Lecture series on “Neutron and Rheology”

By Mitsuhiro Shibayama

Professor,

Director, Neutron Science Laboratory, Institute for Solid State Physics

The University of Tokyo

I will deliver a series of lectures on Neutron and Rheology. The titles of the lectures are as follows.

Part 1. Structural Analyses of Polymers by Small Angle Neutron Scattering

Part 2. Contrast Variation SANS - The basics and applications -

Part 3. Rheo-SANS Studies on Structure Evolution in Polymer-particle Aqueous Solutions

I will deliver the Part 1 in the morning session of July 1, and Part 2 and 2 in the afternoon.

Part I deals with the basics of neutron, neutron scattering, followed by scattering theories of polymeric systems and applications. In Part 2, I introduce the so-called contrast-variation technique in small angle neutron scattering, which is a powerful tool to investigate the structure of multi-component systems. In Part 3, I demonstrate Rheo-SANS, which allows us to study both the nano-structure and rheological properties of various systems, such as micellar solutions, gels, etc.