SUSHIL H. BHAVNANI

RESUME

PhD-Iowa State (1987), MS-Indian Institute of Technology (1979), BS-Bangalore University (1977)

ACADEMIC/ PROFESSIONAL APPOINTMENTS:

- 2014-present Associate Chair, Department of Mechanical Engineering, Auburn University
- 2012-present Henry M. Burt Chair and Professor, Auburn University
- 2003-2008 Alumni Professor, Auburn University
- 2002-present Professor, Auburn University
- 1999-present Undergraduate Program Officer, Dept. of Mechanical Engr., Auburn University
- 1993-2002 Associate Professor, Auburn University
- 1987-1993 Assistant Professor, Auburn University
- 1979-1982 Power Generation Engineer, Tata Electric Companies, Bombay

OVERVIEW

TEACHING AWARDS

- Burt Professorship (2012-present)
- Leischuck Endowed Presidential Award (2009)
- AU Alumni Professorship (2003-2008)
- Walker Merit Award (2017 and 2007)
- Outstanding ME Faculty Member (2005-06, 1998-99 and 1994-95)
- Walker Superior Award (2001)
- SGA Faculty Member of the Year (1995)
- Pumphrey Award (1995),
- Birdsong Merit Award (1992)
- Mortar Board Favorite Educator Award (1991)

TEACHING/EDUCATION GRANTS

- Number of Teaching/Education Grants **15**
- Total Funding Amount **$2,521,000**

RESEARCH GRANTS AND CONTRACTS

- Number of Research Grants **28**
- Total Research Funding Amount **$7,200,000**

PUBLICATIONS AND PRESENTATIONS

- Journal Publications **55**
- Refereed Conference Publications **111**
- Invited Lectures **45**
- Provisional Patents/Disclosures **8**

GRADUATE STUDENTS (MAJOR PROFESSOR)

- Number Graduated **51**
- Number Currently in Progress **2**

TOTAL 53

GRADUATE STUDENTS (COMMITTEE MEMBER)

Graduate Students Advised as Committee Member

- Number Graduated **66**
- Number Currently in Progress **3**

TOTAL 69

RESEARCH RECOGNITIONS AND AWARDS

- Thirteen Best Paper Awards
- Outstanding Faculty Advisor, 2020
- AU Provost's Fellow, 2013-2014
- AU Spirit of Sustainability Award, 2014
- Auburn Alumni Engineering Council Outstanding Senior Researcher Award, 2013
- ASME Electronics and Photonics Packaging Division, 2008 Clock Award
- ASME Fellow, 2003
- NSF Research Initiation Award, 1991

PROFESSIONAL INVOLVEMENT

- Associate Editor, IEEE-CPM Transactions
- Conferences/Workshops Organized **5**
- Sessions/Panels Chaired **24**
- Society Memberships Held **6**
- National Review Panels Served on **4**

AUBURN UNIVERSITY SERVICE

- University Committees **31**
- College of Engineering Committees **13**
- Mechanical Engineering Dept. Committees **21**

SELECTED RECENT HIGHLIGHTS

RECENT STUDENT RESEARCH ACCOMPLISHMENTS

- ***Outstanding Mechanical Engineering Master's Student, 2019-20, Karthekeyan Sridhar***
- ***Outstanding Mechanical Engineering Doctoral Student, 2015-16, Joshua Gess***
- ***Outstanding Mechanical Engineering Doctoral Student, 2014-15, Jack Maddox***
- ***Finalist, Auburn University Three-Minute Thesis Competition, Jack Maddox, Fall 2014***
- ***Outstanding Mechanical Engineering Doctoral Student, 2012-13, Naveenan Thiagarajan***
- ***AU Honors College, Undergraduate Thesis, 2012, Sarah Styslinger***
- ***Auburn University Undergraduate Research Fellowship, 2010, Caitlyn Coats***
- ***Outstanding Master's Student, 2009-2010, Naveenan Thiagarajan***

Employers of most recent graduate advisees

Boeing, Qualcomm, Redstone Arsenal-Huntsville, GE R&D Center-Schenectady, Oregon State University, NASA-Marshall Space Flight Center, University of Kentucky, Intel, Dynetics, Inc., Lockheed Martin, UT-Pratt and Whitney, Hubble Inc., U. S. DoE-Idaho National Lab, Schlumberger, Inc., American Honda, Ford Motor Co., Teledyne Brown Engineering, RF MicroDevices, Lexmark international, Kimberly-Clark

RECENT RESEARCH GRANTS AND CONTRACTS RECEIVED

- "International Space Station Collaborative Research: Thermally Activated Directional Mobility of Vapor Bubbles in Microgravity using Microstructured Surfaces," NSF, $300,000 PIs: S. H. Bhavnani and V. Narayanan, October 2017-August 2020.
- "Hierarchical Micro/Nano-Structures for Condensation Enhancement," Southern Company Services, Inc., $59,495, PIs: S. H. Bhavnani and A. David, September 2014- May 2016.
- "Enabling Self-Propelled Condensate Flow during Phase-Change Heat Rejection using Surface Texturing," NASA-Space Technology Research Opportunities: Early Stage Innovations (STRO-ESI) Program, $499,749, PIs: V. Narayanan and S. H. Bhavnani, January 2013-December 2014.
- "High Density Heat Flux Cooling Methodologies," Department of Defense, $961,819, Co-PIs: D. K. Harris, S. H. Bhavnani, and R. W. Knight, April 2012-October 2013
- "Materials Evaluation for HPC Applications," Department of Defense, $440,595, Co-PIs: D. K. Harris, S. H. Bhavnani, R. W. Knight, M. Hamilton, and V. A. Davis, April 2012-October2013
- "Thermally Actuated Pumping Mechanism during Boiling on an Asymmetrically Structured Surface," National Science Foundation-Chemical Biological, Environmental, and Thermal Systems, $185,376, PIs: V. Narayanan and S. H. Bhavnani, 2009-2013
- "Boiling Heat Transfer Mechanism During Thermally Actuated Pumping by Asymmetric Surface Structures," NASA-HQ, Washington, D.C., Exploration Systems Mission Directorate, $185,000, PIs: V. Narayanan and S. H. Bhavnani, 2009-2013

RECENT ARCHIVAL JOURNAL PUBLICATIONS

1. Bhavnani, S. H., Narayanan, V., Kapsenberg, F., Thiagarajan, N., Strid, L., and Truong, E., "Passive Directional Motion of Fluid During Boiling Driven by Surface Asymmetry in a Dielectric Fluid," Journal of Enhanced Heat Transfer, Vol 26, No 4, pp 393-413, 2019
2. Gao, L. and Bhavnani, S. H., "Experimental Study of Augmented Flow Boiling in a Dielectric Fluid Due to Backward and Forward Facing Stepped Microchannels," International Journal of Heat and Mass Transfer, Vol 124, pp 484-490, September 2018
3. Natesh, S., Truong, E., Narayanan, V., Bhavnani, S. H., "Condensation on a Horizontal Surface with Periodic Asymmetrical Structures -- Transient Film Growth," International Journal of Heat and Mass Transfer, Vol 108, pp. 1126-1139, 2017
4. Gess, J., Bhavnani, S. H., and Johnson, R. W., "Single and Two-Phase PIV Characterization of Fluid Flow within a Liquid Immersion Cooled Electronics Module," Vol 138, No 4, pp 041007-1 to 041007-11, ASME Journal of Electronic Packaging, December 2016