

WORKSHOP SPEAKERS AGENDA AND BREAKOUT SESSIONS

Energy In Transition – Understanding the Characteristics and Production Barriers for High Performance Materials for Tomorrow’s Energy Systems

Day 1 – Oct 27

- 9:00 – 9:10 am Mountain Time: Workshop Administrative Team - Attendee instructions and expectations (**Moderator**)
- 9:10 – 9:20 am Mountain Time: Welcome from the AMO Office (**Valri Lightner**)
- 9:20 – 9:30 am Mountain Time: Workshop Background and Purpose (**Nick Lalena**)

Fossil Energy Office:

- 9:30 – 9:35 am Mountain Time: Welcome from the FE Office, **Angelos Kokkinos**, Associate Deputy Assistant Secretary, Clean Coal and Carbon Management, Office of Fossil Energy
- 9:35 – 9:55 am Mountain Time: FE Office **Robert Schrecengost**, Program Manager, Office of Fossil Energy, “FE Office Overview: Materials for Harsh Environments”.
- 9:55 – 10:15 am Mountain Time: **Sean Bradshaw**, Turbine Technology Manager, Pratt & Whitney representing the Gas Turbine Association, “Energy in Transition – High Performance Materials and Systems for Tomorrow’s Energy Sector”.
- 10:15 – 10:35 am Mountain Time: **Neva Espinoza**, Vice President Energy Supply and Low Carbon Resources, Electric Power Research Institute (EPRI), “Accelerating the Clean Energy Transition Reliably and Affordably”.
- 10:35 – 10:55 am Mountain Time: **Jack deBarbadillo**, Special Metals, “Metallic Structural Materials for Advanced Energy Systems”.
- 10:55 – 11:15 am Mountain Time: **Charles Atkins**, Ramaco, “Coal to Advanced Materials and Manufacturing from and for Harsh Service Conditions (C2AMM 4HSC)”.

BREAK 11:15 am – 11:30 am Mountain Time

Day 1 – Oct 27

NE Office:

- 11:30 – 11:50 am Mountain Time: **Isabella Van Rooyen**, National Technical Director, Advanced Methods for Manufacturing Program for DOE-NEET, “NE Office: Materials for Harsh Service Conditions R&D and Advanced Manufacturing Needs”.
- 11:50 – 12:10 pm Mountain Time: **Gay Wyn Quance/Randall Smith**, Solid Carbon Products/Seerstone Development, “Critical Materials: Graphitic Materials from CO₂ - Synthetic Graphite and Carbonite®”.
- 12:10 – 12:30 pm Mountain Time: **Dave Gandy**, EPRI, “Materials & Manufacturing Needs for Advanced Nuclear Applications”.
- 12:30 – 12:50 pm Mountain Time: **Doug Burns**, Space Nuclear Power and Isotope Systems, Idaho National Laboratory, “Space Nuclear Propulsion (SNP) Fuel Development”.
- 12:50 – 1:10 pm Mountain Time: **George Jacobsen**, Lead Scientist, General Atomics, “Advanced Core Materials for Current and Next Generation Nuclear Reactors.”
- 1:10 – 1:30 pm Mountain Time: **Claudio Filippone**, CEO HolosGen, “Distributable Modular Nuclear Reactor Materials/Manufacturing Challenges”.

Day 2 – Oct 28

- 9:00 – 9:10 am Mountain Time: Workshop Administrative Team - Attendee instructions and expectations (**Moderator**)

EERE Office up 3rd:

- 9:10 – 9:20 am Mountain Time: **Alex Fitzsimmons**, Deputy Assistant Secretary for Energy Efficiency, Office of Energy Efficiency and Renewable Energy (EERE).
- 9:20 – 9:40 am Mountain Time: **Avi Shultz**, EERE Solar Energy Technologies Office, “Concentrating Solar-Thermal Power (CSP) Research and Development”.
- 9:40 – 10:00 am Mountain Time: **Lillie Ghobrial**, EERE Wind Energy Technologies Office, “Wind Energy Materials”.
- 10:00 – 10:20 am Mountain Time: **Alexis McKittrick**, EERE Geothermal Technologies Office, “Overview of Harsh Conditions in Geothermal Development”.
- 10:20 – 10:40 am Mountain Time: **Ned Stetson**, Hydrogen and Fuel Cell Technologies Office, “Materials Compatibility in Hydrogen Service”.

BREAK 10:40 – 11:00 am Mountain Time

Day 2 – Oct 28

AMO Office 4th:

- 11:00 – 11:20 am Mountain Time: **Valri Lightner**, Deputy Director, Advanced Manufacturing Office, “Advanced Manufacturing and Materials for Harsh Service Conditions”.
- 11:20 – 11:40 am Mountain Time: **Leo Christodoulou**, “Manufacturing Materials (& Structures) For Extreme Environments”.
- 11:40 – 12:00 pm Mountain Time: **Michael Sortwell**, Senior Director, Technology, American Iron and Steel Institute. “Steel Industry Challenges for Producing Steel in Harsh Environments”.
- 12:00 – 12:20 pm Mountain Time: **Mark Thompson**, Principal Scientist, GE Research, “Materials and Processing Challenges for Power Generation.”
- 12:20 – 12:40 pm Mountain Time: **Jason Sebastian**, President, QuesTek Innovations, “Materials Challenges and ICME for Advanced Alloys for Harsh Environment Applications”.
- 12:40 – 1:00 pm Mountain Time: **Max Christie**, R&D Director-Ceramic Membranes, Linde, “Materials for Harsh Service Environments: Linde Priorities”.
- 1:00 – 1:20 pm Mountain Time: **Adam Stevenson**, Saint-Gobain, “Challenges for Materials in Harsh Service Environments”.

Day 3 October 29, 2020 BREAKOUT SESSION #1: Materials for Thermal Management, Extreme Temperatures, and Energy Conversion.

9:00 am – 1:00 pm Mountain

Session Leads (Jeff Hawk (NETL), Kashif Nawaz, (ORNL))

Day 3 October 29, 2020 BREAKOUT SESSION #2: Wear, Oxidation, and Corrosion-Resistant Alloys, Components, and Coatings for Static and Rotary Applications.

9:00 am – 1:00 pm Mountain

Session Leads (Bruce Pint (ORNL), Brian Gleeson (University of Pittsburgh))

Day 3 October 29, 2020 BREAKOUT SESSION #3: Ceramics, Composites, and Functionally Graded Materials for Harsh Environments.

9:00 am – 1:00 pm Mountain

Session Leads (Edgar Lara-Curzio (ORNL), Elizabeth Opila (University of Virginia))

Day 4 October 30, 2020 BREAKOUT SESSION #4: Enabling Materials through Advanced Manufacturing Technologies.

9:00 am – 1:00 pm Mountain

Session Leads (Gary Rozak (HC Starck), Isabella Van Rooyen (INL))

Day 4 October 30, 2020 BREAKOUT SESSION #5: Accelerating Qualification of Advanced Materials & Experimental Validation of ModSim Methodology for Materials, Manufacturing, and Performance During Service.

9:00 am – 1:00 pm Mountain

Session Leads (David Alman (NETL), Michael McMurtrey (INL))

Day 4 October 30, 2020 BREAKOUT SESSION #6 ROUND TABLE: Mechanisms for collaborative demonstration of processes at industrially relevant scale.

9:00 am – 1:00 pm Mountain

Session Leads (Briggs White (NETL), Rob O'Brien (INL))