

TMS2016
145th Annual Meeting & Exhibition

FEBRUARY 14-18 DOWNTOWN NASHVILLE,
TENNESSEE MUSIC CITY CENTER

Connecting the Global Minerals, Metals, and Materials Community.

High-Temperature Systems for Energy Conversion and Storage

Functional ceramic materials play an essential role in a number of energy storage and conversion systems including solid oxide fuel cells; high-temperature batteries; membrane separation materials, processes, and systems (H_2 , O_2 , CO_2); general characterizations of ceramic materials (electrical, thermal, microstructural and chemical); high-temperature electrolysis cells; thermal barrier coatings; combustion and control sensors; and nanomaterial for high temperature applications.

Symposium topics include experiments and modeling of the above-mentioned systems including:

- Multiscale modelling and experiments (including in-situ) at various length scales
- Thermal-chemical-mechanical stresses/expansion
- Thermo-mechanical degradation mechanisms
- Effect of microstructure evolution on the properties and efficiency
- Role of grain boundary density, grain size, orientation and grain growth
- Advances in the characterization and modeling techniques
- Reliability and durability of component and sub-systems

The intent is to provide a forum for researchers to discuss current understanding of materials science issues in high temperature processes, and accelerate the development and acceptance of innovative materials and test techniques for clean energy technology.

Organizers include:

Amit Pandey, Rolls Royce LG Fuel Cell Systems Inc. (USA)

Amit Shyam, Oak Ridge National Laboratory (USA)

Kyle Brinkman, Clemson University (USA)

Paul Ohodnicki, National Energy Technology Laboratory (USA)

Jung Pyung Choi, Pacific Northwest National Laboratory (USA)

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