Tata Institute of Fundamental Research

Homi Bhabha Road, Colaba, Mumbai, INDIA, 400005

ASET Colloquium

Materials characterization using different X-ray scattering techniques

by Mr. Mahesh Gokhale (DCMPMS, TIFR Mumbai)

Several techniques based on X-ray scattering are immensely useful for materials characterization. High resolution x-ray diffraction (XRD) is a standard technique for determination of structural information for crystalline materials. While “powder diffraction” is the most popular method, there are several other XRD measurements including pole-figures, asymmetric scans, in-plane diffraction, reciprocal space maps that can provide detailed information about the lattice spacings, strain, structural anisotropy, mosaicity etc. Apart from diffraction, X-ray reflectivity from specular surfaces and measurements of diffuse x-ray scattering are also powerful probes for materials characterization, especially for investigations of thin films and buried layers. I will introduce some basic x-ray characterization techniques, and illustrate it with examples from work in our group at TIFR.

Date & Time: Friday, 8th December 2023, 4 pm (AG-66, TIFR Mumbai)
YT Live: https://youtube.com/live/38dxfpA3ATE?feature=share