Sumanta Acharya-Brief CV

Ring Companies Endowed Chair and Department Chair
Mechanical Engineering Department
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Research Expertise

Computational and Experimental Heat Transfer, Gas Turbine Heat Transfer

Professional Preparation

Ph.D. in Mechanical Engineering, University of Minnesota, 1982
M.S. in Mechanical Engineering, University of Minnesota, 1980
B. Tech. in Mechanical Engineering, Indian Institute of Technology, Kharagpur, India, 1978

Other Appointments

Program Director, Thermal Transport Program, CBET Division, Engineering Directorate, *National Science Foundation*, September 2010-August 2014
Fritz & Francis Blumer Professor, L. R. Daniel Professor, Professor, Assoc. Professor and Asst. Professor of Mechanical Engineering, *Louisiana State University*, August 1982 – August 2014
Director, Turbine Innovation and Energy Research (TIER) Center, *Louisiana State University*, 2001-2014
Visiting Professor, Fluids Section, Mechanical Engineering Department, *Imperial College*, London, January - September 1985

Selected Publications *(from nearly 200 Journal papers and book chapters & nearly 230 technical presentations)*

1. Kalghatgi, P., and Acharya, S., Modal Analysis of an Inclined Film Cooling Jet Flow, *ASME J. Turbomachinery*, #081007, Vol. 136, Issue 8, Jan. 2014, doi: 10.1115/1.4026374
2. Leedom, D., and Acharya, S., Large Eddy Simulations of Film Cooling Flows with Plenum Crossflow Effects, *ASME J. of Heat Transfer,* Volume 135, January 2013, Issue 1, 011010 (12 pages) doi: 10.1115/1.4007667
3. Babaee, H., and Acharya, S., Effect of Uncertainty in Blowing Ratio on Film Cooling Effectiveness, *ASME J. of Heat Transfer*, **Vol. 136**, Issue 3, #031701, Nov. 2013, doi: 10-1115/1.4025562
4. Babaee, H., and Acharya, S., Optimization of Forcing Parameters of Film Cooling Effectiveness, *ASME J. of Turbomachinery*, #061016, Vol. 136, Issue 6, Nov. 2013, doi: 10.1115/1.4025732
5. Karmakar, S., Wang, N., Acharya, S. and Dooley, D., Effects of Rare-earth Oxide Catalysts on the Ignition and Combustion Characteristics of Boron Nanoparticles, *Combustion and Flame*, Vol. 160, Issue 12, Dec. 2013, pgs. 3004-3014, doi: 10.1016/j.combustflame.2013.06.030
6. Zhu, S., and Acharya, S., Flame Dynamics with Hydrogen Addition at Lean Blowout Limits, *ASME J. of Engng. For Gas Turbines and Power*, #051506, Vol 136, Issue 5, May 1, 2014, , doi: 10.1115/1.4026321

7. Kalghatgi, P., and Acharya, S., Improved Film Cooling Effectiveness With A Round Film Cooling Hole Embedded In Contoured Crater, *ASME Gas Turbine Congress & Expo, 2014, Dusseldorf,* GT2014-26600, June 16-20, 2014; *in press ASME J. of Turbomachinery*
8. Saha, K., and Acharya, S., Heat Transfer Enhancement Using Angled Grooves as Turbulence Promoters, *ASME J. of Turbomachinery*, #081004, Vol. 136, Issue 8, Jan. 2014, doi: 10.1115/1.4025733
9. Zhou, F., and Acharya, S., Heat/Mass Transfer and Flow Structure on Four Dimple Shapes in a Square Internal Passage, *ASME J. of Turbomachinery*, Volume 134, Issue 6, November 2012, #061028 (13 pages) doi: 10.1115/1.4006315
10. Roy, S., and Acharya, S., Active Perturbation of Stirred-Tank Flows, *ASME J. of Fluids Engng.*, Volume 134, Issue 6, June 2012, 061104 (15 pages) doi: 10.1115/1.4006471

Current Research

Catalytic Nano-Particle Enhanced Combustion, Office of Naval Research, $501,736, 2009-2015 (in NCE), Sumanta Acharya & Kerry Dooley

Thermally Effective and Thermally Efficient Cooling Strategies for Advanced Gas Turbines, Department of Energy, $500,000, 2013-2016, Forrest Ames (UND), Sumanta Acharya

Selected Awards

AIAA Thermophysics Award 2015
ASME/AIChE Donald Q. Kern Award in Heat Transfer, 2014
75th Anniversary Heat Transfer Division Gold Medal in Heat Transfer, 2013
ASME Heat Transfer Memorial Award in Science, 2011
LSU Distinguished Research Master Award, 2010
LSU Alumni Association Faculty Excellence Award, 2001
Best Paper Award, Heat Transfer Division, ASME Turbo Expo-2006, Barcelona, Spain (paper by Saha, Mahmood and Acharya, Paper # GT 2006-91318)
Best Paper Award, Emile Hugot Prize, XXVI Congress of Intl. Soc. Of Sugar Cane Technologists, 2007, Durban, South Africa (paper by Echeverri, Rein and Acharya, Paper # FE-15)
ASME Fellow, 1999
Best Paper, 26th Annual Aerospace Science Symposium, Combustion Section, Dayton, 2001

Synergistic Research Activities (Research Funding: Nearly 25 million dollars as PI or Co-PI since 1982)

a) Director of Turbine Innovation and Energy Research (TIER) Center, Louisiana State University, 2001- 2014; an interdisciplinary center involving mechanical engineering, electrical engineering, and chemical engineering
b) Founding member of the Clean Power & Energy Research Consortium (www.cpercla.org), 2005-2014; involved 7 different schools in Louisiana working in the area of energy
c) NSF IGERT Lead PI and Director (2007-2010), IGERT on multiscale computational fluid dynamics; involved 7 different departments, 4 colleges and an the LSU center for computation and technology