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EDUCATION

09/04 – 04/06
Ann Arbor, MI

B.E. in Mechanical Engineering and Electronic Engineering (Double Major), Handong University — 03/97 – 08/02, Pohang, Korea

- Thesis Topic: Electrical Capacitance Tomography Using Genetic Algorithm, Advisor: J.Y. Lee
- Computer Engineering (Minor), Early Graduation

PROFESSIONAL APPOINTMENT

Associate Professor, Department of Mechanical Engineering, Wichita State University — 08/19 – Present, Wichita, KS

Assistant Professor, Department of Mechanical Engineering, Wichita State University — 09/13 – 07/19, Wichita, KS

Post-doctoral Fellow, Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory, Supervisor: A.Z. Weber — 09/10 – 08/13, Berkeley, CA

RESEARCH INTERESTS

thermal and water managements; additive manufacturing, machine learning, porous media designs, X-ray image-based pore-scale modeling; computational fluids dynamics; molecular dynamics simulations

RESEARCH EXPERIENCE

Assistant/Associate Professor, Wichita State University — 09/13 – Present, Wichita, KS

- Development of Efficient Process Mapping for Metallic 3D Printing using Data Analytic Algorithms
- Pore-scale Modeling and Measurement of Enhanced Wickability for Non-uniform Pore-Size Microstructures using Lattice Boltzmann Method
- 3D Printing of Metallic Wick Structures
- Measurement of High Flux Two-Phase Thermal Management System using Novel 3D Microporous Structures
- Development of Novel Thermal Diode and Transistor using Heterogeneous Nanoporous Structures using Molecular Dynamics Simulations and Grand Canonical Monte Carlo Simulations
- Development of Ultrasound-Assisted Deicing System
- X-ray Image-based Modeling of Partially-Saturated Gas Diffusion Layer for Polymer Electrolyte Membrane Fuel Cell
- Multiscale Modeling of Coolability of Molten Core for Loss of Coolant Accident in Nuclear Power Plant
- Fundamental Understandings of Enhanced Water Diffusivity in Graphene Nanoporous Structures using Molecular Dynamics Simulations
- Measurement of Enhanced Proton Conductivity of Graphene-based Polymer Electrolyte Membrane

PROFESSIONAL EXPERIENCE

Journal and Conference Reviews

- Nanoscale and Microscale Thermophysical Engineering 09/13 – Present
- Electrochemical Society Journal/Transaction, Journal of Mechanical Science and Technology 09/10 - Present
- ASME Journal/Transaction, Journal of Microelectromechanical Systems 06/07 - Present
- International Journal of Heat and Mass Transfer, and Journal of Thermophysics and Heat Transfer 06/07 – Present

Service and Leadership Activities

- Executive Committee Member , ASME Process Industry Division (PID)
- Research Council, College of Engineering, WSU
- Undergraduate Coordinator , Department of Mechanical Engineering, WSU
- Award Committee Member , College of Engineering, WSU
- Mentor for Junior Faculty , College of Engineering, WSU
- Track Organizer, 2020ASME ICNMM, Orlando, FL
- Topic Organizer , 2018AIAA/ASME Joint Thermophysics and Heat Transfer Conference
- Topic Organizer , 2017/2018 ASME InterPACK , San Francisco, CA
- Topic Organizer , 2017 ASME Power and Energy Conference, Charlotte, NC
- Topic Organizer , 2016ASME ICNMM, Washington DC
- Topic Organizer , 2015ASME InterPACK&ICNMM, San Francisco, CA
- Topic Organizer

[26] M. Moulod and G. Hwang Comparative Studies on Water Self-Diffusivity Confined in Graphene Nanogap: Molecular Dynamics Simulation, μ

[8]

[15] Dilanki Wevita (Undergraduate Student) and G. Hwang (Faculty Advisor) Liquid-Artery Wick for Novel Solar-Thermal-Based Water Desalination System, Howard University, 2018, 1/5/2017-1/4/2018.

[26] M. Moulod, and G. Hwang, ´Water self-diffusivity confined in graphene nanogap using molecular dynamics simulations µ J. Appl. Phys, 120, 194302, 2016. (Citations: 11)

[27] T. Avanessian, and G. Hwang, ´ $ G V R U S W L P L] H G 7 K H U P D O ' L R G H 1 R Q H T X L O L E U L X P 0 R O H F X O D U ' \ Q D P L F Phys, 120, 165306, 2016. (Citations: 10)

[28] G. Hwang, M. Kaviany, K. Moriyama, H. Park, B. Hwang, M. Lee, E. Kim, and Y. Nasersharifi ´FARO Tests Corium-Melt Cooling in Water Pool: Roles of Melt Superheat and Sintering in Sediment µ Nucl. Eng. Des., 305, 569581, 2016. (Citations: 5)

[29] P.A. Garc ´ a-Salaberri, J.T. Gostick, G. Hwang, A.Z. Weber, and M. Vera, ´Effective Diffusivity in Partially -Saturated Carbon-Fiber * D V ' L I I X V L R Q / D \ H U V (I I H F W R I / R F D O 6 D W X U D W L R Q D Q G $ S S O L F D W L R Q V W R 3 R O \ P H U (O H F W U R O \ W H V µ J. Power Sources, 296, 440F 453, 2015. (Citations: 59)

[30] P.A. Garc ´ a-Salaberri, G. Hwang, M.V. Coello, A.Z. Weber, J.T. Gostick, ´Effective Diffusivity in Partially -Saturated Carbon-Fiber Gas Diffusion Layers: Effect of Through- S O D Q H 6 D W X U D W L R Q D Q G 3 R U H 6 L] H 'L V W U L E X W L R Q µ Int. J. Heat Mass Transfer

J. Heat Mass Transfer, 52, 2779-2791, 2009(Citations: 258)

[44] D.H. Min, G. Hwang < 8 V W D 2 1 & R U D 0 . R F - DaQG 3 - D Modified Porous Coatings for Enhanced Pool % R L O Int. J. Heat Mass Transfer, 52, 2607-2613, 2009(Citations: 105)

[45] G. Hwang , A.J. Gross, H. Kim, S. W. Lee, N. Ghafouri, B. L. Huang, C. Lawrence, C. Uher, K Najafi, and M. Kaviany, "Micro Thermoelectric Cooler: Planar Multistage", Int. J. Heat Mass Transfer, 52, 1843-1852, 2009(Citations: 33)

[46] D.H. Min, G. Hwang D Q G 0 . D Y L D - Q Q H U \ , H H D W 7 U D Q V I H U , Q W - + H D W 0 D V V Transfer, 52, 629-635, 2009(Citations: 31)

[47] B. Huang, C. Lawrence, A. Gross,G. Hwang , N. Ghafouri, S. W. Lo 8237.36 306.02re W* n BT( )Tj ET EMC Q /P <</MCID 80 >>B

Liquid Entrainment and Vapor Pull-Through through Branches in a Horizontal Pipe w L W K 6 W U D W Proc. of KNS Spring Meeting, May 2004, Kyungju, Korea.

[26] G. Hwang, Y.M. Moon, H.C. No, J.Y. Lee, S. O. Yu, M. Kim, H. J. Kim, ´2 ff-take Experiment at T-junction between Header and) H H G H U 3 L S H V Proc. of 11th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-10), October 2003, Seoul, Korea.

[27] G. Hwang, J.Y. Lee, H.C. NO, Y.M. Moon, S.O. Yu, M. Kim, H. J. Kim, ´Improvement of Safety Analysis Methodology for CANDU Reactors: Off-take Experiment at T-junction between Header and Feeder Pipes with Arbitrary Angles in CANDU µ Proc. of KNS Spring Meeting, May 2003, Kyungju, Korea.

Theses

1. G. Hwang, ´3 R-Water and Proton Transport in Polymer Electrolyte Membrane Fuel Cell: Molecular Dynamics and Mono - and % L P R G D O : H W W L Q J 7 U H D W P H Q W V R I 0 H V R S Thesis, University of Michigan, D. L R Q µ 3 K
2. G. Hwang, ´0 R G H O L Q Modeling of Wick Heat Pipe µ 2006, M.S.E. Thesis, University of Michigan
3. G. Hwang ´Electrical Capacitance Tomography Using Genetic Algorithm µ