

Ceramics and composites

- Crystal structure : Bonding , Crystal and amorphous materials .
- Engineering Ceramic : Al_2O_3 , ZrO_2 , Sic , Si_3N_4 .
- Characterization of ceramic :
 1. Physical properties
 2. Thermal properties
 3. Electrical properties
 4. Magnetic properties
 5. Optical properties
 6. Mechanical properties
- Forming processes [Axial pressing, isostatic pressing (cold and Hot) , Slip casting , Extrusion] .
- Sintering [forces acting on sintering , vapor phase sintering , liquid phase sintering , Crystal growth , Microstructure , Ceramic applications .