AMMR-24: ELECTRONIC MATERIALS FOR INDUSTRY

Course Details:

Dielectric Materials-dielectric constant and polarization, polarization mechanism, linear and nonline dielectric, pyro-piezo,and ferroelectric properties, application magnetization-diamagnctisn paramagnelism, polypararnagnetism, ferro, antiferro, and ferri magntism. Soft and hard magnet materials, permanent magnet and transformers. Carrier statistics in semiconductor, semiconductor materials purification, and crystals growth, epitaxy, CVD and, MBE, Physical vapor deposition (sputtering, evaporation, etc), P-N junction, Schottky & MaS device structures, doping by implantaik and diffusion, ion implantation, patterning, etchlithography, empirical rule, alloy design, very large sea integration (VLSI).

Text Books and Reference:

1. Elements of Materials Science and Engineering, L. H. Van Vlack (Addison-Wesley)
2. Materials Science and Engineering: An Introduction, W. D. Callister, (WILEY)
3. The Science and Engineering of Materials, Donald R. Askeland (Chapman & Hall)
4. Solid State electronic Devices, B.G. Streetman (PHI)