

Neutron Sciences Progress at Oak Ridge National Laboratory September 2007

Summary

- HFIR Cycle 411 will begin November 14.
- SNS neutron operations will begin November 15.
- The next call for proposals for the HFIR and SNS neutron scattering facilities will be from December 10, 2007, to January 18, 2008.
- ORNL Users Week was very successful with over 360 attendees at plenary, breakout, and poster sessions for ORNL's BES facilities – Center for Nanophase Materials Sciences, High Flux Isotope Reactor, Shared Research Equipment facility, and the Spallation Neutron Source.
- The HFIR Restart issue of *The Neutron Pulse* newsletter is available at http://neutrons.ornl.gov/pubs/neutron_pulse_2007_vol8_no2_hfir.pdf.
- Ian S. Anderson was appointed Associate Laboratory Director for the Neutron Sciences Directorate.

Instruments and Users

- The first detector module for the VULCAN diffractometer (SNS BL7) has been received. Five more modules will complete the baseline version of VULCAN.



- A laser tracker and SScanSS software were successfully used for the first time at the Neutron Residual Stress Facility beamline (NRSF2, HFIR HB-2B) for sample alignment during user experiments.
- The Kirkpatrick-Baez focusing optic, designed for Spallation Neutrons and Pressure Diffractometer (SNAP, SNS BL 3), was assembled and tested at the Institut Laue-Langevin, and achieved 105 μm beam focused from ~ 3 mm.
- Preliminary design work has established the instrument footprint for IMAGINE, the quasi-Laue single-crystal diffractometer for the HFIR cold guide hall. The Letter of Intent is in preparation for submission to the Neutron Scattering Science Advisory Committee meeting in November 2007. For more information about this instrument and the Letter of Intent, contact Flora Meilleur, flora_meilleur@ncsu.edu or Dean Myles, mylesda@ornl.gov.

ORNL Users Week, October 8-11, 2007

- This meeting focused on the scientific resources of four ORNL user facilities funded by the DOE Office of Basic Energy Sciences: Spallation Neutron Source, High Flux Isotope Reactor, Center for Nanophase Materials Sciences, and the Shared Research Equipment program.
- Of the 78 institutions represented, 55 were colleges and universities. The 367 registrants came from 32 states, the District of Columbia, and 7 foreign countries; 36% registered for nanoscience, 28% for neutrons, and 36% for the combined sessions. There were more than 200 registrations for 9 tutorials.
- Current and prospective users became acquainted with the research capabilities of the user facilities through presentations, tours, and workshops, and they were introduced to the user proposal process.
- Talks and photos are at <http://neutrons.ornl.gov/workshops/users2007/index.shtml>.



Employment Opportunities

The following positions are in the Neutron Sciences Directorate or are related to neutron scattering: Click on “View Open Positions” at <http://jobs.ornl.gov/> for additional details

- Clifford G. Shull Fellowship Program, ID 2603
- SNS Instrument Development Fellowship, ID 2602
- SNS Laser Scientist, ID 2558
- SNS HFIR Instrument Support Manager, ID 2410
- **Neutron Scattering Postdoctoral Fellowship Positions with ORNL through Oak Ridge Associated Universities** [description available at <http://www.ornl.gov/orise/edu/ornl/postneeds.htm>):
 - Neutron Scattering Postdoctoral Research Fellow [magnetic nanoparticles] [ORNL08-08-NSSD]
 - Neutron Scattering Postdoctoral Research Fellow [Macromolecular diffractometer] [ORNL07-82-NSSD]
 - Neutron Scattering Postdoctoral Research Fellow [EQ-SANS] [ORNL07-72-NSSD]
 - Beam Instrumentation Post-Doc [ORNL07-64-NSD]
 - Neutron Scattering Postdoctoral Fellowship [dynamic nuclear polarization] [ORNL07-61-NSSD]
 - Control System Programmer [ORNL07-32-SNS]
- **ORNL Fellowships**
 - **Clifford G. Shull Fellowship** – The goal of the Shull Fellowship is to attract new scientific talent to ORNL for the development of its neutron science program. We are looking for candidates with exceptional ability who are capable of developing innovative research programs and who show the promise of outstanding science leadership. **Applications will be accepted until January 15, 2008; however, for full consideration applications should be received by December 31, 2007.** For additional information about the Fellowship, see <http://neutrons.ornl.gov/shullfellowship/> or contact Bob Martin at martinrg@ornl.gov.
 - **Instrument Development Fellowship** - This fellowship opportunity is for the development of novel neutron instrumentation and instrument components to be used for neutron science at ORNL or other U. S. neutron centers. For additional information, see the website at http://neutrons.ornl.gov/jobs/inst_dev_fellow_071004.pdf. **Application deadline is November 30, 2007.** For more information, contact Bob Martin at martinrg@ornl.gov.

Operations

- HFIR will resume operation in FY2008 on November 14, 2007, for Cycle 411 following plant reliability /instrument upgrades. This will begin a series of six operating cycles through the remainder of the fiscal year. Each cycle lasts 23–25 days.
- SNS will resume neutron production November 15, and will continue on its planned ramp to higher power and increased reliability.

Future meetings of interest to SNS and HFIR users

- Materials Research Society Fall Meeting, November 26-30, 2007, Boston, MA, http://www.mrs.org/s_mrs/sec.asp?CID=4749&DID=164574

- American Conference on Neutron Scattering, May 11-15, 2008, Eldorado Hotel, Santa Fe, NM.
<http://www.lansce.lanl.gov/acns2008/index.html>
- American Crystallographic Association, *Annual Meeting*, May 31-June 5, 2008, Knoxville, TN,
- International Conference on Neutron Scattering, May 3-7, 2009, Knoxville, TN.
- 2009 annual meeting of the DOE Experimental Program to Stimulate Competitive Research (DOE EPSCoR), proposed for Oak Ridge, July 2009.