

## 材料物理性質課程大綱

### Introduction

The electron theory of solid is capable of explaining the optical, magnetic, thermal, as well as the electrical properties of Materials.

Part1.Fundamentals of Electron Theory: Continuum theory/ Classical electron theory/  
Quantum theory

Part2. Electric Property of materials: conductor/Insulator/semiconductor

Part3.Optical Property of materials:Laser/optical communication/window/lens/optical  
coating/solar collector/reflector

Part4. Magnetic Property of materials: electric generator/magnetic lens/motor/  
loudspeakers/transformers/tape recorder  
tape/magnetic disk

Part5. Thermal Property of materials: refrigeration/heating device/heat dissipation  
in LED/heat shield for spacecraft/