PARVATHANENI BRAHMAYYA
SIDDHARTHA COLLEGE OF ARTS & SCIENCE
Autonomous
Siddhartha Nagar, Vijayawada–520010
Re-accredited at 'A+' by the NAAC

CONDENSED MATTER PHYSICS LAB

Offered to : M.Sc.(PHYSICS)	Course Code : 22PH4L1
Course Type : Domain specific elective (DSE)	Course : Condensed Matter Physics Lab
Year of Introduction : 2004	Year of offering : 2022
Year of Revision : 2022	Percentage of Revision : Nil
Semester : IV	Credits : 4
Hours Taught : 60 hrs. per Semester	Max.Time : 3 Hours

Course Description

The main objective of the course is to make the students understand the experiments based on some physical concepts in material science courses.

Course Objectives:

1. to experimentally study some of the fundamental concepts in condensed matter physics
2. To teach some experiments of dielectric constants
3. To understand the different phenomena involved in experiments.
4. To teach experiments of susceptibilty
5. To teach error analysis

Course Outcomes: At the end of this course, students should be able to:

CO1: Conduct experiments on the phenomena learnt in condensed matter physics.

CO2: Explain physical phenomena in the experiments performed.

CO3: Explain the connection between physical laws and their application.

CO4: Do the statistical analysis of the results obtained by the experiment and interpretation of results.

CO5: Understand the physics behind the results and make detailed, full report of the experiment.

CO-POMATRIX								
22PH4L1	**CO-PO**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
	CO1				H		L	M
	CO2				H		L	M
	CO3		H	M			L	M
	CO4				H		L	M
	CO5				H		L	M

Syllabus

PRACTICAL–V

Condensed Matter Physics Lab

(Minimum10experimentsaretobedone)

1. Resistivityofsemiconductorbyfourprobemethod
2. Magnetichysteresislooptracer
3. Coefficientoflinearexpansion
4. G.M.Counter-determinationofdeadtime
5. CompositePiezoelectricOscillator
6. Synthesis/FabricationofCarbonNanotubesbySprayPysolysismethodanditsverificationthroughx-raydiffraction.
7. DielectricConstantsofsolids
8. DielectricConstantandCurieTemperatureofFerroelectricCeramics
9. Measurementofopticalspectrumofanalkaliatom
10. Measurementofopticalspectrumofalkalineearthatoms
11. Energygapofathermistor.
12. CharacteristicsofPhotodiode
13. Synthesisandestimationofbandgapenergyofamorphousmaterials
14. Dielectricconstantofliquids
15. Anytwoonlinevirtuallabexperimentswithinthesyllabushavetobecarriedout(usingMHRDwebresource).