

2007 Publications

Journals and Chapters

Y. T. Chen, J.H. Nie, B.F. Armaly, H.T. Hsieh, R. F. Boehm, Developing turbulent forced convection in two-dimensional duct, *JOURNAL OF HEAT TRANSFER*, 129(9), 1295-1299, 2007.

H. Chen, Y. T. Chen, and J. Zhang, A Lattice Boltzmann Modeling of Oxygen Transport and Corrosion Behavior in the Nature Convection Lead-alloy Flow, *NUCLEAR ENGINEERING AND DESIGN*, 237, pp. 1987-1998, 2007.

Y. T. Chen, H. Chen, and J. Zhang, Numerical Investigation on Enhancement of Oxygen Transfer by Forced Convection in Lead-bismuth Eutectic System, *INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER*, 50, pp. 2139-2147, 2007.

H. Chen, Y. T. Chen, H. T. Hsieh, and N. Siegel, CFD Modeling of Gas Particle Flow within a Solid Particle Solar Receiver, *JOURNAL OF SOLAR ENERGY ENGINEERING*, 129(5), pp. 160-170, 2007.

T. Gemci, V. Ponyavin, Y. T. Chen, H. Chen, R. Collins, CFD Simulation of Airflow in a 17-generation Digital Reference Model of the Human Bronchial Tree, *SERIES ON BIOMECHANICS*, 23(1), pp.5-18, 2007

C. K. Halford, R. F. Boehm, Modeling of phase change material peak load shifting, *ENERGY AND BUILDINGS*, 39, 298-305, 2007.

C. R. De Losier, S. Subramanian, V. Ponyavin, Y. T. Chen, A. E. Hechanova, and Per F. Peterson, The Parametric Study of an Innovative Offset Strip-fin Heat Exchanger, *JOURNAL OF HEAT TRANSFER*, 129(10), pp. 1453-1458, 2007.

Refereed Conference Papers

J. Nie, Y. T. Chen, S. Cohen, B. Carter, and R. F. Boehm, "Velocity and temperature distributions in bipolar plate of PEM electrolysis cell," Proceedings of ASME International Mechanical Engineering Congress and Exposition (IMECE 2007), IMECE2007-42622, November 11-15, Seattle, WA, USA, 2007.

T. Tan, Y. T. Chen, H. Chen, and H. T. Hsieh, "Modeling of a Diffusion Controlling Oxidation Process with Scale Removal in Oxygen-containing Liquid Flow," Proceedings of ASME International Mechanical Engineering Congress and Exposition (IMECE 2007), IMECE2007-42322, November 11-15, Seattle, WA, USA, 2007.

J. Wu, J. Nie, and Y. T. Chen, "Three-dimensional fluid flow and coupled heat transfer in simplified bipolar plates," Proceedings of ASME International Mechanical Engineering Congress and Exposition (IMECE 2007), IMECE2007-42360, November 11-15, Seattle, WA, USA, 2007.

V. Nagarajan, V. Ponyavin, Y. T. Chen, Milton Vernon, Paul Pickard, and Anthony E. Hechanova, "CFD Modeling of Bayonet Type High Temperature Heat Exchanger and Chemical Decomposer with Different Packed Bed Designs," Proceedings of ASME International Mechanical Engineering Congress and Exposition (IMECE 2007), IMECE2007-42465, November 11-15, Seattle, WA, USA, 2007.

G. Kuchi, V. Ponyavin, Y. T. Chen, S. Sherman, and A. E. Hechanova, "Flow Distribution on the Tube Side of a High Temperature Heat Exchanger and Chemical Decomposer," Proceedings of ASME International Mechanical Engineering Congress and Exposition (IMECE 2007), IMECE2007-42652, November 11-15, Seattle, WA, USA, 2007.

V. Ponyavin, T. Mohamed, M. Trabia, Y. T. Chen, and A. E. Hechanova, "Transient Analysis of a Ceramic High Temperature Heat Exchanger and Chemical Decomposer," Proceedings of ASME International Mechanical Engineering Congress and Exposition (IMECE 2007), IMECE2007-42199, November 11-15, Seattle, WA, USA, 2007.

J. Nie, Y. T. Chen, S. Cohen, B. Carter, and R. F. Boehm, "Non-uniform velocity distributions in bipolar plate PEM electrolysis cell," Proceedings of 5th Joint ASME/JSME Fluids Engineering Conference, FEDSM2007-37299, July 30 - August 2, San Diego, California, USA, 2007.

J. Nie, Y. T. Chen, and H. T. Hsieh, "Parametric study of turbulent separated convection flow over a backward-facing step," Proceedings of 5th Joint ASME/JSME Fluids Engineering Conference, FEDSM2007-37315, July 30 - August 2, San Diego, California, USA, 2007.

Wang, S. Moujaes, Y. T. Chen, and V. Ponyavin, "Experimental and Numerical Analyses of Friction Factors in Offset Strip Fin Heat Exchangers," Proceedings of FEDSM2007: 5th Joint ASME/JSME Fluids Engineering Conference, FEDSM2007-37482, July 30 - August 2, San Diego, California, USA, 2007.

J. Wu, J. Nie, and Y. T. Chen, "Numerical simulations of three-dimensional fluid flow and coupled heat transfer in bipolar plates," Proceedings of 5th Joint ASME/JSME Fluids Engineering Conference, FEDSM2007-37712, July 30 - August 2, San Diego, California, USA, 2007.

S. B. Sadineni, R. Hurt, C. Halford, R. F. Boehm. Reclaiming Electrolysis Reject Water with a Solar Still, ES2007-36001, ASME, Energy Sustainability 2007, June 27-30, 2007, Long Beach, California, USA.

J. Li and Y. T. Chen, "Developing Time-domain Finite Element methods for Wave Propagation in Negative-index Materials," Waves 2007 Conference, University of Reading, 23-27 July 2007, UK.

J. Li and Y. T. Chen, "Finite Element Study of Time-dependent Maxwell's Equations in Dispersive Media," Waves 2007 Conference, University of Reading, 23-27 July 2007, UK.

J. Nie, D. A. Hopkins, Y. T. Chen, and H. T. Hsieh, "Development of an object-oriented program with adaptive mesh refinement for heat transfer simulations," Proceedings of ASME-JSME Thermal Engineering and Summer Heat Transfer Conference and InterPack, HT2007-32897, July 8-12, Vancouver, Canada, 2007.

H. Chen, Y. T. Chen, H. T. Hsieh, and L. Tan, "Computational Fluid Dynamics Analysis on Underfloor Air Distribution (UFAD) System in BTLab," Proceedings of 2007 ASME-JSME Thermal Engineering Summer Heat Transfer Conference and InterPack, HT2007-32697, July 8-12, Vancouver, Canada, 2007.

M. Wilson, C. Lewinsohn, J. Cutts, Y. T. Chen, and V. Ponyavin, "Optimization of Micro-channel Features in a Ceramic Heat Exchanger," Proceedings of 2007 ASME-JSME Thermal Engineering Summer Heat Transfer Conference and InterPack, HT2007-32181, July 8-12, Vancouver, Canada, 2007.

V. Ponyavin, Y. T. Chen, A. E. Hechanova, and Merrill Wilson, "Fluid/Thermal Analysis of High Temperature Heat Exchanger and Chemical Decomposer for Hydrogen Production," Proceedings of 2007 ASME-JSME Thermal Engineering Summer Heat Transfer Conference and InterPack, HT2007-32676, July 8-12, Vancouver, Canada, 2007.

H. Chen, Y. T. Chen, and H. T. Hsieh, "Numerical Investigation on Optimal Design of Solid Particle Solar Receiver," Proceedings of the ASME Energy Sustainability, ES2007-36134, June 27 - 30, Long Beach, CA, 2007.

Gray, A. Sahn, M. Newmarker, R. Hurt, R. Boehm, M. Jane Hale, A. Andreas, P. Gotseff, and T. Stoffe, Southern Nevada Renewable Resource Assessment, Proceeding of Energy Sustainability Conference, June 27-30, 2007, Long Beach, California, USA.

Gray, R. Boehm, K. W. Stone, Modeling a passive cooling system for photovoltaic cells under construction, Proceeding of Heat Transfer Conference, June 27-30, 2007, Long Beach, California, USA.

Gray, K. Stone, G. Wood, R. Boehm, and K. Johnson. "Assisting in Matching Nevada Power Company's Electrical Load Profiles with High Concentration PV Systems." ASME Energy Sustainability 2007, June 27-30, 2007, Long Beach, California, USA.

R. Fifield, J. Gardner, R. Boehm, "Conversion and Performance Analysis of a Small Utility Vehicle Operating on Hydrogen Fuel" ES2007-36106, ASME, Energy Sustainability 2007, June 27-30, 2007, Long Beach, California, USA.

S. B. Sadineni, R. Hurt, C. Halford, R. F. Boehm. "Reclaiming Electrolysis Reject Water with a Solar Still." ES2007-36001, ASME, Energy Sustainability 2007, June 27-30, 2007, Long Beach, California, USA.

S. P. K., J. Nie, Y. Chen, R. F. Boehm, and H. T. Hsieh, "Numerical modeling of electrochemical process for hydrogen production from PEM electrolyzer cell," Proceedings of the ASME Energy Sustainability, ES2007-36108, June 27 - 30, Long Beach, CA, 2007.

K. W. Stone, R. Gordon, D. Dutra, A. Gray, R. Hurt, R. Boehm, M. J. Hale, F. P. Eddy, Field testing and performance of an Amonix multijunction cell made at the University of Nevada Las Vegas, Proceeding of Energy Sustainability 2007, June 27-30, 2007, Long Beach, California, USA..

J. Nie, Y. T. Chen, S. Cohen, B. Carter, and R. F. Boehm, "Three-dimensional CFD modeling of bipolar plate PEM electrolysis cell for hydrogen production," Proceedings of Fifth International Conference on Fuel Cell Science, Engineering and Technology, FuelCell2007-25308, June 18 - 20, New York, NY, 2007.

G. Kuchi, V. Ponyavin, Y. T. Chen, Steve Sherman, and Anthony E. Hechanova, "Numerical Modeling of High Temperature Shell and Tube Heat Exchanger and Chemical Decomposer with Porous Media Zone," Proceedings of the 2nd International Conference on Porous Media and its Applications in Science and Engineering ICPM2, June 17-21, Hawaii, USA, 2007.

V. Nagarajan, V. Ponyavin, Y. T. Chen, M. Vernon, P. Pickard, and A. E. Hechanova, "Numerical Study of Sulfur Trioxide Decomposition in Bayonet Type Heat Exchanger and Chemical Decomposer with Porous Media Zone," Proceedings of the 2nd International Conference on Porous Media and its Applications in Science and Engineering ICPM2, June 17-21, Hawaii, USA, 2007.

H. Chen, Y. T. Chen, H. T. Hsieh, and J. Zhang, "Stochastic Modeling on Oxide Layer Growth with Scale Removal Effect in Liquid Metal Environment," Proceedings of ICONE15-10656: 15th International Conference on Nuclear Engineering, April 22-26, Nagoya, Japan, 2007.

H. T. Hsieh, Y. T. Chen, M. Chang, M. Hodges, G. Vandegrift, and J. Copple, "An Object-Oriented Engineering Model Design for Integrating Spent Fuel Treatment Facility (SFTF) and Chemical Separation Processes," Proceedings of ICONE15-10669: 15th International Conference on Nuclear Engineering, April 22-26, Nagoya, Japan, 2007.

M. Wilson, C. Lewinsohn, J. Cutts, Y. T. Chen, and V. Ponyavin, "Design of a Ceramic Heat Exchanger for Sulfuric Acid Decomposition," Proceedings of ICONE15-10788: 15th International Conference on Nuclear Engineering, April 22-26, Nagoya, Japan, 2007.

R. Fifield, J. Gardner, R. Boehm, T. Kell, "Use of Direct Cylinder Injection in Hydrogen Engine Conversions." Paper 3534 NHA Annual Hydrogen Conference, March 19-22, 2007, San Antonio, TX, USA.