

## 2009 Publications

### Journals and Chapters

X. He, R. F. Boehm, Direct Solar Water Splitting Cell Using Water, WO<sub>3</sub>, Pt, and Polymer Electrolyte Membrane, ENERGY, 34(10), 2009, 1454-1457.

X. He, R. F. Boehm, Direct Solar Water Splitting Cell Using Water, WO<sub>3</sub>, Pt, and Polymer Electrolyte Membrane, ENERGY-THE INTERNATIONAL JOURNAL, Volume 34, Issue 10, October 2009, Pages 1454-1457

V. Nagarajan, V. Ponyavin, Y. Chen, Milton E. Vernon, Paul Pickard, and Anthony E. Hechanova, CFD Modeling and Experimental Validation of Sulfur Trioxide Decomposition in Bayonet Type Heat Exchanger and Chemical Decomposer for Different Packed Bed Designs, INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, 34 (2009), pp. 2543-2557.

J. H. Nie, Y. T. Chen and H. T. Hsieh, Effects of a baffle on separated convection flow adjacent to backward-facing step, INTERNATIONAL JOURNAL OF THERMAL SCIENCES, 48(3), 618-625, 2009.

J. H. Nie, Y. T. Chen, S. Cohen, B. Carter and R. Boehm, Numerical and Experimental Study of Three-Dimensional Fluid Flow in the Bipolar Plate of a PEM Electrolysis Cell, INTERNATIONAL JOURNAL OF THERMAL SCIENCES, 48(10), 2009, 1914-1922.

T. Tan, Y. Chen, and X. Tan, "Buoyancy Enhanced Oxygen Transport in Liquid Lead Bismuth Eutectic Systems, JOURNAL OF NUCLEAR SCIENCE AND TECHNOLOGY, Vol. 46, No. 2, pp. 109-131, 2009

T. Tan and Y. Chen, "Scale removal cellular automaton oxidation models of metals in lead bismuth eutectic, JOURNAL OF ELECTROANALYTICAL CHEMISTRY, 626 (2009), pp. 89-97

T. Tan and Y. Chen, Simulations of Metal Oxidation in LBE at a Mesoscopic Level, JOURNAL OF ENGINEERING FOR GAS TURBINES AND POWER, May 2009, Vol. 131, 032903/pp.1-11.

L. Zhu, R. Hurt, D. Correa, R. Boehm, Comprehensive energy and economic analyses on a zero energy house versus a conventional house, ENERGY 34(9), 2009, 1043–1053 (ISI:000270076600001).

L. Zhu, R. Hurt, D. Correa, R. Boehm, Detailed Energy Saving Performance Analyses on Thermal Mass Walls Demonstrated in a Zero Energy House, ENERGY AND BUILDINGS, March 2009, 41(3): 303-310 (ISI:000263663100006).

### Refereed Conference Papers

J. H. Nie, Y. T. Chen, B. Wong and L. C. Brown, "Numerical study of nozzle design on cadmium quenching process in thermochemical splitting of water," IMECE2009-12862, ASME International Mechanical Engineering Congress and Exposition, Lake Buena Vista, FL, November 13-19, 2009.

J. Kasukurthi, K. M. Veepuri, J. H. Nie and Y. T. Chen, "Numerical modeling of velocity and temperature distributions in a bipolar plate of PEM electrolysis cell with greatly improved flow uniformity," IMECE2009-10519, ASME International Mechanical Engineering Congress and Exposition, Lake Buena Vista, FL, November 13-19, 2009.

Y. T. Chen, J. H. Nie, A. Johnson, M. Hodges and A. E. Hechanova, "Energy analysis of bayonet heat exchanger and decomposer for hydrogen production," Global 2009 International Conference, Paper #9474, Paris, France, September 6-11, 2009.

T. France, R. Hurt, R. Boehm, and S. Sadineni, Home Energy Conservation in the Las Vegas Valley, Proceedings of the ASME conference of Energy Sustainability, July 19-23, 2009, San Francisco, CA, USA.

Leonardo Banchik, Robert Boehm, and Ken Stone, Fresnel Lens Soiling Characterization and Effect Upon Performance, Proceedings of the ASME conference of Energy Sustainability, July 19-23, 2009, San Francisco, CA, USA.

J. Kopp and R. Boehm, Comparison of Two-Tank Indirect Thermal Storage Designs for Solar Parabolic Trough Power Plants, Proceedings of the ASME conference of Energy Sustainability, July 19-23, 2009, San Francisco, CA, 2009.

L. Banchik, A Sahm, R. Boehm, K. W. Stone, Fresnel lens soiling characterization and effect upon performance, Proceedings of ES2009, Energy Sustainability 2009, July 19-23, 2009, San Francisco, California, USA.

T. France, R. Hurt, R. Boehm, and S. Sadineni, Home Energy Conservation in the Las Vegas Valley, Proceedings of the ASME Conference of Energy Sustainability, July 19-23, 2009, San Francisco, California, USA.

J. Kopp and R. Boehm, Comparison of Two-Tank Indirect Thermal Storage Designs for Solar Parabolic Trough Power Plants, Proceedings of the ASME conference of Energy Sustainability, July 19-23, 2009, San Francisco, California, USA.

J. H. Nie, Y. T. Chen, B. Wong and L. C. Brown, "Numerical modeling of vapor condensation during cadmium quenching process in a solar receiver," ES2009-90382, ASME 3rd International Conference on Energy Sustainability, , July 19-23, 2009 San Francisco, CA, USA.

T. Tan and Y. Chen, "Protection of an Aerowindow, One Scheme to Enhance the Cavity Efficiency of a Solid Particle Solar Receiver," ASME Summer Heat Transfer Conference, July 19-23, 2009, San Francisco, USA (HT2009-88059).

J. Nie, Y. Chen, Bunsen Wong, and Lloyd Brown, "Numerical Modeling of Vapor Condensation during Cadmium Quenching Process in a Solar Receiver," ASME 3rd International Conference on Energy Sustainability, July 19-23, 2009, San Francisco, (ES2009-90382)

H. T. Hsieh, K. Kwan, J.Y. Huang and C. Lee, and Y. Chen, "Knowledge-based Information Resource Management System for Materials of Fast Reactor," The 17th International Conference on Nuclear Engineering (ICONE-17), July 12-16, 2009, Brussels, Belgium (ICONE17-75485)

T. Tan and Y. Chen, "The Influence of Chrome in the Oxidation Process of Steels in Flowing LBE," The 17th International Conference on Nuclear Engineering (ICONE-17), July 12-16, 2009, Brussels, Belgium (ICONE17-75025).

S. B. Sadineni, A. G. Abu Heiba, R. F. Boehm, Performance Prediction of Solar Absorption Cooling Systems Assisted by Gas Heaters, Proceedings of the Inaugural US-EU-China Thermophysics Conference, May 28-30, 2009, Beijing, China.

Sahm, R. Boehm, K. Stone, K. Johnson, Performance of the Amonix High Concentration Photovoltaic System at the NV Energy Clark Station, Proceedings of the Inaugural US-EU-China Thermophysics Conference, May 28-30, 2009 Beijing, China.

Sahm, R. Boehm, K. W. Stone, Optimization of Performance Specifications Based on Environmental Parameters. Proceedings of the Inaugural US-EU-China Thermophysics Conference, May 28-30, 2009, Beijing, China.

J. F. Wu, J. H. Nie and Y. T. Chen, "Three-dimensional numerical simulation and design of PEM fuel cell," UECTC-RE113, First US-EU-China Thermophysics Conference – Renewable Energy (UECTC-RE), Beijing, China, May 28-30, 2009.

J. H. Nie, Y. T. Chen, L. C. Brown and B. Wong, "Numerical modeling of droplet vaporization in the quenching process of the solar cadmium hydrogen cycle," ACFD0067-T016-A-001, The 8th Asian Computational Fluid Dynamics Conference, Hong Kong, January 10-14, 2010 (Invited Paper).