

## **Karl J.L. Geisler, Ph.D.**

### **Publications**

<http://www.menet.umn.edu/~kgeisler>

*Last Update: 7 November 2009*

#### Ph.D. Dissertation

*Buoyancy-Driven Two Phase Flow and Boiling Heat Transfer in Narrow Vertical Channels*, Karl J.L. Geisler, Ph.D. Thesis, Department of Mechanical Engineering, University of Minnesota, 2007.

#### Book Chapters

“Thermal Analysis and Design of Electronic Systems,” Avram Bar-Cohen, Karl J. Geisler, and Allan D. Kraus, Chapter 19 of *RF and Microwave Applications and Systems*, Edited by M. Golio, CRC Press, 2007.

“Thermal Analysis and Design of Electronic Systems,” Allan D. Kraus, Avram Bar-Cohen, and Karl J. Geisler, *Encyclopedia of RF and Microwave Engineering*, John Wiley & Sons, 2005.

“Thermal Analysis and Design,” Avram Bar-Cohen, Karl J. Geisler, and Allan D. Kraus, *RF and Microwave Semiconductor Device Handbook*, Edited by M. Golio, CRC Press, 2002.

“Thermal Analysis and Design of Electronic Systems,” Allan D. Kraus, Avram Bar-Cohen, and Karl J. Geisler, *Encyclopedia of Electrical and Electronics Engineering*, John Wiley & Sons, 1999.

#### Archival Journal Articles

“Passive Immersion Cooling of 3-D Stacked Dies,” Karl J.L. Geisler and Avram Bar-Cohen, *IEEE Transactions on Components and Packaging Technologies*, 32 (3), pp. 557-565, 2009, 10.1109/TCAPT.2008.2006186.

“Confinement Effects on Nucleate Boiling and Critical Heat Flux in Buoyancy-Driven Microchannels,” Karl J.L. Geisler and Avram Bar-Cohen, *International Journal of Heat and Mass Transfer*, 52 (2009), 2427–2436, doi:10.1016/j.ijheatmasstransfer.2009.02.001.

“Optimization of Pool Boiling Heat Sinks Including the Effects of Confinement in the Interfin Spaces,” Karl J.L. Geisler and Avram Bar-Cohen, *Journal of Electronic Packaging*, 130, 041002, 2008.

#### Professional Development Courses Taught

*Thermal Management of Hot Spots and 3D Chip Stacks*, with Avram Bar-Cohen, 59<sup>th</sup> Electronic Components and Technology Conference (ECTC) 2009.

#### Conference Papers

“Direct Liquid Thermal Management of 3D Chip Stacks,” Avram Bar-Cohen, Karl J.L. Geisler, and Emil Rahim, Eleventh Electronics Packaging and Technology Conference, EPTC2009, Singapore, 2009.

“Solder Fatigue Impacts of Conformal Coating for Tin Whisker Mitigation on Thin Shrink Small Outline Chip Scale Packages,” Karl J.L. Geisler, *2009 Proceedings of the ASME InterPack Conference, IPACK 2009*, San Francisco, CA, USA, 2009. IPACK2009-89312

“Boiling and Two-Phase Flow in Narrow Gaps – With Application to Thermal Packaging of Chip Stacks,” Avram Bar-Cohen, Karl J.L. Geisler, and Emil Rahim, Keynote Paper, 7th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, ExHFT-7, Krakow, Poland, 2009.

“Numerical and Experimental Investigations of Boiling Enhancement in Buoyancy-Driven Microchannels,” Karl J.L. Geisler and Avram Bar-Cohen, *Proceedings – The Eleventh Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems, ITherm’08*, Orlando, FL, USA, 2008.

“Pool and Flow Boiling in Narrow Gaps – Application to 3D Chip Stacks,” Avram Bar-Cohen, Karl J.L. Geisler, and Emil Rahim, Keynote Paper, Fifth European Thermal-Sciences Conference (Eurotherm), Eindhoven, the Netherlands, 2008.

“Thermal Performance Maps for Forced Air Cooling of Ruggedized Electronics Enclosures,” Jesse VanEngelenhoven, Gary L. Solbrekken, and Karl J.L. Geisler, *2007 Proceedings of the ASME InterPack Conference, IPACK 2007*, Vancouver, B.C., Canada, 2, 801–809, 2007. IPACK2007-33641

“Passive Immersion Cooling of 3-D Stacked Dies,” Karl J.L. Geisler and Avram Bar-Cohen, *2007 Proceedings of the ASME InterPack Conference, IPACK 2007*, Vancouver, B.C., Canada, 1, 439–452, 2007. IPACK2007-33619

“Optimization of Pool Boiling Heat Sinks Including the Effects of Confinement in the Interfin Spaces,” Karl J.L. Geisler and Avram Bar-Cohen, *2007 Proceedings of the ASME InterPack Conference, IPACK 2007*, Vancouver, B.C., Canada, 2, 359–373, 2007. IPACK2007-33620

“Surface Effects on Confinement-Driven Pool Boiling Enhancement in Vertical Parallel-Plate Channels,” Karl J.L. Geisler and Avram Bar-Cohen, *Proceedings of the ASME Summer Heat Transfer Conference*, San Francisco, CA, USA, 2, 195–205, 2005. HT2005-72666

“Immersion Cooling Module for Military COTS Applications,” Karl J.L. Geisler, Ivan Straznicki, and Avram Bar-Cohen, *Proceedings – Ninth Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems*, Las Vegas, NV, USA, 2, 67–74, 2004.

“Nucleate Pool Boiling Heat Transfer in Narrow Vertical Channels,” Karl J.L. Geisler and Avram Bar-Cohen, *Proceedings – Fifth International Conf. on Boiling Heat Transfer*, Montego Bay, Jamaica, 2003.

“Distance Learning in Thermal Design of Electronic Systems-The IEEE/NSF Project,” Yogendra Joshi, Jayanta K. Sircar, Avram Bar-Cohen, Karl J. Geisler, Sushil Bhavnani, Prachi Pradeepkumar, and James Barnes, *Proceedings – Electronic Components and Technology Conference*, IEEE, Piscataway, NJ, USA, 1289–1292, 2000.

“Design and Analysis of an Optimum Boiling Heat Sink,” Karl J. Geisler and Avram Bar-Cohen, *Boiling 2000: Phenomena & Emerging Applications*, Begell House, 2000.

“Teaching Thermal Design of Electronic Systems on the Internet: National Course Experience,” Avram Bar-Cohen, Sushil Bhavnani, Yogendra Joshi, and Karl J. Geisler, *Proceedings of the 2nd International Conference of Electronic Packaging Research and Education for the 21st Century*, 1999.

“Package-Corrected Composite Relations for Natural Convection Between Asymmetrically-Heated Populated PCBs,” Karl J. Geisler and Avram Bar-Cohen, *Proceedings of the Pacific Rim/ASME International Intersociety Electronic & Photonic Packaging Conference (InterPack)*, 1997.

“A Passive Immersion Cooling Module with a Finned Submerged Condenser,” Karl J. Geisler, David Kitching, and Avram Bar-Cohen, *Process, Enhanced, and Multiphase Heat Transfer / A Festschrift for A. E. Bergles*, R. M. Manglik and A. D. Kraus, Eds., Begell House, 1996.