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EDUCATION

- 1997 - Ph.D., Mechanical Engineering, Purdue University
- 1992 - MS, Applied Mathematics, Johns Hopkins University
- 1984 - BS, Mechanical Engineering, University of Maryland

EXPERIENCE [Years of experience at Auburn University: 20]

- 2003 - Present: Associate Professor, Mechanical Engineering, Auburn University
- 1997 - 2003: Assistant Professor, Mechanical Engineering, Auburn University
- 1994 - 1997: Graduate Research Associate, Mechanical Engineering, Purdue University
- 1991 - 1994: Thermal Analyst, Engineering, Economics, and Research Corporation
- 1989 - 1991: Senior Engineer, Fairchild Space Corporation
- 1985 - 1989: Design Engineer, Westinghouse Defense Electronics

SCIENTIFIC AND PROFESSIONAL SOCIETIES

- 1997 - Present: American Society of Mechanical Engineers

PROFESSIONAL CERTIFICATION

- Professional Engineer, Maryland State # 17796

RESEARCH INTERESTS

- Thermal Management of ground based radars, space-based assets, and advanced propulsion systems; Waste Heat Recovery And Use Strategies; Heat pipe technology; Metal felt porous media as conformal wick structures for heat pipes; MEMS cooling technologies and micro-channel heat pipes.

SELECTED PUBLICATIONS

- Roy, Chandan K., Hamilton, Mike, Johnson, R. Wayne, Knight, Roy W., & Harris, Daniel K, "Thermal performance of Low Melt Alloys between dissimilar materials," Applied Thermal Engineering. Accepted Dec. 10, 2016. In Print. .
- Roy, C., Harris, D. K., H., Bhavnani, S., Knight, R. K., & Hamilton, M. & Johnson, W., "Durability of Low Melt Alloys as Thermal Interface Materials," Journal of Electronics Packaging, Sp. Is., March 2016. In Print.
- Roy, Chandan K., Bhavnani, Sushil, Hamilton, Mike, Johnson, R. Wayne, Knight, Roy W., & Harris, Daniel K, "Accelerated aging and thermal cycling of low melting temperature alloys as wet thermal interface materials," Microelectronics Reliability, 2015, in print.
- Roy, Chandan K., Bhavnani, Sushil, Hamilton, Michael C., Johnson, R. Wayne, Knight, Roy W., & Harris, Daniel K., " Application of Low Melt Alloys as Compliant Thermal Interface Materials: A study of Performance and Degradation under Thermal Duress," published as Feature Cover Article in *Electronics Cooling*, May 2015 Issue, pp. 26-31.
- Roy, Chandan K., Bhavnani, Sushil, Hamilton, Mike, Johnson, R. Wayne, Nguyen, Jonathan L., Knight, Roy W., & Harris, Daniel K, "Investigation into the application of low melt alloys as wet thermal interface materials," International Journal of Heat and Mass Transfer 85 (2015) 996-1002.
- Vadgama, Bhavin N., Jackson, Robert L, & Harris, Daniel K., "*Molecular scale analysis of dry sliding copper asperities*," Applied Nanoscience (2014), 1-12.

- Sheng, Min, Cahela, Donald R., Hongyun, Yang, Gonzalez, Carlos F., Yantz, William Y., Harris, Daniel K., & Tatrchuck, Bruce J. 2013, "*Effective Thermal Conductivity and Junction Factor for Sintered Microfibrous Materials,* "International Journal of Heat and Mass Transfer 56 (2013) 10–19.
- Dean, R, Harris, D. K., Palkar, A, & Wonacott, G, 2012, "*Liquid Metal Filled Micro Heat Pipes for Thermal Management of Solid State Devices*" IEEE Transactions on Industrial Electronics, v. 59 (12) 4888-4894, December 2012.
- Harris, D. K., Palkar, A., Wonacott, G., Dean, R., Simionescu, F, "An Experimental Investigation in the Performance of Water-Filled Silicon Micro-Heat Pipe Arrays," ASME Journal Electronic Packaging, Accepted for publication, Dec. 2009, In-Press.
- Vadgama, B., Harris, D. K., "Wettability and Advancing Contact Angles of R134a on Copper and Aluminum Surfaces," Experimental Thermal and Fluid Science, Vol. 31, pp. 979-984, 2007.
- Simionescu, F., Meir, A. J., Harris, D. K., "Approximation of an optimal convective heat transfer coefficient," Optimal Control Applications and Methods, Vol. 27, pp. 237-253, 2006.
- Harris, D. K., "Pressure and Temperature Modeling and Validation of the Airbag Landing System for MER A&B Missions," AIAA Journal of Spacecraft and Rockets, Vol. 44(2), pp. 445-452, 2006.
- Williamsm, R. R., Harris D. K., "A Device and Technique to Measure the Heat Transfer Limit of a Planar Heat Pipe Wick," Experimental Thermal and Fluid Science, Vol. 30(3), pp. 277-284, 2006.
- Williams, R. R. , Harris, D. K., "Wick Performance Characterization of Step-Graded Microfibrous Metal Felts," International Journal of Heat and Mass Transfer, Vol. 48(2), pp. 293-305, 2005.
- Williams, Richard, R. & Harris, D. K., "Cross-plane and In-plane Porous Properties Measurements Of Thin Metal Felts: Applications In Heat Pipes," Experimental Thermal and Fluid Science, Vol. 27, No. 3, pp 227-235, Mar. 2003.
- Harris, D. K., Simionescu, F., "Radiating Fin Analysis Using An Extended Perturbation Series Solution Technique," AIAA Journal Of Spacecraft and Rockets, Vol. 40, No. 1, pp 141-142, Feb. 2003.
- Harris, D. K., Goldschmidt, V. W., "Measurements Of The Overall Heat Transfer From Combustion Gases Confined Within Elliptical Tube Heat Exchangers," Experimental Thermal and Fluid Science, Vol. 26, No. 1, pp 33-37, Apr. 2002.
- Harris, D. K., Cahela, D. R., Tatarchuk, B. T., "Wet Layup And Sintering Of Metal-Containing Microfibrous Composites For Chemical Processing Opportunities," Composites Part A -Applied Science And Manufacturing, Vol. 32, No. 8, pp 1117-1126, 2001.
- Fang, L., Harris, D. K., Goldschmidt, V. W., "Heat Transfer of a U-bend in a Cross Flow of Air at Different Angles of Incidence," International Journal of Heat and Mass Transfer, Vol. 42, No. 17, pp 3053-3059, Sep. 2000.
- Harris, D. K., Goldschmidt, V. W., "An Empirical Investigation into the External Heat Transfer of a U-Bend in Cross-Flow," International Journal of Heat and Mass Transfer, Vol. 42, No. 11, pp 1957-1968, Jun. 1999.
- Harris, D. K., Warren D, Raleigh, R. F., Goldschmidt, V. W., "Empirically Derived Predictors of Natural Gas Flame Lengths in Circular Tubes," International Journal of HVAC&R Research, Vol. 5, No. 2, pp 139-150, Apr. 1999.
- Harris, D. K., Warren, D. G., Goldschmidt, V. W., "Impact of Manifold Design on Heat Exchanger Efficiency," Journal of Heat Transfer, Vol. 119, No. 2, pp 357-362, May. 1997.

PATENTS

- Dean, R., Harris, D., Vadgama, B., Nadgauda, O., Sanders, N., Ellis, C., and Palmer, M., "Near Room Temperature Process for Bonding and Sealing Silicon Devices and Wafers Using Indium Cold Welding," U.S. Provisional Patent Application No. 60/771,810, 2006.

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