



Module 4:

Neutron Scattering for Structure at Mesoscopic Length Scale: Small Angle Neutron scattering and Neutron Reflectometry - II

Dr. Surendra Singh

MODULE OUTLINE:

Introduction to Polarized Neutron Reflectometry, Neutron Reflectometry for magnetic thin films, Application of the technique, Data Analysis

ABOUT INSTRUCTOR:

Dr. Surendra Singh is from Physics discipline of 43rd batch of training school and he Joined SSPD, BARC in 2000. He received his M. Sc. (physics) from HNB Garhwal university, Uttarakhand and his Ph. D. from Mumbai University in 2008. He has worked as a postdoctoral researcher at Los Alamos National Laboratory, USA during 2010-2012. He was instrumental in setting up of the polarized neutron reflectometer at Dhruva reactor, BARC for studying the magnetic properties of heterostructures and superlattices. His research involved a variety of topics in thin films and multilayers of technological applications, strongly correlated complex oxide heterostructures, and investigation of interface magnetic properties using polarized neutron reflectivity as a primary technique. He has authored/co-authored over 85 research publications in high impact international journals.

MODULE PLAN:

- 1. Introduction to Neutron and x-ray Reflectometry - 1 Lecture**
- 2. Reflectometry facility and data analysis - 1 Lecture**
- 3. Investigation of depth dependent magnetic structure using polarized neutron reflectivity - 2 Lectures**
- 4. Tutorial - 1 Lecture**