TMS2016
145th Annual Meeting & Exhibition

FEBRUARY 14-18 DOWNTOWN NASHVILLE, TENNESSEE MUSIC CITY CENTER

Connecting the Global Minerals, Metals, and Materials Community.

Computational Materials Engineering for Nuclear Reactor Applications

This symposium will highlight current computational materials engineering efforts for nuclear reactors in the United States and abroad, e.g., the Consortium for the Advanced Simulation of LWRs (CASL) and the Nuclear Energy Advanced Modeling and Simulation Program (NEAMS). This symposium seeks abstracts that apply atomistic, mesoscale, and macroscale simulations to discover, understand, and engineer the performance of fission/fusion reactor materials, including fuel, cladding, and structural materials. This symposium will also consider multiscale modeling efforts that bridge length and time scales in order to better connect simulation results with experimental data for predictive model validation. Finally, the application of ICME approaches to use modeling and simulation to better understand structure-property relationships, their associated links with performance, and their application to designing future reactor concepts and materials is also desired.

Some examples include:

- Developing improved material models for LWR fuel and cladding
- Modeling and simulation of critical phenomena in LWRs including CRUD-induced power shift, grid-to-rod-fretting, and pellet-cladding interaction
- Modeling and simulation of new fuel materials including metal, silicide, and nitride fuels
- Modeling and simulation of new cladding materials, such as silicon carbide, coated zirconium alloys, or FeCrAl
- Development and integration of computational tools, methods, and databases for reactor structural material design

Organizers include:

Michael Tonks, Idaho National Laboratory (USA)
Julie Tucker, Oregon State University (USA)
Mark Tschopp, Army Research Laboratory (USA)
Richard Williamson, Idaho National Laboratory (USA)

Learn More at www.tms.org/TMS2016

Join us at TMS2016 in Downtown Nashville, Tennessee, February 14-18!