

PPE5J001 PLASTIC WASTE MANAGEMENT AND RECYCLING TECHNOLOGY

Module I

Plastic & environment value additions, global policy, regulations, waste energy management.

Waste treatment of various plastic plants, estimations of power requirement & efficiency of size reduction operation of plastics, environment pollution.

Need for recycling – Sorting and segregation of waste – Plastics identification- Plastics production and composition – Plastics waste – Composition, quantities and disposal alternatives.

Module II

Primary recycling – Equipments for primary recycling. Specific recycling techniques – PE films, PP battery case – Crushing and separation – PET films.

Recycling of plastics from urban waste – rheology, density, mechanical behavior. Secondary recycling Plastics wastes containing paper – hydrolytic treatment – processing methods – processing of mixed plastics waste – household waste – industrial sector.

Module III

Use of recyclable plastics in motor vehicles – recoverable materials – disposal of residuals – recyclable plastic components – virgin and recycled HDPE – Fluorinated and unfluorinated HDPE – fuel tanks. Tertiary recycling – Reactors used – Advantages – Dry method wet method - use of recyclable plastics in automobiles.

Reference Books

1. Plastic Waste Management" Marcel Dekker, New York, 1995.
2. Edited by Nabil Mustafa, Plastic waste management, 1st edition, Marcel Decker, New York,1993
3. John Schiles, Polymer Recycling.Edited by Dr.J.S.Anand, Recyclic & Plastics Waste Management, CIPET, Journal of India, 1997.