

MABE Publications and Presentations

2012

- Kim, J., Raj, R. and McQuillen, J., "Gravity Scaling of Pool Boiling Heat Transfer," *J. Jpn. Soc. Microgravity Appl.* Vol. 29 No. 2 , p92–98, 2012
- Raj, R., Kim, J., and McQuillen, J., "On the Scaling of Pool Boiling Heat Flux with Gravity and Heater Size", *Journal of Heat Transfer*, Vol. 134, No. 1, pp. 011502 , 2012.
- Raj, R., Kunkelmann, C., Stephan, P., Plawsky, J., and Kim, J., "Contact Line Behavior for a Highly Wetting Fluid Under Superheated Conditions", *International Journal of Heat and Mass Transfer*, Vol. 55, pp. 2664-2675, 2012

2011

- Di Marco, P., Raj, R., and Kim, J. "Boiling in variable gravity under the action of an electric field: results of parabolic flight experiments," 4th International Symposium on Physical Sciences in Space, July 11-15, 2011
- Raj, R., Kim, J., and McQuillen, J. "On the scaling of pool boiling heat flux with gravity and heater size", Proceedings of the ASME/JSME 2011 8th Thermal Engineering Joint Conference, Honolulu, HI, March 13-17, 2011.
- DiMarco, P., Raj, R., and Kim, J., "Boiling in variable gravity under the action of an electric field: results of parabolic flight experiments", *Journal of Physics: Conf. Ser.* 327 012039, doi:10.1088/1742-6596/327/1/012039, 2011.

2010

- Raj, R., Kim, J., McQuillen, J., Sheredy, W., Booth, W., Charpie, J., Eggers, J., Funk, G., Funk, J., and Valentine, R. "Heater size and Orientation Effects on Pool Boiling of FC-72", 2010 International Heat Transfer Conference, Paper No. IHTC14-22682.
- Delgoshaei, P. and Kim, J., "Microscale Heat Transfer Measurements During Subcooled Pool Boiling of Pentane: Effect of Bubble Dynamics", 2010 International Heat Transfer Conference, Paper No. IHTC14-22657.
- Raj, R., Kim, J., and McQuillen, J. "Gravity Scaling Parameter for Pool Boiling Heat Transfer", *Journal of Heat Transfer*, Vol. 132, pp. 091502-1 to 091502-9, DOI: 10.1115/1.4001632, 2010

- Raj, R. and Kim, J. “Heater Size and Gravity Based Pool Boiling Regime Map: Transition Criteria Between Buoyancy and Surface Tension Dominated Boiling”, *Journal of Heat Transfer*, Vol. 132, pp. 091503-1 to 091503-10, DOI: 10.1115/1.4001635,2010.

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- Raj, R., Kim, J., and McQuillen, “Subcooled Pool Boiling in Variable Gravity Environments” Accepted for publication *Journal of Heat Transfer*, Vol. 131/ 091502, 2009
- Raj, R. Kim, J. "Thermocapillary Convection during Subcooled Boiling in Reduced Gravity Environments." *Annals of the New York Academy of Sciences 1161(Interdisciplinary Transport Phenomena Fluid, Thermal, Biological, Materials, and Space Sciences)*: 173-181.
- Liu, Z., Herman, C., Kim, J. "Heat Transfer and Bubble Detachment in Subcooled Pool Boiling from a Downward-Facing Microheater Array in a Non-Uniform Electric Field." *Annals of the New York Academy of Sciences 1161(Interdisciplinary Transport Phenomena Fluid, Thermal, Biological, Materials, and Space Sciences)*: 182-191.
- Delgoshaei, P. and Kim, J. “Microscale heat transfer measurements of the lateral merger during subcooled pool boiling of pentane”, *Proceedings of the ASME IMECE, Lake Buena Vista, FL, November, 2009, Paper No. IMECE2009-12530.*
- Raj, R. and Kim, J. “Gravity Scaling Parameter for Pool Boiling Heat Transfer”, *Proceedings of the ASME IMECE, Lake Buena Vista, FL, November, 2009, Paper No. IMECE2009-12624.*
- Delgoshaei, P. and Kim, J. “Microscale heat transfer measurements during subcooled pool boiling of pentane”, *Proceedings of the ASME Summer Heat Transfer Conference, San Francisco, July 2009, Paper No. HT2009-88165.*
- Kim, J. “Nucleate pool boiling: The dominant bubble heat transfer mechanisms”, *Proceedings of the 7th International ASME Conference on Nanochannels, Microchannels, and Minichannels, June 22-24, 2009, Pohang, Korea.*
- Raj, R. and Kim, J. “Heater size effect on subcooled pool boiling of FC-72”, *ECI International Conference on Boiling Heat Transfer, Florianopolis-SC-Brazil, May 3-7, 2009.*

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- Liu, Z., Herman, C., and Kim, J. “Heat Transfer and Bubble Detachment in Subcooled Pool Boiling from a Microheater Array Under the Effect of a Non-Uniform Electric Field”, *Proceedings of the ASME/JSME/Interpak Conference, July, 2007, Vancouver, CA.*

- Liu, Z., Herman, C., and Kim, J., “Heat Transfer and Bubble Detachment in Subcooled Pool Boiling from a Downward-Facing Microheater Array in a Non-Uniform Electric Field”, Submitted to the Annals of the New York Academy of Sciences.
- Raj, R, Kim, J., “Thermocapillary Convection During Subcooled Boiling in Reduced Gravity Environments”, Submitted to the Annals of the New York Academy of Sciences.
- Arnold, W. A., Hartman, T. G. and McQuillen, J. “Chemical Characterization and Thermal Stressing Studies of Perfluorohexane Fluids for Space-Based Applications,” Journal Of Spacecraft And Rockets, pp 94-101, Vol. 44, No. 1, January–February 2007

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- Henry*, C.D., Kim, J., and McQuillen, J. “Dissolved Gas Effects on Thermocapillary Convection During Boiling in Reduced Gravity Environments”, Heat and Mass Transfer, Vol. 42, pp. 919-928, 2006.
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- Henry, C.D. and Kim, J. “Heater size, subcooling, and gravity effects on pool boiling heat transfer”, International Journal of Heat and Fluid Flow, Vol. 25, No. 2, pp. 262-273, 2004.