

Special Manufacturing Day Event

October 5, 2018

HPC4Manufacturing Online Technical Colloquium: How HPC Improves Competitiveness and Reduces Energy Intensity

Agenda

12:00 p.m. EDT 9:00 a.m. PDT	HPC4Mfg Program Overview: National Laboratories Partner with U.S. Manufacturers to Increase Innovation and Energy Efficiency
	Robin Miles, HPC4Mfg Interim Program Director
12:15 p.m. EDT 9:15 a.m. PDT	Enhancing Experimental Design with AI
	<i>Victor Castillo</i> , Lawrence Livermore National Laboratory Industry Partner: Vitro Glass
12:30 p.m. EDT 9:30 a.m. PDT	High Performance Computing to Explore Membrane Parameters' Effects on Liquid-to-air Membrane Modules
	Jason Woods and Hai Long, National Renewable Energy Laboratory Industry Partner: 7AC Technologies
12:45 p.m. EDT 9:45 a.m. PDT	Accelerating Industrial Application of Energy-Efficient Alternative Separations
	<i>Deborah Bard</i> , Lawrence Berkeley National Laboratory Industry Partner: American Chemical Society Green Chemistry Institute

Panel Discussions

1:30 p.m. – 2:30 p.m. EDT	CFD and Combustion
10:30 a.m. – 11:30 a.m. PDT	Transiting HPC to Industrial Applications: The Case of Multi-Physics Turbulent Combustion Simulations
	<i>Greg Burton</i> , Lawrence Livermore National Laboratory Industry Partner: General Electric
	Effect of Manufacturing Tolerances on Engine Stability
	<i>Mushin Ameen and Sibendu Som</i> , Argonne National Laboratory Industry Partner: Ford Motor Company



Development of a Transformational Micro-cooling Technology for High-pressure Die Casting using High-performance Computing

Adrian Sabau, Oak Ridge National Laboratory Industry Partner: **Shiloh**

Improving Gas Reactor Design with Complex Non-standard Reaction Mechanisms in a Reactive Flow Model

Marc Day, Lawrence Berkeley National Laboratory Industry Partner: ALZETA

 3:00 p.m. – 4:00 p.m. EDT
 Additive Manufacturing

 12:00 p.m. – 1:00 p.m. PDT
 Process Parameter Selection for Laser Powder Bed Fusion Using ALE3D Coupled with Experiments

 Andy Anderson, Lawrence Livermore National Laboratory

Andy Anderson, Lawrence Livermore National Laboratory Industry Partner: United Technologies Research Center (UTRC)

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

Balasubramaniam Radhakrishnan, Oak Ridge National Laboratory Industry Partner: **UTRC**

High Performance GPU-Based FEM Code for Simulating Welding and Additive Manufacturing

Zhili Feng, Oak Ridge National Laboratory Industry Partners: **General Motors and Electric Power Research Institute**

Development of a Multi-physics Model to Optimize Continuous Liquid Interface Production (CLIP) for Additive Manufacturing

Dan Martin, Lawrence Berkeley National Laboratory Industry Partner: Carbon Inc.