β-cyclodextrin functionalized ZnS with Amino Acids

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Zinc Sulfide nanoparticles (ZnS NPs) have great potential in biosensors or biomarkers due to their strong optical and electronic properties. In an acidic medium, chemical precipitation was used to synthesized thioglycolic-acid capped ZnS NPs (ZnS@TGA). The surface functionality of ZnS NPs is essential for their interaction with the target analyte. The present work explored the property of the surface functionality ZnS@TGA with biomolecule β-cyclodextrin (ZnS@TGA-βCD) for bio-sensing application. The β-cyclodextrin consists of seven glucopyranose units in a cyclic formation and its cavity structure forms an inclusion complex with guest molecules. The ZnS@TGA-βCD are characterized by UV–Vis spectroscopy, X-ray Diffraction (XRD), Dynamic Light Scattering (DLS), Zeta potential, Photoluminescence and Fourier Transform Infrared spectrophotometer (FTIR). In addition, the interaction between the ZnS@TGA-βCD complex and amino acids at 1:1 ratio was analyzed through DLS and UV–Vis spectroscopy. In the interaction of ZnS@TGA-βCD complex with amino acids, the hydroxyl groups of β-CD form hydrogen bonding or electrostatic interactions with specific amino acids. The DLS analysis reveals that the interaction of amino acids like L-Arginine, DL-Aspartic acid, L-Cysteine, L-Histidine, L-Lysine and L-Proline increased the hydrodynamic size of ZnS@TGA-βCD due to the aggregation formation. Optical analysis, however, reveals greater interaction with aromatic amino acids such as L-Histidine, DL-Phenylalanine, DL-Tryptophan and L-Tyrosine through the delocalized electrons. The DL-Aspartic acid exhibits stronger interaction with ZnS@TGA-βCD observed in DLS analysis while UV spectra showed greater red shift during interaction with DL-Tryptophan.

Keywords: Zinc sulfide, β-cyclodextrin, amino acids, electrostatic interactions

Abstract ID: RSMPPHY31

Acoustic and Volumetric Study of binary mixtures of Ethylene glycol and Methanol

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Ultrasonic studies are widely used to confirm and analyze binary liquid mixtures of organic molecules. These unique techniques have broad applications across many scientific fields. Ultrasonics enable the accurate measurement of physical and chemical properties in mixtures, providing reliable insights into molecular interactions. In the present study, we report various physical properties of polar binary liquid mixture (BLM) of Ethylene glycol (EG) and Methanol (MeOH) over the entire concentration range (0.0→1.0). Using the experimentally measured physical parameters (ultrasonic speed, density and viscosity) several acoustic and volumetric parameters namely adiabatic compressibility (β), intermolecular free length (L_f), acoustic impedance (Z), molar speed of sound (R), molecular compressibility (W), viscoacoustic relaxation time ($\tau_{\eta a}$), free volume (V_f) and surface tension (σ) were evaluated. Excess of the measured acoustic and volumetric parameters has been evaluated and fitted to the Redlich-Kister (R-K) polynomial model. The deviations observed in the signs and magnitudes of these parameters, when compared to ideal mixing behavior, provide insights into the nature of intermolecular interactions within the liquid mixture. The values of excess parameters, which may be positive or negative depending on the properties of the liquid mixtures, were investigated to gain understanding into molecular interactions and structural changes. To predict the Speed of sound (u) and Viscosity (η) for binary mixtures, various mixing rules were applied, and their validity have been tested.

Keywords: Speed of sound, Binary Mixtures, Viscosity, Ethylene glycol, Mixing Models

Abstract ID: RSMPPHY32

A Comparative Study of Various Dielectric Relaxation Models using Time Domain Reflectometry (TDR) Data for Binary Mixtures of Benzonitrile and n-Butanol

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Dielectric Relaxation Spectroscopy (DRS) deals with Vector Network Analyser (VNA) and Time Domain Reflectometry (TDR) techniques. These techniques provide insights into dielectric properties that are critical for fields like environmental science, materials research, electrical engineering and in RF engineering. In the present study we report dielectric relaxation study using Time Domain Reflectometry (TDR) for binary liquid mixture of Benzonitrile (BZN) with n-Butanol (n-BuOH) over wide range of concentrations (0.0→1.0) across frequency span from 10 MHz to 25 GHz at a temperature of 283.15 K. Complex permittivity spectra (CPS) of BZN with n-BuOH binary mixtures were obtained using TDR data, fitted to known DRS models like Cole-Cole (C-C) model, Cole-Davidson (C-D) model, Debye model and Havriliak-Negami (H-N) model. Complex Non-linear Least Square (CNLS) fit method was used to fetch out the dielectric parameters from above models. The resulting dielectric parameters, along with the dielectric strength and relaxation time were compared and analysed for 11 concentrations of Binary Mixtures.

Keywords: Dielectric relaxation, Binary mixtures, Cole-Cole model, Cole-Davidson model, Debye model, Havriliak-Negami model

Abstract ID: RSMPPHY33

Development and Characterization of $AgBiSe_2/SnSe_2$-Based Heterostructures for Infrared (IR) Photodetection

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Heterostructures of layered chalcogenides offer unique opportunities in optoelectronics due to their tunable properties and synergistic functionalities. Many high-performance electrical and optoelectrical devices based on selenides and their heterostructures have been extensively investigated, and photodetectors have been a particular area of attention. In this work, we report the successful fabrication and characterization of an $AgBiSe_2/SnSe_2$ heterostructure for infrared (IR) photodetection. $AgBiSe_2$ crystals were synthesized using the Direct Vapor Transport (DVT) technique, while $SnSe_2$ was prepared as a powder using the same method. Structural and elemental analysis via X-ray Diffraction (XRD) and Scanning Electron Microscopy (SEM) coupled with Energy-Dispersive X-ray Analysis (EDAX) confirmed the phase purity and composition of both materials. A thin film of $SnSe_2$ was deposited on $AgBiSe_2$ crystals through thermal evaporation, and its structural integrity was validated using XRD. Temperature-dependent electrical transport (IVT) measurements from 93 K to 303 K were conducted to study the heterostructure's behavior under varying thermal conditions. Furthermore, current-voltage (IV) characteristics were evaluated under dark and near-infrared (NIR) illumination at a wavelength of 780 nm using an NIR laser source. A significant photocurrent response was observed, indicating efficient photocarrier generation and separation at the $AgBiSe_2/SnSe_2$ interface. The results highlight the potential of this heterostructure for IR photodetector applications, offering sensitivity in the NIR spectral region. This study underscores the feasibility of employing layered chalcogenide heterostructures for advanced IR sensing devices. The synergistic properties of $AgBiSe_2$ and $SnSe_2$ present a versatile platform for developing high-performance optoelectronic technologies.

Keywords: Layered Chalcogenides, Heterostructure, Direct Vapor Transport (DVT), Thermal Evaporation, Infrared Photodetector

Abstract ID: RSMPPHY34

Optical Shape Measurement of Transparent Phase Objects Through Phase Measuring Deflectometry

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Advances in optical metrology have expanded its application across diverse fields, including biomedical engineering, automotive manufacturing, semiconductors, and aerospace. Among these, Phase Measuring Deflectometry (PMD) stands out for its ability to non-invasively map surface shapes and optical thickness variations. PMD operates by analysing shifts in fringe patterns induced by the object's presence, enabling visualization and measurement of phase objects. Unlike holographic interferometry, which often struggles with resolving dense fringe fields caused by steep object geometries, PMD in transmission mode offers a robust and compact alternative for measuring shape and thickness. By requiring fewer components and offering a simplified setup, PMD emerges as an efficient tool for analysing phase objects, such as optical wedges, with high precision and minimal complexity. This work highlights the adaptability of PMD in addressing challenges associated with phase object measurements, underscoring its significance in next-generation optical metrology systems.

Keywords: optical metrology, phase measuring deflectometry, shape and thickness measurement

Abstract ID: RSMPPHY35

A QUANTITATIVE STUDY OF STRESS GENERATED ON PLPRAMODANT LEAF

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Stress is an inevitable aspect of the environment for plants, and its impact on their growth and survival has long been a topic of interest among researchers. The study of stress on plant leaves has garnered significant attention, as leaves are the primary site for photosynthesis and serve as an interface between the plant and the environment. Stress can be caused by a range of factors, including drought, high or low temperatures, salt, pollution, soil malnutrition, and pathogen attack etc. The effects of stress on plant leaves can manifest in various ways, including changes in leaf morphology, biochemistry, physiology, and gene expression. In present work, a study on stress generated on leaves of Tulsi (Ocimum tenuiflorum) plant after it has been plucked from the plant, is performed using an assembly of spectrometer and imager modules. Moisture and Chlorophyll contents of the stressed leaf is studied using spectrum and images respectively obtained using the spectrometer-imager assembly. To observe changes in the moisture content of the stressed leaf, the Normalized Difference Water Index (NDWI) parameter is calculated using reflectance spectrum of the Tulsi leaf. A decrease in NDWI values and hence in the moisture content is observed over time period of 230 minutes. Apart from spectrum data, color images are of same region of the leaf under natural stress are also recorded using the imager assembled with the spectrometer. Greenness index is calculated from these color images which provides information about the health and characteristics of the plant such as Chlorophyll content which is the green pigment in leaves that plays a vital role in photosynthesis. The presented study of stress on plant leaves can be generalize and is an important area of research that has significant implications for agriculture and environmental sustainability.

Keywords: stress, Tulsi leaf, spectrum, image, Normalized Difference Water Index, Chlorophyll content

Abstract ID: RSMPPHY36

Study Of Dielectric Relaxation Dynamics of Polyethylene Glycol 4000 UsingTime Domain Reflectometry

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The complex permittivity spectra of binary mixtures consisting of Polyethylene Glycol (PEG) 4000 and water were obtained using time-domain reflectometry (TDR) across the GHz frequency range at different temperatures. The dielectric behavior of these mixtures is effectively represented by the Davidson-Cole model. Parameters such as the static dielectric constant (ε_0), relaxation time (τ_0), and thermodynamic quantities, including both activation enthalpy and activation entropy, were determined through a least-squares fitting method. A reduction in the hydration number with increasing PEG 4000 concentration suggests a decrease in the coordination of water molecules.

Keywords: Polyethylene glycol (PEG) 4000, Dielectric constant, Relaxation time, TDR

Abstract ID: RSMPPHY37

Rapid detection of analytes using SERS

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Here, we demonstrate chemically synthesized silver nano-particles, which can then be used in SERS for analyte detection; the fabrication process is facile and inexpensive. We detected R6G (20 µL) and PNBA (30 µL) up to 10^{-9} M, with enhancement factor ~10^{8} and ~10^{6} for R6G and PNBA respectively, utilizing Ag-decorated nanoparticles as SERS-active substrate. Also employing this SERS-active substrate, rapid detection of ultra-trace quantities of leuco-malachite green (LMG) (30 µL, 10^{-10} M) in aquatic product (tilapia fish) has also been performed with enhancement factor ~10^{10}.

Abstract ID: RSMPPHY38

Large Field of View Digital Inline Holographic Microscopy

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Digital Inline Holographic Microscopy (DIHM) is a computational imaging technique designed for high-resolution quantitative analysis of thin samples, including tissue sections. Its lens-free configuration makes it inherently compact, portable and cost-effective solution well-suited for point-of-care applications in comparison to off-axis configuration based Digital Holographic microscopy. In DIHM, Fresnel diffraction patterns are recorded from samples illuminated by a coherent or partially coherent light source.

In this study, we developed a DIHM system with subpixel resolution, having the field of view of approximately 41 mm². The system demonstrated a spatial resolution sufficient to resolve the 4th element of the 8th group in the USAF 1951 resolution chart, using a camera with a pixel size of 1.85 µm. Furthermore, the system was successfully employed for imaging human red blood cells (RBCs), showcasing its potential for a range of biomedical applications.

In conclusion, the portable and cost-effective DIHM system combines a wide field of view with high resolution, making it a powerful tool for high-precision imaging tasks. Its affordability and compact design enable its use as a point-of-care device for medical imaging, disease diagnosis, and real-time tissue analysis. These attributes make it a promising technology for advancing human healthcare in resource-limited settings and beyond.

Keywords: Lens less Microscopy, Digital Holography, Computational optical Imaging, point-of-care diagnosis

PHARMACEUTICAL SCIENCE

"Pharmacology is benefited by the prepared mind. You need to know what you are looking for."

-Siddhartha Mukherjee

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Abstract ID: RSMOPHARMA01

Compounding and Stability Testing of Spironolactone Oral Suspension

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Paediatric patients often require customized medication formulations due to the unavailability of commercial options tailored to their needs. This study focuses on the compounding and stability of a spironolactone oral suspension (5 mg/5 mL) using multivitamin syrup as a vehicle. A specific High-Performance Liquid Chromatography (HPLC-UV) method was developed and validated, exhibiting high linearity ($R^2 \geq 0.9992$), precision, and accuracy. The formulation demonstrated stability for up to 30 days under standard storage conditions, with active pharmaceutical ingredient (API) concentration remaining within the acceptable range (90–110%). Physical parameters such as color, pH, and osmolality showed no significant changes over the storage period. Forced degradation studies revealed spironolactone's stability under thermal and photolytic conditions, while minor degradation occurred under acidic and alkaline stress. These findings confirm the chemical and physical stability of the formulation, supporting its potential use in paediatric care. Further studies are recommended to explore extended beyond-use dating.

Keyword: Compounding formulation, Stability testing, Spironolactone oral suspension

Abstract ID: RSMOPHARMA02

Formulation And In Vitro Evaluation of Liposomal Formulation Containing Anti Fibrotic Agent

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Idiopathic pulmonary fibrosis (IPF) is a progressive and debilitating lung disease characterized by the irreversible scarring of lung tissue, leading to impaired gas exchange and respiratory failure. Despite advances in pharmacological therapies, the clinical management of IPF remains challenging due to the limited efficacy and significant side effects of available treatments. Liposomal drug delivery systems have emerged as a promising strategy to enhance the bioavailability, targeted delivery, and therapeutic efficacy of pharmacological agents in the management of IPF. This research discovers the current state of liposomal formulations in the treatment of IPF, focusing on their ability to overcome the limitations of conventional drug delivery methods. Pirfenidone (PFD) is an anti-fibrotic agent that is used to treat Idiopathic pulmonary fibrosis. Pirfenidone was encapsulated inside the tiny lamellar liposomes composed of lipids, cholesterol and surfactant. The present research highlight PFD loaded liposome & particle characterize by polydispersity index (PDI), zeta potential, and entrapment efficiency and drug release study. The result of this study suggest that, as we increases the concentration of the lipid it is directly proportional to the entrapment efficiency and the release of drug.

Keywords: **Idiopathic Pulmonary Fibrosis, Pirfenidone, Liposomes, Drug release**

Abstract ID: RSMOPHARMA03

Bilosomes Loaded Sponges For The Delivery Of Anti Anginal Drug Through Buccal Mucosa

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Ivabradine hydrochloride is used in the management of angina pectoris. Angina is common symptom of coronary artery disease in which arteries that supply blood to the heart becomes narrowed or blocked. Ivabradine hydrochloride acts by lowering the heart rate. The available marketed dosage form tablet has low oral bioavailability up to 40%, short halflife (2 h), and first pass metabolism (> 50%) by enzyme CYP3A4, due to this it rapidly eliminates from systemic circulation and fails to achieve therapeutic effect. To overcome this drawback newer strategy of developing formulation is needed. To enhance bioavailability and preventing first pass metabolism Bilosomes loaded buccal sponges can be developed. It combines the advantages of nanotechnology based vesicular system bilosomes (bile salt containing vesicles) and by altering the route of drug administration. Buccal route prevents the degradation of drug in liver and stomach while bile salt containing bilosome enhance the permeation of drug through buccal mucosa.
Bilosomes were prepared by thin film hydration method. Prepared bilosomes were evaluated for particle size, zeta potential and entrapment efficiency. Prepared bilosomes were incorporated into the buccal sponges for the delivery through buccal mucosa. Sponges were made by mixing the bilosome solution in polymeric mixture and then lyophilized. This study shows that concentration of lipid, cholesterol and bile salt is most influencing factors for the optimum vesicular size and entrapment efficiency.

Keywords: Buccal, Bilosomes, Ivabradine, Sponges, Drug delivery

Abstract ID: RSMPPHARMA01

Efficient extraction process of secondary metabolites from *Catharanthus roseus* using the Soxhlet method

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The extraction process relies on the use of a Soxhlet apparatus, which includes a solvent reservoir, an extraction chamber where the sample is placed, and a condenser. Soxhlet thimble extraction is a widely used method for isolating phytoconstituent compounds from crude drugs, providing a systematic approach to extract secondary metabolites such as alkaloids, flavonoids, terpenoids and essential oils emphasizing its significance in pharmacognosy and natural product research. In this method, finely powdered plant material is placed in a porous thimble and subjected to continuous solvent extraction. Soxhlet extraction has traditionally been used for a solid sample with limited solubility in a solvent in the presence of insoluble impurities. The plant *Catharanthus roseus* (commonly known as Barmasi) is a valuable medicinal species known for its rich repository of phytoconstituent alkaloids with significant pharmaceutical applications. This study focuses on the efficient extraction of secondary metabolites, particularly vincristine, vinblastine, ajmalicine, and serpentine, which have significant therapeutic applications, especially in cancer treatment and cardiovascular medicine. The Soxhlet method proves to be a reliable and efficient approach for extracting secondary metabolites from *Catharanthus roseus*, delivering high-quality phytoconstituent compounds with significant pharmaceutical potential.

Key words: Soxhlet, Secondary metabolites, *Catharanthus roseus,* Phytoconstituent

Abstract ID: RSMPPHARMA02

Healing with Nature: Medicinal Plants for Hemorrhoid Relief.

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Haemorrhoids, or piles, are a common anorectal disorder affecting populations worldwide, often prompting patients to seek alternative treatments beyond conventional medicine. The global prevalence of haemorrhoids ranges from 4% to 50%. This poster examines the efficacy of various medicinal plants traditionally used to treat haemorrhoids. Detailed data on medicinal plants for haemorrhoid treatment, treatment options, and traditional and scientific information on haemorrhoids were collected from research articles and review articles. A literature survey was conducted using keywords such as haemorrhoids, medicinal plants, and natural treatments for haemorrhoids, with information compiled from sources such as PubMed, Google Scholar, and ScienceDirect. Through a comprehensive review of existing literature and empirical studies, key botanicals, including *Helicteres isora L., Terminalia chebula, Emblica Officinalis, and Curcuma ambada Roxb* were identified for their significant anti-inflammatory and analgesic properties. The poster explores the active compounds in these plants, such as gallic acid, rosmarinic acid, caffeic acid, and curcumin, along with clinical evidence supporting their use. Understanding the potential of these natural remedies could lead to the development of effective treatments, either as single agents or in combination, for haemorrhoid management. This study not only highlights the therapeutic benefits of medicinal plants but also underscores the potential for developing a novel nano-drug for haemorrhoid treatment.

Keywords: Haemorrhoid, anti-inflammatory, analgesic, *Helicteres isora L., Phyllanthus emblica*

Abstract ID: RSMPPHARMA03

Synergistic Potential of Oats and Antidiabetic Herbs: A Pathway to Enhanced Glycemic and Metabolic Regulation

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Oats, abundant in beta-glucan, have emerged as a promising dietary strategy for diabetes management due to their capacity to regulate postprandial blood glucose levels and improve insulin sensitivity. This review explores the combined effects of oats and well-known antidiabetic herbs, including cinnamon, fenugreek, and bitter melon, in optimizing glycemic control and promoting metabolic health. The low glycemic index (GI) of oats ensures steady energy release and minimizes blood sugar fluctuations, making them an integral component in managing type 2 diabetes. Both preclinical and clinical evidence highlight significant improvements in fasting blood glucose, glycated haemoglobin (HbA1c), and lipid profiles. However, critical research gaps remain regarding long-term impacts, individual glycemic variability, and the potential role of oats in type 1 diabetes management. This review emphasizes the functional and complementary role of oats in diabetes care, advocating for further investigations to maximize their therapeutic benefits.

Keywords: oats, diabetes management, beta-glucan, antidiabetic herbs, insulin sensitivity, glycemic control, lipid improvement, functional nutrition, complementary therapy

Abstract ID: RSMPPHARMA04

Solubility Enhancement Technique Special Emphasis on Self Emulsifying Drug Delivery System and Liquisolid Technology

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It is common for solubility, a critical feature that governs the bioavailability and therapeutic efficiency of pharmacological compounds, to be a barrier to the creation of new drugs. As a result of their low solubility, pharmaceutical researchers have a great deal of difficulty when attempting to develop medications that are both more soluble and more sustained (BCS class II). There are issues with the solubility of medications that fall within BCS Class II and Class IV. When it comes to the world of pharmaceutical research, solubility enhancement is of great significance because its primary objective is to improve the solubility and bioavailability of medications that have a poor solubility by increasing their solubility. Because of their propensity to exhibit inadequate absorption, bioavailability, and therapeutic efficacy, medicines that are poorly soluble present a significant problem in the process of drug development. There are a few different approaches that may be taken in order to improve the bioavailability as well as the solubility of drugs that are already poorly soluble. In this review, we will be discussing two of the most essential techniques, which are the Liquisolid technique and the Self Emulsifying Drug Delivery System (SEDDS).

Keywords: SEDDS, Liquisolid technique, BCS Class II and IV, Dissolution, Bio availability

STATISTICS

"Statistics must have a clearly defined purpose, one aspect of which is scientific advancement and the other human welfare and national development."

-Prof. Prasanta Mahalanobis

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Abstract ID: RSMOSTAT01

Multivariate Control Chart Pattern Recognition Model Using Support Vector Machine

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Statistical process control (SPC) is essential for preserving quality and reducing variation in production and service operations. SPC relies on control charts, which graphically show process performance over time. However, interpreting these charts can be challenging, particularly when trends are overlooked. Pattern recognition enhances and automates SPC analysis by identifying non-random patterns that indicate specific problems or different control chart patterns seen in the process behavior. Multivariate statistical process control (MSPC) is an advanced extension of traditional SPC that monitors multiple correlated variables simultaneously, providing a comprehensive view of process stability. This paper presents a multivariate control chart pattern recognition (MCCPR) model developed using support vector machines (SVM) to enhance process monitoring in industrial settings. The MCCPR model was built using SVM, chosen for its effectiveness in handling high-dimensional data and distinguishing CCPs in multivariate process. Synthetic data were generated for three variables, capturing five key control chart patterns: normal, increasing trend, decreasing trend, systematic, and cyclic. The SVM-based model was evaluated using a confusion matrix and showed high accuracy in classifying these patterns, demonstrating robust model performance. Cross-validation further validated the model's stability and reliability. These results indicate that the SVM-based MCCPR model is a powerful tool for quality control, enabling early detection of abnormal process shifts. This model provides a promising solution for industries that require precise monitoring of multiple process variables to maintain product quality and operational efficiency.

Keywords: Multivariate statistical process control, Control chart patterns, Pattern recognition, Support vector machine, Radial basis function

Abstract ID: RSMOSTAT02

A Study on Estimation Methods for the Kumaraswamy Distribution under Joint Ranked Set Sampling

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In this paper, we estimate the parameters of the Kumaraswamy distribution using various sampling schemes, including joint ranked set sampling, joint minimum ranked set sampling, joint modified maximum ranked set sampling, and joint simple random sampling. We compare the maximum likelihood (ML) estimates of the parameters under these joint ranked set sampling schemes with those obtained from joint simple random sampling, using Monte Carlo simulations in R Studio. Our findings indicate that joint ranked set sampling and joint minimum ranked set sampling schemes outperform the joint simple random sampling schemes. Additionally, we observed that joint ranked set sampling is more effective than both joint modified minimum ranked set sampling and joint modified maximum ranked set sampling.

Keywords: Kumaraswamy distribution, joint ranked set sampling, maximum likelihood estimates

Abstract ID: RSMOSTAT03

"Data Quality Matters: Measurement Error and Its Impact on India's Socio-Economic Indicators"

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Measurement errors in official statistics significantly hinder the accurate assessment of socio-economic indicators, affecting the design of effective policies. In the context of Viksit Bharat @2047, these errors can hinder attemts to achieve India's developmental goals, including universal education, better health, and equitable growth. This study investigates the impact of measurement error in household-level surveys across sectors like health, education, and nutrition. Using descriptive statistics, logistic regression, and sensitivity analysis, the research examines how errors in household consumption data distort estimates of financial burdens, food security, and education access. The findings highlight the importance of improving survey methodologies and error correction techniques to ensure more accurate data. This work aims to contribute to evidence-based policymaking and suggests that future research could explore advanced data collection technologies and sector-specific refinements, supporting India's vision of sustainable and inclusive development by 2047.

Keywords: **Measurement Error, Socio-Economic Indicators, Viksit Bharat 2047, Surveys, Policy Design, Data Accuracy**

Abstract ID: RSMOSTAT04

SUSTAINABLE INVENTORY MANAGEMENT UNDER INFLATIONARY CONDITIONS WITH EXPONENTIAL LEAD TIME DEMAND

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Inventory management helps to make supply chain operations more efficient while considering the various costs associated with it, such as ordering cost, holding cost and backorder cost. The changing environmental conditions and its recognized importance at the national and international levels motivates to incorporate the environmental factors into the process of decision making. This research attempts to understand the effect of inclusion of carbon emissions cost during ordering and holding and tries to formulate the effective strategy to maximize the profits. This research also attempts to signify the consideration of probabilistic lead time demand and further considers the exponential nature of lead time demand which helps to recognize more realistic situations in the inventory management. Inflation is another factor which plays important role in the overall profit management of the organistaion. Therefore this paper also introduced the inflationary conditions in the imventory model to get more realistic idea to minimize the total cost. The prescribed model is also compared with the model where inflation effect is not considered. The research shows that consideration of inflation has a significant impact on the overall cost optimization process as the time increases the total cost required for the inventory management also increases. The variations in carbon emission cost during holding has more impact on the total cost as compared to carbon emission cost during orderig. Finally this research also tries to give future possible direction for the expolaration of the inventory model to address various scenarios.

Keywords: **sustainable inventory management, carbon emissions, inflation, exponential distribution**

Abstract ID: RSMOSTAT05

Cubic Inverted Kumaraswamy Distribution and its Properties

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Earlier, researchers used quadratic transmuted distributions to capture the complexity of unimodal data. However, the real-life data can be more complex and, sometimes, cannot be fitted using the quadratic transmuted models. Moreover, several researchers have developed different types of cubic transmuted distribution families to capture the complexity of real-life problems. The applications of the cubic transmuted distributions include issue creation and adaptation in statistical research, mathematics, finance, biostatistics, and survival analysis. This paper introduced a new four-parameter distribution called the Cubic Transmuted Inverted Kumaraswamy (CIKw) distribution. The distribution is the generalization of the Inverted Kumaraswamy distribution of cubic and quadratic forms. We studied the distributional properties of the proposed probability distribution function such as quantile function (QF), moments, mean, median, moment generating function (MGF), and characteristic function. The parameters involved in the distribution are estimated using the maximum likelihood estimation (MLE) method. We estimated the initial values of parameters in the hybrid approach. The algorithms used for simulations are also incorporated. Along with its distributional features, associated inference, simulation, and real-life applications are studied. Three real-life datasets are used for demonstration. The dataset's Kolmogorov-Smirnov (KS) test showed that the CIKw fits better than most distributions including Weibull. We also evaluated the ML estimates of some distribution properties using simulation results from simulation result. Based on the result, we recommend statisticians, mathematicians, and people from other related fields to use the proposed probability distribution to model their data with continuous characteristics.

Keywords: Cubic Transmuted, Maximum Likelihood Function, Kolmogorov-Smirnov Test, Moment Generating Function, Simulation

Abstract ID: RSMPSTAT01

Statistical Modelling and Analysis of Variance of Brain Activity in MRI Experiment

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Functional Magnetic Resonance Imaging (fMRI) measuring blood-oxygenated-level-dependent(BOLD) signal data enable us to study brain activity. This research focuses on analyzing fMRI data to identify brain regions activated by different stimuli, such as visual motion and attention. By applying voxel-based time-series analysis and multivariate regression models, to the study the relationship between BOLD signals and different stimuli and highlights patterns of brain activity. On the "Attention to Visual Motion" dataset, extracting voxel-wise time-series data through Statistical Parametric Mapping (SPM) in MATLAB and conducting subsequent analysis in R, we applied General Linear Models (GLM) and ANOVA to determine activated voxels. Multiple comparison corrections, including the Benjamini-Hochberg and Bonferroni methods, were used to ensure statistical robustness. This work refines robust statistical corrections, reducing false positives and enhancing the reliability of activation detection. Additionally, Dynamic Causal Modeling (DCM) is employed to explore the interactions between brain regions and their responses to various conditions. The results reveal strong activations in key areas, such as the visual cortex and superior parietal cortex, particularly during attention-modulated motion tasks.

Keywords: functional MRI, Attention, Generalized Linear Modelling, Statistical Parametric Mappin

BUSSINESS STUDIES

If you are an entrepreneur, your communication skills matter more than your technical knowledge.

- Aishwarya Goel

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Abstract ID: RSMOBUSI01

Leveraging IoT Technology to Enhance the Efficiency of Carbon Credit Trading Markets and Reduce Carbon Emissions

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This article examines how IoT technology might improve carbon credit trading systems and cut carbon emissions. IoT devices in many sectors provide real-time greenhouse gas emission monitoring and data collecting. These capabilities make carbon accounting more transparent and verifiable, which protects carbon credit markets. IoT technology automates reporting, minimizing administrative complexity and human error. IoT may help carbon markets become more dynamic and flexible by delivering accurate emission data, improving compliance and encouraging sustainable activities. IoT-driven insights may also uncover emission reduction strategy inefficiencies and improvements, improving environmental sustainability. The implementation of IoT in carbon trading markets is a major step toward reducing global emissions and fighting climate change.
Keywords: IoT, carbon credit trading, greenhouse gas emissions, real-time monitoring, carbon accounting.

Abstract ID: RSMOBUSI02

Service Quality, Customer Satisfaction, and Customer Loyalty in Online Shopping: A Comprehensive Review of the Literature

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The interconnections between service quality, customer satisfaction, and customer loyalty have long been considered vital for maintaining competitive advantage in various industries. This review paper synthesizes findings from a broad range of empirical studies, exploring the impact of service quality on customer satisfaction and how satisfaction, in turn, influences customer loyalty in E Commerce industry. The paper covers diverse sectors, including banking, e-commerce, internet services, and small-to-medium-sized enterprises, while employing methodologies such as Structural Equation Modeling (SEM) and Partial Least Squares (PLS) to examine these relationships. The review highlights key dimensions of service quality, such as reliability, responsiveness, assurance, and empathy, and identifies customer satisfaction as a critical mediator between service quality and loyalty. The analysis also emphasizes the emerging role of digital transformation and personalized service in shaping future research directions of online shopping. This comprehensive review provides a foundation for understanding the evolving dynamics of customer relations and offers valuable insights for practitioners and scholars looking to enhance service quality strategies in both traditional and digital environments.
Keywords: **Service Quality, Customer Satisfaction, E-commerce, Digital Transformation, Customer Relations**

Abstract ID: RSMOBUSI03

A STUDY ON THEORETICAL ASPECTS OF THE FACELESS ASSESSMENT SCHEME OF TAXATION

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In today's time no one can think of life without technology. In the past many years the use of technology is increasing day by day within every sector whether it is government sector, semi-cooperative sector, private sector, academic sector or society. And the Income Tax Department also could not stay away from this. Keeping this in mind, the Income Tax Department has also started making maximum use of technology (specifically use of AI) which will benefit the tax department as well as the taxpayers. Income-tax department has taken such a big step in assessment proceeding and started faceless assessment scheme. Now income taxpayer can reply to income-tax notice sitting at home without visiting income-tax department. The main reason behind the introduction of this scheme is to eliminate harassment to taxpayers from income tax officers and to save time, efforts and energy of taxpayers. In this paper an attempt has been made to study the theoretical scope of this Faceless Assessment Scheme of Income Tax and discuss how this scheme can be useful. In this paper, how the entire faceless assessment scheme is functioning is also covered. Mostly, secondary data has been used to understand this scheme. This paper discusses various advantages and disadvantages of the faceless assessment scheme. This study also suggests how to tackles challenges of this scheme to make it more popular. Through this paper an attempt has been made to give some idea about the faceless assessment scheme and what Government would aim to achieve through this new scheme has been discussed.

Keywords: Faceless Assessment, Income Tax Payers, Taxation, Assessment Proceeding

Abstract ID: RSMOBUSI04

AWARENESS AND DETERMINANTS OF FINTECH USAGE AMONG GEN Y INVESTORS IN SURAT CITY

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This study investigates the awareness levels and key determinants influencing the adoption and usage of financial technology (Fintech) among Gen Y (Millennial) investors in Surat city. With the rapid growth of digital finance and fintech platforms, understanding the awareness and factors that drive the acceptance and usage of these technologies in the world of investment among young investors is crucial. The study is descriptive in nature. By using quantitative survey method the study provides insights into the respondents' knowledge levels, investment preferences, demographic distribution, and primary factors influencing their decisions to trade online. These insights provide valuable implications for fintech companies and policymakers in designing targeted strategies to enhance user engagement and address barriers to adoption.

Keywords: Fintech, Investors, Gen Y, Awareness, Determinants

Abstract ID: RSMOBUSI05

THE ROLE OF BUSINESSES IN PROMOTING SUSTAINABLE DEVELOPMENT WITH SPECIAL REFERENCE TO INDIA

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Sustainable Development has become an important component for business strategies worldwide, especially in developing countries like India. Businesses play a major role in improving sustainable development especially in those countries where economic growth and environmental concerns are increasing. This study is descriptive in nature. The objective of this paper is to analyse the role of businesses in promoting sustainable development in India and their initiatives to align with the United Nation Sustainable Development Goals (SDGs). Secondly it finds out how companies contribute towards their Economic, Social and Governance (ESG) factors by analysing data from secondary sources like their sustainable and integrated reports from the period 2021 to 2023. Major companies in steel, energy, FMCG, IT and automobile sectors like Tata steel, Infosys, Reliance Industries, HUL and Mahindra Group were selected as samples. These companies were selected on the basis of their market leadership in respective sectors and their commitments towards sustainable business practices. The study focuses on factors such as carbon emission, female directors and revenue factors of each company to know their contribution towards a sustainable world. The study finds out how these companies align with the sustainable development goals showing increasing trends in their contribution in different factors. It highlights key findings like how companies through their sustainability activities align with the United Nation SDGs like carbon footprints, gender equality and revenue growth. In conclusion the study confirms that Indian companies play a pivotal role in promoting sustainable development by not only promoting economic approach but also aligning their social and environment approach. Though these companies face challenges such as regulatory hurdles, financial constraints and need for stakeholders collaboration, adopting sustainable business practices will help them in long term success.
Keywords: ***Sustainable Development, Environment Social and Governance (ESG), United Nation Sustainable Development Goals (SDGs)***

Abstract ID: RSMOBUSI06

IMPACT OF TECHNOLOGY ON ACCOUNTING EDUCATION: A STUDY ON STUDENT PERCEPTIONS FOR THE FUTURE OF ACCOUNTING

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Rapid technological advancement in accounting profession demands accounting professional with new skills to cope up with the evolving needs of the profession. Educational institutes plays and important role in imparting such skills in students. However, there are limited studies which focus on integration of technological tools in accounting education and how comfortable students' feel about performing their role in accounting profession. This study therefore, aims to assess the effectiveness of technological tools and innovations integrated into accounting education in enhancing students' understanding and to evaluate accounting students' perceptions of their preparedness for future professional roles in the accounting industry. Data was collected through the survey from accounting students, enrolled in different accounting programs in Sardar Patel University, and total 324 responses were received from M.Com, B.Com and BBA students. T test and ANOVA was applied to analyse the data, and results suggest that majority of the respondents believes technological tools are effective and they are prepared to face new technological challenges at work in future. However, it suggested some of the challenges like limited availability and accessibility of technological tools in current accounting education, they also considered the need for having an extra training after the graduation which points out the limitation of current accounting curriculum.
Keywords: Accounting Education, Technology, Effectiveness, Preparedness, Students' Perceptions

Abstract ID: RSMOBUSI07

EXPLORING THE IMPACT OF LIVE STREAMING E- COMMERCE ON CONSUMERS' PURCHASE INTENTION: A SYSTEMATIC LITERATURE REVIEW

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Live streaming has become an increasingly popular tool in e-commerce, providing businesses with a unique way to engage with customers in real-time. Initially popularized on social media platforms, live streaming has now made its mark on e-commerce. This study aims to investigate the impact of live streaming e-commerce on consumers' purchase intention through a systematic review of existing research. By analyzing a variety of scholarly articles and studies, the review highlights key insights on how live streaming influences various aspects of e-commerce, including consumer behavior, engagement, purchase intent. The scope of the research will focus on understanding the relationship between live streaming e-commerce with consumer engagement and purchase behavior in the context of e-commerce. The findings indicate that live streaming with its interactive and immersive features, enhances customer engagement, builds trust, and increases purchase intentions. Live streaming can boost brand awareness, strengthen customer loyalty, and drive sales. Overall, the study emphasizes the significant role of live streaming in shaping consumer decision-making and its potential as a powerful marketing tool for e-commerce businesses.

Keywords: E-Commerce, Consumer Engagement, Live Streaming E-Commerce, Purchase Intention, SLR

Abstract ID: RSMOBUSI08

Cloud Accounting: A bibliographic review of factors affecting and concern factors for adoption of cloud accounting

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Cloud accounting has transformed financial management by providing flexibility, real-time access, and cost-effective solutions for businesses across all sectors. This literature review examines the principal aspects affecting the adoption of cloud accounting, such as data security issues, cost efficiency, scalability, and user-friendliness. It emphasises how cloud-based platforms facilitate enhanced collaboration, streamline company operations, and deliver essential information for decision-making. Nonetheless, concerns such data privacy hazards, reliance on service providers, and the necessity for constant internet connectivity persist as substantial issues. This paper seeks to elucidate the advantages and challenges of cloud accounting adoption, offering a framework for future research and practical implementation strategies.

Keywords: Cloud Accounting, Adoption Factors, Data Security, Scalability, Cloud Service Providers.

Abstract ID: RSMOBUSI09

A study on awareness of income tax planning among the students in higher education with special reference to the students of colleges affiliated with Sardar Patel University

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The purpose of this study is to determine how well-informed college students—more especially, those attending institutions connected to Sardar Patel University—are about income tax preparation. Although income tax planning is an essential financial skill for people to effectively manage their earnings, it is frequently not given enough attention in the classroom. The study looks into a number of characteristics, including demographics, educational background, and exposure to financial literacy programs, that affect people's comprehension of tax-related issues. The study assesses a sample of students' understanding of the fundamentals of income tax, tax-saving strategies, and the significance of tax planning through a structured questionnaire survey. The findings show a sizable awareness gap among students, emphasizing the necessity of including tax education into the framework of academia. The report ends with suggestions for raising income tax awareness, like incorporating tax-related material into the curriculum and holding seminars or workshops to advance financial literacy. According to the findings, students might be better prepared to make wise financial decisions in their future careers by filling this gap.

Keywords: Income Tax, Tax Planning, Tax Saving, Tax Education

Abstract ID: RSMOBUSI10

Determinant factors for the adoption of Internet Banking Services in Anand District: Attitude as a moderating variable

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With the aid of the environment, society, and economy, the United Nations Sustainable Development Goals (SDG) propose a holistic approach to sustainability. Indian banks have begun pledging to be more sustainable in several areas. The study aims to identify the variables affecting the adoption of online banking services. The researcher examined the influence of ease of use, usefulness, creditability, risk, and trust on the intention to use Internet banking in the digital age. Data was gathered by the researcher using a standardized questionnaire. Customers in the Anand district provided the information. For this research study, 110 responses have been collected. The extended TAM was used to verify how well it predicts consumers' intentions to use and adopt Internet banking. The results of this study help provide bank managers with relevant information. This study provides useful results that offer valuable information for bank managers on dealing with internet challenges in the Anand district.

Keywords: Internet Banking, Adoption, Intention, Customer, TAM.

Abstract ID: RSMOBUSI11

Financial Performance of Rural Postal Life Insurance Scheme

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India's insurance industry is growing every year. According to the mission of IRDAI insurance for all by 2047, it is necessary to check the performance of insurance providers. The Postal Department provides one of the most important services, postal life insurance. It provides two types of Insurance; One of the important and oldest insurance services is Postal Life Insurance and another one is Rural Postal Life Insurance. Rural Postal Life Insurance (RPLI) was introduced in 1995 for the benefit of the rural populace to extend insurance coverage to the people living in rural areas. This study is useful to Rural customers who want to take RPLI. **The main aim of this study is to study the financial performance of Rural Postal life insurance.** This study analyzed the financial performance of the Rural postal life insurance scheme from 2015-16 to 2022-23. The secondary data was collected from annual reports of postal life insurance. The data was analyzed through trend analysis, correlation, and regression analysis. Sum assured and premium income is highest in the year 2022-23. The number of claim settlements and Policies issued is highest in 2021-22. This study shows that Rural postal life insurance is increasing every year. The study found policies issued, sum assured, premium income and claim settlement are correlated.

Abstract ID: RSMOBUSI12

PEER TO PEER LENDING IN INDIA: AN INDUSTRY ANALYSIS WITH A COMPARATIVE STUDY OF PLATFORMS FEATURES

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The Peer to Peer (P2P) lending industry in India has emerged as a descriptive force in the financial sector, providing an alternative to traditional lending system. Despite its rapid growth and regulatory recognition. Furthermore, the industry face issues related to trust, transparency, regulatory, compliances. This research examines the peer to peer (P2P) lending industry in India, with a specific focus on comparing the features and functionalities of P2P platforms. The study aims to address the challenges faced by users in selecting appropriate platforms by conducting a comparative analysis of key parameters such as interest rates, loan tenures, security measures, user experience, and technological innovation. Using secondary data combination, this research employs comparative analysis to systematically evaluate various platforms. The findings highlight significant variation in platform performance. This study provided valuable insights for stakeholders including users, platform developers and decision making to enhance decision making and drive innovation in P2P lending ecosystem.

Key words: Peer to Peer lending (P2P), P2P Platforms (companies), Fintech (Financial Technology, RBI (Reserve Bank of India), Lending platform, Industry analysis.

Abstract ID: RSMOBUSI13

A STUDY ON INVESTOR'S AWARENESS TOWARDS POST OFFICE SAVING SCHEMES IN ANAND DISTRICT

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The study examines investors' awareness of post office savings schemes in the Anand District. Post Office Savings Schemes is one of the oldest government-backed saving options offered by the India Post. It is important to understand how well investors know about these schemes. The Primary objectives of the study are to examine the awareness level and analyze the relationship between demographic factors and awareness by focusing on variables such as gender, age, income, education, and Occupation. The study follows a descriptive research design and collects data from 153 investors in the Anand district using a questionnaire. The Independent T-test and One Away Anova were employed to test the Hypothesis. The Findings of the study show that the majority of investors are aware of post office savings schemes. The inventors show a high understanding of Rules Regulations, Potential Returns, and Tax benefits associated with these schemes. The Study revealed no significant difference between the demographic factors and awareness of the schemes. The study suggests creating awareness programs for women and promoting newly introduced schemes. The department should highlight benefits like retirement plans, tax Savings, and health care to attract more investors.

Keywords: Financial Services, Saving Schemes, Post Office Saving scheme, India Post.

Abstract ID: RSMOBUSI14

Study on performance evaluation of public sector banks after reforms with special refence to liquidity

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The aim of banking sectors reform is to improve overall function and risk management of banking industry. Performance of public sector banks post banking reform is analysis by assessing various key indicators and measures. Financial ration such as profitability, asset quality, capital adequacy, liquidity, efficiency, productivity, and cost management are evaluated. Furthermore, customer happiness, market share, and the ability to respond to changing market dynamics are critical criteria in assessing PSBs' overall performance and competitiveness. The main aim of this study is to analysis performance of selected public sector banks also comparison performance between before reform and after reforms.

Keywords- performance evaluation, reforms, liquidity, public sector banks.

Abstract ID: RSMOBUSI15

Tools and Techniques in Forensic Accounting with Reference to Indian Banking Sector

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This paper examines forensic accounting in detail, with a particular focus on its application in the banking sector. Exploring the tools and techniques necessary to detect and prevent financial fraud, the research spans a number of approaches from traditional auditing methods to cutting-edge technologies such as data analytics, artificial intelligence and blockchain building challenges unique emphasis that the banking industry puts on these strategies Effectiveness is assessed Through real-world case studies, the study clarifies the effectiveness of these tools, and demonstrates their importance in identifying the flaws in the financial stability of the banks. Contributing insights into the integration of developed methodologies and technologies, this review aims to inform practitioners, regulators and academics involved in forensic accounting, providing valuable perspectives for tapping fraud and the intricacy of detection and prevention in the dynamic environment of the banking sector.

Keywords: Tools and Techniques, Forensic Accounting, Banking

Abstract ID: RSMOBUSI16

SOCIAL MEDIA AS A TOOL FOR FINANCIAL LITERACY: A STUDY AMONG UNDERGRADUATE STUDENTS IN ANAND DISTRICT

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The present research sought to determine how an undergraduate student studying commerce uses social media to develop financial literacy. The primary goal of this research is to assess the level of financial literacy among graduate students in Anand district, to analyze the usage patterns of social media for financial learning among graduate students, and to investigate the influence of social media on financial decision-making among graduate students. In this study, primary data was collected from 166 respondents using a convenient random sample method. Data was collected from undergraduate students in Anand district using a structured questionnaire using Google Form. Variables in this study were demographics, social media usage, and financial literacy. Mean, rank, and regression analysis have been used in statistical techniques to analyze the data collected. Most of the respondents are between 18 and 20 years of age, and the students live in rural areas. The respondents know about compound interest, budgeting and savings, and debt management. 56% of the students have taken necessary decisions using information on social media. This survey revealed that the majority of students use social media like Instagram and YouTube to get financial information. They prefer content about stock market news, investment tips, and wealth creation strategies. They use information on social media to make financial decisions and invest, and social media helps them understand financial matters. Most students spend about an hour a week on social media for financial learning. Academic curriculum, friends, family, news websites, and social media influencers/content creators respectively contribute to the improvement of financial knowledge.

Keywords: social media, financial literacy, stock market, financial knowledge

Abstract ID: RSMOBUSI17

A STUDY ON EVALUATION OF STARTUP POLICY OF THE GOVERNMENT OF INDIA

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The Startups have a natural ability to create job opportunities in an Economy which can solve the unemployment problem to a great extent. They can bring new innovations, technology, new products or services; give solutions to the existing problems in the society. This shows the growing importance of the Startups worldwide. Hence, a need arised to form a policy by the Indian Government to support the Startups. The Government introduced the Startup India Policy in January 2016 along with many supporting policies to nurture innovations and Startups in the country. The intention is to create a breeding ground for the Entrepreneurs. The policy is such as to help the young generation achieve their dreams of becoming entrepreneurs. Due to all such efforts, India is now the third largest Startup Ecosystem in the world after the United States and China. The main purpose of this study is to examine the impact created by the Startup Policy in creation of an effective Startup Ecosystem for nurturing the Entrepreneurship in India. An evaluation will be made whether the government has succeeded in creation of the necessary environment in the country for the Startups.

Keywords: Startup Policies, Entrepreneurs, Ecosystem, Innovations

Abstract ID: RSMOBUSI18

AI and Sustainable Choices: Revolutionizing Indian Consumerism for the Future

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Artificial Intelligence (AI) is revolutionizing industries across India, reshaping everything from healthcare and agriculture to education and manufacturing. Consumerism, too, is transforming as AI emerges as a key driver in promoting sustainable practices and informed decision-making. In a country striving toward the vision of *Viksit Bharat 2047*, AI's potential to educate and empower consumers to adopt environmentally responsible choices is becoming increasingly significant. While still in its initial phase, AI applications in India are already fostering sustainability. E-commerce platforms like Flipkart and Big Basket are utilising AI to promote eco-friendly products and sustainable sourcing. FMCG giants leverage blockchain-powered AI for transparent supply chains, ensuring consumers are aware of the environmental impact of their purchases. Government initiatives, such as those under *Digital India*, employ AI-driven chatbots and educational campaigns to spread awareness about sustainability among diverse demographics, including rural populations. These efforts are creating a foundation for responsible consumer behaviour. As the nation progresses, challenges such as the digital divide, Limited Regional Language Support, Awareness and Adoption Barriers, and regional disparities in AI accessibility must be addressed. However, opportunities abound. AI-powered multilingual platforms can engage rural consumers, gamified apps can incentivize sustainable behaviour, and public-private partnerships can amplify AI's impact on consumer education. By integrating AI into broader national initiatives, India can foster a culture of sustainability and inclusivity. This paper conceptually explores the current landscape of AI in driving sustainable consumerism, the efforts undertaken by companies and the government, and the challenges and opportunities as India transitions toward a developed and environmentally conscious nation. With AI as a catalyst, sustainable consumerism can play a pivotal role in achieving India's aspirations for 2047.

Keywords: Artificial Intelligence, sustainable consumerism, informed choices, India 2047, consumer behavior.

Abstract ID: RSMOBUSI19

A THEORETICAL REVIEW OF STUDY ON DISPOSITION EFFECT

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This paper examines the "disposition effect," where investors hesitate to sell losing stocks but quickly sell winning ones. By reviewing 40 years of research, it explores theories explaining this behavior among individual and institutional investors and mutual fund managers. The authors reviewed existing studies on the disposition effect conducted in both real and experimental markets. Researchers used different methods to study the disposition effect, like the PGR-PLR ratio, t-tests, ANOVA, correlation, standard deviation, and regression analysis. The disposition effect varies across individual investors, institutions, and mutual funds. Individual investors are more prone to it, influenced by factors like age, gender, experience, and sophistication. Institutional investors and fund managers may or may not be affected.

Keywords: Disposition Effect, Prospect theory.

Abstract ID: RSMOBUSI20

COMPARATIVE ANALYSIS OF INDEX HEDGING STRATEGY WITH WEEKLY VERSUS MONTHLY OPTION

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Trading in a derivative market for a retailer has always been challenging with limited capital compared to other peers. Due to global uncertainty and complex set of news flows, retail traders find it difficult to time the direction and trend of the market movement. When it comes to derivative market, there exists complex sets of strategies often unproven and unchecked but if applied it consistently helps retailers to gain their fair share in the market. The paper compares the position of the trader trading in the Nifty index and hedging with weekly and monthly options. The reason for taking Nifty is being the key index with high liquidity in weekly option as well as monthly option. Where in the other index Bank Nifty also have the higher liquidity in weekly option, NSE has recently stopped the weekly expiry of option so the performance anyway will become insignificant for decision making in future. The paper analyzes the data with precondition framework where margin, brokerage and other legal charges are ignored. The comparative analysis has been drawn by taking data of twenty-four months. The results compared are of long position in the index and hence an opposite position may entail different result altogether. Although the weekly option proved to be cheaper than the monthly option, one cannot ignore the roll over charges while arriving the decision. Also, the other problem with weekly option hedging is constantly monitoring the position in case of any spike due to news driven activity. This way, the monthly option proved to be a lot better in managing and rolling over position. The paper aims to give a guiding framework to retailers trading in the derivative market.

Keywords: Options, Derivatives, Nifty, Strategies

Abstract ID: RSMOBUSI21

THE EVOLUTION OF CORPORATE RISK MANAGEMENT PRACTICES IN A DIGITAL ERA

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The digital era has transformed corporate risk management, prompting a shift from traditional, reactive approaches to proactive, integrated frameworks that address the complexities of modern business environments. This paper examines the evolution of corporate risk management practices, highlighting the challenges posed by technological advancements, globalization, and regulatory demands, alongside the opportunities afforded by emerging digital tools such as artificial intelligence, machine learning, and predictive analytics. Traditional risk management, often characterized by siloed methodologies, has struggled to keep pace with emerging risks, including cybersecurity threats, data privacy concerns, technological disruptions, and reputational challenges amplified by social media. The study underscores the growing importance of enterprise risk management (ERM) systems, which provide a holistic approach to identifying, assessing, and mitigating risks in real-time. Furthermore, it analyses the benefits of adopting cutting-edge technologies, such as enhanced decision-making, improved organizational resilience, and alignment with strategic goals, while addressing implementation challenges, including cost, resistance to change, and ethical considerations. Through a comparative analysis of traditional and modern practices, this research highlights the transition toward integrated frameworks that combine governance, strategy, and digital innovation to effectively mitigate risks. The findings suggest that organizations embracing advanced risk management systems are better positioned to navigate the uncertainties of the digital age. This study contributes to the academic and practical discourse by proposing a framework for aligning risk management with technological advancements and providing actionable recommendations for businesses. Future research is encouraged to address region-specific challenges and explore the ethical implications of using artificial intelligence in corporate risk management strategies.

Keywords: Corporate Risk Management, Digital Transformation, Cybersecurity Risks, Enterprise Risk Management (ERM), Technological Innovations

Abstract ID: RSMOBUSI22

"From Start-up to Sustainability: Examining Entrepreneurship's Role in MSME Development"

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Micro, Small, and Medium Enterprises (MSMEs) are fundamental to economic growth, job creation, and innovation. This paper examines the role of entrepreneurship in supporting MSME development from the initial start-up phase to long-term sustainability. Using a mixed-methods approach, it explores the entrepreneurial strategies that contribute to MSME resilience and adaptability across three key growth stages: start-up, expansion, and sustainability. The study highlights challenges such as limited access to finance, the importance of innovation, and the impact of supportive entrepreneurial ecosystems. Analysis of global data, combined with case studies, underscores that entrepreneurs who prioritize digital transformation, innovation, and strategic partnerships are more likely to achieve sustained success. The findings advocate for policies that strengthen entrepreneurial ecosystems, facilitating MSME growth and economic resilience in both emerging and developed economies. This research underscores entrepreneurship's critical role in enabling MSMEs to thrive in dynamic market environments, supporting long-term economic development and job creation.

Keywords: MSME Development, Economic Growth, Innovation, Job Creation, etc.

Abstract ID: RSMOBUSI23

"Phishing Attacks Targeting Cryptocurrency Users in Gujarat, India: An Analysis of Vulnerabilities"

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Phishing attacks targeting cryptocurrency users in Gujarat, India, have become a growing concern as digital currency adoption increases in the region. This research paper examines the specific vulnerabilities exploited by cybercriminals in phishing schemes aimed at crypto owners in Gujarat. Using techniques such as fake cryptocurrency exchanges, fraudulent websites, and phishing emails that impersonate popular wallet services, attackers are able to deceive users into revealing sensitive information like private keys, passwords, and wallet credentials. The study highlights how attackers often leverage local languages, cultural references, and region-specific cryptocurrency trends to increase the credibility of their scams, making it easier to exploit unsuspecting users. Case studies from Gujarat reveal the prevalence of social engineering tactics that involve convincing users to click on malicious links or download compromised applications. The rapid rise in cryptocurrency investments, coupled with a lack of awareness about cybersecurity best practices, particularly among new users, has made Gujarat a prime target for these attacks. This paper also explores the socio-economic factors contributing to the region's vulnerability, such as limited digital literacy and a lack of effective regulatory oversight. The findings underscore the need for heightened cybersecurity education, improved public awareness, and stronger protective measures to safeguard cryptocurrency investors in Gujarat from phishing attacks.

Keywords: Phishing, Crypto, Cryptocurrency, Investment.

Abstract ID: RSMOBUSI24

SEMICONDUCTOR ECOSYSTEM IN INDIA: VISION TO ESTABLISH A GLOBAL SEMICONDUCTOR HUB

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Amidst global projections in the semiconductor industry growth, India is potentially benchmarking its strength to pioneer, evolve, and establish itself as a global hub. As the other countries, especially Taiwan, China, Japan, South Korea, and the United States, have marked their excellence in the semiconductor industries, the journey of India from import-reliant to becoming self-reliant has been and will be an excellent attribute to look for. Global crisis amid tension between China and Taiwan, ongoing Russia-Ukraine war, and unrest in the Middle East are the fueling factors to immediate attention in becoming self-reliant. The push from the government with its promotional credentials, such as the National Policy on Electronics (NPE), the India Semiconductor Mission (ISM), the Design-Linked Incentives (DLI), and the subsequent efforts like Make in India and Digital India, are favoring the domestic and international companies to prosper here. However, the challenges in this entire journey can't be overlooked, which account for high investment costs, skilled manpower, infrastructural excellence, and other allied resources' management. They are to be tackled and need to be efficiently addressed, resolved, and paced up with future developments. Certainly, India, with its great potential and resources, has the capability not only to win the chip war but also to lead the global market and establish itself as a global semiconductor hub, and the ecosystem to achieve the same shall persist and prosper with the time. This review paper emphasize the journey of India to become a global leader in the semiconductor world, aligning its efforts to establish the same, strategic alliances with the global market players, favorable policies, challenges associated with it, and other aspects to understand the overall ecosystem thereof.

Keywords: chip war, ecosystem, global hub, self-reliant, semiconductor.

Abstract ID: RSMOBUSI25

EVALUATING THE IMPACT OF CORPORATE GREEN ACCOUNTING PRACTICES ON SUSTAINABLE BUSINESS OBJECTIVES

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Assessing the impact of corporate green accounting on sustainable business objectives requires analyzing both financial and non-financial metrics. Green accounting, which integrates environmental costs and benefits into traditional systems, has become more prominent as businesses prioritize sustainability. Evaluating its effectiveness involves examining key indicators like reduced carbon emissions, improved resource efficiency, and better waste management. Consideration should also be given to long-term financial implications, such as cost savings from energy conservation and increased revenue from eco-conscious consumers. Stakeholder perceptions and regulatory compliance are crucial in determining the success of green accounting. Systematic measurement and reporting of these factors help organizations align green accounting practices with sustainable business goals, informing strategic decisions and driving continuous improvement in corporate environmental performance.

Keywords: Environmental Accounting, Impact of Green Accounting practices, Sustainable Development

Abstract ID: RSMOBUSI26

India's offshore wind energy sector is set for significant growth and development.

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India shifting from fossil fuels to renewable energy sources due to the exponential growth in population and subsequent electricity demands. It highlights that as of 2012, only a small portion of India's electricity was generated from renewable sources. The Indian Government aims to increase this to 40-42% of total energy production. A significant part of this renewable energy goal is more focused on wind energy, which makes up 60% of India's renewable energy. However, most of this comes from onshore wind farms, and there's a push to develop offshore wind farms. The promotion of offshore wind energy is seen as a key strategy to reduce reliance on fossil fuels, lower greenhouse gas emissions, conserve the environment and create employment opportunities. In this study, the literature is reviewed to summarize the environmental impact of solar and wind energy and focus on offshore energy in India. The National Institute of Wind Energy (NIWE) and various agencies have identified significant offshore wind energy potential off the coasts of Gujarat and Tamil Nadu, with estimates of 36 GW and 35 GW, respectively. Under the FOWND project supported by the European Union, eight zones in each state were marked as potential sites. The Indian government aims to install 5 GW of offshore wind capacity by 2022 and 30 GW by 2030, which could boost confidence among developers and financiers. This review paper offers a thoughtful and inclusive analysis of the environmental impacts associated with solar and wind energy. It is intended to be a valuable resource for conducting meaningful environmental impact assessments. Furthermore, this analysis may support developers, policymakers, and decision-makers in effectively planning future solar and wind energy projects.

Abstract ID: RSMPBUSI01

Sustainability Practice Through Business: A Study on Business Responsibility and Sustainability Reporting.

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Business responsibility and sustainability reporting is mandatory for top 1000 listed entitles (as per their market capital) with effect from financial year 2022-23 As per the SEBI's guidelines and before FY 2022-23 sustainability reporting were voluntary for all business. This non -financial reports are basic document for the stake holders especially for the investors to analyse companies' sustainability practices. as per the guidelines companies are preparing sustainability reports by BRSR disclosure or follows international standard to report on sustainability practices. Researcher aimed to explore the conceptual framework and disclosure adopted by the business to prepare non-financial reporting. Study also examines the Environmental, Social and Governance factor specific policies, commitment and achievements towards sustainable practices by business after the SEBI's guideline for mandatory reporting for top 1000 listed companies. Content analysis and percentage analysis are used to conclude the sustainability reports of companies. To drive results sustainability reports of top 100 companies collected from the websites of particular company. Top 100 companies were selected from BSE index based on their market capitalization. Study revels that out of 100 companies, 80% business are following BRSR framework to prepare sustainability reports and 20% businesses are following international standards to report their sustainability practices. Majority of the selected companies follows all essential principals as per the guidelines to conduct sustainability report. Paper contributes to conceptual knowledge of BRSR formats and tried to examine results of SEBI's guidelines after mandating sustainability reporting.

Keywords: Sustainability practice, BRSR, ESG factors, non-financial reporting.

ECONOMICS

Economic policy and decision making do not function in a political vacuum.

- Manmohan Singh

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Abstract ID: RSMOECO01

Financial knowledge among Graduate Level Rural Female Students

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The purpose of this study is to find out the financial knowledge in Graduate Level Rural Girl Students of Anand and Petlad Talukas In the present study two talukas Anand and Petlad of Anand district.were selected from which 62 samples of female students studying at graduation level were selected, the stream was chosen from Arts, Commerce and Science In Anand taluka village are Mogari, Meghva, Gana, bakarol, Karamsad, jod villages and in Petlad taluka villages are Shahpur, jogan, bandhani, Dantali, lakkdpura, were selected. Interview schedule was used for data collection in the study. Chi-Squared test was used in SPSS for data analysis. The findings of the study were as follows, Rural Female student of Petlad taluka is having more financial knowledge as compare to Aanad taluka regarding General financial knowledge and advance financial knowledge in addition, it was found that rural students, especially students who did not include subjects related to finance in their curriculum, had less advance financial knowledge.

Keywords: Financial Literacy, Rural Female College Student, Financial knowledge, Financial Behavior, Financial well-being.

Abstract ID: RSMOECO02

Study on Factors Affecting the Adoption of Household Rooftop Solar in Kapadvanj

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Purpose: As per Energy Statistics India 2024, the sustainable energy approach emphasises increasing energy efficiency and improving energy intensity by increasing the share of renewable energy in total energy generation, keeping this as a macroeconomic goal Government of India has launched several schemes regarding renewable energy generation for various sectors. Among various renewable energy generation schemes PM Surya Ghar Muft Bijli Yojana is exclusively for the residential sector aiming to achieve 1 crore household rooftop solar installations in India, however this target is still not achieved as several factors hinder the faster adoption of household rooftop solar. Many studies have been conducted on the factors affecting the adoption of household rooftop solar for metropolitan cities and rural areas however factors affecting household rooftop solar adoption for town areas have not been clearly identified moreover those studies that identified factors affecting household rooftop solar in town emphasise economic factors thus, to bridge this gap this paper aims to identify factors affecting household rooftop solar adoption in town.

Design/Methos/Approach: In this study structured questionnaire is used as a research tool. the questionnaire is administered to 100 non-users of rooftop solar (who were neighbours of rooftop solar users) For data analysis R software is utilised. SEM model is employed for hypothesis testing.

Findings: for investment in household rooftop solar government incentives are a motivator factor which paves the way for cost reduction and shorter payback period. the cost of maintenance has negative relationship towards the adoption of household rooftop solar whereas non-economic factors such as environmental concern is less significant but the motivator factor on the other hand peer effect and social factors have a positive relationship with the adoption of household rooftop solar

Abstract ID: RSMOECO03

ASSESSING THE GAPS BETWEEN DEMAND AND SUPPLY OF PUBLIC TRANSIT NETWORK: A CASE OF NAGPUR CITY

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Urbanization poses challenges for effective public transportation (PT) planning, especially in developing countries. Current practices of origin-destination mapping are a very time and resource-intensive measure, which cannot be used in regular intervals, for updating the city's changing size and demands. Hence, there is a need to find a methodology that is simple to execute yet comprehensive, for estimating the demand of the PT network. This study assesses various location-based accessibility models, which are evaluated using the distance, contour, potential, time-space, and utility measures. Out of all, only the gravity potential measures use the land use and transport components together, for assessing the PT network demand. Hence, this study methodology involves a three-stage approach, first, the overall demand map for the PT network is generated using the trip production (through population density) and trip attraction data (Using gravity potential measure). The second stage includes mapping the existing PT routes (i.e., bus routes selected for this study). Then, in the third stage, weighted overlay analysis is performed to combine the overall demand map for PT and the existing PT network, to estimate the gap in the current supply of PT network for the Home-based educational trips. The analysis reveals significant PT coverage gaps, with major segments underserved for the PT network. This study provides urban planners with a rational and comprehensive methodology for improving public transit accessibility based on the demand for PT.

Keywords: Accessibility, Public Transport Accessibility, Location-based Measure, Public Transit Demand, Gravity Potential Measure

EDUCATION

"Be Educated, Be Organised and Be Agitated"
- B. R. Ambedkar

Sardar Patel University

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Abstract ID: RSMOEDU01

DIGITAL KNOWLEDGE AND SECONDARY SCHOOL STUDENTS

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Current education scheme is witnessing a shift of focus from conventional classroom teaching to digital technological teaching. It is experimental that there is a surging demand for being smart and complete their personal and professional tasks in stipulated time. Since a recent past, digital facilities help us to be smarter in achieving desired outcomes at an ease and make life very easy. The school students are aware with the available digital facilities and utilize them successfully to complete their academic tasks. But the inquiry is what is the level of digital knowledge the school students? The present paper is the answer of this inquiry. The researcher employed a study to check the level of students' digital knowledge. The present study is descriptive in nature wherein researcher used the survey method. Data was collected from secondary school students of Anand District by using Digital knowledge questionnaire. The collected data was analyzed through suitable statistical techniques including percentage analysis and t-test. The findings of the study revealed that 63% of the students are having high digital knowledge, 32% of the students are having average digital knowledge, and 05% of the students are having low digital knowledge. The analysis can be interpreted that neither girls or boys, nor English medium or Gujarati medium secondary school student exhibited significant difference in their digital knowledge. This study shows that there is no difference in the knowledge about the digital literacy among secondary school students.

Key Words: Digital Knowledge, Digital literacy, Secondary School Students, Education.

Abstract ID: RSMOEDU02

મૂલ્ય શિક્ષણ : પ્રવૃતિ આધારિત અધ્યયન

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પ્રસ્તુત પેપર સંસ્થામાં મૂલ્ય શિક્ષણ સાથે સબંધિત છે. પેપરની શરૂઆતમાં સંશોધકે સમાજમાં મૂલ્ય આધારિત શિક્ષણની જરૂરિયાતને યોગ્ય ઠેરવવાનો પ્રયાસ કર્યો છે.ત્યાં મૂલ્ય શિક્ષણના ઉદેશ્યો અને પ્રવૃતિઓ તરફ નિર્દેશ કર્યા પછી મૂલ્યો અને સંબંધિત સામગ્રી બિંદુઓનાં અવકાશની ચર્ચા કરેલ છે.છેલ્લે સંશોધકે પ્રવૃતિ આધારિત મૂલ્ય શિક્ષણનું એક મોડેલ આપ્યું છે.

Abstract ID: RSMOEDU03

ભારતીય જ્ઞાન પ્રણાલીનું વિવિધ ક્ષેત્રોમાં યોગદાન

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ભારતમાં લગભગ 5000 વર્ષ જૂની લોક મંગલકારી જ્ઞાન પ્રણાલી હતી.આ જ્ઞાનનું પ્રથમ ચરણ વૈદિક જ્ઞાનનો સૂર્યોદય કાળ કહેવાય છે .આ પરંપરા ઋગ્વેદ સહિત ચાર વૈદિક સંહિતાઓમાં વિશ્વની પ્રથમ જ્ઞાનગંગા બની છે. ઉત્તર વૈદિક કાળ,ઉપનિષદ દર્શન અને છ પ્રાચીન દર્શનોમાં જિજ્ઞાસા સાથે તર્ક પ્રગટ થયો છે, જે બુદ્ધ અને મહાવીરના દર્શનોમાં અભિવ્યક્ત થાય છે.આ પ્રણાલીમાં પાણિનિએ વિશ્વનું પ્રથમ વ્યાકરણ લખ્યું હતું. કૌટિલ્યે અર્થશાસ્ત્ર, વાત્સ્યાયને કામસૂત્ર અને ભરતમૂનિએ નાટ્ય શાસ્ત્ર લખ્યું હતું. ચરક અને સુશ્રુત સંહિતા આયુર્વેદના આધારભૂત ગ્રંથો ગણાય છે.ભારતીય જ્ઞાન પ્રણાલી જ્ઞાન અને પ્રજ્ઞાનું અદ્વિતિય પ્રતીક છે. જેમાં જ્ઞાન અને વિજ્ઞાન, પરા અને અપરા, કર્મ અને ધર્મ તથા ભોગ અને ત્યાગનો અદ્ભુત સમન્વય છે. ભારતીય શિક્ષણ પ્રણાલી ઋગ્વેદના સમય થી જ જીવનના નૈતિક, ભૌતિક , આધ્યાત્મિક અને બૌદ્ધિક મૂલ્યોને કેન્દ્રમાં રાખીને વિનમ્રતા,સત્યતા, અનુશાસન, આત્મનિર્ભરતા અને સર્વ માટે સન્માન જેવાં મૂલ્યો પર ભાર મૂકે છે. વેદોમાં વિદ્યાને માનવતાની શ્રેષ્ઠતાના આધારનો સ્વીકાર કર્યો છે.ભારતીય જ્ઞાન પ્રણાલી મુજબ જ્ઞાન એ આત્મસાક્ષાત્કાર અને સ્વ પ્રતીતિ છે. જ્ઞાન એ સત્,ચિત્ત અને આનંદની પ્રાપ્તિ છે. પ્રસ્તુત શોધપત્રમાં ભારતીય જ્ઞાન પ્રણાલીના શિક્ષણની સાથે મનુષ્યના દરેક ક્ષેત્રમાં વિશેષ યોગદાનને ઉજાગર કરવામાં આવ્યો છે.

ચાવીરૂપ શબ્દો : ભારતીય જ્ઞાન પ્રણાલી, વિવિધ ક્ષેત્રો, યોગદાન

Abstract ID: RSMOEDU04

Integrating Mental Health and Well-being for Adolescents in India: Strategic Policies, Government Initiatives, and Sustainable Development Pathways

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The psychological well-being and mental health of adolescents in India are becoming increasingly critical concerns due to rapid socioeconomic changes, academic pressures, and cultural expectations. This study explores the prevalence and contributing factors of mental health issues among Indian adolescents, such as anxiety, depression, and stress-related disorders and the initiatives taken by the government so far Approximately 15-20% of Indian adolescents face mental health challenges, compounded by social stigma, lack of awareness, and limited access to mental health services. The COVID-19 pandemic exacerbated these issues, leading to higher rates of anxiety, depression, and social isolation and suicidal cases among youth.

Despite recent government initiatives and the rise of mental health and well-being awareness campaigns, stigma and inadequate mental health infrastructure hinder timely intervention and support. The study highlights the impact of governmental efforts so far and emphasizes the urgent need for targeted mental health programs in schools, robust community support systems, and policies to promote mental health awareness among adolescents. It recommends integrated interventions involving families, educational institutions, and healthcare providers to create a supportive environment for adolescent mental well-being in India. Collaboration is essential for India to achieve the Sustainable Development Goals by 2030, particularly Goal 3, which focuses on mental health and well-being and ensuring access to high-quality mental health services and universal health coverage, especially for adolescents.

Keywords: Psychological Well-being, Mental-health, Sustainable development Goals, Adolescents, Policies

Abstract ID: RSMOEDU05

ભારતીય શિક્ષણ પ્રણાલી અને રાષ્ટ્રવાદ એક અભ્યાસ

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આ પેપર ભારતની શિક્ષણ પ્રણાલી અને રાષ્ટ્રવાદ વચ્ચેની આંતરપ્રક્રિયા વિશે માહિતી આપે છે. પ્રાચીન ભારતીય શિક્ષણ પ્રણાલી વિશે વિવિધ સંશોધનોના અભ્યાસનું વિશ્લેષણ કરીને અને આધુનિક ભારતીય શિક્ષણ પ્રણાલીમાં જુદી જુદી શિક્ષણ નીતિઓ જેવી કે રાષ્ટ્રીય શિક્ષણનીતિ -1986 ,સુધારા શિક્ષણનીતિ 1992 અને હાલમાં જ જેનો અમલ કરવામાં આવ્યો છે તેવી નવી રાષ્ટ્રીય શિક્ષણનીતિ -2020નો અભ્યાસ કરીને ભારતીય શિક્ષણ પ્રણાલી અને રાષ્ટ્રવાદ બંને પાસાઓ વિશે સમજ આપે છે. આ અભ્યાસમાં આધુનિક ભારતીય શિક્ષણ પ્રણાલીમાં રાષ્ટ્રવાદનું આલેખન, રાષ્ટ્રવાદની ભૂમિકા, શિક્ષણની સામાજિક જીવન પર અસર, લોકશાહી , શિક્ષણ અને ટકાઉ વિકાસ , શિક્ષણથી રાષ્ટ્રપ્રેમ ,રાષ્ટ્રનિર્માણ અને ભાઈચારો જેવા મૂલ્યો કેળવવા વગેરે કેવી રીતે અસરકારક છે તે સમજ આપે છે. આ ગુણાત્મક અભ્યાસ દેશના શિક્ષણ ક્ષેત્રને સમજવામાં ઋષિ મુનિઓથી લઈને ગાંધીજી , રવિન્દ્રનાથ ટાગોર, ગિજુભાઈ બધેકા જેવા કેળવણીકારોના શિક્ષણ ક્ષેત્રે આપેલ યોગદાનની સમજ આપે છે. આ પેપર બહારની દુનિયા માટે શિક્ષણથી રાષ્ટ્રનિર્માણ અને દેશ પ્રેમને કેવી રીતે ઉજાગર કરવો તે સમજ પ્રદાન કરે છે. આપણો સમૃદ્ધ સાંસ્કૃતિક વારસો દરેક નાગરિકને સમાન દરજ્જો આપે છે. વ્યક્તિની જગ્યાએ દેશ મહત્વનો છે જ્યાં કોઈ ઉચ્ચ-નીચનો ભાવ ન હોય, કોઈપણ કામ નિમ્ન ન હોય દરેક કામએ દેશ નિર્માણ માટે મહત્વના છે. દરેક નાગરિક દેશપ્રેમ અને ભાઈચારો કેળવે તેજ ખરો રાષ્ટ્રવાદ છે. આવી મહાનતા કેળવવા માટે શિક્ષણ જ અગત્યનું સાબિત થાય છે. દરેક નાગરિકમાં દેશપ્રેમ અને મહાન રાષ્ટ્ર નિર્માણના મૂલ્યો ઉજાગર થાય તેના પર ભાર મૂકે છે. સાંસ્કૃતિક મૂલ્ય કેળવાય તેવા વિદ્યાર્થીઓના નિર્માણ માટે ભારતીય શિક્ષણ પ્રણાલીના મહત્વ પર ભાર મૂકીને પેપર સમાપ્ત થાય છે. જે ભારતીય શિક્ષણ પ્રણાલી અને રાષ્ટ્રવાદ વચ્ચેનો સમન્વય જાણવામાં મદદરૂપ થશે.

ચાવીરૂપ શબ્દો : ભારતની શિક્ષણ પ્રણાલી , રાષ્ટ્રવાદ , રાષ્ટ્રીય શિક્ષણનીતિ, કેળવણીકાર

Abstract ID: RSMOEDU06

Scientific Creativity: Shapes Modern Science

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Both science and creativity are intertwined, they help to define each other. It is highly technical and complex. In today's times, it has become important to encourage creativity along with the study of science. Generally speaking, science is associated with individual creativity and it is known as 'scientific creativity'. Scientific creativity becomes very important for the study of science. So, what is scientific creativity to the science teacher for science pedagogy? How does it work? How can it be constructed? Knowing and understanding these things becomes imperative.

The present research is an attempt to explain the basis of scientific creativity with the help of a close and comprehensive study of various previous research on scientific creativity. This study shows its similarity with the construction of creativity with science in terms of philosophical perspective of science. The emergence of the concept of scientific creativity is discussed with adequate references, explaining how scientific creativity works. Different thinkers' approaches to understanding scientific creativity have been adopted and the debate on this shows that scientific creativity is very broad and complex. Thus, this study clarifies the concept and form of scientific creativity.

Abstract ID: RSMOEDU07

Discovery based learning: Benefits and Challenges in Secondary School Education

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Discovery based learning is a student-centered method. Through the present research. The purpose of studies to discuss the benefits and challenges of discovery education at the secondary level. A student learns through self-directed active learning. So, the knowledge acquired becomes permanent. But when the student is not properly guided at the initial stage, there is a possibility of wasting time. Only a properly trained teacher can teach in this way and unless the students have a rich minimum cognitive structure. It is not possible to study every content in this way. A teacher with a slow-paced learning style may not be able to cope with this type of learning.

Keywords: Discovery-based learning, Secondary Education

Abstract ID: RSMOEDU08

Merits and Demerits of Flipped Classroom Approach

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Flipped Classroom is an active, student oriented approach that was formed to increase the quality of period with in class.Generrally this approach whose applications are done mostly in physical science, also attracts the attention of educators and researchers in different disciplines recently. Flipped classroom learning which wide spread rapidly in the world ,is not well recognised in our country. That is why the aim of study is to attract attention to its potential in education field and provide to make it recognised more by educators and researchers. With this aim, in the study what Flipped Classroom approach is flipped classroom technology models it's advantages and limitations are explained in this article.

Keyword: flipped learning, Flipped Classroom approach.

Abstract ID: RSMOEDU09

'साम्प्रत पाठ्यपुस्तकों में प्रतिबिंबित भारतीय संस्कृति'

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ग्लोबल पावर इंडेक्स (नवंबर 2024) के अनुसार, विश्व के सबसे शक्तिशाली देशों में भारत चौथे स्थान पर है। विकसित भारत-2047 के लक्ष्य के तहत भारत में आर्थिक विकास, पर्यावरणीय स्थिरता, सामाजिक विकास और सुचारू शासन जैसे लक्ष्यों को प्राप्त करने के लिए अनुसंधान और नवाचार अत्यंत आवश्यक हैं। साथ ही, भारतीय ज्ञान परंपरा और भारतीय संस्कृति विश्व का मार्गदर्शन करने में सक्षम है।प्राचीन भारतीय संस्कृति और प्राचीन भारतीय शिक्षा प्रणाली विश्व में अद्वितीय, अनुपम, पूजनीय और दर्शनीय रही है। आध्यात्मिकता, बौद्धिकता और सांस्कृतिक विकास भारतीय ज्ञान परंपरा की हजारों वर्षों से चली आ रही विशेषताएं हैं। भारतीय ज्ञान परंपरा में बहुआयामी आयाम शामिल हैं, जैसे वेद-उपनिषद, गणितशास्त्र, आयुर्वेद, योग, तत्वज्ञान, भाषाशास्त्र, व्याकरणशास्त्र, कला-स्थापत्य, नीतिशास्त्र और पर्यावरण। ये आज भी भारतीय संस्कृति के संरक्षण और संवर्धन में सहायक हैं।भारत में धार्मिक विविधता होने के बावजूद, हर धर्म प्रकृति, समाज और व्यक्ति के साथ सह-अस्तित्व की वकालत करता है। इसीलिए, 'साम्प्रत पाठ्यपुस्तकों में प्रतिबिंबित भारतीय संस्कृति' विषय को शोध के रूप में चुना गया है। इसमें साम्प्रत कक्षा 9 की गुजराती पाठ्यपुस्तक में भारतीय संस्कृति से संबंधित तत्वों के पाठों की पहचान, भारतीय संस्कृति से जुड़े तत्वों का विश्लेषण और इन तत्वों से निष्कर्ष निकालने जैसे उद्देश्य शामिल किए गए हैं। इस शोध के माध्यम से छात्रों, शिक्षकों और अभिभावकों को भारतीय संस्कृति के तत्वों के बारे में अधिक जानकारी प्राप्त हो, उन्हें अपने आचरण में उतारें और भारतीय संस्कृति के प्रति उनकी जागरूकता बढ़े, यही इस शोध का उद्देश्य है। इस शोध में विषयवस्तु विश्लेषण पद्धति का उपयोग किया जाएगा।

मुख्य शब्द: साम्प्रत पाठ्यपुस्तक, भारतीय संस्कृति।

Abstract ID: RSMOEDU10

Fostering Holistic Growth through Indian Knowledge Systems and NEP 2020

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The National Education Policy (NEP) 2020 outlines a transformative vision for India's education system, emphasizing cultural rootedness, multidisciplinary approaches, and holistic growth. This policy resonates strongly with Indian Knowledge Systems (IKS), which provide a timeless framework for intellectual, emotional, physical, and spiritual development. Rooted in ancient traditions, IKS encompasses disciplines such as Ayurveda, Yoga, Vedic Mathematics, and Indian Philosophy, each fostering self-awareness, critical thinking, and balanced living. By integrating IKS into the contemporary education framework, NEP 2020 aspires to prepare learners for 21st-century challenges while maintaining a strong connection to their cultural heritage.This paper critically examines the provisions of NEP 2020 aimed at reintegrating IKS into the education system. It explores the policy's emphasis on multilingual education, the inclusion of local and regional histories, and the revitalization of traditional arts and crafts. Furthermore, NEP 2020's pedagogical approaches, such as experiential learning and inquiry-based methodologies, align closely with the practices of ancient Indian scholars, ensuring that education remains relevant and engaging. This paper also highlights the alignment between NEP 2020 and IKS in promoting sustainability, ethical practices, and lifelong learning.By leveraging IKS within the framework of NEP 2020, this paper argues for an education system that not only imparts knowledge but also nurtures well-rounded individuals. Such integration ensures a harmonious blend of tradition and innovation, creating a generation equipped to address global challenges while remaining deeply rooted in India's rich heritage.

Keywords: Indian Knowledge Systems (IKS), National Education Policy (NEP) 2020, Holistic Development

Abstract ID: RSMOEDU11

THE FACTORS BEHIND MATHEMATICAL CREATIVITY

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Mathematical creativity is a critical aspect of problem-solving and innovation in the field of mathematics. This study explores the multifaceted factors that contribute to the development and expression of mathematical creativity, focusing on cognitive, affective, and environmental influences. It reviews key theoretical frameworks, such as divergent thinking, motivation, and the role of prior knowledge, that underlie creative processes in mathematics. Additionally, the paper examines the developmental trajectory of mathematical creativity, highlighting how it evolves across educational stages, from early childhood through higher education. The role of teachers, classroom practices, and curricular structures in fostering or hindering creativity is also discussed, emphasizing the importance of an encouraging and flexible learning environment. Finally, the paper addresses challenges in integrating creativity into mathematics instruction and proposes strategies for cultivating creative thinking within mathematical education.

Keywords: Creativity, Mathematical Creativity

Abstract ID: RSMOEDU12

INDIAN KNOWLEDGE SYSTEMS DRIVEN LANGUAGE ENRICHMENT THROUGH CULTURAL TEXTS

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Indian Knowledge Systems (IKS) represent a vast repository of ancient wisdom encompassing philosophy, science, literature, and art, deeply rooted in the diverse cultural heritage of India. These systems have historically played a pivotal role in shaping linguistic traditions, preserving languages, and fostering cultural continuity. IKS, through its oral and written traditions, has been instrumental in transmitting knowledge and enriching language development across generations.

Cultural texts, including epics, folk tales, classical literature, and oral narratives, serve as vital mediums for the preservation and evolution of language. These texts not only reflect the socio-cultural milieu of their time but also provide linguistic structures, idiomatic expressions, and vocabulary that continue to influence contemporary language practices. By engaging with such texts, learners can develop a profound understanding of language within its cultural and historical context, promoting a holistic approach to language education.

This paper aims to explore how Indian Knowledge Systems, driven by cultural texts, can enhance language learning and enrichment. It examines the interplay between language and knowledge transmission, emphasizing the pedagogical value of integrating IKS into language curricula. The paper further investigates the potential of cultural texts to enrich linguistic skills, such as vocabulary, syntax, and contextual understanding, while fostering cultural pride and identity among learners.

In doing so, the study seeks to bridge the gap between traditional knowledge and modern language education. It highlights the importance of preserving IKS through strategic incorporation into teaching methodologies and curriculum frameworks. By leveraging the linguistic and cultural richness embedded in IKS, educators can offer a more meaningful and enriching language learning experience. This approach not only preserves India's cultural heritage but also equips learners with a deeper appreciation of their linguistic and cultural roots.

Keywords: Indian Knowledge System, Language Enrichment, Language Learning, Cultural Texts

Abstract ID: RSMOEDU13

Nurturing Holistic Development Of Pre-School Learners: Engaging Panchaadi Pedagogical Approach For Panchtantra Stories

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In the Pre-schooling stage storytelling provides strong basis through which one can impart values along with promoting critical thinking, enhancing language and socio-emotional development. Panchtantra stories illustrates a blend of humor, wit, emotions, life lessons, facts and mystical characters which can be adopted in the educational setting for the preschoolers. Panchtantra a five-book resembles several stories nested within stories ascribing animals as main character who talk to each other and conduct several cores of life based on human characteristics and their behaviour pattern, which is the composed by Vishnu Sarman and considered as Nitishastra which means "Wise conduct of life". The present paper focuses on the Panchtantra stories to be narrated amongst the preschoolers for their holistic development through integration of panchaadi pedagogical approach as prescribed pedagogy to be implemented by NCFFS (National Curriculum Framework for Foundational Stage). Panchaadi pedagogy is a five stepped approach of teaching preschoolers which includes Aditi, Bodh, Abhyas, Prayog and Prasar. So, in this paper the author attempts to represent a pathway related to panchaadi approach of teaching by blending it with story telling Method of narrating and suggesting core areas of Holistic development at each stage of this pedagogical approach. This paper also signifies the benefits of panchaadi approach for Teacher's of preschoolers and importance of holistic development through the Panchatantra stories.

Keywords: ***Holistic Development, Pre-Schoolers, Panchtantra Stories, Panchaadi Pedagogical approach***

Abstract ID: RSMOEDU14

AI AND PROSPECTIVE TEACHERS: INSIGHTS INTO AWARENESS, USAGE AND ETHICAL CONSIDERATIONS

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Artificial Intelligence (AI) is increasingly influencing education, providing innovative tools to enhance teaching and learning. For prospective student teachers, understanding and utilizing AI is essential for meeting the demands of modern classrooms. Aim of this study is to investigate the Awareness and Usage of AI, Barriers to the usage of AI, Readiness for adoption of AI and an Ethical Consideration among perspective student teachers, with a particular focus on their preparedness to incorporate AI into teaching practices. The paper adopts a quantitative approach utilizing a descriptive survey method of research. convenient sampling technique is used to conduct this research with the sample size around 200 prospective student teacher from various B.Ed colleges of Anand district. The research is conducted via self-made questionnaire consisting various dimensions such as Awareness of AI, Usage of AI, Barriers to the usage of AI, Readiness for adoption of AI and an Ethical Consideration. The paper also represents the analysis of collected through frequency and percentage along with the major findings of the study.Lastly, it also represents aspects of discussion and conclusion as well. The study highlights the need for structured AI training within teacher education programs to address these gaps. This research contributes to understanding the role of AI in teacher education and offers insights for policymakers and educators aiming to foster AI readiness in Pre-service teacher training.

Keywords: Artificial Intelligence (AI), AI in Education, Pre-service Teachers, Educational Technology, Teacher Training

Abstract ID: RSMOEDU15

INDIAN MATHEMATICAL CONTRIBUTIONS: A CRITICAL ANALYSIS OF THEIR REPRESENTATION IN SCHOOL MATHEMATICS TEXTBOOKS.

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In this study, the focus is on the representation of contributions made by Indian Mathematicians in the school textbooks, especially Aryabhata, Brahmagupta, Bhaskaracharya and others. The concern raised stems from the problems that exist in the educational resources, namely the textbooks that are used in primary or secondary or higher secondary schools in India: less attention is given to such accomplishments and history does not play any role in the text. The purpose of this study is to evaluate the availability and the importance of Indian mathematics in the scope of school textbooks and its influence on students' comprehension of the subject. A qualitative analysis of textbooks was conducted, examining how these contributions are depicted and identifying the gaps in coverage. The results demonstrate that the achievements of many great Indian mathematicians are either overshadowed or completely disregarded causing the story of the mathematics evolution to be very narrow and European centred. Such a situation may bring about an inability of the students to understand mathematics as a discipline and a science that is enjoyed by all people from all races and cultures. The study argues that these contributions should also properly be reflected and incorporated as part of the curriculum history of mathematics teaching. It outlines strategies for amending texts and curricula to include as legitimate the mathematics practiced and developed by Indians and other peoples throughout the world. In addressing these shortfalls, the research seeks to promote a better educational model in which the subject of mathematics is perceived as a product of various cultures and their influence.

Key Words: Indian Mathematics, Mathematics Textbook

Abstract ID: RSMOEDU16

Scientific Thinking – literature review

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Much research has been done on Thinking and the results can be easily found in Journals however, research on Scientific Thinking development is still relatively rare. Therefore, it is necessary to study the literature to reveal the scope of research on the topic on scientific thinking .To achieve aim , a literature review was carried out with the procedure .some articles obtained team the IJSE , DOAJ , ERIC TOP science ,science Direct and springer Link websites were analyzed . The result showed that the many programmes use to develop scientific thinking and which very helpful to study for development of scientific thinking.

KEYWORDS: scientific thinking, development, review

Abstract ID: RSMOEDU17

Integrating Mental Wellness Strategies In English Language Curricula: A Pathway To Sustainable Development

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The study explored the integration of mental wellness strategies into English language curricula as a means to support students' mental health and academic success, contributing to sustainable development. With increasing awareness of the impact of mental health on education, the study examined the potential benefits of incorporating mental wellness into language learning. By reviewing existing literature, the paper identified the interconnectedness of mental health and academic outcomes, highlighting how strategies such as mindfulness, stress management, and emotional resilience could improve both mental well-being and language acquisition. The study also discussed the theoretical frameworks of wellness to provide a foundation for integrating wellness into educational practices. Through a survey, the paper assessed the current state of mental wellness in curricula and its impact on students' mental health and academic performance. The findings of the study suggested that while there was significant support for the integration of mental wellness, challenges such as lack of teacher training, insufficient resources, and curriculum constraints needed to be addressed. The study concluded that a holistic approach to education, which includes mental wellness strategies, not only enhanced academic outcomes but also promoted students' emotional resilience, contributing to long-term sustainable development goals related to quality education and well-being.

Keywords: Integrating, Mental Wellness, English Language Curricula, Sustainable Development

Abstract ID: RSMOEDU18

A Study Self-Concept Of Higher Secondary Schools Students With Reference to Certain Variables

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Life is a gift given by nature. It includes human beings, birds, etc., when a child is born, he does not know anything. But with the passage of time, he learns by staying in the society and education plays an important part in the foundation of the changes of all those advancements.

We know that education has been going on since ancient times. In the teaching work of teaching, the guru of the Vedic period used to give the knowledge of the Vedas to the disciple and use various methods, the guru used to try to find out what kind of personality they had by evaluating the students before explaining and teaching their ideas.

In the present era, when science and technology have developed, the personality of individuals is also witnessing a change, each person is found to be inherently different with respect to the other person. The principles of psychology state that the differences between individuals are linked to their inheritance. One always makes ideal thoughts to identify one's self but how is one's self identified socially? From this, it can be truly identified, the relationship of knowing oneself is connected to his own thoughts. How is the person really? How does the other person know the person? And how is the ideal person? The relationship with all of them is linked to self-concept.

In the presented research the researcher has considered conducting the study self-concept of higher Secondary Schools Students with reference to certain variables.

Present research has been done self-concept of higher secondary schools' students with reference gender and area for that research has been selected students of higher secondary schools of Mehsana district as a population. For that population researchers were selected higher Secondary Schools by stratified randomly sampling and Schools students were selected by using cluster sampling from each selected higher Secondary Schools survey research method was used as a research method. Researchers has been used standardized self-concept inventory for data collection. "t" calculation has been done for hypothesis testing. Researcher observed that Gender and Area have been affects on Self-Concept of higher secondary schools' students.

Abstract ID: RSMOEDU19

Effectiveness Of Mind Mapping Based Learning Package For Teaching Science At Class IX

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This study investigates the effectiveness of a mind mapping-based learning package for teaching science to ninth-grade students. The primary aim is to evaluate how the application of mind maps can enhance student's understanding, retention, and application of scientific concepts, as well as their critical thinking and creative thinking skills. The research adopts an experimental design, with one group of students receiving instruction through a mind mapping-based learning package and another group following traditional teaching methods. Data were collected through post-tests, along with qualitative tools to assess engagement and learning outcomes of students. Results indicate that students exposed to the mind mapping package demonstrated significant improvements in conceptual understanding, critical thinking, and creative thinking skills compared to those in the control group. Furthermore, the study advocates for the adoption of visual learning strategies in science education. Additionally, the mind mapping approach fostered better organization of information and higher levels of student motivation and engagement. This study suggests that integrating mind mapping techniques into science instruction can be a valuable tool for enhancing learning and academic performance in the ninth grade.

Keywords: Mind Mapping, Learning Package, Science Education, Conceptual Understanding, Critical Thinking And Creative Thinking.

Abstract ID: RSMOEDU20

A Self-Reflection on 'Jivan Sanidhya': Cultivating Soft Skills Through Inspirational Autobiographies

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For purposes of cultural enrichment and national integration, it is imperative for young Indians to appreciate the vast array of languages and literatures their country offers (NEP 2020, p. 14). The interconnected domains of knowledge and practice—encompassing beliefs, skills, communication, ethics, and values, which are fundamental for holistic development (NPST 2020, p. 9). In alignment with these ideals, the 52-week *Jivan Sanidhya* program was crafted to foster essential soft skills through self-reflection on 52 inspiring autobiographies and biographies, delivered by eminent speakers from across India. Sponsored by a philanthropic organization SRK Knowledge Foundation, in association with Sarvajanik University, Surat, and coordinated by the researcher, the program seeks to cultivate soft skills that enhance personal and professional growth. The program has successfully completed 15 sessions. To conduct the qualitative survey, the researcher purposively selected 120 participants from the audience, representing diverse professional backgrounds and age groups. Participants were required to attend at least 11 sessions. A reflective questionnaire was filled by participants to assess skills like time management, communication, networking, relationship-building, listening and analytical abilities, critical thinking, leadership, problem solving and team building. The results revealed notable improvements in these soft skills, particularly in time management, communication, critical thinking and relationship-building. However, challenges such as low youth participation and irregular attendance were observed, indicating a need for targeted strategies to engage younger audience more effectively. This study underscores the significance of programs like *Jivan Sanidhya* in developing specific soft skills, which are essential in today's interconnected world. It also highlights the importance of fostering reading habits and providing opportunities for self-reflection, particularly among the youth, for their overall personal and professional development.

Keywords: Jivan Sanidhya, Soft Skills, Personal development, Autobiographies, Self-reflection, Storytelling.

Abstract ID: RSMOEDU21

Innovative Pedagogies: Transforming Teaching And Learning For The 21st Century

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In this research paper we have discussed different methodologies available for the teaching. Also the technologies which exist or will be coming in the near future to be included in the teaching learning process are studied. Being innovative means broadening over horizons and looking beyond what we currently do, identifying the new ideas of tomorrow and putting them into practice today itself. We have discussed why we need innovative technology for teaching. In this paper we have focused on few of the innovative techniques such as crossover learning, diverse time and place, Flipped Classroom model, Design thinking, learning through gamification**,** cooperative lesson, personalized learning, choice based learning, problem based learning, technology powered learning, field experience, changed exam patterns, mentoring oriented leaning and learning through drama. Also we have emphasized on what is the impact of different innovative techniques and how it will improve the teaching learning process. As we are about to change the teaching learning process of students and the teacher training methods we have to think about the innovative ways of evaluation of students. They are not simply a relabeling of existing knowledge with a new, proprietarily label. Good innovations add value. So we have to take feedback also after applying every new innovation and try to modify or sometimes redefine the things. Because someone truly said "Change is the only thing permanent".

Keywords: innovation, pedagogy, ICT, learner-centric, teaching methodologies.

Abstract ID: RSMOEDU22

Exploring The Vachanamrut: Ancient Indian Wisdom For Today

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Whether it's ill health, losing a job, or failing an exam, everyone has issues in life. The majority of us rely on outside solutions in an attempt to address these issues. In the Vachanamrut, however, Shriji Maharaj exhorts us to seek answers within ourselves. Additionally, the Vachanamrut has remedies that Maharaj teaches that can benefit everyone at any stage of life. The Vachanamrut has life lessons for everyone, whether you're a kid or parent attempting to figure out how to handle your loved ones, a struggling student trying to establish yourself in college, or a satsangi with a strong desire to advance in satsang.

Keywords: Indian Knowledge Tradition, Vachanamrut

Abstract ID: RSMOEDU23

EduConnect: Enhancing Pedagogy through Smart Technology

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This research paper explores the transformative potential of smart technology in higher education pedagogy, with a particular focus on the Indian context and the National Education Policy (NEP) 2020. By examining the integration of various technological tools such as Artificial Intelligence (AI), Internet of Things (IoT), and Augmented/Virtual Reality (AR/VR) in educational settings, this study aims to demonstrate how these innovations can enhance student engagement, improve learning outcomes, and prepare graduates for the challenges of the 21st century. The paper reviews current literature, presents theoretical frameworks, and discusses case studies to provide a comprehensive understanding of the benefits and challenges associated with implementing smart technology in higher education. Furthermore, it offers recommendations aligned with the NEP 2020's vision for a technology-driven, accessible, and quality-focused education system. This research contributes to the ongoing dialogue on educational reform and provides valuable insights for educators, administrators, and policymakers seeking to leverage technology for pedagogical enhancement in higher education.

Key Words: Educonnect, Smart Technology, Dgital Pedagogy, Higher Educations

Abstract ID: RSMOEDU24

A Critical Analysis of Nep 2020 In School Education In Relation To Emotional Maturity

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This paper is thematic in nature. It throws light on the New Educational Policy after a long wait of 34th years. It is a well-known fact that Education helps to transformative about the holistic and multidisciplinary development of individuals which consequently helps in national development. But education needs to be renewed timely according to the present needs. A look at previous policies reveals no contribution to the emotional development of the individuals. This paper deals with emotional development and how it is important for an individual. This critical analysis examines NEP 2020's impact on school education through the lens of emotional maturity, a key factor in fostering personal and social growth. On July 29th, 2020 New Education policy introduced first time in India in 21st century. To transform Indian education system NEP, 2020 is a big step towards to make India into a global hub. NEP emphasis on foundational literacy & numeracy, integration of vocational education, promotion of multilingualism, reforms in assessment method, increased use of technology and a focus on research and innovation. Its essence lies in a transition towards a holistic, interdisciplinary and adaptable approach to education. The new pattern of 5+3+3+4 school education helps in the holistic development of children which includes emotional development. At secondary stage of NEP 2020 provides students multidisciplinary study, greater critical thinking and flexibility and student choice of subjects. Accessibility to all, multilinguist, flexibility in courses, etc. played their part in developing children emotionally. After the critical analysis, it can be concluded that school education plays a pivotal role in emotional development. Also highlights the strengths and limitations of NEP 2020 in cultivating emotional maturity and offers recommendations for addressing existing gaps which helps develop a symphonic relationship and in the development of a nation.

Keywords: NEP- 2020, emotional development, school education

Abstract ID: RSMOEDU25

Social Support and Life Satisfaction as Predictors of Psychological Well-Being among Parents of Children with Special Needs

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The primary aim of this study is to examine the role of social support and life satisfaction as key indicators of psychological well-being among parents of children with special needs. This research explores the significance of these factors in enhancing the mental health and overall quality of life for caregivers who face unique challenges. By analyzing the relationship between social support, life satisfaction, and psychological well-being, the study provides insights into how these elements can positively influence the emotional state of parents caring for children with intellectual disabilities.

The study involves a sample of 60 parents, including 30 mothers and 30 fathers of children with intellectual disabilities. Data were collected using a personal information sheet, a social support scale, and a happiness in life scale. The research explores the needs and experiences of parents in both joint and nuclear families. The findings indicate that support from those around them, along with personal satisfaction, can help reduce stress, ultimately benefiting the mental health of caregivers.

Keywords – Social support, Life satisfaction, Psychological well-being, parent's of children with special needs.

Abstract ID: RSMOEDU26

Utilizing Blended Learning Methodology For Connecting Diverse Learners At Higher Education Level

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The integration of digital technologies into education has catalyzed the evolution of blended learning as a transformative methodology, particularly in higher education. Blended learning combines traditional face-to-face instruction with online learning modalities, fostering a flexible and inclusive environment that addresses the diverse needs of learners. This paper examines the application of blended learning to enhance connectivity and engagement among diverse student populations in higher education.

The study begins by establishing the significance of blended learning as a response to the challenges posed by diversity in higher education contexts, including variations in cultural, academic, and socio-economic backgrounds. It further elaborates on the theoretical framework underpinning the blended learning approach, highlighting its fundamental principles of adaptability, personalization, and collaborative learning.

Subsequently, the paper explores various strategies for implementing blended learning in higher education, such as flipped classroom models, adaptive learning technologies, and hybrid course designs. These approaches are shown to enhance accessibility and accommodate varied learning styles, thereby promoting inclusivity and equity.

To substantiate its efficacy, the paper includes a review of successful case studies from higher education institutions that have adopted blended learning methodologies. These examples demonstrate improvements in learning outcomes, teacher-student interactions, and overall student satisfaction.

Despite its benefits, the paper acknowledges the significant challenges associated with blended learning, including technological constraints, resistance to pedagogical change, and the persistent digital divide. It emphasizes the necessity of targeted teacher training, investment in digital infrastructure, and institutional support to address these barriers effectively.

In conclusion, the study underscores the potential of blended learning to transform higher education by fostering connectivity among diverse learners, improving learning outcomes, and supporting lifelong learning. The findings provide actionable insights for educators, administrators, and policymakers aiming to leverage blended learning for creating equitable and inclusive educational ecosystems.

Keywords: Blended Learning, Higher Education, Digital Pedagogy

Abstract ID: RSMOEDU27

INQUIRY BASED SCIENCE LEARNING: PHASES AND BENEFITS

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Education has been recognized as the instrument for national development. To improve standard of education we have to use new teaching methods according to topic requirement and student's need. Inquiry based learning approach is very beneficial for students as well as for teachers. The main questions of this study were what is the need of teaching science through inquiry based learning? How can we incorporate science learning through inquiry in classroom? Inquiry based science learning is student centered method in which students are actively involved. In this method teacher's role is as motivator, guide and facilitator. Inquiry based learning satisfies student's curiosity. It improve student's abilities like self learning, problem solving, scientific thinking etc. It develops student's scientific attitude. There are many research available which supports inquiry based learning to enhance student's learning abilities. We can obtain higher order learning outcomes using this method. Students are involved in process of construction of science knowledge. The main goal of current study was to provide phases of inquiry based learning in simplest form so that teachers can easily incorporate the method in classroom science teaching. The inquiry based learning framework proposed in the current study on the basis of analysis of literature consist of five phases. These inquiry phases and related activities can be organized in different way according to learning topic and according to student's requirement. So this method is very useful for teachers in classroom teaching of science.

Keywords: Inquiry, Inquiry based learning, Science, Scientific attitude.

Abstract ID: RSMOEDU28

Teaching education through brainstorming techniques: State of art and challenges

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Various Brainstorming techniques have been proposed specifically develop individuals' creativity and productizing during idea -Generation session. Thus a review of previous studies on some brainstorming techniques as on Quasi experimental, descriptive, Classroom, action research design. The insights gained from this review can be used to guide educational decision makers to identity The best brainstorming practices. It also shed light on the potential challenges that students may experience when using certain Brainstorming rules and techniques.

Abstract ID: RSMOEDU29

Empowering The Use Of Technology In Teacher Education Program To Enhance Tpack Development

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In the 21st century, NEP – 2020 focuses on a technological approach to use in a classroom. It is essential to mould the teacher education program in a classroom to providing a diverse perspective, knowledge, skill and educational environment. As the Teacher Education Program by drawing can incorporate it in teaching methods, and contents of various disciplines that helps in catering to diverse needs and interest of students. Hence, by integrating technology at Teacher Education Program can prepare the future teacher to foster the learning management competency into professional experiences. This paper represents concept of TPACK development and its needs at the Teacher Education Program. It also brings to light the pathways for the Teacher Education Program by advocating the use of technology to enhance TPACK development. This paper addresses the challenges that future teacher faces while the implementing technogical approach based lesson plans in the classroom. The most essential part of the paper is focus on the role of the future teacher while implementing of technological approach lesson plans for the classroom.

Key Words: Teacher Education Program, Technological approach, TPACK Development

Abstract ID: RSMOEDU30

Happiness And Mental Health Key Elemnts For Human Well Being

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Mental Health, Wellbeing and Happiness are more interconnected. It common to hear about that the people who have lots of Materialistic life style, Supporters and established career focused life, so that they are still living unhappy lives. Research in the field of psychology found out that Happiness is a feeling of satisfaction with life. Mental pain can be damaging and hurtful as physical. The purpose of this study is Evaluate effects the happiness on the mental health and wellbeing. **The main purpose** of this research is to study the Happiness and its role of the people's lives, role in their moods and emotions and Mental health. **The Method** used in the research is a descriptive study that has been study to collect the information from research paper, books, articles, dissertation and scientific website. **The finding of this study** show that happiness play a key role for good Mental health and wellbeing.

Key words: Happiness, Mental Health, Wellbeing, Emotions

Abstract ID: RSMOEDU31

A Study On The Awareness of E-Wallets Among Post-Graduate Students In Anand District Regarding Digital Payment Systems

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This study explores the awareness and usage of e-wallets among post-graduate students in Anand District, with a focus on understanding their knowledge and adoption of digital payment systems. The increasing prevalence of e-wallets in everyday transactions has revolutionized the financial landscape, particularly in India, where the government has been encouraging cashless payments through various initiatives. Post-graduate students, as part of the younger, tech-savvy demographic, are often at the forefront of digital payment adoption. However, the level of awareness, familiarity with different e-wallet platforms, and the factors influencing their usage are not well-documented in regional contexts such as Anand District.

The research concludes by providing insights into the factors that can enhance the adoption of e-wallets among students, including educational initiatives to improve digital literacy, stronger security frameworks, and incentivization strategies by financial service providers. This study contributes to the growing body of literature on digital payment systems and offers practical recommendations for policymakers, educational institutions, and e-wallet service providers aiming to increase digital payment adoption in rural and semi-urban areas of India.

Keywords: E-wallets, Digital Payment Systems, Post-Graduate Students, Awareness, Adoption, Anand District, Financial Inclusion, Technology, Security, India.

HISTORY

Don't take rest after your first victory because if you fail in second, more lips are waiting to say that your first victory was just luck.

-A. P. J. Abdul Kalam

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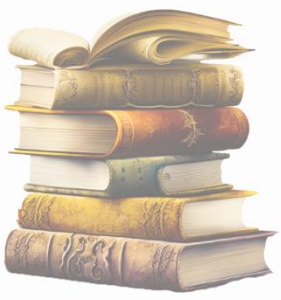

Abstract ID: RSMOHIS01

Social Impact And Future Of Artificial Intelligence In Higher Education

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The state of Gujarat is a progressive and leading state in the field of education. Intelligence (AI) is gaining importance in all sectors of the economy and social sector, and hence in higher education as well. Over the past few years, this concept of "artificial intelligence in education (AIED)" has grown significantly. The present study attempted to find out how the concept of artificial intelligence can be applied to teaching and learning in higher education and the implications of using AI in higher education. It examines the learning implications of ever-evolving technologies on learning as well as teaching methods and extent. In the last few years in the state of Gujarat, there has been a modernization and a change in the method in the field of education. Online education has become widespread as a modern method of education during the Corona epidemic. AI offers opportunities for higher education services to become easily accessible not only inside the classroom but also outside the classroom at extraordinary speed. This study seeks to explore how AI can become an integral part of universities and access its immediate and future impacts on various areas of higher education. Challenges in implementing AI in these organizations were also discovered. This study will successfully provide in-depth information for educators and in-depth knowledge for building educational models that will provide opportunities for future development. State established and private universities in Gujarat continue to play an important role in what they do for student learning orientation. The present study attempts to find out how the effects are seen through AI and how the social mobility and change of the student has been affected.

Key Words: Social Impact, Higher Education, Artificial Intelligence

Abstract ID: RSMOHIS02

Rashtra And The Indian Knowledge System: A Civilizational Perspective

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This paper delves into the concept of ‘Rashtra’ as articulated in the Indian Knowledge System (IKS), emphasizing its cultural, spiritual, and civilizational significance. The Indian Knowledge System, a holistic repository of wisdom evolved over 4000 years, spans literary, archaeological, and oral traditions. It provides a framework to understand India’s cultural continuity and unique civilizational identity. Central to this identity is the notion of Rashtra, distinct from the Western construct of a ‘nation,’ which is typically defined by geographical boundaries, population, and factors like language, race, or religion. In contrast, Rashtra transcends these material limitations, representing a shared cultural and spiritual ethos. Drawing on ancient texts such as the Rigveda, Yajurveda, Ramayana, and Mahabharata, the paper explores how the idea of Bharat as a Rashtra was historically conceptualized—not merely as a political or territorial entity but as a civilization rooted in humanity, peace, and spirituality. Figures like Shree Ram and Shree Krishna are analyzed as exemplars of these ideals, embodying principles that unify diverse communities under a shared sense of belonging. The study also critiques post-independence historiographical approaches, arguing that ideological biases marginalized India’s indigenous concept of Rashtra. This neglect, the paper contends, has impeded the process of Rashtra Nirmana by disconnecting modern India from its cultural roots. By revisiting the concept of Rashtra through the lens of the Indian Knowledge System, the paper advocates for a reawakening of India’s cultural consciousness. This reinvigoration, it argues, is vital for fostering societal harmony and reclaiming a civilizational identity that transcends divisions of caste, religion, race, and geography. The work underscores the importance of integrating these insights into contemporary discourse to strengthen India's journey as a unified and inclusive Rashtra.

Keywords: Indian Knowledge System, Rashtra, Bharat, Civilization, Cultural identity, Spiritual ethos.

Abstract ID: RSMOMU01

Jain Culture And Performing Arts

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Jain literature is an important source of Indian culture and tradition. There are various references to music, dance and drama in Jain canons. It is important to examine these works. The present paper will discuss the relationship between the Jain vision of culture and performing arts.

Keywords: Jain, Literature, Culture , Performing Arts

LAW

"Constitution is not a mere lawyers document, it is a vehicle of Life, and its spirit is always the spirit of Age"

-Dr. B. R. Ambedakar

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Abstract ID: RSMOLAW01

Safeguarding Fundamental Rights in Modern India: Integrating Ancient Indian Jurisprudence with Contemporary Legal Frameworks for a Viksit Bharat

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The present paper explores the protection of fundamental rights in modern India by integrating ancient Indian jurisprudential principles within the current constitutional framework, with an eye toward building a Viksit Bharat. The Indian Constitution enshrines a comprehensive set of fundamental rights, aimed at securing equality, liberty, and justice. However, ancient Indian legal doctrines—rooted in classical texts such as the Manusmriti, Arthashastra, and Dharmashastra—provide a complementary ethical framework, where rights are deeply connected to duties and social responsibilities through the principle of Dharma.

This study investigates how the integration of these ancient doctrines can reinforce and enrich the constitutional protection of fundamental rights, especially in an era of rapid technological advancement and evolving social dynamics. It also examines how these principles can guide law enforcement practices by emphasizing the balance of rights and responsibilities, both for individuals and institutions. By analyzing relevant case law and instances where India's judiciary has drawn upon traditional values, the paper highlights a culturally resonant approach to rights protection that aligns with India's legal heritage.

The paper concludes that incorporating ancient jurisprudential principles alongside modern legal practices fosters a holistic, ethically grounded approach to rights protection. Such an approach not only upholds individual freedoms but also promotes communal welfare, fortifying India's legal system as it transitions toward a technologically advanced, socially cohesive Viksit Bharat.

Keywords: Fundamental rights, Indian Constitution, ancient jurisprudence, Dharma, Viksit Bharat.

Abstract ID: RSMOLAW02

Gender Equality, A Necessary Perspective Towards Viksit Bharat

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Gender equality is a fundamental human right and a critical factor in the development of a prosperous society. Despite significant progress in India over the past few decades, gender disparities persist, particularly in education, employment, healthcare, and political representation. This research aims to examine the critical role that gender equality plays in realizing the vision of a "Viksit Bharat" (Developed India), with an emphasis on the socio-economic and cultural barriers hindering gender parity. Through a mixed-methods approach, including both doctrinal and non doctrinal, this study explores how gender inequality limits the potential of women and marginalized communities and how it affects India's overall development trajectory. The research findings highlight that while India has made notable strides in gender inclusivity policies, there is still a considerable gap in their effective implementation, especially at grassroots levels. Furthermore, it reveals that the economic empowerment of women, their access to quality education, and their participation in decision-making processes are critical areas that need attention for sustainable development. The paper concludes that achieving gender equality is not only a moral imperative but also an economic necessity for India's advancement. The study advocates for policy reforms, community-driven initiatives, and a shift in societal attitudes towards gender roles. The findings suggest that prioritizing gender equality will have multiplier effects on India's development, contributing to more robust economic growth, social harmony, and an inclusive, equitable society. The research underscores the necessity of an integrated approach to gender equality, urging policymakers to view it as central to the goal of a Viksit Bharat.

Keywords: Gender Equality, Socio-Economic Development, Women Empowerment, Viksit Bharat.

Abstract ID: RSMOLAW03

A Study on Burden of Proof: Governing Laws in India

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The purpose of this study is to develop precise research hypotheses that will direct the investigation's analytical framework. In contrast to the Indian Evidence Act of 1872, as well as in the larger framework of judicial adjudication, the theories seek to critically analyze how the Bhartiya Sakshya Adhiniyam 2023 affects the accepted legal principles regarding the burden of proof. The study aims to assess whether the recent amendments have improved legal proceedings' clarity, consistency, and fairness as well as their conformity to global standards by speculating on the type and scope of the changes brought about by the new relevant legislation. By using this methodical approach, the study hopes to confirm or refute preconceived notions and advance knowledge of the changing legal system.

Keywords: Indian Evidence Act of 1872, Bhartiya Sakshya Adhiniyam 2023, amendment, adjudication

RSMOLAW04

"A Roadmap of LGBTQ Community and their Rights: Laws and Judicial Pronouncements"

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The LGBTQ community is growing all over the globe, in countries as diverse as India, the United States, Britain, China, Japan, and others. India immediately comes to mind as the country with the greatest religious and cultural diversity in the world, a place where ancient traditions have survived into contemporary times. LGBT describes those who are drawn to other LGBT individuals. The Justification here is, in India, sexual minorities are frequently the targets of hate crimes. They are taken advantage of verbally, physically, and sexually since they are easy prey. In order to better understand the LGBTQ community and treat them with respect and dignity rather than labelling them, this study presents a brief summary of the LGBTQ community as well as other glossaries and words of the same group. The Contribution of this study endeavours to explore the multifaceted evolution of LGBT rights within historical contexts and assesses the practical accessibility of these rights as guaranteed by Constitutional Law, case law, and other pertinent legislations. This research paper reveals the act related with LGBTQ community in different states of India and cases highlights the position of this community in today's era. This paper can contribute future roadmap regarding this community into across Nation.

Keywords: LGBTQ, Rights, Indian Jurisdictions

Abstract ID: RSMPLAW01

Framework of Sustainable Water Waste Management in India

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Fresh water is precious aliment on the earth. India is one of the most water-stressed regions in the world, with 600 million Indians facing extreme water stress, according to a NITI Aayog report from 2018. In this scenario, wastewater is considered as a new source of water supply for agriculture, industrial use, etc. Apart from the water laws, the government also adopted various policies and schemes, rules to promote the reuse of treated wastewater for non-potable uses. However it is need to effective implementation of water waste policies, judicial intervention on wastewater management, and reuse in India. It also identifies implementation challenges in the enforcement of wastewater laws and byelaws in India.

Keywords: waste, water, management, regulation, law.

LIBRARY & INFORMATION SCIENCE

The infinite library of the Universe is in your mind.

– Swami Vivekananda

Sardar Patel University

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Abstract ID: RSMOLIB01

BLENDED LEARNING SYSTEM IN IMU: ENHANCING MARITIME EDUCATION IN THE DIGITAL AGE

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The Indian Maritime University (IMU) has incorporated blended learning into its educational framework to improve maritime training. This approach combines traditional classroom teaching with online components, providing cadets with increased flexibility and engagement. IMU's blended learning model features in-person sessions, a Learning Management System (LMS), e-learning modules, and various online resources. The advantages of this system at IMU include greater flexibility, enhanced engagement, tailored learning experiences, efficient knowledge sharing, and faculty development opportunities. Research indicates that blended learning positively impacts student engagement, academic performance, flexibility, accessibility, and skills enhancement. However, challenges such as infrastructure limitations, the need for faculty training, and assessment methods persist. A mixed-methods study was conducted to assess the implementation of blended learning at IMU, highlighting favorable perceptions, existing challenges, and recommendations for enhancement. Most participants viewed blended learning as effective, although engagement levels with online components varied. Recommendations for improvement focus on boosting internet connectivity, advancing faculty training, and refining assessment strategies.

Keywords: Blended Learning; IMU; Maritime Education; Learning Management System (LMS); Indian Maritime University

Abstract ID: RSMOLIB02

"Physics and Astronomy Research Retractions in India: A Scopus-Based Bibliometrics Study"

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Retraction identifies errors, ethical violations, or inaccuracies in published research. Explain the concept of "scientific retractions," which involve the withdrawal of published works for reasons such as data manipulation, plagiarism, or honest errors. This study will look into the withdrew materials, assess the underlying causes, and give recommendations to improve research integrity among Indian researchers. The study's value stems from its capacity to shed insight on the patterns and reasons of retracted publications in india, as well as to highlight academic challenges and propose solutions to promote research integrity and scholarly communication. We obtained bibliographic information from the Scopus database for documents labeled as "retracted". Scopus indexes thirteen different sorts of documents. The data was exported in CSV format and includes information like authors, affiliations, country, title, source, and citation. In a tabular format, Microsoft Excel was used to assess the year-over-year distribution of documents, authors, countries/institutions with the most retractions, subject areas, and publication venues. Microsoft Excel, Biblioshiny, and VOSviewer were used to visualize the data. The current study used bibliometrics to identify patterns in retractions across time. From the Scopus database, A sample of 969 papers with retracted bibliographic information from 1996 to 2023 was extracted. Research revealed that the year with the most retracted manuscripts was 2015, with 450. The key causes identified in the study were plagiarism, data fabrication and falsification, authorship disputes, ethical violations, duplication, and methodological or data errors. Improve researchers' ethical training by increasing peer review methods, establishing stricter oversight by academic institutions, and encouraging transparency in retraction announcements.

Keywords: scopus, bibliometrics, physics and astronomy, retractions, India

Abstract ID: RSMOLIB03

An analytical study of the top ten ranked Indian Institutes of Technology (IITs) with special reference to Indian Research Information Network System (IRINS)

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This study presents an analytical examination of the top ten Indian Institutes of Technology (IITs) based on the Indian Research Information Network System (IRINS) profiles, focusing on faculty size, research output, and impact metrics as ranked in the National Institutional Ranking Framework (NIRF) 2023. The core objective is to assess how implementing IRINS can enhance the research visibility of faculty members, bolster academic reputation, and potentially elevate institutional rankings. The research methodology involves a comparative analysis of the IRINS profiles of these ten IITs, highlighting key components such as faculty profiles, research publications, patents, and impact indicators like the H-index and citation counts. Data collection was completed via the IRINS platform on July 27, 2024, and was limited to IITs ranked in the NIRF 2023 top 10. Metrics such as open-access categories, total publications, patents, and citation counts were collected for each institution, offering a detailed view of each IIT's research productivity and visibility.Findings reveal significant disparities in research output and impact across the top IITs. IIT Madras and IIT Delhi lead with high publication counts and citation metrics, indicating a substantial research influence. IIT Bombay, IIT Kharagpur, and IIT Kanpur also demonstrate notable research productivity. In contrast, IIT Roorkee and IIT Guwahati contribute substantially but with relatively lower impact metrics. IIT Hyderabad shows commendable productivity with a smaller faculty, while IIT Gandhinagar and IIT Indore have fewer publications, reflecting a more limited research scope. In conclusion, this study underscores the potential of IRINS as a strategic tool for academic institutions to improve research visibility and rankings. By leveraging IRINS, IITs can enhance the visibility of their faculty research, facilitating increased recognition and collaboration opportunities that contribute to institutional growth and competitive positioning in the academic landscape.

Keywords: Indian Research Information Network System, Research output Researchers Profile, Citation, H Index, Research and Publication, National Institutional Ranking Framework

Abstract ID: RSMOLIB04

BIBLIOMETRIC PATTERNS IN GLOBAL COMMUNITY ENGAGEMENT LITERATURE

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This study examines global research on "Community Engagement" or "Civic Engagement" by analyzing bibliometric data from two widely-used databases: Scopus and Web of Science (WoS), as well as a merged dataset from both sources. While most bibliometric analyses rely on these databases, there is growing availability of alternative platforms like Google Scholar and PubMed, making it important to compare and understand the scope and patterns of community engagement research across different sources. The objective of this study is to identify key trends in community engagement literature, including growth patterns, influential authors, collaboration networks, country-level contributions, and regional research disparities. Using bibliometric techniques, the analysis compares annual publication growth, top authors' production, collaboration dynamics, institutional affiliations, and international research output between Scopus, WoS, and the merged dataset. The results shows the evolving themes within the field, highlighting emerging topics, interdisciplinary collaborations, and geographical differences in research activity. Additionally, citation network analysis identifies influential works shaping the discourse on community engagement. The findings contribute to a deeper understanding of the global landscape of community engagement research, providing valuable insights for researchers, practitioners, and policymakers. This research not only offers a comprehensive view of the development of the field, but also informs future directions for academic inquiry and policy-making in community engagement.

Keywords: Bibliometric Analysis; Community Engagement; Civic Engagement; BiblioShiny; Bibliometrix, VOS Viewer

Abstract ID: RSMOLIB05

An Evaluation, Challenges, and Future Perspectives of Using Artificial Intelligence in Academic Libraries: An Overview

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Artificial intelligence (AI) is revolutionizing several sectors, including education. The concept of using artificial intelligence in academic libraries is gaining popularity internationally. Academic libraries are incorporating contemporary technologies to improve services and obtain a competitive advantage. The study review the impact of artificial intelligence tools and technology on library services and user experience. It provides a comprehensive understanding of the ways in which academic libraries are evolving due to artificial technologies. The issue, "How is artificial intelligence shaping the world of libraries?" will be addressed in this paper. Significantly, this study emphasizes the importance of research and, more importantly, the role of teamwork in advancing AI-enhanced library systems over time. According to the findings, artificial intelligence applications significantly improve academic libraries' user experiences. For example, chatbots driven by artificial intelligence (AI) can offer users immediate support, enhancing accessibility and satisfaction with the service. Academic Libraries can use of AI-powered resource management solutions to optimize operations and resource allocation based on user requirements first. one of the issue that libraries frequently face is the need of more qualified staff with knowledge in AI-enabled services. This lack of expertise makes deployment and maintainace of artificial intteligence systems more complex. Many libraries, particularly those with limited budgets, face a significant obstacle due to the high cost of AI technologies. However, this issues can be manage with an advancements of artificial intellegence and the potential for cost-effective solutions that can be optimized. AI-enhanced libraries can significantly impact education by supporting personalized learning, improving access to information, and facilitating innovative teaching methods. However, embarking on issues such as data privacy, staff deployment, and technological literacy is critical to unlocking AI's full potential in education.

Keywords: Artificial Intelligence, Emerging Technologies, Academic Libraries, Library Services, User Experience, Library Management.

Abstract ID: RSMOLIB06

"Evaluating the Digital Footprint of Indian Journal of Cancer: An Altmetrics Approach"

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Along with the use of physical documents, the use of digital documents has increased in recent times. In this scenario, the emergence of altmetrics (alternative metrics) has introduced novel methods for evaluating the impact of scholarly publications such as citation counts in traditional evaluation. This present study reviews the digital footprint of the 'Indian Journal of Cancer' through an altmetric analysis. The purpose of the present study is to know the user's attitudes towards cancer published in the Indian Journal of Cancer as well as to know which digital platform (such as social media, online reference manager tools, and news outlets) is used by users to refer article and unveil the correlation between Altmetric Attention Score and source of Altmetric Attention Score. For the purpose of the data collection https://app.dimensions.ai was used by the study and articles published in the source title 'Indian Journal of Cancer' with filtered by 'article'. After listing the query total of 4169 results were obtained from that top 100 Altmetric Attention Scorer publications selected for the purpose of analysis. Altmetric.com was utilized to get raw data of the source of the Altmetric Attention Score, and graphs and correlation were demonstrated with the help of Microsoft Office Excel. The present study helps users to select suitable articles from the Indian Journal of Cancer. The study also helps to choose digital platforms to refer to digital objects according to their needs. The study concludes that altmetrics provide important insights into the broader societal and international impact of cancer research, serving as a valuable complement to traditional bibliometric measures.

Keywords: Altmetric Attention Score, Citation, Cancer Research, Altmetrics, Digital Footprint, Correlation

Abstract ID: RSMOLIB07

The Evolution of Education: From Gurukula to Artificial intelligence

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The ancient Gurukula system, an ancient model of Indian educational model, and contemporary AI-integrated education represent distinct approaches to learning and knowledge transmission. While the Gurukula emphasized personalized instruction, spiritual development, and a holistic approach for education, while AI-integrated or assisted education method leverages technology based personalize learning experiences, automated administrative tasks, and enhance accessibility. A comparative analysis discloses both the strengths and weaknesses of these two systems. The Gurukula system, which was emphasis on personalized attention and spiritual development, offers a unique approach to education that can foster deep learning and moral character development. However, its limitations include scalability and accessibility, as well as a potential lack of diversity and exposure to different perspectives. On the other hand, AI-integrated education offers numerous advantages, including personalized learning, efficient administration, and global access to knowledge. However, it also raises concerns about potential job displacement, ethical implications, and the risk of overreliance on technology. By understanding the strengths and weaknesses of both systems, we can identify opportunities for synergy. For instance, AI-powered tools can be used to enhance personalized learning experiences, while the Gurukula's emphasis on holistic development can be integrated into modern education. By maintaining a balance between tradition and technology, we can create a future where education is both effective and meaningful.

Keywords: Education system, Teaching techniques, Gurukul, Artificial intelligence, Personalized learning

Abstract ID: RSMOLIB8

A research study on the use of E-resources by research scholars of Sardar Patel University

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Users and library managers have access to a variety of search possibilities through the e-resources. The library can save its patrons time and space by utilizing electronic resources. The center of scholarly endeavors is the campus library. Nowadays, the majority of the library's resources are accessible online as databases, e-books, e-journals, and other electronic formats. Finding out which e-resources were used, how they were used, and why they were used was the aim of the study. Furthermore, the study seeks to provide light on the challenges experienced by research academics in utilizing electronic resources, as well as their perspectives on the attributes of electronic resources and their utility. The research included a structured questionnaire and purposive sampling methodology. The purpose of the study was to determine whether e-resources were used and how they were used in facilities because the majority of research scholars do not know how to use them. Furthermore, many are unaware that remote access facilities are available and can be used for their research.

Key words: E-resources, Remote access, Search Engine, Research scholars, Bhaikaka Library, Sardar Patel University.

Abstract ID: RSMPLIB01

Libraries' Contribution to the Development and Application of Digital Literacy in India.

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The goal of the article is to better understand how libraries can support digital literacy in the modern world. To know what is digital Library and implementation of digital literacies in Indian libraries. Concerns about the methods for improving digital literacy abilities were listed, including training programs for digital skills and access to technology that fosters these| abilities. We also talked a lot about the things that make it difficult to promote digital literacy in the digital age. This study focuses on open access journal Indian articles and limited by paid up databases. Traditional libraries benefit greatly from the addition of digital collections They significantly contribute to the development of digital literacy by providing opportunities for people to engage with digital information, hone their digital abilities, and navigate the online world with ease.

Keywords: Digital Literacy, Digital Tools, ICT, Information, Digital Library

BUSINESS MANAGEMENT

"In the journey of an entrepreneur, the most important thing is self belief and ability to convert that belief into reality"

-Mukesh Ambani

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Abstract ID: RSMOMBA01

Technology Adoption in Gujarat's Pharmaceutical Industry: Opportunities and Challenges

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The pharmaceutical industry in Gujarat is pivotal in the Indian healthcare structure and economy. The sector contributes significantly through high-quality pharmaceutical manufacturing, providing employment, enhancing technology, and positioning the state as a hub for research, innovation, and global export in the pharmaceutical industry. This research study explores the assimilation of technology, innovation, and their related opportunities and challenges in the pharmaceutical sector in Gujarat, focusing on four major companies Carbogen Amcis Limited, Torrent Pharmaceuticals Ltd, Zydus Lifesciences Limited, and Sun Pharmaceutical Industries Ltd. This paper on technology adoption in the pharmaceutical industry of Gujarat and its opportunities and challenges is based on secondary data sources that include governmental reports, scholarly articles, and corporate records. The research has resulted in high governmental support with various initiatives such as Digital India and Atmanirbhar Bharat, as it fosters integration with technology. Still, issues related to skills shortages, lack of available finance, and regulatory issues remain the biggest concerns, which smaller companies and clinical research organizations face. It concludes with a recommendation to increase investment in infrastructure, workforce development, and policy reform to improve the sector's technological transformation and global ranking.

Keywords: Gujarat Pharmaceutical Industry, Technology Adoption, Innovation, Government Initiatives, Regulatory Challenges, Opportunities and Challenges

Abstract ID: RSMOMBA02

Exploring the Potential of Foreign Direct Investment to Enhance Indian Higher Education in India

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The prospects of FDI in higher education in India are vast and multifaceted. The potential for improved quality, enhanced infrastructure, and a more diverse educational landscape is undeniable. By harnessing the benefits of FDI while mitigating the potential challenges, India can leverage this opportunity to create a world-class higher education system that empowers its youth and fuels the nation's economic and social progress. The landscape of higher education in India is undergoing significant transformation. With a burgeoning youth population and a growing demand for skilled professionals, the Indian government has recognised the need to expand access to quality higher education. An increasing number of universities and colleges worldwide are drawing money from foreign governments and firms through foreign direct investment (FDI), a phenomenon in higher education. The global expansion of the information economy, the rising demand for top-notch education, and institutions' hunt for new revenue streams are some of the causes that are fueling this trend. However, a number of studies have been published on the concept of FDI in the education sector. However, significantly less research work has been done related to FDI in higher education in the Indian context. So, this research gap is associated with the knowledge gap, and it indicates that there is still much to learn about FDI in India, especially regarding the ramifications, difficulties, and potential advantages for higher education institutions in India. Thus, a research study is required to examine the specific dynamics of FDI in higher education to close this gap. The accomplishment of the Sustainable Development Goals (SDGs) depends heavily on the contributions made by higher education institutions (HEIs). The study was undertaken in higher educational institutions with a total sample size of 206; out of it, 115 were male respondents, and 91 were female. Since the study is focused on the opinions of students, faculty members and administrators as these are the most important stakeholders at any level of education. The study's findings reveal that HEIs serve as knowledge hubs that promote sustainability-related research and instruction, giving students the knowledge and perspective they need to address global concerns. They catalyze creative solutions by encouraging ecologically responsible practices on their campuses and working for quality education. By emphasizing the SDGs, HEIs are creating a new generation of responsible citizens who are sensible to sustainability.

Keywords: Foreign Direct Investment, Higher Education, Sustainable Development Goals and Institutions

Abstract ID: RSMOMBA03

"Microfinance as a Catalyst for Social and Economic Empowerment in India: Challenges and Opportunities"

D. H. Gajjar and P. K. Priyan

Microfinance has been recognized as an important tool for fostering social and economic development, particularly in emerging economies like India. This paper explores the role of microfinance in promoting financial inclusion, poverty alleviation, and overall socio-economic development. A conceptual model is presented, which demonstrates how microfinance can address barriers to development through credit access, empowerment, and sustainable livelihoods. The paper also reviews the current state of microfinance in India, its challenges, and the opportunities for growth.

Keywords: Microfinance, Financial Inclusion, Poverty Alleviation, Socio-Economic Development, India

Abstract ID: RSMOMBA04

Consumer Behaviour in Context of E Vehicles: A Systamatic Literature Review

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Electric vehicles (EVs) represent a transformative solution for reducing environmental degradation and dependence on fossil fuels. However, the adoption of EVs, particularly in developing markets like India, faces significant challenges, including high upfront costs, limited charging infrastructure, and consumer skepticism. This study addresses the critical issue of understanding consumer behavior in the context of EV adoption to bridge the gap between market potential and actual penetration. The research aims to add to the existing body of knowledge by examining the factors influencing EV adoption, guided by theoretical frameworks such as the Theory of Planned Behavior (TPB).

The study works a systematic literature review methodology, following to severe selection criteria. Articles were sourced from FT50 journals, full-text, peer-reviewed publications, focusing on research conducted between year 2018 and 2024 within the Indian context. 33 papers initially reviewed out of that 10 were identified as directly relevant to the research area. The findings reveal that environmental awareness, perceived usefulness, consumers awarness and financial incentives positively influence consumer attitudes toward EVs. Adoption of EVs is hampered by obstacles like range anxiety, expensive prices, belifs.

The findings of this study highlight how crucial government initiatives, such as infrastructure expenditure and subsidies, are in lowering adoption barriers. Campaigns for consumer education are also essential for filling up knowledge gaps and boosting trust in EV technology. Also this study finds the role of green purchase behaviour of consumer.

This study contributes to the field by offering actionable insights for policymakers, manufacturers, and marketers, enabling them to develop strategies that accelerate EV adoption in India. Future research should focus on longitudinal studies and cross-regional comparisons to further enhance the understanding of consumer behavior in the evolving EV market.

Keywords: **Electric Vehicle Adoption, Consumer Behaviour Analysis, Sustainable Development, Government Policy Impact, Green Purchase Behaviour, Consumer Awarness.**

Abstract ID: RSMOMBA05

IMPACT OF DIGITALISATION ON CHANGING HUMAN RESOURCE MANAGEMENT PRACTICES

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The rapid advancement of digital technology has significantly transformed human resource management (HRM) practices across various sectors. This research paper explores the profound impact of digitalization on HRM, highlighting how technology has revolutionized traditional processes such as recruiting, training, development, and employee rewards.
Digital tools and platforms, including social media, video conferencing, and specialized HR software, have become integral to modern HR practices, offering cost-effective and efficient solutions compared to traditional methods.Furthermore, the research delves into the benefits of digitalization, such as increased data generation and accessibility, which contribute to greater organizational knowledge and flexibility.
This study underscores the necessity for traditional HRM models to evolve in response to digitalization, ensuring that HR practices remain relevant and effective in the digital age. Secondary data was utilized for this research, drawing from existing literature, reports, and case studies to provide a comprehensive analysis of the impact of digitalization on HRM practices. By analyzing the impact of digitalization on HRM, this paper provides insights into how organizations can strategically implement digital HRM practices to achieve sustainable growth and competitive advantage. Also it provides insights into changing HR management in digital era.
Keywords: Digitalisation, changing Human Resource Management practices, Digital tools.

Abstract ID: RSMPMBA01

Manure Management Models: A Wayforward for Sustainable Waste Management

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In India, about 300 million dairy animals are reared. While milk produced by these animals is considered as a pricey asset and hence robust and efficient dairy value chain does exist for milk & milk products. However, the dung produced by these animals have always been considered as waste and has various challenges with respect to disposal, health hazard, pollution, etc. Traditionally, dairy farmers have been managing dung in multiple ways such as manure (raw and FYM), as a supplement to fuelwood, for rituals, air purification, house cleansing etc. used traditionally as Farm Yard Manure (FYM) in farm directly and as dung cake in kitchen. Though Dung has immense potential as a clean source of energy and fertilizer, it has been always overlooked. Through this poster, we will be explore the various manure management models (both decentralized and centralized models) that can be implemented in India. These manure management models are promising and offers a pathway towards more sustainable and efficient waste management practices. With the efficient manure management practices, it is estimated that India's 50% of LPG need (or 100% of the rural households' cooking energy need) and about 44% of NPK need can be sufficed. These models are aligned with the idea of 'Waste to Wealth' along with principles of a circular economy and addressing Sustainable Development Goals (SDGs) where waste is minimized, and resources are continuously reused.
Keywords: manure, manure management, dung, dairy animals, sustainable waste management

Abstract ID: RSMPMBA02

Women and Non-Work Related Factors Affecting Work-Life Conflict: Navigating Career Breaks in Patriarchal Societies

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The increasing importance of work-life conflict (WLC) in organizations has investigated the effect of various family, individual, and personal factors. There is a need to seek these antecedents' ways of creating work-life conflict or work-life support to help women balance work and life roles. The present study reviews the literature on career breaks for working women, identifies the research gap, and proposes an agenda for future research. This review contributes to the literature by developing a conceptual model that provides a theoretical understanding of WLC literature in the context of career breaks in Patriarchal Societies. The model includes the various antecedents of non-work related factors i.e. individual stressors-related factors, family involvement-related factors, non-work related social support factors, and environment-related factors on work-life conflict constructs, thus representing the relational mechanism of key variables. By doing so, this study presents the current status of WLC literature. It offers valuable future research areas: academic attention to the need for more research on WLC policy in the organization, helping for childcare and caregiving policies to employees, and a comprehensive perspective of work-life problems by taking into account individual differences of employees, various countries as a research context, and an extension of work-life in various organizations.

Keywords: Work-family conflict, Career breaks, Work-life conflict, Gender differences; Work and home domain

Abstract ID: RSMPMBA03

Barriers to Access and Inclusion of Digital Financial Services for Women: A Study of Bharuch District Area

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Digital financial services (DFS) offer significant potential to improve financial inclusion and providing tools for economic empowerment. This research work explores the unique challenges face by women in accessing digital financial services (DFS) within Bharuch District area, Gujarat. Although digital finance has made significant strides in promoting financial inclusion, gender-specific barriers persist, particularly in rural and semi-urban areas. A survey of 220 women from diverse socio-economic backgrounds by using convenience non sampling method to identify factors limiting women's engagement with DFS, including low levels of financial literacy and digital literacy, lack of trust in digital platforms, socio-cultural norms that restrict women's economic independence, and limited access to digital infrastructure. Additionally, the complexity and user-unfriendliness of some DFS products and services discourage women from adopting them. SPSS was used to analyze data and reveal the patterns in DFS usage, highlighting that 65% of women reported limited digital literacy and comfort with DFS applications. Only 45% had access to personal smartphones, with device ownership markedly lower among rural participants. Socio-cultural factors emerged as a significant barrier, with nearly half of the respondents reporting family discouragement. Additionally, privacy and security concerns were prevalent, with 58% citing fear of fraud as a deterrent to DFS usage. The study's findings underscore the need for targeted interventions to bridge the gender gap in digital finance. By addressing these barriers, financial institutions, policymakers, and community leaders can collaborate to create a supportive digital finance environment for women in Bharuch District, This can lead to better financial health for women and their families, and contribute to economic growth.

Keywords: Digital financial services, Women's financial inclusion, Gender gap in digital finance, Barriers to DFS access.

Abstract ID: RSMPMBA04

Gaming meets Advertising: Exploring Youth Reactions to Online Game Ads

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The rapid growth of the gaming industry has transformed advertising strategies, particularly in-game advertising, which integrates promotional content seamlessly into gameplay. This study investigates the perceptions of young gamers in Anand city towards online gaming advertisements, focusing on the factors influencing brand perception, preferences, and the role of gaming influencers. A combination of primary data collected through a structured questionnaire and secondary data from scholarly sources forms the basis of this research. The findings explore the significance of in-game advertising formats and influencer marketing in shaping consumer attitudes. The study reveals key insights into players' experiences with various advertisement types, their preferences, and the implications for advertisers operating in a fast-evolving digital ecosystem. The outcomes of this research contribute to understanding the intersection of gaming, advertising, and consumer behavior, offering valuable perspectives for businesses aiming to optimize their advertising strategies within this dynamic landscape.

Keywords: in-game advertising, gaming influencers, brand perception, consumer attitudes

Abstract ID: RSMPMBA05

Best Practices in Waste Management: A Case Study of Petlad Municipality

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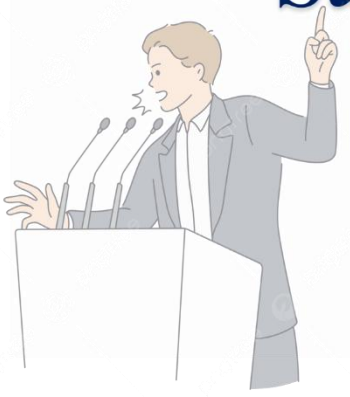
The performance of Urban Local Bodies (ULB) play a significant role in driving country's economic activities. In India, performance of local bodies is one of the most concerned areas for government as well as country as a whole. In Anand district in the state of Gujarat there are 11 municipalities, in which Petlad municipality has performed exceptionally well in the area of waste management and sanitation. The ministry of central government as well as independent bodies have recognized the initiatives of Petlad ULB that created impact in the region. The case study explores some of the best practices which are adopted by Petlad municipality in waste management and how the ULB improved the services for its citizen through various initiatives. It also identifies some of the major recognitions achieved by the ULB.

Keywords: Best Practice, Waste Management, Sanitation, Municipality,

POLITICAL SCIENCE

It is easy to kill individuals but you cannot kill the ideas.
- Bhagat Singh



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Abstract ID: RSMOPOLI01

Revisiting the Past: The Intersection of Indian Knowledge Systems and Nationalism

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The research paper explores the relationship between India's indigenous knowledge systems (IKS) and the development of nationalism. The study begins by examining the cultural unity in pre-colonial India through shared religious texts, philosophical systems, and social structures. It then delves into the disruption caused by British colonialism, which marginalized IKS and led to a deep intellectual and cultural rift. However, this very marginalization sparked a revival of interest in IKS during the late 19th and early 20th centuries, as nationalists such as Swami Vivekananda and Mahatma Gandhi turned to India's spiritual and intellectual heritage to resist colonial domination and promote national unity. Methodologically, the research utilizes historical analysis, tracing the role of IKS in shaping key nationalist ideologies, from the spiritual nationalism of Sri Aurobindo to Deendayal Upadhyaya's Integral Humanism. It also examines the role of IKS in contemporary nationalist discourses, particularly through the lens of India's educational policies and soft power strategies. Major results show that IKS has been central in both fostering a sense of cultural pride and contributing to national unity, despite ongoing challenges posed by globalization, caste and class dynamics, and the politicization of traditional knowledge. The paper concludes by arguing that while IKS has historically played a crucial role in the development of Indian nationalism, its future relevance depends on balancing tradition with modernity and ensuring inclusivity. This research contributes to a deeper understanding of how traditional knowledge systems can be leveraged to address contemporary national and global challenges.

Keywords: Nationalism, Marginalization, Colonial domination, Integral Humanism.

Abstract ID: RSMOPOLI02

Legislative Approaches to Achieve Gender Equality: Towards Viksit Bharat

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Women's treatment in the workplaces and equal wages for both genders the challenge of gender equality is very real in India, which requires strong legislative initiatives to tackle systemic disparities and enable more women reach new heights across a wide gamut of industries. A Viksit Bharat not so far if we introduce wide-ranging reforms which encourage the participation of women in different spheres, also ensure that they enjoy equal rights forested in its working. Gender equality is important for a successful India. Laws and policies are needed to ensure equal opportunities for all while reducing gender inequality. Measures taken by India through different legislation to achieve gender equality, in terms of Political Representation, Anti-Discrimination including Gender Violence and health issues and Education are focused It points out the gap in the existing legal system and how a lot more is still needed to overcome socio-cultural norms and biases. This study combines the qualitative and quantitative data which are comprised of an analysis through a mixed-methods approach to measure the level of public awareness on gender-related policies. In conclusion, gender equality in Viksit Bharat will require a cohesive combination of laws accompanied with both effective legislations and societal recognition. To create an enabling environment for women in all aspects of life, policymakers are advised to adopt a combined approach by implementing both ground-up movements and legal frameworks.

Keywords: Legislative, Policy, Reforms, Laws

Abstract ID: RSMOPOLI03

Global Leadership in the Age of Uncertainty: A Comparative Study of Diplomatic Approaches

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In today's complex and interconnected world, global leadership faces unprecedented challenges brought on by a range of issues, including climate change, geopolitical conflicts, economic instability, and public health crises. This comparative study examines how diplomatic strategies vary across different countries, each bringing unique approaches and perspectives to international leadership in an era defined by uncertainty. By analyzing the diplomatic frameworks of key global players such as the United States, China, the European Union, and emerging economies, this study highlights how differing political cultures, historical contexts, and strategic interests shape responses to global crises.

The research focuses on three main diplomatic approaches: cooperative, competitive, and hybrid strategies. Cooperative strategies prioritize multilateralism and collective problem-solving, as often exemplified by the European Union. Competitive strategies, seen in the diplomatic stance of countries like the United States and China, reflect a preference for national interest-driven policies and assertive global positioning. Hybrid strategies are utilized by emerging economies that blend cooperation and competition to balance influence and protect sovereignty. By comparing these approaches, this study reveals how leadership styles impact international collaboration, conflict resolution, and global stability.

Furthermore, this study emphasizes the importance of adaptive and innovative leadership in addressing cross-border challenges. It suggests that in times of uncertainty, successful global leadership requires not only strategic foresight but also a commitment to diplomatic flexibility and cultural sensitivity. The findings underscore the critical role of diplomacy in shaping the future of international relations and highlight the need for a renewed focus on inclusive leadership and cooperative frameworks to navigate an increasingly volatile global landscape. Ultimately, this comparative study aims to provide insights into the evolving dynamics of global leadership and the strategic imperatives needed to foster resilience and stability worldwide.

Keywords: global leadership, cooperative strategies, competitive strategies, hybrid strategies

Abstract ID: RSMOPOLI04

"Diplomatic Leadership in the 21st Century: Balancing Hard and Soft Power" (Drawing from: Nye, 2004; Obama, 2014)

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This paper examines the evolving nature of diplomatic leadership in the 21st century, focusing on the critical balance between hard and soft power in contemporary international relations. Drawing from Nye's (2004) seminal work on smart power and building on Obama's (2014) foreign policy doctrine, the study analyzes how modern diplomatic leaders navigate complex global challenges through the strategic integration of coercive capabilities and persuasive influence. Through a comparative analysis of diplomatic approaches in major international crises between 2000-2024, the research demonstrates that successful diplomatic leadership increasingly relies on the situational deployment of both hard and soft power resources. The study identifies three key elements of effective diplomatic leadership: adaptive power projection, multilateral engagement capacity, and strategic communication competence. Findings suggest that diplomatic leaders who successfully blend traditional hard power tools with soft power elements achieve more sustainable diplomatic outcomes compared to those employing single-dimension approaches. The research contributes to international relations theory by proposing a new framework for understanding diplomatic leadership effectiveness in an era of complex interdependence and technological disruption.

Keywords: diplomatic leadership, smart power, international relations, foreign policy, multilateral engagement, strategic communication

Abstract ID: RSMOPOLI05

Youth Participation and Its Impact on Election Outcomes

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This study explores the impact of youth participation on election outcomes in the 112 Anand Vidhansabha constituency over the last three elections. By analyzing voter turnout, demographic shifts, and voting patterns, the research aims to understand how young voters influence political dynamics. The study identifies key factors driving youth engagement using quantitative data from election records and qualitative insights from surveys and interviews. The findings highlight the significant role of young voters in shaping election results, offering policy recommendations to enhance youth participation and ensure their voices are effectively represented in the political process.

Key words: Youth Participation, Election

Abstract ID: RSMOPOLI06

વિકસિત ભારતનાં નિર્માણમાં યુવા નેતૃત્વ અને કુટનીતિની ભૂમિકા : એક અભ્યાસ

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ભારત એક ઝડપથી વિકસતો વિકાસશીલ દેશ છે. ભારત વિકસિત દેશ બનવાની રેસમાં આગળ વધી રહ્યું છે. ટૂંક સમયમાં ભારતીય અર્થતંત્ર પણ પાંચ ટ્રિલિયન ડોલરને સ્પર્શી જશે અને આપણે વિશ્વની ત્રીજી સૌથી મોટી અર્થવ્યવસ્થા બની જઈશું. વિકસિત દેશ બનવાનું લક્ષ્ય કેવી રીતે હાંસલ કરવું. વિકસત ભારત 2047 યુવાનોને તે માર્ગ બતાવવાનું છે જેના ઉપર આપણો શિક્ષક થવાનું ટેગ લાગશે અને વિશ્વના પસંદગીના વિકસિત દેશોમાં તેને ગણતરી થશે. 2047 સુધીમાં વિકાસ ભારતના વિઝનને સાકાર કરવા માટે ભારતના યુવાનોની ઉર્જા અને સમર્પણ અનિવાર્ય છે. રાષ્ટ્ર નિર્ણાયક તબક્કે હોવાથી, યુવાનોને સશક્ત બનાવવા અને તેમની ક્ષમતાનો ઉપયોગ કરવા માટે સરકાર, શૈક્ષણિક સંસ્થાઓ અને સમાજના સામૂહિક પ્રયાસો જરૂરી છે. નવીનતા, જવાબદારી અને સામુદાયિક જોડાણની સંસ્કૃતિને પ્રોત્સાહન આપીને, ભારત સમૃદ્ધ અને ટકાઉ ભવિષ્ય માટે માર્ગ મોકળો કરી શકે છે. સરકારની સહાયક પહેલ સાથે રાષ્ટ્રીય વિકાસમાં ફાળો આપવા માટે યુવા વ્યક્તિઓની પ્રતિબદ્ધતા, નિ .શંકપણે ભારત માટે ઉજ્જવળ ભવિષ્ય તરફ દોરી જશે.

ચાવીરૂપ શબ્દો : યુવા, નેતૃત્વ, કુટનીતિ, ભાગીદારી

Abstract ID: RSMOPOLI07

India-ASEAN Buddhist Diplomacy: Building Soft Power through Shared Spiritual Heritage

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This paper explores India's Buddhist diplomacy with ASEAN nations as a strategic tool for enhancing soft power in the region. By leveraging their shared spiritual heritage, India aims to strengthen cultural, economic, and political ties with Southeast Asia. This research examines the historical context, key initiatives, and impact of India's Buddhist diplomacy.
Through a qualitative analysis of official documents, diplomatic statements, and expert interviews, this study reveals how India's Buddhist diplomacy Fosters cultural exchange and people-to-people connectivity. It Enhances India's regional influence and credibility. It Diversifies India's diplomatic engagement beyond traditional economic and security concerns. It Counters China's growing presence in Southeast Asia. Case studies of India's interactions with Myanmar, Thailand, Cambodia, and Indonesia illustrate the effectiveness of Buddhist diplomacy in: Revitalizing ancient Buddhist sites and routes, Promoting tourism and cultural exchange, Supporting regional peace and stability. This research contributes to the understanding of soft power dynamics in Indo-ASEAN relations, highlighting the potential of cultural diplomacy to reshape regional geopolitics. By exploring the intersection of spirituality, culture, and international relations, this paper demonstrates how India's Buddhist diplomacy can become a cornerstone of its Act East policy.

Keywords: Buddhist diplomacy, soft power, India-ASEAN relations, cultural exchange, Act East policy.

Abstract ID: RSMOPOLI08

Gender representation in the Indian Lok Sabha: analyzing the progress and challenges of women's political empowerment

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This paper examines gender representation within India's Lok Sabha, analyzing the progress and persistent challenges of women's political empowerment in one of the world's largest democracies. Despite legislative milestones and societal strides toward gender equality, women remain significantly underrepresented in the Indian parliament. This study explores key factors influencing women's electoral success, including political party dynamics, electoral systems, socio-cultural barriers, and gender quotas. By evaluating the progress of female political participation over recent election cycles, we identify patterns and obstacles that shape women's roles in political leadership. Using both quantitative analysis of historical data and qualitative insights from case studies, the paper highlights the impact of limited gender representation on policymaking and governance priorities. Finally, we present policy recommendations to foster a more equitable political environment, emphasizing strategies to overcome systemic barriers and ensure meaningful representation for women in Indian politics. This research contributes to the broader discourse on gender parity in governance, advocating for reforms that not only increase female representation but also strengthen democratic inclusivity and diversity.

Keywords: Gender representation, Indian Lok Sabha, women's political empowerment, gender equality, political participation.

Abstract ID: RSMOPOLI09

વૈશ્વિક નેતૃત્વ અને કૂટનીતિ

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આજે ૨૧ મી સદીમાં નેતૃત્વ અને કૂટનિતિનું મહત્વ વધતુ જઈ રહ્યું છે. કારણ કે દુનિયા વધુ એકબીજા દેશો સાથે વિવિધ બાબતે જોડાઈ રહી છે. આજે વૈશ્વિક નેતાઓ પાસે સ્પષ્ટ વિઝન છે, જે સમગ્ર વિશ્વને સારૂ નેતૃત્વ આપવાનું ધ્યેય રાખે છે, વૈશ્વિક નેતાઓએ આંતરરાષ્ટ્રીય સંસ્થાઓ સાથે નજીકનો સંબંધ રાખવા માટે તમામ દેશોને પ્રેરણા આપી સમાનતા અને શાંતી લાવવી જોઈએ. વૈશ્વિક નેતૃત્વમાં વિવિધ દેશોની સંસ્કૃતિ અને વિવિધતાને જાણવી ખૂબ જ જરૂરી છે, વિવિધ સંસ્કૃતિઓ અને વિચારધારાઓની માન્યતાઓ અને વૈશ્વિક મૂલ્યોથી જાગ્રત કરી શકાય તેમજ એકબીજા દેશોનું સન્માન કરી શકાય. વૈશ્વિક નેતાઓએ ટકાઉ વિકાસ માટે વિવિધ યોજના બનાવી, તેનો વિશ્વમાં મજબૂતીથી અમલ થાય તેવા પ્રયાસ કરવા જોઈએ જેથી ભવિષ્ય માટે આવનાર પેઢીને ફાયદો થાય.આંતરરાષ્ટ્રીય સ્તરે માનવ અધિકારનું જતન કરે અને માનવતાની સાથે શાંતિ અને ભાઈચારાની ભાવના વધે તે દિશામાં પ્રયાસ કરી વિશ્વમાં સકારાત્મક દ્રષ્ટીકોણનો વિકાસ થાય તેમજ UN,WHO,WTO જેવી સંસ્થાઓએ સંવેદનશીલ અભિગમ અપનાવી લોકશાહી મૂલ્યોનું જતન થાય અને આંતરરાષ્ટ્રીય સ્તરે વિવિધ પ્રશ્નોના ઉકેલ માટે સંવાદ થાય, વાતચીત થાય, સાથે સંઘર્ષ ટાળવામાં મદદ કરે. વૈશ્વિક નેતાઓ પાસે વિશ્વને સંદેશ આપવાની અને સમન્વય આધારીત કુશળતા હોય, વિશ્વને સહકાર આપી શકે, વિશ્વ સમક્ષ આવનાર પડકારો અને આફતોને તાકાત અને સત્તાથી નહી, પરંતુ વિઝન ,મોરલ વેલ્યુજ અને પ્રભાવશાળી નિતિઓ દ્વારા સમાધાન થાય, વૈશ્વિક મંચ પર સમર્થન પ્રાપ્ત હોય તેવા વૈશ્વિક નેતાઓની આજે ખાસ જરૂર છે

ભારતના વડાપ્રધાન નરેન્દ્ર મોદી વૈશ્વિક નેતૃત્વ અને કૂટનીતિમાં અનોખી ભૂમિકા નિભાવતા રહ્યા છે.જે વિકસિત ભારત માટે મહત્વનું છે, તેમનો દ્રષ્ટિકોણ ભારતને વૈશ્વિક મંચ પર વધુ પ્રભાવશાળી બનાવવાનો અને ભારતને વિશ્વગુરૂ બનાવવાને રહ્યો છે. ખાસ કરીને વસુદેવ કુટુંબકમ, solar allince,પર્યાવરણ , આતંકવાદ અને આરોગ્યમાં મહત્વપૂર્ણ યોગદાન આપવા પ્રયાસ કરેલ છે. ભારતે કૂટનીતિમાં મજબૂત અને મૈત્રીપૂર્ણ નીતિ અપનાવીને ભારતને વૈશ્વિક સ્તરે મજબૂત કરવા સફળ રહ્યા છે, જેમાં તેમણે U.S, જાપાન, ઈઝરાયેલ, અને મિડલ ઈસ્ટ જેવા દેશો સાથે સહકાર વધાર્યો છે.

ચાવીરૂપ શબ્દો : વૈશ્વિક, નેતૃત્વ, કૂટનીતિ

Abstract ID: RSMPPOLI01

The Bharat of Tomorrow by Gender Equality: A Nation Transformed 2047

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This paper envisions an India in 2047 where gender equality is the cornerstone of societal and economic transformation. By achieving true gender equity, India can realize a future marked by unprecedented progress in every domain—from education and employment to governance and healthcare. The vision includes equal economic participation, with women occupying leadership roles across industries and contributing to a thriving, inclusive economy. Educational reforms eliminate gender disparities in access and achievement, promoting lifelong learning and skill development for all. In governance, gender-balanced leadership ensures policies that are inclusive, addressing issues from health to workplace equality. This future Bharat dismantles patriarchal norms, fostering an environment where both women and men can thrive, free from gender-based violence or discrimination. The paper emphasizes that a commitment to gender equality is not only a social imperative but a critical pathway to national prosperity and social harmony. By 2047, this transformed Bharat stands as a beacon of progress, showcasing how a gender-equitable society fosters innovation, resilience, and unity.

Keywords: India 2047, Gender equality, Societal transformation, Economic, transformation, Gender equity, Education, Employment

PSYCHOLOGY

"Man is made by his belief. As he believes, so he is."
– The Bhagavad Gita

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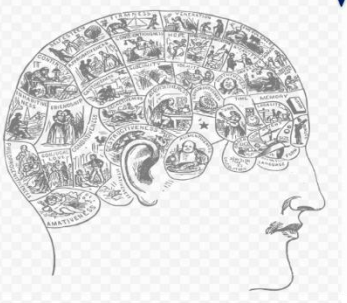

Abstract ID: RSMOPSY01

Effectiveness of Dialectical Behavioral Strategies on coping with Menstrual Distress in Premenstrual Dysphoric Disorder among Adolescent girls

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Introduction: Premenstrual Distress (PMD) is a common and often debilitating condition affecting adolescent girls, characterized by a range of emotional, behavioral, and physical symptoms. These symptoms can significantly impact daily functioning and quality of life. Dialectical Behavioral Therapy (DBT), a cognitive-behavioral approach, has shown promising results in helping females manage emotional dysregulation and distress. However, its application in addressing menstrual distress related to Premenstrual dysphoric disorder remains underexplored.

Objectives: The primary aim of this study is to evaluate the effectiveness of Dialectical Behavioral Strategies in coping with Menstrual Distress in Premenstrual Dysphoric Disorder among Adolescent girls. The research specifically investigates how Dialectical Behavioral Strategies can reduce the severity of premenstrual distress and enhance the Premenstrual ways of coping and Dialectical Skills use coping mechanisms among school going underprivileged adolescent girls of Vadodara region in the age range of 14-18 years.

Methodology: The present Quasi experimental study (Non-Randomized with Control Group design) study employs a retrospective-prospective approach, combining data from 3 phases to comprehensively assess the impact of DBS-A on menstrual distress. Participants are recruited from NGOs providing fellowships for further study. In the first phase of the study, 16.67% of the participants were provisionally found to be positive for Premenstrual Dysphoric Disorder via Convenience (Consecutive sampling) and Purposive Sampling method. In the second phase of the study, 40 participants were found to be eligible and confirmed Positive for PMDD by filling up C-PASS Diary that was developed by Eisenlohr-Moul (2017) consisting of 24 symptoms, was utilized for 2 consecutive menstrual cycles via Experience Sampling method (Daily Diary method). In the third phase of the study, 20 participants in the experimental group received the intervention comprising of 16-week structured Dialectical behavioral strategies for Adolescents, including 24 sessions focusing on Mindfulness, Emotional regulation, Distress tolerance, Interpersonal effectiveness, and Walking the Middle Path via hybrid mode. On the other hand, 20 participants in the control group did not receive any intervention. Quantitative data is collected using standardized tools such as the Premenstrual Symptoms Screening Tool for Adolescents (PSST-A) by Steiner (2011) that contained 19 items, Premenstrual Coping Measure (PMCM) by Read et al. (2014) that consists of 32 items, and the Dialectical Behavior Therapy Ways of Coping Checklist (DBT-WCCL) by Neacsiu et al. (2010) that consists of 59 items were administered at baseline, and post-intervention. The Reliability of C-PASS scale was found to be 98%, followed by that of PSST-A, PMCM & DBT-WCCL to be 0.81, 0.68-0.89, and 0.92- 0.96, respectively.

Results: Preliminary findings indicate that participants who underwent the DBS-A intervention reported a significant reduction in the severity of Premenstrual distress at $p < 0.05$. Significant improvements in Premenstrual ways of Coping and Dialectical Ways of Coping were also observed at $p < 0.05$, suggesting that DBS-A may be an effective therapeutic approach for managing menstrual distress in adolescent girls.

Conclusion: The study concludes that Dialectical Behavioral Strategies are effective in reducing menstrual distress in premenstrual phase associated with PMDD among Adolescent girls. These findings have important implications for mental health practitioners and educators, emphasizing the need for integrated therapeutic approaches that address both the psychological and physical aspects of PMDD. Further research is recommended to explore long-term outcomes and the potential for incorporating DBS-A into standard care practices for Adolescent girls with PMDD.

Keywords: Adolescent girls, Coping, Dialectical Behavioral Strategies, Premenstrual Distress, Premenstrual dysphoric disorder, Underprivileged.

Abstract ID: RSMOPSY02

Lifestyle of working and non-working women with breast cancer

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The aim of the present study was to investigated lifestyle of working and non-working women with breast cancer. The random sampling method was used in this study. The Total sample consisted of 200. Among it, 100 working women sample consisted of 50 urban areas and 50 rural areas, and another 100 Non-working women consisted of 50 sample from urban area and 50 sample from rural areas women with breast cancer. The sample was selected from Ahmadabad, Anand and Vadodara District. The research tool of lifestyle scale developed by Bawa and Kaur (2012). In this research lifestyle inventory was used for data collection. A 2 x 2 factorial design was planned where types of work and area were considered as independent variables and lifestyle as dependent variables. Accordingly, a 2 x 2 ANOVA was carried out to test the hypothesis. The result revealed that there is significant difference between the lifestyle of working and non-working women with breast cancer. That result shows working women have a better lifestyle compare than non-working women with breast cancer. Second there is significant difference between the lifestyle of urban and rural areas women with breast cancer. That result shown rural area women have a better than lifestyle compare than urban area women with breast cancer. There is no interaction effect between lifestyle of types of work and types of area of women with breast cancer.

Keywords: Lifestyle, breast cancer, working, Non-working, Rural, Urban

Abstract ID: RSMOPSY03

The impact of Vipassana Meditation on Life Attitude Across Different Nationalities

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Purpose: This study investigated the impact of Vipassana meditation practice, nationality, and gender on life attitude among Vipassana meditators and non-meditators.

Methodology: The sample included 360 participants (180 from India, 180 from Mongolia; 240 Vipassana meditators, 120 non-meditators; 180 males, 180 females). The Life Attitude Profile-Revised (LAP-R) developed by Gary T. Reker (1992), encompassing six subdimensions—Purpose, Coherence, Choice/Responsibleness, Death Acceptance, Existential Vacuum, and Goal Seeking—was utilized. A 2 x 2 x 3 factorial design analyzed using a three-way ANOVA considered nationality, meditation experience, and gender as independent variables, with life attitude as the dependent variable.

Findings: Vipassana meditation positively influences the composite scales and subdimensions of life attitude. National differences were not evident in life attitude, except for existential transcendence and death acceptance. The interaction between nationality and gender influences the composite scale Personal Meaning Index, and the subdimensions Coherence and Goal Seeking. The interaction between nationality and meditation experience affects the subdimensions Coherence, Choice Responsibility, Existential Vacuum, and Goal Seeking.

Conclusion: Based on findings it was concluded that Vipassana meditation practice significantly influences life attitude. There were interaction effects of nationality and meditation experience on some composite scales and subdimensions of life attitude.

Key words: ***Life Attitude, Vipassana meditation, Indian, Mongolian, gender***

Abstract ID: RSMOPSY04

Effects of online dating application use on young adults

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Dating applications such as Tinder, Bumble, and Hinge have become indispensable tools in contemporary dating culture, catering to a wide range of preferences. These platforms function on a fundamental principle: users generate profiles consisting of photographs and written descriptions. It is possible for users of these platforms to be subjected to frequent experiences of acceptance or rejection, which may have a detrimental effect on their mental condition. This is especially true when it comes to rejection, which may result in emotions of failure, disappointment, and a lowered sense of self-worth. In light of the fact that these applications are increasingly popular among young adults, the purpose of this study is to evaluate the degree to which they have an impact on the psychological well-being of young people. The results this study that was given to a total of 150 college students revealed that fifty of the participants had personal encounters with dating apps by using survey method. Both the Rosenberg Self-Esteem Scale and the Beck Depression Inventory-II were later completed by these subjects. The findings from both scales suggest that the persistent chase of validation and acceptance, which often takes the form of "likes," may be a factor in the development of a heightened fear of being rejected and a drop in one's level of self-confidence.

Keywords: Online dating apps, psychological well-being, young adults, Depression

Abstract ID: RSMOPSY05

A Study of Spiritual Quotient and Life satisfaction Among Divyaang Children's Parents

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The Main aim of the research is to see the Spiritual Quotient and Life satisfaction among Divyaang children's parents. Spiritual quotient and life satisfaction both are inter connected with eachother. In present sceniorio due to compitative decade, humans are facing lots of challenges & may sometimes fail in fulfill requirement of their child. For the present study total 240 sample were selected form the Anand district. Data were collected with Starified random sampling method. For data collection the tool were used of Spiritual Quotient scale which is devloped by Ahluwalia G., Chadha. N. K. and Vohra, S. S. (2015) & Life Satisfaction Scale devloped by Q. G. Alam, and Srivastava, (1996) . For the data annylysis Annova F test & corelation were applied for the present study. 2*2*2 factorial design were used for the present study. At the end of result, it can be conclued that, there is no significant difference in gender, types of family and aera of spiritual quotient & life satisfaction in both. There is Positive correlation between spiritual quotient & life satisfaction of divyaang childrens parents.

Key Words. Parents, urban, rural, joint, nuclear, Spiritual quotient, life satisfaction

Abstract ID: RSMOPSY06

Navigating Risks and Resilience: Coping Strategies Among Young Adults

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This study investigates the relationship between risk behaviors and coping strategies among young adults in Baroda, India. The research explores the types of risk behaviors prevalent in this population, including substance use, reckless driving, and unsafe sexual practices, and the coping strategies they employ to manage associated stress. A correlational research design was utilized, surveying 200 young adults from Baroda to measure their engagement in risk behaviors and the coping strategies they use to handle stress. The study found significant associations between the use of maladaptive coping strategies (e.g., avoidance, venting) and increased engagement in risk behaviors. In contrast, problem-focused strategies (e.g., planning, seeking help) were linked to a lower likelihood of engaging in such behaviors. These findings are discussed in terms of their implications for developing mental health interventions that promote adaptive coping strategies and reduce risk behaviors. Given the prominence of risk behaviors among young adults in Baroda, the results underscore the importance of targeted psychological interventions that foster healthy coping mechanisms to enhance psychological well-being and resilience in this population.

Keywords: Risk Behaviors, Coping Strategies, Young Adults

Abstract ID: RSMOPSY07

Moderated Mediation of Pregnancy-Related Stress and Life Satisfaction: The Role of Marital Adjustment and Parity

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The transition to parenthood, particularly during pregnancy, often brings about significant psychological and relational challenges. This study investigates the relationship between pregnancy-related stress and life satisfaction among pregnant women, emphasizing the mediating role of marital adjustment and the moderating influence of parity. A sample of 108 pregnant women in their second trimester was surveyed, comprising 51 nulliparous and 57 primiparous women, selected through purposive and snowball sampling methods. Data were collected using the Demographic Data Sheet, Pregnancy Stress Rating Scale (Chen, 2015), Dyadic Adjustment Scale (Spanier, 1976), and Satisfaction with Life Scale (Diener et al., 1985). Correlation analyses, mediation analysis, and moderated mediation analysis were performed, with findings evaluated at a 5% significance level within a 95% confidence interval ($p < 0.05$).The results revealed significant correlations between the variables, with marital adjustment positively associated with life satisfaction, while pregnancy-related stress showed negative associations with both marital adjustment and life satisfaction. Mediation analysis indicated that pregnancy-related stress indirectly reduced life satisfaction through its negative impact on marital adjustment, which emerged as a significant mediator for both nulliparous and primiparous women. Parity moderated these relationships, with nulliparous women experiencing a stronger negative impact of pregnancy-related stress on marital adjustment and life satisfaction compared to primiparous women. These findings underscore the critical role of marital adjustment in maintaining life satisfaction during pregnancy. Targeted interventions aimed at improving marital communication and coping mechanisms are essential, particularly for nulliparous women, to buffer the adverse effects of pregnancy-related stress and enhance overall well-being.

***Keywords*: pregnancy-related stress, life satisfaction, marital adjustment, parity, mediation, moderated mediation**

SOCIAL WORK

To a social worker working for others is not a job, it is a joy

-Amit Kalantri

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Abstract ID: RSMOMSW01

The Role of Mental Health in Achieving Happiness: A Comprehensive Exploration Through the Harvard Study of Adult Development and the Panchkosha Framework

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This paper explores the crucial role of mental health in achieving long-term happiness, integrating findings from the Harvard Study of Adult Development with the ancient Panchkosha framework. By examining modern psychological research alongside traditional philosophical perspectives, the study provides a comprehensive approach to understanding happiness and emotional resilience. Through the lens of emotional regulation, social connections, and mental clarity, this research highlights how mental well-being serves as a foundation for lasting happiness.

Keywords: Mental Health, Happiness, Harvard Study of Adult Development, Emotional Regulation, Panchkosha, Well-being.

Abstract ID: RSMOMSW02

The Role of Gender Equality in Shaping a Progressive and Developed India (Viksit Bharat): Policy, Society and Economy

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Gender equality is a core idea that supports a country's overall growth rather than just being a catchphrase. Gender equality is a non-negotiable element in the Viksit Bharat vision, which aims to achieve holistic development across economic, social, and cultural dimensions in India. To fully realise the potential of the country, gender-based discrimination must end and women must be empowered. Under the inspiring direction of Prime Minister Narendra Modi, "Empowering Viksit Bharat: Embracing Gender Equality for Inclusive Growth" captures the spirit of India's path towards comprehensive development. The foundation of this revolutionary program is gender equality, which acknowledges that inclusive progress can only be accomplished when all facets of society are given more authority. "GYAN" the four pillars of Viksit Bharat 2047 are Garib, Yuva, Annadata, and Nari. Viksit Bharat's vision by 2047 depends on empowering one of the four, but India confronts long-standing obstacles. There are still gender differences in academic performance and workforce contribution due to systemic barriers and cultural norms. We must implement strategic initiatives that prioritise access to healthcare, education, financial independence, and policy changes that uphold gender equality. In addition to economic opportunity, this paradigm change towards gender equality also includes social and political inclusion, guaranteeing equal access to resources, opportunities, and rights for women, people with disabilities, the LGBTQ+ community, and marginalised groups. India sets the path for inclusive and sustainable growth by promoting an atmosphere of respect, equality, and dignity, where each person can make a significant contribution to the advancement of the country. This study is focused on assessing the role of gender equality in achieving Viksit Bharat and to study the existing review of literature regarding gender equality and Viksit Bharat. This study emphases on gender equality as a necessary perceptive for Viksit Bharat.

Key Words: Gender Equality, Vikshit Bharat, Policy, Society, Economy

Abstract ID: RSMOMSW03

GENDER EQUALITY WITH REFERENCE TO WOMEN HEALTH

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As humans, we are always concerned about our health and the health of others we care about. Regardless of color, religion, political views, economic status, or social standing, everyone has the fundamental right to health care. However women are affected by many of the same health conditions as a men but women experience them differently, their experience of the violence, gender bias in health system and society at large, discrimination the ground of race or other factors the limited power many women have over their sexual and reproductive lives and their lack of influence in decision making are social realities which have an adverse impact of their health. So, women face particular health issues and particular from discrimination women facing multiple forms of discrimination, barriers and marginalization in addition to gender discrimination. The World Health Organization recognize gender as a key driver of inequalities in living condition, by extension, health “Gender equality” refers to the element of all genders to enjoy equal rights, opportunities and treatment. In order to promote "wellness and welfare for everyone-physical, mental, and social well-beings," the Indian government declared the theme of "One Earth," "One Health," during the G-20 summit. This present paper talks about the concept of Gender Equality. The concept of gender equality is taken into consideration with reference to the health of Women.

Keywords: Gender Equality, Women Health, Ignorance.

Abstract ID: RSMOMSW04

Insight into the Application of Digital Technology in Indian Learning System

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Digital technology has a potential to achieve our educational goals significantly. This paper explore the current state and government policy regarding digital learning, it identify the key challenges in the application of digital technology and try to evaluate the impact of digital technology on education. This review paper is based on secondary date, it use previous studies, magazines, government websites and reports. It discuss the importance of digital learning and explore successful government projects about the application of digital technology in education of the other countries. The study suggests the early induction of digital technology right from the beginning of child’s education. It also suggest the focus on the emerging technologies like AI to utilise for education.

Keywords: digital leaning, education system, digital technology.

Abstract ID: RSMOMSW05

Preparedness Through Anganwadi Workers' Experiences In Gujarat's Icds Scheme: Impacts, Challenges, And Pathways For Inclusive Development

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This study investigates public health preparedness in Gujarat's Integrated Child Development Services (ICDS) through the experiences of Anganwadi workers (AWWs), who serve as primary functionaries at the community level. Given the critical role AWWs play in delivering health, nutrition, and early childhood services, assessing their knowledge, practices, and challenges provides insight into the system's readiness to meet public health needs, particularly in times of crisis. This research aims to identify key challenges faced by AWWs within the ICDS framework and to explore pathways for building a more resilient, inclusive public health system in Gujarat. A mixed-methods approach was employed, with quantitative data collected via structured surveys and qualitative insights gathered through semi-structured interviews. This approach facilitated a comprehensive analysis of AWWs' experiences, including their access to essential resources, knowledge of public health protocols, and awareness of gender-responsive practices. Findings indicate that while AWWs possess foundational knowledge in health and nutrition, there are significant gaps in training related to crisis response, resource constraints, and gender-sensitive service delivery. Additionally, socio-cultural barriers and logistical limitations often hinder AWWs' effectiveness in addressing public health challenges at the grassroots level. The study highlights the need for regular, specialized training, increased support for AWWs, and a focus on gender equity to enhance public health resilience in rural areas. These findings underscore the importance of policy interventions that integrate inclusive development goals with public health initiatives, particularly by strengthening the support systems for frontline health workers. This research contributes valuable insights into the systemic improvements necessary to empower AWWs and build a more sustainable ICDS model that aligns with India's broader vision for inclusive development.

Keywords: public health, Anganwadi workers, ICDS, Gujarat, inclusive development, gender equity

Abstract ID: RSMOMSW06

Public Health and Social Impacts of Pandemics

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Pandemics are serious threats that impact not only public health but also the economy and social well-being of countries worldwide. This area of research explores how pandemics and infectious diseases influence public health and contribute to social issues, especially around restrictions and bans that are implemented to control outbreaks. The research uses a combination of systematic reviews, mixed-methods approaches (both quantitative and qualitative), and case studies to provide a well-rounded understanding.
The study draws on a range of fields including public health, epidemiology, sociology, psychology, economics, communication studies, healthcare policy, global health, anthropology, and digital health. It emphasizes topics such as healthcare system resilience, pandemic preparedness, emergency responses, mental health impacts, social stigma, and community resilience. Additional focus areas include effective health communication, digital health technologies, social networks, and promoting health equity. Together, this research aims to shed light on the broader consequences of pandemics and the ways that societies can better prepare for, respond to, and recover from such crises.

Primary Keywords: Pandemics, Public health, Social impact, Global health security, Infectious disease epidemiology

Abstract ID: RSMOMSW07

Bridging the Gap: Comparative Analysis on LGBTQ+ Workplace Inclusion in India and Developed Nations

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This conceptual paper explores the key factors that contributed in the workculture acceptance of the LGBT+ (Lesbian, Gay, Bisexual, Transgender, +) community being a developing country India and key factors that played a role in developed countries such as Canada, Netherland and Brazil. The objective is comparative analysis of the contributing factors and gaps of laws, policies and strategies applied by the government as well as Inclusive Strategies, Infrastructure and HR policies, Labour Laws, Workplace Protection and corporate diversity initiatives imposed in the private companies of developed countries and private companies in India to make the workplace more inclusive. Conceptual analysis method will help to understand the variables contributing to the cultural change by analysing secondary data from websites such as Google Scholar, ResearchGate, Social Science Research Network, Pubmed, newsletters from Forbs and some articles from government websites. By comparing National and International Practices, this will help to find an effective approach to make the workplace more inclusive and identify different ways to adapt best practices in Indian cultural context. This study not only highlights the role of legislation but also initiative leadership of private organisations in formulation of cultural attitude which helps to shape positive experience in the workplace. It also highlights obstacles of implementation practices and lack of legislative backing faced by Government and Private sectors to make it a secure workplace for LGBTQ+. Lastly, the paper ends with recommendations to Government and Indian organisations who willing to include diverse practices that consider the cultural aspects which will give some input toward understanding global best practices in the workplace, giving insights into pathways for cultural adaptation in emerging markets and furthering the broader objective of equity and inclusivity in the global workforce.

Keywords: LGBT+ (Lesbian, Gay, Bisexual, Transgender, +) inclusion, workplace diversity, global comparison, inclusive work culture, corporate policies, cultural adaptation.

Abstract ID: RSMOMSW08

Childhood Gender Inequality in India

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Childhood gender inequality in India remains a significant societal challenge, deeply rooted in cultural, economic, and social norms. From an early age, children are exposed to gendered expectations that shape their roles, behaviors, and opportunities. Girls often face discrimination in terms of access to education, healthcare, and nutrition, with a preference for boys in many households. Gender bias manifests in various forms, including child marriage, domestic labor, and limited career choices for girls. Boys, on the other hand, may experience pressure to fulfill traditional roles as providers or to suppress emotional expression. These inequalities have long-term impacts on personal development, opportunities, and overall well-being. Despite improvements in legal frameworks and educational access, gender disparities in childhood continue to perpetuate the cycle of poverty and discrimination. Addressing these inequalities requires a comprehensive approach, focusing on changing societal attitudes, empowering both boys and girls, and promoting gender-sensitive policies.

Keywords: Childhood Gender inequality, Education, Healthcare, Gender bias, Domestic labor, Social norms, Gender roles

Abstract ID: RSMOMSW09

Strengthening Resilience in the Face of Cyber Victimization: The Role of Social Support

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Cyber victimization is a growing challenge for young women aged 18-25 years, often impacting their mental well-being and social dynamics. This study explores the intricate relationships between cyber victimization, resilience, and social support, considering demographic variables such as age, education, marital status, and family income. Using a cross-sectional survey of 346 respondents across Gujarat, data were collected through structured questionnaires and analyzed using correlation and ANOVA techniques. The results revealed a weak negative relationship between cyber victimization and resilience. Resilience levels showed a stabilizing trend across varying levels of cyber victimization, suggesting its potential as a buffering factor. Moderation analysis indicated that while social support patterns suggest its relevance as a protective factor, its moderating effect on the relationship between cyber victimization and resilience was not statistically significant. Demographic factors such as age, marital status, education, and family income showed observable patterns of association with levels of cyber victimization, resilience, and social support. This study highlights the need for targeted measures to address cyber victimization and recommends exploring factors like cultural influences and technology usage to develop comprehensive strategies for its mitigation.

Keywords: Resilience, Social Support, Cyber Victimization, Age, education

Abstract ID: RSMOMSW10

Role of Non-Government Organizations in Empowerment of Tribal Women: A Literature Review

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The empowerment of tribal women remains a crucial yet challenging aspect of development efforts worldwide. Non-Governmental Organizations (NGOs) play a pivotal role in facilitating this process through various interventions. This systematic review aims to synthesize existing literature on the role of NGOs in empowering tribal women, focusing on the methodologies employed and outcomes achieved. Through a comprehensive analysis of the literature, it is evident that NGOs significantly contribute to the empowerment of tribal women. Their interventions encompass a wide range of activities, including education, skill development, healthcare, income generation and advocacy. Moreover, successful empowerment initiatives often involve a systematic approach tailored to the specific needs and contexts of tribal communities. The findings underscore the critical role of NGOs in empowering tribal women and highlight the importance of adopting a systematic approach in their interventions. Moving forward, there is a need for further research to evaluate the long-term impact of NGO interventions, identify best practices, and address the persisting challenges in empowering tribal women effectively. This review provides valuable insights for NGOs practitioners, and researchers striving to promote the empowerment of tribal women worldwide.

Keywords: Non-Governmental Organizations, Tribal Women, Empowerment, Systematic Review

Abstract ID: RSMOMSW11

Title: Gender Equality and Systemic Reforms in Ending Domestic Violence Against Women for Viksit Bharat

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Gender equality is the core element for societal progress and the holistic development of a nation. Domestic violence against women is a widespread issue that affects countless women forcing them to face physical and mental suffering within their homes and limiting their ability to thrive and contribute to society and the nation as well. This inequality demands empowerment of woman to ensure equal participation in all aspects of life. This study explores the critical relationship between domestic violence, gender equality, and the development of society for Viksit Bharat. Domestic violence, which manifests in physical, emotional, and psychological abuse within households, is often rooted in deeply ingrained gender inequalities. These inequalities imply power imbalances, primarily affecting women and marginalized groups, and contribute to the cycle of violence. The study examines the far-reaching consequences of domestic violence, not only on individuals but also on communities. By promoting gender equality and enacting effective legal and social measures, society can address the root causes of violence and unlock pathways for positive social and economic development. The study combines literature review, data analysis, and interviews to develop practical recommendations for combating domestic violence and fostering a more equitable society. The study emphasizes the need for comprehensive societal change and systematic reforms to create safer, more inclusive environment and empowerment of women through gender equality as a key factor in eliminating domestic violence, thus enabling the true transformation from women's development to women-led development as envisioned for Viksit Bharat.

Key words: Gender Equality, Domestic Violence, Viksit Bharat

Abstract ID: RSMOMSW12

Road Safety Through Good Practices for Building a Sustainable India - A Systematic Review

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We all know that road accidents claim 1.3 million lives globally every year and are the cause of 50 million injuries all over the world. For this, road safety is an integral element of sustainable development. Sustainable Development Goal number 3 strives to "Ensure healthy lives and promote well-being for all at all ages." It also includes the objective of reducing the number of road crashes by 50 percent by 2030. The Ministry of Road Transport and Highways (MoRTH) published official statistics showing that road crashes claimed the lives of 153,972 people in India in 2021. This corresponds to 11.3 deaths per 100,000 population. Since the invention of the wheel has played a major role in the history of mankind, for maximum road safety, drivers can adopt sustainable driving behaviors that aid in reducing the number of accidents and are eco-friendly. Road safety and excellent driving practices can save many lives. An attempt has been made in this paper to put forward the best practices based on the systematic review of different research papers, including those on Scopus, Web of Science, ResearchGate, and many more sources, which will help in advancing the country towards sustainable development by protecting the valuable assets of the country by saving precious human lives. This study aims to support the growth of sustainable development by analyzing numerous studies and highlighting the good practices, best ideas, approaches, and road safety preventive measures found in them.

Keywords: Road Safety, Sustainability, Driving Behaviour, Review of Literature, Road Accident, Good Road Safety practices

Abstract ID: RSMOMSW13

Empowering Women, Strengthening the Nation: India's Constitutional Commitment to Gender Equality

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This study considers the constitutional provisions which provides the foundation for gender equality in India. The policies of the government which aligns with fundamental rights, directive principles and specific provisions addressing gender disparities. Issues related to gender equality has been obstructive and central concern in shaping India's developmental framework. The reality of gender inequality in India is very complex and diversified, because it exists in every field like education, employment opportunities, income, health, cultural issues, social issues, economic issues etc. This study uses qualitative analysis to explore key articles such as Article-14 Equality before the law, Article-15 Prohibition of discrimination and Article-21 Protection of life and personal liberty along with directives promoting proactive measures for women. Through a critical review of constitutional provisions and policies, these research investigates how these constitutional guarantees have been implemented to address issues like gender based violence, access to education and employment opportunities. Preliminary findings suggest that while these provisions have provided a legal foundation for gender equality, there remain significant challenges in their full implementation particularly at grassroot level. This study concludes that enhancing the effectiveness of constitutional provisions, along with policy reforms is crucial for achieving true gender parity, which is prima facie for India's progress as a Viksit Bharat. The findings contribute to ongoing discussions on strengthening legal frameworks to achieve sustainable development goals.

Keywords: gender equality, constitutional provisions, viksit bharat, legal framework, India

Abstract ID: RSMOMSW14

Community Radio as a Tool for Social Empowerment: A Case Study of Maandesi Tarang Vahini in Rural Maharashtra

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This research examines the role of community radio as a significant tool for social empowerment, using *Maandesi Tarang Vahini*, a community radio station in Mhaswad, Maharashtra, as a case study. The station empowers marginalized groups, especially women, farmers, and artisans in rural areas, by providing a platform for their voices and addressing local issues that mainstream media often overlooks. Through participatory communication, *Maandesi Tarang Vahini* broadcasts vital information on agriculture, health, women's rights, and financial literacy, helping improve community knowledge and social engagement. Data collected through interviews, field observations, and surveys demonstrate the station's impact on enhancing agricultural practices by informing farmers about sustainable methods and government schemes. It also plays a crucial role in empowering women by offering programs on self-help groups (SHGs), financial independence, and social rights, encouraging greater participation in local economic activities. Additionally, the station fosters cultural preservation by broadcasting local folk music, traditional stories, and discussions on indigenous knowledge, contributing to maintaining cultural heritage in the region. Despite these successes, *Maandesi Tarang Vahini* faces challenges, including financial sustainability, technical infrastructure limitations, and regulatory restrictions on content, such as the prohibition of news broadcasting. Overall, the research concludes that community radio stations like *Maandesi Tarang Vahini* are essential to achieving India's inclusive and sustainable development goals by empowering marginalized communities and providing them with the tools and knowledge necessary for socio-economic progress. Statistical data, tables, and pie charts have been used to illustrate the station's impact and the challenges it faces.

Keywords: Community radio, social empowerment, participatory communication, rural development, Maandesi Tarang Vahini, marginalized communities.

Abstract ID: RSMPMSW01

LIFE SKILLS : ALTERNATIVE FOR ACHIEVING MENTAL HEALTH AMONG ADOLESCENTS

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Adolescence is a developmental stage that brings both opportunities and challenges, as young people navigate the complexities of growing up. It is also a critical period of emotional and psychological development, marked by numerous challenges such as academic pressures, peer relationships, identity formation, and the onset of mental health issues. The increasing prevalence of mental health issues among adolescents calls for innovative approaches to prevention and intervention. Traditional methods often involve clinical treatment and psychological counseling, but life skills education has emerged as a promising alternative that offers preventative benefits and empowers adolescents to manage their mental health independently. Life skills, as defined by the World Health Organization (WHO), are a set of psychosocial skills that help individuals effectively navigate the demands and challenges of everyday life. This paper aims to explore how life skills education can serve as an alternative method for achieving mental health among adolescents, with a focus on secondary data from existing studies. This study examines the role of life skills as an alternative strategy for promoting mental health among adolescents, focusing on the relationship between life skills education and mental health outcomes. By analyzing data from secondary sources the study highlights how these life skills can reduce anxiety, depression, and behavioral issues. The findings suggest that by integrating life skills programs into educational settings, policymakers and educators can equip adolescents with the tools necessary for navigating life's challenges and fostering lifelong mental well-being.

Keywords: Life Skills, Mental Health, Adolescents

SOCIOLOGY

A nation's culture resides in the hearts and in the soul of its people.

- Mahatma Gandhi

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WOMEN OFFENDERS AND THEIR REASONS

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Violation of the laws and rules of the society is now limited to men, the amount of criminal activities has started to increase even by women. Many times knowing the crime, sometimes criminal behavior is done unknowingly. Various reasons are also responsible for crimes committed by women. Which leads women to do such activity. Various reasons like poverty, broken family, conflict in marriage, appearance, lack of education lead women to commit crime. Which becomes a problem for the society because the development of the family is necessary for the development of the society and the development of women is necessary for the development of the family but when women are involved in criminal activities then it creates an anti-social situation in the society.

Abstract ID: RSMOSOCI02

ગ્રામીણ સમાજની સ્ત્રીઓમાં સશક્તિકરણથી પરિવર્તન

નિષ્ઠા વી. પ્રજાપતિ
અનુ. સમાજશાસ્ત્ર વિભાગ, સરદાર પટેલ યુનિવર્સિટી, વલ્લભ વિદ્યાનગર, આણંદ.
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ગ્રામીણ વિસ્તારોમાં સ્વતંત્રતા પછી પણ મહિલાઓના દરજ્જાની વાસ્તવિક માન્યતાનો અભાવ જોવા મળતો હતો. મહિલાઓને પુરુષોની તુલનામાં કેટલાક સમાજોમાં પૂર્વગ્રહનો સામનો કરે છે. તેમને અમુક વિશેષાધિકારોથી વંચિત રાખી અને તેમની સ્થાનિક ફરજોને પૂર્ણ કરવા માટે તેમનું સંપૂર્ણ ધ્યાન આપવાની અપેક્ષા રાખવામાં આવતી હતી. હવે એવી પહેલ અને વ્યૂહરચનાઓ અમલમાં છે જે મહિલાઓ અને પુરુષો સમાન સ્તરે છે તે વિચારને પ્રોત્સાહન આપે છે, તેમને સમાન અધિકારો અને તકો આપવી જોઈએ, ખાસ કરીને શાળા અને નોકરીના સંદર્ભમાં. ગ્રામીણ વિસ્તારોમાં લોકો મહિલાઓ અને છોકરીઓને સમાન તરીકે જોવાનું શરૂ કરી રહ્યા છે, જે સંસ્કૃતિમાં પરિવર્તનને પ્રતિબિંબિત કરે છે. આ અભ્યાસ ગ્રામીણ મહિલાઓની સામાજિક-આર્થિક સ્થિતિ, સ્ત્રી સશક્તિકરણ, અને તેમની સ્થિતિ સુધારવા માટે કરવામાં આવેલા પગલાં પર ધ્યાન કેન્દ્રિત કરે છે. સ્ત્રી સશક્તિકરણએ એવા નિયમો, અનુસંધાનો અને પરિસ્થિતિઓને વિકસાવવા પર ભાર દેતો ખ્યાલ છે જે દ્વારા સ્ત્રીઓ પોતાનું જીવન સ્વતંત્ર રીતે અને બિનબંધનપૂર્વક જીવવા માટે સક્ષમ બની શકે છે. આમાં શૈક્ષણિક અને આર્થિક તકદીરો, સમાજમાં સત્તા અને નિર્ણાયક ભૂમિકા ધરાવવી, અને ભય, હિંસા, ભેદભાવ અને અનુચ્છેદના વિરૂદ્ધ હક પ્રાપ્ત કરવો વગેરે બાબતો સામેલ છે. જો આપણે ભારતના આર્થિક અને સામાજિક ઇતિહાસ પર નજર કરીએ તો એ સ્પષ્ટ છે કે આપણી આઝાદી પછી મહિલા સશક્તિકરણને નવી દિશા આપવામાં આવી છે. દસમી યોજનાની મધ્ય-ગાળાની સમીક્ષામાં, વિષમ લિંગ ગુણોત્તર, ઉચ્ચ શિશુ અને માતૃત્વ મૃત્યુદર ઘટાડવાના પ્રયાસરૂપે, ડિલિવરી દરમિયાન અને પછી વધુ સારી સંભાળ પૂરી પાડીને 30 ટકા સુધીનો સંભવિત ઘટાડો કરવામાં આવ્યો હતો. મહિલા અધિકારો સાથે સંબંધિત 42 કેન્દ્રીય કાયદાઓ છે, જેમાંથી 32ની સમીક્ષા રાષ્ટ્રીય મહિલા આયોગ દ્વારા કરવામાં આવી હતી. ઘરેલું હિંસાથી મહિલાઓનું રક્ષણ અધિનિયમ હેઠળ, તેમના ઘરોમાં હિંસાનો સામનો કરતી મહિલાઓને તાત્કાલિક અને કટોકટીની રાહત આપવાની જોગવાઈ કરવામાં આવી છે. લિંગ આધારિત અંદાજપત્રની જોગવાઈ યુનિયન એક્સપેન્ડિચર બજેટ 2005-06 માં સ્ટેટમેન્ટ 19, એક્સપેન્ડિચર બજેટ દ્વારા કરવામાં આવી છે. હાલમાં, ભારત સરકારના 35 વિભાગોમાં લિંગ આધારિત અંદાજપત્રીય જોગવાઈઓ કરવામાં આવી છે.

ચાવીરૂપ શબ્દોઃ ગ્રામીણ મહિલાઓ, સામાજિક - આર્થિક સ્થિતિ, સ્ત્રી સશક્તિકરણ, મહિલા રોજગાર.

Abstract ID: RSMOSOCI03

Spirituality among youth in modern India

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In modern India, the concept of spirituality among youth is evolving, shaped by the interplay of traditional values, contemporary lifestyles, and global influences. Unlike the rigid adherence to religion seen in earlier generations, spirituality among today's youth often transcends organized practices, focusing on personal growth, mindfulness, and interconnectedness. This shift is driven by factors such as increased access to information, exposure to diverse ideologies, and the pressures of modern life, leading young individuals to seek meaning beyond material success.While some embrace traditional practices, adapting them to fit their modern schedules, others explore non-conventional paths like yoga, meditation, and self-help frameworks. Social media and digital platforms play a significant role in spreading awareness about spiritual practices and philosophies, making spirituality more accessible to the tech-savvy generation. However, this dynamic also raises concerns about the commercialization and superficiality of spiritual pursuits. This paper examines the factors influencing spirituality among Indian youth, the role of cultural heritage and modernity, and the impact of digitalization on their spiritual journey. It also explores the potential of spirituality as a tool for mental well-being, ethical decision-making, and fostering a sense of community in an increasingly fragmented world. By understanding these dynamics, we can better appreciate how spirituality is helping Indian youth navigate the challenges of modern life while staying connected to their roots.

Keywords: Spirituality, Indian youth, modern India

Abstract ID: RSMOSOCI04

A Sociological Study of 'Beggar' in Society (With reference to the city of Petlad)

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The purpose of this study is to explore the socio-economic causes of begging in the city of Petlad, Gujarat. Begging is a widespread social problem, often reflecting deep socio-economic inequalities, and this research attempts to understand the complex factors that contribute to individuals resorting to begging as a means of survival. This study examines the social life of beggars in Petlad, using a questionnaire and secondary data to collect data. This research examines the socio-economic background of beggars, the reasons for begging, interactions with people, and the role of government and non-government interventions. It aims to identify the socio-economic conditions that lead to begging, understand public attitudes towards beggars, and the social stigma associated with begging. To explore the effectiveness of government social welfare programmes in addressing the problem. This study will contribute to a broader understanding of begging not as an isolated phenomenon but as a manifestation of structural inequality. It will help provide insights into possible policy solutions aimed at reducing urban poverty and marginalization. This will shed light on the broader implications for social justice and welfare reform.

Keywords: Poverty, Health-related services, Government services available to beggars, Lack of education, Unemployment.

Abstract ID: RSMPSOCI01

Harassment experienced by women in industrial areas -A Sociological Study (In Reference of Vadodra City)

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Harassment is a sensitive issue in socialization it is threatening behaviour by any person or group anywhere and workplace harassment is one of them Workplace harassment is one of the most sensitive areas that attract the attention of researchers Dealing with workplace harassment is a key indicator of effective field studies and observations Harassment occurs in workplaces but there is no proper record. A thorough study on the main objective A research work has been undertaken with the primary objective of studying the experiences of women working in the workplace regarding harassment. This research aims to study women's experiences of harassment while working with bosses and colleagues in the industrial sector. The present research study is descriptive. A visit schedule has been used for data collection. The area of study is Vadodara City of Gujarat State selected as sample. For data collection 50 working women are selected as respondents through purposive sampling method. This research is started on the basis of interview schedule which is based on the main objectives related to harassment so based on this interview schedule is developed which is analysed through tabulation. The study revealed the level of women's experiences of verbal, physical, psychological, discriminatory, religious, cyber and unethical harassment at the workplace where they were sometimes shouted at, insulted and insulted while interacting with superiors, colleagues and staff members while attending meetings. Targeted and provoked by abusive language, repeated jokes, bullying, attacks and assaults or threats in selected workplaces mainly recommended that enforcement of laws should be ensured and workplace heads should provide a harassment-free environment for working women.

Key Word: Harassment, Industrial area, Women, Experience

Abstract ID: RSMPFA01

The Impact of Excessive Exposure to colors on Mental and Emotional health in Society: An Analysis with Urban Bharatiya society in Context

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In the modern urban scenario, people are exposed to enormous range of colors in their daily lives, be it digital screens, advertisements around, architecture or overwhelming presence of fashion. This paper examines the potential emotional as well as psychological disturbances caused by excessive and uncontrolled and unregulated exposure to colors. This paper focuses mainly on urban Bharatiya society. Colors creates a significant impact on human psychology, where different colors inducing specific emotions and mental states. We observe that traditional Bharatiya art and architecture have used colors thoughtfully to create harmony and balance, modern urban environments are having a chaotic and often overwhelming color exposures around. This unregulated over-exposure to bright and contrasting colors, especially in cities, can lead to adverse effects on individuals' mental and emotional well-being. This study investigates how constant exposure to excessive color stimuli affects mental health in urban Indian contexts and discusses possible solutions.The study explores, how intense color saturation in contemporary urban settings potentially lead to anxiety, stress, over-stimulation, and other serious mental health issues. Derived from color psychology, design principles and traditional aesthetics, this research paper seeks to highlight the impact of unbalanced and disproportionate exposure to colors and suggests intervention to create environments with better visual harmony and balance.

Keywords: urban, emotional disturbances, colors, unregulated exposure

ENGLISH

"All the world's a stage, and all the men and women merely players."

- William Shakespeare

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RSMOENG1

Cultural Displacement and Indigenous Identity in *Paraja*: A Study of Social Dynamics

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Gopinath Mohanty's novel *Paraja* explores the intricate cultural fabric of the Paraja tribal community in Odisha, India. Viewed through the lens of cultural studies in literature, the novel highlights not only the representation of indigenous life but also critiques broader social and political structures. The Paraja tribe's culture operates as a system of meaning and power, intricately linked to issues of class, caste, colonialism, and modernity.

The primary issue explored in the this study is cultural displacement and erosion of indigenous identity in Gopinath Mohanty's 'Paraja'. The novel highlights how external forces like colonialism, capitalism and modernity disrupts the traditional way of life for the Paraja tribe.

The novel vividly depicts the Paraja tribe's customs, social structures, religious beliefs, and their connection to the natural environment. Tribal rituals, festivals, and agrarian practices reflect a deep spiritual bond with the land, which defines the tribe's cultural identity. However, this identity is fragile when confronted with external forces. The intrusion of the colonial state and capitalist economy disrupts the tribe's traditional ways of life, creating a cultural conflict that threatens to displace them. Mohanty critiques the exploitation of tribal labor and the alienation of their land, emphasizing the cultural and not merely economic nature of their oppression.

This study aims to examine cultural dimensions in Paraja through the lens of cultural studies. Specifically it seeks to explore how Mohanty portrays the intersection of cultural, power and identity within the Paraja tribe and how external forces contribute to their cultural displacement. In doing so, qualitative research methodology will be used.

In conclusion, *Paraja* offers a rich examination of cultural dimensions, revealing how indigenous identity is shaped and threatened by broader social forces.

Key Words: Cultural dimensions , Identity, Capitalism, Colonialism

RSMOENG2

Decolonizing Indian stage: Girish Karnad's Contribution to Post Colonial Theater.

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This study undertakes a comprehensive examination of Girish Karnad's pivotal role in decolonizing the Indian stage through his innovative and provocative plays that challenge the cultural hegemony imposed by colonialism. By employing a critical postcolonial framework, this research analyzes Karnad's notable works, including "Tughlaq", "Hayavadana", and "The Fire and the Rain", to demonstrate how he strategically utilizes myth, history, and folklore to foreground India's diverse cultural heritage. Karnad's subversion of Western dramatic conventions and promotion of indigenous theatrical forms are revealed through a nuanced exploration of his dramatic structures, language, and symbolism. This study argues that Karnad's theater embodies a decolonizing imperative, recentering Indian experiences and challenging dominant discourses that have historically marginalized indigenous perspectives. Furthermore, this research examines Karnad's engagement with contemporary social and political issues, highlighting his advocacy for social justice and cultural equality. The complexities of Indian identity, including the tensions between tradition and modernity, are explored through Karnad's portrayal of characters navigating cultural, linguistic, and regional differences. This study also situates Karnad's work within the broader landscape of Indian theater and cultural production, demonstrating his influential role in shaping a distinctly Indian theatrical identity. By investigating Karnad's contribution to decolonization and cultural resistance, this research provides new insights into the significance of his oeuvre and its ongoing relevance to postcolonial and theater studies.

Key Words: Girish Karnad, Postcolonial Theater, Decolonization, Indian Drama, Cultural Identity

RSMOENG3

The Impact of the Indian Knowledge System (IKS) in Literature

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The Indian Knowledge System (IKS) has a enormous repository of olden wisdom, philosophies, and educational practices that have extremely influenced the development of Indian literature. This paper aims to examine the impact of Indian Knowledge System (IKS) on literature through a perspective that views knowledge as dynamically constructed through connections between individuals and their environments. The study employs qualitative methods, including textual analysis of classical works such as the Bhagvad Gita to explore how Indian Knowledge System (IKS) elements—such as dharma (duty), karma (action and consequence), and rasa (aesthetic experience)—generate multi-dimensional narratives fascinating active reader involvement. The discloses that Indian Knowledge System (IKS) based writing fosters mutual meaning-making, enabling readers to connect significantly with texts and obtain modified interpretations, thereby bridging chronological and cultural divides. The paper concludes that integrating Indian Knowledge System (IKS) with frameworks in literary studies which not only enhances inclusivity and critical thinking but also deepens admiration for cultural inheritance contributing transformative discoveries for both literary pedagogy and contemporary learning.

Keywords: Indian Knowledge System (IKS), Literature, Dharma, Rasa, Pedagogy, Bhagvad Geeta, Cultural Heritage

RSMOENG4

Exploring African Identities through Afrofuturism and Speculative Fiction in Toni Morrison's "Beloved" and "The Bluest Eye"

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The works of Toni Morrison, particularly "Beloved" and "The Bluest Eye," offer a rich environment for delving into the issues of speculative fiction and Afrofuturism in relation to African identities. Morrison skilfully combines futuristic themes with historical tragedy to create a world in which African American protagonists are free to dream of a future without the constraints of systematic oppression, even as they battle with their own past.

In "Beloved," Morrison explores the strange lingering effects of slavery through the use of speculative fiction. The spirit of Sethe's dead daughter haunts her, signifying the lasting effects of slavery on African American identity. Morrison criticizes the historical erasure of African American experiences through this spectral presence and highlights the need to face and reclaim this past in order to create a free future. "The Bluest Eye" further examines the internalization of racial oppression through the lens of a young African American girl, Pecola Breedlove, who yearns for blue eyes and white beauty standards. Morrison's speculative approach reveals the devastating psychological effects of systemic racism while also highlighting the potential for envisioning African American identity beyond these imposed ideals. This study explains how Morrison's speculative narratives challenge and reinvent African identities by placing her works within the context of Afrofuturism. Morrison examines alternative futures based on cultural resilience and self-empowerment in addition to criticizing the socio-political realities that African Americans must contend with through the combination of historical realism and speculative components. By showing how Afrofuturism and speculative fiction might alter our perception of African American experiences and identities, this study hopes to add to current conversations in the field of African studies.

Keywords: Afrofuturism, Speculative Fiction, African Identities, Historical Trauma, Slavery.

RSMOENG5

The Loss of Culture, Memory and the Dialect: A Traumatic Odyssey of Indentured Coolie Women

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British implemented the Slavery Abolition Act in 1834 and it was efficacious to a number of colonized countries in numerous ways. On the one hand, it dispensed the rights to every free coolie whether to work on the plantation or repudiate the offer to work; and on the other hand, it freed them from British slavery and hegemony. Thus, taking the advantage of Slavery Abolition Act, the slaves on the colonies stopped working on British plantations which ultimately caused coffee and sugar plantations to face a dearth of workers. As a result, British, who experienced unbridled situation introduced a new system called 'Indentured' (a free contract system) under which the people of India were invited to the colonies to work under a contract system for five and more years. Interestingly, in the whole process of immigration, British managers had very little role to play into it. It was a local arkati in the center of the whole process who convinced the illiterate Indians to register the names for work on plantations without providing them the basic information about the colonies and the rules of the Indentured system. Consequently, after reaching to various colonies, the Indian coolie women faced physical suffering, shortage of food, deduction in wages, inhuman treatment and rapes in order to survive on the planation. Shockingly, the local arkati, agents and the Sardar were blameworthy for inhuman treatment. Hence, the present research paper is a genuine attempt to divulge the fact that how indentured journey of coolie women on a wide range of colonies turn out to be an attestation of losing culture, memory and the dialect.

Key Words: Instrumental Rape, Topas, Indentured, Girmitiyas, Arkati, Sardar, Fiji.

RSMOENG6

Endogenous and Exogenous Factors in the Political Transitions and Dictatorships in Mr. President by Miguel Ángel Asturias

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This paper explores the internal and external factors that influence political changes and the survival of dictatorships in Miguel Ángel Asturias's *Mr. President.* Using Gustav Lidén's framework on types and causes of dictatorships, the study connects Asturias's portrayal of power, repression, and resistance with broader political patterns. It examines how internal elements like institutions and ideologies, along with external pressures such as economic challenges and neighboring countries, impact the development and stability of authoritarian regimes. This paper delves deeper into the dynamics of the causes and effects of dictatorships.

Keywords: ***Authoritarianism, Power, Resistance, Comparative analysis.***

RSMOENG7

"Women's Empowerment and Social Reform: A Study of Female Characters in S L Bhyrappa's Novels".

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This study examines the representation of women's empowerment and social reform in S.L. Bhyrappa's novels, exploring the complex and multifaceted portrayals of female characters within the socio-cultural context of India. Through a critical analysis of Bhyrappa's notable works, including "Vamshavruksha", "Parva", and "Aavarana", this research investigates how female characters navigate the intersections of patriarchy, tradition, and modernity. The study reveals that Bhyrappa's female characters embody agency, resilience, and transformation, challenging dominant narratives of women's roles in Indian society. By employing a feminist and postcolonial framework, this research demonstrates how Bhyrappa's novels contribute to the discourse on women's empowerment, highlighting the tensions between cultural heritage and social change. Ultimately, this study argues that Bhyrappa's works offer nuanced insights into the complexities of women's experiences in India, underscoring the need for continued social reform and gender equality.

Keywords: S.L. Bhyrappa, Women's Empowerment, Social Reform, Female Characters, Indian Literature, Feminist Studies, Postcolonialism.

RSMOENG8

From Glory to Horror: The Changing Image of War in Literature

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The idea of war is as old as human civilization itself. If human society has evolved so does the notion of war. War has evolved from metallic arms to nuclear and bio-warfare. Literature as a record keeper of time and deeds of society has always remained interested in the idea of war. If culture and war have undergone a cataclysmic change, then war literature too has undergone a transition. As society has evolved and humans have increased their knowledge of the world, society has taken a different take on war. If war was glorified and considered a necessity in the past, then in contemporary times war is considered to be absurd and horrific. War literature now focuses on the absurdity, trauma, and senseless violence of war, offering a critique of its glorified past. By analyzing key anti-war works, this paper examines how literature reflects society's changing perception of war, transitioning from a heroic narrative to one emphasizing its brutal reality.

Keywords: War literature, Glorification, Anti-war novels, Trauma, Modern warfare

RSMOENG9

Socio-Psychological Functionalism and Dysfunctionalism in Tsitsi Dangarembga's *This Mournable Body*, An Analogous Study of Pulmonary Veins and Arteries

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In Sanskrit, it is said that *यथा पिंडे तथा ब्रम्हांडे* which literary means that whatever is inside our body, there is analogous existence in this universe. The whole universe and our body works adhering to functionalism and dysfunctionalism. When things work according to rules and lows we consider it as functionalism and interruption leads to dysfunctionalism. In order to sustain and flourish our body and society follow rules but sometimes it becomes necessary to eradicate them. In the present paper, we intend to envisage dysfunctionalism by the optimistic point of view. The main focus of the paper is to show how functionalism of the society is necessary to be dysfunctional in order to evolve. Functionalists defines the term functionalism as a set of rules laid by society, culture or nation in order to maintain peace and to cultivate. But sometimes we have to eradicating the pseudo-functionalism. In our body also each and every part has its own functions. Focusing on the analogy between our body and universe, we can say that in our body there are arteries which carry oxygenated blood and veins carry deoxygenated blood but the pulmonary arteries and veins have exact opposite functions. The present paper will use analytical method to study dysfunctionalism shown in the selected work of Tsitsi Dangarembga. Author has described journey of protagonists showing dysfunctionalism is necessary for the growth of an individual as well as the society. In work we find devastating yet appealing conditions of the female protagonist. We see little Tambu, evolving from wretchedness of life and crafting a new world on her own by disembarking the pseudo-functionalism of society. The work is true replica that indicates the functions of pulmonary arteries and veins showing the demand of time to switch the functions of functionalism and dysfunctionalism as the only way to make them functional.

Keywords: Functionalism, dysfunctionalism, pseudo-functionalism, pulmonary arteries and veins.

RSMOENG10

Representation of Artificial Intelligence in *The Return of Vaman*

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As artificial intelligence develops, its numerous possibilities and hazards become part of the dystopian society. Dystopian society refers to an imagined state or society with suffering or injustice and usually, this society is post-apocalyptic or totalitarian. This research paper aims to analyze the depiction of artificial intelligence in Jayant Narlikar's novel *The Return of Vaman* (1989). Narlikar presents *The Return of Vaman* as knowledge of developments and prospects in computer technology through Indian scientists' efforts in making the photonic supercomputer and replicating Vaman with the help of the information they get from the container. The supercomputer "Guru" and a robot named "Vaman" are presented to analyze the adverse consequences of artificial intelligence on society. The committee managed to make artificial intelligence capable of doing anything it desired. The lives of human beings became more comfortable day by day, but they failed to see the danger ahead. People are controlled by their creations because of the adverse use of artificial intelligence. This research paper tries to contribute to human relations with AI by analyzing shared imaginative visions of AI in society based on SF work.

Keywords: ***Artificial Intelligence, Dystopian Society, Humans, Adverse Use, SF***

RSMOENG11

ECOCRITICAL APPREHENSIONS IN INDIAN ENGLISH LITERATURE

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Literature and nature have always been closely related, as demonstrated by the writings of poets and other authors throughout history in practically every civilisation on the planet. All areas of knowledge and development are currently examining and emphasising the close connection between the natural and social worlds. The researcher looks at how authors have portrayed this intimate connection between nature and civilisation in their writing. The goal of this research study is to thoroughly examine the existence and ramifications of ecocriticism in Indian fiction. Its specific goal is to examine how different literary works such as novels, short tales, and poems written by a wide variety of Indian authors depict environmental consciousness and the relationship between nature and humanity. The study intends to shed light on how Indian fiction actively confronts ecological challenges, portrays the natural world, and integrates traditional ecological wisdom by examining these writings. The study also looks at the sociocultural context that shapes these literary portrayals and assesses how they might affect environmental activism and awareness in India. By taking a comprehensive and multidisciplinary approach, this study seeks to advance scholarly discussion of ecocriticism and its relevance to Indian literature in English language. This paper explores how Indian literature's concern for nature shifts from adoration to destruction, demonstrating how literature cannot escape environmental depletion.

Keywords: Environment, ecocriticism, environmental, nature, relationship.

RSMOENG12

UNITY IN DIVERSITY: MULTICULTURALISM, SOCIAL COHESION, AND THE PATH TO VIKSHIT BHARAT THROUGH NEIL BISSOONDATH'S LENS.

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The present study delves into the relationships among multiculturalism, social integration and national formation and articulates the works of Neil Bissoondath as an Insightful tool in answering these questions within the context of managing diversity in India's dreams of Vikshit Bharat (Developed India). Neil Bissoondath, a second-generation diaspora writer, explores the problems of identity and alienation as well as the processes of integration into multicultural societies, which often include a tension between the need to maintain cultural diversity and the desire to assimilate into the dominant culture of the host country. Among others, it examines how linguistic, religious, and ethnic diversity in India, as presented in language, religion, and ethnicity networks, can function as both contributing and inhibiting factors during the nation-building process. Drawing on Bissoondath's exemplary treatment of the subject of diasporas, this paper submits that the ideal of maintaining social cohesion—inclusiveness being one of the key attributes of the pursuit of Vikshit Bharat ideal—can be reconciled with respect for the existing plurality the country's population is made up of. It is suggested that the Indian condition cannot be defined only by its developmental aspirations in terms of economic growth but also includes the challenge of reconciling diversity within the national framework.

Keywords: Multiculturalism, Social Cohesion, Vikshit Bharat, Unity in Diversity,Diaspora Literature, Social Harmony

RSMOENG13

Blend of Folk and Modern: Habib Tanvir's Approach to Modern Indian Theatre

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Habib Tanvir, Ratan Thiyam, Vijay Tendulkar, Girish Karnad and Badal Sarkar were significant contributors in the formation of modern Indian theatre. Among these veteran theatre writers, directors and artists, Habib Tanvir's works stands as a unique theatre for it is an amalgamation of folk elements and modern dramaturgy. Tanvir's approach to theatre and its technique was experimental and progressive throughout his journey of theatrical works. Tanvir's initial work Agra Bazar is an excellent play in modern theatre while the following works especially his magnum opus Charandas Chor, after his studies in theatre from foreign transforms and turn to indian roots and celebrates the folk life on modern stage. He realizes that the real theatre is in villages and subsequently begins utilizing the folk and tribal elements in his performances. He integrates folk songs, dance, and story, music in modern approach with both folk and urban actors. Although Tanvir's works are illustrated as revival of folk theatre, he comments himself that his theatre is modern which creates the fusion of folk and modern. So, this paper is an attempt to explore the synthesis of folk and modern elements in theatre, considering how he intervowes the traditional forms and modern stage to present contemporary realities. By examining key plays and perfromances, the paper argues that Tanvir's style characterizes a major contribution to the development of modern Indian theatre by navigating the intersection of past and present in the search of authentic cultural expression.

Keywords: Habib Tanvir, Modern Theatre, Folk Theatre, Folk elements, Perfromance, Modern stage

RSMOENG14

The Philosophy of Time and Transformation of Values with Time in Thomas Mann's Novel *The Magic Mountain.*

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Thomas Mann a Nobel Laureate writer of Germany was impressed by Immanual Kant's philosophy of moral values. Kant has also mentioned the philosophy of time and it's relation to the moral values in his major work *Groundwork of the Metaphysics of Morals*. Mann has presented the philosophy of time and its relation to the moral values in his novel *The Magic Mountain*. Mann has tried to mention the importance of time and its values for different people in different situation. At the same time also mentioned the function of time for the history and critical time of world war in Germany. Mann has portrayed German society and transformation of values in German society during the time of world war. During that time Mann has spend few weeks at the hospital for his wife's treatment and experienced cycle of time and its value at the hospital, which became the major theme of the novel *The Magic Mountain*. In this novel Mann has mentioned the value of time for patients, doctors, philosophers, artists, etc and transformation in the values of time at the sanatorium. By mentioning time as the character of the novel Mann has presented the new style of Bildungsroman novel. Mann has never compromised in presenting the issues of German society in his novel, even when he was exiled from the Germany and by knitting German society with time Mann has tried to once again establish moral values in German society.

Keywords: The Philosophy of Time, transformation, values, sanatorium, society and the world war.

RSMOENG15

Caste Conflict in Pyre by Perumal Murugan

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Perumal Murugan's novel Pyre poignantly explores the deeply entrenched caste conflicts in rural Tamil Nadu through the tragic love story of Saroja and Kumaresan. Set against the backdrop of a conservative society, the narrative captures the pervasive nature of caste hierarchies and their devastating impact on individuals who dare to challenge them.

The novel follows Saroja, a young woman from an undisclosed caste background, and Kumaresan, a man from an agrarian community, who elope and return to Kumaresan's native village, hoping to build a life together. Their inter-caste union becomes a catalyst for social unrest, exposing the rigidly patriarchal and casteist attitudes of the villagers. Murugan skillfully portrays how the couple's love becomes a site of collective resistance, as they face escalating hostility, ostracism, and violence.

Through vivid descriptions and psychological depth, Pyre delves into the dynamics of caste prejudice, communal loyalty, and moral hypocrisy. Murugan also critiques how societal norms, deeply rooted in tradition, perpetuate fear and violence, leaving no space for individual freedom or empathy. The title itself—Pyre—is a haunting metaphor for both the flames of love and the consuming fire of societal wrath.

This paper examines Pyre as a microcosm of caste conflict in contemporary India, emphasizing how personal narratives can illuminate systemic injustices. It argues that the novel not only critiques the caste system but also highlights the urgent need for social reform and empathy in a fragmented society. Murugan's storytelling evokes both heartbreak and reflection, making Pyre a compelling commentary on the enduring caste question.

Keywords: Caste Conflict, Microcosm, Patriarchal.

RSMOENG16

The Role of AI and ML in English Language Teaching

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Artificial Intelligence (AI) and Machine Learning (ML) are transforming English Language Teaching (ELT) by offering innovative, personalized, and adaptive learning solutions. This paper examines the multidisciplinary applications of AI/ML in ELT, highlighting their role in enhancing learner engagement, facilitating language assessment, and supporting teacher training. AI-powered tools such as chatbots, virtual assistants, and automated feedback systems provide learners with real-time support and immersive practice opportunities. ML algorithms enable adaptive learning platforms that cater to diverse learner needs, improving outcomes across cultural and linguistic contexts. Drawing from linguistics, cognitive science, and educational technology, this study underscores the importance of interdisciplinary collaboration in leveraging AI/ML for ELT. Additionally, it addresses challenges such as data biases, ethical considerations, and the need for equitable access to AI-enhanced tools. The findings point to a future where AI and ML play a central role in advancing English language education global.

RSMOENG17

The Impact of Translating Regional Literature on the Global Literary Landscape

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Translation plays a crucial role in the dissemination and appreciation of regional literature on a global scale. This paper explores the impact of translating regional literatures into English, examining how such translations contribute to the global literary landscape and foster cross-cultural understanding. "Socrates," by Manubhai Pancoli, a seminal work in Gujarati literature, encapsulates the socio-cultural and philosophical ethos of its time, presenting themes that resonate universally. However, its reach remains limited without translation due to language barriers. The paper discusses the broader implications of such translations. It argues that translating regional literature like "Socrates" not only preserves and promotes cultural diversity but also enriches the global literary canon. These translations enable a more inclusive understanding of world literature, where diverse voices and narratives are acknowledged and appreciated. The analysis also considers the reception of such texts in its translated form, assessing its impact on readers and critics outside the language community. The translation's ability to convey the novel's philosophical discourse and socio-cultural commentary is scrutinized, demonstrating the potential of regional literature to contribute to global conversations on universal themes. In conclusion, this paper underscores the transformative power of translation in amplifying regional literature, using "Socrates" as a case study. It emphasizes the need for continued efforts in translating regional works to foster global literary dialogue and cultural exchange, ultimately enriching the collective human experience.

Keywords: Translation, regional Literatures, cross-cultural understanding, reception.

RSMOENG18

Kuntaka's Vakrokti and Empson's Seven Types of Ambiguity: A Comparative Study

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Kuntaka's Vakrokti and William Empson's Seven Types of Ambiguity are landmark theories in literary criticism, originating from distinct historical, linguistic, and cultural contexts. While Vakrokti, developed in the late 9th to early 10th century, celebrates stylistic ingenuity as the soul of poetic beauty, Seven Types of Ambiguity, published in the 20th century, explores the multiplicity of meanings inherent in literary texts. Despite the temporal and cultural divide, both frameworks share a focus on the nuanced interplay of language and interpretation. This paper offers a theoretical comparison of these two approaches, analyzing their core concepts, categorizations, and stylistic focus. It examines how each theory defines literary creativity, the role of the reader in interpretation, and the cultural and philosophical underpinnings shaping their perspectives. By juxtaposing Kuntaka's six classifications of vakrata with Empson's seven types of ambiguity, the study highlights their respective contributions to understanding linguistic richness and aesthetic appeal in literature.

Keyword: ***Vakrokti, Ambiguities, Literary Criticism***

GUJARATI

“નડતી નથી દીવાલને બાબત વિચારની,
માણસની આસપાસ છે હાલત વિચારની”

-રમેશ પારેખ

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RSMOGUJ1

શ્રી ધ્રુવ ભટ્ટની પ્રકૃતિ વિષયક કૃતિમાં ભારતીય સંસ્કૃતિ-દર્શન

દિવ્યરાજસિંહ મહેન્દ્રસિંહ યાદવ
અનુસ્નાતક ગુજરાતી વિભાગ, સરદાર પટેલ યુનિવર્સિટી, વલ્લભવિદ્યાનગર, ગુજરાત
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શ્રી ધ્રુવ પ્રબોધરાય ભટ્ટ ગુજરાતી સાહિત્યના યશસ્વી સર્જક છે. પોતાની સાહિત્ય કૃતિઓને 'લખાણ' તરીકે ઓળખાવતા શ્રી ધ્રુવ ભટ્ટને શબ્દોનાં આડંબર વિના, સાદી, સરળ. સુઘડ શૈલીમાં સાહિત્ય સર્જવાની ફાવટ છે. અનેક નવીન વિષયોનું ખેડાણ તેઓની કૃતિઓમાં જોવા મળે છે. પ્રકૃતિને કેન્દ્રમાં રાખીને તેઓ પાસેથી આપણને ત્રણ કૃતિઓ પ્રાપ્ત થાય છે. 'તત્ત્વમસિ', 'સમુદ્રાન્તિકે' અને 'અકૂપાર'. આ કૃતિઓમાં તેઓએ પ્રકૃતિના સાંનિધ્યમાં રહીને, પ્રકૃતિનું મનભાવન આલેખન કર્યું છે. અકૂપારમાં ગીર પ્રદેશનાં નેસ-નિવાસી માનવસમાજનું નિરૂપણ થયું છે. ભારતીય જ્ઞાન પરંપરાનું 'સંસ્કૃતિ' શિરમોર તત્ત્વ છે. 'જે શ્રેષ્ઠ સંસ્કારોથી યુક્ત કરીને માનવને પરિપૂર્ણ બનાવે છે, તે સંસ્કૃતિ છે.....!' યુગોથી વિદ્યમાન ભારતીય સંસ્કૃતિને ટકાવી રાખનાર પરિબળ તરીકે ભારતીય જ્ઞાન પરંપરા મહત્ત્વપૂર્ણ ભાગ ભજવે છે. શ્રી ધ્રુવ ભટ્ટે પોતાની આ ત્રણેય રચનાઓમાં પ્રત્યક્ષ-પરોક્ષરૂપે ભારતીય જ્ઞાન પરંપરાના પરિપ્રેક્ષ્યમાં ભારતીય સંસ્કૃતિનું જ નિરૂપણ કર્યું છે. પ્રકૃતિ વિષયક કૃતિઓમાં સંસ્કૃતિ-નિરૂપણનાં માધ્યમથી તેઓ સ્પષ્ટ કરે છે કે પર્યાવરણ એક પ્રદત્ત અસ્તિત્વ છે. પ્રકૃતિનું તે મહત્ત્વનું અને અભિન્ન અંગ છે. ભારતીય ચિંતન એ સ્પષ્ટ કરે છે પ્રકૃતિનાં સર્વ તત્ત્વોમાં ચૈતન્ય વ્યાપ્ત છે. મનુષ્ય અને પ્રકૃતિનો પારસ્પરિક સહયોગ જ એકમેકને ટકાવી રાખવા સમર્થ છે, પ્રકૃતિ વિના મનુષ્ય અસ્તિત્વવિહીન છે. આ કૃતિ પ્રકૃતિનાં સાંનિધ્યમાં રહીને, પ્રકૃતિનું સંરક્ષણ અને તેનું ચિંતન કરતી મહાન સંસ્કૃતિની દ્યોતક બનવા પામે છે. આજના નિસર્ગ-વિધ્વંસક ઔદ્યોગિકયુગમાં નિસર્ગનું રક્ષણ કરવાનો કોલ આપતી સંસ્કૃતિને શ્રી ધ્રુવ ભટ્ટ સાહિત્યનાં માધ્યમથી આપણી સમક્ષ રજૂ કરે છે.

Keywords: **પ્રકૃતિ, ભારતીય જ્ઞાન પરંપરા, ભારતીય સંસ્કૃતિ, સાહિત્ય**

RSMOGUJ2

વાગડ પ્રદેશના પ્રવાસન સ્થળોમાં સંસ્કૃતિ દર્શન

મનીષા વાઘેલા,
રિસર્ચ સ્કૉલર,ગુજરાતી વિભાગ,સ.પ.યુનિવર્સિટી.વલ્લભ વિદ્યાનગર

ભારતની સંસ્કૃતિ વિશ્વના દરેક માનવીઓના માનસપટ પર એક આગવી અને જુદી છાપ ધરાવે છે.દરેક પ્રદેશના લોકોમાં સ્વસંસ્કૃતિની આગવી સુગંધ હોય છે જેમાં લોક જીવનનો ધબકાર હોય છે. જુદા-જુદા પ્રદેશમાં ભિન્ન ભિન્ન પ્રકારની જાતિ આગવી પરંપરા અને સંસ્કૃતિની માન્યતા ધરાવે છે. એવી જ રીતે ભારતના સુપ્રખ્યાત કચ્છ પ્રદેશના વસ્તીની ખુમારી અને સંઘર્ષની વૈવિદ્યતા દર્શાવવાનો મારો ઉપક્રમ છે. વાગડ પ્રદેશના વૈવિધ્યસભર વિસ્તારમાં આવેલા સ્થળોમાં સંસ્કૃતિ દર્શન જેમ કે, ધોળાવીરા, રવેચી માતાજીનું મંદિર, વ્રજવાણી મંદિર, મહાભારતનું વિરાટનગર ગેડી, તરુણાંક સૂર્યમંદિર, ત્રિકમ સાહેબ મંદિર જેવા અનેક અદભૂત ધાર્મિક સ્થળોની વાતને આપ સમક્ષ રજૂ કરવાનો મારો ઉપક્રમ છે.

RSMOGUJ3

ગુજરાતી સાહિત્ય કૃતિઓમાં કૃષિ પ્રધાન દેશના ખેડૂતોની જીવન શૈલી

ખુશ્બુ એમ.કુરેશી,
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આપણે સૌ જાણીએ છે કે ભારત એક કૃષિ પ્રધાન દેશ છે. છતાં આજે ભારતમાં ઘણા એવા ખેડૂતો છે જે પોતાની સમસ્યા અને સમાધાન માટે તલસી રહ્યા છે. ભારતીય સાહિત્યમાં ઘણી બધી ભાષાઓમાં ખેડૂતોની સમસ્યાને દર્શાવવામાં આવી છે, પરંતુ ગુજરાતી સાહિત્યમાં ખેડૂતોની સ્થિતિ,સમસ્યાઓ અને જીવન શૈલીના વિવિધ પાસા દર્શાવવા કેટલીક મુખ્ય સાહિત્યિક કૃતિઓ ખેડૂતોની દુર્દશાને તેમની પર કરવામાં આવેલા અત્યાચાર વ્યક્ત કરવામાં આવ્યા છે તે દ્રષ્ટિકોણથી ભારતના પ્રત્યેક સમાજ સુધી ખેડૂતોની ભાવના પોંહચે એ હેતુથી આવા સાહિત્યની રચના થઇ છે.ગુજરાતી સાહિત્યમાં ખેડૂત ભાવના વ્યક્ત કરતી કેટલીક કૃતિઓ છે જેમકે,ઉમાશંકર જોશીની કાવ્ય કૃતિ ‘નિરીક્ષણ’,પન્નાલાલ પટેલની નવલકથા ‘માનવીની ભવાઇ’,અશ્વિની ભટ્ટની ‘ઓથાર’,ઝવેરચંદ મેઘાણી ‘સૌરાષ્ટની રસધાર,ભોળાભાઈ પટેલ ‘કિસાનની કવિતા’વગેરે ગુજરાતી સાહિત્યમાં ખેડૂતોના સંઘર્ષો અને સમસ્યાઓના પ્રતિબિંબ પાડતી કૃતિઓ જોવા મળે છે.જેમાં ખેડૂતોના આંતરિક અને બાહ્ય શોષણની વાતને આપની સમક્ષ રજૂ કરવાનો મારો મૂળ ઉપક્રમ છે.

RSMOGUJ4

ભારત શું છે ? : ભારતની ધરોહર

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સરદાર પટેલ યુનિવર્સિટીના અનુસ્નાતક ગુજરાતી વિભાગના ભૂતપૂર્વ અધ્યક્ષ ડૉ. નરેશ વેદ (જન્મ : ૩/૩/૧૯૪૮) લેખક ઉપરાંત ઉત્તમ વક્તા છે. “ ભારત શું છે ? ” એ નરેશ વેદનું સમગ્ર ભારત દેશને નજર સમક્ષ ચિત્રિત કરતું મહત્વનું પુસ્તક છે. પ્રથમ મુખપૃષ્ઠ પર ભારતના નકશામાં હાથમાં રાષ્ટ્રધ્વજ સાથે ભારતમાતાનું અપ્રતિમ સુંદર ચિત્ર આપેલું છે. ભારતની અતરંગ ઓળખ આપતા લેખોનું આ પુસ્તક ભારતની યુવાપેઢીને અર્પણ કરવામાં આવ્યું છે. ' લેખકનું મનોગત ' માં લેખક નોંધે છે કે : 'લોકોમાં આપણા દેશ વિશેની જાણકારીમાં રહેલી ઉણપ દૂર કરવાના આશયથી આ પુસ્તકની રચના થઈ છે. 'ભારતીય એટલે શું ?' , તેની સંવેદનાઓ , સમસ્યાઓ ,સંસ્કારો આ બધું અહીં વિગતે આલેખાયું છે. ૨૧૬ પૃષ્ઠો ઉપર ૨૫ જેટલા પ્રકરણોમાં ભોગૌલિક રચના , ધર્મ , સંપ્રદાયો, જાતિ, ગોત્ર , વંશ , ભાષા , બોલીઓની વાત થઈ છે. ભારત વિશેની સચોટ અને વિગતપૂર્ણ માહિતી આપવાનો લેખકનો પ્રયાસ પ્રશંસનીય છે. પ્રસ્તુત પુસ્તકમાં નરેશ વેદે ભારતીય સમસ્યાઓ જેવી કે , ગુલામી , ગરીબી , નિરક્ષરતા , પછાતપણું , સ્ત્રી અવદશાનું આલેખન પણ કર્યું છે. કુલાચાર , લોકાચાર , ધર્માચાર અને રાજ્યાચાર જેવા ' ભારતીય આચારો ' , ભારતીય પરંપરાઓ , ભારતીય માન્યતાની કહેવતોને સમજાવી છે. સંસ્કૃત પંક્તિના માધ્યમથી ભારતીય આદર્શોને ઉજાગર કર્યા છે. સોળ સંસ્કારો , ભારતીય સંસ્કૃતિ , ભારતીય ધર્મો , ભારતીય સાધના , વિવિધ તીર્થસ્થાનો , નદીઓ , પ્રાકૃતિક સંપદા , ખનીજ સંપત્તિ , પ્રાણી સંપદા , આર્થિક તેમજ વૈચારિક સંપદા વગેરેની માહિતી આપી છે. ટૂંકમાં , સમગ્ર પુસ્તકમાં ભારત અને ભારતીયોની સંવેદના , સમસ્યા , સંસ્કાર , માન્યતા , આદર્શ , મૂલ્યો , પરંપરા , ચેતના , ચારિત્ર્ય , સંસ્કૃતિ વગેરેની સરળ ભાષામાં માહિતી આપતું ઉપયોગી પુસ્તક છે. ‘ ભારત શું છે ? ’ ભારત દેશનું અલૌકિક દર્શન કરાવતું નરેશ વેદનું મહત્વનું પુસ્તક છે.

સૂચક શબ્દો: ભારત, ભારતીયતા, સંસ્કૃતિ.

RSMOGUJ5

હિમાલયનો પ્રવાસ ભારતીય સંસ્કૃતિનું અપૂર્વ દર્શન

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કાકાસાહેબ કાલેલકર (દત્તાત્રેય બાલકૃષ્ણ કાલેલકર જ.1885 સતારા, અ.1981 દિલ્હી) ભારતના સુપ્રસિદ્ધ રાષ્ટ્રસેવક, ચિંતક અને સમર્થ ગુજરાતી લેખક તથા નિબંધકાર. માતૃભાષા મરાઠી હોવા છતાં સવાયા ગુજરાતી બનીને તેમણે ગુજરાતી સાહિત્યની સેવા કરી. ગુજરાતી, હિન્દી અને મરાઠી જેવી ભાષાઓમાં તેમણે સાહિત્યનું સર્જન કર્યું છે. એમના સાહિત્યનાં વિષયોમાં પુષ્કળ વૈવિધ્ય જોવા મળે છે, એનું ઉત્તમ ઉદાહરણ છે 'હિમાલયનો પ્રવાસ'. (1924) 'હિમાલયનો પ્રવાસ' કાકાસાહેબની અંતર્યાત્રા સાથે ભારતીય સંસ્કૃતિની પણ યાત્રા છે. આ પ્રવાસ પુસ્તકમાં એમણે વાચકને ભારતીય સંસ્કૃતિ, મૂલ્યો, વાસ્તવબોધ સાથે સૌંદર્યબોધનું પણ દર્શન કરાવ્યું છે. પ્રકૃતિ સાથે તાદાત્મ્ય, ઉત્કટ રાષ્ટ્રપ્રેમ, ભારતનો ઇતિહાસ અને સંસ્કૃતિ સાથે ભાવનાત્મક સંબંધ તથા લેખકની કલ્પનાશક્તિ તથા કાવ્યમય અભિવ્યક્તિને કારણે આ પુસ્તકનું સાહિત્યિક મૂલ્ય ઊંચું બન્યું છે. પ્રસ્તુત શોધપત્રમાં આ તમામ પાસાઓ ઉપર દૃષ્ટિપાત કરવાનો ઉપક્રમ છે.

સૂચક શબ્દો (KEYWORDS) : હિમાલય, પ્રવાસ, ભારતીય સંસ્કૃતિ.

RSMOGUJ6

ભારતીય સંસ્કૃતિને ઉજાગર કરતા સ્થળોનો પ્રવાસ : વિદિશા

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ગુજરાતી પ્રવાસ નિબંધોમાં કાકાસાહેબ કાલેલકર બાદ ભોળાભાઈ પટેલનો ફાળો નોંધપાત્ર છે. 'વિદિશા' નિબંધ સંગ્રહમાં ભોળાભાઈ પટેલે વિવિધ સ્થળોએ કરેલી યાત્રા દરમિયાન જોયેલા, અનુભવેલા અને માણેલા પ્રવાસોનું સૌંદર્યલક્ષી આલેખન જોવા મળે છે.'વિદિશા' નિબંધની શરૂઆત તેઓ બંગાળી કવિ જીવનાનંદ દાસની પંક્તિ 'ચુલ તાર કબેકાર અંધકાર વિદિશાર નિશા' વિદિશાના અંધકાર વિશેની અનુભવેલી કલ્પનાને તેઓ ભૂતકાળની વિદિશા નગરી સાથે જોડે છે. ત્યારબાદ નગરની વર્તમાન હાલત અને પરિવેશનું વર્ણન આવે છે. 'વિદિશા' નિબંધ સંગ્રહમાં કુલ આઠ શહેરો, એક સરોવર, એક શિખર અને અંતે પોતાના ગામ 'સોજા' વિશેનો નિબંધ આપી સર્જક એક વલય પૂરું કરે છે. વિદિશા, ભુવનેશ્વર, માંડુ, ઈમ્ફાલ, જેસલમેર, ખજુરાહો, કાશી, રામેશ્વરમ જેવા આઠ શહેરો, 'ચિલિકા' જેવું મનોરમ્ય સરોવર અને 'બ્રહ્મા' જેવું ઉન્નત શિખર સર્જકની કલમે નવું રૂપ ધરીને આવે છે. સંસ્કૃતિ, કલા, સાહિત્ય, પુરાણ કથાઓ, ઐતિહાસિક સ્થળો અને ભૌગોલિક સંદર્ભો વડે થયેલું નિરૂપણ વધુ નીખરી આવે છે. સર્જકે વિવિધ ભાષાનાં સર્જકો, એમનાં કાવ્યો, નવલકથાઓ, નાટકો વગેરે સંદર્ભો પણ જે તે સ્થળ વિશેષ સાથે સાંકળી આપ્યા છે. આમ, ભોળાભાઈ પટેલનાં આ નિબંધ સંગ્રહમાં ભારતની સંસ્કૃતિ અને તેનાં ઐતિહાસિક વારસાનું પ્રતિબિંબ કઈ રીતે ઝીલાયું છે તે દર્શાવવાનો મારો અહીં ઉપક્રમ રહેલો છે.

સૂચક શબ્દ : ભારતીય, સંસ્કૃતિ, ઐતિહાસિક, વિદિશા, નિબંધ

RSMOGUJ07

પિંજર નવલકથામાં પ્રાપ્ત થતી ભારતીય જ્ઞાનપરંપરા તથા સાંસ્કૃતિકદર્શન

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ભારતીય જ્ઞાનપીઠ પુરસ્કૃત તથા ભારતનો સર્વ શ્રેઠ પુરસ્કાર પદ્મ વિભૂષણ પ્રાપ્ત કરનારા કવયિત્રી શ્રી અમૃતા પ્રિતમની આ નવલકથાનું પંજાબી, હિન્દી બંને ભાષામાં સર્જન થયું છે. તથા આ કૃતિનો એકથી વધુ ભાષામાં અનુવાદ પણ થયો છે. પિંજર શબ્દમાં પ્રતીકાત્મક રહેલી છે, તથા પિંજર શબ્દની બે અર્થછાયા દર્શાવી છે.(૧) સામાજિક માનવીનું પિંજર (૨) કથાનાયિકાનો પોતાનો દેહ કે જેમાં કંઇક કેદ થયું છે, જે સતત બહાર આવવાં તરફડિયાં મારે છે. કથાનાયિકા પૂરો છત્તોઆની ગામની શાહની દીકરી છે, તેનું લગ્ન રત્તોવાલના રામચંદ સાથે થવાનાં છે, આ સમય દરમિયાન ધાર્મિક દંગાઓ તથા ફસાદો ચાલી રહ્યા છે તથા એક જીવ બીજા જીવને ભરખી જવાની સ્થિતિ ઉત્પન્ન થાય છે. હિન્દુ, મુસ્લિમ તથા શીખ આ ત્રણ કોમમા ચાલી રહેલું વૈમનસ્ય તથા એમાં પીડાતી સ્ત્રીઓની વ્યથા ખૂબજ અસહનીય બને છે અને એ જ ઘટના પુરો સાથે બને છે, રશિદ નામનો યુવક પુરોનું અપહરણ કરે છે, ત્યારે પુરો ભારતીય સંસ્કૃતિનીને ઉજાગર કરતી નાયિકા રશિદને પોતાનું શરીર સ્પર્શ કરવા દેતી નથી, તથા અન્ન જળનો ત્યાગ કરે છે, સમગ્ર ઘટનાઓ દરમિયાન રશિદ જેવા ઉત્તમ પુરુષ પાત્ર દ્વારા આપણને ભારતીય જ્ઞાનપરંપરના પણ દર્શન થાય છે.તથા પુરો જેવી સ્ત્રી નાયિકાની વ્યથા દ્વારા સંસ્કૃતીનાદર્શન થતાં જોવા મળે છે.

Keywords: *ભારતીયતા, સંસ્કૃતી, દંગા –ફસાદ, વિભાજન, હિન્દુ – મુસ્લિમ, પિંજર*

RSMOGUJ8

વાલ્મીકિ રામાયણમાં નિરૂપિત શિક્ષણવ્યવસ્થા

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વાલ્મીકિ રામાયણ મુજબ રામાયણકાલીન શિક્ષણવ્યવસ્થામાં ગુરૂકુળોનું સ્થાન વિશેષ હતું. વર્ણાશ્રમ વ્યવસ્થા મુજબ બ્રહ્મચર્યાશ્રમ શિક્ષણપ્રાપ્તિ માટેનો સમય ગણાતો હતો. આ દરમ્યાન ગુરુ પાસે ગુરૂકુળમાં રહીને વિદ્યાભ્યાસ કરવાની પરંપરા પ્રચલિત હતી. તત્કાલીન ગુરૂકુળોમાં વેદ આદિ શાસ્ત્રો, વિવિધ અસ્ત્ર-શસ્ત્રો ઉપરાંત સંગીત, રાજનીતિ, અર્થશાસ્ત્ર અને જીવનકૌશલ્યોનું પણ શિક્ષણ આપવામાં આવતું હતું. જેને કારણે સમાજમાં શાસ્ત્ર વિશારદ તેમજ અસ્ત્ર-શસ્ત્ર નિપુણ વ્યક્તિઓ જોવા મળતાં હતાં. શિક્ષણવ્યવસ્થામાં સ્ત્રી-પુરુષ સમાન રીતે શિક્ષણ મેળવી શકતાં હશે તેવું પ્રતીત થાય છે. જેના પરથી રામાયણકાલીન શિક્ષણવ્યવસ્થા ઉત્તમ હશે તેમ કહી શકાય.

KEY WORDS: વાલ્મીકિ રામાયણ, શિક્ષણવ્યવસ્થા

RSMOGUJ9

મધ્યકાલીન ગુજરાતી ગિનાન સાહિત્યમાં બહુસંસ્કૃતિવાદના દ્રષ્ટિકોણથી અભ્યાસ

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મધ્યકાલીન ગુજરાતી સાહિત્યમાં ગિનાન સાહિત્ય એ સંશોધન ક્ષેત્રે વણખેડાયેલો વિષય છે. ગુજરાતી ગિનાન સાહિત્યમાં આપણને વિવિધ ધર્મ અને સંસ્કૃતિઓના ઉદાહરણો જોવા મળે છે. દા.ત નરહરિએ ભારતીય સંસ્કૃતિ એ ભારતીય ધર્મનું પ્રતીક છે. અલી એ ઇસ્લામિક ધર્મનું સંસ્કૃતિ પ્રતીક છે. આ બંને સાથેની ઘણી રચનાઓ આપણને ગિનાન સાહિત્ય મારફતે જોવા મળે છે. આ રચનાઓમાં આપણને હિન્દુ મુસ્લિમના રીત રિવાજોની માહિતી પ્રાપ્ત થાય છે. આવી કેટલીય રચનાઓની માહિતી શોધપત્રમાં કરવામાં આવશે.

Keywords: ગીનાન સાહિત્ય, ખોજકી લીપી, બહુસંસ્કૃતિવાદ

RSMOGUJ10

વૈશ્વિકરણની અસરો અને ગુજરાતી કવિતા: સંશોધન પત્રનો સારાંશ.

પ્રતિક બી ભોઈ

ગુજરાતી વિભાગ, સરદાર પટેલ યુનિવર્સિટી

આ સંશોધનનો મુખ્ય હેતુ એ છે કે વૈશ્વિકરણની અસરો ગુજરાતી કવિતા પર કેવી રીતે પડી છે તેનું વિશ્લેષણ કરવું. આ સંશોધનમાં ગુજરાતી કવિઓએ વૈશ્વિકરણના વિવિધ પાસાઓ જેવા કે આર્થિક, સામાજિક, સાંસ્કૃતિક અને રાજકીય પરિવર્તનોને કેવી રીતે તેમની કવિતામાં વ્યક્ત કર્યા છે તેનું અન્વેષણ કરવામાં આવ્યું છે.

Key Words: વૈશ્વિકરણ, આર્થિક, સામાજિક, સાંસ્કૃતિક, ગુજરાતી કવિતાઓ

RSMOGUJ11

રાષ્ટ્રભાવનાને ચરિતાર્થ કરતી નવલકથા : આનંદમઠ

રાધાબેન મોહનભાઈ તળપદા

અનુસ્નાતક ગુજરાતી વિભાગ, સરદાર પટેલ યુનિવર્સિટી, વલ્લભવિદ્યાનગર

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ભારતીય સાહિત્યમાં બંગાળી સાહિત્ય આકર્ષણનું કેન્દ્ર રહ્યું છે. બંગાળી ભાષાના ઉત્તમ નવલકથાકાર તરીકે બંકિમચંદ્ર ચટ્ટોપાધ્યાયનું નામ મોખરાનું છે. તેમની નવલકથાઓ મુખ્યત્વે ઐતિહાસિક તથ્યો પર આકાર પામે છે. 'આનંદમઠ' એ એમની જાણીતી નવલકથા છે. રાષ્ટ્રભક્ત બંકિમચંદ્ર ચટ્ટોપાધ્યાયે તેમની આ નવલકથામાં 'વંદે માતરમ્' ગીત મૂક્યું છે. આ ગીત દ્વારા તત્કાલીન સમાજમાં રાષ્ટ્રભાવનાના બીજ રોપાયાં હતા. આ ગીત આજે પણ દરેક ભારતવાસીનાં હૃદયમાં ગૂંજે છે. સત્યના પાયા પર રચાયેલી આ નવલકથા બંગાળના નવનિર્માણ માટે પ્રેરણારૂપ બની હતી. આ નવલકથામાં નિર્દેશિત રાષ્ટ્રભાવનાથી અસહાય બનેલી પ્રજામાં નવી ચેતના સ્ફુરે છે. 'આનંદમઠ' એ રાષ્ટ્રકલ્યાણ માટે સર્જાયેલા એક ઉત્તમ પ્રકારના ઐતિહાસિક નમૂનારૂપે અમર બની છે. આથી, બંગાળી ભાષાની આ નવલકથામાં રાષ્ટ્રભાવના કઈ રીતે વ્યક્ત થઇ છે એ દર્શાવવાનો અહીં મારો નમ્ર પ્રયાસ છે.

સૂચક શબ્દો: રાષ્ટ્રભાવના, રાષ્ટ્રગીત, ઐતિહાસિક, રાષ્ટ્ર કલ્યાણ.

RSMOGUJ12

એક રાષ્ટ્ર, અખંડ ભારતના શિલ્પી: 'સરદાર'

મનિષ એચ. વણકર

અનુસ્નાતક ગુજરાતી વિભાગ, સરદાર પટેલ યુનિવર્સિટી, વલ્લભ વિદ્યાનગર

ભારત દેશને અનેક વિદેશી શક્તિઓ, વિધર્મીઓ, સલ્તનતો અને અંગ્રેજો દ્વારા અખંડ ભારતને ખંડિત કરવાના અનેક પ્રયત્નો કર્યા. તેની સાંસ્કૃતિક અસ્મિતા, વારસાને નષ્ટ કરવાના અનેક પ્રયાસો થયા. પરંતુ, તેની સામે હિંમતપૂર્વક લડીને પોતાની આંતરસૂઝ અને સમજણશક્તિ તેમજ લોખંડી મનોબળને પરિણામે ભારત દેશને એક સંઘ, એક સૂત્રતા અને એક બંધનમાં બાંધીને એક રાષ્ટ્રનું નિર્માણ ભારતના પનોતા પુત્ર, ગુજરાતીઓનું અભિમાન અને કરમસદના કર્મયોગી 'બિસ્માર્ક' સરદાર વલ્લભભાઈ પટેલે કર્યું છે. મિહિર ભુતાએ સમગ્ર રાષ્ટ્રને સમર્પિત સરદાર પટેલના જીવનને કેન્દ્રમાં રાખી 'સરદાર' નાટક લખ્યું છે. ખેડા અને બારડોલી સત્યાગ્રહ ,અમદાવદ મ્યુનિસિપાલટીના સભ્ય, સ્વતંત્ર ભારતના પ્રથમ નાયબ વડાપ્રધાન અને ગૃહમંત્રી બની ૫૬૨ દેશી રજવાડાઓને પોતાની સમજણશક્તિથી સમજાવી તેમજ જૂનાગઢ, હૈદરાબાદ, ત્રાવણકોર, દીવ, મૈસુર અને કાશ્મીર આદિ પ્રશ્નોના નિરાકરણ કરી ભારત દેશને એક બંધ, એક સંઘમાં બાંધી એક રાષ્ટ્રનું નિર્માણ કર્યું. તે પ્રસંગોને આ નાટક ઉજાગર કરે છે.

Keywords: ભારત, સંસ્કૃતિ, રાષ્ટ્ર, અસ્મિતા

RSMOGUJ13

પુરાણોમાં ગુજરાત અને ગુજરાતની અસ્મિતા

ચાર્વી ભટ્ટ

અનુસ્નાતક ગુજરાતી વિભાગ,સરદાર પટેલ યુનિવર્સિટી, વલ્લભ વિદ્યાનગર

'સદા સૌમ્ય શી વૈભવે ઉભરાતી મળી માતૃભાષા મને ગુજરાતી.' આ પંકિત ગુજરાતી ભાષામાં લખતા ભારતીય કવિ ઉમાશંકર જોશીની છે. ભારત એ કેવળ કોઈ સ્થળ, પ્રાંત કે દેશનું નામ નથી, ભારત એ જીવંત પ્રાણમય અસ્મિતાનું નામ છે આ અસ્મિતા ભારતના વિવિધ પ્રાંતોથી એની સંસ્કૃતિઓની વ્યકિતથી વિશ્વ ચેતનાની આત્મા છે ભારતનું દરેક રાજ્ય તેની આત્મોચિત સંસ્કૃતિનું પરિવહન કરે છે જે ભારતીય અસ્મિતા અને તેની ચેતનાનો આધારસ્તંભ છે 'વ્યકિત મટી બનું વિશ્વ માનવી માથે ધરું ધૂળ વસુંધરાની.' ગુજરાતી કવિની આ વૈશ્વિક છબિ તેની કવિતામાં પ્રગટ થાય છે જ પણ તેની સાથે તેના સંશોધનમાં પણ પ્રગટ થાય છે એવો જ એક અધ્યયન ગ્રંથ એટલે 'પુરાણોમાં ગુજરાત' પ્રથમ દૃષ્ટિએ જોઈએ તો આ અધ્યયન ગ્રંથ ગુજરાતની પૌરાણિક સંજ્ઞાઓનો સંગ્નાકોશ છે પરંતુ એમાંથી પસાર થઈએ ત્યારે તેનો ભારતીય અને વૈશ્વિક અનુબંધ પ્રગટ થયા વિના ન રહે ગુજરાત એ વૈશ્વિક ધોરણોમાં કેવી રીતે દૃષ્ટિવંત થાય છે તે આ અધ્યયન ગ્રંથનો પ્રાણ છે ભારતની અસ્મિતામાં ગુજરાતનું સ્થાન દર્શાવતો આ ગ્રંથ તેનું પરિશીલન કરે છે શબ્દે શબ્દે ગુજરાત અને તેની અસ્મિતા આ ગ્રંથમાં પ્રગટ થાય છે, આ ગ્રંથનું અધ્યયન એ ભાવિ પેઢીને ગુજરાતની અસ્મિતાથી સભાન કરે તેવું છે. આ અધ્યયન દ્વારા ગુજરાતની અસ્મિતાનું પ્રાગટય કરવાનો મારો ઉપકમ છે.

ચાવીરૂપ શબ્દ : ગુજરાત, ગૂર્જર, અસ્મિતા,સંસ્કૃતિ, ભારત

RSMOGUJ14

ઈતિહાસ અને સંસ્કૃતિનો સમન્વય : વસ્તુપાલ-તેજપાલ રાસ

ભુટાભાઈ રાજાભાઈ ઓડેદરા

ગુજરાતી વિભાગ, સરદાર પટેલ યુનિવર્સિટી વલ્લભ વિદ્યાનગર, આણંદ, ગુજરાત.

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મધ્યકાલીન ગુજરાતી સાહિત્યમાં ખેડાયેલા વિવિધ સ્વરૂપોમાંનું એક 'રાસ' સાહિત્ય સ્વરૂપ પણ છે. ભારતમાં જૈન ધર્મમાં ગુજરાતના સુપ્રસિદ્ધ વસ્તુપાળ અને તેજપાળ મંત્રી બંધુઓ તેમના ઉત્તમ કાર્યો થકી ભારતીય સંસ્કૃતિમાં સમાવિષ્ઠ ઉચ્ચતમ જીવન મૂલ્યો બિનસાંપ્રદાયિકતા, સમાજસેવા, રાષ્ટ્ર સેવા, લોક સેવા, ધર્મ સેવા, રાષ્ટ્ર પ્રેમ, ઉદાર નીતિ અને બંધુત્વ ભાવના જેવા ઉચ્ચ જીવન મૂલ્યો અપનાવી ઉત્તમ કાર્ય કર્યા છે. તે ઐતિહાસિક ચરિત્રોની ગાથા જૈન કર્તાઓ દ્વારા મધ્યકાલીન ગુજરાતી સાહિત્યમાં રાસકૃતિઓમાં આલેખવામાં આવી છે. જે રાસકૃતિઓ આ પ્રમાણે છે ૧.હીરાનંદસૂરિકૃત 'વસ્તુપાલ રાસ', ૨. લક્ષ્મીસાગરસૂરિ કૃત 'વસ્તુપાલ-તેજપાલ રાસ,૩.પાશ્વચંદ્રસૂરિકૃત 'વસ્તુપાલ - તેજપાલ રાસ' લક્ષ્મી સાગર અને સમયસુંદરસૂરિકૃત 'વસ્તુપાલ-તેજપાલ રાસ' જે રાસ કૃતિઓનું વિગતે પરિચય પ્રસ્તુત શોધપત્રમાં રજૂ કરવાનો મારો ઉપકમ છે.

સૂચક શબ્દો (KEYWORDS) : **હસ્તપ્રત, પાઠ વાચના, સાહિત્ય અને ઇતિહાસ, બિનસાંપ્રદાયિકતા, ઐતિહાસિક તત્વ, સંઘ યાત્રા , ભારતીય સંસ્કૃતિ, પ્રાકૃત- અપભ્રંશ અને જૂની ગુજરાતી.**

RSMOGUJ15

અકુપાર નવલકથાનો પર્યાવરણકેન્દ્રી અભ્યાસ

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માનવનો પર્યાવરણ સાથેનો સંબંધ ઔપચારિક નથી. ગાઢ, ગુઢ અને ઘણો ગહન છે. માનવ અનુભવોમાં પર્યાવરણનો અનુભવ પ્રાથમિક અને ઘણો પ્રમુખ છે. વિજ્ઞાન અને યંત્ર સંસ્કૃતિના વિકાસની અસર પર્યાવરણ. પર પડી છે એટલું જ નહીં, માનવની આંતર પ્રકૃતિમાં પણ પરિવર્તન આવ્યું છે. આ બધાને કારણે પર્યાવરણનું સંતુલન ખોરવાયું છે. ભૌતિક સુખો પાછળની દોડને કારણે આપણું પ્રાકૃતિક જીવન નંદવાયુ છે. પર્યાવરણના બચાવની પ્રવૃત્તિનો આરંભ થઈ ચૂક્યો છે ત્યારે સર્જક ચેતનાએ આ સંદર્ભે શું અનુભવ્યું? તે તેમના સર્જન દ્વારા અભિવ્યક્ત કર્યું છે. તેનો અભ્યાસ શોધપત્રમાં કરવાનો છે. ધ્રુવ ભટ્ટ રચિત અકૂપાર નવલકથા માં નવલકથામાં પર્યાવરણને કેવી રીતે દર્શાવાયું છે અને તેને બચાવવાના પ્રયત્નો કરવામાં આવ્યા છે તેની વિસ્તૃત માહિતી શોધપત્રમાં રજૂ કરવાની છે.

RSMOGUJ16

“દેવાત્મા હિમાલય” ભારતની ભવ્યતા

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અનુસ્નાતક ગુજરાતી વિભાગ,સરદાર પટેલ યુનિવર્સિટી,વલ્લભ વિધ્યાનગર
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ગુજરાતી નિબંધ સાહિત્યમાં ભોળાભાઈ પટેલનું નામ મોખરાનું ગણવામાં આવે છે. તેમણે અનેક નિબંધ સંગ્રહો આપ્યા છે. તેમાનો એક નિબંધ સંગ્રહ એટલે “દેવાત્મા હિમાલય”. કે જેમાં ભોળાભાઈ પટેલે હિમાલયથી કન્યા-કુમારી સુધીના અનેક સ્થળોએ કરેલા ભ્રમણ દરમિયાન પોતે નીહાળેલા,અનુભવેલાં પ્રવાસોનું સૌંદર્યમંડિત આલેખન કરેલ છે. “દેવાત્મા હિમાલય” ભ્રમણવૃત્ત બે ખંડમાં આલેખાયું છે. પ્રથમ ખંડ “દેવાત્મા હિમાલય” અને બીજો ખંડ “ભુવનમોહિની” ના નામે છે. “દેવાત્મા હિમાલય” ના સમગ્ર ખંડમાં મહાનદી ગંગા વહેતી રહે છે. આ નિબંધ સંગ્રહના પ્રથમ ખંડની તુલનામાં બીજા ખંડમાં વિસ્મયની યાત્રા આછી-ઓછી જણાય છે.અહી પ્રકૃતિસૌંદર્ય અને ભાવજગત બંને એકબીજામાં ભળતા જોવા મળે છે. ભોળાભાઈએ કરાવેલી હિમાલયની યાત્રામાં ભારતની સંસ્કૃતિ, ધાર્મિકતા, ભારતની શોભા, ભારતની ભવ્યતાના ભારોભાર દર્શન જોવા મળે છે. આમ ભોળાભાઈ પટેલના આ નિબંધ સંગ્રહમાં ભારતીયતા, તેનું મહત્વ તથા તેના સૌંદર્યનું આલેખન થયું છે.

સૂચક શબ્દો : નિબંધ સંગ્રહ, દેવાત્મા, ભવ્યતા, ભરતીયતા, સંસ્કૃતિ

RSMOGUJ17

ઝવેરચંદ મેઘાણીના કાવ્યોમાં રાષ્ટ્રીય અસ્મિતા

રિકલ વણકર
અનુસ્નાતક ગુજરાતી વિભાગ સરદાર પટેલ યુનિવર્સિટી

ઝવેરચંદ મેઘાણી ગુજરાતી કવિ,નવલકથાકાર, વાર્તાકાર તેમજ લોકસાહિત્યના સંશોધક-સંપાદક.કવિ તરીકે ઝવેરચંદ મેઘાણીને જે અસાધારણ લોકપ્રિયતા સાંપડી તે અર્વાચીન ગુજરાતી સાહિત્યના ઇતિહાસની એક વિરલ ઘટના છે.ઝવેરચંદ મેઘાણીની ખૂબ જ લોકપ્રિય બનેલી કવિતા મુખ્યત્વે રાષ્ટ્રીય અસ્મિતાની કવિતા છે. ગાંધીજીએ જેમને "રાષ્ટ્રીય શાયર તરીકે બિરદાવ્યા છે એવા ઝવેરચંદ મેઘાણીના કાવ્યો 'કસુંબીનો રંગ',તરુણોનું મનોરાજ્ય',શિવાજીનું હાલરડું','છેલ્લો કટોરો','મા તારો બેટડો આવે','કેદીનું કલ્પાંત','કોઇનો લાડકવાયો' તેમજ 'છેલ્લી પ્રાર્થના' જેવા કાવ્યોમાં રાષ્ટ્રીય આંદોલનથી તત્કાલ પ્રવર્તતા શૌર્ય અને સમર્પણના ભાવોને કવિએ હૃદયપૂર્વક ગાયા છે.

સૂચકશબ્દો (KEYWORDS): રાષ્ટ્રીય અસ્મિતા

HINDI

"जीवन का सबसे बड़ा धर्म है मानवता।"

-प्रेमचंद

Sardar Patel University

Vallabh Vidyanagar, Anand, Gujarat

RSMOHIN1

जया जादवानी का हिंदी साहित्य : एक अनुशीलन

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साहित्य मनुष्य का और समाज का प्रतिबिंब है अतः एक साहित्यकार अपने सृजन शक्ति से वर्तमान एवं भविष्य की स्थितियों को प्रस्तुत करता है उसके साहित्य में उस समय के वातावरण में घटित होने वाली घटनाओं की झलक दिखाई देती है। एक साहित्यकार के साहित्य को पढ़कर ही हमें उसके व्यक्तित्व, स्वभाव, संस्कार, आदि को समझ पाते हैं एक लेखक के साहित्य को पढ़कर ही उसके वैचारिक दृष्टिकोण, अमूर्त कल्पनाएं साकार रूप लेती है। हिंदी साहित्य में स्त्री लेखन लगभग मध्यकाल से शुरू हो गया था उसके बाद तो कई महिलाकारो ने सभी विधाओं कविता, कहानी, उपन्यास, नाटक, निबनध आदि में रचनाएं लिखना प्रारंभ कर दिया। समकालीन तक आते-आते स्त्री लेखन का क्षेत्र बहुत व्यापक रूप से विस्तृत हो गया। समकालीन महिला लेखन में समसामयिक घटनाओं और यथार्थवादी चिंतन को अपने साहित्य का केंद्र बनाया है और उसमें मानव जीवन के विभिन्न पहलूओ को उकेरने का प्रयास किया है समकालीन महिला साहित्यकार में जया जादवानी का स्थान अग्रणीय है लेखिका ने स्त्री जीवन से जुड़े उनकी पीड़ा, दुख दर्द, कुंठा, उनकी अस्मिता के प्रश्न, किन्नर जीवन, समलैंगिक संबंध, आदि मानव जीवन के विभिन्न पक्षों को अपनी रचनाओं के माध्यम से व्यक्त किया है। जया जादवानी समकालीन लेखिकाओ में उच्च स्थान रखती है क्योंकि इन्होंने अपनी रचनाओं के माध्यम से नारी के अंतर्मन के अंतरंग पक्षों को चित्रित किया है अतः इनकी रचनाएं मानव जीवन के मूल्य को केंद्रित करती है तथा सही अर्थों में मानव जीवन का साक्षात्कार कराती है।

RSMPHIN2

गुजरात के समकालीन हिन्दी साहित्य में बड़ौदा जनपद के साहित्यकारों का प्रदेय: एक अध्ययन

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अहिंदी भाषी प्रदेश गुजरात में हिंदी को व्यापक एवं समृद्ध बनाने हेतु प्रेरणा और बल धार्मिक, राजनीतिक, व व्यापारिक, भौगोलिक एवं सांस्कृतिक परिस्थितियों से मिला है। यहाँ पर साहित्यिक परिस्थिति की बात की जाए तो गुजरात में हिंदी साहित्यिक संपदा सर्वोपरि रूप से दिखाई देती है। पाटण के निवासी हेमचंद्राचार्य से लेकर श्री नरसिंह मेहता, वैष्णव हिंदी कवि, स्वामी नारायण सम्प्रदाय के हिंदी कवि, ज्ञानमार्गी संत कवि, जैन कवि, आधुनिक हिंदी कवि, समकालीन हिंदी कवि एवं साहित्यकारों द्वारा गुजरात अंचल के हिंदी के विकास एवं प्रचार प्रसार में विशेष योगदान रहा है। गुजरात में मौजूद साहित्यकारों कि इस लंबी श्रृंखला में मैंने गुजरात राज्य बड़ौदा जनपद के कुछ प्रतिष्ठित साहित्यकारों द्वारा दिये गए प्रदत्त एवं साहित्यिक योगदान को यहाँ पर चित्रित कर रही हूँ जो इस प्रकार से है - डॉ० कुंवर चंद्र प्रकाश सिंह, डॉ० मदन गोपाल गुप्त, डॉ० दयाशंकर शुक्ल, डॉ० रमण लाल पाठक, डॉ० भगवान दास कहार, डॉ० पारूकांत देसाई, डॉ० विष्णु विराट चतुर्वेदी, डॉ० माणिक मृगेश, डॉ० नलिनी पुरोहित, डॉ० रानू मुखर्जी, डॉ० धनंजय चौहान। निष्कर्ष रूप से हम यह कह सकते हैं कि बड़ौदा जनपद के प्रतिष्ठित कवियों ने हिंदी साहित्य में अपना विशेष योगदान दिया है। अंततः हम कह सकते हैं कि गुजरात में ऐसे कई हिंदी प्रेमी और साहित्य साहित्यकार एवं कवि है जो हिंदी साहित्य के सेवा एवं प्रचार प्रसार मे अपना विशिष्ट योगदान दे रहे हैं।

RSMOHIN3

स्वाधीनता आन्दोलन के दौरान जेल में लिखी गयी हिन्दी कविताएँ

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स्वाधीनता आंदोलन भारतीय इतिहास में सत्तासीन शासकों के शोषण उनकी नीतियों और देश को अंग्रेजी दासता से मुक्त कराने का आंदोलन है। यह मुख्यतः भारतीय राजनीतिक संगठनों द्वारा संचालित अहिंसावादी आंदोलन था जो जनाधार के रूप में राष्ट्रीय स्तर पर अंग्रेजी हुकूमत के खिलाफ एक आवाज बनता है। यह आंदोलन अवाम की मुक्ति का आंदोलन था जो जाति-पाति और धर्म से परे संगठित व सुनियोजित ढंग से स्वतंत्रता की भावना से प्रेरित होकर जन-आंदोलित होता है। स्वाधीनता आंदोलन के दौर में सत्तासीन शासक के शोषण और नीतियों के खिलाफ जो भी आंदोलन हुए हैं उन्हें दबाने के लिए अंग्रेजी हुकूमत द्वारा आंदोलनकारियों को पकड़कर जेल में कैद कर दिया जाता रहा। जेल में कैद इन आंदोलनकारियों के साथ शामिल थे हमारे साहित्यकार जिन्होंने न केवल प्रत्यक्ष रूप से आंदोलन में भाग लिया बल्कि क्रांति संघर्ष के संचालन के उत्तरदायित्व को भी संभाला। इन साहित्यकारों ने अपनी रचनाओं के माध्यम से आंदोलन को जन-जन से जोड़ने का प्रयास किया और सफल भी रहे। इतना ही नहीं अपनी लेखनी से वे अंग्रेजी हुकूमत को कलम की ताकत दिखा रहे थे जिनमें कई रचनाकारों को आंदोलनकारियों के साथ कारावास में ठूंस दिया गया किंतु इससे भी ब्रिटिस हुकूमत साहित्यकारों की कलम नहीं पकड़ सके। इन साहित्यकारों ने जेल में रहकर भी अपना क्रांति संघर्ष जारी रखा और जेल के जीवन संघर्ष और यातनाओं को अपनी कविताओं में व्यक्त किया। साहित्यालोचकों ने इन साहित्यकारों की जेल में लिखी गई रचनाओं को जेल साहित्य की संज्ञा से विभूषित किया है। स्वाधीनता आंदोलन के दौर में अनेक रचनाकारों को जेल जाना पड़ा और जेल की यातनाओं से गुजरना पड़ा। जिन रचनाकारों ने जेल में भोगे गए यथार्थ को अपने काव्य रचनाओं के माध्यम से अभिव्यक्त किया उनमें प्रमुखता माखनलाल चतुर्वेदी, पाण्डेय बेचन शर्मा 'उग्र', शिवमंगल सिंह 'सुमन', अज्ञेय, भवानी प्रसाद मिश्र, नागार्जुन व अटलबिहारी बाजपेयी प्रमुख हैं जिन्होंने अपनी रचनाओं में अपने जेल अनुभव व्यक्त किया।

RSMOHIN4

हिन्दी गद्य साहित्य में महामारी

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महामारी, अकाल या अन्य आपदाएं समय-समय पर अपने भिन्न-भिन्न रूपों में आती रही है। महामारियों के समय में कराहती आवाज को सुनने उसे व स्वर देने की कोशिश साहित्यकार अपने साहित्य में करता है मध्यकाल में काशी के आस-पास फैली महामारी का वर्णन हमे तुलसीदास की रचना कवितावली' व 'विनयपत्रिका में मिलता है। तुलसीदाम ने 'हनुमान बाइक' की रचना बाहू पीड़ा से मूक्तित पाने के प्रयोजन से की थी। इसी प्रकार रीतिकाल में पद्माकर ने गंगालहरी की रचना कुष्ट रोग से निवारण के लिए की। इन रचनाओं के माध्यम हम तत्कालीन युग बोध व युग पीड़ा के समझ सकते है महामारी में हमें सामान्य जीवन से परे देखने और गहराई से सोचने का मौका मिलता है। एक महामारी हजारों, लाखों लोगों को अपने साथ ले जाती है। हाल ही में आई कोविड-19 महमारी ने हमारे जीवन में जिस तरह की उत्थान-पुथल मचाई ऐसी विभीषिकाएं इतिहास के साथ साथ साहित्य के पृष्ठों पर भी दर्ज है। महामारी के संकट या आपदा में मानव हृदय को गहरा आघात पहुंचता है। इस बदले हुए स्वरूप ने जो घाव और दर्द भरी स्मृतियां दी है, को मानव मस्तिष्क में एक लम्बे अरसे तक हलचल पैदा करती रहेगी। प्राचीन काल में इंसान अस्वस्थ या बीमार होने पर संजीवनी, जड़ी-बूटी, अन्य देशी एवं आयुर्वेद की औषधियों के द्वारा अपना उपचार करता एवं ईश्वर की कृपा पर निर्भर था। अब आधुनिक समय में चिकित्सा की मशीनों बड़े अस्पतालों का विकास हुआ, सरकारी स्तर पर भी उपचार मिलता है। मगर कोरोना महामारी के समय सभी अस्पताल, चिकित्सक, यांत्रिक मशीनें असहाय हो गई थी। 'कोविड-19' की आपदा इन अर्थों में क्रूरतम कही जायेगी कि इसने भारतीय संस्कृति के अन्तिम संस्कार शव-दाह दहन तक परिजनों द्वारा नहीं किया गया, ऐसी ही त्रासदियां अनेकों बार, अनेकों भाषाओं में लिखा गया है।

RSMOHIN5

यात्रा की परंपरा और स्त्री

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यात्रा मनुष्य की स्वाभाविक प्रवृत्ति है। यात्रा ने मनुष्य को और मनुष्य ने दुनिया को बदला है। दुनिया भर की शुरूआती यात्राएँ प्रायः पुरुषों द्वारा की गई हैं। पितृसत्तात्मक समाज में स्त्री के लिए यात्रा कभी सहज नहीं रही। संभव है, मातृसत्तात्मक समाज में स्थिति सकारात्मक रही हो। वेदकालीन समाज से लेकर मुगलकालीन समाज में रचित साहित्य में मिलने वाले स्त्री-यात्रानुभव भारतीय स्त्री की यात्रा की अनवरत परंपरा को दर्शाते हैं। यात्राएँ वैदिक साहित्य के मूल में है। ऋषिका लोपामुद्रा ऋषि अगस्त्य के साथ भारत-भ्रमण करती हैं तो 'रामायण' और 'महाभारत' के स्त्री-चरित्र युद्धयात्रा और धर्मयात्रा में अपने पुरुष-साथियों के साथ यात्रारत हैं। बुद्धकालीन 'थेरीगाथा' की भिक्षुणियों और 'वीरशैव' की अक्का महादेवी के यात्रानुभव आधी आबादी को नए आलोक में देखने-समझने का प्रस्ताव रखते हैं।

हिंदी में स्त्री यात्रा की परंपरा को देखें तो पुरानी हिंदी की सिद्ध कवयित्रियों, मध्यकालीन हिंदी की भक्त कवयित्रियों और आधुनिककालीन स्वातंत्र्यचेता यायावर स्त्रियों के यात्रानुभव हमें एक नई दुनिया से रूबरू कराते हैं और उनके इन अनुभवों के निर्माण में यात्राओं की महत्ती भूमिका रही है। यात्रा का सीधा संबंध अनुभव और चेतना के विस्तार से है। यात्रानुभव मनुष्य को अनुभवसंपन्न बनाते हैं, सोचने-विचारने और बोलने-बतियाने का ढ़ंग सिखाते हैं। सोलहवीं सदी की 'बनयात्रा', अठारहवीं सदी की 'बद्री यात्रा कथा' और उन्नीसवीं सदी की 'लंदन यात्रा' यात्रा दिखाती है कि हिंदी में स्त्री यात्री की अपनी परंपरा है, जिसका विकास बीसवीं सदी में हुआ और इक्कीसवीं सदी में इसने उपलब्धियों के नये आयाम प्राप्त कर यात्रावृत्तांत को साहित्य की केंद्रीय विधा के रूप में स्थापित किया।

SANSKRIT

लोकाः समस्ताः सुखिनो भवन्तु।

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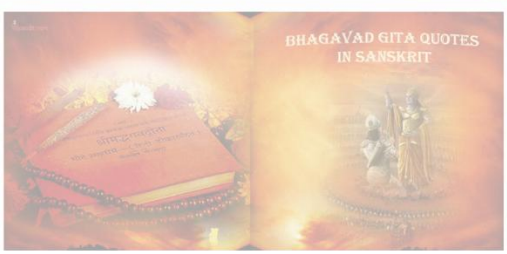

RSMOSAN1

મહાકવિ ભવભૂતિકૃત "ઉત્તરરામચરિતમ્" નાટકમાં ભારતીયતા.

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ભારતીયતાનો ઉચ્ચ આદર્શ આપણાં વૈદિકકાલીન ગ્રંથોમાં જોવા મળે છે. આ ગ્રંથોમાં ઉચ્ચ આદર્શો,માનવ-જીવનનાં મૂલ્યો જોવા મળે છે. સંસ્કૃત સાહિત્યના કવિઓ પોતાની કૃતિમાં ભારતીયતાના આ જ મૂલ્યોને નિરૂપે છે. આધુનિક સમયમાં જ્યારે મનુષ્ય ટેક્નોલોજીથી સબળ બન્યો હોય ત્યારે જીવન જીવવાના પાયાના સિદ્ધાંતો કે મૂલ્યોથી દૂર ગયો છે. ત્યારે સાહિત્ય માનવ-જીવનાં પ્રશ્નોનું સમાધાન કરતું જોવા મળે છે. અને સમાજ-જીવનના આદર્શ-મૂલ્યો સાહિત્યની કૃતિમાં જોઈ શકાય છે. ભારતીયતા એટલે આદર્શ માનવ-જીવન,દાંપત્ય જીવન,કુટુંબ-ભાવના,સમાજ-જીવન,પ્રેમ,લાગણી,કરુણા,આતિથ્ય-ભાવના અને જીવનદર્શન- આ બધા જ પ્રકારના મૂલ્યો આજના સમયે બધી જ ભૌતિક સુવિધાઓ હોવા છતાં ક્ષીણ થયાં છે ત્યારે ભારતીય જ્ઞાન પરંપરાના અમલ દ્વારા મૂલ્ય-નિષ્ઠ જીવન થકી જ બધા પ્રશ્નોનું સમાધાન થશે એમ ચોક્કસપણે કહી શકાય. મહાકવિ ભવભૂતિના ઉત્તરરામચરિતમાં આ જ ભારતીયતા આદર્શોને જોઈ શકાય છે.

Keywords : ભારતીયતા,આદર્શ,જીવન-દર્શન,મૂલ્યો,ઉત્તરરામચરિતમ્

RSMOSAN2

અભિનવ પંચાશિકા સમીક્ષાત્મક અધ્યયન

ગઢવી કમલેશ કુમાર જસવંતસિંહ

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ભારતીય કથા સાહિત્યના અવકાશમાં એક ઉડતી નજર નાંખીએ તો આપણને એ વાત દૃષ્ટિગોચર થાય છે કે આ સાહિત્ય માનવ મનના જાગૃત થવાની સાથે જ આવીર્ભાવ પામેલું છે. કથાનો આરંભ જ કથનની સાથે થયો છે. માણસે બોલવાની સાથે જ પોતાની અભિવ્યક્તિ શરૂ કરી અને કથાનો અવાચ્ય આરંભ થયો. સમય જતા કાળક્રમે એનું વાસ્તવિક સ્વરૂપ આવતા ભલે હજારો વર્ષો વહી ગયા હોય પરંતુ એ હજારો વર્ષોના એના પ્રવાહમાં એના અનેક સ્વરૂપો સાહિત્યના માર્ગને પ્રશસ્ત કરતા રહ્યા છે. આજનું કથા સાહિત્ય એનો જ એક પરિપાક છે એવું નિઃસંદેહ માનવું પડે. વેદ ઉપનિષદ અને મહાકાવ્ય કાળ પછી પ્રશિષ્ટ સંસ્કૃત સાહિત્યકાળમાં એનો ખૂબ જ વિકાસ થયો. ત્યાર બાદ ઇસવીસન પછી એનો વેગ થોડો ધીમો થયો હોય એવું લાગ્યું પરંતુ અર્વાચીન સમયમાં ફરીથી એણે પૂરેપૂરા વેગથી સાહિત્યના ભંડારને છલકાવી દીધો છે. આવી સુખદ યાત્રામાં એક અપૂર્વ આનંદ આપતો પડાવ એટલે "અભિનવ પંચાસીકા" અર્વાચીન સાહિત્યમાં સમાજના દરેક પરિસ્થિતિના ચિત્રને ખૂબ સારી રીતે પ્રદર્શિત કરતી કથાઓનો સંપુટ આપવામાં પંડિત નારાયણ શાસ્ત્રી કાંકરેજી સફળ થયા છે. સમાજના દરેક ભાગને, સમસ્યાને દૂર કરવા, સમજાવવા માટે એમની કથાઓ ખરેખર ઉપકારક બની રહી છે. સામાજિક જીવનની રુઢીઓ, કુરિવાજો, વ્યસન, અંધશ્રદ્ધા, આત્મ ગૌરવ, દેશાભિમાન, નારી મહત્વ, જીવન મૃત્યુનું મહત્વ તેમજ સમાજ જીવનને સ્પર્શથી તમામ બાબતોને સુપેર કથા માધ્યમથી રજૂ કરવામાં એમને સફળતા મેળવી છે. જ્યાં સુધી માનવ મન વિચારતું રહેશે ત્યાં સુધી અનંતકાળ સુધી આ કથાઓ મનોરંજિત કરતી રહેશે એમાં શંકા ને કોઈ સ્થાન નથી. કથા પંચાશિકા, સમાજ જીવન, સમસ્યાઓ, વિચાર શક્તિ, મનોરંજન, સાહિત્ય.

Keywords: ભારતીય કથા, અભિનવ પંચાસીકા, નારાયણ શાસ્ત્રી, સામાજિક જીવન

RSMOSAN3

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विश्वस्मिन् अस्मदीया भारतीयकालगणना अतीव प्राचीना वैज्ञानिकी सूक्ष्मतमा वर्तते । भारतीयकालगणनैव सूर्यचन्द्रमसोर्गत्यनुसारं प्रचलति । तेन कारणेनास्माकं सर्वेप्युत्सवा नियतकाल एव आयान्ति । भारतीयकालपरिमाणस्य सूक्ष्मतमः कालः परमाणुर्वर्तते तथा बृहत्तमकालो ब्राह्मदिनं विद्यते । तत्र बहूनि परिमाणानि सन्ति, तानि यथा - परमाणु-अणु-पल-विपल-प्रतिपल-निमेष-क्षण-घटी-होरा-प्रहर-अहोरात्र-सप्ताह-पक्ष-मास-अयन-संवत्सर-ब्राह्मदिनादीनि । एषु परिमाणेष्वन्यतस्य होरापरिमाणस्य विज्ञानं प्रस्तूयते । होरा इति शब्दस्य कोर्थः ?, अस्मिन् शब्दे किं संपूर्णे लिङ्गम् ? का च व्युत्पत्तिः ? इति प्रश्नाः सहजतया जायन्ते । तर्हि अग्निपुराणे उक्तं यथा - **चतुर्विंशतिवेलाभिरहोरात्रं प्रचक्षते । पश्चिमादर्द्धसत्रादि होराणां विद्यते क्रमः ।।** राश्यर्द्धभागो होरानाम्ना विज्ञायते । असौ शब्दः स्त्रीलिङ्गे वर्तते । **हुङ् - गतौ** धातोः **रन्** प्रत्यये कृते होराशब्दो निष्पद्यते । सामान्यतः प्रत्येकस्मिन् दिवसे चतुर्विंशतिहोराः भवन्ति । तत्र यस्य ग्रहस्य प्रथमा होरा भवति, तद्दिनमपि तद्ग्रहनाम्ना ज्ञायते । इत्थमस्माकं सूर्यादिवासराणां नामाभिधानं तथा क्रमनिर्धारणं जायते । तत्र होराणां विशिष्टः क्रमो वर्तते, सूर्यः शुक्रः बुधः चन्द्रः शनिः गुरुः मङ्गलः । अनेन क्रमेण सम्पूर्णस्य होराचक्रस्य निर्माणं भवति । यथा जैनधर्मे यात्रायाः प्राक् चोघडीयादर्शनं भवति तथैव मुहूर्त्ताभावे माङ्गलिककार्येषु, विद्यारम्भे, विवाहे, नूतनयन्त्रक्रयणे, भूमिक्रयणे इत्यादिषु विविधेषु कार्येषु होरायाः उपयोगिता वर्तते । अनेन प्रकारेण निश्चितग्रहस्य नियतहोरायां कार्यं क्रियते चेदवश्यं तत्तत्कार्येषु सिद्धिः प्राप्यते । एतादृग् विज्ञानमस्माकं भारतीयज्ञानपरम्परायां निहितं वर्तते ।

Keywords - भारतीयकालगणना, परिमाणानि, ग्रहाः, होरा, विज्ञानम्, कार्यसिद्धिः ।

RSMOSAN4

આદિશંકરાચાર્યના મતે નૈતિક જીવન – આત્મબોધના સંદર્ભમાં

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આદિશંકરાચાર્યના વિચારો ન કેવલ આધ્યાત્મિક ઉપદેશ આપે છે, પરંતુ નૈતિક જીવન જીવવા માટે મજબૂત આધાર પણ પૂરો પાડે છે. 'આત્મબોધ' દ્વારા શંકરાચાર્યએ નૈતિક જીવન જીવવા માટે વ્યાપક માર્ગદર્શન આપ્યું છે. નૈતિક જીવન કોઈ વિરલ ગુણ નથી, તે જ્ઞાન પ્રાપ્તિના પથ પરનો પાયો છે. શંકરાચાર્યની દ્રષ્ટિએ નૈતિકતાએ જીવન જીવવા માટેનું સાધન નથી, પરંતુ તે આધ્યાત્મિક ઊંચાઈઓ સુધી પહોંચવા માટેનો માર્ગ છે. શંકરાચાર્યએ માનવ જીવનના ઉચ્ચતમ ધ્યેયની પ્રાપ્તિના માર્ગની શરૂઆત નૈતિકતા દ્વારા થાય છે તેવો વિચાર રજૂ કર્યો છે. જેની વર્તમાન સમયમાં ખૂબ જ આવશ્યકતા રહેલી છે. આજના સમયના પડકારોને ધ્યાનમાં રાખીને પણ શંકરાચાર્યના આદર્શો મહત્વપૂર્ણ છે. ટેકનોલોજી અને ઝડપી જીવનશૈલી વચ્ચે માનવ મૂલ્ય અને નૈતિકતા માટેની જાગૃતિ જરૂરી છે. શંકરાચાર્યના દર્શન દ્વારા યુવા પેઢીને નૈતિક ગુણોના વિકાસ માટે પ્રેરણા આપી શકાય છે. આદિશંકરાચાર્યના નૈતિક જીવનના સિદ્ધાંતો આધુનિક સમયમાં માનવજાત માટે પ્રકાશપથના રૂપે કાર્ય કરે છે. આત્મબોધનું દર્શન કરનાર માણસને તેના સાચા સ્વરૂપનો બોધ થાય છે અને જીવન સુખમય બને છે. જો આદર્શોને વ્યક્તિગત, સામાજિક અને વૈશ્વિક સ્તરે અપનાવવામાં આવે, તો આધુનિક જીવનમાં ઉત્પન્ન થયેલી તકલીફોને દૂર કરી શકાય છે. શંકરાચાર્યએ આપેલ નૈતિકતાનો સિદ્ધાંત જીવન જીવવાનો એક શાશ્વત માર્ગ છે.

Keywords: નૈતિકતા, આત્મબોધ, સુખ, ધ્યેયપ્રાપ્તિ, અપવર્ગ (મોક્ષ)

RSMOSAN5

આત્મદીપો ભવઃ

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આજના ટેક્નોલોજી પ્રધાન યુગમાં જ્યારે મનુષ્યની બધીજ જરૂરીયાતો આંગળીના ટેરવે પૂરી થાય છે ત્યારે પ્રશ્ન થાય કે, આટલી બધી સુખ-સુવિધાઓમાં રહેતો હોવા છતાં મનુષ્યમાં આટલી બધી અશાંતિ, ચિંતા, રાગ, દ્વેષ ઈત્યાદિ શા માટે ? તેનો ઉત્તર આ બધી સુખ-સુવિધાઓ જ છે. જે મનુષ્યને ક્ષણિક સુખ માટે સતત પ્રયત્નશીલ બનાવી રાખી સ્વયંને સ્વયંથી દૂર કરે છે. જેના કારણે તે સ્વયંની સાથે સમય ન વિતાવી શકતા સ્વયંથી અજ્ઞાત બનીને રહી જાય છે અને તેથી અશાંતિ ઈત્યાદિમાં બંધાયેલો રહે છે. આવા બંધનોમાંથી મુક્તિ માટે શ્રીમદ્ ભગવદ્ ગીતામાં કહ્યું છે કે, "उद्धरेत् आत्मना आत्मानम्" (ભ. ગી. ૬.૫) અર્થાત્ 'સ્વયંથી જ સ્વયં નો ઉદ્ધાર કરવો' માટે સૌપ્રથમ સ્વયંને જાણવું આવશ્યક છે. હવે, પ્રશ્ન થાય કે સ્વયંને જાણવું કેવી રીતે ? તેનો ઉત્તર આપણને મુંડકોપનિષદમાં જોવા મળે છે જ્યાં આત્મદર્શનના સાધનોનો સ્પષ્ટ ઉલ્લેખ કરતા કહ્યું છે કે, "सत्येन लभ्यस्तपसा ह्येष आत्मा सम्यग्ज्ञानेन ब्रह्मचर्येण नित्यम" (મું. ઉપ. ૩.૧.૫) અર્થાત્ સત્ય, તપ, સમ્યગ્જ્ઞાન અને બ્રહ્મચર્ય દ્વારા સ્વયંને જાણી શકાય છે. આ સાધનોમાં 'તપ'નું વિશેષ મહત્વ છે. જેને દર્શાવતા શ્રુતિ-સ્મૃતિમાં "तपो ब्रह्मेति" (તૈ. ઉપ. ૩.૨.૧) અર્થાત્ 'તપ જ બ્રહ્મ છે', "तपश्चास्मि तपस्विषु" (ભ. ગી. ૭.૯) અર્થાત્ 'તપસ્વિઓમાં તપ હું છું' જેવા ઘણાં સંદર્ભો જોવા મળે છે. સામાન્ય રીતે તપને પ્રકાશ, ગરમી કે કષ્ટ વેઠવાના અર્થમાં લેવામાં આવે છે પરંતુ વિશિષ્ટ ઉપયોજનમાં તપ વિશેષ ક્રિયા કે શક્તિ તરીકે પણ ઓળખાય છે. માટે અહીં સ્વયંના સાક્ષાત્કાર માટેના શ્રેષ્ઠ સાધન તપને વિવેચનાત્મક પદ્ધતિથી સમજાવવામાં આવશે. જેથી આજની યુવા પેઢી તપના માધ્યમથી સ્વયંના ઉદ્ધાર માટે પ્રયાસ કરે એવી આશા છે. અને આ સુખ-સુવિધાઓના ભોગ પૂર્વે સ્વયં સાથે ચર્ચા કરે કે, જીવનમાં ખરેખર આવશ્યક શું છે ? જેના પાલન દ્વારા તેની ઘણી ખરી ચિંતા આવતા પહેલા દૂર થઈ જશે.

Keywords: **સુખ-સુવિધાઓ, બંધનો, આત્મદર્શન, ઉદ્ધાર, તપ**

RSMOSAN6

भारतीयसंस्कृतसाहित्ये गोमहत्त्वम्

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Keywords : **गोसेवा, महिमा, भगवती, सर्वदेवमयी**

RSMOSAN7

આધુનિક જીવન પદ્ધતિમાં વેદાંતની ઉપયોગિતા

મીનાક્ષીબેન તેજાભાઈ ઝાલા

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ભારતીય દર્શનની દ્રષ્ટિ અત્યંત વ્યાપક છે. તેમાં વેદાંત દર્શનની વાત અહીં કરીએ તો જે કોઈ ધર્મ કે પંથ નથી, પરંતુ વેદાંત તો જીવન જીવવાની એક દ્રષ્ટિ છે. જે દ્રષ્ટિ દરેક સ્થિતિ, દેશ, કાળ સર્વમાં એક સમાન રૂપે જોવા મળે છે. આથી ભારતદેશ હોય કે કોઈ અન્ય દેશ હોય, અરણ્ય હોય કે હિમાલય હોય, પ્રાચીન હોય કે અર્વાચીન હોય – આ દ્રષ્ટિ બધી જ અવસ્થામાં ઉપયોગી છે. જીવન એટલે ચેતન તત્વની અનુભૂતિ અથવા પ્રવૃત્તિ-નિવૃત્તિની ક્રિયા. મનુષ્ય દ્વારા ક્રિયાઓ માત્રને માત્ર સુખની પ્રાપ્તિ માટે જ કરવામાં આવે છે. પ્રાચીન સમયમાં પણ સુખ પ્રાપ્તિ માટે ક્રિયાઓ થતી હતી અને આજે પણ થાય છે. પરંતુ આજના સમયમાં આ ક્રિયા કરવાની પદ્ધતિમાં બદલાવ જોવા મળે છે. જેના પરિણામ સ્વરૂપે મનુષ્યમાં અરુચિ, ઘૃણા, ક્રોધ, અહંકાર જેવાં ભાવવિકારોમાં જડપી વધારો થઈ રહ્યો છે. અર્વાચીન મનુષ્ય જીવનની સૌથી મોટી કમજોરી એ છે કે મનુષ્ય કર્મ કરતાં ફળમાં વધારે આશક્તિ રાખે છે. જેના પરિણામે આત્મહત્યા, ચોરી, અસત્ય બોલવું, હિંસા કરવી વગેરે જેવાં દુષ્ટ કાર્યોમાં જોડાય જાય છે. આ સર્વ પ્રકારનાં દૃષ્ટ કાર્યોમાંથી વિમુક્ત કેવી રીતે થઈ શકાય જેના વિશે વેદાંતમાં વિસ્તૃત ચર્ચા કરેલી છે. જેમાં બહિરંગ સાધનો (યમ, નિયમ, આસન, પ્રાણાયામ વગેરે) અને અંતરંગ સાધનોનો (ધર્મ, ધ્યાન, સમાધિ, શ્રવણ-મનન વગેરે) ઉપાય દર્શાવવામાં આવ્યો છે. જે ભૂત, ભવિષ્ય અને વર્તમાન ત્રણેય કાળમાં મનુષ્ય જીવન માટે ઉપયોગી બની રહેશે.

Keywords - વેદાંત, જીવન, કાળ, અંતરંગ, બહિરંગ, કર્મ-ફળ

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સાંખ્યકારિકા પરની સાંખ્યતત્વ કૌમુદી ટીકાનું સમીક્ષાત્મક અધ્યયન

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માનવી ને સુખની પ્રાપ્તિ કરવા માટે તથા મોક્ષ પ્રાપ્ત કરવા માટે સતત પ્રયત્ન કરતો હોય છે. પરંતુ જ્યાં સુધી તેને યોગ્ય ઉપાય ન મળે ત્યાં સુધી તેને સુખની પ્રાપ્તિ તથા મોક્ષ પ્રાપ્ત થતો નથી આ માટેનો ઉપાય દર્શનશાસ્ત્ર નો અભ્યાસ છે. આ દર્શન શાસ્ત્રના અભ્યાસ દ્વારા સુખની પ્રાપ્તિ તથા મોક્ષ પ્રાપ્ત કરી શકાય છે. ભારતીય દર્શનો લગભગ 996 મનાઈ છે. પરંતુ અત્યારે મુખ્યત્વે ૯ દર્શનો વધુ પ્રચલિત મનાય છે. તેમાં બે વિભાગમાં વિભાજિત કરવામાં આવ્યા છે (૧) આસ્તિક દર્શન અને (૨) નાસ્તિક દર્શન. વેદના પ્રામાણ્ય નો સ્વીકાર કરનારા આસ્તિક દર્શન છે. તેમાં મુખ્યત્વે સાંખ્યદર્શન, યોગદર્શન, ન્યાયદર્શન, વૈશેષિકદર્શન, પૂર્વ મીમાંસા ,ઉત્તરમી મીમાંસા નો સમાવેશ કરવામાં આવે છે. વેદના પ્રામાણ્ય નો સ્વીકાર ન કરનારા નાસ્તિક દર્શનો છે તેમાં જૈન દર્શન, બૌદ્ધ દર્શન, અને ચાર્વોકદર્શન નો સમાવેશ કરવામાં આવે છે. ભારતીય દર્શનોમાં પ્રથમ રચાયેલું દર્શન સાંખ્યદર્શન છે. તેના રચયિતા કપિલ મુનિ મનાય છે. તેમણે આ દર્શનનું જ્ઞાન તેમણે ક્રમશ: તેમના શિષ્યોને આપ્યું હતું. આ દ્વારા જ્ઞાનનો પ્રચાર થયો હતો. સાંખ્યદર્શનમાં 25 તત્વોની ગણના કરવામાં આવી છે. તેથી જ સાંખ્યદર્શન એવું દર્શન નું નામ આપ્યું છે. આ દર્શન ઉપર ઈશ્વરકૃષ્ણ દ્વારા સાંખ્યકારિકા નામની કૃતિની રચના કરવામાં આવી છે. આ સાંખ્યકારિકા ઉપર સમયાંતરે ટીકાઓની રચના થવા લાગી તેમાં સૌથી વધુ પ્રસિદ્ધ ટીકા વાચસ્પતિ મિશ્રએ સાંખ્યતત્વ કૌમુદી નામની ટીકા રચી છે. આ ટીકા ઉપર પણ અન્ય ટીકાઓ રચાય છ વાચસ્પતિ મિશ્રએ આ સાંખ્યતત્વ કૌમુદી ટીકામાં પ્રથમ મંગલાચરણ કરીને સાંખ્યશાસ્ત્રના અધ્યયન નું પ્રયોજન બતાવ્યું છે. ભારતીય દર્શનો જીવનના અંતિમ લક્ષ્ય મોક્ષ નો જ સ્વીકાર કર્યા છે . ત્યારબાદ તત્વોની સંખ્યા અને વર્ગીકરણ કર્યું છે. પ્રમાણ વિચારની ચર્ચા કરી પ્રત્યક્ષ પ્રમાણ, અનુમાન પ્રમાણ અને શબ્દ પ્રમાણ ની ચર્ચા કરી છે. સત્કાર્યવાદ સમજાવ્યો છે. ત્રિગુણ વ્યવસ્થા અને પ્રકૃતિ તથા સર્ગ પ્રક્રિયા-તત્વ પરિચય આપ્યો છે. ત્રિસર્ગની ચર્ચા કરી પુરુષ અને પુરુષ બહુત્વ અને પુરુષ-પ્રકૃતિ સંયોગ અને અપવર્ગ (મોક્ષ) દર્શાવ્યો છે. આમ વાચસ્પતિ મિશ્ર એ માનવીને મોક્ષ પ્રાપ્ત કરવાનું સાધન રૂપ કેટલાક મુદ્દા ની ચર્ચા કરી છે તેનું જ્ઞાન પ્રાપ્ત કરી માનવી મોક્ષ પ્રાપ્તિ સુધી પહોંચી શકે છે.

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પ્રવીણકુમાર કલુભાઇ બારીયા

અનુસ્નાતક સંસ્કૃત વિભાગ, સરદાર પટેલ યુનિવર્સિટી, વલ્લભ વિદ્યાનગર, આણંદ.

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મનુષ્ય જીવનનો ઉદ્દેશ્ય 'સ્વ'ને પામી પરમતત્ત્વ સાથે ઐક્ય સાધવાનો છે. જીવન એવી રીતે જીવવું કે માનવતાના મૂલ્યો સમજાય અને તેનાથી સંતુષ્ટિ મેળવી, કર્તવ્યકર્મો કરતાં કરતાં છેવટે પરમાત્માનું 1શરણ લેવું. પ્રધાનતયા સંસાર ભૌતિકવાદી અભિગમવાળો છે, તેના બંધનોમાંથી મુક્ત થવું, નિજકર્મમાં પ્રયત્નશીલ રહી એવી યાત્રા કરવી કે તેમાં જળકમળવત રહીને જીવનને સફળ બનાવવું જોઈએ. સાહિત્ય જીવન સાથે સંકળાયેલ પાસાઓને ઉજાગર કરે છે. અને જીવનની કલાને વિકસાવે છે. જીવન જીવવવાની કલાના બીજ સાહિત્યમાં પરિષ્કૃત થયેલા મળી આવે છે. સાહિત્યના જ્ઞાનથી મનુષ્યની અંદર રહેલા ભાવનો ઉત્કર્ષ થાય છે, જેથી તેના જીવનમાં નવું નવું કરવાની ભાવના જાગે અને 'સ્વ'નો બોધ થાય છે. આમ, સાહિત્યિક દ્રષ્ટિએ જોઈએ તો સાહિત્યનો અર્થ કવિઓ-મહાકવિઓ દ્વારા કરવામાં આવેલી રચનાઓ એમ કરી શકાય છે. જેમાં જીવન દર્શનને સ્પર્શે એવો સમાજ, કુટુંબ, વ્યક્તિ, લોકકલ્યાણ, વગેરેના નિરૂપણને કેન્દ્રમાં રાખી બોધાત્મક શૈલીમાં ઉપદેશ આપવામાં આવ્યો છે. સાહિત્યમાં આવતા ઉલ્લેખમાં સાહિત્યકાર-લેખક-કવિનો પોતાનો કે કાવ્યમાં આવતા પાત્રોનો અને વાચકનો એમ મુખ્યત્વે ત્રણ પ્રકારના ઉલ્લેખને માનવી પોતાના જીવનમાં ઉતારી સફળતાના શિખરો પાર કરી શકે છે. સંસ્કૃત સાહિત્યમાં કાલિદાસ આદિ મહાકવિઓએ રચેલ મહાકાવ્યો મોખરાનું સ્થાન ધરાવે છે. તેમાં મહાકવિ કાલિદાસ રચિત 'રઘુવંશ' તથા 'કુમારસંભવ', ભારવિનું 'કિરાર્તાજુનીયમ્', માઘનું 'શિશુપાલવધ' અને શ્રીહર્ષનું 'નૈષધીયચરિત' નામના મહાકાવ્યોનો સમાવેશ થાય છે. આ મહાકાવ્યો સમગ્ર સાહિત્યજગતમાં અનેરો પ્રભાવ પાડે છે, જેમાં સમગ્ર મનુષ્યજીવનને ધ્યાનમાં રાખીને ચોક્કસ પ્રકારના પુરુષાર્થને પામવાની વાત કરીને સુખી જીવન જીવવવાનો બોધ પણ આપવામાં આવ્યો છે. આ પાંચ મહાકાવ્યોમાં વ્યક્ત થતા જીવનનો આધુનિક સમયમાં જીવાતા જીવન સાથે અનેરો સંબંધ રહેલો છે. જેમાં ખાસ કરીને ધર્મ, અર્થ, કામ અને મોક્ષ એવા ચાર પ્રકારની ફલપ્રાપ્તિ બતાવીને આ ચાર પુરુષાર્થોમાંથી કોઈ એકની પ્રાપ્તિ કરાવી આપે છે. જે મહાકાવ્યની આગવી લાક્ષણિકતા છે. કવિઓ પોતાના પાંડિત્ય થકી કૃતિમાં શબ્દો દ્વારા ચમત્કૃતિ લાવીને સમાજને નવો વળાંક આપે છે.

Keywords – સાહિત્ય, જગત, મનુષ્યજીવન, પુરુષાર્થ, ભૌતિક વિષયોનું જ્ઞાન, સુખપ્રાપ્તિ.

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મહાત્મા ગાંધીની રાષ્ટ્રનિર્માણ ભાવના

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વિશ્વવંદનીય રાષ્ટ્રપિતા મહાત્મા ગાંધીની રાષ્ટ્રના નિર્માણમાં અમૂલ્ય ભૂમિકા રહેલી છે. દેશને આઝાદી મળે તેમજ શાંતિ સ્થપાય એ તેમના જીવનનું લક્ષ્ય હતું. રાષ્ટ્રનિર્માણ માટે તેમણે સત્ય, અહિંસા, બ્રહ્મચર્ય, ત્યાગ, સમભાવ જેવા ગુણોના પ્રયોગો કરી તેનું આચરણ પણ કર્યું હતું. તેમાંથી બે મજબૂત સિદ્ધાંત હોય તો તે સત્ય અને અહિંસા છે. વર્તમાન સમયમાં રાષ્ટ્ર-રાષ્ટ્ર વચ્ચે યુદ્ધ જેવી સ્થિતિનો માહોલ જોવા મળે છે. આ પરિસ્થિતિને પહોંચી વળવા માટે મહાત્મા ગાંધીએ સૂચવેલા સત્ય, અહિંસા, સમભાવ જેવા ગુણોને વ્યક્તિ પોતાના જીવનમાં આત્મસાત્ કરીને આચરણ કરે તો યુદ્ધ જેવી સ્થિતિ પેદા ન થાય. તેથી માનવજીવનમાં તેમના વિચારોની ઉપયોગીતા સવિશેષ છે. મહાત્મા ગાંધીએ સ્વાતંત્ર્ય અને શાંતિ માટે ભારતમાં ઘણા આંદોલનો અને સત્યાગ્રહો પણ કર્યા હતા. ગાંધીજી સ્વાતંત્ર્ય ચળવળ ચલાવતા ત્યારે તેમણે 'મારા સ્વપ્નનું ભારત' નો વિચાર રજૂ કર્યો હતો. ગાંધીજીના આર્થિક ક્ષેત્રના વિચારો રાષ્ટ્ર પુનરુત્થાન માટે દીવાદાંડી સમાન છે. ગાંધીજીએ ગ્રામસ્વરાજનું સ્વપ્ન પણ જોયું હતું. જેમાં દરેક ગામ સંપૂર્ણ રીતે પ્રજાસત્તાક બને અને ગામડાના વિકાસ માટે ગ્રામોદ્ધાર થવો જોઈએ. માટે જ તેમણે ખાદીને મહત્વ આપ્યું હતું. જે ઓછું મૂડીપ્રધાન અને વધુ રોજગારી પ્રધાન હતું. જેના કારણે માનવીને અર્થવ્યવસ્થાનું વર્તુળ મળી રહે છે અને માનવી આર્થિક સ્વતંત્રતા ભોગવી શકે છે. રાષ્ટ્રનિર્માણના મહત્વમાં ગાંધીજીએ આર્થિક બાબતોને પણ કેન્દ્રમાં રાખી હતી. સાથોસાથ સામાજિક અને આર્થિક શોષણ સામે લડવા માટે લોકોને મજબૂત બનાવવાની દિશામાં પણ કાર્ય કર્યું હતું. ગાંધીજીએ પોતાના રાષ્ટ્ર પ્રતિ તન, મન, ધનને ન્યોછાવર કરીને રાષ્ટ્રનું શ્રેષ્ઠ નિર્માણ કર્યું છે. તેમનું જીવનદર્શન સત્યના માર્ગ પર ચાલવા માટે આજે પણ પ્રેરણા પૂરી પાડે છે અને વિશ્વ ફલક ઉપર ગાંધીજીના વિચારો આજે પણ અતિ મૂલ્યવાન બન્યા છે.

Keyword : રાષ્ટ્રનિર્માણ, સત્ય, અહિંસા, સ્વાતંત્ર્ય ચળવળ, પુનરુત્થાન, ગ્રામસ્વરાજ, આર્થિક સ્વતંત્રતા

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નિર્ભયભીમ વ્યાયોગના સાહિત્યિક મૂલ્યો

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નિર્ભયભીમ વ્યાયોગ એ એક રૂપકનો પ્રકાર છે. વ્યાયોગનો વ્યુત્પત્તિલભ્ય અર્થ થાય છે. વિ - વિશેષ રૂપથી, આ-બધી બાજુથી, યોગ-પ્રયત્ન. આ રૂપક પ્રકારના વ્યાયોગનું મહત્ત્વ આનંદ, જ્ઞાન પ્રાપ્તિ, સામાજિક સંદેશ, સંસ્કૃતિ તથા આત્મવિકાસ માટે ફળદાયી છે. ભારતીય સંસ્કૃતિનો મહાન ઇતિહાસ ધરાવતો ધાર્મિક ગ્રંથ મહાભારત છે. જેમાં આવતા આદિ પર્વના બલપર્વમાંથી મૂળ કથાસ્ત્રોત લઈ તેમાં થોડાંઘણાં પરિવર્તનો કરી નાટ્યદર્પણકારે આ વ્યાયોગની રચના કરી છે. જેમાં ઉપહાર પુરુષના રક્ષણ માટે ભીમ રાક્ષસ બક સાથે બાહુના યુદ્ધનું વર્ણન કરવામાં આવ્યું છે. જેનાથી માણસમાં સહકારની ભાવના કેળવાય છે. શૌર્ય, વિદ્યા, કુળ, ધન, રૂપ વગેરે માટે થયેલા સંઘર્ષનું સ્પર્ધા યુદ્ધ પણ જોવા મળે છે. જે માણસને જીવન જીવવા માટે ઉપયોગી ઉત્તમ રીતભાત અને ઉચ્ચ કોટિના આદર્શો રજૂ થયેલા છે. આ વ્યાયોગમાં શૃંગાર, હાસ્ય તથા શાંત રસનો અભાવ હોવા છતાં કથાવસ્તુ રસિક લાગે છે તથા અલંકાર વૈભવ પણ છે. એક દિવસમાં રંગમંચ પર ભજવી શકાય તેવી ઘટનાઓ રજૂ કરવામાં આવી છે. તે માત્ર મનોરંજન માટે જ નથી, પરંતુ તેમાં રહેલી દયા, સત્ય, અહિંસા, ક્ષમા જેવા ગુણો આત્મસાત્ થઈ શકે અને સમાજના લોકોમાં રહેલા સારા અને પવિત્ર ગુણોને પ્રોત્સાહન પ્રાપ્ત થાય છે. સમાજ અને રાષ્ટ્ર માટે સારા નાગરિકોનું ઘડતર શકે તેવી બાબતોને બદલે આજકાલ માણસોમાં ચિંતા, ક્રોધ, તણાવ લોકોમાં વધુ પડતો જોવા મળે છે. તેને દૂર કરવા માટે પ્રકૃતિ સૌંદર્યનું સાંનિધ્ય આવશ્યક છે અને તે મનુષ્યના મનને શાંતિ અર્પે છે. આ સંદેશ માટે અહીં આ નાટ્યમાં ફળ, ફૂલ, વન વેલીઓ, વૃક્ષો, પક્ષીઓ તથા લતામંડપની સુંદરતા રજૂ કરવામાં આવી છે. આ ઉપરાંત આચાર-વિચાર, નૈતિક, સામાજિક, વ્યવહારિક, સાંસ્કૃતિક અને પારિવારિક વગેરે મૂલ્યોનો વિકાસ થઈ શકે છે.

Keyword: **નિર્ભયભીમ, વ્યાયોગ, મહાભારત, ઉપહાર, સહકાર, નૈતિક, મૂલ્ય, અભિનય**

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સંસ્કૃતસાહિત્યમાં બૃહત્તયી પ્રાચીન શાસનોમાં ગુપ્તચર ની ભૂમિકા અને આધુનિક શાસનોમાં રૉ સિસ્ટમમાં ગુપ્તચર ની ભૂમિકા

માર્કન્ડકુમાર ભરતભાઈ જોષી

શ્રી ભીખાભાઈ આર્ટ્સ કોલેજ, આણંદ

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પ્રાચીન શાસનોમાં ગુપ્તચરની ભૂમિકાની વ્યાખ્યા અને તેના મહત્વને સંસ્કૃતસાહિત્યના સંદર્ભમાં વિશ્લેષણ કરવામાં આવ્યું છે. પ્રાચીન કાળમાં, ગુપ્તચરોએ રાજા અને સામ્રાજ્યોના અંતર્ગત શત્રુઓની જાળવણી, રાજકીય ઘટનાઓની જાણકારી મેળવવી અને રાજકીય ખૂણાની વિધેયી માહિતી એકત્ર કરવા માટે મહત્વપૂર્ણ કાર્યો કર્યા. આ પ્રકારના ગુપ્તચરો દ્વારા શાસકોને વિજ્ઞાન, કળા અને વિધાની માર્ગદર્શન આપવામાં આવ્યું, જે સામ્રાજ્યના પાયાને મજબૂત બનાવવામાં મદદરૂપ બન્યા. આ ઉપરાંત, આધુનિક યુગમાં ગુપ્તચર પ્રણાલીઓએ પણ ખૂબ મહત્વ ધારણ કર્યું છે, ખાસ કરીને રિસર્ચ એન્ડ એનાલિસિસ વિંગ (RAW) અને અન્ય આંતરરાષ્ટ્રીય ગુપ્તચર એજન્સીઓ દ્વારા. આ એજન્સીઓનું કાર્ય સામ્રાજ્યની સુરક્ષા, આંતરરાષ્ટ્રીય રાજકારણ અને દેશના વિદેશી સંબંધોને મજબૂત બનાવવાનો છે. આ સંસ્થા પ્રાચીન શાસકોની ગુપ્તચર પદ્ધતિની તુલનામાં વધુ સોફિસ્ટિકેટેડ અને વ્યાવસાયિક છે. આ સેમિનારમાં પ્રાચીન અને આધુનિક શાસકોની ગુપ્તચર નીતિ અને પદ્ધતિઓમાં સંકળાયેલા સામયિક સુસંગતતા અને ભૂમિકાને ચર્ચવામાં આવ્યું છે, જે શાસકોને તેમની વ્યૂહરચનાઓ માટે પરિપૂર્ણ માહિતી મેળવવામાં સહાય કરે છે.

Keywords: ગુપ્તચર, પ્રાચીન શાસન, રૉ સિસ્ટમ, સંસ્કૃતસાહિત્ય, આધુનિક શાસન, રિસર્ચ એન્ડ એનાલિસિસ વિંગ (RAW), ગુપ્તચર નીતિ, શાસકીય સુરક્ષા

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ભારતના રાષ્ટ્રપતિ દ્વારા પુરસ્કૃત ગુજરાતના સંસ્કૃત વૈયાકરણો

પંચાલ પાયલ [1], વિજયાનન્દ જી. પટેલ[1*]

[1]*ડિપાર્ટમેન્ટ ઓફ સંસ્કૃત સરદાર પટેલ યુનિવર્સિટી, વિદ્યાનગર.*

[1]*ડૉ.વિજયાનન્દ જી. પટેલ ભવન્સ કોલેજ ડાકોર.*

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"गुर्जरप्रदेशस्य राष्ट्रपतिपुरस्कृतविद्वद्वर्याः खलु सरस्वतीकण्ठाभरणस्वरूपाः" ભારતના રાષ્ટ્રપતિ-પુરસ્કૃત ગુર્જરપ્રદેશના સંસ્કૃતભાષા-સાહિત્યના વિદ્વદ્વર્યો તો ખરેખર વાગ્દેવી સરસ્વતીના કંઠહારસ્વરૂપ છે.ભારતના રાષ્ટ્રપતિ દ્વારા વર્ષ ૧૯૫૮થી પ્રતિવર્ષ સંસ્કૃત,પ્રાકૃત,પાલિ ભાષા-સાહિત્યના ૧૫ જેટલા પ્રતિભાસમ્પન્ન વિદ્વાનોને રાષ્ટ્રપતિ ભવન,નવીદિલ્હીમાં સમારોહનું આયોજન કરીને ***Certificate of Honour*** થી વિભૂષિત કરવામાં આવે છે.આ અન્વયે પ્રશસ્તિપત્ર, સ્મુતિચિહ્ન અને પાંચ લાખ રૂપિયા એનાયત કરવામાં આવે છે.આના અનુસંધાને વર્ષ ૧૯૫૮- ૨૦૧૯ સુધી સમગ્ર દેશમાંથી અન્દાજીત ૯૩૦ વિદ્વાનોને સન્માનિત કરવામાં આવ્યા હતાં. જેમાં જેમની કર્મભૂમિ કે જન્મભૂમિ ગુજરાત છે. તેવા ગુજરાતના ૨૫ સંસ્કૃત વિદ્વાનોના જીવન તથા કવનની માહિતી એક ગ્રન્થમાં આપેલ છે,તે ગ્રન્થના અભ્યાસના આધારે ગુજરાતના ૭ સંસ્કૃત વૈયાકરણોનો પરિચય આપવામાં આવ્યો છે,જેમાં જીવન, વ્યવસાયિક કારકિર્દી, સાહિત્ય સર્જન સૂચિ(કવન), મૌલિક પુસ્તકો, સંશોધન લેખોની સૂચિ, માર્ગદર્શન આપેલ ઉત્તીર્ણછાત્રોની વિગતો,વર્ષ તથા શીર્ષકને આ અભ્યાસમાં આલેખવામાં આવશે. આમ, આ અભ્યાસલેખથી નવી રાષ્ટ્રીય શિક્ષણનીતિમાં જયારે IKS નો અભ્યાસક્રમમાં સમાવેશ કરવામાં આવ્યો છે.ત્યારે ભારતીય જ્ઞાનપરમ્પરામાં સંસ્કૃત વ્યાકરણ આગવું અને મુખ્ય સ્થાન ધરાવે છે.જેમાં સંસ્કૃતમાં અને ખાસ કરીને સંસ્કૃત વ્યાકરણમાં વિશેષ પ્રદાન કરનાર ગુજરાતના વૈયાકરણોનો અભ્યાસએ ભારતીય જ્ઞાન પરમ્પરાનો એક વિશેષ ભાગ બની રહેશે, તેમજ આ અભ્યાસથી આવા ઐતિહાસિક અને સાંસ્કૃતિક મુલ્ય ધરાવતી રાષ્ટ્રીય ધરોહરનું કાયમી જતન અને જાળવણી તેમજ વિદ્યાક્ષેત્રે અને આપણા સમાજમાં નિત્ય ધબકતી રાખવીએ સંશોધન કર્તાનું કર્તવ્ય છે.

Keywords: રાષ્ટ્રપતિ પુરસ્કૃત વિદ્વાનો, સંસ્કૃત વૈયાકરણો, જીવન તથા કવન, વ્યવસાયિક કારકિર્દી

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व्याकरणशास्त्रदृष्ट्या भाषाविज्ञानसंरचना

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भाषा अस्माकं जीवनस्य महत्वपूर्णसाधनं वर्तते यतोहि तया विना वाक्व्यवहारः न शक्यः। अस्माकं विचारान् प्रस्थापयितुं भाषया विना न कोऽपि सरलः मार्गः। भाषा नाम, भाष्यते शास्त्रव्यवहारादिना प्रयुज्यते इति । भाष् + गुरोश्च हलः (३ । ३ । १०३), अ प्रत्ययात् (३ । ३ । १०२), टाप् इति भाषा। दण्डी स्वग्रन्थे काव्यदर्शे लिखति यत् - इदमन्धन्तमः कृत्स्नं जायेत भुवनत्रयम् । यदि शब्दाह्वयं ज्योतिरासंसारं न दीप्यते।। (काव्यादर्श - १.३), अर्थात् सम्पूर्णं भुवनत्रयम् अन्धकारयुक्तम् अभविष्यत्, यदि संसारे शब्दस्वरूपज्योतिः अर्थात् भाषाप्रकाशः न अभविष्यत्। अमरे कथितम् अस्ति यत् - "ब्राह्मी तु भारती भाषा गीर्वाग्वाणी सरस्वती। व्याहार उक्तिर्लपितं भाषितं वचनं वचः॥ (१.६.१)" इति।भाषां सम्यक्तया अवगन्तुं तस्याः भाषायाः व्याकरणं पठितव्यम् एव भवति। व्याकरणे भाषायाः प्रयोगः, शब्दानाम् उच्चारणम्, रूपः, ध्वनिः, प्रत्ययः, धातुः, कालः, वचनम्, लिङ्गम्, इत्यादि बहवः विषयाः सन्ति तेषां चर्चा भवति। आधुनिकविद्वांसः भाषायाः कृते व्याकरणेन सह भाषाविज्ञानस्य अपि चर्चां कुर्वन्ति। भाषाविज्ञानं (Linguistics) नाम भाषायाः विज्ञानम् इति। भाषाविज्ञाने आदौ तुलनात्मकम् अध्ययनं कृतम्। भाषाविज्ञानं भाषायाः वैज्ञानिकम् अध्ययनं वर्तते। इदानीं भाषा विज्ञाने बहूनां विषयाणां चर्चा अभ्यासः च प्रचलत् अस। तत्र वाक्यविज्ञानम् (Syntax), रूपविज्ञानम् (Morphology), शब्दविज्ञानम् (Wordology), ध्वनिविज्ञानम् (Phonetics), अर्थविज्ञानम् (Semantics) एतेषां विषयाणां चर्चा भाषाविज्ञाने क्रियते। अग्रे अपि वर्णात्मकं भाषाविज्ञानम्, ऐतिहासिकं भाषाविज्ञानम्, तुलनात्मकं भाषाविज्ञानम्, संरचनात्मकं भाषाविज्ञानम्, प्रायोगिकं भाषाविज्ञानम् (pragmatics) एते सर्वेऽपि भाषाविज्ञानस्य अध्ययनस्य प्रकाराः सन्ति। अस्माकं संस्कृतव्याकरणे एतेषां विषयाणां चर्चा आदौ एव कृता वर्तते। यथा ध्वनिविज्ञाने उच्चारणं कथं कुतः भवति तस्य चर्चा कृता अस्ति सा एव चर्चा अस्माकं शास्त्रे दृश्यते यथा पाणिनीयशिक्षायां एतस्य विषयस्य चर्चा दृश्यते, शब्दविज्ञानम्, वाक्यविज्ञानम्, अर्थविज्ञानम् एते विषयाः भर्तृहरिणां वाक्यपदिये दृश्यन्ते, रूपविज्ञानं पाणिनेः अष्टाध्याय्यां दृश्यते।

Keywords - भाषाविज्ञानम्, भाषा, पाणिनिः, भर्तृहरिः, भाषाविज्ञानसंरचना

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ભીષ્મ પર્વ અને રાજનીતિ

શૌનકકુમાર શૈલેશભાઈ જોશી

અનુસ્નાતક સંસ્કૃત વિભાગ, સરદાર પટેલ યુનિવર્સિટી, વલ્લભ વિદ્યાનગર

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આપણી ભારતીય સંસ્કૃતિનો પરિચય મેળવવા માટે નો એક અમૂલ્ય ગ્રંથ એટલે મહાભારત. મહાભારત ભારતીયજ્ઞાનપરંપરાને દર્શાવતો એક ઐતિહાસિક ગ્રંથ છે. ભગવાન વેદવ્યાસ દ્વારા પ્રણીત મહાભારત નામક ગ્રંથ સ્મૃતિ વિદ્યાનો ગ્રંથ છે. ભગવાન વેદવ્યાસ ઋષિના શિષ્ય ઋષિ વૈશંપાયને જનમેજયને આ અદ્વિતીય કથાનું રસપાન કરાવ્યું હતું માટે આ કથાને જયસંહિતા પણ કહેવામાં આવે છે. **"यदिहास्ति तदन्यत्र यन्नेहास्ति न तत्कचित्"** (મહા-સ્વર્ગારોહણપર્વ 5/50) આ ઉક્તિનો અર્થ થાય છે કે જે "આ મહાભારત નામક ગ્રંથમાં છે તે જ અન્ય ગ્રંથોમાં પણ છે. અને જે આ ગ્રંથમાં નથી તે અન્ય કોઇ પણ ગ્રંથમાં નથી". રાજનીતિનું વર્ણન મહાભારતનાં ભીષ્મપર્વમાં છે. જેમાં રાજધર્મ, પ્રજાપાલન, પ્રજાની સમસ્યાનું નિરાકરણ, રાજ્યનું સંરક્ષણ, મિત્રરાજ્ય તથા શત્રુરાજ્ય સાથેના સંબંધ, ગુપ્તચર વ્યવસ્થા, સૈન્યપ્રબંધન, સેનાપતિના કર્તવ્યો, અમાત્યના કર્તવ્યો, રાજપુરોહિતના કર્તવ્યો, ધર્મપાલન આદિ વિષયોનું પ્રતિપાદન કરવામાં આવ્યુ છે. જેનું સંશોધનના માધ્યમથી ગ્રંથોનાં આધારે પ્રતિપાદન કરવામાં આવ્યુ છે. ભીષ્મપર્વમાં અનેક કુશળ રાજનીતિજ્ઞો, શાસ્ત્રજ્ઞો તથા શસ્ત્રજ્ઞો જેમ કે, ભીષ્મ, શ્રીકૃષ્ણ, દ્રોણ, અર્જુન, યુધિષ્ઠિર, કર્ણ આદિ પોતાના ધર્મનું પાલન કરતા દૃષ્ટિગોચર થાય છે. આ પર્વના નાયક જ શ્રી કૃષ્ણ છે. જેમના થકી રાજધર્મ, પ્રજાધર્મ, મનુષ્યધર્મ યુદ્ધધર્મ આદિનું નિરૂપણ કરાયું છે. રાજનેતામાં ભીષ્મ વર્ણન અહીં નિરૂપિત કર્યું છે જેમ કે, **महेन्द्रसदृश: शौर्ये स्थेर्ये च हिमवानिव। समुद्र इव गाम्भीर्ये सहिष्णुत्वे धरासम:**॥ (ભીષ્મપર્વ.13/8) જે શૌર્યમાં દેવરાજ ઇન્દ્ર સમાન, સ્થિરતામાં હિમાલય સમાન, ગંભીરતામાં સમુદ્ર સમાન અને સહનશીલતામાં પૃથ્વી સમાન જેમનું ચરિત્ર છે તેવા ભીષ્મ યુદ્ધમાં ઉપસ્થિત થાય છે. આમ અનેક મહારથી યુદ્ધમાં સમુપસ્થિત છે. જે રાજનૈતિકતા અને રાજનીતિનું ઉત્તમ પ્રતિપાદન કરે છે, જે આ શોધપત્રના માધ્યમથી પ્રસ્તુત કરવાનો પ્રયત્ન કરેલ છે.

Keywords - ભારતીયજ્ઞાનપરંપરા, રાજધર્મ, પ્રજાધર્મ, ગુપ્તચર વ્યવસ્થા, સૈન્યપ્રબંધન

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સમગ્ર સૃષ્ટિમાં આપણી સમક્ષ જે કઇં પણ દ્રષ્ટિગત થઈ રહ્યું છે તે વિશે સ્વયંને જિજ્ઞાસા ઉદ્ભવે છે -શા માટે? કેવી રીતે? ઇત્યાદિ ઉત્સુકતાથી મનુષ્ય જિજ્ઞાસાવશ તેની ઉત્પત્તિ, સ્થિતિ અને લયના જ્ઞાન માટે પ્રવૃત થાય છે. ભારતીય ચિંતન પરંપરામાં શંકરાચાર્યજીના અદ્વૈતવેદાન્તમાં માયાના આધારે જ બધાં જ સિદ્ધાન્તો ટકેલા છે. તેથી જ મનુષ્યની સૃષ્ટિ વિષયક જિજ્ઞાસાની તૃપ્તિ માટે તેમજ અદ્વૈતવેદાન્તના ગૂઢ રહસ્યને સમજવા માટે માયાને સમજવી ખૂબ જ આવશ્યક છે. 'मायावी इव मायायाः' અર્થાત્ માયાવી (જાદુગર) માયા (જાદુ)ને ટકાવી રાખવાનું કારણ બને છે. શંકરાચાર્યજી માયા તથા અવિદ્યા શબ્દોનો પ્રયોગ એક જ અર્થમાં કરે છે. જીવ અજ્ઞાનતાને કારણે પોતાનું વાસ્તવિક સ્વરૂપ ભૂલીને ભ્રમિત થઈ જાય છે તેથી જ માયાને અવિદ્યા કે અજ્ઞાન કહેવામાં આવે છે. સંસારની સમગ્ર નિર્જીવ વસ્તુઓ માયાની અભિવ્યક્તિ છે. માયા વિશે વેદ, ઉપનિષદ્, પુરાણ તેમજ શ્રીમદ્ભગવદ્ગીતામાં પણ માયાનો સંદર્ભ દ્રષ્ટિગોચર થાય છે. ઋગ્વેદમાં માયા વિશે કહેવાયું છે કે – 'इन्द्रो मायाभिः पुरुरूप ईयते ।' (ऋग्वेद, ६/४७/१८) અર્થાત્ 'ઇન્દ્ર પોતાની માયા શક્તિ દ્વારા વિવિધ રૂપ ધારણ કરીને યજમાન સામે પ્રકટ થાય છે' અહીં માયા શબ્દનો પ્રયોગ ઇન્દ્રજાળના અર્થમાં થયો છે. ડૉ. રાધાકૃષ્ણ પણ કહે છે – 'Maya has the two functions of concealment of the real and the projection of the unreal.' માયાને સત્ કે અસત્ ન કહીને અનિર્વચનીય કહી છે - 'सत् चेत् न बाध्येत, असत् चेत् न प्रतीयते ।' શંકરાચાર્યજી કહે છે કે માયા ભગવાનની અવ્યક્ત શક્તિ છે. કેવળ અજ્ઞાનીને જ માયાનું જ્ઞાન થાય છે. જે બ્રહ્મજ્ઞાની છે તેને માયાનું જ્ઞાન ક્યારેય નથી થતું. જ્ઞાનનો ઉદય થવાથી માયાનો અન્ત થઇ જાય છે. માયા બ્રહ્મની બીજ શક્તિ છે. માયાથી સંયુક્ત થઈને બ્રહ્મ ઈશ્વરની ઉત્પત્તિ કરે છે. 'શ્વેતાશ્વતરોપનિષદ્'માં કહેવાયું છે કે માયાથી યુક્ત આત્માને ઈશ્વર જાણવો જોઈએ. માયાના સહયોગથી સક્રિય થઈને ઈશ્વર જગતની સૃષ્ટિ કરે છે..

Keywords: માયા, અવિદ્યા, જિજ્ઞાસા, બ્રહ્મ, ઈશ્વર, જ્ઞાન

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પંચતંત્રમાં વ્યવહાર બોધ

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ભારતીય કથા સાહિત્યનો વિસ્તૃત અને સમૃદ્ધ વારસો પ્રાચીન કાળમાં વિદ્યમાન હતો. જેમાં હિતોપદેશ, પંચતંત્ર, બૃહત્કથા, વેતાલ પંચવિંશતિ (વેતાલ પચ્ચીસી), સિંહાસન દ્વાત્રિંશિકા (સિંહાસનબત્રીસી), શુકસપ્તતિ વગેરે જેમાં પ્રમુખ છે. તદ્ ઉપરાંત જૈન અને બૌદ્ધ કથા જાતક કથાઓ તથા કથારત્નાકરની કથાઓ પણ ઉપલબ્ધ છે. આ કથા કે વાર્તા સાહિત્યનો ઉદ્દેશ રસાસ્વાદ નહિ, પણ પ્રાણીઓના પાત્રો દ્વારા કુતૂહવૃત્તિને જાગૃત કરી કથોપકથન દ્વાર નીતિ કે ઉપદેશ આપવાનો હેતુ રહેલો છે. જેમાં ભારતીય કથા સાહિત્યમાં પંચતંત્ર મુખ્ય સ્થાન ધરાવે છે. પંચતંત્ર પંચ અને તંત્ર- એ બે શબ્દોના યોગથી બન્યો છે. આમ પંચ એટલે પાંચ અને તંત્ર એટલે વિભાગ (પુસ્તક). સંક્ષેપમાં પાંચ વિભાગ કે વિષયને દર્શાવતું પુસ્તક. જેમાં પાંચ તંત્રો આ પ્રમાણે છે: (૧) મિત્રભેદ (૨) મિત્રસંપ્રાપ્તિ (૩) કાકોલૂકીય (૪) લબ્ધપ્રણાશ અને (૫) અપરીક્ષિતકારક. પંચતંત્રના કથામુખનો મુખ્ય આશય વિવેકહીન અને શાસ્ત્રવિમુખ વ્યક્તિને વ્યવહાર બોધ આપવાનો છે. પંચતંત્રનો વ્યવહાર બોધ આ પ્રમાણે છે : (૧) સખત પુરુષાર્થ : “સખત પરિશ્રમનો કોઈ વિકલ્પ નથી” આ વાતનું સમર્થન દરેક વાર્તામાં જોવા મળે છે. પંચતંત્રકાર પ્રારબ્ધનો સ્વીકાર કરતા હોવા છતાં અધિક પુરુષાર્થ પર વધુ ભાર મુકે છે. (૨) નિસ્વાર્થ પ્રેમ અને મૈત્રી : પંચતંત્રકાર કહે છે કે “જે મનુષ્ય નિષ્કપટભાવે મિત્રતા કરે છે, તે પરાભવનું દુઃખ પામતો નથી. (૩) અવિરત સતર્કતા : મનુષ્યે કોઈપણ વાતમાં ગાફેલ ન રહેતા, સતત જાગૃત રહેવું જોઈએ. પ્રત્યેક વાર્તાને આધારે કહી શકાય કે મનુષ્ય જાગૃત રહી કોઈપણ કાર્ય કરે, તો સામેની વ્યક્તિમાં રહેલી કુટિલતાને જાણી તેને હટાવી શકાય છે. (૪) અતિલોભનો ત્યાગ : अति सर्वत्र वर्जयेत् । એ સુક્તિનું સમર્થન દરેક વાર્તામાં થયેલું જોવા મળે છે. लोभः पापस्य कारणम् । આ વાત અનુસાર અતિલોભ અંતે વિનાશને નોતરે છે. આમ, પંચતંત્રમાં પુરુષાર્થ, મિત્રતા, સતર્કતા કે અતિલોભનો ત્યાગ વગેરે દ્વારા મનુષ્યને ઉપદેશ અને વ્યવહારુ બોધ આપ્યો છે.

Keywords : પંચતંત્ર, વ્યવહારબોધ, સખતપુરુષાર્થ, નિસ્વાર્થ મૈત્રી અને પ્રેમ, સતર્કતા, અતિલોભ-ત્યાગ

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કવિ ભાસ કૃત **कर्णभारम्**માં નિહિત માનવ જીવનમૂલ્યોની સાંપ્રતમાં ઉપાદેયતા

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ઉચ્ચ માનવ જીવનમૂલ્યો થકી વ્યક્તિનું જીવન, સમાજ અને રાષ્ટ્ર ઉત્કૃષ્ટ બને છે. પ્રાચીન કાળમાં નાટકાદિ માધ્યમો દ્વારા મૂલ્યોને ટકાવી રાખવામાં તેમજ પેઢી દર પેઢી આગળ ધપાવવામાં આવતાં હતાં. પરંતુ સાંપ્રતમાં ક્યારેક આધુનિકતાના નામે તો ક્યારેક પાશ્ચાત્ય સંસ્કૃતિની અસર હેઠળ ભારતીય સંસ્કૃતિના અભિન્ન અંગ એવા માનવ જીવનમૂલ્યોનો ક્યાંક ને ક્યાંક હ્રાસ થતો જાય છે. સાંપ્રતમાં પ્રાચીન કાળની સાપેક્ષે સુવિધા અને સગવડો તો વધ્યાં છે, પરંતુ મનુષ્ય ક્યાંક મનુષ્ય ન રહેતાં યંત્રવત્ બનતો જાય છે. માનવ-માનવ વચ્ચેના પરસ્પર સંબંધોમાં સંવેદના અને સ્નેહ દિન-પ્રતિ દિન ઘટતાં જાય છે. માણસ ભીતરથી સાવ એકલવાયો થતો જાય છે, જેના દુષ્પ પરિણામે સમાજમાં અનેકવિધ સામાજિક સમસ્યાઓ સર્જાતી જાય છે. અત: શ્રેષ્ઠ અને સ્વસ્થ સમાજ નિર્માણાર્થે સમાજનો પ્રત્યેક વ્યક્તિ સ્વત: જીવનમાં મૂલ્યનું અનુસરણ કરે, એ હાલની તાતી જરૂરિયાત છે. સંસ્કૃત વાંડ્મયમાં માનવ જીવન મૂલ્યો સુંદર રીતે વણાયેલાં છે તે પૈકી कर्णभारम्માં પરીલક્ષિત જીવનમૂલ્યો અહીં પ્રસ્તુત રહેશે. ભાસ કૃત कर्णभारम् એકાંકીમાં દાન, વચનબદ્ધતા, સત્યનું આચરણ, ઋણસ્વીકાર, સ્વાભિમાન, કર્તવ્યનિષ્ઠા વગેરે ઉત્કૃષ્ટ માનવ જીવનમૂલ્યની ઝાંખી જોવા મળે છે. જો આ એકાંકીને સાંપ્રતમાં ભજવવામાં આવે તો તેમાં નિહિત માનવ જીવનમૂલ્યોને પુનઃ જનમાનસ સુધી પહોંચાડી શકાય. તથા જીવનમાં તેના સુચારૂ સમન્વયથી જીવન સુંદર અને સુગમ બની શકે. પરિણામે સમાજમાં સર્જાઇ રહેલી વિવિધ સામાજિક સમસ્યાઓ ઘટાડી શકાય અને સમય જતાં નામશેષ પણ કરી શકાય. જેથી મનુષ્યના પારસ્પરિક સંબંધો શ્રેષ્ઠતમ બને અને એક સ્વસ્થ અને સુંદર સમાજનું ઘડતર તથા ઉત્કૃષ્ટ રાષ્ટ્ર નિર્માણ પણ શક્ય બની શકે.

Keywords - कर्णभारम्, માનવ જીવનમૂલ્યો, સાંપ્રત

RSMOSAN20

ભારતીય આધ્યાત્મિક શાસ્ત્રોમાં પ્રકૃતિમહીમા; એક અધ્યયન

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સદિયોથી પ્રકૃતિની ગરિમા અને આધ્યાત્મ સાથેનો સબંધ માનવ જગત માટે વિસ્મયનો વિષય જ રહ્યો છે.

આપણા ભારતવર્ષ પર પ્રકૃતિનો આશીર્વાદ છે. પ્રકૃતિ, પ્રાકૃતિક-ભૌતિક અને પદાર્થિક જગત અથવા બ્રહ્માંડ છે

. પ્રકૃતિ, કુદરતી-વાતાવરણ, કુદરતી જીવ છે, જેમ કે, ફુલ-ઝાડ જે એક જગ્યાએ સ્થાયી જીવ છે. કુદરતી વાતાવરણ સાથે મળી ને મનુષ્યજીવ ને જીવન આપે છે. જન્મ થી મૃત્યુ સુધી પ્રકૃતિ આપણો સહારો છે. જીવનની પ્રત્યેક ક્ષણ અને પ્રત્યેક શ્વાસમાં પ્રકૃતિ જ આપણા અસ્તિત્વને જિંવત રાખે છે. પ્રકૃતિ વગરના પુરુષની એટલે કે માનવ જાતની કલ્પના પણ ન કરી શકાય.

આ દરેક આધ્યાત્મિક પરંપરાગત શાસ્ત્રોમાં પ્રકૃતિ અને માનવજાતનો સંબધ અને તેના મહત્વ ઉપર ખૂબ જ ભાર આપવામાં આવ્યો છે.આવા ભવ્ય પરંપરાગત વારસાની માનવ જાતે કદર કરવી જોઇએ ,તે દ્વારા ગૌરવ અનુભવવુ જોઈએ અને કોઇક રીતે આપણા પૂર્વજ ઋષિઓ દ્વારા સંશોધિત મૂળવિજ્ઞાન તરફ માનવ જાતનું ઋણ ચુકવવાના પ્રયત્નો કરવા જોઈએ.ભારતીય સંસ્કૃતિનાં મહત્વના મૂળમાં વૈજ્ઞાનિક પ્રક્રિયાના આધારે જીવ(માનવ)ની મુક્તિ અને સુખાકારી માટેના અને જીવનને સર્વોત્તમ બનાવવાના અનેક માર્ગો અંગે ઉલ્લેખ છે.પ્રકૃતિ આપણને શુદ્ધિ અર્પણ કરે છે., સુક્ષ્માતિસુક્ષ્મ વિષાણુના માધ્યમે રોગકારક અને રોગ મારગ રસ્તાઓ દેખાડી શકે છે. , પશુ, પંખી અને માનવોનો આહાર , દિર્ધાયુ, જીવન , સ્વાસ્થ્ય , પ્રસન્નતા , પવિત્રતા અને અમુક અંશે આર્થિક સદ્ધર્તા પણ અર્પે છે.કોઈ અન્ય સંસ્કૃતિમાં મનુષ્યના ઉદ્ધાર માટે આટલું ઊંડાણ અને સમજણ સાથેનું શાસ્ત્રોક્ત પરિમાણ જોવા મળ્યું નથી. દુનિયાભરથી લોકો આધ્યાત્મની શોધમાં ભારતદેશની યાત્રા કરે છે.અને માનવ માટે પોતાના સ્વ ઉત્થાનનું પહેલુ પગથિયું પ્રકૃતિ સાથેની તાદાત્મયતા છેઅનેકાનેક પ્રશ્નોને સમજવા જરુરી છે કે શું ખરેખર પ્રકૃતિ એ જીવન છે ? એ એક આસ્થા નું પ્રતિક છે ? તેમા જીવન છે? તેની આરાધ્ય માણી પૂજા કરવી જોઇએ કે નહીદોમાં જણાવ્યા અનુસાર મનુષ્યો સાથે પ્રકૃતિનું સંતુલન એ જગતનું મુખ્ય અને અનિવાર્ય અંગ છે. ભારતીય સંસ્કૃતિમાં એવા કેટલાય ઋષિમુનીઓ થઇ ગયા છે કે જેમના મતે વૃક્ષની પૂજા સૌથી પહેલાં તેના ઓષધીય અથવા પ્રતીકાત્મક હેતુ માટે કરવામાં આવી હતી અને દેવી-દેવતાઓ ની પુજા પછીથી આવી હતી. આજે પણ કેટલાય એવા ઝાડ પાન અને પ્રકૃતિના સંદર્ભો છે જે કોઈ દેવ-દેવતા ના પ્રતીકવાદનો અભિન્ન ભાગ છે. આપણું આધ્યાત્મ કહે છે કે પ્રકૃતિ ખૂબ ભાવનાશીલ છે, તે આનંદ વ્યક્ત કરી શકે છે. સદાય સૌને કંઇક ને કઈ આપે છે પણ વળતરમાં કશું લેતી નથી.તે નિઃસ્વાથી છે.

वनस्पतिर्दिवास्वांगै: करब्बवायुं प्रकर्षति मुञ्चति प्राणवायुं च प्राणनामुपकारकम् ॥

એ આપણને સૌ ને પ્રાણ વાયુ આપે, ફળ આપી રસનો આનંદ કરાવે, ફુલની સુંગધથી આપણને પણ સુંગધીત કરે, એ પોતાના લાકડાથી લઇને છાલ , રસ , મૂલ સુદ્ધા અર્પણ કરે છે. એ પશું કે પક્ષી માંટે નિવાસ તો માનવ માટે આશરો પણ બની જાય છે.

પ્રાણી સૃષ્ટિની ઉત્પતી ની પહેલા પ્રકૃતિસૃષ્ટીની ઉત્પત્તિ થઈ હતી કારણ કે પ્રાણી સૃષ્ટિ માટેની સઘળી વ્યવસ્થા કરવાનું પૂણ્ય પ્રકૃતિ ને જાય છે. એટલે જ કહ્યું છે કે એ આપણી પૂર્વજ છે.

“ याःऔषधिःपूर्वाजाता देवेभ्यस्त्रियुगं पुरा “

ભારતીય આધ્યાત્મિક શક્તિથી વિશ્વને સુજાણ કરવા પ્રકૃતિની ઓળખ ખૂબ જરુરી છે. પ્રકૃતિ વિષેની સમજણ,સંરક્ષણ અને સંવર્ધનમાં માનવ વિશેષની રુચી અત્યંત આવશ્યક છે.

આજના આ ગ્લોબલ વોર્મિંગના જમાનામાં આપણી આસપાસના પર્યાવરણીય વાતાવરણ (Environment) ની જાણવણી પ્રત્યે સૌ સજાગ બનવાની આપણા સૌની ફરજ છે.

પ્રકૃતિના માધ્યમે ભારતીય આધ્યાત્મિક પરંપરાનો પરિચય આપી એનું મહત્વ વધારવું અતિ સરળ છે. ભારતીય આધ્યાત્મિક શાસ્ત્રની પ્રણાલીનો અભ્યાસ સુદ્રઢ થવાથી સંસ્કાર, શિસ્ત અને સૌહાર્દ પણ આપણે સૌ આપણામાં વિકસાઇ શકીશું.

આપણે પ્રાકૃતિક સૌંદર્ય ને નિરખતા થઇ,ઓળખતા થઇ, તેના આસ્વાદ ને અનુભવીએ, આ પ્રકારે ચૈતસિક સર્જનશક્તિનાં રહસ્યને સમજવાનો પ્રયાસ કરી શકાશે .

RSMPSAN21

કાલિદાસના નાટકોમાં ભારતીય સંસ્કૃતિ – એક અધ્યયન

અંકુરકુમાર હર્ષદભાઈ પાઠક

સંસ્કૃત વિભાગ,સરદાર પટેલ વિશ્વવિદ્યાલય, વલ્લભ વિદ્યાનગર, ગુજરાત

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કાલિદાસની પ્રતિભા કાવ્ય અને નાટક એ બન્ને પ્રદેશમાં વિહરી છે. એ કાલિદાસની વિશિષ્ટતા છે. કાલિદાસના નાટકોનો “માલવિકાગ્નિમિત્રમ” “વિક્રમો-ર્વશીયમ” અને “અભિજ્ઞાનશાકુંતલમ” એ રચના ક્રમ સામાન્ય રીતે સ્વીકારાયો છે. કાલિદાસની નાટ્યકલા ઉત્તરોત્તર વિકાસ પામતી પામતી તેના અભિજ્ઞાનશાકુંતલમમાં પૂર્ણ વિકાસ પામી છે. કાલિદાસ પોતાના નાટકોની કથાને કપોલકલ્પિત નથી બનાવતા. પણ ઇતિહાસ, પુરાણ અથવા પ્રાચીન લોકકથાઓને આધાર બનાવે છે. આ કથામાંથી તેમની વિચારધારા શૃંગાર રસ તરફ અતિ આકર્ષાય છે. નાટ્યપરંપરા અનુસાર પણ નાટ્યના પ્રધાન રસ વીર અને શૃંગાર જ પરિગણિત થયા છે. તે અનુસાર કાલિદાસ શૃંગાર રસને આલંબિને પોતાના નાટકની રચના કરે છે. જે આપણને ત્રણે નાટકમાં દૃગ્ગોચર થાય છે. આ પ્રકારે ઉત્તરોત્તર નાટકોના લેખનમાં મહાકવિની શૈલી વધુ વિકસિત થતા અંતે અભિજ્ઞાન-શાકુંતલમાં સુંદર જીવનના દરેક પરિબળોનો તેમાં સમાવેશ જોવા મળે છે. મહાકવિ કાલિદાસ દ્વારા રચિત કૃતિઓનો અભ્યાસ કરતા લાગે છે કે જાણો મહાકવિ માટે નાટક એ એક કલા થઇ ગઇ હોય અને તે ઉત્તરોત્તર વિકાસ પામી હોય. મહાકવિએ કહ્યું છે કે આ નાટકો લોકોને આનંદ આપવાવાળા અને ચિત્તનું સમારાધન કરવાવાળા છે. તેમાં ત્રૈગુણ્યોદ્ભવ નાનાવિધરસવાળા અને પ્રકૃતિના અકલ્પનીય રૂપને પ્રસ્તુત કરવાવાળા નાટકો ભૂયઃ યશને પ્રાપ્ત થયા છે. મહાકવિ કાલિદાસ દ્વારા રચિત નાટકો માત્ર સહૃદયોને આનંદ કરાવનારા જ નહી પણ જીવન જીવવાનો પથ દર્શાવવાવાળા પણ છે.

Keywords - મહાકવિ કાલિદાસ, નાટક, વીરરસ, શૃંગારરસ, નાટક શૈલી.

About the Sardar Patel University

The great visionary and architect of modern India, Sardar Vallabhbhai Patel, was the source of the genesis of the Sardar Patel University (SPU) in the year of 1955. Started as a rural University for the upliftment of the rural populace. It has emerged as a reputed seat of learning and has created its own niche in the fields of academics and research. The University is NAAC reaccredited with an 'A' grade for the duration 2023 2028. The University campus is spread across the area of around 87acres and has state of the art infrastructural facilities for teaching-learning and research. The university offers 46 PG, 4 UG and 31 doctoral programs through its 27 postgraduate departments, a constituent college and 148 affiliated colleges. More than 4000 students enrol for the study at the university every year. More than 400 PhD students are engaged in research work in the university. Researchers of the university annually publish more than 300 research articles in reputed journals. The university is committed to foster in dynamic ecosystem that supports research and innovation. The university has been granted Rs.3 Crores under the Student Start Up and Innovation Policy (SSIP) 2.0 of the Government of Gujarat. A section-8 company Sardar Patel Startup & Entrepreneurship Council (SPSEC) has been established to promote startups and entrepreneurship among the students and faculties of the university. SPU has some unique features. It has an agro Economic Research Centre (for the states of Gujarat, Rajasthan, Dadra & Nagar Haveli) and a Cost of Cultivation Scheme for Gujarat established by the Ministry of Agriculture, Govt. of India. The university also runs a Community Science Centre funded by GUJCOST, Govt. of Gujarat. SPU has its own Community Radio Station. A Centre for Indian Knowledge System (IKS) has been established recently. Also, SPU was nominated for the International Green University Award 2024 by the Green Mentors Institution, affiliated with ECOSOC of the United Nations. Furthermore, the university has launched a significant event, "Sardar Saga" commemorating the 150th anniversary of Bharat Ratna Shri Sardar Vallabhbhai Patel through a series of creative and vibrant programs throughout the year dedicated to his legacy.