



The Department of MECHANICAL ENGINEERING



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Yang, Bao



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Research Interests

Micro/nanoscale thermal transport and energy conversion

Thermal science and its applications in electrical engineering, optical engineering, and material science

Micro/nano devices

MEMS

Nanotechnology

Education

Ph.D., (Mechanical Engineering) University of California, Los Angeles, 2003

Ph.D., (Physics) University of Science and Technology of China, 1998

Professional Memberships and Service

Member – American Society of Mechanical Engineers, Materials Research Society, American Physical Society, International Thermoelectrics Society

Selected Publications

2003

G. Chen, B. Yang, and W.L. Liu, "Engineering Nanostructures for Energy Conversion", Chapter 2 in *Heat Transfer and Fluid Flow in Microscale and Nanoscale Structures*, edited by M. Faghri and B. Sunden.

B. Yang and G. Chen, "Partially Coherent Phonon Heat Conduction in Superlattices", *Physical Review B*, Vol. 67, pp.195311–195314, 2003. Also selected for the May 19, 2003 issue of the *Virtual Journal of Nanoscale Science & Technology*, <http://www.vjnano.org>.

2002

B. Yang, W.L. Liu, J.L. Liu, K.L. Wang, and G. Chen, "Measurements of Anisotropic Thermoelectric Properties in Superlattices", *Applied Physics Letters*, Vol. 81, pp. 3588–3590, 2002.

B. Yang, J.L. Liu, K.L. Wang, and G. Chen, "Simultaneous Measurements of Seebeck Coefficient and Thermal Conductivity across Superlattice", *Applied Physics Letters*, Vol. 80, pp. 1758–1760, 2002. Also selected for the March 18, 2002 issue of the *Virtual Journal of Nanoscale Science & Technology*, <http://www.vjnano.org>.

B. Yang and G. Chen, "A Unified Wave-Particle Treatment for Phonon Transport in Superlattices", presented at *ICT'2002*, Proceedings of *21st International Conference on Thermoelectrics*, ICT'02, pp. 306–309.

B. Yang, J. L. Liu, K. L. Wang, and G. Chen , "Cross-Plane Thermoelectric Properties in Si/Ge Superlattices", *Materials Research Society Symposium Proceedings, Thermoelectric Materials 2001-Research and Applications*, Vol. 691, pp.G3.2.1-6, 2002.

2001

B. Yang and G. Chen, "Lattice Dynamics Study of Anisotropic Heat Conduction in Superlattices", *Microscale Thermophysical Engineering*, Vol. 5, pp. 107-116, 2001.

2000

B. Yang and G. Chen, "Lattice Dynamics Study of Phonon Heat Conduction in Quantum Wells", *Physics of Low-Dimensional Structures*, Vol. 5/6, pp. 37-48, 2000.

Related News

UMD Researchers Work to Mitigate Water Scarcity Crisis with Solar-Powered Devices Made of Wood
Low-cost, enviro-friendly devices use natural nanoengineering October 10, 2017

Das Named Editorial Board Member of Nature's *Scientific Reports*

Das to serve on editorial board for *Scientific Reports*, Fluids and Plasma Physics category. January 31, 2017

Yang Promoted to Professor

Department of Mechanical Engineering Associate Professor Bao Yang promoted to the rank of Professor. May 25, 2016

UMD Team Takes Top Honor in DARPA RevCon Competition

UMD team beats out six other schools with their winning thermal connector prototype. November 15, 2015

Ohadi Receives ASHRAE E.K. Campbell Award of Merit

Mechanical Engineering Professor Michael Ohadi recently received the ASHRAE E.K. Campbell Award of Merit. August 9, 2015

Team Wins UMD Sustainability Grant to Improve Cell Phone Battery Life

Student team led by Associate Professor Bao Yang wins UMD Sustainability Grant. May 28, 2015

UMD Teams Awarded Over \$5 Million to Improve Power Plant Cooling Technologies

The U.S. Energy Department's Advanced Research Projects Agency-Energy (ARPA-E) funds two UMD teams to improve power plant cooling efficiency. May 21, 2015

Scientific Reports Invites Yang to Serve as Editorial Board Member

Associate Professor Bao Yang invited to serve as an Editorial Board Member for Scientific Reports. April 17, 2015

UMD Team Wins in RevCon Competition for Second Year Straight

Student and alumni team designs winning concept for DARPA's 2015 International Field-Reversible Thermal Connector (RevCon) Challenge. March 12, 2015

Saving Energy with 'Personal HVAC Systems'

UMD awarded more than \$5 million by ARPA-E to fund potentially transformational research. December 23, 2014

UMD Team Receives RevCon Award

Student team wins award for "Low-Resistance Seamless Wedge Thermal Connectors." February 28, 2014

"Embedded Cooling" of Next-Generation Power Electronics

UMD Research Team wins \$2.1 million contract from DARPA to develop "embedded cooling" technology May 24, 2013

Students Win Graduate School Dissertation Awards

Zheng Jia awarded Graduate Dean's Dissertation Fellowship, Jia and Jiajun Xu awarded Ann G. Wylie Dissertation Fellowship May 14, 2013

Dr. Bao Yang Promoted to Associate Professor

Bao Yang receives promotion to Associate Professor with tenure. March 26, 2009

ME Faculty & Students Dominate Invention Awards

Co-Inventor Greg Jackson Winner in Physical Sciences Category April 15, 2006

ME Celebrates Many New Additions

Congratulations to the ME families. January 15, 2005

ME Celebrates a Few New Additions

Congratulations to the Yang, DeVoe and Hazelwood families. December 15, 2004

OUTSTANDING SPRING FACULTY AWARDS AND ACCOMPLISHMENTS

Numerous outstanding faculty awards and accomplishments in the Department of ME announced. April 15, 2004

