



U.S. DEPARTMENT OF
ENERGY

Nuclear Energy

DOE-NE Materials Cross- Cut Webinar

Wednesday, August 17, 2016

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NEET-RM Technical POC

Los Alamos National Laboratory



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WELCOME!

For the webinar...

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- **Please use the Webex tool online and/or the phone connection.**
- **But, if you are not speaking please remember to mute the microphone and/or silence speakers to avoid feedback.**
- **If you are calling in via phone, please make sure computer microphone/speakers are muted to avoid feedback**

- **This is the 7th DOE-NE annual materials cross-cut meeting.**
- **The objective has been to facilitate discussion and awareness of the various programs and activities across a broader cross-section of managers and researchers**
 - DOE-NE programs (LWRS, ARC, FCT, etc.)
 - Office of Science
 - Naval Reactors
 - Fusion Science etc.
- **Presentations will cover both DOE-NE program overviews AND summaries from the FY2013 NEET Advanced Characterization Research**
- **The presentations and discussion today are meant to be a starting point for future collaborations and joint research.**

Today's morning session will provide an overview of NEET Awards

Tues., August 16 (all times EDT):

■ **10:00-10:30: Welcome, Kick off, and overview of NEET: Sue Lesica**

■ **10:30 – 3:00 NEET FOA Advanced Characterization award presentations and discussion (Sue Lesica and Stu Maloy to lead)**

- 10:30-11:00: Developing Microstructure-Property Correlation in Reactor Materials using In Situ High Energy X-Rays, Meimei Li
- 11:00-11:30: Determining the Stress-Strain Response of Irradiated Metallic Materials via Spherical Nanoindentation, Nate Mara
- 11:30-12:00: Predictive Characterization of Aging and Degradation of Reactor Materials in Extreme Environments, Jianmin Qu
- 12:00-12:30: Advanced 3-D Characterization and Reconstruction of Reactor Materials, Kumar Sridharan
- 12:30-1:00: Unraveling Dynamics of Radiation Damage Formation Via Pulsed Ion-Beam Irradiation, Sergei Kucheyev
- 1:00-1:30: Use of Micro- and Meso-scale Magnetic Characterization Methods to Study Degradation of Nuclear Reactor Structural Materials, Pradeep Ramuhalli

■ **1:30-2:00: break**

Today's afternoon session will cover NEET Awards and LWRS

■ August 16 (all times EDT):

- 2:00-2:30: Automated Synchrotron X-Ray Diffraction of Irradiated Materials, Bob Odette
- 2:30-2:45: Investigating Grain Dynamics in Irradiated Materials with High Energy X-Rays, Meimei Li
- 2:45-3:00: Characterizing the Irradiation Response of Nuclear Reactor Structural Materials, Mychailo Toloczko

■ **3:00-5:00 : LWRS overview and select LWRS highlights (Jeremy Busby to lead)**

- 3:00-3:30: LWRS MAaD Overview, Jeremy Busby
- 3:30-4:00: Localized deformation studies, Maxim Gussev
- 4:00-4:30: Cable aging and NDE, Leo Fifield
- 4:30-5:00: Environmentally assisted Fatigue, Mohanty Subhasish

Tomorrow morning is focused on advanced reactors, FCRD and NSUF

- **August 17 (all times EDT):**

- **10:30 – 12:30: Advanced Reactor Concepts overview and select highlights. (Sam Sham, Richard Wright to lead)**
 - 10:30 -11:00: ARC Fuel Forms - Demkowicz
 - 11:00 – 11:30: Fast reactor structural materials update – Sham
 - 11:30 – 12:00: High temperature materials – Wright
 - 12:00 - 12:30: Graphite – Windes

- **12:30 – 1:30: break**

- **1:30 – 2:30 FCRD AR and ATF Core Matls overview (Stu Maloy to lead)**
 - 1:30-2:00 AR Core Materials (Maloy)
 - 2:00-2:30 ATF Clad Materials (Terrani)

- **2:30 – 3:30: NSUF update and highlights (Dan Ogden)**



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Safety!

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- **In case of emergency, follow whatever your local procedures might be.....**

- **Please remember to mute your microphone until the QA sessions**
- **We will have QA time with each presentation**
 - Submit questions via chat function
 - Or ask them directly
 - Or send an email
- **Presentations will be available via archive**
- **Drop in/out as needed during the day**



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■ NEET-RM projects:

- Meimei Li- mli@anl.gov, Nate Mara- namara@lanl.gov, Jianmin Qu- j-qu@northwestern.edu, Assel Aitkaliyeva- Assel.aitkaliyeva@inl.gov, Sergei Kucheyev- kucheyev1@llnl.gov, Pradeep Ramuhalli- Pradeep.Ramuhalli@pnnl.gov, Mychailo Toloczko- mychailo.toloczko@pnnl.gov, Lynne Ecker- lecker@bnl.gov

■ DOE-NE Programs

- Light Water Reactor Sustainability (LWRS) – Keith Leonard (leonardk@ornl.gov), gussevmn@ornl.gov, leo.fifield@pnnl.gov, smohanty@anl.gov
- Fuel Cycle R&D (FCRD) – Advanced Fuels – Stuart Maloy (maloy@lanl.gov), Kurt Terrani (terranika@ornl.gov)
- Advanced Reactor Concepts- Sam Sham, ssham@anl.gov, Richard.wright@inl.gov, paul.demkowicz@inl.gov, william.windes@inl.gov
- Nuclear Science User Facility (NSUF)- Rory Kennedy (rory.kennedy@inl.gov)

■ Please send presentations in pdf format to:

- Sue Lesica – sue.lesica@nuclear.energy.gov
- Stuart Maloy – maloy@lanl.gov