

Department of Energy Nuclear Science User Facilities Awards 17 Rapid Turnaround Research Proposals

IDAHO FALLS -- The U.S. Department of Energy (DOE) Nuclear Science User Facilities (NSUF) has selected 17 new rapid turnaround experiment (RTE) projects, totaling up to \$850,000. These projects will advance research in nuclear fuels and help extend the lifetime of structural components in nuclear systems.

The NSUF, first established at Idaho National Laboratory (INL), is the nation's only designated nuclear energy user facility. NSUF provides research teams with no-cost access to reactor, post-irradiation examination, high performance computing, and beamline capabilities at a diverse mix of affiliated partner facilities in university, national laboratory and industry institutions across the country.

NSUF competitively selected the 17 RTE projects from high-quality proposals submitted during the solicitation period. Each proposal was evaluated based on a variety of factors including feasibility, programmatic relevance and scientific-technical merit. All reviews were then passed through a panel committee before the proposals were placed in their final ranking positions.

Research teams from Massachusetts Institute of Technology, Idaho National Laboratory, Florida State University, Illinois Institute of Technology, University of Florida, Michigan State University, University of Michigan, Argonne National Laboratory, Boise State University and Oak Ridge National Laboratory will work with the NSUF on their proposed experiments. The newly awarded RTE projects are:

PI Name	Institution	Title	Facility
Zheng, Guiqiu	Massachusetts Institute of Technology	Microstructural Characterization of Post-Irradiation Alloys for Integrated FHR Technology Development	Idaho National Laboratory – Irradiated Materials Characterization Laboratory
Miller, Brandon	Idaho National Laboratory	TEM Microstructural Characterization of Irradiated UO ₂ Fuel	Idaho National Laboratory & Center for Advanced Energy Studies
Xu, Cheryl	Florida State University	Influence of neutron irradiation on the microstructures and electrical properties of polymer derived ceramic sensing material	North Carolina State University – PULSTAR Reactor
Guillen, Donna	Idaho National Laboratory	Beamline Examination of a Hf-Al Metal-Matrix Composite Material	Illinois Institute of Technology – The Materials Research Collaborative Access Team (MRCAT)
Terry, Jeff	Illinois Institute	TEM investigation of the SiC	Oak Ridge National

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	of Technology	containment layer of irradiated nuclear fuel particles	Laboratory – Low Activation Materials Development and Analysis (LAMDA)
Miller, Brandon	Idaho National Laboratory	APT of Irradiated UO ₂ Fuel	Idaho National Laboratory – Irradiated Materials Characterization Laboratory
Xu, Chi	University of Florida	Effect of Neutron Irradiation on Tensile Deformation of a HT-UPS Stainless Steel	Idaho National Laboratory & Center for Advanced Energy Studies
Boehlert, Carl	Michigan State University	In situ study of defect accumulation in Ti-6Al-4V under heavy ion irradiation: Influence of the microstructure and temperature	Argonne National Laboratory – Intermediate Voltage Electron Microscope
Marquis, Emmanuelle	University of Michigan	B and Li grain boundary segregation in irradiated LWR steels	Oak Ridge National Laboratory – Low Activation Materials Development and Analysis (LAMDA)
Chen, Weiying	Argonne National Laboratory	Irradiation Effect in the Heterogeneous Hardening of Cast Austenitic Stainless Steels	Idaho National Laboratory & Center for Advanced Energy Studies
Marquis, Emmanuelle	University of Michigan	Microstructure Analysis of High Dose Neutron Irradiated Microstructures	Oak Ridge National Laboratory – Low Activation Materials Development and Analysis (LAMDA)
Snead, Lance	Massachusetts Institute of Technology	Determining Structure Evolution in Iso-molded Nuclear Graphite Under Stress	Massachusetts Institute of Technology – Nuclear Reactor Laboratory (NRL)
Snead, Lance	Massachusetts Institute of Technology	Wigner Energy of SiC Irradiated to High Levels of Swelling	Oak Ridge National Laboratory - Low Activation Materials Development and Analysis (LAMDA)
Yang, Yong	University of Florida	Evaluate the ferrite decomposition in irradiated duplex cast stainless steels	Idaho National Laboratory & Center for Advanced Energy Studies

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Wharry, Janelle	Boise State University	TEM in situ microcantilever testing of irradiated F/M alloys	Idaho National Laboratory & Center for Advanced Energy Studies
He, Lingfeng	Idaho National Laboratory	In Situ Observation of Lunar Crater Features in Xe Irradiated UO ₂ at High Dose	Argonne National Laboratory – Intermediate Voltage Electron Microscope
Katoh, Yutai	Oak Ridge National Laboratory	Investigation of the interface strength for matrix-fiber interface of irradiated SiC composite materials	University of California – Berkeley

The NSUF reviews RTEs three times per year. The call offers any interested researcher from a university, national laboratory or industry the opportunity to perform short-term analyses of a limited scope of work. Facilities included in this call include mechanical testing facilities, ion irradiation capabilities, high performance computing, the Intermediate Voltage Electron Microscopy facility, and the North Carolina State University PULSTAR reactor. The 17 RTE awards being announced today were submitted during the previous call, which began in October 2015 and closed in January 2016. The next call for solicitations is currently open and scheduled to close May 31, 2016.

For user guides and more information about submitting proposals, visit the NSUF website at <http://nsuf.inl.gov>.

INL is a DOE multiprogram national laboratory, and performs work in each of DOE's strategic goal areas: energy, national security, science and environment. INL is the nation's leading center for nuclear energy research and development. Day-to-day management and operation of the laboratory is the responsibility of Battelle Energy Alliance.

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