

NERI Project Presentations by Panel

DAY 1

Panel 1 – AFCI Fuels & Safeguards (Canyons A)

- ◆ 07-035 Computations for Advanced Nuclear Fuels - Sudarshan K.Loyalka, University of Missouri-Columbia (10:00 am – 12:00 pm)
- ◆ 07-064 Fundamental Studies of Irradiation-Induced Defect Formation and Fission Product Dynamics in Oxide Fuels - James Stubbins, University of Illinois (1:00 pm – 3:00 pm)
- ◆ 07-059 Analysis of Advanced Fuel Assemblies and Core Designs for the Current and Next Generations of LWRs - Jean Ragusa, Texas A&M University (3:20 am – 5:20 pm)

Panel 2 – AFCI Separations, Waste Forms, & Reactors (Canyons B)

- ◆ 07-023 Chemistry of Transuranic Elements in Solvent Extraction Processes: Factors Controlling Redox Speciation of Plutonium and Neptunium in Extraction Separation Processes – Alena Paulenova, Oregon State University (10:00 am – 12:00 pm)
- ◆ 08-039 Real-Time Detection of Actinide Compositions in the UREX+ Process, Sean M. McDeavitt, Texas Engineering Experiment Station (1:00 pm – 3:00 pm)
- ◆ 07-015 Radiation-Induced Segregation and Phase Stability in Candidate Alloys for the Advanced Burner Reactor - Gary Was, University of Michigan & Brian Wirth, University of California-Berkeley (3:00 pm – 5:20 pm)

Panel 3 – NHI (Canyons C)

- ◆ 07-057 Optimization of Heat Exchangers - Ivan Catton, University of California-Los Angeles (10:00 am – 12:00 pm)
- ◆ 07-030 Liquid Salts as Media for Process Heat Transfer from Very High-Temperature Reactors: Forced Convective Channel Flow Thermal Hydraulics, Materials, and Coatings - Kumar Sridharan, University of Wisconsin-Madison (1:00 pm – 3:00 pm)

Panel 4 – Gen IV Methods (Salon II)

- ◆ 07-003 An Advanced Integrated Diffusion/Transport Method for the Design, Analysis, and Optimization of the Very High-Temperature Reactors – Farzad Rahnema, Georgia Institute of Technology (10:00 am – 12:00 pm)
- ◆ 07-011 Implications of Graphite Radiation Damage on the Neutronic, Operational, and Safety Aspects of Very High-Temperature Reactors – Ayman I. Hawari, North Carolina State University (1:00 pm – 3:00 pm)
- ◆ 07-017 Advancing the Fundamental Understanding and Scale-up of TRISO Fuel Coaters via Advanced Measurement and Computational Techniques – Muthanna Al-Dahhan, Washington University (3:20 pm – 5:20 pm)

Panel 5 – AFCI Reactors; Systems Analysis; Regulatory & Safety; Modeling & Simulation (Seminar Theater)

- ◆ 07-071 Identification and Analysis of Critical Gaps in Nuclear Fuel Cycle Codes Required by the SINEMA Program – Adrian Miron, University of Cincinnati (10:00 am – 12:00 pm)
- ◆ 07-037 Experimental Development and Demonstration of Ultrasonic Measurement Diagnostics for Sodium Fast Reactor Thermohydraulics - Akira Tokuhira, Kansas State University (1:00 pm – 3:00 pm)
- ◆ 08-014 An Innovative Approach to Precision Fission Measurements Using a Time Projection Chamber – Nolan Hertel, Georgia Institute of Technology (3:20 pm – 5:20 pm)

DAY 2

Panel 1 – AFCI Fuels & Safeguards (Canyons A)

- ◆ 07-046 Fundamental Processes of Coupled Radiation Damage and Mechanical Behavior in Nuclear Fuel Materials for High-Temperature Reactors - Simon Phillpot, University of Florida (8:00 am – 10:00 am)
- ◆ 07-060 Powder Metallurgy of Uranium Alloy Fuels for Transuranic-Burning Fast Reactors - Sean M. McDevitt, Texas Engineering Experiment Station (10:20 am – 12:20 pm)
- ◆ 08-020 Risk-Informed Balancing of Safety, Non-Proliferation, and Economics for the Sodium-Cooled Fast Reactor – George Apostolakis, Massachusetts Institute of Technology (1:20 pm – 3:20 pm)
- ◆ 07-051 Economic, Repository, and Proliferation Impacts of Advanced Nuclear Fuel Cycles - K.B. Cady, Cornell University (3:40 pm – 5:40 pm)

Panel 2 – AFCI Reactors & Fuels (Canyons B)

- ◆ 07-063 Neutronic and Thermal-Hydraulic Coupling Techniques for Sodium Cooled Fast Reactor Simulations – Jean Ragusa, Texas A&M University (8:00 am – 10:00 am)
- ◆ 08-041 Performance of Actinide-Containing Fuel Matrices Under Extreme Radiation and Temperature Environments - Brent J. Heuser, University of Illinois, Urbana-Champaign (10:20 am – 12:20 pm)
- ◆ 08-051 Radiation Damage in Nuclear Fuel for Advanced Burner Reactors: Modeling and Experimental Validation - Niels Gronbech Jensen, University of California-Davis (1:20 pm – 3:20 pm)
- ◆ 08-058 Advanced Instrumentation and Control Methods for Small and Medium Export Reactors with IRIS Demonstration - Wesley Hines, University of Tennessee (3:40 pm – 5:40 pm)

Panel 3 – Gen IV Materials & Heat Transfer (Canyons C)

- ◆ 08-055 Cladding and Structural Materials for Advanced Nuclear Energy Systems - Gary Was, University of Michigan (8:00 am – 10:00 am)
- ◆ 07-069 Establishing a Scientific Basis for Optimizing Compositions, Processing Paths, and Fabrication Methods for Nanostructured Ferritic Alloys for Use in Advanced Fission Energy Systems - G.R. Odette & Takuya Yamamoto, University of California-Santa Barbara (10:20 am – 12:20 pm)
- ◆ 07-024 Materials and Design Methodology for Very High-Temperature Nuclear Systems - James Stubbins, University of Illinois (1:20 pm – 3:20 pm)
- ◆ 07-020 Emissivity of Candidate Materials for Very High-Temperature Reactor Applications: Role of Oxidation and Surface Modification Treatments - Kumar Sridharan, University of Wisconsin-Madison (3:40 pm – 5:40 pm)

Panel 4 – Gen IV Methods; Fuels (Salon II)

- ◆ 07-018 Fission Product Transport in TRISO-Coated Particle Fuels: Multi-Scale Modeling and Experiment – Izabela A. Szlufarska, University of Wisconsin-Madison (8:00 am – 10:00 am)
- ◆ 08-043 A Research Program on Very High-Temperature Reactors - Sudarshan Loyalka, University of Missouri-Columbia (10:20 am – 12:20 pm)
- ◆ 07-058 Experimental and Computational Fluid Dynamics Analysis of Advanced Convective Cooling Systems - Victor M. Ugaz & Yassin A. Hassan, Texas Engineering Experiment Station (1:20 pm – 3:20 pm)

Panel 5 – AFCI Separations & Waste Forms; Systems Analysis; Modeling & Simulation (Seminar Theater)

- ◆ 08-033 Deployment of a Suite of High-Performance Computational Tools for Multiscale Multiphysics Simulation of Generation-IV Reactors – Michael Z. Podowski, Rensselaer Polytechnic Institute (8:00 am – 10:00 am)
- ◆ 08-067 Advanced Aqueous Separation Systems for Actinide Partitioning – Ken Nash, Washington State University (10:20 am – 12:20 pm)
- ◆ 07-027 New Fission Product Waste Forms: Development and Characterization - Alexandra Navrotsky, University of California-Davis (1:20 pm – 3:20 pm)