Announcement

Physics of Scattering (Light, X-ray and Neutron)
Dr. Masoud Amirkhani

Description
The course offers insight into basic knowledge and understanding of different scattering methods used for studying structure and dynamics of soft matter in nanometer scale. We particularly focus on the colloidal dispersions such as the core-shell particles, polymeric system and mixture of nanoparticles and polymer. After following this course the student will have a detailed understanding of fundamental and application aspects of several scattering methods.

Content
The course begins with basic scattering theory and followed by derivation of scattering equation for a dispersion of spherical colloidal particles. Then different experimental methods, such as small angle neutron scattering (SANS), small angle X-ray scattering (SAXS), and static and dynamic light scattering will be discussed. You also will learn the limitation and advantage of each technique and the way that the experiment must be designed in order to get the most useful information from different type of samples.

Literatur
1. Methods of X ray and Neutron Scattering in Polymer Science
   Ryong-Joon Roe
2. Small angle x-ray scattering
   O. Glatter, O. Kratky
3. Dynamic light scattering: with applications to chemistry, biology, and physics
   By Bruce J. Berne, Robert Pecora

Additional information
Course type: lecture
Attendance time: 2 hours per week
3 ECTS credits
Presentation or written examination (depends on the number of attending students).

Date
Tuesday, 16 – 18, O25/169
Begin: October 16th, 2012

Instructor
Dr. Masoud Amirkhani (Institute of Experimental Physics)

Target audience
Master students in Physics, Physics and Management or Advanced Materials.