NPTEL Video Course - Metallurgy and Material Science - NOC:Carbon Materials and Manufacturing

Subject Co-ordinator - Prof. Swati Sharma

Co-ordinating Institute - IIT - Madras

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 30 - Carbon Black: Introduction and Properties
Lecture 31 - Carbon Black: Industrial Manufacturing
Lecture 32 - Carbon Fiber: Introduction and Properties
Lecture 33 - Melt Spinning of Petroleum Pitches
Lecture 34 - Electrospinning and Viscoelasticity
Lecture 35 - Carbonization of Polyacrylonitrile (PAN) Fibers
Lecture 36 - Mechanical Property Testing Methods for Carbon Fibers
Lecture 37 - Defects in Carbon Fibers
Lecture 38 - Introduction to Carbon Fiber Reinforced Plastic (CFRP)
Lecture 39 - Machining of Carbon Fiber Reinforced Plastic
Lecture 40 - Carbon/Carbon Composite
Lecture 41 - Carbon/Metal and Carbon/Concrete Composites: Manufacture and Properties
Lecture 42 - Graphene: Introduction and Crystal Structure
Lecture 43 - Graphene: History and Nomenclature
Lecture 44 - Chemical Vapor Deposition of Graphene - I
Lecture 45 - Chemical Vapor Deposition of Graphene - II
Lecture 46 - Defects in Graphene and the (n,m) Notations
Lecture 47 - Carbon Nanotube: Introduction and Properties
Lecture 48 - Vapor Phase Growth of Carbon Nanotube
Lecture 49 - Vapor Deposited Diamond
Lecture 50 - Diamond Like Carbon
Lecture 51 - X-Ray Diffraction Analysis of Carbon Materials
Lecture 52 - Raman Spectroscopy of Carbon Materials
Lecture 53 - Transmission Electron Microscopy of Carbon Materials
Lecture 54 - Surface Area Analysis of Carbon Materials
Lecture 55 - Numerical Problems: Carbon Manufacturing and Characterization
Lecture 56 - Large Scale Industrial Applications of Carbon Materials
Lecture 57 - Micro and Nano Scale Applications of Carbon Materials: Rigid and flexible carbon devices
Lecture 58 - Supply Chain of Industrial Carbons
Lecture 59 - Summary of NPTEL Course on Carbon Materials and Manufacturing