

CHEN LI, Ph. D.

Professor

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RESEARCH INTERESTS

Conduct research in micro/nano-scale two-phase heat and flow physics, prediction, control and modeling. Aim at basic research in developing and verifying models/theories based on new two-phase transport phenomena observed in experiments. Implement these models/theories in enhancing two-phase heat and flow transport through controlling governing forces at micro/nano-scale to address critical issues in thermal management and water-energy nexus.

EDUCATION

- Aug. 2006 **Ph. D. in Mechanical Engineering,**
Rensselaer Polytechnic Institute, Troy, New York
Research Area: Two-phase heat transfer
Advisor: Professor G. P. “Bud” Peterson, President of Georgia Institute of Technology
- May 2003 **M.S. in Mechanical Engineering,**
University of Nevada, Reno, Nevada
Research Area: Convection and fins
Advisor: Professor Richard A. Wirtz, UNR Foundation Professor
- July 1997 **B.S. in Thermal Power Engineering,**
Chongqing University, Chongqing, China
Research Area: Heat pipes
Advisor: Professor Yuanguo Chen

PROFESSIONAL EXPERIENCE

<u>Dates</u>	<u>Firm/Institution</u>	<u>Rank/Position</u>
01/2018 ~	ME at University of South Carolina	Professor
08/2014 ~ 12/2017	ME at University of South Carolina	Associate Professor
08/2009 ~ 08/2014	ME at University of South Carolina	Assistant Professor
10/2007 ~ 07/2009	ME at University of Colorado, Boulder	Assistant Research Professor
09/2006 ~ 09/2007	ME at University of Colorado, Boulder	Research Associate
01/2003 ~ 08/2006	MANE at Rensselaer Polytechnic Institute	Graduate Research Assistant
08/2001 ~ 12/2002	ME at University of Nevada, Reno	Graduate Research Assistant
07/1997 ~ 07/2001	Shanghai Institute of Satellite Engineering, China	Thermal Engineer

HONORS AND AWARDS

For Academics and Research

- *Governor's Young Researcher Award* for Excellence in Scientific Research, SC state 2017
- *Research Progress Award*, College of Engineering and Computing of USC 2017
- *Breakthrough Star*, U. of South Carolina 2017
- *The ASME ICNMM 2016 Outstanding Early Career Award*, ASME 2016
- *Young Investigator Research Award*, College of Engineering and Computing of USC 2014
- *ASPIRE Award*, U. of South Carolina 2014
- *Winner of the 2008 DARPA/iMINT Center Poster Competition* 2008
- *Excellent Young Engineer Award*, Shanghai Institute of Satellite Engineering 1999
- *Outstanding Graduate* of Chongqing University with prize 1997
- *Outstanding student award and scholarship*, Chongqing University 1993-1997

For Training and Mentoring

- *Breakthrough Graduate Scholar of USC (WM Li, Ph.D. student)* 2018
- *Outstanding Overseas Students Award, Ministry of Education of China (WM Li, Ph.D. student)* 2018
- *Travel Grant awarded by USC Graduate School (WM Li, Ph.D. student)* 2017
- *Travel Grant awarded by USC Graduate School (M. Alwazzan, Ph.D. student)* 2016
- *Travel Grant awarded by USC Graduate School (FH Yang, XM Dai, Ph.D. students)* 2013
- *Fellowship in the Carbon Nano Materials and Applications Workshop, Rapid City, SD* 2011

FUNDED GRANTS AS PRINCIPAL INVESTIGATOR (PI) (EXTERNAL ~ \$3.5 M)

1. Electric Power Research Institute (EPRI), *Innovative and Ultra-efficient Evaporators to Realize Cost-effective Desalination*, \$330 k, PI: **Chen Li**, CoPIs: Yan Tong and Morgan Stefik, 04/21/2017-04/20/2020.
2. Office of Naval Research (ONR), *"Bubble Dynamics in a Confined Domain"*, \$448 K, PI: Chen Li, CoPI: Yan Tong, 04/01/2016-03/31/2019.
3. NASA EPSCoR, *"Explore a Unified Ultra-Efficient and Gravity-Insensitive Flow Boiling pattern for Space Applications"*. \$749,998 and a matching fund of \$ 375,000 from SC State, PI: Chen Li, CoPIs: Jamil Khan and Jay Ochterbeck, 07/09/2014-07/08/2018.
4. University of South Carolina, ASPIRE-I, *"Ultrafast and Sensitive Gas Nanosensors Based on Graphene Nanoribbons"*, \$15 K, PI: Chen Li, 05/16/2014-09/15/2015
5. National Scientific Foundation (NSF), *"On-demand Sweating-Boosted Air Cooled Heat-Pipe Condensers for Green Power Plants"*, \$675 K, PI: Chen Li, CoPIs: Xinyu Huang, Tanvir Farouk, and Jamil Khan, 05/01/2014-04/31/2018.
6. National Scientific Foundation (NSF), *"Nano-tip Induced Boundary Layers to Enhance Flow Boiling in Microchannels"*, \$305 K, PI: Chen Li, 09/01/2013-08/31/2017.
7. Office of Naval Research (ONR), *"Mechanisms of Enhanced Flow Boiling with High Frequency Self-modulated Microbubble-switched Oscillations"*, \$339 K, PI: Chen Li, CoPI: Jamil Khan, 06/01/2012-06/15/2015.
8. University of South Carolina, Startup Funding, \$xxx K, PI: Chen Li, 08/17/2009 – 08/16/2012.

- University of Colorado Technology Transfer Office Proof of Concept Grant (POCg), *A Micro-scale Hybrid Wick Heat Pipe Cooling System for High Concentration Photovoltaic Cell*, \$ 50K, PI: Chen Li, CoPIs: Victor M. Bright, Ronggui Yang and YC Lee, 04/01/2009 to 12/31/2011.

FUNDED GRANTS AS CO-PI (~1.5 M)

- Office of Navy Research (ONR), *Electric Ship Research and Development Consortium (ESRDC)*, PI at University of South Carolina: Roger Dougal, Co-PIs: Chen Li and 3 others, \$8.8 M. 02/01/2017-01/31/2022. (\$ ~ 500 k allocated to Chen Li)
- Office of Navy Research (ONR), *Electric Ship Research and Development Consortium (ESRDC)*, PI at University of South Carolina: Roger Dougal, Co-PIs: Chen Li and 3 others, \$3 M. 02/01/2014-01/31/2017. (\$ ~ 400 k allocated to Chen Li)
- Office of Navy Research (ONR), *Electric Ship Research and Development Consortium (ESRDC)*, PI at University of South Carolina: Roger Dougal, Co-PIs: Chen Li and 3 others, \$3 M. 06/01/2012-01/31/2014. (\$ ~ 200 k allocated to Chen Li)
- Defense Advanced Research Projects Agency (DARPA), *Flexible Thermal Ground Plane with Micro/Nano-Scaled Wicking Structure*, PI: Y.C. Lee, Co-PIs: Chen Li and 5 others, \$~4M, 03/01/2008 – 06/30/2012. (\$ ~ 400 k allocated to Chen Li)
- National Institute of Health (NIH), *Microencapsulation of Oocytes for Low-CPA (cryoprotectant) Vitriification*, \$1.4 M, PI: Xiaoming He, Consultant: Chen Li, 12/1/2010-11/30/2015 (\$13 k allocated to C. Li).

CURRENT RESEARCH GROUP

- POSTDOC FELLOWS (2):

Dr. Benli Peng	Nov. 2014 -
Dr. Peter (Pengtao) Wang	Sept. 2014 -
- Ph.D. Students (8):

Mr. Raikhan Dawas	Summer 2014 -
Mr. Ahmed Abdulshaheed	Summer 2014 -
Mr. Wei Chang	Summer 2014 -
Mr. Mostafa Mobli	Spring 2015 –
Ms. Congcong Ren	Fall 2015-
Ms. Jiakuan Ma	Fall 2015-
Mr. Yueyang Zhao	Fall 2015-
Mr. Guanghan Huang	Spring 2016 -

ALUMNI

- Postdocs/visiting professors**

Name	Current Position	
1 Dr. Xiaopeng Qu	<i>R&D Thermal Simulation Engineer (IC Packaging) at Micron Technology</i>	<i>Oct. 2015-March 2016</i>
2 Dr. Bo Shi	<i>Associate Professor in The College of Energy and Power Engineering at Nanjing University of Aeronautics and Astronautics, Nanjing, Jiangsu, China</i>	<i>June 2007-Dec. 2010</i>
3 Dr. Xiaochuan Li	<i>Associate Professor in College of Energy and Power</i>	<i>Oct. 2014-</i>

	Engineering at Yangzhou University, Yangzhou, Jiangsu, China	<i>Sept. 2015</i>
4	Dr. Fanghao Yang <i>Staff Scientist</i> in Princeton Plasma Physics Laboratory (PPPL)	<i>Sept. 2013- June 2014</i>
5	Dr. Tamanna Alam <i>TBD</i>	<i>Nov. 2014 - Dec. 2017</i>

- ***Ph.D. students:***

	Name	Current Position	Graduate Year
1	A.K.M. Monjur Morshed	<i>Associate Professor</i> in ME at the Bangladesh University of Engineering and Technology	December, 2012 (co-advised with Prof. Khan)
2	Xianming Dai	<i>Assistant Professor</i> in ME in University of Texas, Dallas	August, 2013
3	Fanghao Yang	<i>Staff Scientist</i> in Princeton Plasma Physics Laboratory (PPPL)	August, 2013
4	Mehdi Famouri	<i>Senior Mechanical Engineer</i> in Arconic	May, 2017
5	Karim Egab	<i>Lecture</i> in ME at the Technical Basrah Institute Technology, Basrah, Iraq	August, 2017
6	Wenming Li	TBD	Defended in June, 2017 and plan to graduate in May, 2018
7	Mohammad Alwazzan	<i>Lecture</i> in ME at USC	December, 2017

- ***M.S. students***

	Name	Current Position	Graduate Year
1	Muhmmad Yakut Ali	<i>Process TD Engineer</i> at Intel Corporation	May, 2012 (co-advised with Prof. Jamil Khan)

- ***Undergraduate Research Assistants***

	Name	Current Position	Graduate Year
1	Zachary Watchter	<i>Mechanical Design Engineer</i> in Agilis Engineering	May, 2012
2	Tsegaye Yemame	<i>Process and Design Engineer</i>	May, 2013

KEYNOTE PRESENTATIONS

1. **Chen Li**, “Enhanced dropwise condensation via wettability contrast mechanism,” 3rd International Symposium of Fluids and Thermal Engineering, Dec. 17-19, Ningbo, China.
2. **Chen Li**, “A priori prediction of nucleation site density,” in the Gordon Conference in Micro/nanoscale Two-phase heat transfer, Galveston, TX, USA, Jan 9, 2017.
3. **Chen Li**, “Toward Sophisticated Controls of Two-Phase Transport at Micro/Nanoscale” in the International Heat Transfer Symposium, May 6-9, 2014, Beijing, China.

BOOK AND BOOK CHAPTERS

1. **(Invited)** X.M. Dai and **Chen Li**, “Multiscale Thermal Transport in Energy Systems”, edited by Yuewen Zhang and Ya-Ling He, Nava Science Publishers, Inc. NY, USA, 2016.
2. **(Invited)** F. Yang and **Chen Li**, “Special Topics in Two-Phase Flow and Heat Transfer”, edited by J.R. Thome, World Scientific Publishing Co., Singapore, 2015.

JOURNAL PUBLICATIONS (Graduate students and postdocs are underlined)

2017 submissions

1. Karim K. Egab, Mohammed Alwazzan, Benli Peng, Jamil Khan, Saad Oudah, Yang Han, Xianming Dai, and **Chen Li**, “Condensation heat transfer on hydrophobic-hydrophilic patterns (I): heat transfer characterization”, in submission.
2. Karim K. Egab, Mohammed Alwazzan, Benli Peng, Jamil Khan, Saad Oudah, Yang Han, Xianming Dai, and **Chen Li**, “Condensation heat transfer on hydrophobic-hydrophilic patterns (II): droplet dynamics”, in submission.
3. Raikan Dawas, P.T. Wang, J. Khan, and **Chen Li**, “Sweating-boosted air cooling using durable superhydrophilic green patina,” in submission.
4. Xianming Dai, P.T. Wang, F.H. Yang, L. Wang, M. Yu, and X.C. Li, and **Chen Li**, “Decoupling of surface structure and intrinsic wettability on boiling heat transfer,” in submission.
5. Wenming Li, F.H. Yang, T. Alam, X.P. Qu, F.Y. Kong, A.S. Khan, W.H. Xu, M. Alwazzan, Y. Tong, Z.K. Wang, and **Chen Li**, “Biomimetic architecture-activated boundary layer for highly stable and efficient two-phase transport”, in submission.

2017 Under review

6. Guanghan Huang, Y. Tang, **Chen Li**, W. Yuan, Z.P. Wan, L.S. Lu, “Determination of optimal inclination angles for microflat aluminium heat pipe array,” *Int. J. of Heat and Mass Transfer*, in review.
7. Wengmin Li, J.X. Ma, T. Alam, F.H. Yang, J. Khan, and **Chen Li**, “Flow boiling of HFE-7100 in Silicon microchannels integrated with multiple micro-nozzles and reentry micro-cavities,” *Int. J. of Heat and Mass Transfer*, in review.
8. Tamanna Alam, W.M. Li, W. Chang, F.H. Yang, J. Khan, and **Chen Li**, “A comparative study of flow boiling HFE-7100 in Silicon nanowire and plainwall microchannel,” *Int. J. of Heat and Mass Transfer*, in review.

2018

9. W.M. Li, F.H. Yang, T. Alam, X.P. Qu, Wei Chang, and **Chen Li**, “Enhanced Flow Boiling in Microchannels using Auxiliary Channels and Multiple Micronozzles (I): Characterizations of Flow Boiling Heat Transfer,” *Int. J. of Heat and Mass Transfer*, 116 (2018), 208-217.

2017

10. B.L. Peng, Z. Lan, W. Xu, R.F. Wen, X.H. Ma, J.X. Ma, **Chen Li**, “A Numerical Study of Droplet Motion/Departure on Condensation of Mixture Vapor Using Lattice Boltzmann Method,” *Int. J. of Heat and Fluid Flow*, 68 (2017) 53-61.
11. R.F. Wen, Q. Li, W. Wang, C. Oshman, B. Latour, C.H. Li, **Chen Li**, V. M. Bright, Y. C. Lee, G.P. Peterson, and R.G. Yang, “Enhanced Bubble Nucleation and Liquid Rewetting for Highly Efficient Boiling Heat Transfer on Two-Level Hierarchical Surfaces with Patterned Copper Nanowire Arrays,” *Nano Energy*, 38 (2017) 59-65.
12. W.M. Li, F.H. Yang, T. Alam, X.P. Qu, Wei Chang, and **Chen Li**, “Enhanced Flow Boiling in Microchannels using Auxiliary Channels and Multiple Micronozzles (II): Enhanced CHF and Reduced Pressure Drop,” *Int. J. of Heat and Mass Transfer*, 115 (2017) 264-272.
13. P.T. Wang, R. Dawas, M. Alwazzan, W. Chang, J. Khan, and **Chen Li**, “Sweating-boosted air cooling on nanoscale CuO wick structures,” *Int. J. of Heat and Mass Transfer*, 111 (2017), pp 817-826.
14. M. Alwazzan, K. Egab, B.L. Peng, J. Khan, and **Chen li**, “Condensation on hybrid/patterned copper tubes (I): characterization of condensation heat transfer,” *Int. J. of Heat and Mass Transfer*, 112 (2017) 991–1004.
15. M. Alwazzan, K. Egab, B.L. Peng, J. Khan, and **Chen li**, “Condensation on hybrid/patterned copper tubes (II): visualization study of droplet dynamics,” *Int. J. of Heat and Mass Transfer*, 112 (2017) 950–958.
16. A. Tessema, D. Zhao, J. Moll, S.S. Xu, R.G. Yang, **Chen Li**, S. K. Kuma, and A. Kidane, “Effect of Filler Loading, Geometry, Dispersion and Temperature on the Thermal Conductivity of Polymer Nanocomposites,” *Polymer Testing*, 57 (2017), pp. 101-106.
17. W.M. Li, X.P. Qu, T. Alam, Wei Chang, and **Chen Li**, “Enhanced Flow Boiling in Microchannels through Integrating Multiple Micro-nozzles and Reentry Microcavities,” *Applied Physics Letters*. 110 (2017), 014104.

2016

18. T. Alam, W.M. Li, F.H. Yang, Wei Chang, Jing Li, Zuankai Wang, J. Khan, **Chen Li**, “Force Analysis and Bubble Dynamics during Flow Boiling in Silicon Nanowire Microchannels,” *Int. J. of Heat and Mass Transfer*, 101 (2016) 915-926.
19. T. Alam, A.S. Khan, W.M. Li, F.H. Yang, Yan Tong, J. Khan, **Chen Li**, “Transient Force Analysis and Bubble Dynamics during Flow Boiling in Silicon Nanowire Microchannels,” *Int. J. of Heat and Mass Transfer*, 101 (2016) 937-947.
20. F.H. Yang, WM. Li, X.M. Dai, and **Chen Li**, “Flow Boiling Heat Transfer of HFE 7000 in Nanowire-coated Microchannels,” *Applied Thermal Engineering*, 93 (2016) 260-268.

2015

21. W.M. Li, F.H. Yang, Tamanna Alam, J. Khan, and **Chen Li**, “Experimental and Theoretical Studies of Critical Heat Flux of Flow boiling in Microchannels with Microbubble-excited

High-Frequency Two-phase Oscillations,” *Int. J. of Heat and Mass Transfer*, 88 (2015) 368-378.

2014

22. X.M. Dai, F.H. Yang, R.G. Yang, X.Y. Huang, W. Rigdon, X.D. Li and **Chen Li**, “Biphilic nanoporous surfaces enabled exceptional drag reduction and capillary evaporation enhancement,” *Applied Physics Letters*, 105, 191611, 2014.
23. F.H. Yang, M. Alwazzan, W.M. Li, and **Chen Li**, “Single and Two-phase Transport Phenomena in Microchannels with Embedded Chaotic Mixers,” *IEEE/ASME J of MEMS*, DOI (identifier) 10.1109/JMEMS.2014.2313314.
24. J.L. Plawsky, A.G. Fedorov, S.V. Garimella, H.B. Ma, S.C Maroo, **Chen Li**, and Y. Nam, “Nano- and Micro-structures for Thin-Film Evaporation – A Review,” *Nanoscale and Microscale Thermophysical Engineering*, 18(3), (2014) 251-269.
25. M. Favour, G. Carbajal, and **Chen Li**, “Transient Analysis of Heat Transfer and Fluid Flows in a Polymer-based Micro Flat Heat Pipe with Hybrid Wicks,” *Int. J. of Heat and Mass Transfer*, 70, (2014) 545-555.
26. F.H. Yang, X.M. Dai, Y. Peles, P. Cheng, J. Khan, and **Chen Li**, “Flow Boiling Phenomena in a Single Annular Flow Regime in Microchannels (I): Characterization of Flow Boiling Heat Transfer”, *Int. J. of Heat and Mass Transfer*, 68(0) (2014) 703-715.
27. F.H. Yang, X.M. Dai, Y. Peles, P. Cheng, J.A. Khan, and **Chen Li**, “Flow Boiling Phenomena in a Single Annular Flow Regime in Microchannels (II): Reduced Pressure Drop and Enhanced Critical Heat Flux”, *Int. J. of Heat and Mass Transfer*, 68(0) (2014) 716-724.

2013

28. X.M. Dai, M. Favouri, A. Abdulagatov, R.G. Yang, Y.C. Lee, S.M. George, and **Chen Li**, “Capillary Evaporation on Micromembrane-enabled Hybrid Wicks with Atomic Layer Deposited Silica,” *Applied Physics Letters*, 103, 151602, 2013. (**Editor’s pick in Nov. and Dec. 2013**)
29. Fanghao Yang, Xianming Dai, Chih-Jung Kuo, Yoav Peles, Jamil A. Khan, and **Chen Li**, “Enhanced Flow Boiling in Microchannels by Self-sustained High Frequency Two-phase Oscillations,” *Int. J. of Heat and Mass Transfer*, Vol. 58, pp. 402-412, 2013.
30. S. Achaya, J. Alvarado, D. Bannerjee, W. E. Billups, G. Chen, B.A. Cola, W. Cross, E. Duke, S. Graham Jr., H. He, H. Hong, S. Jin, S. Karna, C. H. Li, **Chen Li**, J. Li, G.P. Peterson, J. A. Puszynski, J. Routbort, J. Shan, D. Shin, A. Smirnova, P. Smith, X. Wang, A. Waynick, R. White, X. Yan, W. Yu, “Report on Carbon Nano Material Workshop: Challengers and Opportunities,” *Nanoscale and Microscale Thermophysical Engineering*, 17, pp. 10-24, 2013.
31. Xianming Dai, Fanghao Yang, Ruixian Fang, Tsegaye Yemame, Jamil A. Khan, and **Chen Li**, “Enhanced Single and Two-phase Transport Phenomena using Flow Separation in the Microgap with Copper Woven Mesh Coatings,” *Applied Thermal Engineering*, 54, pp. 281-288, 2013.
32. Fanghao Yang, Xianming Dai, Yoav Peles, Ping Cheng, and **Chen Li**, “Can multiple flow boiling regimes be reduced into a single one in microchannels?” *Applied Physics Letters*, 103, 043122, 2013.
33. Xianming Dai, Xinyu Huang, Fanghao Yang, Xiaodong Li, Joshua Sightler, Yingchao Yang and **Chen Li**, “Enhanced Nucleate Boiling on Horizontal Hydrophobic-hydrophilic Carbon Nanotube Coatings,” *Applied Physics Letters*, 102, 161605, 2013.

34. Xianming Dai, Fanghao Yang, Yung-Cheng Lee, Ronggui Yang, and **Chen Li**, “Micromembrane Enhanced Capillary Evaporation,” *Int. J. of Heat and Mass Transfer*, Vol. 64, pp. 1101-110, 2013.

2012

35. Fanghao Yang, Xianming Dai and **Chen Li**, “High Frequency Microbubble-switched Oscillations Modulated by Microfluidic Transistors,” *Applied Physics Letters*, 101, 073509, 2012.
36. AKM M. Morshed, Fanghao Yang, Yakut Ali, Jamil A. Khan, and **Chen Li**, “Enhanced flow boiling in a microchannel with integration of nanowires,” *Applied Thermal Engineering*, Vol. 32, pp. 68-75. 2012.
37. C. Oshman, Q. Li, W. Wang, C.-Y. Lin, L.-A. Liew, A. Adbulagatov, M. Kong, S. Song, X. Dai, R. Yang, **Chen Li**, S. M. George, V.M. Brighth, S.P. Rawal, R.J. Monson, and Y.C. Lee, “Flexible and Conformal Thermal Ground Planes,” DTIC Document, 2012.

2011

38. Muhammad Yakut Ali, Fanghao Yang, **Chen Li**, and Jamil Khan, “Thermohydraulic characteristics of a single-phase microchannel heat sink coated with copper nanowires,” *Frontiers in Heat and Mass Transfer*, 2, 033003, DOI: 10.5098/hmt.v2.3.3003, 2011.
39. Haiping Hong, Mark Horton, **Chen Li**, G.P. Peterson, “Alignment of carbon nanotubes comprising magnetically sensitive metal oxides in heat transfer nanofluids,” *Thermochimica Acta*, Vol. 525 (1-2), pp. 87-92. (2011)
40. C. Oshman, B. Shi, **Chen Li**, R. G. Yang, Y. C. Lee, G. P. Peterson and V.M. Bright, “The development of polymer-based flat heat pipes (PFHP)”, *IEEE/ASME J of MEMS*, Vol. 20 (2), pp. 4. 2011.

2010

41. Mark Horton, Haiping Hong, **Chen Li**, Bo Shi, G. P. Peterson and Sungho Jin, “Magnetic Alignment of Ni-coated single wall carbon nanotubes in heat transfer nanofluids”, *Journal of Applied Physics*, Vol. 107, 104320, DOI:10.1063/1.3428450. 2010.
42. G. P. Peterson, **Chen Li**, Moran Wang and Gang Chen, “Advancements in Micro/nano Transport Phenomena with Applications in Sustainable Energy and Environment”, Editorial of Special Issue *on Micro/nano Transport Phenomena in Renewable Energy and Energy Efficiency*, *Advances in Mechanical Engineering*, DOI: 10.1155/2010/170590, 2010.
43. **Chen Li**, and G. P. Peterson, “Geometric Effects on Critical Heat Flux on Horizontal Microporous Coatings”, *AIAA Journal of Thermophysics and Heat transfer*, Vol. 24 (3), pp. 449-455. 2010.

2008

44. **Chen Li**, Z. Wang, P.-I. Wang, Y. Peles, G. P. Peterson and N. Koratkar, “Nanostructured Copper Interfaces for Enhanced Boiling,” *SMALL*, Vol. 4, No. 8, pp. 1084-1088, 2008. This work was featured by **Nature News**, 04 July 2008, DOI: 10.1038/news.2008.935.

2007

45. **Chen Li** and G. P. Peterson, “Parametric Study of Pool Boiling in Horizontal Conductive Micro Porous Coated Surfaces” *ASME Journal of Heat Transfer*, Vol. 129, pp. 1465-1475.

2007. (*Top 10 Most Downloaded Articles – November and December 2007 in ASME J of Heat Transfer*)

2006

46. **Chen Li**, G. P. Peterson, and Y. Wang, “Evaporation/boiling on Thin Capillary Wick (I): Thickness Effects,” *ASME Journal of Heat Transfer*, Vol. 128, pp. 1312-1319, 2006.
47. **Chen Li** and G. P. Peterson, “Evaporation/boiling on Thin Capillary Wick (II): Effects of Volumetric Porosity and Mesh Size,” *ASME Journal of Heat Transfer*, Vol. 128, pp. 1320-1328, 2006.
48. **Chen Li** and G. P. Peterson, “The Effective Thermal Conductivity of Wire Screen,” *Int. J. Heat Mass Transfer*, Vol. 49, pp. 4095-4105, 2006.

2005

49. **Chen Li** and R. A. Wirtz, “Development of a High Performance Heat Sink Based on Screen-Fin Technology,” *IEEE TCPT*, Vol. 28(1), pp. 80-87, 2005.

PEER-REVIEWED CONFERENCE PAPERS

1. Jiaxuan Ma, W.M. Li, **Chen Li**, “Enhanced flow boiling in bridged microchannels on HFE7100,” the 16th International Heat Transfer Conference, Beijing, China, August 10-15, 2018.
2. Tamanna Alam, W.M. Li, W. Chang, F.H. Yang, J. Khan, and **Chen Li**, “A comparative study of flow boiling HFE-7100 in Silicon nanowire and plainwall microchannel,” the 16th International Heat Transfer Conference, Beijing, China, August 10-15, 2018.
3. P.T. Wang, R. Dawas, M. Alwazzan, M. Stefik, J. Khan, and **Chen Li**, “Sweating-boosted Air Cooling with Water Dripping,” Proceedings of the ASME Summer Heat Transfer Conference, 5th Joint US-European Fluids Engineering Summer Meeting, and 14th International Conference on Nanochannels, Microchannels, and Minichannels, Washing, DC, USA, July 10-14, 2016.
4. M. Famouri, M. Abdollahzadeh, G.H. Huang, A. Abdulshaheed, G. Carbajal, and **Chen Li**, “Transient Analysis of A Cylindrical Heat Pipe Considering Different Wicks Structures,” Proceedings of the ASME Summer Heat Transfer Conference, 5th Joint US-European Fluids Engineering Summer Meeting, and 14th International Conference on Nanochannels, Microchannels, and Minichannels, Washing, DC, USA, July 10-14, 2016.
5. M. Mobli and **Chen Li**, “On the Heat Transfer Characteristics of A Single Bubble Growth and Departure During Pool Boiling,” Proceedings of the ASME Summer Heat Transfer Conference, 5th Joint US-European Fluids Engineering Summer Meeting, and 14th International Conference on Nanochannels, Microchannels, and Minichannels, Washing, DC, USA, July 10-14, 2016.
6. G.H. Huang, A. Abudlshaheed, W. Chang, and **Chen Li**, “An Evaluation of Hybrid Wick Design on High Performance Copper-Ethanol Heat Pipes,” Joint 18th Int. Heat Pipe Conference and 12th Int. Heat Pipe Symposium, Jeju, Korea, June 12-16, 2016.

7. M. Alwazzan, K. Egab, B.L. Peng, J. Khan, and **Chen Li**, “Condensation on Hybrid/Patterned Copper Surfaces,” Proceedings of the First Pacific Rim Thermal Engineering Conference, Hawaii, USA, March 13-17, 2016.
8. F.H. Yang, X.C. Li, W.M. Li, and **Chen Li**, “Integrate Monolithic Nanostructures to Enhance HFE-7000 Two-Phase Microchannel Heat Sink,” Proceedings of the ASME 2015 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems and ASME 2015 12th International Conference on Nanochannels, Microchannels, and Minichannels, InterPACKICNMM2015, San Francisco, CA, USA, July 6-9, 2015.
9. M. Alwazzan, K. Egab, and **Chen Li**, “Condensation on Thermal Plasma Pray Nickel Coatings on Copper Surfaces,” 9th International, Conference on Boiling and Condensation Heat Transfer, Boulder, Colorado, USA, April 26-30, 2015.
10. W.M. Li, F.H. Yang, and **Chen Li**, “Critical Heat Flux of Flow Boiling in Microchannels with Self-Sustained High Frequency Two-Phase Oscillations,” 9th International, Conference on Boiling and Condensation Heat Transfer, Boulder, Colorado, USA, April 26-30, 2015.
11. F.H. Yang, W.M. Li, and **Chen Li**, “Enhanced Flow Boiling of HFE-7000 in Nano-engineered Microchannels,” the 1st Heat Transfer Symposium, Beijing, China, May 6-9, 2014.
12. F.H. Yang, M. Alwazzan, and **Chen Li**, “Enhanced Flow Boiling of HFE 7000 by Chaotic Mixers in Microchannels,” The 4th ASME Micro/nanoscale Heat and Mass Transfer International Conference, Hongkong, China, Dec. 11-14, 2013.
13. Q. Li, W. Wang, C. Oshman, M. Tian, **Chen Li**, V. M. Bright, Y. C. Lee, and R. G. Yang, “Enhanced Pool Boiling Performance on Micro-, Nano-, and Hybrid Structured Surfaces,” ASME International Mechanical Engineering Congress & Exposition (IMECE) IMECE 2011-64921, Denver, Colorado, November 11-17, 2011.
14. A.K.M. Morshed, Fanghao Yang, Muhammad Y. Ali, Jamil Khan, and **Chen Li**, “Enhanced Flow Boiling in Micro-channel Heat Sink with Copper Nanowire Coatings,” ASME 9th International Conference on Nanochannels, Microchannels and Minichannels, ICNMM 2011-58092, Edmonton, Canada , June 19-22, 2011.
15. Qian Li, Wei Wang, Chris Oshmmman, **Chen Li**, Victor M. Bright, Yung-Cheng Lee and Ronggui Yang, “Hybrid micro/nano structured surfaces for high heat flux dissipation,” 24th International Conference on Micro Electro Mechanical Systems, MEMS 2011, Cancun, Mexico, January 13-27, 2011.
16. Xianming Dai, Levey T. Tran, Fanghao Yang, Bo Shi, Ronggui Yang, YC Lee and **Chen Li**, “Characterization of Hybrid-wicked Copper Acetone Heat Pipes,” Proceedings of the ASME/JSME 8th Thermal Engineering Joint Conference, AJTEC 2011, Honolulu, Hawaii, USA, March 13-17, 2011.
17. Muhammad Yakut Ali, Fanghao Yang, **Chen Li**, and Jamil Khan, “Effect of 1D Cu Nanostructures on heat transfer characteristics of Single Phase Microchannel Heat Sink,” Proceedings of the ASME/JSME 8th Thermal Engineering Joint Conference, AJTEC 2011, Honolulu, Hawaii, USA, March 13-17, 2011.

18. C. Oshman, B. Shi, A. Abdulagatov, S. George, R. G. Yang, Y. C. Lee, V.M. Bright, and **Chen Li**, “Fabrication and Testing of an ALD TiO₂ Coated Flat Polymer Micro Heat Pipe”, *15th International Heat Pipe Conference (15th IHPC)*, Clemson, South Carolina, USA, April 25-30, 2010.
19. Yaxiong Wang, Wenxiu He and **Chen Li**, “Experimental Investigation of the Thermal Performance of Flat Heat Pipe Heat Sink with Multiple Heat Sources,” *15th International Heat Pipe Conference (15th IHPC)*, Clemson, South Carolina, USA, April 25-30, 2010.
20. Ji Li, G. P. Peterson, **Chen Li**, and Guoguang Su, “A Stabilized Boiling/Evaporation Two-phase Flow in Microchannels,” *ASME 2nd Micro/nanoscale Heat & Mass Transfer International Conference*, Shanghai, China, December 18-22, 2009.
21. C. Oshman, B. Shi, **Chen Li**, R. G. Yang, Y. C. Lee, and V.M. Bright, “Fabrication and Testing of a Flat Polymer Micro Heat Pipe”, *15th International Conference on Solid-State Sensors, Actuators & Microsystems*, Denver, Colorado, USA, June 21-25, 2009.
22. **Chen Li**, Nikhil Koratkar, and G. P. Peterson, “Bubble Dynamics on Nanostructured Cu Surfaces”, *ASME Proceedings of MicroNano08*, Clear Water Bay, Kowloon, Hong Kong, China, June 3-5, 2008.
23. **Chen Li**, G. P. Peterson, Ji Li, and Nikhil Koratkar, "The Visualization of the Evaporation Process on Thin Micro Sintered Copper Mesh Screen", *ASME Heat Transfer Summer Conference*, August 10-14, 2008, Jacksonville, FL, USA, 2008.
24. **Chen Li** and G. P. Peterson, “Experimental Studies on CHF of Pool Boiling on Horizontal Conductive Micro Porous Coated Surfaces,” *Proceedings of the Space Technology and Applications International Forum (STAIF-2008)*, Albuquerque, New Mexico, US, 2008.
25. **Chen Li**, “Enhanced Evaporation/Boiling Heat Transfer,” *International Conference on Renewable Energy Scale-up Developing (ICRESD) and Third Energy Technical Forum In Far-Yangtze River Triangle Area*, Nanjing, P. R. China, Nov. 16-17, 2006.
26. **Chen Li** and G. P. Peterson, “Comprehensive Comparisons between Evaporation and Nucleate Boiling on Micro Porous Coated Surfaces,” *2006 ASME International Mechanical Engineering Conference*, Chicago, IL, Nov. 05 – 10, 2006.
27. **Chen Li** and G. P. Peterson, “Experimental Study of Effects of Volumetric Porosity and Critical Meniscus Radius on Evaporation/boiling from Thin Capillary Wicks,” *2005 ASME International Mechanical Engineering Conference*, Orlando, FL, Nov. 05 – 11, 2005.
28. J. Li, G. P. Peterson, P Cheng and **Chen Li**, “Local Heat Transfer Measurement of forced liquid convection in Microchannel,” *2005 ASME International Mechanical Engineering Congress and Exposition (IMECE2005)*, Orlando, FL, Nov. 05-11, 2005.
29. **Chen Li**, G. P. Peterson and Y. Wang, “Experimental Study of Thickness effects in evaporation/boiling on Thin Sintered-Copper-Mesh Surface,” *2005 ASME Summer Heat Transfer Conference*, San Francisco, CA, July 17 – 22, 2005.
30. **Chen Li**, G. P. Peterson and Y. Wang, “Capillary Condensation on Micro-finned surfaces,” *42th AIAA Aerospace Science Meeting*, Reno, NV. Jan. 5 – 8, 2004.

31. **Chen Li** and R. A. Wirtz, “Development of a High Performance Heat Sink Based on Screen-Fin Technology,” Proc 19th Semiconductor Thermal Measurement and Management Symposium, IEEE 02CH37437, pp. 53 - 60, San Jose, CA March 6 – 10, 2003.
32. R. A. Wirtz, **Chen Li**, Ji-Wook Park and J. Xu, “High Performance Woven Mesh Heat Exchanges,” 11th AIAA/MDA Technology Conference and Exhibit, Monterey, CA, July 29 – Aug 2, 2002.
33. **Chen Li**, “Thermal Analysis of LM-4B Launch Vehicle’s Fairing,” The 5th Space Thermophysics Conference of Chinese Institute of Astronautics, Huangshan, China, 2000.
34. X. Zhao, C. Shen, and **Chen Li**, “Investigation of the Startup Performance of CPL or LHP,” The 5th Space Thermophysics Conference of Chinese Institute of Astronautics, Huangshan, China, 2000.
35. X. Zhao, M. Tian, **Chen Li**, and C. Shen, “Application and Design of CPL in FY-1C,” 5th Space Thermophysics Conference of Chinese Institute of Astronautics, Huangshan, China, 2000.
36. Y. Chen, **Chen Li**, M. Jin, and J. Tang, “Investigation of Thermal Performance of Anti-Gravity L-Shape Copper-Water Heat Pipe,” National Heat and Mass Transfer Conference of Chinese Institute of Thermophysical Engineering, 973103, IV-94-6, Chongqing, China, 1997.

SELECTED PRESENTATIONS

1. W.M. Li, T. Alam, J. Khan, and **Chen Li**, “Highly Efficient Flow Boiling in Micro/Nano-Engineered Microchannels,” 21st Workshop on Thermophysics in Microgravity, El Segundo, CA, USA. March 27 (2017)
2. W. Chang, W.M. Li, T. Alam, and **Chen Li**, “Length Effect on Flow Boiling of HFE-7100 in Silicon Nanowire Microchannels,” poster presentation in the Gordon Conference in Micro/nanoscale Two-phase heat transfer, Jan 9 (2017)
3. T. Alam, W.M. Li, W. Chang, F.H. Yang, J. Khan, and **Chen Li**, “Flow Regime Development and Flow Pattern Map of Flow Boiling Silicon Nanowire Microchannels,” poster presentation in the Gordon Conference in Micro/nanoscale Two-phase heat transfer, Galveston, TX, USA. Jan 9 (2017)
4. W.M. Li, T. Alam, W. Chang, J. Khan, and **Chen Li**, “Enhanced Flow Boiling with HFE7100 in Microchannels Coupling Multiple Nozzles with Reentry Cavities,” poster presentation in the Gordon Conference in Micro/nanoscale Two-phase heat transfer, Galveston, TX, USA. Jan 9 (2017)
5. P.T. Wang, R. Dawas, M. Alwazzan, M. Stefik, J. Khan, and **Chen Li**, “Sweating-boosted Air Cooling with Water Dripping,” the ASME Summer Heat Transfer Conference, 5th Joint US-European Fluids Engineering Summer Meeting, and 14th International Conference on Nanochannels, Microchannels, and Minichannels, July 10-14, Washing, DC, USA. (2016)
6. M. Famouri, M. Abdollahzadeh, G.H. Huang, A. Abdulshaheed, G. Carbajal, and **Chen Li**, “Transient Analysis of A Cylindrical Heat Pipe Considering Different Wicks Structures,” the ASME Summer Heat Transfer Conference, 5th Joint US-European Fluids Engineering Summer Meeting, and 14th International Conference on Nanochannels, Microchannels, and Minichannels, July 10-14, Washing, DC, USA. (2016)

7. M. Mobli, and **Chen Li**, “On the Heat Transfer Characteristics of A Single Bubble Growth and Departure During Pool Boiling,” the ASME Summer Heat Transfer Conference, 5th Joint US-European Fluids Engineering Summer Meeting, and 14th International Conference on Nanochannels, Microchannels, and Minichannels, July 10-14, Washing, DC, USA. (2016)
8. G.H. Huang, A. Abudlshaheed, W. Chang, and **Chen Li**, “An Evaluation of Hybrdi Wick Design on High Performance Copper-Ethanol Heat Pipes,” Joint 18th Int. Heat Pipe Conference and 12th Int. Heat Pipe Symposium, June 12-16, Jeju, Korea. (2016)
9. M. Alwazzan, K. Egab, B.L. Peng, J. Khan, and **Chen Li**, “Condensation on Hybrid/Patterned Copper Surfaces,” the First Pacific Rim Thermal Engineering Conference, March 13-17, Hawaii, USA. (2016)
10. F.H. Yang, X.C. Li, W.M. Li, and **Chen Li**, “Integrate Monolithic Nanostructures to Enhance HFE-7000 Two-Phase Microchannel Heat Sink,” the ASME 2015 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems and ASME 2015 12th International Conference on Nanochannels, Microchannels, and Minichannels, InterPACKICNMM2015, July 6-9, San Francisco, CA, USA. (2015)
11. M. Alwazzan, K. Egab, and **Chen Li**, “Condensation on Thermal Plasma Pray Nickel Coatings on Copper Surfaces,” 9th International, Conference on Boiling and Condensation Heat Transfer, April 26-30, Boulder, Colorado, USA. (2015)
12. F.H. Yang, X.C. Li, W.M. Li, and **Chen Li**, “Integrate Monolithic Nanostructures to Enhance HFE-7000 Two-Phase Microchannel Heat Sink,” Proceedings of the ASME 2015 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems and ASME 2015 12th International Conference on Nanochannels, Microchannels, and Minichannels, InterPACKICNMM2015, July 6-9, San Francisco, CA, USA. (2015)
13. M. Alwazzan, K. Egab, and **Chen Li**, “Condensation on Thermal Plasma Pray Nickel Coatings on Copper Surfaces,” 9th International, Conference on Boiling and Condensation Heat Transfer, April 26-30, Boulder, Colorado, USA. (2015)
14. W.M. Li, F.H. Yang, and **Chen Li**, “Critical Heat Flux of Flow Boiling in Microchannels with Self-Sustained High Frequency Two-Phase Oscillations,” 9th International, Conference on Boiling and Condensation Heat Transfer, April 26-30, Boulder, Colorado, USA. (2015)
15. F.H. Yang, W.M. Li, and **Chen Li**, “Enhanced Flow Boiling of HFE-7000 in Nano-engineered Microchannels,” The 1st Heat Transfer Symposium, May 6-9, Beijing, China. (2014)
16. F.H. Yang, M. Alwazzan, and **Chen Li**, “Enhanced Flow Boiling of HFE 7000 by Chaotic Mixers in Microchannels,” *The 4th ASME Micro/nanoscale Heat and Mass Transfer International Conference*, Hongkong, China, Dec. 11-14. (2013)
17. F.H. Yang and **Chen Li**, “Flow Boiling Phenomena in a Single and Periodic Annular Flow Enabled by Si Nanowires in Microchannels,” *The 4th ASME Micro/nanoscale Heat and Mass Transfer International Conference*, Hongkong, China, Dec. 11-14. (2013)

18. Fanghao Yang, Xianming Dai and **Chen Li**, “Flow Boiling in Microchannels with ‘Feedback’ Loops,” *ASME 3rd Micro/Nanoscale Heat & Mass Transfer International Conference*, March, 2012, Atlanta, GA, USA. (2012)
19. X.M. Dai, F.H. Yang, T. Yemame, R.X. Fang, J.A. Khan and **Chen Li**, “Enhanced Flow Boiling by Fluid Separation and Merging in Microgap,” *ASME 3rd Micro/Nanoscale Heat & Mass Transfer International Conference*, March, 2012, Atlanta, GA, USA. (2012)
20. X.M. Dai, F.H. Yang, Y.C. Lee, R.G. Yang and **Chen Li**, “Oscillating Evaporation Induced by Microscale Bi-porous Structures,” *ASME 3rd Micro/Nanoscale Heat & Mass Transfer International Conference*, March, 2012, Atlanta, GA, USA. (2011)
21. M. Famouri, G. Carbajal, X.M. Dai and **Chen Li**, “Two-phase Fluid Flow and Heat Transfer Simulation in Micro Flat Heat Pipes,” *ASME 3rd Micro/Nanoscale Heat & Mass Transfer International Conference*, March, 2012, Atlanta, GA, USA. (2011)
22. X.M. Dai and **Chen Li**, “Supernucleating interfaces Made from Functionalized Carbon Nanotubes (FCNTs),” *Carbon Nano Materials and Applications Workshop, South Dakota School of Mines*, November, 2011, Rapid City, SD. (2011)
23. B. Shi, C. Oshman, A. Abdulagatov, M. Lee, V. Yong, D.U. Ahn, C-Y. Lin, W. Wang, J-H. Cheng, **Chen Li**, R. Yang, V. Bright, S. George, G.P. Peterson, and Y.C. Lee, “Development of Micro/Nano-Enabled Flexible Thermal Ground Plane,” *IMAPS International Conference and Exhibition on Device Packaging, Workshop on MEMS & Associated Microsystems*, Scottsdale, Arizona, March 9 - 12 (2009).
24. **Chen Li**, “The Visualization of the Evaporation Process on Thin Micro Sintered Copper Mesh Screen”, *ASME Heat Transfer Summer Conference*, August 10-14, 2008, Jacksonville, FL, USA. (2008)
25. **Chen Li**, “Bubble Dynamics on Nanostructured Cu Surfaces”, *ASME MicroNano08*, June 3-5, 2008, Clear Water Bay, Kowloon, Hong Kong, P. R. China. (2008)
26. **Chen Li**, G.P. Peterson, “Experimental Studies on CHF of Pool Boiling on Horizontal Conductive Micro Porous Coated Surfaces,” the *Space Technology and Applications International Forum (STAIF-2008)*, Albuquerque, NM, USA. (2008)
27. **Chen Li**, and G.P. Peterson, “Comprehensive Comparisons between Evaporation and Nucleate Boiling on Micro Porous Coated Surfaces,” *2006 ASME International Mechanical Engineering Conference*, Chicago, IL, USA. (2006)
28. **Chen Li**, and G.P. Peterson, “Experimental Study of Effects of Volumetric Porosity and Critical Meniscus Radius on Evaporation/boiling from Thin Capillary Wicks,” *2005 ASME International Mechanical Engineering Conference*, Orlando, FL, USA. (2005)
29. **Chen Li**, Y.X. Wang, and G.P. Peterson, “Experimental Study of Thickness effects in evaporation/boiling on Thin Sintered-Copper-Mesh Surface,” *2005 ASME Summer Heat Transfer Conference*, San Francisco, CA, USA. (2005)
30. **Chen Li**, “Flat Plate Heat Pipe Cooling Device for Mobile Computers,” *2004 ASME International Mechanical Engineering Conference*, Washington DC, USA. (2004)
31. **Chen Li**, G.P. Peterson, “Capillary Condensation on Micro-finned surfaces,” *The 42th AIAA Aerospace Science Meeting*. Reno, NV, USA. (2004)

SEMINARS

1. “Micro/Nanoscale Two-Phase Transport for Water-Energy Nexus,” Presented in Suzhou University of Science and Technology, Suzhou, China, July 4, 2017.
2. “Sophisticatedly manipulate/control complex two-phase transport at micro/nanoscale” Presented in North China Electric Power University, Beijing, China, June 29, 2017.
3. “Sophisticatedly manipulate/control complex two-phase transport at micro/nanoscale” Presented in Tsinghua University, Beijing, China, June 27, 2017.
4. “Sophisticatedly manipulate/control complex two-phase transport at micro/nanoscale” Presented in NASA Jet Propulsion Laboratory, Pasadena, CA 91109, May 19, 2017.
5. “Mechanisms of Enhanced Flow Boiling with High Frequency Self-modulated Microbubble-switched Oscillations,” Presented in the School of Chemical Engineering at the Dalian University of Science and Technology, Dalian, China, July 26, 2016.
6. “To what extent can we manipulate two-phase transport at micro/nanoscale,” Presented in Institute of Electronics and Nanoengineering, Georgia Tech. Atlanta, GA, USA, March 28, 2016.
7. “Two-phase heat transfer: potentials, challenges, and opportunities propelled by micro/nanoscale structures,” Presented in the School of Chemical Engineering at the Dalian University of Science and Technology, Dalian, China, July 21, 2015.
8. “Two-phase heat transfer: potentials, challenges, and opportunities propelled by micro/nanoscale structures,” Presented in the School of Energy Engineering at the Zhejiang University, Hangzhou, China, July 13, 2015.
9. “Two-phase heat transfer: potentials, challenges, and opportunities propelled by micro/nanoscale structures,” Presented in the Department of Mechanical Engineering at Virginia Tech., Blacksburg, March 16, 2015.
10. “Two-phase Heat Transfer on Micro/nano-Structures,” Presented in the Department of Mechanical Engineering at the University of South Carolina, Columbia, SC, USA, January, 2015.
11. “Enhanced Flow Boiling in Microchannels,” Presented in the School of Chemical Engineering at the Dalian University of Science and Technology, Dalian, China, July, 2014.
12. “Enhanced Flow Boiling in Microchannels,” Presented in the School of Mechanical and Power Engineering at the Shanghai Jiaotong University, Shanghai, China, July, 2014.
13. “Enhanced Flow Boiling in Microchannels,” Presented in the College of Engineering at Peking University, Beijing, China, May 8, 2014.
14. “Toward Sophisticated Controls of Two-Phase Transport at Micro/Nanoscale” Presented in the Department of Mechanical and Aerospace Engineering at the University of Missouri, Columbia, MO. USA. April, 2014.
15. “Toward Sophisticated Controls of Two-Phase Transport at Micro/Nanoscale” Presented in the Department of Mechanical, Aerospace and Nuclear Engineering at the Rensselaer Polytechnic Institute, Troy, NY. USA. September 18, 2013.

16. "Toward Sophisticated Controls of Two-Phase Transport at Micro/Nanoscale" Presented in the Department of Mechanical Engineering at the Yangzhou University, Yangzhou, China, May 10, 2013.
17. "Toward Sophisticated Controls of Two-Phase Transport at Micro/Nanoscale" Presented in the School of Mechanical and Power Engineering at the Shanghai Jiaotong University, Shanghai, China, May 23, 2013.
18. "Recent Work in Micro/nanoscale Two-Phase Heat Transfer," Presented in the Department of Applied and Computational Mathematics at the University of South Carolina, Columbia, SC, USA. October 2, 2012.
19. "Micro/Nano-Engineered Interfaces for Two-Phase Heat Transfer and Its Roles in Renewable Energy," Presented in the Department of Applied and Computational Mathematics at the University of South Carolina, Columbia, SC, USA. September 1, 2010.

TEACHING

EMCH 354 Heat Transfer	Fall 2010, 2011, 2012, 2013, 2014 and Spring 2012, 2013, 2014, 2015, 2016, 2017, 2018
EMCH 560 Intermediate Fluid Mechanics	Spring 2010, 2011
EMCH 751 Advanced Heat Transfer	Fall 2011, 2012, 2013, 2014, 2015, 2016, 2017

PROFESSIONAL ACTIVITIES

ASME K-9 and K-13 committee members

Editors

1. Guest Editor for a special issue on "*Micro/Nano Heat Transfer in Renewable Energy and Energy Efficiency*" in *Advances in Mechanical Engineering*, 2008-2010.

Topic Organizers

1. Discussion Leader: A Priori Prediction of Nucleation Site Density, *Gordon Research Conference of Micro & Nanoscale Phase Change Heat Transfer*, Galveston, TX, USA, January 8-13, 2017
2. Topic co-Chair (10-19): Multi-Phase Heat Transfer, the ASME 2016 International Mechanical Engineering Congress & Exposition (IMECE), Phoenix, Arizona, 2016.
3. Topic co-Chair (8-3): Heat Transfer in Multiphase Systems II, the ASME 2016 Summer Heat Transfer Conference, Washington, DC, USA, July 10-14, 2016.
4. Topic Chair (6-6): Thin Film/Surface Tension Driven Flows, the ASME 2015 InterPACK/ICNMM conference, San Francisco, CA, USA, July 6-9, 2015.

Track Organizers

1. Track Organizer (Track 4): Micro/nano boiling and condensation heat transfer, the 5th *ASME Microscale and Nanoscale Heat and Mass Transfer Conference (MNHMT)*, Singapore, Singapore, January 3-6, 2016

2. Co-track Organizer (Track 4): Evaporation, boiling, and condensation, *the ASME 12th International Conference on Nanochannels, Microchannels, and Minichannels*, Chicago, IL, August 3-7, 2014.
3. Co-track Organizer (Track 4): Micro/nano boiling and condensation heat transfer, the 4th *ASME Microscale and Nanoscale Heat and Mass Transfer Conference (MNHMT)*, Hongkong, China, December 11-14, 2013.
4. Co-track Organizer (Track 4): Micro/nano boiling and condensation heat transfer, *the 3rd ASME Microscale and Nanoscale Heat and Mass Transfer Conference (MNHMT)*, Atlanta, GA, March 3-6, 2012.

Session Organizers

1. Session Chair (8-3-2): Heat Transfer in Multiphase Systems IIB, the ASME 2016 Summer Heat Transfer Conference, Washington, DC, USA, July 10-14, 2016.
2. Session Organizer (Track 10-4-3): Fundamentals of Phase-Change Heat Transfer, *ASME 2011 International Mechanical Engineering Congress & Exposition (IMECE)*, Denver, CO, November 11-17, 2011.
3. Session Chair (Track 4-4): Boiling and Condensation with Nanofluids and on Nanoscale Structured Surfaces, *the 3rd ASME Microscale and Nanoscale Heat and Mass Transfer Conference (MNHMT)*, Atlanta, GA, March 3-6, 2012.
4. Co-Session Chair (Track 4-2): Two-Phase Flow and Phase-Change Heat Transfer in Microchannels, *the 3rd ASME Microscale and Nanoscale Heat and Mass Transfer Conference (MNHMT)*, Atlanta, GA, March 3-6, 2012.
5. Session Chair, Micro/Nano-Enabled Thermal Management Systems of Micro/Nano08, *ASME 2nd Integration & Commercialization of Micro & Nanosystems International Conference & Exhibition*, Hong Kong, June 3-5, 2008.

Research Proposal Reviewers

1. Israel Science Foundation, 2015
2. NSF Panel Reviewer, 2015
3. ACS Petroleum Research Fund, 2013, 2016
4. US Army Research Office (ARO), 2013.
5. Japan Space Exploration Agency (JAXA), 2012.
6. NSF Panel Reviewer, 2010.
7. NASA Panel Reviewer, *Fluid Physics Review Panel*, 2008.

Book Reviewers

1. Handbook of Porous Media-Third Edition, Taylor and Francis, 2014.
2. Annual Review of Heat Transfer Book, Begell House, 2014.
3. *Modern Thermal Design* by H.S. Lee, John Wiley & Sons, Inc., Hoboken, NJ 07030

Journal Reviewers

1. Joule (a sister journal of Cell)

2. Nature Communications
3. Nano Energy
4. Scientific Reports/Nature
5. Microsystems & Nanoengineering/Nature
6. Applied Energy
7. Carbon
8. Applied Physics Letters
9. Journal of Applied Physics
10. ASME J. of Heat Transfer
11. Nanoscale and Microscale Thermophysical Engineering
12. Int. J. of Heat and Mass Transfer
13. AIAA J. of Thermophysics and Heat Transfer
14. Chemical Engineering and Processing: Process Intensification
15. Int. J. of Multiphase Flow
16. Plos One
17. Energies
18. Solar Energy
19. Physics of Fluids
20. Heat Transfer Engineering
21. Int. J. of Thermal Science
22. Int. J. of Heat Transfer Engineering
23. Applied Thermal Engineering
24. J. of Enhanced Heat Transfer
25. J. of Low Temperature Physics
26. Heat Transfer Engineering
27. IEEE Transactions on Electron Devices
28. IEEE Transactions on Advanced Packaging
29. IEEE Transactions on Nanotechnology
30. Frontier in Heat and Mass Transfer

Conference Manuscript Reviewers

1. *The 15th International Heat Transfer Conference*, Kyoto, Japan, 2014.
2. *The third ASME Microscale and Nanoscale Heat and Mass Transfer Conference (MNHMT)*, Atlanta, GA, March 3-6, 2012.
3. *ASME 2011 International Mechanical Engineering Congress & Exposition (IMECE)*, Denver, Colorado, November 11-17, 2011.
4. *ASME 8th International Conference on Nanochannels, Microchannels, and Minichannels*, Montreal, Canada, August 1-5, 2010.
5. *ASME 2nd Integration & Commercialization of Micro & Nanosystems International Conference & Exhibition*, Hong Kong, June 3-5, 2008.
6. *2008 ASME Heat Transfer/Fluids/Energy/Solar/Nano Conferences*, Jacksonville, Florida, USA, August 10-14, 2008.

UNIVERSITY SERVICE

- | | |
|--|-----------|
| 1. ME Department faculty search committee member in USC, | 2017-2018 |
| 2. Department Chair Review Committee of CEC, | 2016 |

3. Members of T&P committee, seminar committee, and graduate study committee in the department of Mechanical Engineering, 2014-present
4. Faculty judge in University Graduate Day, 2013 and 2014
5. ME Department faculty Search Committee in USC, 2012
6. Faculty Search Committee in Civil Engineering in USC, 2010
7. Undergraduate students advisement, 2010-present
8. Faculty secretary of Mechanical Engineering, 2009 – 2010

INVENTION DISCLOSURES AND PATENT APPLICATIONS

U.S. Utility Patents

1. **Chen Li**, Fanghao Yang, and Yan Tong, USC# 1037: “*Ultra-Efficient Two-Phase Evaporators/Boilers Enabled by Nanotip-Induced Boundary Layers*,” US 20140338778 A1
2. **Chen Li**, Fanghao Yang, Xianming Dai, and Yan Tong, “*Enhanced Flow Boiling in Microchannels by High Frequency Microbubble-excited and -Modulated Oscillations*,” US patent, U.S. 2014/0027005 A1.
3. **Chen Li**, Fanghao Yang, Xianming Dai, and Yan Tong, “*Microfluidic Devices for the Generation of Nano-Vapor Bubbles and Their Methods of Manufacture and Use*,” US 9139416 B2
4. **Chen Li**, Xianming Dai, Xinyu Huang, and Fanghao Yang, “*Carbon Nanotube Enabled Hydrophobic-hydrophilic Composite Interfaces*,” US patent, U.S. US 20140037938 A1, July, 2013.
5. Ronggui Yang, Y.C. Lee, Victor M. Bright, **Chen Li**, G. P. Peterson, Christopher Oshman, Bo Shi and Jen-Hau Cheng “*Flexible Thermal Ground Plane and Manufacturing the Same*”, US patent , US 9651312 B2.

U.S. Provisional Patents

1. **Chen Li**, Fanghao Yang, Xianming Dai, and Yan Tong, “*Enhanced Flow Boiling in Microchannels by High Frequency Microbubble-excited and -Modulated Oscillations*,” US Provisional patent, Filed 7/30/2012; Serial no. 61/741,952
2. **Chen Li**, Fanghao Yang, Xianming Dai, and Yan Tong, “*Frequency Microbubble-switched Oscillations Modulated by Microfluidic Transistors*,” US Provisional patent, Filed 8/1/2012; Serial no. 61/742,009
3. **Chen Li**, Fanghao Yang, Xianming Dai, and Yan Tong, “*Ultra-efficient flow boiling enabled by nanoengineered bi-porous interfaces*,” US Provisional patent, Filed 8/1/2012; Serial no. 61/742,007