

EVELYN N. WANG

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Professor Evelyn N. Wang is the Gail E. Kendall Professor and Head in the Department of Mechanical Engineering at the Massachusetts Institute of Technology. Professor Wang earned her B.S. degree in Mechanical Engineering from the Massachusetts Institute of Technology; and her S.M. and Ph.D. degrees in Mechanical Engineering from Stanford University. She was a postdoctoral associate at Bell Laboratories, Alcatel Lucent from 2006-2007. She joined the MIT faculty in 2007. Professor Wang teaches and conducts research in the area of micro/nanoscale heat and mass transfer.

Professor Wang's research program combines fundamental studies of micro/nanoscale heat and mass transport processes with the development of novel engineered structures to create innovative solutions in thermal management, energy, and water harvesting systems. Her group leverages state-of-the-art micro/nanofabrication and synthesis, unique measurement, and model prediction capabilities to perform in-depth studies and enable mechanistic insights into complex fluidic and thermal transport processes for these applications. Meanwhile, this approach has also led to the discovery of novel flow and transport phenomena, which offers great potential to realize new and important functionalities.

Professor Wang has published over 140 archival journal papers in prestigious journals including Science, Nature Materials, Nature Nanotechnology, Nature Communications, Nature Energy, Nano Letters, ACS Nano, Journal of Heat Transfer, International Journal of Heat and Mass Transfer, and numerous conference papers. She has advised 28 Master's students, 16 PhD students and 20 Postdoctoral Associates now pursuing successful careers in industry, national labs, and academia including faculty positions at University of Illinois Urbana Champaign, University of Michigan, Rice University, Rensselaer Polytechnic Institute, Drexel University, Syracuse University, Indian Institute of Technology Patna, and Kyung Hee University.

Professor Wang's research has been honored with awards including the 2008 DARPA Young Faculty Award, the 2011 Air Force Office of Scientific Research Young Investigator Award, the 2012 Office of Naval Research Young Investigator Award, 2012 Bergles-Rohsenow Young Investigator Award in Heat Transfer, 2017 ASME Gustus L. Larson Memorial Award, 8th Prince Sultan bin Abdulaziz International Prize for Water, and a fellow of the ASME. She served as the Associate Director of the Solid State Solar Thermal Energy Conversion (S3TEC) Center, an Energy Frontier Research Center, funded by the US Department of Energy. She is the co-founder of the first 2015 Gordon Research Conference on Micro and Nanoscale Phase Change Heat Transfer and has been extensively involved as a committee member and organizer of national and international conferences.

Curriculum Vitae

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EDUCATION

- Ph.D. 2006 Mechanical Engineering, Stanford University
National Defense Science and Engineering Graduate Research Fellow
Thesis: Characterization of Microfabricated Two-Phase Heat Sinks for IC Cooling Applications
Advisors: Thomas W. Kenny and Kenneth E. Goodson
- M.S. 2001 Mechanical Engineering, Stanford University
National Defense Science and Engineering Graduate Research Fellow
- B.S. 2000 Mechanical Engineering, Massachusetts Institute of Technology

PROFESSIONAL EXPERIENCE

- 7/18-present Head, Mechanical Engineering Department, MIT
- 7/17-present Professor, Mechanical Engineering Department, MIT
- 7/17-6/18 Associate Head for Operations, Mechanical Engineering Department, MIT
- 7/14-6/17 Associate Professor with tenure, Mechanical Engineering Department, MIT
- 10/14-5/15 Visiting Associate Professor, Mechanical Engineering Department, Stanford University
(on sabbatical)
- 10/14-5/15 Technology Expert and Researcher, Advanced Technologies and Projects, Google,
Mountain View, CA (on sabbatical)
- 7/11-6/14 Associate Professor without tenure, Mechanical Engineering Department, MIT
- 7/07-6/11 Assistant Professor, Mechanical Engineering Department, MIT
- 2/06-4/07 Postdoctoral Researcher, Bell Laboratories, Alcatel Lucent, Murray Hill, NJ

HONORS & AWARDS

- 2018 8th Prince Sultan bin Abdulaziz International Prize for Water
- 2018 Viskanta Fellowship, Purdue University
- 2017 ASME Gustus L. Larson Memorial Award
- 2017 MIT Bose Award
- 2017 Foreign Policy's 2017 Global ReThinker
- 2017 MIT Technology Review 1 of 10 Breakthrough Technologies
- 2017 Scientific American and World Economic Forum 1 of 10 Emerging Technologies
- 2017 MIT Committed to Caring Award
- 2017 Best Poster Award, ASME ICNMM

2016	ASME Electronic Packaging and Photonic Division Women of the Year
2016	MIT Technology Review One of the Biggest Clean Energy Advances
2016	MIT Greenlabs Innovation Award
2016	Best Poster Awards, ITherm
2016	Best Poster Award, ASME ICNMM
2016	Singapore Research Professor
2015	Gail E. Kendall Professor Chair
2015	ASME Fellow
2015	Defense Science Study Group
2014	Best Paper Award, ITherm
2014	Best Poster Award, ITherm (2 nd prize)
2012	ASME Bergles-Rohsenow Young Investigator Award in Heat Transfer
2012	ONR Young Investigator Award
2012	ASME Micro/Nanoscale Heat and Mass Transfer International Conference Best Paper Award (1 st Prize)
2011	AFOSR Young Investigator Award
2010	Best Paper Award, ITherm
2008	DARPA Young Faculty Award
2008	Esther and Harold E. Edgerton Assistant Professor Chair
1998-present	Member of Tau Beta Pi Engineering Honor Society
1998-present	Member of Pi Tau Sigma Mechanical Engineering Honor Society

BOOKS

B1. E.N. Wang, Guest Editor, Annual Review of Heat Transfer, vol. 18, 2016.

INVITED BOOK CHAPTERS

- BC1. Lenert, Y. Nam, and E.N. Wang, "Heat Transfer Fluids," Book Chapter in Solar Thermal Challenges Volume, Annual Review of Heat Transfer, 15(15), 93-129, 2012.
- BC2. Miljkovic, N. Preston, D.J., and E.N. Wang, "Recent Developments in Altered Wettability for Enhancing Condensation" Encyclopedia of Two-Phase Heat Transfer and Flows, 2015.
- BC3. Adera, S., Feng, J. and E.N. Wang, "Surface Engineering, Tailored Wettability, and Applications" Entry in Encyclopedia of Nanotechnology, DOI 10.1007/978-94-007-6178-0_100967-1, 2015.
- BC4. Narayanan, S., Li, X., Kim, H., Umans, A., and E. N. Wang, "Recent Advances in Adsorption-based Heating and Cooling Systems," Book Chapter in Annual Review of Heat Transfer, vol 19, 199-239, 2016.
- BC5. Antao, D.S., Zhu, Y. and E.N. Wang, "Boiling on Enhanced Surfaces," Book Chapter in Handbook of Thermal Science and Engineering, 1-47, 2017.
- BC6. Zhu, Y., Antao, D.S., and E.N. Wang, "Bio-Inspired Surfaces for Enhanced Boiling," Book Chapter in Bio-inspired Engineering of Thermal Materials, Wiley, 2018.
- BC7. Zhu, Y., Mutha, H., Zhao, Y, and E.N. Wang, "Manipulating Water and Heat with Nanoengineered Surfaces," Book Chapter in Women in Nanotechnology, Springer, 2019, in press.

JOURNAL PUBLICATIONS

- J1. Balandin, A., Wang, K.L., Cai, S., Li, R., Viswanathan, C.R., Wang, E.N., and M. Wojtowicz, "Investigation of Flicker Noise Level and Deep Levels in AlGaIn/GaN Heterostructure Field Effect Transistors," Journal of Electronic Materials, 29(3), 297-301, 2000.
- J2. Wang, E.N., Zhang, L., Jiang, L., Koo, J.-M., Maveety, J.G., Sanchez, E.A., Goodson, K.E., and T.W. Kenny, "Micromachined Jets for Liquid Impingement Cooling of VLSI Chips," Journal of MicroElectroMechanical Systems, 13(15), 833-842, 2004.

- J3. Wang, E.N., Devasenathipathy, S., Santiago, J.G., Goodson, K.E., and T.W. Kenny, "Nucleation and Growth of Vapor Bubbles in a Heated Silicon Microchannel," *Journal of Heat Transfer*, 126(4), 497, 2004.
- J4. Burney, J., Bay, T.J., Brink, P.L., Cabrera, B., Castle, J.P., Romani, R.W., Tomada, A., Nam, S.W., Miller, A.J., Marinis, J., Wang, E., and B.A. Young, "Development and Characterization of a TES Optical Imaging Array for Astrophysics Applications" *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* [01689002] 520.1-3 (2004): 533-536.
- J5. Zhang, L., Wang, E.N., Goodson, K.E., and T.W. Kenny, "Phase Change Phenomena in Silicon Microchannels," *International Journal of Heat and Mass Transfer*, 48(8), 1572-1582, 2005.
- J6. Hidrovo, C.H., Kramer, T.A., Wang, E.N., Vigneron, S., Steinbrenner, J.E., Koo, J.-M., Wang, F.-M., Fogg, D.W., Flynn, R.D., Lee, E.S., Cheng, C.-H., Kenny, T.W., Eaton, J.K., and K.E. Goodson, "Two-Phase Microfluidics for Semiconductor Circuits and Fuel Cells," *Heat Transfer Engineering*, 27(4), 53-63, 2006.
- J7. Kenny, T.W., Goodson, K.E., Santiago, J.G., Wang, E., Koo, J.-M., Jiang, L., Zhang, L., Fogg, D., Yao, S., Rose, K., Flynn, R., Cheng, C.-H., and C. Hidrovo, "Advanced Cooling Technologies for Microprocessors," *International Journal of High Speed Electronics and Systems*, 16, 301-313, 2006.
- J8. Wang, E.N., Devasenathipathy, S., Lin, H., Hidrovo, C.H., Santiago, J.G., Goodson, K.E., and T.W. Kenny, "A Hybrid Method for Bubble Reconstruction in Two-Phase Microchannels," *Experiments in Fluids*, 40, 847-858, 2006.
- J9. Krupenkin, T.N., Taylor, J.A., Wang, E.N., Kolodner, P., Hodes, M., and T.R. Salamon, "Reversible Wetting-dewetting Transitions on Electrically Tunable Superhydrophobic Nanostructured Surfaces," *Langmuir*, 23, 9128-9133, 2007.
- J10. Wang, E.N., Bucaro, M., Taylor, J.A., Kolodner, P., Aizenberg, J., and T. Krupenkin, "Droplet Mixing Using Electrically Tunable Superhydrophobic Nanostructured Surfaces," *Microfluidics and Nanofluidics*, 7(1), 137-140, 2008.
- J11. Alexander, B.A., and E.N. Wang, "Design of a Microbreather for Two-Phase Microchannel Heat Sinks," *Nanoscale and Microscale Thermophysical Engineering*, 13(3), 151-164, 2009.
- J12. Xiao, R., Chu, K.-H., and E.N. Wang, "Multi-layer Liquid Spreading on Superhydrophilic Nanostructured Surfaces," *Applied Physics Letters*, 94(19), 193104, 2009.
- J13. Chu, K.-H., Xiao, R., and E.N. Wang, "Uni-directional Spreading on Asymmetric Nanostructured Surfaces," *Nature Materials*, 9, 413-417, 2010.
- J14. Xiao, R., Enright, R., and E.N. Wang, "Prediction and Optimization of Liquid Propagation in Micropillar Arrays," *Langmuir*, 26(19), 15070-15075, 2010.
- J15. Won, Y., Wang, E.N., Goodson, K.E., and T.W. Kenny, "3-D Visualization of Flow in Microscale Jet Impingement Systems," *International Journal of Thermal Sciences*, 50(3), 325-331, 2011.
- J16. Allison, J.M., Staats, W.L., McCarthy, M., Jenicek, D., Edoh, A.K., Lang, J.H., Wang, E.N., and J.G. Brisson, "Enhancement of Convective Heat Transfer in an Air-cooled Heat Exchanger Using Interdigitated Impeller Blades," *International Journal of Heat and Mass Transfer*, 54(21), 4549-4559, 2011.
- J17. Miljkovic, N. and E.N. Wang, "Modeling and Optimization of Hybrid Solar Thermoelectric Systems with Thermosyphons," *Solar Energy*, 85(11), 2845-2855, 2011.
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- J19. Xiao R. and E.N. Wang, "Microscale Liquid Dynamics and the Effect on Macroscale Propagation in Pillar Arrays," *Langmuir*, 27(17), 10360-10364, 2011.
- J20. Humpalik, T., Lee, J., O'Hern, S.C., Fellman, B.A., Baig, M.A., Hassan, S.F., Atieh, M.A., Rahman, F., Laoui, T., Karnik, R., and E.N. Wang, "Nanostructured Materials for Water Desalination," *Nanotechnology*, 22(29), 292001, 2011.

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- J31. Lenert, A., Nam, Y., Yilbas, B., and E.N. Wang, "Focusing of Phase Change Microparticles for Local Heat Transfer Enhancement in Laminar Flows," *International Journal of Heat and Mass Transfer*, 56(1), 380-389, 2013.
- J32. Miljkovic, N., Enright, R., Nam, Y., Lopez, K., Dou, N., Sack, J., and E.N. Wang, "Jumping-Droplet-Enhanced Condensation on Scalable Superhydrophobic Nanostructured Surfaces," *Nano Letters*, 13(1), 179-187, 2013.
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- J35. Raj, R., Maroo, S., and E.N. Wang, "Wettability of Graphene," *Nano Letters*, 13(4), 1509-1514, 2013.
- J36. Xiao, R., Maroo, S., and E.N. Wang, "Negative Pressures in Nanoporous Membranes for Thin Film Evaporation," *Applied Physics Letters*, 102(12), 123103, 2013.
- J37. Chu, K.-H., Joung, Y.S., Enright, R., Buie, C.R., and E.N. Wang, "Role of Hierarchically Structured Surfaces in Boiling Critical Heat Flux Enhancement," *Applied Physics Letters*, 102(15), 151602, 2013.
- J38. McKay, I.S., and E.N. Wang, "Thermal Pulse Energy Harvesting," *Energy*, 57(1), 632-640, 2013.
- J39. Xiao, R., Miljkovic, N., Enright, R., and E.N. Wang, "Immersion Condensation on Oil-infused Heterogeneous Surfaces for Enhanced Heat Transfer," *Scientific Reports*, 3(1988), 1-6, 2013.
- J40. Miljkovic, N., Xiao, R., Preston, D.J., Enright, R., McKay, I.S., and E.N. Wang, "Condensation on Hydrophilic, Hydrophobic, Nanostructured Superhydrophobic and Oil-Infused Surfaces," *Journal of Heat Transfer*, 135(8), 080906, 2013.

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- J44. Kariya, H.A., Peters, T.B., Cleary, M., Hanks, D.F., Staats, W., Brisson, J., and E.N. Wang, "Development and Characterization of an Air-Cooled Loop Heat Pipe with a Wick in the Condenser," *Journal of Thermal Science and Engineering Applications*, 6(1), 011010, 2013.
- J45. Muzychka, Y.S., Bagnall, K.R., and E.N. Wang, "Thermal Spreading Resistance and Heat Source Temperature in Compound Orthotropic Systems with Interfacial Resistance," *IEEE Transactions on Components, Packaging and Manufacturing Technology*, 3(11), 1826-1841, 2013.
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- J47. Miljkovic, N., Preston, D.J., Enright, R., and E.N. Wang, "Electrostatic Charging of Jumping Droplets on Superhydrophobic Surfaces," *Nature Communications*, 4, 2013.
- J48. Miljkovic, N., Preston, D.J., Enright, R., and E.N. Wang, "Electric-Field-Enhanced Condensation on Superhydrophobic Nanostructured Surfaces," *ACS Nano*, 7(12), 11043-11054, 2013.
- J49. Bagnall, K.R., Muzychka, Y.S., and E. N. Wang, "Application of the Kirchhoff Transform to Thermal Spreading Problems with Convection Boundary Conditions," *IEEE Transactions on Components, Packaging and Manufacturing Technology*, 4(3), 408-420, 2014.
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- J51. Nam, Y., Yeng, Y.X., Bermel, P., Celanovic, I., Soljagic, M., and E.N. Wang, "Modeling of Solar Thermophotovoltaic Energy Conversion Systems with Two-Dimensional Tantalum Photonic Crystals," *Solar Energy Materials and Solar Cells*, 122, 287-296, 2014.
- J52. Humplik, T, Raj, R., Maroo, S.C., Laoui, T., and E.N. Wang, "Framework Water Capacity and Infiltration Pressure of MFI Zeolites," *Microporous and Mesoporous Materials*, 190, p. 84-91, 2014.
- J53. Chou, J.B., Yeng, Y.W., Lenert, A., Rinnerbauer, V., Celanovic, I., Soljagic, M., Wang, E.N., S.-G. Kim, "Design of Wide-angle Selective Absorbers/Emitters with Dielectric Filled Metallic Photonic Crystals for Energy Applications," *Optics Express*, 22(1), p. 144-154, 2014.
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- J57. Li, X., Michaelis, V.K., Ong, T.-C., Smith, S.J., Griffin, R.G., and E.N. Wang, "Designed Single-step Synthesis, Structure, and Derivative Textural Properties of Well-ordered Layered Penta-coordinate Silicon Alcoholate Complexes," *Chemistry-A European Journal*, 20(21), p. 6315-6323, 2014.
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- J59. Narayanan, S., and E.N. Wang, "Optimization of Adsorption Process for Climate Control and Thermal Energy Storage," *International Journal of Heat and Mass Transfer*, 7, p. 288-300, 2014.

- J60. Poesio, P and E.N. Wang, "Resonance Induced Wetting State Transition of a Ferrofluid Droplet on Superhydrophobic Surfaces," *Experimental Thermal and Fluid Science*, 57, p. 353-357, 2014.
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- J63. Preston, D.J., Miljkovic, N., and E.N. Wang, "Jumping Droplet Electrostatic Charging and Effect on Vapor Drag," *Journal of Heat Transfer*, 136(8), p. 080909, 2014.
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- J66. Zhu, Y., Antao, D.S., Xiao, R., and E.N. Wang, "Real-Time Manipulation with Magnetically Tunable Structures," *Advanced Materials*, 26(37), p. 6442-6446, 2014.
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- P24. A., Anders, L. Becerra, M. Drake, J. Ferrua, D. Preston, E. N. Wang, “Fume Hood Feedback Device” MIT Case No. 19881J, 2017.

INVITED PRESENTATIONS

- I1. September-October 2005, “Microfabricated Two-Phase Heat Sinks for IC Cooling Applications,” Intel Corporation, Portland, OR. Also at: Sandia National Laboratory, Livermore, CA. Bell Labs, Lucent Technologies, Murray Hill, NJ.

- I2. January-May 2006, "Characterization of Microfabricated Two-Phase Heat Sinks for IC Cooling Applications," Department of Mechanical Engineering, University of California, Berkeley. Also at: University of Washington, Seattle, WA., University of California, Riverside, CA., University of Illinois, Urbana-Champaign, IL., University of California, Los Angeles, CA.
- I3. July 2007, "MEMS Technology for Advanced Thermal Management," Northrop Grumman, Los Angeles, CA.
- I1. July 2008, "Multi-phase Fluidics on Nanostructured Surfaces," US-Japan Joint Seminar on Nanoscale Transport Phenomena-Science and Engineering, Boston, MA.
- I2. December 2008, "Tunable Nanoengineered Surfaces for Microfluidics and Energy," 37th New England Complex Fluids Workshop, Harvard University, Cambridge, MA.
- I3. April 2009, "MEMS: Small Systems with Big Impacts," Engineering Colloquium, Wellesley College, Wellesley, MA.
- I4. June 2009, "Tunable Nanoengineered Surfaces for Microfluidics and Energy," California NanoSystems Institute Seminar Series, University of California, Santa Barbara, CA.
- I5. June 2009, "Tunable Nanoengineered Surfaces for Microfluidics and Energy," Department of Microelectronics, Peking University, Beijing, China.
- I6. June 2009, "Tunable Nanoengineered Surfaces for Microfluidics and Energy," Department of Precision Instruments and Mechanology, Tsinghua University, Beijing, China.
- I7. October 2009, "Tunable Nanostructured Arrays for Stable High Flux Microchannel Heat Sinks," DARPA YFA'07 Highlights, DARPA, Arlington, VA.
- I8. January 2010, "Nanoengineered Surfaces for Microfluidic-based Thermal Management Devices," Reliability, Packaging, Testing, and Characterization of MEMS and MOEMS at SPIE Photonics West, San Francisco, CA.
- I9. June 2010, "Nanoengineered Surfaces: Transport Phenomena and Thermal Management Applications," Keynote Lecture at the XXVIII UIT National Heat Transfer Conference, Brescia, Italy, June 21-23, 2010.
- I10. November 2010, "Nanoengineered Surfaces for Energy Efficient Systems," Department of Mechanical, Aerospace, and Nuclear Engineering Colloquium, Rensselaer Polytechnic University, NY.
- I11. April 2011, "Controlled Liquid Dynamics on Nanoengineered Surfaces," Condensed Matter Seminar, Amherst, MA.
- I12. June 2011, "Nanoengineered Surfaces for Energy Efficient Systems," Waterloo Institute of Nanotechnology, University of Waterloo, Canada.
- I13. June 2011, "Nanoengineered Surfaces for Microfluidics and Energy Systems," Ontario on a Chip, Toronto, Canada, June 9-10, 2011.
- I14. July 2011, "Nanoengineered Surfaces for Energy Efficient Systems," ASME 2011 9th International Conference on Nanochannels, Microchannels, and Minichannels, Edmonton, Alberta, Canada, June 19, 22, 2011.
- I15. August 2011, "Advancements in Solar Thermal Energy Conversion Systems," National Renewable Energy Laboratory, Golden, CO.
- I16. November 2011, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Department of Mechanical Engineering, Stanford University, Stanford, CA.
- I17. November 2011, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Nano Seminar, University of California Berkeley, Berkeley, CA.
- I18. November 2011, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Department of Mechanical Engineering, Duke University, Durham, NC.
- I19. March 2012, "Droplet Dynamics on Nanoengineered Surfaces for Energy Applications," ASME Micro/Nanoscale Heat and Mass Transfer International Conference, Atlanta, GA, March 3-6, 2012.
- I20. July 2012, "Enhanced Boiling and Condensation with Nanoengineered Surface Design," Keynote Lecture at ASME 2012 10th International Conference on Nanochannels, Microchannels and Minichannels, ICNMM2012, Rio Grande, Puerto Rico, July 8-12, 2012.

- I21. July 2012, Invited Panel, Opportunities in Thermal Concentrating Solar Power (CSP), 2012 ASME Summer Heat Transfer Conference, Rio Grande, Puerto Rico, July 8-12, 2012.
- I22. September 2012, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Advanced Heat Exchangers/Electronics Cooling Consortium, University of Maryland, College Park, MD.
- I23. September 2012, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Department of Mechanical and Aerospace Engineering, Ohio State University, OH.
- I24. October 2012, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Department of Mechanical Engineering, Georgia Institute of Technology, GA.
- I25. November 2012, "Nanoengineered Surfaces for Advanced Thermal Management and Energy Applications," Graduate School of Engineering, Nagoya University, Nagoya, Japan.
- I26. November 2012, Invited Panel, Significant Questions in Thermal Energy Storage, ASME IMECE 2012, Houston, TX, November 9-15, 2012.
- I27. December 2012, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," 2012 Nanotek and Expo 2012, Philadelphia, PA, December 3-5, 2012.
- I28. January 2013, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Masdar Institute, Abu Dhabi, United Arab Emirates.
- I29. January 2013, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Nanyang Technological University, Singapore.
- I30. February 2013, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Department of Mechanical Science and Engineering, University of Illinois at Urbana-Champaign, IL.
- I31. March 2013, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Department of Mechanical Engineering, Stevens Institute, Hoboken, NJ.
- I32. March 2013, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Department of Mechanical Engineering, University of Michigan, Ann Arbor, MI.
- I33. April 2013, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Department of Mechanical Engineering, Boston University, Boston, MA.
- I34. May 2013, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Department of Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA.
- I35. May 2013, "Nanoengineered Surfaces for Enhanced Phase-Change Heat Transfer," Department of Mechanical Engineering, Stanford University, Stanford, CA.
- I36. May 2013, "Nanoengineered Surfaces for Enhanced Phase-Change Heat Transfer," Department of Mechanical Engineering, UC Berkeley, Berkeley, CA.
- I37. May 2013, "Nanoengineered Surfaces for Enhanced Phase-Change Heat Transfer," Department of Energy and Power Engineering, Huazhong University of Science and Technology, Wuhan, China.
- I38. May 2013, "Nanoengineered Surfaces for Enhanced Phase-Change Heat Transfer," Department of Mechanical Engineering, Department of Materials Science and Engineering (joint seminar), Shanghai Jiao Tong University, Shanghai, China.
- I39. May 2013, "Nanoengineered Surfaces for Enhanced Phase-Change Heat Transfer," Department of Energy and Resources Engineering, Peking University, Beijing, China.
- I40. May 2013, "Nanoengineered Surfaces for Enhanced Phase-Change Heat Transfer," Department of Thermal Engineering, Tsinghua University, Beijing, China.
- I41. July 2013, Invited Panel, Great Experiments in Heat Transfer, ASME 2013 Summer Heat Transfer Conference, Minneapolis, MN, July 14-19, 2013.
- I42. September 2013, "Nanoengineered Surfaces for Enhanced Phase Change Heat Transfer," Advanced Heat Exchangers/Electronics Cooling Consortium, University of Maryland, College Park, MD.
- I43. September 2013, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Department of Mechanical & Aerospace Engineering, Princeton University.
- I44. October 2013, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Technical University of Denmark (DTU), Denmark.

- I46. October 2013, "Nanoengineered Surfaces: Transport Phenomena and Energy Applications," Department of Mechanical Engineering, University of Colorado at Boulder, CO.
- I47. November 2013, "Nanoengineered Surfaces for Thermal Energy Applications," Department of Physics, Northeastern University, MA.
- I48. December 2013, "Enhanced Condensation Heat Transfer on Engineered Superhydrophobic Surfaces," MRS Fall Meeting, Boston, MA.
- I49. January 2014, "Nanoengineered Surfaces for Thermal Energy Applications," Masdar Institute, Abu Dhabi, UAE.
- I50. February 2014, "Nanoengineered Surfaces for Thermal Energy Applications," Polymer Science and Engineering Seminar Series, Amherst, MA.
- I51. February 2014, "Nanoengineered Surfaces for Thermal Energy Applications," University of Maryland, College Park, MD.
- I52. April 2014, "Nanoengineered Surfaces for Thermal Energy Applications," Spring New England Section of the APS, Boston College, MA.
- I53. September 2014, "Nanoengineered Surfaces for Thermal Energy Applications," Air Force Research Laboratory, Dayton, OH.
- I54. September 2014, "Nanoengineered Surfaces for Thermal Energy Applications," Lincoln Laboratory, Lexington, MA.
- I55. December 2014, "Advanced Thermal Management Techniques," Northrop Grumman Aerospace Systems, Redondo Beach, CA.
- I56. April 2015, "From Nanoscale Surface Engineering to Macroscale Energy Systems," Mechanical Engineering Department, UC Berkeley, Berkeley, CA.
- I57. April 2015, "Nanoengineered Devices for Thermal Management and Solar Thermal Energy Conversion," IEEE Nanotechnology Council, Santa Clara, CA.
- I58. May 2015, "From Nanoscale Surface Engineering to Macroscale Energy Systems," Sandia National Laboratory, Livermore, CA.
- I59. May 2015, "From Nanoscale Surface Engineering to Macroscale Energy Systems," Lawrence Berkeley National Laboratory, Berkeley, CA.
- I60. July 2015, "Nanoengineered Surfaces for Enhanced Condensation Heat Transfer," Tech Talk, 2015 ASME Joint International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems & International Conference on Nanochannels, Microchannels, and Minichannels, San Francisco, CA.
- I61. July 2015, Invited Panel, Women in Technology Panel, 2015 ASME Joint International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems & International Conference on Nanochannels, Microchannels, and Minichannels, San Francisco, CA.
- I62. September 2015, "High Flux Nanostructured Two-Phase Thermal Management Strategies," 2015 Electronics Packaging Symposium Technology Advances in Small Scale Systems and Microelectronics Packaging, GE Global Research, Niskayuna, NY.
- I63. September 2015, "From Nanoscale Surface Engineering to Macroscale Energy Systems," Department of Mechanical Engineering, Texas A&M University, College Station, TX.
- I64. October 2015, "From Nanoscale Surface Engineering to Macroscale Energy Systems," Nanoscale Science and Engineering Seminar, UC Berkeley, Berkeley, CA.
- I65. December 2015, "Hierarchical Structures for Thermal Management and Energy Conversion," 2015 Materials Research Society Fall Meeting, Boston, MA.
- I66. December 2015, "Nanomaterials-Enabled Advanced Thermo-Adsorptive Battery for Electric Vehicle Climate Control," 2015 Materials Research Society Fall Meeting, Boston, MA.
- I67. December 2015, "Nanoengineered Surfaces for Thermal Energy Conversion," Plenary Talk, PowerMEMS, Boston, MA.
- I68. May 2016, "Manipulation of Liquid-Vapor Phase-Change Processes via Nanoengineered Surfaces," Keynote Lecture, 9th International Conference on Multiphase Flow, Florence, Italy.

- I69. July 2016, "Nanoengineered Surfaces for Thermal Energy Conversion," Keynote Lecture, 10th Australasian Heat & Mass Transfer Conference, Brisbane, Australia.
- I70. July 2016, "From Nanoscale Surface Engineering to Macroscale Energy Systems," Distinguished Lecture, School of Mechanical and Mining Engineering, University of Queensland, Brisbane, Australia.
- I71. July 2016, "Nanoengineered Surfaces for Thermal Energy Conversion," Invited Plenary Talk, Joint Symposium of the 18th Annual Conference of the Chinese Society of Micro-nano Technology and the Microsystems & Nanoengineering Summit 2016, Beijing, China.
- I72. November 2016, "Liquid-Vapor Phase-Change Via Nanoengineered Surfaces," Keynote at 4th International Forum on Heat Transfer, Sendai, Japan.
- I73. November 2016, "Nanoscale Surface Engineering to Macroscale Thermal Energy Systems," International Institute for Carbon - Neutral Energy Research, Kyushu University, Fukuoka, Japan.
- I74. November 2016, "Nanoengineered Devices for High Performance Thermal Management," Intel Corp, Chandler, AZ.
- I75. November 2016, "Spectral Enhancement of a Solar Thermophotovoltaic Device," MRS Fall Meeting 2016, Boston, MA.
- I76. December 2016, "Nanoscale Surface Engineering to Macroscale Thermal Energy Systems," Department of Mechanical Engineering, Carnegie Mellon University, Pittsburgh, PA.
- I77. December 2016, "From Nanoscale Surface Engineering to Macroscale Thermal Energy Systems," Department of Mechanical Engineering, Worcester Polytechnic Institute, Worcester, MA.
- I78. January 2017, "Nanoengineered Materials for Advanced Thermal Energy Systems," Southern University of Science and Technology, Shenzhen, China.
- I79. April 2017, "From Nanoscale Surface Engineering to Macroscale Thermal Energy Systems," Plenary Talk, 2nd Thermal and Fluids Engineering Conference and 4th International Workshop on Heat Transfer, Las Vegas, NV.
- I80. April 2017, "From Nanoscale Surface Engineering to Macroscale Thermal Energy Systems," Department of Mechanical Engineering Seminar, University of Minnesota, Minneapolis, MN.
- I81. June 2017, "Nanoengineered Devices for Solar Energy Conversion," 2017 Transducers, Kaohsiung, Taiwan.
- I82. October 2017, "From Nanoengineered Materials to Energy and Water Harvesting Devices," Department of Chemistry, University of North Carolina – Chapel Hill, NC.
- I83. October 2017, "Nanoengineered Structures for Advanced Energy and Water Technologies," Department of Mechanical Engineering, Boston University, Boston, MA.
- I84. November 2017, "Advanced Materials for Energy and Water," EmTech - Technology Review, Cambridge, MA.
- I85. November 2017, "Design of Liquid Infused Surfaces for Enhanced Condensation Heat Transfer," MRS Fall Meeting, Boston, MA.
- I86. November 2017, "Nanoengineered Materials for Liquid-Vapor Phase Change," 2017 Fall MRS Meeting, Boston, MA.
- I87. April 2018, "Nanoengineered Structures for Advanced Energy and Water Technologies," Department of Mechanical Engineering and Applied Mechanics, University of Pennsylvania, Philadelphia, PA.
- I88. April 2018, "Atmospheric water harvesting device for arid climates," Technology Idol, Global Water Summit, Paris, France.
- I89. May 2018, "Advancing Energy and Water Technologies via Nanoengineered Materials," Energy Seminar, Stanford University, Stanford, CA.
- I90. July 2018, "Transport in Porous Media for Energy and Water Applications," GRC on Flow and Transport in Permeable Media, Sunday River, ME.
- I91. January 2019, "Nanoengineered Materials for Enhanced Thermal Energy Devices," Southern University of Science and Technology, Shenzhen, China.

- I92. April 2019, “Nanoengineered Materials and Thermal Engineering for Advanced Energy and Water Technologies,” Distinguished Seminar, Mechanical Engineering Department, Columbia University, New York, NY.
- I93. April 2019, “Nanoengineered Materials and Thermal Engineering for Advanced Energy and Water Technologies,” Viskanta Fellowship Seminar, Department of Mechanical Engineering, Purdue University, West Lafayette, IN.
- I94. April 2019, “Nanoengineered Materials and Thermal Engineering for Advanced Energy and Water Technologies,” Department of Materials Science and Engineering, College Station, TX.
- I95. April 2019, “Elucidating Liquid-Vapor Phase Change via Engineered Nanostructures,” 2019 Spring MRS Meeting, Phoenix, AZ.

PROFESSIONAL SOCIETIES

Tau Beta Pi (TBP)
Pi Tau Sigma (PTS)
Society of Women Engineers (SWE)
American Society of Mechanical Engineers (ASME) – Fellow
American Physical Society (APS)
Materials Research Society (MRS)