MANGALORE UNIVERSITY

Department of Materials Science

MSc Materials Science

MSP 509: **MATERIALS SCIENCE LAB. – V** (3 Credits)

Objectives of the courses: This laboratory course is designed to impart the hands on experience on the measurement of various properties of different materials covered in the theory courses. This course also exposes the students to various simple measurement techniques. Almost all kinds of materials dealt in theory are covered in the laboratory courses with an emphasis on the understanding of the measurement as well as the material properties. As far as possible, within the constraints of the equipment, the experiments are distributed in the semesters where the theory is taught.

Expected course outcomes: The students should gain an understanding of the techniques used as well as the properties of materials dealt in each of the experiment.

1. Study of junction capacitance and it's variation
2. Electrical conductivity of metals and estimation of Fermi energy
3. Energy gap of CdS thin films
4. Dielectric constant of ferroelectric materials
5. Thickness of thin films
6. Determination of molecular weight by viscosity measurement
7. Functional group analysis of polymer
8. Glass transition temperature
9. Dimension of polymer coil