

NANOCOMPOSITES

OBJECTIVE: The course covers the fundamentals of different structural composite constitutions and structural properties of CNTs apart from various synthesis and characterization methods and structural applications.

Fundamentals of composite product designs-chopped fiber and milled fiber composites and comparison.

Introduction to continuous reinforced composites-Dispersion strengthened composites-mechanical alloying

Nano composite materials and applications: Natural nanocomposites-Polymer, metal and ceramic matrices and reinforcements-Whisker Reinforced Composites

Carbon Nano structures :The Essentials - Understanding Nano Science and Nanotechnology by types of Carbon Nano tubes, growth mechanisms Mechanical reinforcements, Solid Disordered carbon Nanostructures, Nano structured crystals, Graphene, carbon nano fibers. Carbon nano tubes and applications, characterization methods-Vibrational, Mechanical Properties of CNTs,

Basic concepts in Finite Element modeling of nanocomposites - Evaluation of the Mechanical Properties of Carbon Nanotube Based Composites by Finite Element Analysis.

Reference books

1. Introduction to Nanotechnology by Charles P. Poole Jr and Frank J.Owens Wiley India Pvt Ltd.
2. Encyclopaedia of Nanotechnology by M.Balakrishna rao and K.Krishna Reddy, Vol I to X Campus books.
3. Encyclopedia of Nanotechnology by HS Nalwa
4. Nanotechnology - science, innovation and opportunity by Lynn E.Foster. Prentice Hall Pearson education.
5. Nano:The Essentials - Understanding Nano Science and Nanotechnology by T.Pradeep; Tata Mc.Graw Hill Pearson education.

Mrs. B.M
for sende
approval.
10/3/15

Mrs R.B

Student: C. K. Kaishnadasan

R.No: 411 91 3052