

LANSCCE Neutron Scattering School

Phase Transformations Studied With Neutron Scattering

July 7-17, 2009

Los Alamos National Laboratory, Los Alamos, New Mexico USA

With the construction of the world's most powerful neutron source, the Spallation Neutron Source, the future for neutron scattering is bright in the U.S. Added to this is the importance of phase transformation in science and technology. Considering that one of the key strengths of neutron scattering is to probe materials under stress, pressure, magnetic fields, or elevated temperatures, an education in neutron scattering to study phase transformations has never been more timely.

For the LANSCCE neutron school on phase transformations, lectures will be presented by world recognized experts in the field and will span all levels from introductory concepts (neutron scattering basics, thermodynamics and crystallography of phase transformations) to phase transformations specific to certain classes of materials (minerals, ceramics, metals, amorphous materials). Real-life applications of neutron scattering will be presented by leading researchers, illustrating how neutron scattering provides insight into phase transformations.

The lectures will be complemented by hands-on experiments using Lujan neutron instruments. Data involving high and low temperature, pressure, and stress-induced phase transformations will be analyzed and students will leave the school with the knowledge to identify phase transformation related problems that can be solved with neutron scattering.

The school is limited to 30 participants who will be selected from their application materials including reference letters and a statement of "why neutron scattering could be (is) relevant to my research." Applicants should be full time graduate students or postdocs. Early career industrial researchers and advanced undergraduate students are also invited to apply. Applicants need not be U.S. citizens; however, preference will be given to students attending U.S. universities.

The LANSCCE neutron scattering school is supported by the National Science Foundation and the Department of Energy-Office of Basic Energy Sciences. The school is tuition-free and assistance for travel, lodging and subsistence is available.

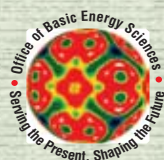
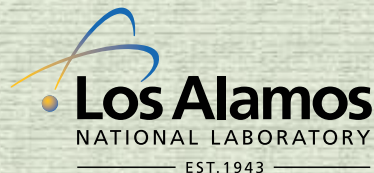
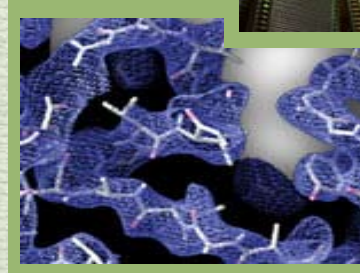
Confirmed Lecturers:

Chris Benmore, Argonne National Laboratory
Don Brown, Los Alamos Neutron Science Center
Michael Carpenter, University of Cambridge
Luke Daemen, Los Alamos Neutron Science Center
Bob Field, Los Alamos National Laboratory
Ken Herwig, Spallation Neutron Source
Rex Hjelm, Los Alamos Neutron Science Center
Kanani Lee, Yale University
Robert McQueeney, Ames Laboratory
Scott Misture, Alfred University

Alexandra Navrotsky, University of California, Davis
Thomas Proffen, Los Alamos Neutron Science Center
Simon Redfern, University of Cambridge
James Rhyne, Los Alamos Neutron Science Center
Art Schultz, Argonne National Laboratory
Stephen Shapiro, Brookhaven National Laboratory
Alexis Stichler, University of Wyoming
Sven Vogel, Los Alamos Neutron Science Center
Bjoern Winkler, Goethe University Frankfurt/ Germany

Chair: **Sven Vogel** sven@lanl.gov School Director: **Jim Rhyne** rhyne@lanl.gov Admin: **Lisa Padilla** ljp@lanl.gov

Apply on-line at: www.lansce.lanl.gov/neutronschool Application deadline: April 13, 2009



The LANSCCE neutron scattering school is supported by the National Science Foundation and the Department of Energy. The school is tuition-free and assistance for travel, lodging and subsistence is available.