

Solicitations and Partners

Mary Catherine Thelen
Program Administrator

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Solicitations – What's In It for You?

- Free Research – irradiation/PIE costs born by User Facility
- Collaborations – an opportunity to work with INL or partner facility staff
- Students – internship opportunities at INL, experiment opportunities for hands-on learning, assistance in student support
- Facilities – INL and partner facility capabilities continue to grow (LANSCE, HFIR, NRAD)



ATR NSUF offers universities, national laboratories and industry the chance to become leaders in the Nuclear Renaissance

Fiscal Year 2010 Solicitations

What is the Same?

Open solicitation with two closing dates

What has Changed?

Rapid Turnaround Experiments

Opportunities for non-university proposals

New-User Experiments

Fiscal Year 2010 Solicitations – What's the Same



Continued with two calls for irradiation, PIE-only and APS proposals:

Fall Fiscal Year 2010

- Fall window opened in June of 2009
- Last day to submit proposals October 15, 2009
- Announcement of awards January 21, 2010
- Received 11 Proposals - Awarded 3

Spring Fiscal Year 2010

- Spring 2010 submission window opened December 7, 2009
- Last day to submit proposals April 5, 2010
- Received 14 proposals
- Announcement of awards June 7, 2010

Experiments using Synchrotron Radiation at the Advanced Photon Source

- Proposed research for use of the Materials Research Collaborative Access Team (MRCAT) beam line, operated by Illinois Institute of Technology and located in the Advanced Photon Source Facility at Argonne National Laboratory.
- Call opened June, 2009, and closed in late September
- Call resulted in the award of 4 experiments – awarded December, 2009
- Experiments offered include x-ray diffraction (XRD), x-ray absorption (XAS), x-ray fluorescence (XRF), and 5 μm spot size fluorescence microscopy.

Proposals for research utilizing MRCAT are accepted from accredited U.S. universities and colleges, DOE-national laboratories, or industry researchers.

Fiscal Year 2010 Solicitations – What's Changed

New-User Experiments

- New-User Experiments are designed to help university researchers, inexperienced in reactor-based testing, learn the intricacies of designing and conducting an in-reactor test.
- The material to be irradiated in the capsule will be chosen by the NSUF staff.
- An experiment can be initiated when 3-5 teams have requested participation. Universities share in the design and approval of a capsule experiment.
- Each team selected for participating in the experiment will have an opportunity to follow the experiment design process, through the samples being inserted into the reactor, and then PIE of the materials.

Current New-User Experiment

- 8 universities participating – Drexel; Boise State; Rensselaer Polytechnic Institute Texas A&M; University of Texas Arlington; University of Nevada, Las Vegas and Reno; University of Utah
- 17 total faculty and student participants
- 3 capsule experiments – concrete, instrumentation and stress relaxation

Rapid Turnaround Experiments

Rapid Turnaround Projects are experiments that can be performed quickly (~ 2 months or less) and are low in cost.

- These projects will be performed at either the INL or one of the ATR NSUF partner facilities.
- Awards will be made on a first come basis with proposals receiving a High Priority in the review process given first priority. It is anticipated that up to 6 awards will be made in FY 2010 depending on the availability of funding.
- Examples of rapid turnaround experiments could include examination of a limited number of samples from the PIE library, or use of a partner facility ion beam or neutron scattering facility.
- The NSUF staff will review each rapid turnaround proposal for appropriateness in this section of the call. If a proposal is determined to be a large project, it will be moved to the general call and the proposer will be notified.

Proposals for Rapid Turnaround Experiments are accepted from accredited U.S. universities and colleges, DOE-national laboratories, or industry researchers.

Current ATR NSUF Projects

FY 2010 Reactor Experiments			
Institution	ATR Position or Other Facility	Scheduled Insertion Date	Scheduled Removal Date
University of California, Berkeley	MIT	November, 2010	
Idaho State University	ATR	February, 2011	
University of Nevada, Las Vegas	ATR-C	January 2011	
FY 2009 Reactor Experiments			
Institution	ATR Position or Other Facility	Scheduled Insertion Date	Scheduled Removal Date
Massachusetts Institute of Technology	MIT Reactor	Various	Various
University of California, Santa Barbara	ATR	October, 2010	October, 2011
Utah State University	ATR	May 2010	February, 2011
Idaho State University	ATR-C	May 2010	August, 2010
Drexel University	ATR	October, 2010	October, 2011

Current ATR NSUF Projects

FY 2008 Reactor Experiments			
Institution	ATR Position or Other Facility	Scheduled Insertion Date	Scheduled Removal Date
Colorado School of Mines	MIT Reactor	Various – Spring 2009	Various – Spring/Summer 2009
University of California, Santa Barbara	ATR	August. 2009	August , 2010
North Carolina State University	ATR	February, 2009	Nov 2009/Jan 2010
University of Illinois	ATR	August 2009	December, 2010
University of Florida	ATR	February, 2009	April, 2010
University of Wisconsin	ATR	August, 2008	Sept 2009/Oct 2010

Current ATR NSUF Projects

FY 2009 Post Irradiation Examination Experiments		
Institution	ATR Position or Other Facility	Analysis Dates
University of Wisconsin	University of Wisconsin	Various - 2010
FY 2010 Post Irradiation Examination Experiments		
Institution	ATR Position or Other Facility	Analysis Dates
Argonne National Laboratory	Advanced Photon Source	December, 2009
Illinois Institute of Technology	Advanced Photon Source	December, 2009
Idaho National Laboratory	Advanced Photon Source	April, 2010
Los Alamos National Laboratory	Advanced Photon Source	Summer, 2010
Oak Ridge National Laboratory	University of Michigan Ion Beam Lab	TBD

Partnerships – A Foundation for Growth

Partnerships bring additional capabilities to the ATR NSUF, offer collaborative opportunities beyond the INL and form a foundation for nuclear research that reaches across the U.S.

Fiscal Year 2010 has seen continued growth with the addition of two new partners and others lining up to become future partners

Rapid Turnaround Experiments are an ideal venue for these kinds of collaborative endeavors

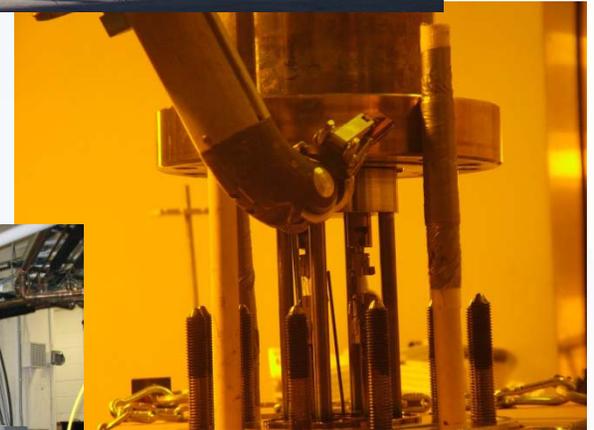


Partner Institutions

MIT – 5 MW test reactor with 27 fuel element positions and 3 positions for in-core experiments.

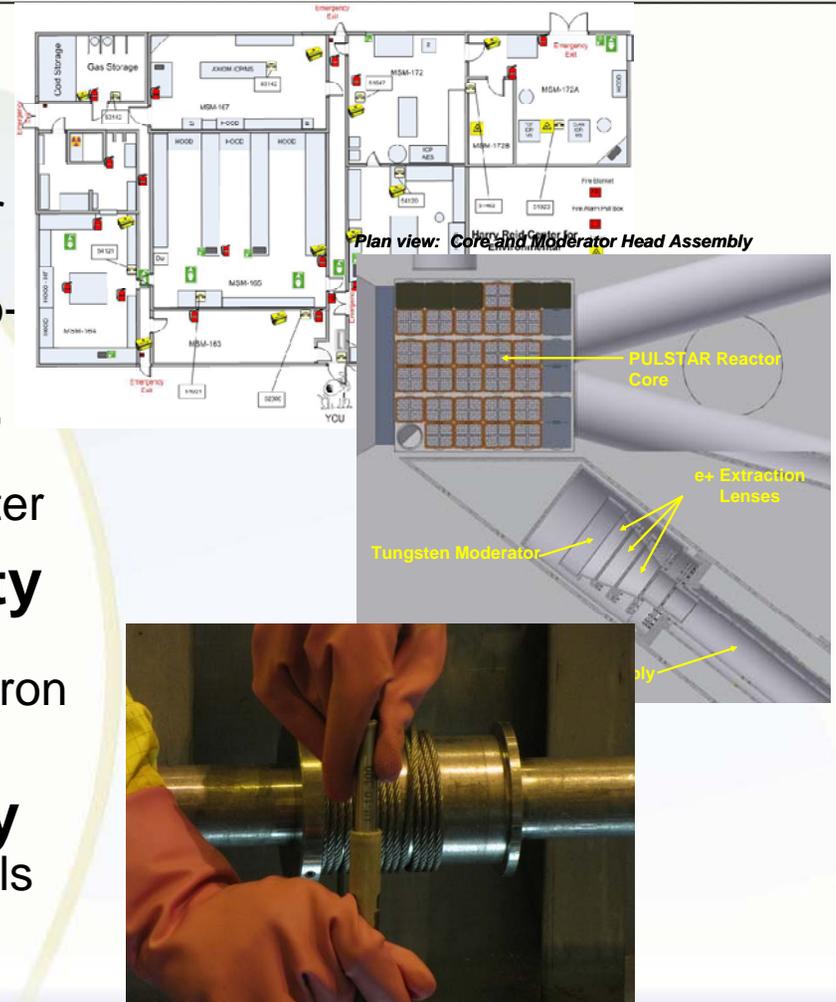
University of Michigan – Ion Beam Laboratory and Irradiated Materials Complex

University of Wisconsin – Characterization Laboratory for Irradiated Materials (includes Accelerator Ion Beam and Electron Microscopy Laboratory)



Partner Institutions

- University of Nevada, Las Vegas** – Radiochemistry Laboratory, Metallographic Microscope, X-Ray Powder Diffraction, Rietveld Analysis, Scanning Electron Microscopy, Electron Probe Micro-Analyzer (EPMA), Analytical Transmission Electron Microscopy, X-Ray Fluorescence, PANalytical Axios Sequential Wavelength-dispersive X-ray Fluorescence Spectrometer
- North Carolina State University**
 Pulsar reactor, and Neutron Powder Diffraction, Neutron Imaging, Intense Positron Source facilities.
- Illinois Institute of Technology**
 Synchrotron Radiation utilizing the Materials Research Collaborative Access Team (MRCAT) at the Advanced Photon Source



Partner Institutions

Potential New Partners include:

Los Alamos Neutron Science Center (LANSCE) – Lujan Scattering Center

High Flux Isotope Reactor (HFIR) – In-vessel facilities, gamma irradiation facility, neutron activation analysis facility, and a number of PIE facilities.

Conclusions

Fiscal Year 2010 has been a year of Growth for ATR NSUF:

Opportunities for experimenters grew to include allowing non-university participation on some kinds of research

Rapid Turnaround and APS/MRCAT experiments provide the opportunity for quick access to research results

New User experiments offer the opportunity to participate in a full irradiation experiment

Partner facilities continue to be added increasing capabilities offered and the opportunity for cross-fertilization of nuclear science.



For a list of current research projects, access to the solicitation site, and Information on partners, please see the ATR NSUF website at <http://atrnsuf.inl.gov>