

Narrative Vitae of

GANG CHEN

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Gang Chen is currently Carl Richard Soderberg Professor of Power Engineering and Head of the Department of Mechanical Engineering at Massachusetts Institute of Technology (MIT). He received his bachelor and master degrees from the Power Engineering Department, Huazhong Institute of Technology (now Huazhong University of Science and Technology or HUST in short), China, in 1984 and 1987, respectively. He stayed at HUST as a lecturer from 1987-1989. He received his PhD degree from the Mechanical Engineering Department, UC Berkeley, in 1993, studying under then Chancellor Chang-Lin Tien. He was an assistant professor at Duke University from 1993 to 1997, a tenured associate professor at University of California at Los Angeles from 1997 to 2001. He joined MIT in 2001 as a tenured associate professor, and was promoted to full professor in 2004.

Professor Chen's research interests center on nanoscale thermal transport and energy conversion phenomena, and their applications in energy storage and conversion, thermal management, and water treatment and desalination. He has made important contributions to the understanding of heat conduction in nanostructures structures such as ballistic and coherent heat conduction in quantum wells and superlattices via both modeling and experimental studies. He and his collaborators invented ways to extract phonon mean free path distributions in solids by exploiting ballistic phonon transport processes and advanced first principles simulation tools to compute phonon thermal conductivity. He and his collaborators exploited the unique nanoscale heat conduction physics to advance the field of thermoelectric materials and their applications in solar thermal and waste heat recovery. His group also developed strategies to engineer nanostructures to achieve high thermal conductivities, including the development and demonstration that polymer nanofibers can be more thermally conductive than most metals, and additives to liquids which significantly improve their thermal conductivity. In addition to nanoscale heat conduction and nanostructured thermoelectrics, Professor Chen's group also advanced the field of thermal radiation, including developing a method to measure radiation heat transfer between two surfaces down to tens nanometer separations and experimental demonstration that radiative heat transfer at such small spacings can exceed the prediction of the Planck blackbody radiation law by three orders of magnitude, and photon trapping in solar photovoltaic cells. By exploring micro/nanoscale transport phenomena, Professor Chen's group is advancing several technologies such as thermoelectric power generation, solar thermal and solar photovoltaics, desalination and waste-water treatment, and highly thermally conductive polymers. Two of Professor Chen's inventions were selected by Scientific American as one of the annual top ten world changing ideas: one on directional solvent extraction technology for desalination and waste water treatment (2012) and one on using batteries to convert thermal energy into electricity (2014). Professor Chen authored a book entitled "Nanoscale Energy Transfer and Conversion: a parallel treatment of electrons, molecules, phonons, and photons"---the first textbook in the field and his lectures are freely available online via the MIT Open Courseware program. He has published more than 355 archival journal articles, 24 book chapters, and given over 450 invited

talks all over the world. He is a Thomson Reuters highly cited researcher. Professor Chen has supervised over 70 M.S. and Ph.D. thesis and over 60 post-docs and visiting scholars. More than 40 of his Ph.D. students and post-docs are in academia. He has over 50 granted and pending patents, and cofounded two companies.

Professor Chen has done extensive service both within and outside MIT. He is currently the Head of the MIT Mechanical Engineering Department and the director of the MIT Pappalardo Micro/Nano Engineering Laboratory. He served as the head of the Micro/Nano Engineering Area of the MIT Mechanical Engineering Department and a member of the Mechanical Engineering Department Council. He chaired the advisory board of the ASME Nanotechnology Institute, and served on the advisory board of several other organizations. He is serving (or served) on the editorial/advisory board of nine journals. He led the first US Department of Defense Multidisciplinary University Research Initiative (MURI) on thermoelectric materials, and currently serves as the director of “Solid-State Solar-Thermal Energy Conversion Center (S3TEC)”, an Energy Frontier Research Center funded by the US Department of Energy.

Chen is a recipient of a K.C. Wong Education Foundation fellowship and a John Simon Guggenheim Foundation fellowship. He received an NSF Young Investigator Award, an R&D 100 award, an ASME Heat Transfer Memorial Award, a Japan Heat Transfer Societies Nukiyama Memorial Award, a World Technology Award (Energy category), the Eringen Medall from the Society of Engineering Science, and the MIT Capers and Marion McDonald Award for Excellence in Mentoring and Advising. He is a fellow of American Association for the Advance of Science (AAAS), American Physical Society (APS), and American Society of Mechanical Engineers (ASME). He is a member of the US National Academy of Engineering and an academician of Academia Sinica.

Curriculum Vitae

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Research Interests:

Experimental, theoretical, and numerical study of fundamental thermal energy conversion and transport mechanisms at micro- and nanometer scales, with applications to thermoelectrics, photovoltaics, thermophotovoltaics, microelectronics and photonics; nanoengineered materials with high and low thermal conductivities; thermal interface materials; ultrafast transport processes; thermal radiation and electromagnetic metamaterials; water treatment and desalination.

Education:

University of California, Berkeley, Mechanical Engineering, Ph.D. 1993
 Dual Minors in Thermodynamics and Electrical Engineering.
 Thesis Advisor: NEC Distinguished Professor and Chancellor: Chang-Lin Tien.
 Thesis Title: "Thermal Phenomena in Optical and Optoelectronic Thin Film Devices."

Huazhong University of Science and Technology, Power Engineering, M.E., 1987
 Master Thesis Advisor: Professor and Chairman S. M. Cheng. Thesis Title:
 "Heat Transfer and Fluid Flow around Droplet-Shaped Cylinders."

Huazhong University of Science and Technology, Power Engineering, B.E., 1984

Professional Experience:

23/7/13-present Head, Mechanical Engineering Department, MIT

7/04-present Professor, Mechanical Engineering Department, MIT.

7/01-6/04 Associate Professor, Mechanical Engineering Department, Massachusetts Institute of Technology.

11/96-6/01 Associate Professor, Mechanical and Aerospace Engineering Department, University of California at Los Angeles.

7/93-6/97 Assistant Professor, Department of Mechanical Engineering and Materials Science, Duke University.

6/90-5/93 Graduate Student Research Assistant, University of California, Berkeley.

10/89-5/90 Graduate Student Research Assistant, University of California, Irvine.

5/87 - 9/89 Lecturer, Huazhong University of Science and Technology, China.

Selected Awards and Honors:

11/2016 Distinguished Colloquium, U. Chicago, Institute of Molecular Engineering

- 10/2016 Eringen Medal, Society of Engineering Science
- 9/2016 Thomson Reuters Highly Cited Researcher
- 8/2016 Alwin Schaller Lecture, Department of Mechanical Engineering, UIUC
- 8/2016 Distinguished Lecture, U. Virginia, Department of Mechanical Engineering
- 5/2016 David Goodwin Memorial Lecture, Caltech.
- 4/2016 Leaders in Engineering Lecture, RPI MANE.
- 3/2016 Distinguished Seminar, Department of Mechanical Engineering, Northeastern University
- 11/2015 World Technology Award in Energy
- 7/2015 William Mong Distinguished Lecture, University of Hong Kong.
- 1/2015 Institute of Advanced Studies Distinguished Seminar, Hong Kong University of Science and Technology.
- 12/2014 Batteries that Capture Low-Grade Waste Heat named by Scientific America Magazine as one of 10 World Changing Ideas.
- 7/2014 Academician, Academia Sinica, Taiwan
Citation: "For pioneering contributions in understanding heat transport and energy conversion mechanisms at micro- and nanometer scales; experimental demonstration of enhanced near-field thermal radiation heat transfer beyond the Planck law by three orders of magnitude; leading to significant advances in energy related materials and technology."
- 7/2014 Outstanding Alumni Award, Huazhong University of Science and Technology
- 5/2014 Nukiyama Memorial Award, Heat Transfer Society of Japan
- 5/2014 Penner Lecture, Department of Mechanical Engineering, UCSD.
- 1/2014 Distinguished Lecture, ME8888 Seminar, Ohio State University
- 4/2013 75th Anniversary Medal of the ASME Heat Transfer Division
- 3/2013 George Persall Lecture, Duke University.
- 11/2012 Directional Solvent Extraction Technology Named by Scientific America Magazine as one of 10 World Changing Ideas.
- 11/2012 Fellow, American Physical Society
Citation: "For pioneering contributions to the understanding of heat transfer at nanoscale and to the development of thermoelectric energy conversion technologies."
- 11/2012 Hawkins Lecture, Purdue University
- 9/2012 Springer Professor, UC Berkeley
- 7/2012 Guest Professor, Tsinghua University
- 6/2012 Distinguished Seminar, U. Toronto Mechanical Engineering Department.
- 11/2011 Distinguished Lecture, CMU Mechanical Engineering Department.
- 6/2011 Honorary Professor, Hubei University of Arts and Science, China
- 5/2011 Capers and Marion McDonald Award for Excellences in Mentoring and Advising, MIT School of Engineering.
- 2011 Distinguished Lecture, University of Connecticut, School of Engineering.
- 2010 JALA Ten 2010 for High Thermal Conductivity Polymers.
- 2010 Honorary Professor, Shanghai University
- 2010 Member, National Academy of Engineering

- Citation: For contributions to heat transfer at the nanoscale and to thermoelectric energy conversion technology.
- 2009 Fellow, American Association for Advancement of Science
Citation: For advances in understanding heat transfer at the nanoscale and in developing thermal energy technology.
- 2009 Carl Richard Soderberg Professor of Power Engineering, MIT School of Engineering
- 2009 Dusenberre Distinguished Lecture, Penn State University, College Station.
- 2008 R&D 100 Award for High Performance Thermoelectric Materials
- 2008 ASME Heat Transfer Memorial Award, Science Category.
Citation: For seminal and experimental contributions in the field of transport mechanisms at micro- and nanometer scales, with applications to energy conversion devices, and pioneering work on nanoengineered materials with high and low thermal conductivities.
- 2007 Honorary Professor, Huanan University of Science and Technology, China
- 2007 Guest Professor, Wuhan University of Science and Technology, China
- 2006 Fellow, ASME
- 2006-2009 Warren and Towneley Rohsenow Professorship, MIT
- 2005 Best Paper Award (Research Category), InterPACK'05 (the ASME/Pacific Rim Technical Conference and Exhibition on Integration and Packaging of MEMS, NEMS, and Electronic Systems, July 17-22, San Francisco).
- 2005-2009 Guest Professor, Xian Jiaotong University, China.
- 2004 NASA Space Act Tech Brief Award
- 2002-2003 Guggenheim Fellowship.
- 1994-2001 National Science Foundation Young Investigator Award.
- 1999- Guest Professor, Huazhong University of Science and Technology, China.
- 1994-1997 Outstanding Reviewer for Journal of Heat Transfer.
- 1996-1997 Warren Faculty Scholar, Duke University.
- 1995, 2002 Invited participant of the NAE First Ann. Symp. Frontiers of Engineering.
- Fall, 92 Arthur Gould Tasheira Scholarship, University of California, Berkeley.
- 10/89-10/92 Scholarship, K.C. Wong Education Foundation, Hong Kong.
- Winter, 1990 Fellowship, Dept. Mechanical Engineering, University of California, Irvine.

Award Won by Students under Chen's Supervision:

- 2008 HP best student paper award, 1st place, for paper presented by Sheng Shen, at International Mechanical Engineering Congress.
- 2008 Best paper award, Julius Springer Forum on Applied Physics 2008 for poster paper presented by Sheng Shen.
- 2010 Zhiting Tian, 3rd Prize, ASME Society Wide Micro/Nano Forum at IMECE, Vancouver, November 2010.
- 2012 Winner of the Student Poster Award for Thermoelectric Symposium. B. Liao, M. Zebarjadi, K. Esfarjani and G. Chen, Cloaking core-shell nanoparticles from conducting electrons in solids, poster presentation at Material Research Society Fall Meeting 2012, Boston, MA, Nov. 25-30, 2012 (B9.14).
- 2012 Winner of best poster award in Micro/Nanoscale Heat Transfer. Y. Hu, K. Collins, L. Zeng, M. Luckyanova, G. Chen, "Hybrid Nanostructures for

- Nanoscale Heat Transfer", IMECE2012-93899, Micro Nano Forum Poster Presentation, Houston, TX, Nov. 9-15, 2012.
- 2013 Zhiting Tian, MIT Graduate Women of Excellence
- 2013 Bolin Liao, 3rd Place, MIT ME De Florez Award
- 2013 Maria Luckyanova, winner of students and post-doc competition at 2013 DOE EFRC PI meeting, Washington, DC.
- 2013 Sangyeop Lee, Keivan Esfarjani, Tengfei Luo, Gang Chen, "Resonant Bonding Leads to Low Thermal Conductivity", IMECE2013-67320, ASME International Mechanical Engineering Conference and Exposition, November 15-21, 2013, San Diego, CA (the best poster award in the heat transfer category)
- 2014 Yuan Yang, 2nd Prize at Society Wide Micro/Nano Forum, for poster, "A Charging-free Electrochemical System for Low-grade Heat Harvesting" Yuan Yang, Seok Woo Lee, Yi Cui, and Gang Chen, International Mechanical Engineering Conference and Exposition, Montreal, Canada, November 14-20, 2014
- 2015 Yuan Yang received MRS Postdoctoral Award.
- 2016 Bolin Liao received Kavli Postdoc Fellowship at Caltech.

Selected Professional Activities:

- University of Michigan, Department of Mechanical Engineering External Review Committee, 2016.
- Stanford University, Department of Mechanical Engineering Visiting Committee, January, 2016
- MIT.nano Governing Board, 2015-
- Co-Chair, MIT Department of Nuclear Engineering Department Head Search Committee, 2015
- MIT MTL Policy Board, 2014-
- Co-Chair, 4th China-American Frontier of Engineering Symposium, 2014-2015.
- Co-Chair, 5th China-American Frontier of Engineering Symposium, 2015-2017.
- Dean's Council, MIT School of Engineering, 2013-
- Peer Committee, NAE, 2015-
- Associate Editor-in-Chief: Engineering, 2015-
- Editorial board: Technology, 2013-
- Advisory Board Member: China Southern University of Science and Technology, 2012
- Advssory Board Member: School of Engineering, Nanjing University, 2012
- Editorial Board: Nano Energy, 2011-
- Member of US-Russia Presidential Bilateral Relation Commission Delegation, Moscow, February 27-March 4, 2011.
- Editorial Board, Frontier of Heat and Mass Transfer, 2010-2013.
- Director, Pappalardo Micro/Nanoengineering Laboratory, MIT, 2006-present
- Area Head, Nano Engineering, Mechanical Engineering Department, 2005-10/2009, 2011-2012.
- ME Department Council Member, 2005-2009, 2011-2012.

- Member of US-Russia Presidential Bilateral Relation Commission Delegation, Nano Energy Subgroup, Moscow, February 27-March 4, 2011.
- ASME Heat Transfer Division Award Committee, 2011-2015
- Director, Solid-State Solar-Thermal Energy Conversion Center (S³TEC Center), Funded by the DOE Energy Frontier Research Center Program, 2009-
- Editor, Journal of Nanomaterials, 2005.
- Advisory Board, NSF Center of Scalable Integrated Nanomanufacturing, 2005.
- Board of Advisors, Center for Applied Science, Taiwan, 2004-2016.
- Editorial Board, Microscale and Nanoscale Thermophysical Engineering, 2004-.
- Editorial Board, Journal of Computational and Theoretical Nanoscience, 2004-.
- Associate Editor, ASME Journal of Heat Transfer, July 2002-June 2005.
- Co Editor, Annual Review of Heat Transfer, 2003-.
- Co-Chair, 6th US-Japan Seminar on Nanoscale Transport Phenomena, Boston, July 13-16, 2008.
- Chair, Advisory Board, ASME Nano Institute, Nov., 2005-2008.
- Chair, Nanoscale Phenomena Committee, ASME Nano-Institute, 2003-2005
- Co-Chair--US-Japan Seminar on Nanoscale Heat Transfer, 2005.
- ASME K-8 and K-16, Member.
- Conference Co-Chair, ASME Nano-Institute Conference on Integrated Nanosystems, Berkeley, September 14-16, 2005.
- Conference Chair, International Conference on Energy Nanotechnology, MIT, June 25-28, 2006.
- Conference Co-Chair, International Conference on Energy Nanotechnology, Santa Clara, CA, September 5-7, 2007.
- Co-chair, International Conference on Integration and Commercialization of Micro/Nano Systems, Sanya, China, January 10-13, 2007, ASME/CMES
- Co-Chair, DOE Workshop on Solar Energy Utilization Workshop, Panel 3, Sub-panel on Thermal Utilization, April 18-21, 2005.
- Organizing Committee---National Academy of Engineering 9th Annual Symposium on Frontiers of Engineering, Irvine, California, 2003.
- Organizer--2nd Microtherm Workshop, Albuquerque (1998);
- Program Chairman--18th International Thermoelectrics Conference, Baltimore (1999);

Books

1. G. Chen, Nanoscale Energy Transfer and Conversion, Oxford Press, ISBN 019515942X, 2005.
2. V. Prasad, Y. Jaluria, G. Chen, Editors, In Memory of Chang-Lin Tien, Annual Review of Heat Transfer, vol. 14, Begell House, 2005.
3. G. Chen, J. Karni, V. Prasad, and Y. Jaluria, Editors, Solar Thermal Challenges, Annual Review of Heat Transfer, Solar-Thermal Challenge, vol. 15, 2012.
4. G. Chen, V. Prasad, and Y. Jaluria, Editors, Annual Review of Heat Transfer, vol. 16, 2013.

5. G. Chen, V. Prasad, and Y. Jaluria, Editors, Multiscale Simulation of Phonon and Electron Thermal Transport, Annual Review of Heat Transfer, vol. 17, 2014.
6. E.N. Wang, G. Chen, V. Prasad, and Y. Jaluria, Editors, Thermal Management Fundamentals and Technologies, Annual Review of Heat Transfer, vol. 18, 2015.
7. G. Chen, V. Prasad, and Y. Jaluria, Editors, Annual Review of Heat Transfer, vol. 19, 2016.

Invited Book Chapters:

- IB1. G. Chen, 1996, "Heat Transfer in Micro- and Nanoscale Photonic Devices," *Annual Review of Heat Transfer*, Ed., C.L. Tien, Vol. VII, 1-57.
- IB2. G. Chen, 2001, "Phonon Heat Conduction in Low-Dimensional Structures," Semiconductors and Semimetals, Recent Trends in Thermoelectric Materials Research III, Vol. 71, pp. 203-259, Ed. T. Tritt, Academic press, San Diego.
- IB3. G. Chen, B. Yang, and W.L. Liu, 2003, "Engineering Nanostructures for Energy Conversion," in Heat Transfer and Fluid Flow in Microscale and Nanoscale Structures Editors: M. Faghri and B. Sunden, pp. 45-92.
- IB4. B. Yang and G. Chen, 2003, "Phonon Heat Conduction in Superlattices," in Chemistry, Physics, and Materials Science for Thermoelectric Materials: Beyond Bismuth Telluride, Ed. M.G. Kanatzidis, T.P. Hogan, S.D. Mahanti, pp. 147-167, Kluwer Academic/Plenum Publisher, New York.
- IB5. G. Chen, D. Borca-Tasciuc, R.G. Yang, "Nanoscale Heat Transfer," Encyclopedia of Nanoscience and Nanotechnology, H.S. Nalwa, Ed., American Scientific Publishers, Vol. 7, pp. 429-459 (2004).
- IB6. B. Yang and G. Chen, "Experimental Studies on Thermal Conductivity of Thin Films and Superlattice Materials," in Thermal Conductivity: Theory, Properties, and Applications, T.M. Tritt, Ed., Kluwar Press, New York, pp. 167-185 (2004).
- IB7. T. Borca-Tasciuc and G. Chen, "Thin-Film Thermal Conductivity Measurement Techniques," in Thermal Conductivity: Theory, Properties, and Applications, T.M. Tritt, Ed., Kluwar Press, New York, pp. 205-238 (2004).
- IB8. M. S. Dresselhaus, G. Dresselhaus, J. Heremans, and G. Chen. "Low Dimensional Thermoelectricity," In CRC Handbook; Molecular and Nano-electronics: Concepts, Challenges, and Designs," edited by Y. Gogotsi, CRC Press, Inc., Boca Raton, Florida, USA, 2005.
- IB9. A. Narayanaswamy and G. Chen, "Direct Computation of Thermal Emission from Nanostructures," Annual Review of Heat Transfer, Vol. 14, pp. 169-196, 2005.
- IB10. C. Dames and G. Chen "Thermal Conductivity of Nanostructured Thermoelectric Materials," CRC Handbook, edited by M. Rowe, pp.42-1 to 42-16, 2006, Taylor and Francis, Boca Raton.
- IB11. S. Shen and G. Chen, Molecular Gas Film Lubrication, Encyclopedia of Tribology, Eds. Q.J. Wang and Y.-W. Chang, pp.2309-2313, 2013, Springer.

- IB12. Q. Hao and G. Chen, “Frequency-Dependent Monte Carlo Simulations of Phonon Transport in Nanostructures,” in *Applications of Monte Carlo Simulations In Science and Engineering*, Shaul Mordechai, Intech, Chap. 29, pp. 707-734, 2011.
- IB13. Daniel Kraemer, Kenneth McEnaney, Zhifeng Ren, and Gang Chen, “Solar Thermoelectric Power Conversion,” in *CRC Handbook*, Ed., D.M. Rowe, Taylor&Francis, Boca Raton, pp. 24-1 to 24-16, 2012.
- IB14. Zhifeng Ren, Gang Chen, and Mildred S. Dresselhaus, “Nanostructured Thermoelectric Materials,” in *CRC Handbook*, Ed., D.M. Rowe, Taylor&Francis, Boca Raton, pp. 1-1 to 1-50, 2012.
- IB15. Kenneth McEnaney, Daniel Kraemer, and Gang Chen, “Direct Heat-to-Electricity Conversion of Solar Energy,” *Annual Review of Heat Transfer*, vol. 15, pp. 179-230, 2012.
- IB16. Gang Chen and Jacob Karni, “Introduction: Challenges and Opportunities in Solar Thermal Technologies,” *Annual Review of Heat Transfer*, vol. 15, pp. 1-6, 2012.
- IB17. Gang Chen, “Probing Nanoscale Heat Transfer,” *Annual Review of Heat Transfer*, vol. 16, pp. 1-6, 2013.
- IB18. Weishu Liu, Zhifeng Ren and Gang Chen, Nanostructured Thermoelectric Materials, In *Thermoelectric Nanomaterials*, K. Koumoto and T. Mori (eds.) *Thermoelectric Nanomaterials*, Springer Series 1 in Materials Science 182, DOI: 10.1007/978-3-642-37537-8_11, 2013.
- IB19. G. Chen, “Nanostructured Thermoelectric Energy Scavenging,” *McGraw-Hill Year Book*, 2013.
- IB20. G. Chen, “Multiscale Simulation of Phonon and Electron Thermal Transport,” *Annual Review of Heat Transfer*, Vol. 17, pp.1-8, 2014.
- IB21. Zhiting Tian, Sangyeop Lee and Gang Chen, “A Comprehensive Review of Heat Transfer in Thermoelectric Materials and Devices,” *Annual Review of Heat Transfer*, Vol. 17, pp. 425-483, 2014.
- IB22. Keivan Esfarjani, Jivtesh Garg⁺ and Gang Chen “Modeling Heat Conduction from First-Principles,” *Annual Review of Heat Transfer*, Vol. 17, pp. 9-47, 2014.
- IB23. J. Tong, A. Mercedes, Gang Chen, and Svetlana V. Boriskina, “Local field topology behind light localization and metamaterial topological transitions,” in *Singular and Chiral Nanoplasmonics*, p. 259, Ed. S.V. Boriskina, CRC Press, 2015.
- IB24. Sangyeop Lee and Gang Chen, Nanostructured Thermoelectric Materials, in *Innovative Thermoelectric Materials: Polymer, Nanostructure and Composite Thermoelectrics*; eds. T. Poehler and H. Katz; ISBN: 978-1-78326-605-0.

Journal Publications

- J1. S.M. Cheng, Y.X. Zhao, and G. Chen, 1988, "Experimental Study of Heat Transfer and Flow Resistance of Air Across A Droplet-Shaped Tube," *Chinese Journal of Engineering Thermophysics*, Vol. 9, pp. 359-361 (in Chinese).
- J2. H.R. Zhang, G. Chen, and S.Y. Huang, 1992; "Interaction between Film Condensation on One Side of A Vertical Wall and Natural Convection on the Other with Wall Radiation Taken into Account," *Journal of Huazhong University of Science and Technology*, Vol. 20, pp. 41-47 (in Chinese).
- J3. C. Peng, T. Zeng, and G. Chen, 1992, "Free Convection About Vertical Needles Embedded in a Saturated Porous Medium," *Journal of Thermophysics and Heat Transfer*, Vol. 6, pp. 558-561.
- J4. P.E. Phelan, G. Chen, and C.L. Tien, 1992, "Thickness-Dependent Radiative Properties of Y-Ba-Cu-O Thin Films," *Journal of Heat Transfer*, Vol. 114, pp. 227-233.
- J5. G. Chen and C.L. Tien, 1992, "Partial Coherence Theory of Thin Film Radiative Properties," *Journal of Heat Transfer*, Vol. 114, pp. 636-643.
- J6. K. Richter, G. Chen, and C.L. Tien, 1993, "Partial Coherence Theory of Multilayer Thin-Film Optical Properties," *Optical Engineering*, Vol. 32, pp. 1897-1903.
- J7. G. Chen and C.L. Tien, 1993, "Thermal Conductivity of Quantum Well Structures," *Journal of Thermophysics and Heat Transfer*, Vol. 7, pp. 311-318.
- J8. G. Chen and C.L. Tien, 1993, "Internal Reflection Effects on Transient Photothermal Reflectance," *Journal of Applied Physics*, Vol. 73, pp. 3461-3466.
- J9. G. Chen and C.L. Tien, 1993, "Facet Heating of Quantum Well Lasers," *Journal of Applied Physics*, Vol. 74, pp. 2167-2174.
- J10. P.M. Norris, G. Chen, and C.L. Tien, 1994, "Size Effects on the Temperature Rise of Vertical-Cavity Surface-Emitting Lasers," *International Journal of Heat and Mass Transfer*, Vol. 37, Suppl. 1, pp. 9-17.
- J11. G. Chen and C.L. Tien, 1994, "Thermally-Induced Optical Nonlinearity during Transient Heating of Thin Films," *Journal of Heat Transfer*, Vol. 116, pp. 311-316.
- J12. G. Chen, C.L. Tien, X. Wu, and J.S. Smith, 1994, "Measurement of Thermal Diffusivity of GaAs/AlGaAs Thin-Film Structures," *Journal of Heat Transfer*, Vol. 116, no.2, May, pp. 325-331.
- J13. C.L. Tien and G. Chen, 1994 (Invited), "Challenges in Microscale Conductive and Radiative Heat Transfer," *Journal of Heat Transfer*, Vol. 116, pp. 799-807.
- J14. G. Chen, M. Hadley, and J.S. Smith, 1994, "Pulsed and Continuous Wave Thermal Characteristics of External-Cavity Surface-Emitting Laser Diodes," *Journal of Applied Physics*, Vol. 76, no.6, Sept. 14, pp. 3261-3271.
- J15. G. Chen, 1995, "A Comparative Study on the Thermal Characteristics of Vertical-Cavity Surface-Emitting Lasers," *Journal of Applied Physics*, Vol. 77, no.9, May 1, pp. 4251-4258.

- J16. X.Y. Yu, G. Chen, A. Verma, and J.S. Smith, 1995, "Temperature Dependence of Thermophysical Properties of GaAs/AlAs Periodic Structure," *Applied Physics Letters*, Vol. 67, no. 24, Dec. 11, pp. 3554-3556.
- J17. X.Y. Yu, L. Zhang, and G. Chen, 1996, "Thermal-Wave Measurement of Thin-Film Thermal Diffusivity with Different Laser Beam Configurations," *Review of Scientific Instruments*, Vol. 67, pp. 2312-2316.
- J18. G. Chen, 1996, "Nonlocal and Nonequilibrium Heat Conduction in the Vicinity of Nanoparticles," *ASME Journal of Heat Transfer*, Vol. 118, pp. 539-545.
- J19. G. Chen, 1996, "Optical Effect on Thermal Emission from Semiconductors," *Applied Physics Letters*, Vol. 69, pp. 512-513.
- J20. G. Chen, 1997, "Size and Interface Effects on Thermal Conductivity of Superlattices and Periodic Thin-Film Structures," *ASME Journal of Heat Transfer*, Vol. 119, pp. 220-229.
- J21. G. Chen, T. Borca-Tasciuc, and R.B. Fair, 1997, "Photon Effect on Radiative Properties of Silicon During Rapid Thermal Processing," *Journal of Applied Physics*, Vol. 82, pp. 830-835.
- J22. G. Chen, 1997, "Wave Effects on Radiative Transfer in Absorbing and Emitting Thin-Film Media," *Microscale Thermophysical Engineering*, Vol. 1, pp. 215-224.
- J23. T. Borca-Tasciuc and G. Chen, 1997, "Temperature Measurement of Fine Wires by Photothermal Radiometry," *Review of Scientific Instruments*, Vol. 68, pp. 8040-8043.
- J24. G. Chen and M. Neagu, 1997, "Thermal Conductivity and Heat Transfer in Superlattices," *Applied Physics Letters*, Vol. 71, pp. 2761-2763.
- J25. T. Koga, X. Sun, S.B. Cronin, M.S. Dresselhaus, K.L. Wang, and G. Chen, 1997, "Models for Low-Dimensional Thermoelectricity," *Journal of Computer-Aided Materials Design*, Vol. 82, pp. 830-835.
- J26. G. Chen, 1998, "Thermal Conductivity and Ballistic Phonon Transport in Cross-Plane Direction of Superlattices," *Physical Review B*, Vol. 57, pp. 14958-14973.
- J27. G. Chen and T. Borca-Tasciuc, 1998, "Applicability of Photothermal Radiometry to Temperature Measurement of Semiconductors," *International Journal of Heat and Mass Transfer*, Vol. 41, pp. 2279-2285.
- J28. T. Borca-Tasciuc and G. Chen, 1998, "Thermophysical Property Characterization of Thin Films by Scanning Laser Thermoelectric Microscope," *International Journal of Thermophysics*, Vol. 19, pp. 557-567.
- J29. S.G. Volz and G. Chen, 1999, "Lattice Dynamic Simulation of Silicon Thermal Conductivity," *Physica B, Condensed Matter*, Vol. 263-264, pp. 709-712.
- J30. M.S. Dresselhaus, G. Dresselhaus, X. Sun, Z. Zhang, S.B. Cronin, T. Koga, J.Y. Ying, and G. Chen, 1999, "The Promise of Low-Dimensional Thermoelectric Materials," *Microscale Thermophysical Engineering*, Vol. 3, pp. 89-100 (1999).
- J31. G. Chen, 1999, "Phonon Wave Effects on Heat Conduction in Thin Films and Superlattices," *Journal of Heat Transfer*, Vol. 121, 945-953.

- J32. S.G. Volz and G. Chen, 1999, "Molecular Dynamics Simulation of Thermal Conductivity of Silicon Nanowires," *Applied Physics Letters*, Vol. 75, pp. 2056-2058.
- J33. G. Chen, T. Borca-Tasciuc, B. Yang, D. Song, W.L. Liu, T. Zeng, D.-A. Achimov, 1999, "Heat Conduction Mechanisms and Phonon Engineering in Superlattice Structures," *Thermal Science and Engineering*, Vol. 7, pp. 43-51.
- J34. S. Volz and G. Chen, 2000, "Molecular Dynamics Simulation of Thermal Conductivity of Silicon Crystals," *Physical Review B*, Vol. 61, pp. 2651-2656.
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- J328. Lingping Zeng, Kimberlee Collins, Yongjie Hu, Maria Luckyanova, Alexei Maznev, Samuel Huberman, Vazrik Chiloyan, Jiawei Zhou, Xiaopeng Huang, Keith Nelson, and Gang Chen “Measuring phonon mean free path distributions by probing quasiballistic phonon transport in grating nanostructures,” *Scientific Report*, Vol. 5, 17131, DOI:10.1038/srep17131, Nov. 27, 2015.
- J329. Jiawei Zhou, Bolin Liao, Bo Qiu, Samuel Huberman, Keivan Esfarjani, and Gang Chen, “Ab initio optimization of phonon drag effect for lower-temperature thermoelectric energy conversion” *Proceedings of National Academy of Sciences of the United States of America*, Vol. 111 (48) 17011-17016; doi:10.1073/pnas.1415097111, 2015.
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- J331. Weishu Liu, Jiawei Zhou, Qing Jie, Yang Li, Hee Seok Kim, Jiming Bao, Gang Chen, and Zhifeng Ren, “New insight into the material parameter B that enhanced the thermoelectric performance of $\text{Mg}_{2+\delta}\text{Sn}_{1-x-y}\text{Ge}_x\text{Sb}_y$,” *Energy and Environmental Science*, DOI: 10.1039/C5EE02600H, Vol. 9, pp. 530-539, 2016.
- J332. S.V. Boriskina, M.A. Green, K. Catchpole, E. Yablonovitch, M.C. Beard, Y. Okada, S. Lany, T. Gershon, A. Zakutayev, M.H. Tahersima, V.J. Sorger, M.J. Naughton, K. Kempa, M. Dagenais, Y. Yao, L. Xu, X. Sheng, N.D. Bronstein, J.A. Rogers, A.P. Alivisatos, R.G. Nuzzo, J.M. Gordon, DM. Wu, M.D. Wisser, A. Salleo, J. Dionne, P. Bermel, J.J. Greffer, I. Celanovic, M. Soljagic, A. Manor, C. Rotschild, A. Raman, L.X. Zhu, S.H. Fan, and G. Chen, “Roadmap on Optical Energy Conversion,” (G. Chen contribution: “Entropy Flux and Upper Limit of Energy Conversion of Photons”). *Journal of Optics*, Vol. 17, No. 7, Article No. 073004, 2016.

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- J334. Matthew S. Branham, Wei-Chun Hsu, Selcuk Yerci, Brittany R. Hoard, Abasifreke Ebong, Sang Eon Han, and Gang Chen, “Empirical Comparison of Random and Periodic Surface Light-Trapping Structures for Ultrathin Silicon Photovoltaics” *Advanced Photonic Materials*, DOI: 10.1002/adom.201500667, Vol. 4, 858-863, 2016.
- J335. Yuan Yang, Xiaopeng Huang, Zeyuan Cao, and Gang Chen, “Thermally Conductive Separator for Improving Thermal Management in Batteries,” *Nano Energy*, 22, 301-309, 2016.
- J336. Lingping Zeng, Vazrik Chiloyan, Samuel Huberman, Alexei Maznev, Jean-Philippe Peraud, Nicolas Hadjiconstantinou, Keith Nelson, and Gang Chen, “Monte Carlo Study of Non-diffusive Relaxation of a Transient Thermal Grating in Thin Membranes,” *Applied Physics Letters*, 108, 063107, 2016.
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- J338. Jiawei Zhou, Bolin Liao, and Gang Chen, “First-principles calculations of thermal, electrical, and thermoelectric transport properties of semiconductors,” *Semiconductor Science and Technology (topical review)*, Vol. 31, 4, 043001, 2016.
- J339. Wei-Chun Hsu, Jonathan K. Tong, Matthew S. Branham, Yi Huang, Selcuk Yerci, Svetlana V. Boriskina, and Gang Chen “Mismatched Front and Back Gratings for Optimum Light Trapping in Ultra-Thin Crystalline Silicon Solar Cells,” *Optics Communications*, Vol. 377, pp. 52-58, 2016.
- J340. Qian Zhang, Eyob Kebede Chere, Yumei Wang, Hee Seok Kim, Ran He, Feng Cao, Keshab Dahal, David Broido, Gang Chen, Zhifeng Ren, High Thermoelectric Performance n-type $\text{PbTe}_{1-y}\text{S}_y$ due to Deep Lying States by Indium Doping and Spinodal Decomposition,” *Nano Energy*, Vol. 22, 572-582, 2016.
- J341. Vazrik Chiloyan, Lingping Zeng, Samuel Huberman, Alexei A. Maznev, Keith A. Nelson, Gang Chen, “Variational Approach to Solving the Spectral Boltzmann Transport Equation in Transient Thermal Grating for Thin Films,” *Journal of Applied Physics*, Vol. 120, 025103, 2016.
- J342. Sungwoo Yang, Xiaopeng Huang, Gang Chen, Evelyn N. Wang, “Three-dimensional graphene enhanced heat conduction of porous crystals” *Journal of Porous Materials*, DOI 10.1007/s10934-016-0225-9, 2016.
- J343. George Ni, Gabriel Li, Svetlana V. Boriskina, Hongxia Li, Weilin Yang, TieJun Zhang, Gang Chen, “Steam Generation under One Sun and Ambient Conditions,” *Nature Energy*, DOI: 10.1038/NENERGY.2016.126, Vol 1, Article No. 16126, August 22, 2016.
- J344. Svetlana V. Boriskina, Lee A. Weinstein, Jonathan K. Tong, Wei-Chun Hsu, Gang Chen, “Hybrid optical-thermal antennas for enhanced light focusing and radiative cooling,” *ACS Photonics*, DOI: 10.1021/acsp Photonics.6b00374, Volume: 3 Issue: 9 Pages: 1714-1722, SEP 2016.
- J345. Daniel Kraemer, Qing Jie, Kenneth McEnaney, Feng Cao, Weishu Sui, Lee Weinstein, James Loomis, Zhifeng Ren, and Gang Chen, “Concentrating solar thermoelectric

- generators with a peak efficiency of 7.4%,” *Nature Energy*, DOI: 10.1038/NENERGY.2016.153, Vol.1, Article No. 16153, 2016.
- J346. Bolin Liao, Alexei A. Maznev, Mildred S. Dresselhaus, Keith A. Nelson, and Gang Chen, “Photo-excited charge carriers suppress sub-THz phonon mode in silicon at room temperature,” *Nature Communications*, DOI: 10.1038/ncomms13174, Vol. 7, No. 13174, 2016.
- J347. Wei-Chun Hsu, Jonathan K. Tong, Bolin Liao, Yi Huang, Svetlana V. Boriskina, and Gang Chen, “Entropic and Near-Field Improvements of Radiative Cells,” *Scientific Report*, DOI: 10.1038/srep34837, Vol. 6, No. 34837, 2016.
- J348. Feng Cao, Yi Huang, Lu Tang, Tianyi Sun, Svetlana V. Boriskina, Gang Chen, and Zhifeng Ren, “Wide-Angle Solar Spectral Splitter with Low Infrared Emittance for Hybrid Solar-Thermal Photovoltaic Applications,” *Advanced Materials*, 10.1002/adma.201603113, Vol. 28, 10659–10663, 2016.
- J349. Svetlana V. Boriskina, Jonathan K. Tong, Wei-Chun Hsu, Bolin Liao, Yi Huang, Vazrik Chiloyan, Gang Chen, “Heat meets light on the nanoscale,” *Nanophotonics*, Vol. 5, pp. 134-160, 2016.
- J350. Jin You Lu, Aikifa Raza, Nicholas X. Fang, Gang Chen and TieJun Zhang, “Effective Dielectric Constants and Spectral Density Analysis of Plasmonic Nanocomposites,” *Journal of Applied Physics*, DOI: 10.1063/1.4966119, Vol. 120, OCT 28 2016,
- J351. Ran He, Daniel Kraemer, Jun Mao, Lingping Zeng, Qing Jie, Yucheng Lan, Chunhua Li, Jing Shuai, Hee Seok Kim, Yuan Liu, David Broido, Gang Chen, and Zhifeng Ren, “Achieving high power factor and output power density in p-type half-Heuslers $\text{Nb}_{1-x}\text{Ti}_x\text{FeSb}$,” *Proceedings of National Academy of Sciences*, doi:10.1073/pnas.1617663113, Vol. 113, 13576-13581; 2016.
- J352. Dongwook Lee, Sayed Y. Sayed, Sangyeop Lee, Chris A. Kuryak, Jiawei Zhou, Gang Chen, and Yang Shao-Horn, “Enhancement of Thermoelectric Power Factor in Planar Heterostructure of PEDOT:PSS and Undoped Si” *Nanoscale*, 10.1039/C6NR06950A Vol. 8, 19754-19760, 2016.
- J353. Jonathan Mendoza and Gang Chen, “Anderson localization of thermal phonons leads to a thermal conductivity maximum,” *Nano Letters*, doi: [10.1021/acs.nanolett.6b03550](https://doi.org/10.1021/acs.nanolett.6b03550), Vol. 16, pp. 7616–7620, 2016.
- J354. A. Vega-Flick, R. A. Duncan, J. K. Eliason, J. Cuffe, J. A. Johnson, J.-P. M. Peraud, L.P. Zeng, Z. Lu, A. A. Maznev, E. N. Wang, J. J. Alvarado-Gil, M. Sledzinska, C.M. Sotomayor Torres, G. Chen, K. A. Nelson, “Thermal transport in suspended silicon membranes measured by laser-induced transient gratings,” *AIP Advances*, 10.1063/1.4968610, Vol. 6, 121903, 2016.
- J355. Qichen Song, Jiawei Zhou, Laureen Meroueh, David Broido, Zhifeng Ren, and Gang Chen, “The Effect of Shallow vs. Deep Level Doping on the Performance of Thermoelectric Materials,” *Applied Physics Letters*, doi: 10.1063/1.4973292, Vol. 109, 263902, 2016.

Invited Conference/Workshop Presentations/Seminars:

Keynotes and Plenary Lectures in Conferences

- IP1. G. Chen, V. Sabastian, S. Zhou, and T. Borca-Tasciuc, 1998, "Phonon Heat Conduction in Nanostructures," Plenary lecture, Eurotherm Conference, 57: Microscale Heat Transfer, Poitiers, France, July 8-10. In *Microscale Heat Transfer*, ed. J.B. Saulnier, D. Lemonnier, and J.-P. Bardon, pp. 59-72.
- IP2. G. Chen and S. Volz, 1999, "Molecular Dynamic Simulation from Nanoscale to Macroscale," Overview talk, 117th Xiangshan Conference: Thermophysics and Heat Transfer in Extreme Cases, conference abstract.
- IP3. G. Chen and T. Zeng, 2000, "Nonequilibrium Phonon and Electron Transport in Thin Films and Superlattices," Keynote address, Proceedings of the International Heat Transfer and Transport Phenomena in Microscale, pp. 1-11, Ed. G.P. Celata, Banff, Canada, October 15-20, 2000.
- IP4. G. Chen, "Engineering Thermophysical Properties of Micro- and Nanostructures," Keynote lecture on France National Heat Transfer Conference, Nantes, France, May 29-31, 2001.
- IP5. G. Chen, B. Yang, W.L. Liu, D. Borca-Tasciuc, D. Song, and A. Jacquot, "Energy Conversion and Transport in Nanostructures," Keynote, presented at International Symposium on Micro/Nanoscale Energy Conversion and Transport, April 14-19, 2002, Antalya, Turkey, extended abstract book, pp. 42-43.
- IP6. G. Chen, A. Narayanaswamy, and C. Dames "Engineering Nanoscale Phonon and Photon Transport for Direct Energy Conversion," Keynote, presented at Eurotherm Seminar No. 75, Reims, France, July 8-12, 2003.
- IP7. G. Chen, "Nanoscale Heat Transfer and Nanostructured Thermoelectrics," presented at 9th Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITHERM2004), Las Vegas, June 1-4, 2004, IThERM 2004, pp.8-16, lunch speaker.
- IP8. G. Chen, "Integrating Nanoscale Effects into Micro and Macrosystems," Keynote, presented at 2nd International Conference on Microchannels and Minichannels, Rochester, NY, June 17-19, 2004.
- IP9. G. Chen, R.G. Yang, A. Narayanaswamy, and X.Y. Chen, "Thermally-Excited Nonequilibrium States between Electrons and Phonons for Energy Conversion," Plenary, International Symposium on Micro/Nanoscale Energy Conversion and Transport, Seoul, Korea, Extended Abstract, pp. 9-11, August 8-13, 2004.
- IP10. G. Chen, "Nanostructures for Direct Thermal to Electric Energy Conversion," Plenary, Proceedings of the First International Forum on Heat Transfer, November 24-26, 2004, Kyoto, Japan, pp. 1-3.
- IP11. G. Chen, "Nanostructures for Macroscale Energy Conversion," Keynote at International Conference on Micro Energy Systems, September 11-14, 2005, Sanya, China.
- IP12. G. Chen, "Nanostructured Thermoelectric Materials and Devices," Plenary, 2006 Taipei International Thermal Management Forum, Taipei, July 11, 2006.

- IP13. G. Chen, "Nanoscale Heat Transfer Effects Enabled Energy Technologies," Plenary, 13th International Heat Transfer Conference, Sydney, Australia, August 13-18, 2006.
- IP14. G. Chen, "Energy Nanotechnology," Plenary, 2^{do} Taller Nacional Nanotecnologia, October 5-7, 2006, Vina de Mar, Chile.
- IP15. G. Chen, "Energy Technology Breakthroughs Enabled by Nanoscale Effects," Keynote, NSF Nanoscience and Engineering Grantee Conference, December 4-6, 2006, Virginia, VA.
- IP16. G. Chen, "Nanostructures and Their Thermal Properties," Keynote, EuroSimE: Thermal, Mechanical and Multiphysics Simulation and Experiments in Micro-Electronics and Micro-Systems, London, April 15-18, 2007.
- IP17. G. Chen, A. Narayanaswamy, Z. Chen, L. Hu, S. Sheng, and X.Y. Chen, "Radiative Heat Transfer in Nanostructures by Surface Phonon Polaritons," Keynote Lecture at IEEE-Nano2007, The 7th IEEE International Conference on Nanotechnology, August 2-5, 2007, Hongkong.
- IP18. G. Chen, "Thermophysical Properties of Nanostructured Materials," Keynote, Proceedings of the 8th Aisan Thermophysical Properties Conference, pp. 39-42, August 21-24, 2007, Kyushu University, Fukuoka, Japan.
- IP19. G. Chen, "Thermoelectric Energy Conversion in Nanostructures," Keynote, 1st Int. Forum on Advanced Thermoelectric Materials and Devices, Nov. 10-11, 2007, Shanghai, China.
- IP20. G. Chen, "Nanoscale Heat Transfer and Energy Conversion," Keynote, Chinese Annual National Heat and Mass Transfer Conference, Nov. 12-15, 2007, Guangzhou, China.
- IP21. G. Chen, "Thermoelectric Energy Conversion in Nanostructures," Keynote, Key Conference: The Future Prospects for the Compound Semiconductor Industry, March 2-4, 2008, Key West, Florida.
- IP22. G. Chen, "Nanostructured Thermoelectric Materials for Solid-State Cooling," Plenary Talk, Advanced Technology Workshop on Advanced Substrates and Next-Generation Semiconductors, April 30-May 1, 2008, Linthicum Heights, Maryland.
- IP23. Gang Chen, Q. Hao, A. Muto, D. Kramer, H. Lee, and A. Minnich, "Nanostructured Thermoelectric Materials, Devices, and Their Potential Applications," Keynote, Third Energy Nanotechnology International Conference, August 11-13, 2008.
- IP24. G. Chen, "Keys to Success," Dinner Talk, at Chinese in America Thermal Engineering Association (CATEA), Jacksonville, Florida, August 11, 2008.
- IP25. G. Chen, "Nanostructured Thermoelectrics: Materials, Devices, and Applications," Keynote, NanoThailand Symposium, 2008, November 6-8, Bangkok, Thailand.
- IP26. G. Chen, "Micro/Nano Education in Mechanical Engineering," Keynote, Seminar on the Renewal of Mechanical Engineering Higher Education, Bandung, Indonesia, Nov. 8, 2008.
- IP27. G. Chen, "Nanostructured Thermoelectrics: Materials, Devices, and Applications," MIT Energy Initiative Fall Energy Research Conference, MIT, November 13-14, 2008.

- IP28. G. Chen, “Nanostructured Thermoelectric Materials and Applications,” Keynote, SMA 10th Anniversary Symposium, January 21-22, 2009, Singapore.
- IP29. G. Chen, “Challenges of Peltier Cooling to 10 K,” Keynote, Workshop on Recent Advances in Peltier Cooling in the Range Including 10K, Air Force Research Laboratory, Albuquerque, New Mexico, April 22 and 23, 2009.
- IP30. G. Chen, “Nanotechnology for Energy Applications,” Keynote 9th Emerging Information and Technology Conference, MIT, August 6-7, 2009.
- IP31. Austin Minnich, Baskaran Mudililaran, Qing Hao, Asegun Henry, and Gang Chen, “Multiscale Modeling of Electron and Phonon Transport in Nanocomposite Nanostructures for Thermoelectric Applications,” Keynote, Symposium on “Multiphysics Simulations for Solids, IMECE, November 15-19, 2009, Orlando, Florida.
- IP32. G. Chen, “Phonon Transport in Nanostructured Thermoelectric and Heat Transfer Materials” Keynote at ICREA Phonon Engineering Workshop, Sant Feliu de Guixols, Girona, Spain, May 24-27, 2010.
- IP33. Gang Chen, Keivan Esfarjani, Junichiro Shiomi, Tengfei Luo, Zhiting Tian, “Multiscale Modeling of Phonon Transport in Nanostructures,” Plenary Lecture at International Mechanical Engineering Congress and Exhibition, IMECE, Vancouver, Canada, November 14-18, 2010.
- IP34. G. Chen, D. Kraemer, A. Muto, K. McEnaney, H.-P. Feng, “Thermoelectric Power Conversion,” Keynote Talk (given by student Daniel Kraemer) at Energy Harvesting and Storage, Boston, November 16-17, 2010.
- IP35. G. Chen, “Nanostructured Thermoelectrics: Millie’s Legacy and Recent Developments,” Keynote at the Symposium: 80th Birthday Celebration for Millie Dresselhaus, MIT, December 4, 2010.
- IP36. A. Mavrokefalos, P. Sambegoro, S.E. Han, and G. Chen “Thermal Radiation Transport in Nanostructures,” Keynote speech at Physics of Quantum Electronics, Snowbird, Utah, January 2-6, 2011.
- IP37. G. Chen, “Nurturing Leaders for an Energy Revolution,” Keynote at China 1000 Talent Annual Meeting, Beijing, China, January 15, 2011.
- IP38. G. Chen, “Luck Favors Prepared Minds,” Keynote New England Chinese Professionals New Year Gala and Community Enrichment Forum, Newton, MA, February 13, 2011.
- IP39. G. Chen, “Micro/Nanotechnologies for Energy and Environment,” Keynote at EITC Young Investigator Conference, Plenary Panel Discussion, Harvard University, August 18-19, 2011.
- IP40. G. Chen, “Extraordinary Heat Transfer at Nanoscale” Keynote at The *2nd International Symposium* on Recent Advances in Applied Sciences, Oct. 3-4, 2011, National Dong Hwa University, Taiwan.
- IP41. Jianjian Wang, Ruiting Zheng, Jinwei Gao, and Gang Chen, “Heat Conduction Mechanisms and Applications of Graphite Suspensions,” Plenary at Carbon Nano Materials and Applications Workshop, Rapid City, SD, Oct. 30-Nov. 1, 2011.

- IP42. G. Chen, “Nanoengineered Materials for Thermal Energy Systems,” Plenary Lecture at International Mechanical Engineering Congress and Exhibition, Denver, Colorado, November 11-17, 2011.
- IP43. G. Chen, “Solar Thermoelectric Energy Conversion,” Keynote at 2011 NSF Nanoscale Science and Engineering Grantees Conference, December 5-7, 2011 National Science Foundation, Arlington, VA.
- IP44. G. Chen, “Two Decades of Micro/Nanoscale Thermophysics and Heat Transfer,” Closing remark at 7th US-Japan Seminar on Nanoscale Transport Phenomena---Science and Engineering, December 11-14, 2011, Shima, Japan.
- IP45. G. Chen, “Thermoelectric Materials, Transport, and Applications,” Keynote at Physics@FOM, Veldhoven, Netherland, January 17-18, 2012.
- IP46. G. Chen, “Extraordinary Heat Transfer at Nanoscale,” Keynote at ASME 2012 3rd Micro/Nanoscale Heat and Mass Transfer International Conference, March 3-6, 2012, Georgia, Atlanta.
- IP47. G. Chen, “Nurturing Leaders for An Energy Revolution,” keynote at Forum on Modern Engineering, Nanjing, China, May 21, 2012.
- IP48. G. Chen, “Thermal Transport and Properties in Nanostructured Materials,” Plenary lecture at 18th Symposium on Thermophysical Properties, June 24-29, 2012, Boulder, Colorado.
- IP49. G. Chen, “Nanostructured Materials for Thermoelectric Energy Conversion,” Keynote at International Workshop on Materials Science and Materials Chemistry for Energy. September 17-18, 2012. Beijing University, China.
- IP50. G. Chen, “Heat Conduction in Crystalline Nanostructured Materials,” Keynote at East Lake International Forum on Frontiers of Science and Technology for Outstanding Young Oversea Scholars, Wuhan, October 6-8, 2012.
- IP51. G. Chen, “Nanostructured Materials for Thermoelectric Energy Conversion,” Keynote at MIT Materials Day: Materials for Energy Harvesting, October 17, 2012.
- IP52. G. Chen, “From Basic Research to Commercialization,” Keynote at The 3rd China Jiangsu Conference for International Technology Transfer and Commercialization, Wuxi, China (Jointly sponsored by MIT ILP and Wuxi), November 10, 2012.
- IP53. G. Chen, “Nanoscale Heat Transfer for Energy Applications,” Keynote at 3rd International Forum on Heat Transfer, Nagasaki, Japan, November 11-15, 2012.
- IP54. G. Chen, “Heat Transfer at Intersections,” Keynote Lecture at ASME 2013 Summer Heat Transfer Conference, Menneapolis, MN, July 14-19, 2013.
- IP55. G. Chen, “In Pursuit of the Sun: From Solar Thermoelectrics to Photovoltaics,” Plenary Lecture at ASME 2013 7th International Conference on Energy Substainability and ASME 2013 11th Fuel Cell Science, Engineering and Technology Conference, Menneapolis, MN, July 14-19, 2013.
- IP56. G. Chen, “Transition from Near-Field Thermal Radiation to Phonon Interfacial Conduction”, Plenary Talk, PIERS 2013, Stockhom, August 12-15, 2013.

- IP57. G. Chen, "Heat Transfer at Intersections," Plenary Lecture at the 4th International Symposium on Micro and Nano Technology (ISMNT-4), Shanghai, October 8-12, 2013.
- IP58. G. Chen, "MIT Innovation and Entrepreneurship Ecosystem" MIT-CHIEF Dinner Speech, November 16, 2013
- IP59. G. Chen, "From Basic Research to Commercialization and Recent Progress in Renewable Energy Research," Plenary Talk at Jiansu State-Grid, Plenary Lecture, October 11, 2013.
- IP60. G. Chen, "Progress and Challenges in Thermoelectric Transport, Materials, Characterization, and Systems," Plenary Talk at International Conference on Thermoelectrics, Nashville, Tennessee, July 6-10, 2014.
- IP61. G. Chen, "Ballistic, Coherent, Hydrodynamics, and Quantum Heat Conduction," Plenary Talk at 8th US-Japan Joint Seminar on Nanoscale Transport Phenomena, Santa Cruz, California, July 13-July 16, 2014.
- IP62. G. Chen, "Heat Transfer at Interfaces," Nukiyama Memorial Award Lecture, International Heat Transfer Conference, Kyoto, Japan, August 10-15, 2014.
- IP63. G. Chen, "Probing and Simulation Phonon and Electron Transport for Thermoelectric Applications," Keynote Lecture, 5th International Congress on Ceramics, Beijing, China, August 17-21, 2014.
- IP64. G. Chen, "Thermodynamics and Heat Transfer of Thermal Radiation," Keynote Lecture at OSA Incubator on Fundamental Limit of Optical Energy Conversion, Washington, DC, November 13-14, 2014.
- IP65. G. Chen, "Innovating Thermal Materials, Devices, and Energy Conversion Systems," Plenary Lecture in Heat Transfer, IMECE, 2014, Montreal, Canada, November 14-20, 2014.
- IP66. G. Chen, Dinner Speech, New England Chinese Professionals New Year Gala, Newton, MA, February 21, 2015.
- IP67. G. Chen, "Connecting Conduction with Radiation: from Boltzmann to Maxwell," Symposium Progress on Laser Materials Processing, in Honor of 60th Birthday of Professor Grigoropoulos, Berkeley, California, April 11, 2015.
- IP68. Gang Chen, Bolin Liao, Sangyeop Lee, and Jiawei Zhou, "First-Principles Calculations of Electron and Phonon Transport Properties in Single Crystals," Plenary Talk, Advances in Computational Heat Transfer, CHT-15, Rutgers, New Jersey, May 25-29, 2015.
- IP69. Gang Chen, "Thermoelectric Energy Conversion: Materials, Devices, and Systems," Plenary Lecture at: The 15th International Conference on Micro and Nanotechnology for Power Generation and Energy Conversion Applications (PowerMEMS2015), Cambridge, MA, December 1-4, 2015.
- IP70. Gang Chen, "Thermal Energy: A New Look for a Better Future," Keynote at CAST-Boston launching event, Boston, January 31, 2016.
- IP71. Gang Chen, "Education Innovation in the MIT Department of Mechanical Engineering," Keynote Lecture at First China-US Education Summit, China Education 30 Forum, MIT, April 22, 2016.

- IP72. Gang Chen, “Innovations in Energy Utilization: Solar, Thermal, and Water,” Keynote at 1000 Talents-Plan Competition, Harvard University, June 6, 2016.
- IP73. Gang Chen, “Innovating Thermal Materials, Devices, and Energy Conversion Systems,” Plenary talk at the 9th International Symposium on Heat Transfer (ISHT-9), Beijing, China, August 15-19, 2016.
- IP74. Gang Chen, “Phonon Heat Conduction Beyond Fourier Diffusion: Ballistic, Coherent, Localized, Hydrodynamic, and Divergent Modes,” Eringen Medal Plenary Talk, Society of Engineering Science, College Park, Maryland, October 2-5, 2016.
- IP75. Gang Chen, “Materials Innovation for Efficient Solar and Thermal Energy Utilization,” International Forum on Innovation and Emerging Industries Deployment, October 31-Nov. 2, Shanghai, 2016.

Invited Presentations in Conferences

- IP76. G. Chen, S. G., Volz, T. Borca-Tasciuc, T. Zeng, D. Song, K.L. Wang, and M.S. Dresselhaus, 1998, "Phonon Engineering in Superlattices," Invited paper at the MRS Fall Meeting, Boston, Massachusetts, 1998, MRS Proc. Vol. 545, pp. 357-368.
- IP77. G. Chen, 1998, "Heat Conduction in Low-Dimensional Structures," invited paper presented at 5th International Conference on Solid-State and Integrated-Circuit Technology, Beijing, China, October 21-23, Conference Proc., p. 860.
- IP78. G. Chen, T. Zeng, T. Borca-Tasciuc, and D. Song, 1999, “Phonon Engineering in Nanostructures for Solid-State Energy Conversion,” invited paper presented at International Union of Materials Research Society-International Conference on Advanced Materials, Beijing, China, June 14-18, 1999.
- IP79. G. Chen, 2000, “Thermal Consideration in Design of Heterostructure Electronic and Photonic Devices,” invited presentation at 2000 SPIE Terahertz and Gigahertz Electronics and Photonics Conference, San Diego, July 30-August 4, 2000.
- IP80. G. Chen, B. Yang, W.L. Liu, T. Borca-Tasciuc, D. Song, D. Achimov, M.S. Dresselhaus, J.L. Liu, and K.L. Wang, “Thermoelectric Property Characterization of Low-Dimensional Structures,” Invited, Proc. 20th International Conference on Thermoelectrics, ICT’01, pp. 30-34, Beijing, China, June 8-11, 2001 (IEEE Press, IEEE Cat. No. 01TH8589, Piscataway, NJ).
- IP81. G. Chen, B. Yang, W.L. Liu, and T. Zeng, “Nanoscale Heat Transfer for Energy Conversion Applications,” Invited, International Conference on Energy Conversion and Applications, Wuhan, China, June 17-20, 2001, Conference Proceedings: Energy Conversion and Applications, Vol. 1, pp. 287-296, ed. W. Liu.
- IP82. G. Chen, “Heat Conduction in Low-Dimensional Structures,” Invited, 5th Gordon Conference on Photoacoustic and Photothermal Phenomena, Queens College, Oxford, UK, August 19-24, 2001.
- IP83. G. Chen, “Nano-to-Macroscale Energy Transport and Conversion---Bridging the Gaps in Length Scales and Disciplines,” Invited, Proceedings of Colloquium on Micro/Nano

- Thermal Engineering, pp. 205-232, Ed., S.J. Song, Feb. 17-19, 2002, Seoul National University, Seoul, Korea.
- IP84. G. Chen, "Micro and Nanoscale Heat Transfer---Tien's Legacy," presented at Chang-Lin Tien's retirement ceremony, Berkeley, June 21, 2002.
- IP85. G. Chen and R.G. Yang, "Nano-to-Macroscale Modeling through Approximation," Invited, presented at International Mechanical Engineering Congress, 2002.
- IP86. G. Chen, "Thermal Design of Photonic Devices," invited, presented at 1st Symposium on Photonics, Networking, and Computing, March 12-13, 2002, Durham, North Carolina (no paper submitted).
- IP87. G. Chen, "Diffusion-Transmission Interface Condition," invited, presented at 4th US-Japan Nanotherm, Berkeley, June 22-26, 2002.
- IP88. G. Chen, "Thermally Engineered Nanostructures for Energy Conversion," invited, presented at The International Conference on Micro and Nanosystems 2002, Kuming, China, August 11-14, 2002.
- IP89. G. Chen, "Electron and Phonon Transport and Energy Conversion in Nanostructures," invited, Integrated Nanosystems 2002, Sponsored by ASME Nano-Institute, Berkeley, CA, September 18-20, 2002.
- IP90. G. Chen and R.G. Yang, "Nano-to-Macroscale Transport Modeling Through Approximation," invited, November 17-22, 2002, Proceedings of International Mechanical Engineering Congress and Exhibitions (IMECE2002), New Orleans, LA, paper IMECE2002-32120.
- IP91. G. Chen, "Exploring Nanoscale Heat Transfer Effects for Energy Conversion," invited, presented at MRS Spring Meeting, San Francisco, April 21-25, 2003.
- IP92. G. Chen, "Reducing Phonon Thermal Conductivity Through Nanostructures for Thermoelectric Energy Conversion," invited, presented at Internal Conference on Thermoelectrics, Heraut, France, August 17-21, 2003.
- IP93. G. Chen, C. Dames, D. Borca-Tasciuc, T. Harris, and D. Song, "Thermal Conductivity of Complex Nanostructures," invited, presented at International Conferences on Thermal Conductivity, Knoxville, Tennessee, Oct. 26-29, 2003.
- IP94. G. Chen, "Nanostructure-Based Direct Thermal-to-Electric Power Generation Technologies," invited, American Filtration & Separation Society, Diesel and Gas Engine Emission Solution, Oct. 2, 2003.
- IP95. G. Chen, "Basic Heat Transfer Characteristics at Nanoscale," invited, presented at Tutorial on Micro- Nanoscale Heat Transfer, IMECE 2003, Nov. 15-21, 2003.
- IP96. G. Chen, "Thermal Conductivity and Heat Conduction in Nanostructures: Modeling, Experiments, and Applications," invited, Paper No. AIAA-2004-2463; presented at 37th AIAA Thermophysics Conference, Portland, Oregon, June 28-July 1, 2004.
- IP97. G. Chen, "Nonequilibrium Electron-Phonon Transport Near Sharp Potential Barriers," invited, International Conference on Thermoelectrics, Adelaide, Australia, July 25-29, 2004.

- IP98. G. Chen, "Nanoscale Heat Transfer and Thermal-Electric Energy Conversion," invited, presented at 13th International Conference on Photoacoustic and Photothermal Phenomena, Rio de Janeiro, Brazil, 5-8 July 2004.
- IP99. G. Chen, A. Schmidt, H. Lee, and X. Y. Chen, "Exploring Nanoscale Heat Transfer Effects for Nanomanufacturing," invited, presented at 2nd International Symposium on Nanomanufacturing, KAIST, Korea, Nov. 3-5, 2004.
- IP100. G. Chen, L. Hu, A. Narayanaswamy, and Z. Chen, "Nanoscale Thermal Radiation: Fundamental Issues and New Opportunities," invited, Japan-US Joint Seminar, Nanoscale Transport Phenomena, Matsushima, Japan, July 4-7, 2005.
- IP101. A. Henry and G. Chen, "Extracting Phonon Properties from Molecular Dynamics Simulations," invited, Japan-US Joint Seminar, Nanoscale Transport Phenomena, Matsushima, Japan, July 4-7, 2005.
- IP102. J.B. Wang and G. Chen, "Electrothermal Heat Conduction in Nanofluids," invited, Japan-US Joint Seminar, Nanoscale Transport Phenomena, Matsushima, Japan, July 4-7, 2005.
- IP103. G. Chen, R.G. Yang, H. Lee, Q. Hao, M.-S. Jeng, M. Tang, M.S. Dresselhaus, B. Poudel, S. Kumar, D.Z. Wang, Z.F. Ren, P. Gogna, and J.-P. Fleurial, "Design, Modeling, and Synthesis of Nanocomposites for Solid-State Energy Conversion," invited, SPIE's International Symposia on Optics East 2005, Symposium SA119, Symposium SA 111, Nanofabrication: Technologies, Devices, and Applications II, October 23-26, Boston, MA (no paper submitted).
- IP104. G. Chen, C. Dames, S. Chen, J.Y. Huang, and Z.F. Ren, "Thermal and Thermoelectric Characterization of Nanostructures," invited, SPIE's International Symposia on Optics East 2005, Symposium SA119, Nanosensing: Materials and Devices II, on October 23-26, Boston, MA (no paper submitted).
- IP105. G. Chen, "Role of Nanotechnology In Energy," invited, MIT Energy Forum, May 3, 2006.
- IP106. G. Chen, "Thermoelectric Energy Conversion with Nanostructured Materials," invited, MIT Energy Conference, May 13, 2006.
- IP107. G. Chen, "Heat Transport in Superlattices and Nanocomposites for Thermoelectric Applications," invited, International Conferences on Materials and Technologies, Sicily, Italy, June 4-9, 2006.
- IP108. C. Dames, S. Chen, C.T. Harris, J.Y. Huang, Z.F. Ren, M.S. Dresselhaus, and G. Chen, "A Modified High-Resolution TEM for Thermoelectric Property Measurements of Nanowires and Nanotubes," invited, SPIE Optics East, Oct. 2, 2006.
- IP109. G. Chen, "Nanostructured Thermoelectric Materials for Power Generation," invited, MEMS@MIT Fall 2006 Meeting, October 10, 2006, MIT.
- IP110. G. Chen and X.Y. Chen, "Solar to Electric Energy Conversion via Thermoelectric Devices," invited, MRS Fall Meeting, Symposium CC: Solar Energy Conversion, November 27-December 1, 2006, Boston, MA (no paper submitted).
- IP111. G. Chen, A. Henry, and C. Dames, "Thermoelectric Energy Conversion in Nanostructures," invited, International Electron Devices Meeting, San Francisco,

- December 11-12, 2006, IEDM Technical Digest, pp. 20.1.1-20.1.4, 2006, IEEE Cat. No. 06CH37807.
- IP112. G. Chen, “Thermoelectric Energy Conversion in Nanostructures,” invited, 2nd Int. Conference on Nano/Micro Engineered and Molecular Systems, Bangkok, Thailand, January 16-19, 2007.
- IP113. G. Chen, L. Hu, Z. Chen, A. Narayanaswamy, and X.Y. Chen, “Thermal radiative transport in nanostructures and its application in energy technology,” invited, MRS Spring Meeting, Symposium II: Nanoscale Heat Transport--From Fundamentals to Devices, April 9-13, 2007.
- IP114. G. Chen, “Energy Nanotechnology,” invited, The Fourth U.S.-Korea Forum on Nanotechnology: Sustainable Energy, April 26-27, 2007.
- IP115. G. Chen, “Nanoscale Phonon and Phonon-Polariton Heat Transfer and Related Coherence Issues,” invited, Thermal Radiation at The Nanoscale: Forces, Heat Transfer, and Coherence (TR07), Les Houches, May 21-25, 2007.
- IP116. G. Chen, “Energy Technology Enabled by Nanoscale Effects,” invited, NSF Workshop on Frontiers in Transport Phenomena Research and Education: Energy Systems, Biological Systems, Security, Information Technology and Nanotechnology, University of Connecticut, Storrs, May 17-18, 2007.
- IP117. G. Chen, L. Hu, S. Shen, and A. Narayanaswamy, “ Breakdown of Planck’s Law at Nanoscale,” invited, Presented at 38th Physics of Quantum Electronics, Snowbird, Utah, January 6-10, 2008.
- IP118. G. Chen, A. Minnich, H. Lee, Q. Hao, and A. Henry, “Thermoelectric Transport in Nanostructured Bulk Materials,” invited, MRS, Spring Meeting, R Symposium San Francisco, March 23-27, 2008.
- IP119. G. Chen, M. Chiesa, A. Muto, D. Kramer, H. Lee, Q. Hao, A. Minnich, X.Y. Chen, and H. Lu, “Potential Applications of Nanostructured Thermoelectric Materials,” invited, MRS Spring Meeting, LL Symposium, San Francisco, March 23-27, 2008.
- IP120. G. Chen, S. Shen, L. Hu, and A. Narayanaswamy, “Breakdown of Planck’s Blackbody Radiation Law at Nanoscale,” invited, 2nd Integration and Commercialization of Micro and Nano Systems International Conference and Exhibition, June 3-5, 2008, Clear Water Bay, Hong Kong.
- IP121. G. Chen, “Solar Thermoelectrics and Thermophotovoltaics,” invited, Solar Energy: New Materials and Nanostructured Devices for High Efficiency, Stanford, CA, June 24-25, 2008.
- IP122. S. Shen, L. Hu, X.Y. Chen, A. Narayanaswamy, and G. Chen, “Breakdown of the Planck’s blackbody radiation law at nanoscale gaps” Invited poster presented by S. Shen, Julius Springer Forum on Applied Physics 2008, Harvard, 2008. Win best poster award.
- IP123. Vincent Berube, Mildred Dresselhaus, Gang Chen, Costas P. Grigoropoulos, Samuel S. Mao; “Hydrogen storage in nanostructured materials,” Invited poster presented by V. Berube, Julius Springer Forum on Applied Physics 2008, Harvard, 2008.

- IP124. Gang Chen, “Thermoelectric Energy Conversion,” invited, US-China Clean Energy Exchange Conference, October 18, 2008, Chelmsford, MA.
- IP125. G. Chen, A. Minnich, H. Lee, B. Muralidharan, M.S. Dresselhaus, X. W. Wang, G. Joshi, G. H. Zhu, Y. C. Lan, D. Z. Wang, Z.F. Ren, “SiGe Nanocomposites Thermoelectrics: The Knowns and the Unknowns,” invited, APS March Meeting, Pittsburgh, March 16-20, 2009.
- IP126. Gang Chen, A. Minnich, Q. Hao, A. Muto, H. Lee, D. Kramer, M. Tang, M.S. Dresselhaus, Y. Ma, Y.C. Lan, J. Yang, X. Yan, G. Joshi, G. H. Zhu, X. W. Wang, D. Wang, and Z.F. Ren, „Nanostructured Thermoelectric Materials and Their Potential Applications,“ invited, SAE World Congress, Detroit, April 20-23, 2009.
- IP127. Gang Chen, Austin Minnich, Kimberlee Collins, Asegun Henry, Hohyun Lee, Qing Hao, and Mildred S. Dresselhaus, Gaohua Zhu, Yucheng Lan, Xiaowei Wang, Giri Joshi, Dezhi Wang, and Zhifeng Ren, “Phonons: How Long Do They Really Travel,” invited, International Conference on Thermoelectrics, Freiburg, July 27-30, 2009.
- IP128. Gang Chen, “Nanocomposites Thermoelectrics: The Knowns and Unknowns,” invited, Thermoelectric Transport: progress in first principles and other approaches and interplay with experiment, Lausanne, Switzerland, Meeting Dates: July 22, 2009 – July 24, 2009.
- IP129. D. Kramer, A. Muto, H. Lee, Q. Hao, K. McEnaney, G. Chen, Y. Ma, Y.C. Lan, J. Yang, G. Joshi, G. H. Zhu, X. W. Wang, D. Wang, and Z.F. Ren, “Nanostructured Thermoelectric Materials and Their Potential Applications,” invited, Session, Mechanics and Materials in Energy Systems, IMECE, November 15-19, 2009, Orlando, Florida.
- IP130. Gang Chen, “Converting Heat into Electricity Using Solid-State Technology,” invited, Ideastream 2010, April 13, 2010, Boston, MA.
- IP131. Yiqun Zheng, Bhaskaran Muralidharan, Mona Zebarjadi, Zhifeng Ren, Mildred S. Dresselhaus, Gang Chen, “Theoretical Investigation of Size Effects on Electron and Phonon Thermoelectric Transport in Nanostructures,” invited, International Conference on Thermoelectrics, May 30-June 3, 2010, Shanghai, China.
- IP132. G. Chen, M.S. Dresselhaus, Z.F. Ren, B. Muralidharan, and Y. Q. Zhang, “Nanostructured Thermoelectric Materials and Their Potential Applications,” invited, 5th Forum on New Materials, CIMTEC 2010, Montecatini Terme, Italy, June 13-18, 2010.
- IP133. S. Shen, A. Mavrokefalos, P.L. Sambegoro, and G. Chen, “Near Field Heat Transfer Exceeding Planck’s Blackbody Radiation Law (and Nanostructured Thermoelectrics),” invited, 2010 Villa Conference on Interaction Among Nanostructures, June 21-25, 2010, Santorini, Greece.
- IP134. G. Chen, “From Basic Research to Commercialization,” invited, The OVC International Optoelectronic Expo & Forum: Chang-Lin Tien International Forum, Wuhan, China, Nov. 2-5, 2010.
- IP135. Austin Minnich, Junichiro Shiomi, Keivan Esfarjani, Zhiting Tian, and Gang Chen, “Experimental and Theoretical Studies on Phonon Mean Free Path in Thermoelectric Materials,” Invited talk at APS March Meeting, March 21-25, 2011, Dallas, Texas.

- IP136. Daniel Kraemer, Bed Poudel, Hsien-Ping Feng, J. Christopher Caylor, Giri Joshi, Bo Yu, Xiao Yan, Yi Ma, Xiaowei Wang, Dezhi Wang, Andrew Muto, Kenneth McEnaney, Matteo Chiesa, Zhifeng Ren, and Gang Chen, "Solar thermoelectric energy conversion", Invited talk at MRS Spring Meeting, April 25-29, 2011.
- IP137. Gang Chen, Andrew Muto, D. Kramer, Ken McEnaney, H.-P. Feng, W. Liu, Q. Zhang, B. Yu, Zhifeng Ren, "Thermoelectric Energy Conversion Using Nanostructured Materials," Invited Talk at SPIE Defense, Security, and Sensing, Conference 8035, Energy Harvesting and Storage: Materials, Devices, and Applications II, April 25 – 29, 2011, Orlando, Florida, USA.
- IP138. Sang Eon Han, Anastassios Mavrokefalos, Matthew S. Branham, and Gang Chen, Efficient Light-Trapping Nanostructures in Thin Silicon Solar Cells," Invited Talk at SPIE Defense, Security, and Sensing, Conference 8031, Micro- and Nanotechnology Sensors, Systems, and Applications III, April 25 – 29, 2011, Orlando, Florida, USA.
- IP139. Gang Chen, "Highly Thermally Conductive Polymers," Invited talk at Nanotech Conference and Expo, Boston, June 13-16, 2011.
- IP140. Gang Chen, "Challenges and Opportunities in Thermoelectric Energy Conversion," 220th invited, ECS Meeting and Electrochemical Energy Summit, October 9-14, 2011, Boston, MA.
- IP141. A. Mavrokefalos, P. Sambegoro, G. Chen, "Near-Field Radiation Transfer," invited talk AVS 58th International Symposium and Exhibition, October 30-November 4, 2011, Nashville, TN.
- IP142. A. Mavrokefalos, S.E. Han, S. Yerci, M. Branham, "Efficient Light Trapping in Periodic Nanostructured Thin Crystalline Si Solar Cells," invited talk, Optical Society of America Topical Meeting on Optical Nanostructures and Advanced Materials for Photovoltaics (PV), November 2-3, 2011, Austin, Texas.
- IP143. Austin Minnich, Keivan Esfarjani, Jivtesh Garg, Tengfei Luo, Kimberlee Collins, Maria Luckyanova, Zhiting Tian, Lingping Zeng, and Gang Chen, "Experimental and Theoretical Studies on Phonon Transport: From Bulk Materials to Nanostructures," invited talk, MRS Fall Meeting, Boston, W3.1, Symposium W: Phonons in Nanomaterials—Theory, Experiments, and Applications, November 26-30, 2011.
- IP144. M. Zebarjadi and G. Chen, "Recent Advances in Thermoelectrics," invited talk 2011 IEEE International Electron Devices Meeting, Washington, DC, December 5 - 7, 2011.
- IP145. Jianjian Wang, Ruiting Zheng, Jinwei Gao, and Gang Chen, "Heat Conduction in Nanofluids: Mechanisms and New Phenomena," invited talk, 7th US-Japan Joint *Seminar* on Nanoscale Transport Phenomena, Shima, Japan, December 11-14, 2011.
- IP146. Gang Chen, "Concentrated Solar Thermoelectric Power," invited talk, DOE Sunshot Summit, Denver, Colorado, June 13-14, 2012.
- IP147. Gang Chen, "Nanostructured Materials for Thermoelectric Energy Conversion," invited talk, ACS National Meeting, Philadelphia, August 18-23, 2012.
- IP148. A. Mavrokafelos, S. E. Han, S. Yerci, M. Branham, and G. Chen, "Efficient Light-Trapping in Inverted Nano-Pyramid Thin Crystalline Silicon Films", invited, European

- Materials Society Conference (E-MRS), Strasbourg, France, May 14-18, 2012 (delivered by Yerci).
- IP149. Gang Chen, “Nanostructured Materials for Thermoelectric Energy Conversion,” Invited talk, Orcas 2012, International Conference on Energy Conversion and Storage, Friday Harbor, WA, September 4-6, 2012.
- IP150. Gang Chen, Svetlana V. Boriskina, Matthew Branham, and Selcuk Yerci, “Light Trapping and Thermodynamics of Photovoltaic Cells,” invited talk, OSA’s 96th Annual Meeting, Frontiers in Optics 2012, Laser Science XXVIII, APS/DLS 28th Annual Meeting, Rochester, New York, October 14-18, 2012.
- IP151. Gang Chen, “Nanostructure Approach to Thermoelectrics: Materials, Transport, and Devices,” invited talk, MRS Fall Meeting, Acta Materialia Award Forum, Boston, November 25-30, 2012.
- IP152. Gang Chen, “Thermoelectric Transport in Bulk and Nanostructured Materials,” invited, Gordon Research Conference on Nanomaterials for Applications in Energy Technology, Ventura, California, February 3 to 8 2013.
- IP153. Gang Chen, “Thermal Transport in Soft Matters: Polymers and Nanofluids,” invited, MMSD 2013 - Organic Electronics and Transport Phenomena, Max Planck Institute for Polymer Research, Mainz, Germany, June 10, 2013 to June 12, 2013.
- IP154. Gang Chen, “Near-Field Radiation Heat Transfer,” invited talk, presented at ASME 2013 Summer Heat Transfer Conference, Minneapolis, MN, July 14-19, 2013.
- IP155. Gang Chen, “Ballistic and Coherent Heat Conduction,” invited, CECAM Nanophotonics, Bremen, Germany, August 19-23, 2013.
- IP156. Gang Chen, Yongjie Hu, Maria Luckyannova, Jivtesh Garg, Zhiting Tian, Kimberlee Collins, and Lingping Zeng, “Phonon Heat Conduction at the Nanoscale: From Ballistic to Coherent,” IMECE2013-66018, Invited Presentation at ASME 2013 International Mechanical Engineering Congress & Exposition, San Diego, CA, November 15-21, 2013.
- IP157. Gang Chen, “Nonlocal and Coherent Phonon Transport in Bulk Materials and Nanostructures,” Invited Presentation, MRS Fall Meeting, Symposium UU, Boston, December 1-6, 2013.
- IP158. Gang Chen, “Nonlocal and Coherent Phonon Transport in Bulk Materials and Nanostructures,” Invited Presentation, e-MRS Spring Meeting, Symposium D, Lille, France, May 26-30, 2014.
- IP159. Gang Chen, “The Interdisciplinary Future of Mechanical Engineering,” Invited talk at International Conference on Engineering Science and Technology, Sponsored by UNESCO/CAETS/CAE, June 2-3, 2014.
- IP160. Gang Chen, “Probing and Simulating Phonon and Electron Transport for Thermoelectric Applications,” Invited talk at Gordon Conference, Ceramics: Solid-State Studies In, Mt. Holyoke, July 20-25, 2014.
- IP161. Matthew Branham, Wei-Chun Hsu, Selcuk Yerci, and Gang Chen, “Thin Film c-Si Solar Cells – Detailed Understanding from Light Trapping to Carriers Collection,” Invited talk

- at AVS 61th International Symposium and Exhibition, Baltimore, MD, November 9-14, 2014.
- IP162. Bo Qiu, Bolin Liao, Jiawei Zhou and Gang Chen, "First-Principles Calculation of Thermoelectric Properties of Silicon," Invited talk at MRS Fall Meeting, Boston, MA, November 31-December 5, 2014.
- IP163. Gang Chen, Vazrik Chiloyan, Poetro L. Sambegoro, Jonathan K. Tong, Yi Huang, Wei-Chun Hsu, and Svetlana V. Boriskina, "Thermodynamics and heat transfer of thermal radiation" Invited talk at MRS Spring Meeting, Symposium M, April 5-10, 2015.
- IP164. Gang Chen, "Innovations in Energy Utilization: Solar, Thermal, and Water," invited talk MIT China Conference, Wuxi, May 23, 2015.
- IP165. Gang Chen, "Simulation of All Thermoelectric Properties of Single Crystalline Materials from First-Principles," invited talk at International Conference on Thermoelectrics, Dresden, Germany, June 28-July 3, 2015.
- IP166. Gang Chen, Vazrik Chiloyan, Poetro L. Sambegoro, Jonathan K. Tong, Yi Huang, Wei-Chun Hsu, and Svetlana V. Boriskina, "Heat Transfer and Thermodynamics of Thermal Radiation in the Near and Far Fields" Invited talk at PIERS (Progress in Electromagnetics Research Symposium, Prague, July 6-9, 2015.
- IP167. Gang Chen, "Engineering Phonon Heat Conduction in Nanostructures," Gordon Research Conference on Nano-Mechanical Interfaces, Hong Kong University of Science and Technology, July 19-20, 2015.
- IP168. S. Boriskina, V. Chiloyan, P.L. Sambegoro, J. Tong, Y. Huang, and Gang Chen, "Exploring and Tailoring Near-Field Thermal Radiation at Extreme Separations," invited presentation at Meta'15, 6th International Conference on Metamaterials, Photonic Crystals and Plasmonics, New York, August 4-7, 2015.
- IP169. Gang Chen, "Phonon Heat Conduction in Nanostructures: Ballistic, Coherent, Hydrodynamic, and Divergent Modes," International Symposium on Clusters and Nanostructures, Richmond, Virginia, October 26-29, 2015.
- IP170. G. Chen, M. Luckyanova, L.P. Zeng, S.Y. Lee, B.L. Liao, J.W. Zhou, V. Chiloyan, and S. Humberman, "Phonon Transport: Ballistic, Coherent, and Hydrodynamic Regimes," Phonon Transport, Interactions and Manipulations in Nanoscale Materials and Devices - Fundamentals and Applications II, 2015 MRS Fall Meeting, Boston, MA, November 29-December 4, 2015.
- IP171. Gang Chen, Daniel Kraemer, Lee Weinstein, James Loomis, George Ni, Jonathan Tong, Yi Huang, and Svetlana Boriskina, "Nano-Materials Based Solar-Thermal Technology," Symposium OO, 2015 MRS Fall Meeting, Boston, MA, November 29-December 4, 2015.
- IP172. Gang Chen, "Phonon Heat Conduction in Nanostructures: Ballistic, Coherent, Localized, and Hydrodynamic Modes," APS March Meeting, Baltimore, MD, March 14-18, 2016.
- IP173. Wei-Chun Hsu; Matthew Branham; Jonathan Tong; Bolin Liao; Yi Huang; Svetlana V. Boriskina; Gang Chen, "Ultra-Thin Crystalline Silicon Solar Cells and Near-Field Thermo-Radiative Cells," in Symposium NM4: Nanomaterials-Based Solar Energy Conversion, NM4.12.01, MRS Fall Meeting, Nov 27-Dec 2, 2016, Boston, MA.

Invited Panelist and Participants

- IP174. G. Chen, 1996, "Thermal Issues in Semiconductor Lasers," Panel presentation at the 1996 International Mechanical Engineering Congress, Atlanta, Georgia, November 17-22.

- IP175. G. Chen, 1998, "Microscale Heat Transfer in Photonic Structures and Devices," Panel Presentation at 1998 IMECE, Anaheim, CA, Nov. 14-20.
- IP176. G. Chen, "Thermoelectric Micro-Coolers and Micro Power Generators," panel presentation (Thermal MEMS Panel) at 1999 National Heat Transfer Conference, Albuquerque, New Mexico, August 15-17, 1999.
- IP177. G. Chen, "Thermophysical Engineering in Nanostructures," round-table discussion, Heat Transfer and Transport Phenomena in Microsystems Conference, Banff, Canada, October 15-20, 2000.
- IP178. G. Chen, "Thermoelectric Micro-Power Generators," Panel on Miniature Energy, Chemical and Biological Systems (session # AES-11, J. Kapat and L. Chou), IMECE2000, at IMECE2000, Orlando, ASME HTD-Vol. 366-2, pp. 245-251.
- IP179. G. Chen, "Teaching Nanoscale Transport at MIT," Panel on Micro/Nanoscale heat transfer education, IMECE'2002.
- IP180. G. Chen, Panel member at MIT Materials Unlimited Seminar, Seminar Speaker Y.-M. Lin on Thermoelectric Materials. 12/16/02
- IP181. G. Chen, "Micro- Nanoscale Heat Transfer Education," presented at Purdue Heat Transfer Celebration, paper in conference proceedings, April 3-5, 2003.
- IP182. G. Chen, "Nanoscale Heat Transfer and Information Technology," presented at Rohsenow Symposium on the Future of Heat Transfer, paper in conference CD-ROM, May 16, 2003.
- IP183. R.G. Yang and G. Chen, "Recent Development In Nanostructured Thermoelectric Materials and Devices," presented at 9th Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITHERM2004), Las Vegas, June 1-4, 2004, ITHERM 2004 pp. 731-732.
- IP184. G. Chen, A. Narayanaswamy, and L. Hu, "Thermal Radiation inside and outside Nanostructures," Panel on Fundamental Questions in Multiscale Thermophysics and Transport, IMECE 2004, Anaheim, November 14, 2004 (Chair: van Carey).
- IP185. G. Chen, "Design and Manufacturing of Solid-State Energy Conversion Materials," Panel on Challenges and Opportunities in Electronic/Photonic Materials Manufacturing, ASME Summer Heat Transfer Conference, July 17-22, 2005, San Francisco, CA.
- IP186. G. Chen, "Thermoelectric Materials: From Superlattices to Nanocomposites," Panel on Challenges and Opportunities of Solid-State Technologies for Electronic Cooling and Power, ASME InterPACK'05, July 17-22, 2005, San Francisco, CA.
- IP187. G. Chen, "Nanoscale Thermal Radiation: Fundamental Issues and New Opportunities," presented at IMECE2005, Nov. 6-11, Orlando, FL (Chairs: Z.M. Zhou, P. Meguc).
- IP188. G. Chen, "Engineering Nanocomposites for Thermoelectric Energy Conversion," presented at IMECE2005, Nov. 6-11, Orlando, FL (Chairs: W. Chiu and R. Mahajan).
- IP189. G. Chen, Panelist, Advanced Technology Workshop on Advanced Substrates and Next-Generation Semiconductors, April 30-May 1, 2008, Linthicum Heights, Maryland.

- IP190. Gang Chen, "Inconvenient Truth or Incorrect Conclusion," DOE Thermoelectrics Application Workshop, 9/29-10/1, 2009, Coronado, CA.
- IP191. Gang Chen, Panel on China Energy and Environment Research, MIT student organization, February 18, 2010.
- IP192. Gang Chen, Thermoelectric Energy Conversion, Energy Harvesting for Wireless Sensors, MIT Enterprise Forum, February 22, 2010.
- IP193. Gang Chen, "Nanostructured Materials for Thermoelectric Energy Conversion," International Mechanical Engineering Congress and Exhibition, IMECE, Panel on NanoEngineering for Energy, Vancouver, Canada, November 14-18, 2010.
- IP194. G. Chen, "Rapid Developing Energy Industry in China and Role of Low-Cost Nanotechnology," Panel Discussion at Harvard Project for Asia and International Relation Conference, Harvard University, February 13, 2011.
- IP195. G. Chen, "From Basic Research to Commercialization and Thermoelectric Energy Conversion," MIT-China program, MIT, April 20, 2011.
- IP196. G. Chen, "Concentrated Solar Thermoelectric Generators," DOE EFRC Summit, Panel on Energy Conservation and Efficiency, May 27, 2011.
- IP197. G. Chen, Panelist, MIT CHIEF Conference, MIT, November 17 and 18, 2012.
- IP198. Gang Chen, "Two Decades of Micro/Nanoscale Thermophysics and Heat Transfer," presented at ASME 2013 Summer Heat Transfer Conference, Minneapolis, MN, July 14-19, 2013.
- IP199. G. Chen, Panelist on Panel "Commercializing EFRC Research", 2013 DOE EFRC PI Meeting, Washington, DC, July 18-19, 2013.
- IP200. G. Chen, Panelist on Panel, "Aligning Global Development with Academic Career," IMECE, 2014, Montreal, Canada, November 14-20, 2014.
- IP201. G. Chen, Panelist on Panel "Solar Thermal", talk title "Innovation Examples of Solar-Thermal Technologies," MIT Solar Day, September 10, 2015.
- IP202. G. Chen, Panelist on Panel "Materials", MIT-CHIEF, November 12, 2016.

Invited Presentations in Workshops

- IP203. G. Chen, 1995, "Thermal Phenomena at Micron and Nanoscale," NSF/DOE Workshop on Advanced Thermal Manufacturing and Materials Processing, Leesburg, Virginia, May 25-26.
- IP204. G. Chen, 1997, K.L. Wang, and M.S. Dresselhaus, "Quantum Structures for Thermal Management of Microelectronic Devices," DARPA Workshop on Microelectronics Thermal Management, Arlington, December 11-12.
- IP205. G. Chen, 1998 "Towards Phonon Engineering in Microelectronic and Microthermoelectric Devices," invited presentation at the DSRC/DARPA Study: Thermal Management for Compact Systems, Arlington, Virginia, February 5-6.

- IP206. G. Chen, 1998, "Perspective of Thermoelectric Cooling for Internal Cool Electronics," invited presentation at the IEEE Workshop on Internal Cool Electronics, Marriot Hotel, Washington, DC., Oct. 15-16.
- IP207. G. Chen, "Report on the 2nd Microtherm Workshop and Tutorial," presented to the DOE Council of Engineering Energy Research, Santa Monica, CA, 1999.
- IP208. G. Chen, "Phonon Engineering in Nanostructures," Office of Naval Research Workshop on Thermally Engineered Materials, Dec. 10, 1999.
- IP209. G. Chen, "Phonon Engineering and Heat Transfer in Nanostructures," Department of Defense Workshop on Applied Physics of Nanostructures and Nanomaterials, Dec. 16-17, 1999.
- IP210. G. Chen, "Engineering Nanostructures for Energy Transport and Conversion," UC Berkeley Nanoengineering Workshop, Berkeley, August 4-5, 2000 (Sponsored by DOE CEER).
- IP211. G. Chen, ARO workshop, invited participant, Nanoscience for Soldiers, Research Triangle Park, NC, Feb. 8-9, 2001.
- IP212. G. Chen, "Nanoscale Engineering of Heat Transfer and Energy Conversion Processes," ONR workshop, Thermal Materials: Processing and Performance, University of Cambridge, UK, May 30-June 1, 2001.
- IP213. G. Chen, "Solid-State Energy Conversion---From Physics to Systems," presented at DARPA/ONR Workshop on Direct Energy Conversion, Alexandria, Dec. 4&5, 2001 (Dr. Pazik and Browning).
- IP214. B. Yang and G. Chen "Phonon Transport in Superlattices," presented at New Thermoelectric Materials Workshop: Chemistry, Physics and Materials Science of Thermoelectric Materials: Beyond Bismuth Telluride, Traverse City, Michigan, August 17-21, 2002.
- IP215. G. Chen, "Nanoscale Heat Transfer for Thermoelectric Energy Conversion," presented at Department of Energy/Electric Power Research Institute (DOE/EPRI) High Efficiency Thermoelectrics Workshop, San Diego, CA, February 17-20, 2004.
- IP216. G. Chen, "Nanoscale Heat Transfer: Enabling Efficient Direct Thermal-to-Electric Energy Conversion," presented at National Nanotechnology Initiative Workshop on "Nanoscience Research Needs for Energy," Arlington, VA, March 16-18, 2004.
- IP217. G. Chen, "Thermal Conductivity and Heat Conduction Mechanisms in Superlattices," Presented at JST-CREST Koumoto Meeting, Fukuoka, Japan, November 26-27, 2004.
- IP218. The Air Force/Army/NSF Joint Workshop on Multifunctional Structures for Energy Harvesting & Storage, Stanford University, December 1-17, 2004 (attending and discussion only).
- IP219. DOE workshop on Solar Energy Utilization, Washington, DC, April 18-21, 2005 (attending and sub-pane chair on Thermal Utilization).

- IP220. G. Chen, "Engineering Phonon Thermal Transport in Nanostructures," Defense Science Research Council Workshop on Nanoscopic Phonon Engineering, Arlington, May 9, 2005.
- IP221. G. Chen, "Nanotechnology for Efficient Energy Utilization," MIT ILP Workshop on Energy Challenge Workshop, Cambridge, MIT, Dec. 6-7, 2005.
- IP222. G. Chen, "Surface Phonon-Polariton Engineering," DARPA Nanoscopic Optical Phonon Engineering, Workshop, December 15, 2005.
- IP223. G. Chen, X.Y. Chen, Z. Chen, L. Hu, A. Narayanaswamy, and R.G. Yang, "Thermally Excited Nonequilibrium States between Electrons and Phonons for Solid-State Energy Conversion," Int. Workshop on Nanoscale Energy Conversion and Information Processing Devices, September 24-26, Nice, France.
- IP224. G. Chen, "Nanostructured Thermoelectric Materials for Power and Cooling," MEMS@MIT Fall 2006 Meeting, MIT, October 10, 2006.
- IP225. G. Chen, "Novel Thermoelectric Materials, Devices, and Systems," DARPA/MTO Components from Thermoelectric Materials Workshop, Arlington, VA, May 16-17, 2007.
- IP226. G. Chen, "Solar to Electric Energy Conversion via Thermoelectric Devices," MIT Space Power Workshop, May 13-16, 2007.
- IP227. G. Chen, "Direct Energy Conversion," GCEP Workshop, MIT, November, 29-30, 2007.
- IP228. Gang Chen, "Thermal Energy Conversion and Storage," NSF Workshop on Thermal and Solar Energy Conversion and Storage.
- IP229. Gang Chen, "Plenty Room at the Bottom---Nanotechnology Development from the Bottom up: Energy Nanotechnology Startup," Panelist at 3rd Energy Nanotechnology International Conference, 2008.
- IP230. Gang Chen, "Nanostructured Thermoelectric Materials," Workshop on Recent Advances in Peltier Cooling in the Range Including 10K, Air Force Research Laboratory, Albuquerque, New Mexico, April 22 and 23, 2009.
- IP231. Gang Chen, "Extra-Ordinary Heat Transfer and Energy Conversion," DARPA ECYCLER Workshop, Arlington, April 23-24, 2009.
- IP232. Gang Chen, Mildred S. Dresselhaus, and Zhifeng Ren, "Nanostructured Thermoelectrics: from Basic Physics to Potential Applications," DOE Thermoelectrics Application Workshop, 9/29-10/1, 2009, Coronado, CA.
- IP233. Sheng Shen and Gang Chen, "Extraordinary Heat Transfer and Energy Conversion," DSRC Physics of High Heat Flux Devices and their Applications Workshop, 11/11-12/09, Arlington, VA.
- IP234. Gang Chne, "Nano, Heat, and Energy," MITEI Press Session with ~20 reporters, March 5, 2010, MIT.
- IP235. Gang Chen, Workshop on Computational Materials Science and Chemistry for Innovation, DOE Office of Science, July 26-28, 2010, Bethesda, Maryland.
- IP236. Gang Chen, \$1/W Workshop, EERE&ARPA-E, Washington DC, August 10-11, 2010.

- IP237. Daniel Kraemer, Bed Poudel, Hsien-Ping Feng, J. Christopher Caylor, Bo Yu, Xiao Yan, Yi Ma, Xiaowei Wang, Dezhi Wang, Andrew Muto, Kenneth McEnaney, Qing Hao, Matteo Chiesa, Zhifeng Ren, and Gang Chen, “Solar Thermoelectric Generators with Flat-Panel Thermal Concentration,” DOE EERE 2011 Thermoelectrics Application Workshop, San Diego, January 3-6, 2011.
- IP238. G. Chen, “Nano, Heat, and Energy---Nanostructured Thermoelectric Materials,” presented as a member of US-Russia Presidential Bilateral Relation Commission Delegation, Moscow, February 27-March 4, 2011.
- IP239. G. Chen, “Thermoelectrics: Kang’s Contributions and Recent Developments,” K.L. Wang Symposium, UCLA, June 25, 2011.
- IP240. G. Chen, “Progress in Thermoelectric Materials, Devices, and Applications,” Advanced Thermoelectric Technology Workshop, Taipei, June 30, 2011.
- IP241. G. Chen, “Phonon Transport Theories and Simulation,” invited talk NSF/ONR Workshop on Micro/Nanoscale Heat Transfer, Georgia, Atlanta, March 4, 2012.
- IP242. G. Chen, “Progress from EFRC: Solid-State Solar-Thermal Energy Conversion Center,” presented at 3rd International Thermoelectrics Application Workshop, Baltimore, March 20-22, 2012.
- IP243. G. Chen, “Opportunities for Thermoelectrics,” invited talk at Emerging Ideas for High Efficiency Topping Cycle, Presentation at ARPA-E Workshop, Arlington, Virginia, March 27, 2012.
- IP244. G. Chen, Kavli Prize Week, invitation by Mildred S. Dresselhaus, Oslo, Norway, 9/1-9/5, 2012.
- IP245. G. Chen, “Simulating and Probing Phonon and Electron Transport for Thermoelectric Applications,” Materials for Sustainable Energy Future, Workshop IV: Energy Conservation and Waste Heat Recovery, Institute for Pure and Applied Mathematics, UCLA, November 18-22, 2013.
- IP246. G. Chen, “Introduction to MIT MechE,” MIT, Cambridge, MIT-TIT 1st Workshop, September, 2014.
- IP247. G. Chen, “Introduction to MIT MechE, Materials and Devices for Thermal Systems,” Tokyo Institute of Technology, MIT-TIT 2nd Workshop, January 7, 2015.
- IP248. G. Chen, “Understanding and Controlling Thermal Transport,” Toyota Workshop: Thermal Management for Future Vehicles, Ann Arbor, Michigan, June 9, 2015.
- IP249. Northeastern Department Head Meeting, August 14-15, RPI, Troy.
- IP250. G. Chen, “Spectral and Angular Control of Thermal Emission, Absorption and Transmission,” Future Directions Workshop for Power and Energy Advances from Photonic Sciences and Applications, Caltech, CA, January 19-20th 2016.
- IP251. G. Chen, “System Consideration in Waste Heat Recovery,” ARPA-E Workshop on Waste Heat Recovery, San Francisco, CA, December 13-14, 2016.

Invited Tutorials:

- IP252. G. Chen, 1998, "Thermophysics of Solids and Solid-State Devices," Tutorial presented at the 2nd Microtherm Workshop and Tutorial, Albuquerque, New Mexico.
- IP253. G. Chen, "Nanostructures and Their Properties," Tutorial given at IThERM 2006, May 30 - June 2, 2006 in San Diego, CA.
- IP254. G. Chen, "Hydrogen Storage," Tutorial given at ASME Energy Nanotechnology International Conference, June 26-28, MIT, 2006.
- IP255. G. Chen, "Thermal Transport in Nanostructures," Tutorial given at EuroSimE: Thermal, Mechanical and Multiphysics Simulation and Experiments in Micro-Electronics and Micro-Systems, London, April 15-18, 2007.
- IP256. G. Chen, "Thermoelectric Energy Conversion" Six Hour Tutorial, European School in Materials Science: Chemistry and Physics of Materials for Energetics, University of Milano-Bicocca, September 14-19, 2009.
- IP257. G. Chen, "Thermal Energy Technology," September, 2013, MITEI China Program.
- IP258. G. Chen, "Thermal Energy Technology," October 31, 2013, MITEI China Program.

Program Reviews/Kick-off (started recording 9/2010)

- IP259. G. Chen, "Phonon Transport in Nanostructured Thermoelectric Materials for Cryogenic Cooling" Cryogenic Cooling MURI Kick-off Meeting, Albuquerque, New Mexico, September 1, 2010.
- IP260. G. Chen, "Nanomanufacturing for Energy Systems," At NSF SINAM Site Visit Review, Berkeley, June 9-10, 2011.
- IP261. G. Chen, "Electron and Phonon Thermoelectric Transport in FeSb₂, Bi, and Bi₂Te₃," Cryogenic Cooling MURI Review, Santa Barbara, December 16, 2011.
- IP262. G. Chen, "Overview of S3TEC Activities," EFRC S3TEC Review by DOE, Baltimore, Maryland, Jan. 9, 2012.
- IP263. G. Chen, "Metallic Composites Phase Change Materials for High Temperature Thermal Energy Storage," ARPA-E HEATS Program Annual Review, Arlington, VA, October 23, 2012.
- IP264. G. Chen, "Phonon and Electron Transport in Nanostructured Thermoelectric Materials for Cryogenic Cooling," AFOSR MURI Program Review, Albuquerque, NM, December 17, 2012.
- IP265. G. Chen "Solid-State Solar Thermal Energy Conversion Center," presented at Physical Behavior of Materials PI Meeting, Potomac, April 14-17, 2013.
- IP266. G. Chen et al., "Probing and Engineering Phonons and Electrons Transport In nanostructured thermoelectric materials," 2013 DOE EFRC PI Meeting, Washington, DC, July 18-19, 2013.
- IP267. G. Chen, APRA-E Workshop on Personnel Thermal Management Systems, Nov. 12 and 13, 2013.

- IP268. G. Chen, "First Principles Simulation of Phonon and Electron Thermoelectric Transport" 2013 OSU MURI Review, Albuquerque.
- IP269. G. Chen, "Concentrated Solar Thermoelectric Generators," DOE EERE Program Review, Washington, DC, February 18, 2014.
- IP270. G. Chen, "Continuous Processing of High Thermal Conductivity Fibers and Sheets," DOE Polymer Program Review, Washington DC, May 7, 2014.
- IP271. G. Chen, "Thermal and Electrical Regulation of Heat Transfer," AFOSR Project Review, Arlington, Virginia, May 8, 2014.
- IP272. G. Chen, "Concentrated Solar Thermoelectric Generators," DOE EERE Program Review at Sunshot Summit, 2014, Anaheim, May 20.
- IP273. G. Chen, "Full Spectrum Stacked Solar Thermal and PV Receiver," APRA-E FOCUS Project Kickoff Meeting, Denver, June 25, 2014.
- IP274. G. Chen, "Heat Transfer and Thermodynamics of Thermal Radiation," DOE Physical Behavior of Materials Principal Investigators' Meeting, Gaithersburg, MD, March 30 - April 1, 2015.
- IP275. G. Chen, "Probing and Understanding Thermal Transport and Energy Conversion in Nanostructures," Energy Frontier Research Center Principal Investigators' Meeting, Washington, DC, October 26-27, 2015.
- IP276. G. Chen, "ab-Initio Simulation of Thermoelectric Transport," DARPA MATRIX Program Review, Durham, NC, Decmeber 6-8, 2016.

Invited Seminars:

- S1. "Microscale Thermal Phenomena in Optical and Optoelectronic Thin Film Devices," at IBM Amalden, California, January 22, 1993.
- S2. "Thermal Phenomena in Semiconductor Lasers," at University of Virginia at Charlottesville, April 6, 1995.
- S3. "Thermal Issues in VCSELs," at Hewlett-Packard Laboratory, Polo Alto, California, November 15, 1995.
- S4. "Heat Transfer in Nanoscale Devices," at North Carolina A&T State University, February, 9, 1996.
- S5. "Heat Transfer in Superlattices and Nanostructures" at UNC Chapel-Hill, May 29, 1996.
- S6. "Heat Transfer in Superlattices and Nanostructrues" at Army Research Office, September 4, 1996.
- S7. "Thermal Conductivity of Superlattices," at Naval Research Laboratory, Washington, October 1, 1996.
- S8. "Heat Transfer in Superlattices and Nanostructures," at Leigh University, November 15, 1996.
- S9. "Micro- and Nanoscale Heat Transfer: From Science to Applications" UNC-Charlotte, March 4, 1997.

- S10. "Thermal Conductivity of Thin Films: Measurement and Modeling" Marlow Industries, Inc., Dallas, November 21, 1997.
- S11. "Phonon Engineering in Micro- and Nanostructures," California Institute of Technology, February 10, 1998.
- S12. "Microscale Heat Transfer and Its Application in Microelectronics Thermal Management," Rockwell Science Center, Thousand Oaks, August 14, 1998.
- S13. "Heat Transfer and Phonon Engineering in Micro- and Nanostructures," Tsinghua University, China, October 20, 1998, Beijing.
- S14. "State-of-the-Art of Thermoelectric Research" Hughes, CA, March 4, 1999.
- S15. "Micro- and Nanoscale Heat Transfer and Energy Conversion," at Mechanical Engineering Department, San Diego State University, April 16, 1999.
- S16. "Micro and Nanoscale Heat Transfer and Thermophysics," Huazhong University of Science and Technology, China, 1999.
- S17. "State-of-the-Art of Thermoelectrics Research," Huazhong University of Science and Technology, China, June 28, 1999.
- S18. "Introduction to Micro-Electro-Mechanical-Systems." Huazhong University of Science and Technology, China, June 29, 1999.
- S19. "Electron-Phonon Engineering for Thermoelectrics Applications" at MITI, Electron-Technical Laboratory (Dr. Ohara), Tsukuba, August 13, 1999.
- S20. "Heat Transfer and Phonon Engineering in Nanostructures for Solid-State Energy Conversion," at Arizona State University, Mechanical and Aerospace Engineering Department, September 17, 1999.
- S21. "Heat Transfer and Phonon Engineering in Nanostructures for Solid-State Energy Conversion" at University of Minnesota, Mechanical Engineering Dept. (Host Kumar Tamma), September 22, 1999.
- S22. "Modeling and Simulation of Phonon Transport in Nanostructures," Two hour colloquium at University of Minnesota, Mechanical Engineering Dept. (Host Kumar Tamma), September 23, 1999.
- S23. "Heat Transfer and Phonon Engineering in Nanostructures for Solid-State Energy Conversion," at Seagate, Minnesota (Host: Edward Murdock), September 23, 1999.
- S24. "Thermal Characterization of Thin Films and Thermal Management of Photonic Devices," at GenOA, Fremont, CA, Oct. 23, 2000 (Host: A. Verma).
- S25. "State-of-the-Art of Thermoelectrics Research and Potential for Aerospace Applications," Lockheed Martin Skunk Works, Palmdale, Nov. 29, 2000 (Host: Larry Bloxham).
- S26. "State-of-the-Art of Thermoelectrics Research and Potential for Aerospace Applications," Lockheed Martin Skunk Works, Palmdale, Feb. 12, 2001 (for program managers).
- S27. "Engineering Nanostructures for Energy Transport and Conversion," Stanford University, Feb. 14, 2001 (Host: K.E. Goodson).

- S28. “Thermal Issues in VCSELs,” Novalux, Inc, Sunnydale, CA, Feb. 15, 2001 (Host: Robert Martisen).
- S29. “Nanostructures for Solid-State Energy Conversion,” UCLA Department of Materials Science and Engineering Seminar, Feb. 16, 2001 (Host: Ya-Hong Xie).
- S30. “Engineering Nanostructures for Energy Transport and Conversion,” Mechanical Engineering, Carnegie Mellon University, Feb. 28, 2001 (Host: S.C. Yao).
- S31. “Nanoscale Heat Transfer and Its Applications in Energy Conversion and Photonics,” Sandia National Laboratory, March 14, 2001 (Host: C.C. Wong).
- S32. “Nanostructures for Solid-State Energy Conversion,” Materials Science and Engineering Dept., Tsinghua University, June 11, 2001 (Host: Cewen Nan).
- S33. “Nanoscale Heat Transfer and Thermoelectrics Research,” University Wide Nanogroup, Huazhong University of Science and Technology, June 21, 2001 (Host: Prof. Xianliang Yang).
- S34. “Nano and Micro Energy Research,” MEMS Lunch, MIT, September 6 (Host: Professor Martin Smith).
- S35. “Bridging the Gaps between Nano- to Macroscale Transport,” MIT IAP (organized by Sid Yip).
- S36. “Nano-to-Macroscale Energy Transport and Conversion---Bridging the Gaps in Length Scales and Disciplines,” Mechanical Engineering Department, Hong Kong University of Science and Technology, February 21, 2002 (Host: Professor Ping Cheng).
- S37. “Nanoscale Heat Transfer and Energy Conversion---Experimental Approaches,” Mechanical Engineering Department, Hong Kong University of Science and Technology, February 22, 2002 (Host: Professor Ping Cheng).
- S38. “Nano-to-Macroscale Transport: Bridging the Gaps in Length Scales and Disciplines,” MIT Mechanical Engineering Seminar Series, March 15, 2002.
- S39. “Heat Transfer and Energy Conversion in Nanostructures,” Mechanical Engineering Department Seminar, University of Connecticut, October 11, 2002.
- S40. “Introduction to Nanoscale Energy Transport Research,” At IBM Yorktown Heights, Oct. 31, 2002 (host Phaedon Avouris).
- S41. “Nanoscale Heat Transfer for Direct Energy Conversion,” at Mechanical Engineering Department, University of Pennsylvania, January 30, 2003 (Host: H. Bau).
- S42. “Nanoscale Heat Transfer and Nanostructured Thermoelectric Materials---Their Implications for Microelectronics” Intel Corporation, Chandler, Arizona, Feb. 7, 2003 (Hosts: Emery, Chaun Hu).
- S43. “Nanostructured Thermoelectric Materials for Energy Conversion,” Johns Hopkins University, Department of Materials Science, March 26, 2003 (Host: J. Spicer).
- S44. “Heat Conduction in Nanostructures,” Ecole Centrale Paris, July, 2003 (Host: J.-J. Greffet).

- S45. "Introduction to Thermoelectricity and Thermoelectric Energy Conversion," July, 2003 (Host: J.-J. Greffet).
- S46. "Nanotechnology Enabled Direct Energy Conversion," Ford Motor Company, Detroit, October 2, 2003.
- S47. "Nanoscale Heat Transfer and Energy Conversion," Princeton University, Mechanical Engineering Department Seminar, February 21, 2004 (Host: Y. Ju).
- S48. "Nanotechnology: Enabling Efficient Direct Energy Conversion," Laboratory for Environment and Energy, MIT, February 25, 2004 (Host: David Marks).
- S49. "Nano, Heat, and Energy," Industrial Technology Research Institute, Energy and Resource Laboratory, July 1, 2004 (Host: S. Chu).
- S50. "Nanotechnology-Enabled Direct Energy Conversion and Thermal Management," Chinese Academy of Science, July 30, 2004 (Host: Yuelin Wang).
- S51. "Nanoscale Heat Transfer and Energy Conversion," Northeastern University, Mechanical Engineering Department Seminar, September 17, 2004 (Host: Hameed Metghalchi).
- S52. "Nanoscale Heat Transfer and Energy Conversion," University of Kentucky, Nanotechnology Certificate Program, October 21, 2004 (Host: Pinar Menguc).
- S53. "Nanoscale Heat Transfer and Energy Conversion," University of Michigan, Mechanical Engineering Department Seminar, October 22, 2004 (Host: Kevin Pipe).
- S54. "Nanoscale Heat Transfer and Energy Conversion," Korea Advanced Institute of Science and Technology, November 3, 2004 (Dr. Sung Kim).
- S55. "Nanotechnology Enabled Direct Energy Conversion and Thermal Management," LG Chemical, Daejeon, Korea, November 4, 2004 (Dr. Gwang Gyu Kim).
- S56. "Nanotechnology Enabled Direct Energy Conversion and Thermal Management," Komatsu Corporation, Japan, November 22, 2004 (Mr. M. Takashiri).
- S57. "Nanotechnology Enabled Direct Energy Conversion and Thermal Management," Toyota Corporation, Japan, November 22, 2004 (Dr. Kita).
- S58. "Nanotechnology Enabled Direct Energy Conversion and Thermal Management," Denso Corporation, November 25, 2004 (Dr. Kinji Hodaira).
- S59. "Nanoscale Heat Transfer and Energy Conversion," Vanderbilt University Institute of Nanoscience and Nanotechnology, January 19, 2005 (Walker).
- S60. "Nanotechnology-Enabled Direct Energy Conversion," GE Globe Research Center, February 14, 2005 (Fazila).
- S61. "Nanostructured Thermoelectrics," Institute of Physics, Chinese Academy of Sciences, March 18, 2005 (Sisheng Xie).
- S62. "Energy, Photonics, and Nanotechnology," Huazhong University of Science and Technology, March 21, 2005.
- S63. "Energy and Nanotechnology," Huazhong University of Science and Technology, School of Power Engineering, March 22, 2005.

- S64. “Nanotechnology-Enabled Direct Energy Conversion,” Purdue University, Mechanical Engineering Department, March 25, 2005 (Fisher).
- S65. “Nanotechnology-Enabled Direct Energy Conversion,” University of Austin, Mechanical Engineering Department, April 25, 2005 (Li Shi).
- S66. “Nanoscale Heat Transfer and Energy Conversion,” Worcester Polytechnic Institute, Mechanical Engineering Department, April 27, 2005 (K. Rong).
- S67. “Fundamentals of Nanoscale Heat Transfer,” Xian Jiaotong University, July 11, 2005.
- S68. “Heat Conduction in Nanostructures,” Xian Jiaotong University, July 11, 2005.
- S69. “Nanostructures for Thermoelectric Energy Conversion,” Xian Jiaotong University, July 12, 2005.
- S70. “Nanoscale Thermal Radiation and Thermophotovoltaics,” Xian Jiaotong University, July 12, 2005.
- S71. “Nanoscale Transport in Fluids,” Xian Jiaotong University, July 13, 2005.
- S72. “Nanotechnology: From Optics to Energy,” New England Chinese Information and Network Association (NECINA), December 17, 2005.
- S73. “Nanotechnology Enabled Direct Energy Conversion,” Harvard University, Applied Mechanics Seminar Series, February 22, 2006.
- S74. “So, What Does Nanotechnology Have to Do with Energy,” MIT Micro/Nano Seminar Series, March 6, 2006.
- S75. “Nanoscale Heat Transfer and Energy Conversion,” RPI, Mechanical Engineering Department Seminar, April 14, 2006.
- S76. “So, What Does Nanotechnology Have to Do with Energy,” Columbia University, Mechanical Engineering Department Seminar, April 21, 2006.
- S77. “Nanoscale Heat Transfer and Energy Conversion,” National Cheng-Kung University, Taiwan, July 10, 2006.
- S78. “Nanoscale Heat Transfer and Energy Conversion,” National Tsinghua University, Taiwan, July 12, 2006.
- S79. “Nano, Heat, and Energy,” Taiwan Industrial Research Institute, July 13, 2006.
- S80. “Nanoscale Heat Transfer Enabled Energy Technologies,” CISRO, Sydney, Australia, August 14, 2006.
- S81. “Energy Nanotechnology,” University of New South Wales, Sydney, Australia, August 16, 2006.
- S82. “Energy Nanotechnology,” University of Wollongong, Australia, August 16, 2006.
- S83. “Energy Nanotechnology,” University of South Florida, Physics Department, September 14, 2006.
- S84. “Energy Technologies Enabled by Nanoscale Heat Transfer Effects,” Penn State University, Physics Department, October 24, 2006.

- S85. “Energy and Nanotechnology,” Wuhan University of Science and Technology, January, 6, 2007.
- S86. “Energy and Nanotechnology,” Huanan University of Science and Technology, China, January 15, 2007.
- S87. “Nanoscale Heat Transfer and Energy Conversion,” Hongkong Polytechnic, January 16, 2007.
- S88. “So, What Does Nanotechnology Have to Do with Energy,” CMU Joint Seminar of Nanotechnology Center and Mechanical Engineering Department, March, 2007.
- S89. “Nano, Heat, and Energy,” School of Energy, Zhejiang University, China, August 8, 2007.
- S90. “So, What Does Nanotechnology Have to Do with Energy,” School of Energy, Huazhong University of Science and Technology, China, August 13, 2007.
- S91. “Nano, Heat, and Energy”, Nanyang Technological University (Host Jan Ma), Singapore, Nov. 7, 2007.
- S92. “Nanostructured Thermoelectric Materials,” Materials Program, Harvard University (M. Aziz Host), March 20, 2008.
- S93. “Energy Transport and Conversion in Nanostructures,” Mechanical Engineering Seminar Series, Caltech, April 15, 2008.
- S94. “Engineering Nanoscale Phonon Transport for Largescale Energy Applications,” Chemistry Department (Keith Nelson), MIT, April 22, 2008.
- S95. “Heat Conduction and Phonon Engineering in Nanostructures,” Tsinghua University, Engineering Mechanics Department (Min Chen), May 26, 2008.
- S96. “So, What Does Energy Have to Do with Nanotechnology,” Beijing University Distinguished Seminar Series (Alice Zhang), May 27, 2008.
- S97. “Nanoscale Solar and Thermal Radiation --- Photon Management and Beating Planck’s Blackbody Radiation Law,” Tsinghua University, Engineering Mechanics Department (Min Chen), May 28, 2008.
- S98. “What Does Energy Have to Do with Nanotechnology,” Nanjing University, Physics Department (Yi Shi), May 30, 2008.
- S99. “Thermoelectrics and Thermal Management,” Executive Briefing, Japan R&D Mission, ILP, August 28, 2008.
- S100. “Energy Transport and Conversion in Nanostructures,” Masdar Institute of Science and Technology, January 15, 2009, Abu Dhabi, UAE.
- S101. “Nano, Heat, and Energy,” MIT Microlunch (open to MTL faculty), Feb. 24, 2009.
- S102. “Nanoscale Heat Transfer for Efficient Energy Utilization,” Dusenberre Distinguished Lecture, Penn State University, Mechanical Engineering Department, March 3, 2009 (Aman Haque host).
- S103. “Solid-State Solar-Thermal Energy Conversion Center,” May 12, 2009, Presentation to DOE Secretary Dr. Steven Chu on MIT Campus.

- S104. "Extraordinary Heat Transfer and Energy Conversion," Lincoln Laboratory, May 18, 2009.
- S105. "Nanoscale Heat Transfer for Efficient Energy Utilization," EHT, Zurich, July 24.
- S106. "Nanoscale Heat Transfer for Efficient Energy Utilization," ITRI, Sinchu, Taiwan, August 14, 2009.
- S107. "Extraordinary Heat Transfer and Energy Conversion," UC Berkeley Campus Wide Nano Seminar, Aug. 28, 2009.
- S108. "DOE EFRC: S³TEC Center" to MITEI Advisory Board, Oct.9, MIT.
- S109. "Nano, Heat, and Energy," Information Session for Institute of Physics, CAS, Oct. 18, Boston College, 2009.
- S110. "Nanostructured Heat Transfer and Energy Conversion Materials," Huazhong University of Science and Technology, China, November 17, 2009.
- S111. "My Research Experience and Current Research," Huazhong University of Science and Technology, November 18, 2009.
- S112. "Nanostructured Heat Transfer and Energy Conversion Materials," China University of Geoscience, November 18, 2009.
- S113. "Extraordinary Heat Transfer in Nanostructures," Mechanical Engineering Department, U. Massachusetts Lowell, February 17, 2010.
- S114. "Nanostructured Thermoelectric and Thermal Management Materials and Their Applications," Schlumberger, Cambridge, March 25, 2010.
- S115. "Exploring Nanoscale Effects for Energy Conversion," MIT China Energy and Environment Research Seminar Series, April 9, 2010.
- S116. "Solid-State Solar-Thermal Energy Conversion Center," MIT ME Visiting Committee, April 28, 2010.
- S117. "Nanostructured Heat Transfer and Energy Conversion Materials," Shanghai University, School of Materials Science and Engineering, May 29, 2010.
- S118. "My Learning and Researching Experience," Huazhong University of Science and Technology, Scientific Spirit and Practice Seminar Series, June 7, 2010.
- S119. "Extraordinary Heat Transfer and Energy Conversion at Nanoscale," Sandia National Laboratory, August 30, 2010.
- S120. "Nanoscale Energy Transport and Conversion," UIUC Mechanical Engineering Seminar Series, September 14, 2010 (Sanjiv Sinha host)
- S121. "Extraordinary Heat Transfer and Energy Conversion," U. Michigan joint Mechanical Engineering and Materials Science Seminar, September 16, 2010 (Pramod Reddy host).
- S122. "DoE S³TEC" report to Mr. Tony Tan, former vice Premier of Singapore, September 30, 2010.
- S123. "Engineering Heat Transfer and Energy Conversion in Nanostructured," U. Wisconsin, Materials Science Seminar, February 17, 2011.

- S124. “Extraordinary Heat Transfer and Energy Conversion in Nanostructure,” AFOSR Wright Patterson Laboratory, February 18, 2011
- S125. “Extraordinary Heat Transfer and Energy Conversion in Nanostructure,” University of Connecticut, School of Engineering Distinguished Seminar Series (host Baki Cetegen), April 10, 2011.
- S126. “Extraordinary Heat Transfer and Energy Conversion at Nanoscale,” Yuanze University, Fuel Cell Institute (host S.H. Chan), Taiwan, 2011.
- S127. “Lucky Favors Prepared Minds,” Xiangfan College, July 4, 2011.
- S128. “Extraordinary Heat Transfer and Energy Conversion at Nanoscale,” Shanghai Jiaotong University, School of Mechanical Engineering (host: Lisa Xu), July 5, 2011.
- S129. “Solar Thermoelectric Energy Conversion,” DOE EERE (hosted by Dr. Ramesh), Washington DC, August 30, 2011.
- S130. “Nurturing Leaders in Energy Revolution,” Huazhong University of Science and Technology, China, October 7, 2011.
- S131. “Solid-State Solar Thermal Energy Conversion Center,” presentation to Dr. Steve Koonin, Under Secretary, DOE, Oct. 24, 2011.
- S132. “Converting Solar Energy into Electricity: The Third Way,” Science for the Public Lecture, Oct. 25, 2011 (www.scienceforthepublic.org)
- S133. “Engineering Heat Conduction in Nanostructured Materials for Energy Systems,” Distinguished Lecture, CMU Mechanical Engineering Department, Nov. 11, 2011.
- S134. “Solar Thermoelectric Energy Conversion,” NREL, Nov. 15, 2011.
- S135. “Thermoelectric Transport, Materials and Systems”, MITEI Report to UTC Visitors, Feb. 13, 2012.
- S136. “Nano, Heat, and Energy,” ILP Northrop Gumman Day at MIT, May 2, 2012.
- S137. “Nanostructured Materials for Thermal Energy Systems,” Huazhong University of Science and Technology, May 23, 2012.
- S138. “Extraordinary Nanoscale Heat Transfer,” Distinguished Seminar, University of Toronto, Mechanical Engineering Department, June 4, 2012.
- S139. “Engineering Energy Conversion and Heat Transfer in Nanostructures,” Tsinghua University, July 5, 2012.
- S140. “Heat and Mass Transfer in Soft Materials,” UC Berkeley, Springer Seminar Series, September 13, 2012
- S141. “Thermoelectric Energy Conversion: Materials, Devices, and Systems,” UC Berkeley, Springer Seminar Series, September 14, 2012.
- S142. “Heat Conduction in Crystalline Nanostructured Materials,” UC Berkeley, Springer Seminar Series, September 15, 2012.
- S143. “Radiation Heat Transfer in Nanostructures,” Beijing University, September 17, 2012.

- S144. "Radiation Heat Transfer in Nanostructures," UC Berkeley, Springer Seminar Series, September 19, 2012.
- S145. "Light Trapping and Thermodynamics of Photovoltaics," UC Berkeley, Springer Seminar Series, September 20, 2012.
- S146. "Thermoelectric Energy Conversion: Transport, Materials, and Systems," Purdue Hawkins Lecture, November 1, 2012.
- S147. "Radiation Heat Transfer in Nanostructures," Purdue Mechanical Engineering Seminar, November 2, 2012.
- S148. "Thermoelectric Energy Conversion: Materials, Transport, and Devices," Electrical Engineering Department, UCSB (John Bowers), February 8, 2013.
- S149. "Thermoelectric Energy Conversion: Transport, Materials, and Applications," Pennergy Seminar, University of Pennsylvania, March 14, 2013.
- S150. "Nanoengineering for Efficient Heat Transfer and Energy Conversion Materials and Systems," George Persall Lecture, Mechanical Engineering Department, Duke University, March 22, 2013.
- S151. "MIT MechE: Defining Mechanical Engineering for Today and Tomorrow," MIT MechE Engineering Department," Talk to Shanghai MIT Club, Shanghai, October 10, 2013.
- S152. "Nanoscale Heat Transfer and Energy Conversion," Hongkong Polytechnique University, October 14, 2013.
- S153. "Nano, Heat, Energy," IHI Executive Briefing, MIT ILP (Corey Cheng), December 5, 2013.
- S154. "MIT Innovation and Entrepreneurship Ecosystem," Xiangyan College (Host President Ruzhu Li), January 11, 2014.
- S155. "Tailoring Solar and Thermal Radiation with Nanostructures for Energy Applications," UCSB Institute for Energy Efficiency Seminar (Bowers host), January 15, 2014.
- S156. "Extraordinary Heat Transfer at Nanoscale," OSU Mechanical Engineering Distinguished Speaker, Seminar 8888 (Jos Heremans Host), January 24, 2014.
- S157. "Nanoengineering for Efficient Heat Transfer and Energy Conversion Materials and Systems," Penner Lecture, Department of Mechanical Engineering, May 11, UC San Diego.
- S158. "Nano, Heat, Energy," ILP LG Group, 4/23/2014, ILP, MIT.
- S159. "Solar and Thermal Materials, Devices, and Energy Conversion Systems", Taiwan ITRI Frontier Resear Seminar, July 2, 2014.
- S160. "Nanoengineering for Efficient Heat Transfer and Energy Conversion Materials and Systems," Georgia Institute of Technology, Mechanical Engineering Department, August 22, 2014.
- S161. "Introduction to MIT MechE, Materials and Devices for Thermal Systems," Honda, Tokyo, Japan, January 8, 2015.

- S162. "Introduction to MIT MechE, Materials and Devices for Thermal Systems," Denso, Nagoya, Japan, January 8, 2015.
- S163. "Materials and Devices for Efficient Solar and Thermal Energy Utilization," Institute of Advanced Studies Distinguished Seminar, Hong Kong University of Science and Technology, January 12, 2015.
- S164. "Energy Conversion: What is New with Silicon," MIT MTL Industrial Advisory Board Meeting, January 23, 2015.
- S165. "Materials and Devices for Efficient Solar and Thermal Energy Utilization," Northwestern University, ME Department Seminar Series (Distinguished), April 6, 2015.
- S166. "Thermal Technology: from Basic Research to Commercialization," MITEI Training Class for CNG Group, May 13, 2015.
- S167. "Innovations in Energy Utilization: Solar, Thermal, and Water" GRIMN, Beijing, May 20, 2015.
- S168. "Materials and Devices for Efficient Solar and Thermal Energy Utilization," William Mong Distinguished Lecture, University of Hong Kong University of Science and Technology, July 24, 2015.
- S169. "How to Succeed in Graduate School," MIT Chinese Students and Scholar Association, September 10, 2015.
- S170. "Materials and Devices for Efficient Solar and Thermal Energy Utilization," Distinguished Seminar, Department of Mechanical Engineering, Northeastern, March 25, 2016.
- S171. "Materials and Devices for Efficient Solar and Thermal Energy Utilization," Leadership in Engineering Lecture, RPI Department of Mechanical, Aerospace, and Nuclear Engineering, RPI, April 22, 2016.
- S172. "Materials and Devices for Efficient Solar and Thermal Energy Utilization," Goodwin Memorial Lecture, Caltech, May 5, 2016.
- S173. "MIT Department of Mechanical Engineering," Tsinghua University, TEEP (Tsinghua Excellence in Engineering Program), August 15, 2016.
- S174. "Materials and Devices for Efficient Solar and Thermal Energy Utilization," Distinguished Seminar, Department of Mechanical and Aerospace Engineering, University of Virginia, August 25, 2016.
- S175. "Materials and Devices for Efficient Solar and Thermal Energy Utilization," Alwin Schaller Lecture, Department of Mechanical Engineering, UIUC, August 30, 2016.
- S176. "Materials and Devices for Efficient Solar and Thermal Energy Utilization," Applied Physics Colloquium, Harvard University, September 2, 2016.
- S177. "Phonon Heat Conduction Beyond Fourier Diffusion: Ballistic, Coherent, Localized, Hydrodynamic and Divergent Modes," Distinguished Lecture at Institute of Molecular Engineering, U. Chicago, November 3, 2016.

PatentsIssued in USA

1. Z. F. Ren, G. Chen, B. Poudel, S. Kumar, W. Z. Wang, and M. S. Dresselhaus, "Methods for Synthesis of Semiconductor Nanocrystals and Thermoelectric Composites", US 7,255,846 B2, issued on Aug 14, 2007.
2. G. Chen, Z. F. Ren, and M. S. Dresselhaus, "Nanocomposites with High Thermoelectric Figures of Merit", US 7,465,871 B2, issued on Dec 16, 2008.
3. Z. F. Ren, G. Chen, B. Poudel, S. Kumar, W. Z. Wang, and M. S. Dresselhaus, "Doped Semiconductor Nanoparticles and Methods of Synthesis Thereof", US 7,586,033 B2, issued on Sept 8, 2009.
4. Z. F. Ren, S. Kumar, G. Chen, and H. Lee, "Thermoelectric Properties by High Temperature Annealing", US 7,591,913 B2, issued on Sept 22, 2009.
5. G. Chen, X. Y. Chen, M. Dresselhaus, and Z. F. Ren, "Solar Thermoelectric Conversion", US 8,168,879 B2, issued on May 1, 2012.
6. G. Chen, Z. F. Ren, and M. S. Dresselhaus, "Nanocomposites with High Thermoelectric Figures of Merit", US 8,293,168 B2, issued on October 23, 2012.
7. Z. F. Ren, B. Poudel, G. Chen, Y. C. Lan, D. Z. Wang, Q. Hao, M. Dresselhaus, Y. Ma, X. Yan, X. Y. Chen, J. Giri, and B. Yu, "Methods for high figure-of-merit in nanostructured thermoelectric materials", US 8,865,995 B2, issued on October 21, 2014.
8. Zhifeng Ren, Jian Yang, Xiao Yan, Qinyu He, Gang Chen, and Qing Hao, "Thermoelectric skutterudite compositions and methods for producing the same", US 8,883,047 B2, issued on November 11, 2014.
9. Zhifeng Ren, Xiao Yan, Giri Joshi, Shuo Chen, Gang Chen, Bed Poudel, and James Christopher Caylor, "Half-Heusler alloys with enhanced figure-of-merit and methods of making", US 9,048,004, issued on June 2, 2015.
10. Zhifeng Ren, Qinyong Zhang, Qian Zhang, and Gang Chen, "Thermoelectric materials and methods for synthesis thereof", US 9,099,601, issued on August 4, 2015.
11. G. Chen, "Potential Amplified Nonequilibrium Thermoelectric Device (PANTEC)," US Patent No. 8,309,838, November 13, 2013.
12. G. Chen, R.G. Yang, and A. Narayanswamy, "Surface Plasmon Coupled Nonequilibrium Thermoelectric Device," MIT Case Number 10827. Provisional patent filed May 4, 2004; full utility patent application filed, December 8, 2004. US Patent No. 7,508,110, March 24, 2009.
13. Gang Chen and Xiaoyuan Chen, "Surface Phonon Polariton Raman Lasers," US Patent No. 7,471,448 B2, date of patent: Dec. 30, 2008.
14. Ruiting Zheng, Jinwei Gao and Gang Chen, "Graphite Microfluids", Filed June 2009, M.I.T. Case No. 13749. PCT filed on December 15, 2010 combined with MIT Case 13853, US Patent No. 8,192,643, February, 5, 2012,
15. Anurag Bajpayee, Daniel Kraemer, Andrew Jerome Muto, Gang Chen, John H. Lienhard, and Borivaje B. Mikic, "Water Desalination Using Directional Solvent Extraction," US Patent 8,119,007 B2, Date of Patent Feb. 21, 2012. (China for PCT/US2010/57448, Chinese Patent Serial No. 2013102300062480), US Patent 8,501,007, Date of Patent August 6, 2013.

16. Gang Chen, Christine Junior, and Juergen Koehler, "System and Method for Thermal Process Including a Thermoelectric Heat Pump and Internal Heat Exchanger," US Patent No. 8,365,539, February 5, 2013.
17. Hsien-Ping Feng, Gang Chen, Bo Yu, Zhifeng Ren, Shuo Chen, and Bed Poudel, "Metal Deposition Using Seed Layers," US Patent No. 8,580,100, November 12, 2013.
18. Wei-Chun Hsu, Jonathan K. Tong, Bolin Liao, Brian R. Burg, and Gang Chen, "Direct and Quantitative Broadband Absorptance Spectroscopy with Multilayer Cantilever Probes," US Patent No. 9,012,849, April 21, 2015.
19. Mona Zebarjadi, Bolin Liao, Keivan Esfarjani, and Gang Chen, "A Semiconductor with Embedded Nanoparticles Invisible to the Conduction Carriers", US Patent No. 9,076,712 B2, July 7, 2015.
20. Taofang Zeng, Yanjia Zuo, and Gang Chen, Silica Aerogel and Their Preparation, US Patent Application No. 20120128958 (August 9, 2011); US Patent No. 9073759 B2, July 7, 2015.
21. Gang Chen, Erik Skow, and Xiaoyuan Chen, "Polymer Sheets and Other Bodies Having Oriented Chains and Method and Apparatus for Producing Same," US Patent No. 9,109,846 B2, 8/18/2015.
22. Gang Chen, Xiaoyuan Chen, and Ronggui Yang, "Multistage Thick Film Thermoelectric Devices," MIT Case 11653, filed May 9, 2005. US Patent Allowed, 2016.
23. Gang Chen, Hadi Ghasemi, Amy Marie Marconnet, George Wei Ni, "Localized Solar Collectors" MIT Case No. 16537, US Provisional patent application, U.S. Provisional Application No.: 61/874390, Filing Date: September 6, 2013; US Patent No. 9459024, 10/4/2016.
24. Anurag Bajpayee, Gang Chen, Michael Fowler, Kevin Kleinguetl and Stephen Josef Kress, "Water Extraction Using A Directional Solvent," M.I.T. CASE No. NO. 14793; US patent No. 9428404, 08/30/2016.
25. Gang Chen, Shuo Chen, Weishu Liu, Zhifeng Ren, Hui Wang, Hengzhi Wang and Bo Yu, "Methods of Synthesizing Thermoelectric Materials," M.I.T. CASE NO. 15708J, US Patent No. 9306145, 2016.
26. Seok Woo Lee, Yuan Yang, Hadi Ghasemi, Gang Chen and Yi Cui, "Electrochemical Sysems and Methods for Harversting Heat Energy," MIT Ref. No.: 16329, U.S. Provisional Application No.: 61/864,056, Filing Date: August 9, 2013. Patent Allowed 2016.

Issued in China

27. G. Chen and Z. F. Ren, "Solar thermoelectric hot water system", Chinese ZL200880025371.8, issued on Feburary 27, 2013.

Issued in Japan

28. G. Chen, Z. F. Ren, and M. S. Dresselhaus, "Nanocomposites with High Thermoelectric Figures of Merit", Japanese patent 5253810, issued on April 26, 2013.
29. Z. F. Ren, G. Chen, D. Z. Wang, M. Dresselhaus, X. Yan, X. W. Wang, B. Yu, B. Poudel, Y. C. Lan, Q. Hao, Y. Ma, X. Y. Chen, and G. Joshi "Methods fro High Figure-of-merit in

- Nanostructured Thermoelectric Materilas”, Japanese patent 5329423, issued on August 2, 2013.
30. G. Chen, X. Y. Chen, M. Dresselhaus, and Z. F. Ren, “Solar Thermoelectric Conversion”, Japanese patent 536332/09, issued on November 26, 2013.

Doctoral Theses, Supervisor

1. Borca-Tasciuc, Theodorian, "Thermal and Thermoelectric Properties of Superlattices," Mechanical Engineering Department, University of California at Los Angeles, May 2000 (Dr. Borca-Tasciuc is currently Professor at Rensselaer Polytechnic Institute).
2. Yao, Da-Jeng ,“In-Plane MEMS Microcoolers,” Mechanical Engineering Department, University of California at Los Angeles, May 2001 (co-supervised with C.J. Kim. Dr. Yao is currently Professor at National Tsinghua University, Taiwan).
3. Yang, Bao, “Thermal and Thermoelectric Transport in Superlattices and Quantum Wells,” Mechanical Engineering Department, University of California at Los Angeles, June 2003 (Dr. Bao Yang is now associate professor position at the University of Maryland at College Park).
4. Song, David Won-Jun, “Phonon Heat Conduction in Nano and Micro-Porous Thin Films,” Mechanical Engineering Department, University of California at Los Angeles, June 2003 (David Song is now at Intel, Arizona).
5. Liu, Weili, “In-Plane Thermoelectric Properties of Si/Ge Superlattices,” Mechanical Engineering Department, University of California at Los Angeles, July 2004.
6. Diana Borca-Tasciuc, “Thermophysical Properties of Individual and Ordered Nanowire Composites for Thermoelectric Applications.” Mechanical Engineering Department, University of California at Los Angeles, 2005 (Diana is now a associate professor at RPI).
7. Fardad Hashemi, “Design and Fabrication of Nanotweezers for Nanomanipulation,” Mechanical Engineering Department, MIT, May, 2005 (now at Nikon).
8. Yang, Ronggui, “Nanoscale Heat Conduction with Applications in Nanoelectronics and Thermoelectrics,” Mechanical Engineering Departmen, MIT, December 2005 (Ronggui Yang is now an associate professor at U. Colorado, ME Department).
9. Christopher Dames, “Thermal Properties of Nanowires,” Mechanical Engineering Department, MIT, May, 2006 (Chris is now an associate professor at UC Berkeley, ME Department).
10. Arvind Narayanaswamy, “Investigation of Nanoscale Thermal Radiation: Theory and Experiments,” Mechanical Engineering Department, MIT, May, 2007 (Arvind is now an Associate Professor at Columbia University, ME Department).
11. Dye-Zone (Zony) A. Chen, “Energy Transmission Through and Along Thin-Films Mediated by Surface Phonon-Polaritons,” Mechanical Engineering Department, MIT, July, 2007.

12. Aaron Schmidt, "Optical Characterization of Thermal Transport from the Nanoscale to the Macroscale," Mechanical Engineering Department, May, 2008 (Aaron is now an assistant professor BU).
13. Lu Hu, "Photon Management in Thermal and Solar Photovoltaics," Mechanical Engineering Department, MIT, September 2008 (Lu joined Exxonmobile).
14. Vince Berube, "Thermodynamic Properties of Metal Hydride Nanostructures," Physics Department, MIT (co-supervised with Mildred S. Dresselhaus, Vince joined McKinsey&Company).
15. Hohyun Lee, "Modeling and Characterization of Thermoelectric Properties of SiGe Nanocomposites," Mechanical Engineering Department, MIT, May 2009 (Hohyun is now an Associate Professor at Santa Clara University, ME Department).
16. Asegun Seku Famake Henry, "1D-to-3D Transition of Phonon Heat Conduction in Polyethylene Using Molecular Dynamics Simulations," Mechanical Engineering Department, MIT, May, 2009 (Ase is now an assistant professor at Georgia Tech, ME Department).
17. Jinwei Gao, "Experimental and Theoretical Investigation of High Thermal Conductivity Micro/Nano Suspension," Ph.D. from South China University of Technology, March, 2010. (visiting student from 9/2007-12/2009 from South China University of Technology, Jinwei Gao is now an Associate Professor position from South China Normal University).
18. Sheng Shen, "Probing Extraordinary Nanoscale Energy Transfer using Bimaterial AFM Cantilevers," Mechanical Engineering Department, MIT, May 2010 (Sheng is now an assistant professor at CMU, ME Department).
19. Thomas Harris, "Development of a Nanostructure Thermal Property Measurement Platform Compatible with a Transmission Electron Microscope," Mechanical Engineering Department, MIT, May 2010 (Tom is currently a staff member Sandia National Laboratory).
20. Qing Hao, "Nanocomposites as Thermoelectric Materials," Mechanical Engineering Department, MIT, May 2010 (Qing is now an assistant professor at U. Arizona, ME Department).
21. Austin Minnich, "Exploring Heat Transfer at the Nanoscale in Thermoelectric Materials," Mechanical Engineering Department, MIT, May, 2011 (Austin is now an assistant professor at CalTech).
22. Andrew Muto, "Thermoelectric Device Characterization and Solar Thermoelectric System Modeling," Mechanical Engineering Department, MIT, September 2011 (Andrew joined Corning).
23. Anurag Bajpayee, "Directional Solvent Extraction Desalination," Mechanical Engineering Department, MIT, September, 2012 (Anurag is now CEO of Gradiant Corporation).

24. Zhiting Tian, “Exploring Heat Transfer at the Atomistic Level for Thermal Energy Conversion and Management,” Mechanical Engineering Department, MIT, May, 2014 (Zhiting is now an assistant professor at Virginia Tech).
25. Kenneth McEnaney, “Thermoelectrics and Aerogels for Solar Energy Conversion Systems,” Mechanical Engineering Department, MIT September, 2014 (Ken joined Creare)
26. Matthew Branham, “Ultrathin Crystalline Silicon Solar Cells Incorporating Advanced Light-Trapping Structures,” Mechanical Engineering Department, MIT, November, 2014 (Matthew joined Giga Factory).
27. Kimberlee Chiyoko Collins, “Studies of Non-diffusive Heat Conduction through Spatially Periodic and Time-harmonic Thermal Excitations,” Mechanical Engineering Department, MIT, January, 2015 (Kim is now post-doc at Lawrence Livermore Laboratory).
28. Sangyeop Lee, “Transport of Phonons and Electrons in Thermoelectric Materials and Graphene,” Mechanical Engineering Department, MIT, June, 2015 (Sangyeop joined University of Pittsburgh as an Assistant Professor).
29. Maria Luckyanova, “Observation and Manipulation of the Wave Nature of Phonon Thermal Transport through Superlattices,” Mechanical Engineering Department, MIT August, 2015 (Maria joined Apple).
30. Jianjian Wang, “Transport Properties of Graphite-Loaded Composites in Liquid and Solid States,” Mechanical Engineering Department, MIT, September, 2015 (Jianjian joined Advanced cooling Technologies).
31. Poetro Lebdo Sambegoro, “Experimental Investigations on the Influence of Curvature and Materials on Near-field Thermal Radiation” Ph.D. Thesis, MIT ME Department, January 15, 2016.
32. Daniel Kramer, “Solar Thermoelectric Power Conversion: Materials Characterization to Device Demonstration” PhD Thesis, MIT ME Department, January 15, 2016 (Daniel joined Modern Electron).
33. Bolin Liao, “Nanoscale Electron, Phonon and Spin Transport in Thermoelectric Materials,” PhD Thesis, MIT ME Department, March 30, 2016 (Bolin received KNI Post-doc Fellow and joined Professor Zewail group at Caltech).
34. Jonathan Tong, “Photonic Engineering of Near and Far-Field Radiative Heat Transfer,” PhD Thesis, MIT ME Department, May 10, 2016 (joined BAE Systems).
35. Wei-Chun Hsu, “Ultra-Thin Crystalline Silicon Solar Cells and Near-field Thermo-Radiative Cells,” PhD Thesis, MIT ME Department, May 10, 2016 (Wei-Chun joined KLA-Tencor).
36. Lingping Zeng, “Studying Phonon Mean Free Path Distributions At the Nanoscale: Modeling and Experiments,” PhD Thesis, MIT ME Department, June, 2016.

Master Theses Supervised:

1. Yu, Xiaoyu, "Measurement of Thermal Diffusivity of Thin Film Structures by Thermal Wave Method," Department of Mechanical Engineering and Materials Science, Duke University, May, 1995.
2. Borca-Tasciuc, Diana, "Synthesis and Thermal Characterization of Anodized Alumina," Mechanical and Aerospace Engineering Department, University of California at Los Angeles, June 2001.
3. Liao, Andrew "A Comparative Analysis of Semiconductor Diode Lasers with and without Integrated Heat Spreaders," Mechanical and Aerospace Engineering Department, University of California at Los Angeles, June 2001 (currently with Raytheon).
4. Fu, Jianping "Integrated Electroplated Heat Spreaders for High Power Semiconductor Lasers." Mechanical and Aerospace Engineering Department, University of California at Los Angeles, September, 2002 (Jianping Fu is now assistant professor at U. Michigan).
5. Shah, Ashish, "Modeling and Fabrication of High Power Density Micro Thermophotovoltaic Devices," Department of Mechanical Engineering, MIT, December 2003 (currently with Applied Materials).
6. Cybulski, James S., "Fabrication, Modeling, & Electrical Characterization of Self-Assembling Microscale Rollup Structures," Department of Mechanical Engineering, MIT, June 2004 (currently with Intel).
7. Schmidt, Aaron J., "Photothermal Lithography," Department of Mechanical Engineering, MIT, June 2004.
8. Lee, Hohyun, "Thermoelectric Properties of Si-Ge Nanocomposites," Department of Mechanical Engineering, January, 2005.
9. Asegun Henry, "Molecular Dynamics Analysis of Spectral Characteristics of Phonon Heat Conduction in Silicon," Mechanical Engineering Department, MIT, May, 2006.
10. Jack Ma, "Thermal Conductivity of Fluids Containing Suspension of Nanometer-Size Particles," Mechanical Engineering Department, MIT, May, 2006.
11. Shane Cunningham, "Determining Thermoelectric Properties of Polymer Fibers, Theory and Measurements," Swiss Federal Institute of Technology, Zurich (visiting student, September 2006-March 2007).
12. Daniel Kramer, "Research on the Solar Application of Thermoelectric Generators," Swiss Federal Institute of Technology, Zurich (visiting student, Nov. 2006-May 2007).
13. Erik Skow, "Processing and Thermal Properties of Molecular Oriented Polymers," Mechanical Engineering Department, MIT, May, 2007.
14. Muto, Andrew, "Device Testing and Characterization of Thermoelectric Nanocomposites," Mechanical Engineering Department, MIT, May, 2008.
15. Minnich, Austin, "Modeling the Thermoelectric Properties of Bulk and Nanocomposite Thermoelectric Materials," Mechanical Engineering, MIT, May 2008.

16. Yanjia Zuo, "Preparation of Silica Aerogels with Improved Mechanical Properties and Extremely Low Thermal Conductivities through Modified Sol-Gel Process," Mechanical Engineering Department, MIT, May 2010 (co-supervised with Dr. Taofang Zeng).
17. Kimberlee Collins, "Experimental Investigations of Solid-Solid Thermal Interface Conductance," Mechanical Engineering Department, MIT, May 2010.
18. Mike Kozloski, "Kettlelectric and myGen: Portable, Thermoelectric-Based Power Generation Systems for Off-Grid Home Use and the Village Entrepreneur," Mechanical Engineering Department, MIT, May 2010 (co-supervised with Amy Smith).
19. Kenneth McEnaney, "Modeling of Solar Thermal Selective Surfaces and Thermoelectric Generators," Mechanical Engineering Department, MIT, September, 2010.
20. Poetro Lebdo Sambegoro, "Near-field Radiation in Nanoscale Gaps," Mechanical Engineering Department, MIT, January 2011.
21. Jianjian Wang, "Investigation on the Heat Conduction Mechanisms of Graphite Suspensions," Mechanical Engineering, MIT, February 2011.
22. Stephen Kress, "Droplet Formation in a Binary Water-Fatty Acid System," ETH, July 2011 (visiting student at my Lab from January to July 2011).
23. Maria Luckyanova, "Detecting Coherent Phonon Wave Effects in Superlattices Using Time-Domain Thermoreflectance," M.S. Thesis, ME Department, MIT, February, 2012.
24. Wei-Chun Hsu, "Direct and Quantitative Broadband Absorptance Micro/Nano Spectroscopy Using FTIR and Bilayer Cantilever Probes," Mechanical Engineering Department, MIT, September, 2012.
25. Bolin Liao, "Practical Electron Cloaking in Solids," Mechanical Engineering Department, MIT, September, 2012.
26. Jonathan Kien-Kwok Tong, "Direct and Quantitative Absorptive Spectroscopy of Nanowires," Mechanical Engineering Department, MIT, September, 2012.
27. Lingping Zeng, "Experimental and Numerical Investigation of Phonon Mean Free Path Distribution," Mechanical Engineering Department, MIT, February, 2013 (co-supervised with Nicolas Hadjiconstantinou)
28. Lee Weinstein, "Improvements to Solar Thermoelectric Generators Through Device Design," Mechanical Engineering Department, MIT, September, 2013.
29. Jonathan Mendoza, "Nanostructures and Alloys: Multiple Scattering and Nonlinearities in Phonon Transport," Mechanical Engineering Department, MIT, January, 2014.
30. George Ni, "Photoacoustic Measurement of Bandgaps of Thermoelectric Materials," Mechanical Engineering Department, MIT, May, 2014.
31. Yi Huang, "Electrically-Tunable Near-Field Heat Transfer with Ferroelectric Materials," Mechanical Engineering Department, MIT, May, 2014.
32. Vazrik Chiloyan, "Bridging Conduction and Radiation: Investigating Thermal Transport in Nanoscale Gaps," Mechanical Engineering Department, MIT, January, 2015.

33. Yi Jenny Wang, Equilibrium Molecular Dynamics Study of Thermal Conductivity in Octane,” Mechanical Engineering Department, MIT, January, 2015.
34. Jiawei Zhou, “*Ab initio* simulation and optimization of phonon drag effect for lower-temperature thermoelectric energy conversion” Mechanical Engineering Department, MIT, June, 2015.

Post-Doc Supervised:

1. Dr. Ravi Kumar (Ph.D. with Zhoumin Zhang Univ. Florida, post-doc 99-2000 at UCLA).
2. Dr. Sebastian G. Volz (Post-doc From France, ENSMA 97-98, currently at CNRS and Ecole Centrale de Paris France).
3. Dr. Taofang Zeng (Ph.D. from MIT, Post-Doc 97 - June, 2000).
4. Dr. Senquan Zhou (Ph.D. from Tsinghua Univ., Post-doc from 97-98 at UCLA)
5. Dr. Dekui Qing (Post-doc from 2001-2003 at MIT), worked on metamaterials.
6. Dr. Xiaoyuan Chen, 9/03-09, research scientist, pump-probe, etc., now Director, Chinese Academy of Science, Solar Energy Research and Development Center, Shanghai Advanced Research Institute.
7. Dr. Matteo Chiesa, Post-Doc, Ph.D. from Norwegian University of Science and Technology, September 2006-August 2007. Matteo continued as a visiting scholar with the MIT-MASDAR program in lab September 2007 (Matteo joined MASDAR Institute as an assistant professor in Sept., 2008).
8. Dr. Daryoosh Vashaee, Post-Doctorate, Ph.D. from UC Santa Cruz, October, 2006-August 2007 (Daryoosh Vashaee joined U. Okalahoma as an assistant professor in September 2007).
9. Dr. Aaron Schmidt, Post-Doc, Ph.D. in May 2008 jointly between myself and Matteo Chiesa, joined BU as an assistant professor later.
10. Dr. Bhaskaran Mulidharan, Post-Doc., May 2008-December 2010, Ph.D. from EE Department, Purdue with S. Datta. Worked on electron transport in thermoelectric materials. Now assistant professor at IIT.
11. Dr. Celine Hin, Ph.D from Institut National Polytechnique Grenoble, post-doc from April 2009, working on DFT and materials diffusion simulation (Celine joined Virginia Tech as an assistant professor in Fall, 2011).
12. Dr. Hsieh-Ping (Tony) Feng, Ph.D. from National Tsinghua University, post-doc start May, 2009 (Tony joined Hongkong University as an assistant Professor in Fall, 2011).
13. Dr. Shuo Chen, Ph.D. from BC, post-doc started in July, 2009 (Shuo took another post-doc position at BC in Fall, 2011 and became an assistant professor at U. Houston in 2013).
14. Dr. Nitin Shukla, Ph.D. from Virginia Tech (with Scot Huxtable), post-doc started in July, 2009 (Nitin joined Franhoffer Institute, Cambridge campus in Fall, 2011).

15. Dr. Tengfei Lu, Ph.D. from Michigan State in Aug. 2009 with Jack Lloyd, post-doc starts in Sept. 1, 2009 (Tengfei took an assistant professor position in Fall, 2011 from Notre Dame University).
16. Dr. Yann Chalopin, Ph.D. from Ecole Centrale Paris with Sebastian Volz, visiting student/post-doc starts in Sept. 1, 2009 (Yann took a position at Ecole Centrale Paris, hired by CNRS, Sept., 2010).
17. Dr. Yang Nuo, Ph.D. from Singapore National University with Baowen Li, visiting-student/post-doc starts in September 1, 2009 (now a faculty member at Huazhong University of Science and Technology).
18. Dr. Weitao Dai, Ph.D. from Iowa State University expected Sept., 2009. Post-doc starts on Oct. 1, 2009 (Weitao took second post-doc position at BC in Fall, 2011).
19. Dr. Jae-Sik Jin, Ph.D. from Seoul National University, post-doc starts on Sept. 1, 2009 (Jae-Sik took another post-doc position in Spring, 2011).
20. Dr. Keivan Esfarjani, research scientist, joined Oct. 20, 2009, left August, 2012 to join Rutgers University as a Associate Research Professor.
21. Dr. Mona Zebarjadi, post-doc since Januar, 2010. Joined Rutgers University as an assistant professor in Fall 2012.
22. Dr. Sang Eon Han, Ph.D. from U. Minnesota (Chem Eng.) with David Norris, post-doc from March 2009, working on EM wave simulation. Joined U. New Mexico, Chemical Engineering Department, as an assistant professor in June, 2012.
23. Dr. Anastassis Mavrokefalos, Ph.D. from UT Austin with Li Shi, post-doc from January 2009. Post-doc supported by MIT-Cyprus Institute. Joined University of Houston, ME Department, as an assistant professor in August, 2012.
24. Dr. Brian Burg, from ETH, joined group in October, 2010 (Ph.D. with Dimos Poulikakos). Joined IBM Zurich in August, 2012.
25. Dr. Nagarajan Thoppey, Ph.D. from NC State University, September 2012-May 2013, worked on polymer processing.
26. Dr. Amy Marconnet, Ph.D. from Stanford with Ken Goodson, September 2012. Amy already had a faculty job offer from Purdue and started at Purdue in August 2013.
27. Dr. Maha Khayyat, from Umm Al-Qura University, Ph.D. from U. Cambridge, Cavendish Lab., joined November, 2012 sponsored by MIT-KFUPM collaboration, stayed till May, 2013.
28. Dr. Jivtesh Garg, joined group in May, 2011 (Ph.D. with Nicola Mazari, joined Oklahoma University as an assistant professor in the summer 2013).
29. Dr. Selcuk Yerci, Ph.D. from BU with Luca Degro, May, 2011 – January 2014, working on PV cells modeling. From 2/1/2014, Assistant Professor at Middle East Technical University, Ankara, Micro and Nanotechnology Programme, Electrical and Electronics Engineering.
30. Dr. Nenad Miljkovic, Ph.D. from MIT with Evelyn Wang, joined group in September, 2013 (had an offer from UIUC), and joined UIUC as an assistant professor in July, 2014.

31. Dr. Hadi Ghasemi, Ph.D. from U. Toronto, joined group as a post-doc around September, 2012, worked on Polymer project and also Solar Steam-Generation, Aerogel. Joined U. Houston as an assistant professor in August 2014.
32. Dr. Yongjie Hu, joined group in May, 2011 (Ph.D. with Charlie Lieber), joined UCLA MAE as an assistant professor in September, 2014.
33. Dr. Xiabo Li, Ph.D. from U. Colorado with Ronggui Yang, Denver, joined April, 2012, working on phase change materials for thermal storage, joined Huazhong University of Science and Technology in Fall, 2014 as an associate professor.
34. Dr. Bo Qiu, Ph.D. from Purdue with Xiulin Ruan, joined September, 2012, joined Qualcomm in July 2014 (now at Intel).
35. Dr. Chang-Te Lin, Ph.D. from National Tsinghua University, joined group in September, 2013, joined Chinese Academy of Science in May 2014 as Research Fellow, Ningbo Institute of Material Technology & Engineering.
36. Dr. John Cuffe, Ph.D. from Spain with Clivia Sotomayor Torres, Institute Catalana de Reserca I Estudis Avancats (ICREA), September, 2012-August 2014.
37. Dr. Yuan Yang, Ph.D. from Stanford with Yi Cui, joined July, 2012, working on thermogalvanic cells (joined U. Columbia Applied Physics Department as an assistant professor, July, 2015).
38. Dr. Xiaopeng Huang, Ph.D. from U. Iowa with Xinwei Wang, September 2012 - June 2015 (joined HP).
39. Dr. James Loomis, Ph.D. from U. Louville, joined August, 2013. Joined U. Aukland as a Senior Lecture in August 2015.
40. Dr. Maria Luckyanova, Sept. 1, 2015-February 2016 (joined Apple).
41. Dr. Jianjian Wang, Oct. 1, 2015-March 2016 (joined Advanced Cooling Technologies).