



Module 2: Magnetic Neutron Diffraction - II

Prof. Anil Jain

MODULE OUTLINE:

Diffraction from polycrystalline materials for physical and magnetic structure using thermal neutrons. Magnetic neutron diffraction using polarized and un-polarized neutrons.

ABOUT INSTRUCTOR:

Dr. Anil Jain joined the Solid State Physics Division, Bhabha Atomic Reserach Centre, Mumbai, after graduating from the 47th Batch of BARC Training School. He obtained his doctorate from Homi Bhabha National Institute, Mumbai, India in 2013. During 2013-15, he was a post-doctoral fellow at Max Planck Institute for Solid State Research, Stuttgart, Germany. He is an Assistant Professor at Homi Bhabha National Institute (HBNI), Mumbai. Dr. Jain is an expert in neutron diffraction using powder and single crystal samples. He has also worked on dynamics in magnetic systems. He observed Higgs mode in a two dimensional antiferromagnet that was reported in Nature (Physics). His recent research focuses on Spin Correlations in Low-dimensional Quantum Magnets using neutron scattering. He is a recipient of several awards for his work.

MODULE PLAN:

- 1. Determination of magnetic structures by neutron diffraction - (ii) - 1 Lecture**
- 2. Elastic and Inelastic Magnetic Neutron Scattering - 1 Lecture**
- 3. Tutorial - 2 Lectures**
- 4. Polarized Neutron - 1 Lecture**
- 5. Neutron Depolarization in Magnetic Materials - 1 Lecture**
- 6. Fluctuation Dissipation Theorem and Dynamic correlation function - 1 Lecture**
- 7. Neutron scattering from spin waves - 1 Lecture**