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
Victor Castillo, 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
Deborah Bard, Lawrence Berkeley National Laboratory
Industry Partner: American Chemical Society Green Chemistry Institute

Panel Discussions

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

Additive Manufacturing

Process Parameter Selection for Laser Powder Bed Fusion Using ALE3D Coupled with Experiments

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.