PPE6J003 POLYMERIZATION ENGINEERING

Module I

Industrial methods of polymerization such as a bulk, solution, emulsion, suspension. Layout and arrangement of polymer plant. Stereochemistry of polymers and stereo-specific polymerization. Catalysts-their utility in polymers and stereo-specific polymerizations.
Catalysts-their utility in polymer manufacture, Zieglar-Natta, Metallocene and others.

Module II

Manufacturing processes of basic raw materials and intermediates of synthetic polymers. Production technology, properties and application of important plastics such as polyethylene, polypropylene, polystyrene and polyvinyl chloride.
Brief introduction of copolymers based on the common monomers such as ethylene, vinyl chloride, styrene, acrylates and methacrylates etc.

Module III

Formaldehyde and its reaction products with phenol, urea and melamine. Preparation of moulding powders.

Reference Books :

1. *Principles of Polymerization by George Odian*
2. *Kuran; Witold, Principles of Cordination Polymerization, John Wiley & Sons Ltd., Chishester (2001).*
3. *Polymer Science & Technology of Plastics & Rubbers by P Ghosh*
4. *Polymer Science by Gowriker-Viswanathan-Sreedhar*
5. *Odian; George, Principles of Polymerization, McGraw-Hill Book Co., New York (1970).*
6. *Polymerization Process Modeling, N A Dotson, R Galvan, R L Laurence and M Tirrell, VCH Pub., Ind., 1996*
7. *Reaction Engineering of Step Growth Polymerization, S K Gupta and Anil Kumar, Plenum Press, 1987*