

**PPE4I103 ADDITIVES AND COMPOUNDING**

**Additives for plastics**

Fillers-Antioxidants-Thermal-Stabilizers,Lubricants-Plasticizers,Toughening-agents-Colourants- Fire retardants-Coupling agents-blowing-agents-Ultraviolet stabilizer-Antistatic agents-Anti blockingagents-Slipandantislipagents-processingaids-mouldreleasingagents.

**Compounding** - Selection of polymers and compounding-ingredients-general objectives- possibilitiesand limitation of additivesintopolymermatrices.

**Mixing and mixing equipments**

Machineconstruction-specifications-temperaturecontrolsystem-operatingcharacteristics- housekeeping and maintenance of compounding machines. Casestudiesonpreferenceofoneplasticstootherandco-relationofpropertiesofconventional materialsandblendsandalloys-casestudiesonapplicationofblendsandalloys.

**Text Book**

1. *polymer additives by muller*

**Reference Books**

1. *Al – Malaika; S. Golovoy; A and Wilkie (Eds), Chemistry and Technology of Polymer Additives, Black well Science Ltd, Oxford (1999)*
2. *Matthews; F.L.and Rawlings; R.D, Composite Materials, Engineering and Science Chairman and Hall, London (1994)*
3. *Plastics Testing Technology Hand Books by Vishu Shah*
4. *Hand Book of Plastics Test Methods by Brown R.P*
5. *Mascia; L.,The Role of Additives in Plastics, Edward Arnold Publishers Ltd., U. K. (1974).*
6. *Murphy; John, Additives for Plastics Handbook, 2ndEdition, Elsevier Advanced Technology, Oxford.*

**ADDITIVE AND COMPOUNDING LAB**

1. Compounding of thermoplastics plastics:
  - a) Physical blending – ribbon blender, tumbler, high speed mixer.
  - b) Melt mixing – hot two roll mill, extruder.
2. Compounding of Thermoset resins – Phenol formaldehyde molding powders, Melamin- formaldehyde molding powders, dough molding compounds.
3. Compounding and Moulding of Rubbers
  - a) NR, SBR, CR, BR and NBR
4. Compression moulding of phenolic molding powders and DMC& SMC
5. Injection moulding of thermoplastics.
6. Blow moulded products.