



**MANGALORE UNIVERSITY**  
**Department of Physics**  
**MSc Physics**

**PHP 510: CONDENSED MATTER PHYSICS - PRACTICALS I**

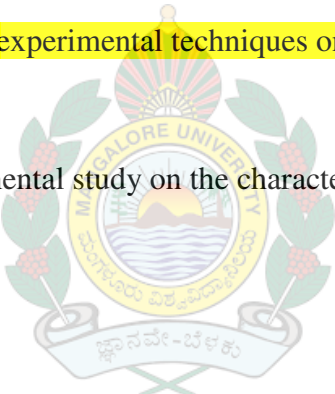
**Course outcome**

CO1 The student will be familiar with analysis of X-ray diffraction pattern, experimental determination of elastic constants of crystals, study the anisotropy in the thermal expansion and thermal conductivity of crystalline solids.

CO2 Student get basics on the experimental study of dielectrics and ferroelectric materials.

CO3 The student study about the experimental techniques on the determination of optical constants of metals.

CO4 They have the basic experimental study on the characteristics of various optoelectronic devices.

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1. X-ray powder photograph
  2. Birefringence of quartz
  3. Elastic constants of crystals
  4. Thermal expansion
  5. Dielectric constant and Curie temperature of Ferroelectric materials
  6. Optical constants of metals
  7. Thermal conductivity of insulators
  8. Lattice vibrations – electrical analog
  9. Characteristic of phototransistors
  10. Estimation of Planks constant using LED  
(Additional experiments may be included)