E5 LATEX AND FOAM TECHNOLOGY

Unit –I

Introduction to NR & Synthetic Lattices - Molecular and physical structure; vulcanized latex, Artificial dispersion, SBR, Nitrile, Neoprene, Thiokol, High styrene resin, PVAc, PVC, Acrylic, Carboxylated SBR & vinyl pyridine latex.

Unit – II

Compounding of Latex - Methods of manufacture and machineries, stabilization of dispersion. Micro and nano fillers, vulcanizing ingredients, Dispersing agents Stabilizing agents. Compounding for Neoprene latex.

Unit – III

Testing on Latex - Mechanical stability, pH, particle size of dispersion and size distribution, chemical stability, state of cure, DRC, TSC.

Foam technology - Urethane foam, Cold foam, integral skin foam, Semi rigid foam, Rigid PU foam etc. Foam testing, concepts of micro-cellular structure, closed and open cell structures. Industrial uses of latex and foam technologies.

Unit-IV

Manufacture of Latex Based Products - Latex thread, Dipped goods, casting spraying, spreading, adhesives, rubberized coir, rubberized hair, Micro-porous Ebonite, Can sealing, Latex cements, Latex foam, Latex laminated paper & boards, Latex coated fabrics & cords, , Neoprene latex coated paper, latex mixed with cement, Emulsion paints, Electro deposition of latex.

Reference Books:

1. Latex Foam Rubber, E.W. Madge, , MacLaren and Sons Ltd., London, 1962.
2. Polymeric Foams and Foam Technology, 2nd Ed., Daniel Klempner and Vahid Sendijarevic (eds.), Hanser Gardner, 2004.
3. Basic Elastomer Technology, Edited by K.C. Baranwal and H.L. Stephens, Rubber Division, Published by American Chemical Society.