

WILLIAM MAXWELL REED MECHANICAL ENGINEERING SEMINAR

Solid Oxide Fuel Cells: Recent Modeling and Simulation Developments

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Abstract: A key feature of the Solid Energy Conversion Alliance (SECA) core technology program (CTP) is the development of modeling and simulation tools that are applicable to a wide range of Solid Oxide Fuel Cell (SOFC) designs. This presentation summarizes state-of-the-art in SOFC and describes recent development activities conducted at Pacific Northwest National Laboratory in support of SECA CTP. The presentation focuses on the development of new analytical and computational techniques for modeling of rapid-start up, steady state operations, microstructural electrochemistry, life prediction, and system thermal and electric modeling.

Bio: Dr. Khaleel is the Director of the Computational Sciences and Mathematics Division with capabilities in high performance computing, computational physical and biological sciences, scientific computing environments, informatics analytics, applied mathematics, and statistical and quantitative Sciences. Dr. Khaleel is an international leader in multiphysics and multiscale modeling of solid oxide fuel cells and lightweight materials. Dr. Khaleel's current research is focused on the development of computational methods and tools for simulating advanced forming and joining technologies, multiphysics modeling of solid oxide fuel cells, basic material modeling, and probabilistic mechanics.

Dr. Khaleel has received the award for Excellence in Technology Transfer of superplastic forming of aluminum to General Motor Company, Federal Laboratory Consortium for Technology Transfer, May 10, 2000; the ASME International, McGrattan Literature Award for authoring the outstanding paper in the Journal of Pressure Vessel Technology in 1998 "Effects of Flaw Sizing on Reliability of Piping;" Battelle Memorial Institute Technical Network Leader of the Year (2001); Suksdorf Fellowship at Washington State University (WSU), 1990-1992. Dr. Khaleel also received his Ph.D. from Washington State University.

Date: Thursday, March 9, 2006
Time: 3:30pm to 4:30pm (refreshments 3:00pm)
Place: 323 CRMS
Contact: Dr. Marwan Khraishah 257-6262 x 219

Meet the speaker and have refreshments
Attendance open to all interested persons



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