



HPC4EI Virtual Event: Computational Science Supports Energy Initiatives

October 7, 2022

8:00 a.m. PDT (11:00 a.m. EDT)

Agenda

8:00 a.m. PDT
(11:00 a.m. EDT)

Welcome

Robin Miles, HPC4EI Program Director, Lawrence Livermore National Laboratory

8:10 a.m. PDT
(11:10 a.m. EDT)

HPC4EnergyInnovation Program Overview: National Laboratories Partner with U.S. Manufacturers to Increase Innovation and Energy Efficiency

Aaron Fisher, HPC4EI Project Manager, Lawrence Livermore National Laboratory

8:30 a.m. PDT
(11:30 p.m. EDT)

DOE Roadmap for the Decarbonization of Industry

Joe Cresko, Chief Engineer, U.S. Department of Energy's Energy Efficiency and Renewable Energy Advanced Manufacturing Office

Panel Session 1:

Decarbonization of Industrial Processes

9:00 a.m. PDT
(12:00 p.m. EDT)

Panel Moderator: Aaron Fisher, HPC4EI Project Manager, Lawrence Livermore National Laboratory

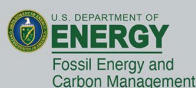
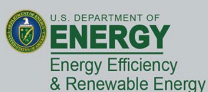
Boston Metals: Molten Oxide Electrolysis for CO₂-free Steel Production

Adam Rauwerdink, PhD, Senior Vice President Business Development, Boston Metals

Shell and Oak Ridge National Laboratory: CO₂-free Production of Hydrogen from Methane

Dr. Vimal Ramanuj, Computational Scientist, Oak Ridge National Laboratory

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Electric Power Research Institute and Argonne National Laboratory:
Electrification through Induction Heating Pipe Bending

Dr. Noah Paulson, Assistant Computational Scientist, Argonne National Laboratory

Noble Thermodynamics and Argonne National Laboratory: CO₂-free Combined Heat and Power

Dr. Miguel Sierra Aznar, Co-founder, Noble Thermodynamics

Dr. Riccardo Scarcelli, Principal Research Scientist, Argonne National Laboratory

DOE Technology Needs

10:30 a.m. PDT
(1:30 p.m. EDT)

Technology Needs in Carbon Utilization

Amishi Kumar Claros, Acting Division Director of Carbon Dioxide Removal and Conversion, U.S. Department of Energy's Office of Carbon Management

10:50 a.m. PDT
(1:50 p.m. EDT)

Modeling and Simulation Needs in Concentrated Solar Energy

Dr. Avi Shultz, Program Manager for Concentrating Solar-thermal power (CSP), U.S. Department of Energy's Solar Energy Technology Office

11:10 a.m. PDT
(2:10 p.m. EDT)

Break

Panel Session 2:

Hydrogen Material Interactions in Turbines Burning High Hydrogen Content Fuel Mixtures

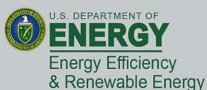
11:30 a.m. PDT
(2:30 p.m. EDT)

Panel Moderator: Dr. Edgar Lara-Curzio, Distinguished Scientist, Director for Energy Transitions and Infrastructure Programs Co-Director, Fossil Energy & Carbon Management Program

Ramesh Subramanian, Principal Expert and Innovation Manager, Siemens Energy, Inc.

Sachin Shinde, Manager, Lifting Method and Tools, Siemens Energy, Inc.

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Dr. David Alman, Associate Director of Materials Engineering & Manufacturing Directorate, National Energy Technology Laboratory

Dr. Ömer N. Doğan, Materials Scientist, National Energy Technology Laboratory

Panel Session 3: Hydrogen Combustion for Stationary Power Generation

1:00 p.m. PDT
(4:00 p.m. EDT)

Panel Moderator: Sibendu Som, Director for the Center for Advanced Propulsion and Power, Argonne National Laboratory

Modeling Gas Turbine Combustors with High Hydrogen Fuel Blends & Challenges

Homayoon Feiz, PhD, Technical Leader, Combustion Modeling, Gas Turbine Engineering, GE Power

CFD Modeling of Hydrogen Combustion for Gas Turbine Applications

Dr. Peter Strakey, Research Scientist, National Energy Technology Laboratory

Simulation Challenges in Development of a Dry Low Emissions Gas Turbine Combustion System for 100% Hydrogen and Natural Gas Blends

Dr. Shaun Ho, Group Manager for Methods and Analysis Group of Combustion Engineering, Solar Turbines Incorporated

2:00 p.m. PDT
(5:00 p.m. EDT)

Closing Remarks

2:15 p.m. PDT
(5:15 p.m. EDT)

Adjourn

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