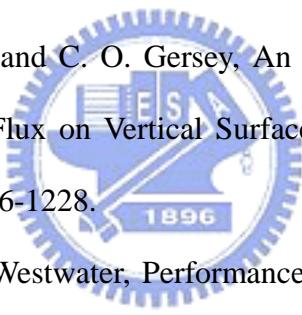


Reference

- [1] Tadayon, Thermal Challenges During Microprocessor Testing, Intel Technology Journal, Q3, 2000.
- [2] Package Research Center Third Annual Review, Atlanta Georgia, 4.1-4.5, December 1997.
- [3] I. Mudawar and T. M. Anderson, Optimization of Enhanced Surfaces for High Flux Chip Cooling by Pool Boiling, *Journal of Electronic Package* 115 (1993) 89–100.
- [4] M. Arik and A. Bar-Cohen, Immersion Cooling of High Heat Flux Microelectronics with Dielectric Liquids, International Symposium on Advanced Packaging Materials (1998) 229-247.
- [5] A. Bar-Cohen, State-of-the-Art and Trends in the Thermal Packaging of Electronic Equipment, *Journal of Electronic Package* 114 (1992) 254–270.
- [6] K. Nishikawa, Y. Fujita, H. Ohta and S. Hidaka, Effects of System Pressure and Surface Roughness on Nucleate Boiling Heat Transfer, *Memoirs of the Faculty of Engineering, Kyushu University* 42 (2) (1982) 95–111.
- [7] M. T. Cichelli and C. F. Bonilla, Heat Transfer to Liquids Boiling under Pressure, *AIChE Transactions* 41 (6) (1945) 755–787.
- [8] N. Abuaf, S. H. Black and F. W. Staub, Pool Boiling Performance of Finned Surfaces in R-113, *International Journal of Heat and Fluid Flow* 6 (1) (1985) 23–30.
- [9] G. Guglielmini, M. Misale and C. Schenone, Experiments on Pool Boiling of a Dielectric Fluid on Extended Surfaces, *International Communications in Heat and Mass Transfer* 23 (4) (1996) 451–462.
- [10] W. R. McGillis, V. P. Carey, J. S. Fitch and W. R. Hamburgen, Pool Boiling Enhancement Techniques for Water at Low Pressure, in: *Proceedings, Seventh Annual IEEE Semiconductor Thermal Measurement and Management Symposium*, IEEE, New York, (1991) 64–72.

- [11] N. Zuber, Hydrodynamic Aspects of Boiling Heat Transfer, Atomic Energy Commsion Report, AECU-4439, Physics and Mathematics, 1959.
- [12] V. P. Carey, Liquid–Vapor Phase-Change Phenomena, Hemisphere Publishing Corporation, 1992.
- [13] Y. Elkassabgi and J. H. Lienhard, Influences of Subcooling on Burnout of Horizontal Cylindrical Heaters, *Journal of Heat Transfer* 110 (1988) 479–486.
- [14] Y. S. Hong, C. N. Ammerman and S. M. You, Effects of Length Scale, Subcooling, and Dissolved Gas Content on the Pool Boiling Critical Heat Flux of Cylindrical Heaters, Proceedings of the 11th International Heat Transfer Conference, Kyongju, Korea, (1998) 389–394.
- [15] K. N. Rainey and S. M. You, Pool Boiling Heat Transfer from Plain and Microporous Square Pin, Finned Surfaces in Saturated FC-72, *Journal of Heat Transfer* 122 (3) (2000) 509–516.
- [16] W. H. McAdams, W. E. Kennel, C. S. Minden, R. Carl, P. M. Picornell, and J. E. Dew, Heat Transfer at High Rates to Water with Surface Boiling, *Industrial and Engineering Chemistry* 41 (9) (1949) 1945–1953.
- [17] A. A. Watwe and A. Bar-Cohen, Nucleate Pool Boiling and Critical Heat Flux in Gas-Saturated Dielectric Coolants, Proceedings of the 2nd European Thermal-Sciences and 14th UIT National Heat Transfer Conference, Rome, Italy, (1996) 1631-1638.
- [18] B. D. Marcus and D. Dropkin, The Effect of Surface Configuration on Nucleate Boiling Heat Transfer, *International Journal of Heat Mass Transfer* 6 (1963) 863-867.
- [19] P. M. Githinji and R. H. Sabersky, “Some Effect of the Orientation of the Heating Surface in Nucleate Boiling”, *Journal of Heat Transfer* 85 (1963) 379.
- [20] K. Nishikawa, Y. Fujita, S. Uchida and H. Ohta, “Effect of Surface Configuration on Nucleate Boiling Heat Transfer” *International Journal of Heat and Mass Transfer* 27(9) (1984) 1559-1571.

- [21] J. Bonjour and M. Lallemand, “Flow Patterns during Boiling in a Narrow Space between two Vertical Surface”, International Journal of Multiphase Flow 24 (1998) 947-960.
- [22] J. Bonjour and M. Lallemand, “Two-Phase Flow Structure near a Heated Vertical wall during Nucleate Pool Boiling” International Journal of Multiphase Flow 27 (2001) 1789-1802.
- [23] M. Fujii, E. Nishiyama and G. Yamanaka, “Nucleate Pool Boiling Heat Transfer from Micro-Porous Heating Surface”, Advance in Enhanced Heat Transfer (1979) 45-51.
- [24] S. Kumagai, S. G. Jho, Y. Hirono, R. Shimada and T. Takeyama, Boiling Heat Transfer From Circular Surfaces With Rectangular Fin Array, Heat Transfer. Japan Research 16(2) (1987) 69–81.
- [25] K. N. Rainey, S. M You and S. Lee, Effect of Pressure, Subcooling, and Dissolved Gas on Pool Boiling Heat Transfer from Microporous, Square Pin-Fin Surfaces in FC-72, International Journal of Heat and Mass Transfer 46 (2003) 23-35.
- [26] A. Bar-Cohen and H. Schweitzer, Thermosyphon Boiling in Vertical Channels, Journal of Heat Transfer 117 (1985) 772-778.
- [27] P. F. Rampisela, G. Berthoud, C. Marvillet, and P. Bandelier, Enhanced Boiling Heat Transfer in very Confined Channels, Aerospace Heat Exchanger Technology (1993) 227-236.
- [28] U. P. Hwang and P. Moran, Boiling Heat Transfer of Silicon Integrated Circuits Chip Mounted on a Substrate. Heat Transfer in Electric Equipment, HTD-20, ASME, (1983) 53-59.
- [29] C. Xia., W. Hu and Z. Guo., Natural Convective Boiling in Vertical Rectangular Narrow Channels, Experimental Thermal and Fluid Science 12 (1996) 313-324.
- [30] Y. H. Kim, S. J. Kim, J. J. Kim, S. W. Noh, K. Y. Suh, J. L. Rempe, F. B. Cheung and S. B. Kim, Visualization of Boiling Phenomena in Inclined Rectangular Gap, International Journal of Multiphase Flow 31 (2005) 618–642.

- [31] A. E. Bergles and M. Misale, The Influence of Channel Width on Natural Convection and Boiling Heat Transfer from Simulated Microelectronic Components, *Experimental Thermal and Fluid Science* 14 (1997) 187-193.
- [32] M. Monde, Characteristics of Heat Transfer Enhancement Due to Bubbles Passing Through a Narrow Channel, *Journal of Heat Transfer* 110 (1988) 1016-1019.
- [33] M. Monde and Y. Mitsutake, Enhancement of Heat Transfer due to Bubbles passing through a Narrow Vertical Rectangular Channel, *International Journal of Multiphase Flow* 15 (1989) 803-814.
- [34] A. H. Howard and I. Mudawar, Orientation Effects on Pool Boiling Critical Heat Flux (CHF) and Modeling of CHF for Near-Vertical Surfaces, *International Journal of Heat and Mass Transfer* 42 (1999) 0554-0577.
- [35] I. Mudawar, A. H. Howard and C. O. Gersey, An Analytical Model for Near-Saturated Pool Boiling Critical Heat Flux on Vertical Surfaces, *International Journal of Heat and Mass Transfer* 40 (1997) 1216-1228.
- 
- [36] D. L. Bondurant and J. W. Westwater, Performance of Transverse Fins for Boiling Heat Transfer, *Chemical Engineering Science*, 20(1) (1971) 837-849.
- [37] G. J. Klein and J. W. Westwater, Heat Transfer From Multiple Spines to Boiling Liquids, *AIChE Journal* 17(5) (1971) 1050–1056.
- [38] K. W. Haley and J. W. Westwater, Boiling Heat Transfer from a Single Fins, *Proceedings of the 3rd International Heat Transfer Conference*, Vol. 3, Chicago, (1966) 245–253.
- [39] M. S. Tov, Analysis and Design of Extended Surfaces in Boiling Liquids, *Chemical Engineering Progress Symposium*, 66 (1970) 174–184.
- [40] G. Guglielmini, M. Misale and C. Schenone, Boiling of Saturated FC-72 on Square Pin Fin Arrays, *International Journal of Thermal Science* 41 (2002) 599–608.
- [41] J. Y. Chang and S. M. You, Boiling Heat Transfer Phenomena from Microporous and Porous Surfaces in Saturated FC-72, *International Journal of Heat and Mass Transfer* 40

(18) (1997) 4437-4447.

- [42] Y. Hirono, R. Shimada, S. Kumagai, K. Kaino, and T. Takeyama, Optimization of Fin Array in Boiling Heat Transfer, Technical Report, Tohoku University, 50(1) (1985) 21–39.
- [43] L. Zhang and M. Shoji, Nucleate Site Interaction in Pool Boiling on the Artificial Surface, International Journal of Heat and Mass Transfer 46 (2003) 513–522.
- [44] M. Shoji and Y. Takagi, Bubbling Features from a Single Artificial Cavity, International Journal of Heat and Mass Transfer 44 (2001) 2763-2776.
- [45] H. Honda and J. J. Wei, Effects of Fin Geometry on Boiling Heat Transfer from Silicon Chips with Micro-Pin-Fins immersed in FC-72, International Journal of Heat and Mass Transfer 46 (21) (2003) 4059-4070.
- [46] N. K. Phadke, S. H. Bhavnani, A. Goyal, R. C. Jaeger and J. S. Goodling, Re-Entrant Cavity Surfaces Enhancement for Immersion Cooling of Silicon Multichip Packages, IEEE Transactions on Components, Hybrids, and Manufacturing technology, 15 (5) (1992) 815-822.
- [47] W. Nakayama, T. Daikoku, H. Kuwahara and T. Nakajima, Dynamic Model of Enhanced Boiling Heat Transfer on Porous Surfaces, Part I: Experimental Investigation, Journal of Heat Transfer 102 (1980) 445–450.
- [48] W. Nakayama, T. Daikoku, H. Kuwahara and T. Nakajima, Dynamic Model of Enhanced Boiling Heat Transfer on Porous Surfaces, Part II: Analytical Modeling, Journal of Heat Transfer 102 (1980) 451–456.
- [49] W. Nakayama, T. Daikoku, and T. Nakajima, Effects of Pore Diameters and System Pressure on Saturated Pool Boiling Heat Transfer from Porous Surfaces, Journal of Heat Transfer 104 (1982) 286–291.
- [50] J. Arshad and J. R. Thome, Enhanced Boiling Surfaces: Heat Transfer Mechanism and Mixture Boiling, Proceedings of ASME-JSME Thermal Engineering Joint Conference 1(1) (1983) 191–197.

- [51] A. M. Czikk, P. S. O'Neill and C. F. Gottzmann, Nucleate Boiling from Porous Metal Films: Effects of Primary Variables, *Advances in Enhanced Heat Transfer* (1981) 109-122.
- [52] H. Ogata, and W. Nakayama, Heat Transfer to Boiling Helium from Machined and Chemically Treated Cooper Surface, *Advances in Cryogenic Engineering* 27 (1982) 309-317.
- [53] R. Cole and W. M. Rohsenow, Correlation of Bubble Departure Diameters for Boiling of Saturated Liquids, *Chemical Engineering Progress Symposium* 65 (92) (1968) 211-213.
- [54] N. Zuber, Nucleate Boiling - The Region of Isolate Bubbles-Similarity with Natural Convection, *International Journal of Heat Mass Transfer* 6 (1963) 53-65.
- [55] W. M. Rohsenow, A Method of Correlating Heat Transfer Data for Surface Boiling of Liquids, *Journal of Heat Transfer* 74 (1962) 969-975.
- [56] K. Stephan and M. Abdelsalam., Heat Transfer Correlations for Natural Convection Boiling, *International Journal of Heat Mass Transfer* 23 (1980) 73-87.
- [57] M. G. Cooper, Saturation Nucleate Pool Boiling - A Simple Correlation, *International Chemical Engineering Symposium* 86 (1984) 785-792.
- 
- [58] R. J. Benjamin and A. R. Balakrishnan,, Nucleation Site Density in Pool Boiling of Saturated Pure Liquids: Effect of Surface Microroughness and Surface and Liquid Physical Properties, *Experimental Thermal and Fluid Science* 15 (1) (1997) 32-42.
- [59] K. N. Rainey and S. M. You, Effects of Heater Size and Orientation on Pool Boiling Heat Transfer from Microporous Coated Surfaces, *International Journal of Heat and Mass Transfer* 44 (2001) 2589-2599.
- [60] J. Y. Chang and S. M. You, Heater Orientation Effects on Pool Boiling on Micro-porous-enhanced Surface in Saturated FC-72, *Journal of Heat Transfer* 118 (1996) 937-943.
- [61] S. J. Kline and F. A. Mcclintock, Describing the Uncertainties in Single-Sample Experiment, *Mechanical Engineering* 75 (1953) 3-8.

- [62] 3M data sheet for ‘Thermal Management Fluids and Services’, www.3m.com/electronics/chemical (2000).
- [63] A. Piarone, Effect of Surface Orientation on Nucleate Boiling and Critical Heat Flux of Dielectric Fluids, International Journal of Thermal Sciences 44 (2005) 822–831.
- [64] S. M. You, T. W. Simon, A. Bar-Cohen and W. Tong, Experimental Investigation of Nucleate Boiling Incipience with a Highly Wetting Dielectric Fluid (R-113), International Journal of Heat and Mass Transfer 33 (1990) 105-117.
- [65] M. S. EL-Genk and H. Bostanci, Saturation Boiling of HFE-7100 from a Copper Surface, Simulating a Microelectronic Chip, International Journal of Heat Mass Transfer 46 (2003) 1841-1854.
- [66] D. Rini, R. Chen and L. Chow, Bubble Behavior and Heat Transfer Mechanism in FC-72 Pool Boiling, Experimental Heat Transfer 14 (2001) 27-44.

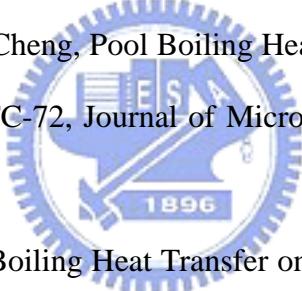


LIST OF PUBLICATION

Conference Paper:

1. C. K. Yu, D. C. Lu, T. C. Cheng and B. C. Tsai, Pool Boiling Heat Transfer from Artificial Micro-Cavities Surface in Dielectric Liquid FC-72, Proceedings of ASME International Mechanical Engineering Congress and R&D Expo Conference, 2004, IMECE2004-59297.
2. C. K. Yu, D. C. Lu, Experimental Study of Pool Boiling on Micro-Pin-Fin Array Heat Sink in Saturated FC-72, Fifth International Conference on Enhanced, Compact and Ultra-Compact Heat Exchangers: Science, Engineering and Technology, 2005.

Journal Paper:

1. C. K. Yu, D. C. Lu and T. C. Cheng, Pool Boiling Heat Transfer on Artificial Micro-Cavity Surfaces in Dielectric Fluid FC-72, Journal of Micromechanics and Microengineering, 16 (2006) 2092-2099.
2. C. K. Yu and D. C. Lu, Pool Boiling Heat Transfer on Horizontal Rectangular Fin Array in Saturated FC-72, International Journal of Heat and Mass Transfer, 50 (17-18) (2007) 3624-3637.
3. C. K. Yu and D. C. Lu, Experimental Study of Pool Boiling Heat Transfer on Vertical Rectangular Finned Surface in Saturated FC-72, International Journal of Heat and Mass Transfer, (submitted).
4. C. K. Yu and D. C. Lu, Pool Boiling Heat Transfer on Vertical Artificial Micro-cavity Array in Dielectric Fluid FC-72, Journal of Micromechanics and Microengineering, (submitted).