



HPC4 Materials Workshop



Offices of

Fossil Energy • Energy Efficiency & Renewable Energy • Nuclear Energy



HPC4 Materials Workshop

- 7:30 a.m.** **Registration - Lawrence Welk Foyer**
- Continental Breakfast - Bob and Dolores Hope Room**
- 8:30 a.m.** **General Session - Lawrence Welk Room**
- Welcome/Opening - Outline of the Day**
 Regis Conrad, U.S. Department of Energy
- 8:40 a.m.** **HPC - Important Part of the Solution**
 Randall Gentry, National Energy Technology Laboratory
- 8:55 a.m.** **Industry Perspective**
 Chris Herbst, VP Government Programs, Eaton
- 9:20 a.m.** **How the HPC Program Works - Including IP**
 Lori Diachin, Director HPC4EnergyInnovation Lawrence Livermore National Laboratory
- 9:45 a.m.** **Overview of Lab Capabilities, Expertise and Hardware**
 David Skinner, Lawrence Berkeley National Laboratory
- 10:10 a.m.** **Break - Bob and Dolores Hope Room**
- 10:20 a.m.** **National Lab Panel (LLNL, ORNL, LANL, NETL)**
 Moderator: *Jeff Roberts, Lawrence Livermore National Laboratory*
 Edgar Lara-Curzio, Oak Ridge National Laboratory
 Robin Miles, Lawrence Livermore National Laboratory
 Joel Kress, Los Alamos National Laboratory
 Jeff Hawk, National Energy Technology Laboratory
- 11:00 a.m.** **National Lab Poster Blast**
 Moderator: *Darren Mollot, U.S. Department of Energy*
- 11:40 a.m.** **Poster Session, Networking/Lunch - Bob and Dolores Hope Room**

- 1:00 p.m.** **Industry Panel**
Moderator: Regis Conrad, *U.S. Department of Energy*
PPG – Jackie Kulfan
Eaton – Jason Carroll
- 1:45 p.m.** AMO HPC4Mfg and Materials Overview
Mark Johnson, *U.S. Department of Energy*
- 2:15 p.m.** Moderator: Regis Conrad, *U.S. Department of Energy*
Speakers for each of the Proposed Topic Areas
FE Extreme Materials – Jeff Hawk, *National Energy Technology Laboratory*
VTO Lightweight Materials – Sarah Kleinbaum
AMO – Mark Johnson
FCTO – Ned Stetson
- 3:00 p.m.** **Q&A - Feedback**
- 3:30 p.m.** **Closing Remarks**

Poster Presentations

Integrated Predictive Tools for Customizing Microstructure and Material Properties of Additively Manufactured Aerospace Components

Bala Radhakrishnan, *Oak Ridge National Laboratory*

Computational Materials Projects on the Software Team at Oak Ridge National Laboratory

Robert Smith, *Oak Ridge National Laboratory*

Process Maps for Microstructure in Laser Powder Bed Fusion Additive Manufacturing (LPBFAM) Process

Adrian Sabau, *Oak Ridge National Laboratory*

Accelerating the Industrial Application of Energy-Efficient Chemical Separation

David Skinner, *Lawrence Berkeley National Laboratory (for Deborah Bard)*

Computational Study of Flow and Growth Inside Ammonothermal Gallium Nitride Reactor

Nick Killingsworth, *Lawrence Livermore National Laboratory*

Improving the Manufacturability, Performance, and Durability of Microporous Polymer Membranes for Li-S Batteries using First-Principles Computer Simulations

Tod A. Pascal, *Lawrence Berkeley National Laboratory (for David Prendergast)*

Development of Reduced Glass Furnace Model to Optimize Process Operation

Vic Castillo, *Lawrence Livermore National Laboratory*

Computational Materials Capabilities

Joel Kress, *Los Alamos National Laboratory*

Materials Solutions to Enable Advanced Technology Computational Materials Engineering at NETL Research and Innovation Center

Jeff Hawk, *National Energy Technology Laboratory*

Predicting the Strength of Al/Li Turbine Blades for Aircraft Engines

Robin Miles, *Lawrence Livermore National Laboratory (for Sylvie Aubry)*

HPC4Mfg: Making Semiconductor Devices Cook through HPC Ab Initio

Simulations David Skinner, *Lawrence Berkeley National Laboratory (for Lin-Wang Wang)*

Lowering the Energy Cost of Titanium Parts through Microstructural Modeling and Control in Laser-Powder Bed Additive Manufacturing

Robin Miles, *Lawrence Livermore National Laboratory (for Wayne King)*

Predicting Materials Performance in Extreme Environments

Ram Davanathan, *Pacific Northwest National Laboratory*

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