

Annual Report 2010 – Neutron Scattering SIG

The neutron scattering SIG has sponsored a number of sessions in the 2010 ACA meeting, including: “Local Structure” chaired by Thomas Proffen; “Functional Materials” chaired by Jason Hodges; “Incommensurately Modulated Materials” chaired by Olivier Gourdon (all co-sponsored by the Powder and Materials SIGs). Also the sessions: “What can your beamlines offer you?” chaired by Ashfia Huq and co-sponsored by the synchrotron SIG; “Precipitates and voids in advanced materials” chaired by Ken Littrell and co-sponsored by SAS, Materials and Industrial SIGs; “Mechanisms of phase transitions” chaired by Branton Campbell and co-sponsored by the Materials, Powder and SAS SIGS; “Powder Diffraction” chaired by Peter Chupas and co-sponsored by Powder and Materials SIGS. The “Transactions” symposium on the first element was co-sponsored by the Neutron SIG.

A number of sessions and session chairs have been proposed for the ACA 2011 meeting, determined in a joint meeting with the Materials and Powder SIGs. These sessions are as follows:

- 1) In-Situ diffraction studies of materials.
- 2) Energy materials/materials for a sustainable future. (Full day session)
- 3) Crystallography and the search for new materials.
- 4) Local structure and diffuse scattering.
- 5) Diffraction studies of Industrial Materials.
- 6) The evolution of software for powder diffraction data analysis. In recognition of Lachlan Cranswick.
- 7) Diffraction studies of magnetic materials.
- 8) Earth materials.
- 9) Resonant scattering studies of materials.
- 10) What can a beam line do for you?

Several workshop ideas were considered, and a workshop on symmetry mode analysis for the 2011 ACA meeting was proposed that will be organized by Branton Campbell.

The Neutron Scattering SIG Etter Student Lecture winner was given in the “Local Structure” session by Stacy Smith of BYU, for work on synthesizing metal oxide nanoparticles and characterizing nanoparticle structure using advanced crystallographic methods.

Christina Hoffmann was nominated to be Chair of the neutron SIG at the 2011 ACA meeting in New Orleans. A nominating committee to determine candidates for the next neutron SIG chair was created, consisting of Ian Swainson and Bryan Chakoumakos.

Several advances in neutron scattering capabilities over the past year must be recognized, including the availability of advanced powder and single crystal scattering capabilities at the SNS. SNAP, POWGEN, TOPAZ, and VULCAN are all accepting user proposals to service the crystallographic community. There are now 13 operating instruments at the SNS, 6 in the user program and 7 in commissioning. EQ-SANS will become part of the user program in the fall. The IMAGINE beamline at HFIR has received funding, and the new four-circle single crystal diffractometer and powder diffractometer are operational. Furthermore, we note that the single crystal diffractometer was moved from the IPNS to LANSCE, and is open to proposals.

It is with much sadness that we remember the loss of Lachlan Cranswick over this past year. He was an invaluable member of the crystallography community. His loss is felt personally by a great many in the scattering community. His passing has been remembered at the ACNS in Ottawa, and discussed in ACA Reflexions. As well, we intend to hold a session at the next ACA meeting, which will cover software methods in powder diffraction, in consideration of his well known involvement in the ccp14 project.

Craig Bridges