SARDAR PATEL UNIVERSITY
Vallabh Vidyanagar, Gujarat
(Reaccredited with 'A' Grade by NAAC (CGPA 3.25)
Syllabus with effect from the Academic Year 2021-2022

Master of Science – Nano Science & Nano Technology
(M.Sc.) (Nano Science & Nano Technology) Semester –II

Course Code	PS02CNST54	Title of the Course	PRACTICAL – I
Total Credits of the Course	4	Hours per Week	12 hrs

Course Objectives:	To have hand practice of using different semiconductors

Course Content		
Unit	Description	Weightage* (%)
1.	Four probe method Determination of resistivity of Germanium crystal at different temperature and estimation of energy band gap. Determination of specific resistively of discs of arbitrary shape by Van der PAUW method. Determination of reverse saturation current Io and material constant, ideality factor. Determination of temperature coefficient of junction voltage and energy band gap. Study of depletion capacitance and its variation with reverse bias. Study of Hall effect and estimation of Hall coefficient R, carrier density (n) and carier mobility of M. Germanium sample n-type Germanium sample p-type Indian Arsenide (In As) Crystallisation of alkali halide (NaCl) by aqueous solution method. Direct observation of dislocations in alkali halide crystals by etching method. **Note -**Experiments can be added or deleted depending upon current advancements.	100%

Teaching-Learning Methodology	Demonstration/Group discussion/ Panel/Hands on training

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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Make use of different electronic devices used in the labs/industries.
2.	
3.	

Suggested References:	
Sr. No.	References
1.	

On-line resources to be used if available as reference material
On-line Resources

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