

LIST OF PUBLICATIONS

Jon P. Longtin

April, 2017

Book Chapters

1. Longtin, J. P., 2005, "Non-linear Phenomena in Laser Material Interactions," *Annual Review of Heat Transfer, Memorial Edition for Professor Chang-Lin Tien*, Begell House, New York, NY.
2. Longtin, J.P., Phinney, L. M., and Qiu, T., 2005, "On Professor Tien's Contributions to Laser Materials Processing," *ibid.*
3. Fan, C. H., and Longtin, J. P., 2003, "Radiative energy transport at the spatial and temporal micro/nanoscales", Chapter 6 of *Heat and Fluid Flow in Microscale and Nanoscale Structures*, WIT Press, Southampton, UK.
4. Sampath, S., Longtin, J. P., Gambino, R., Herman, H., Greenlaw, R., and Tormey, E., 2001, "Direct Write Thermal Spraying of Multilayer Electronics and Sensor Structures," Chapter 9 of *Direct Write Technologies for Rapid Prototyping Applications*, A. Piqué and D. B. Chrisey (eds.), Academic Press, San Diego.
5. Longtin, J. P., "Microscale Laser-Liquid Interactions," 2000, Chapter 1 in Volume XI of the *Annual Review of Heat Transfer*, C. L. Tien (ed.), Hemisphere, Washington.
6. Longtin, J. P., and Tien, C. L., "Microscale Radiation Phenomena," 1998, Chapter 3 of *Microscale Energy Transport*, C. L. Tien, A. Majumdar, and F. M. Gerner (eds.), Taylor and Francis, New York.

As Guest Editor

1. *Journal of Thermal Spray Technology*, Special Issue of the 2016 International Thermal Spray Conference papers. Volume 26, Issues 1–2, Jan/Feb 2017.

Journal Articles

1. Tao, H., Mei, C., and Longtin, J.P., 2017, "Thermosyphon-Assisted Cooling System for Refrigeration Applications," *International Journal of Refrigeration*, Vol. 74, pp. 163–174.
2. Longtin, J.P., Oberste Berghaus, J., and Brogan, J., 2016 "Thermal Spray for Electronics," in "The 2016 Thermal Spray Roadmap," *Journal of Thermal Spray Technology*, Vol. 25, No. 8, pp. 1376–1440.
3. Tewolde, M., Fu, G., Hwang, D., Zuo, L., Sampath, S., Longtin, J.P., 2016, "Thermoelectric Device Fabrication using Thermal Spray and Laser Micromachining," *Journal of Thermal Spray Technology* Vol. 25, No. 3, pp. 431–440.
4. Fu, G., Zuo, L., Lian, J., Wang, Y., Chen, J., Longtin, J.P., and Xiao, Z., 2015, "Ion Beam Irradiation Effect on Thermoelectric Properties of Bi₂Te₃ and Sb₂Te₃ Thin Films," *Nuclear Instruments and Methods in Physics Research B*, Vol. 358, pp. 229–235.
5. Trelewicz, J.R., Longtin, J.P., Gouldstone, C., Kennedy, P.J., and Donbar, J.M., 2015, "Heat Flux Measurements in a Scramjet Combustor using Embedded Direct Write Sensors," *AIAA Journal of Propulsion and Power*, Vol. 31, No. 4, pp. 1003–1013.

6. Tewolde, M., Fritch, J.C., and Longtin, J.P., 2015, "Design and Manufacture of a Low-Cost Retrofit Module for Gas Meters," *Applied Thermal Engineering*, Vol. 75, pp. 357–365.
7. Trelewicz, J.R., Longtin, J.P., and Hubble, D.O., 2015, "High-Temperature Calibration of Direct-Write Heat Flux Sensors from 25 to 860 °C Using the In-cavity Radiation Method," *IEEE Sensors Journal*, Vol. 15, No. 1, pp. 358–364.
8. Fu, G., Zuo, L., Longtin, J. P., Nie, C., Chen, Y, Tewolde, M, and Sampath, S., 2014, "Thermoelectric Properties of Magnesium Silicide Deposited using Atmospheric Plasma," *Journal of Electronic Materials*, Vol. 43, No. 7, pp. 2723-2730.
9. Fu, G., Zuo, L., Longtin, J. P., Nie, C. and Gambino, R., 2013, "Thermoelectric Properties of Magnesium Silicide Fabricated using Vacuum Plasma Thermal Spray," *J. Applied Physics*, Vol. 114, No. 14, pp. 144905-1–144905-6.
10. Tewolde, M. and Longtin, J.P., 2013, "High-Resolution Automated Gas Meter Reading and Load Disaggregation," *Applied Energy*, Vol. 108, pp.363–372.
11. Longtin, J.P., Zuo, L., Hwang, D., Fu, G., Tewolde, M., Chen, Y., and Sampath, S., 2013, "Fabrication of Thermoelectric Devices Using Thermal Spray," *Journal of Thermal Spray Technology*, Vol. 22, No. 5, pp. 577–587.
12. Darvishi, S., Cubaud, T., and Longtin, J.P., 2012, "Ultrafast Laser Machining of Tapered Microchannels in Glass and PDMS," *Optics and Lasers in Engineering*, Vol. 50, No. 2, pp. 210–214.
13. Longtin, J.P., and Tewolde, M., 2011, "High Resolution Automated Meter Reading System for Natural Gas Meters," *Metering International*, Issue 1, pp. 84–89.
14. Longtin, J.P., Mari, E., Tan, Y., and Sampath, S., 2011, "Using Thermal Spray and Laser Micromachining to Fabricate Sensors," *Journal of Thermal Spray Technology*, Vol. 20, No. 4, pp.958–966.
15. Sitharaman, B., Avti, P., Schaefer, K., Talukdar, Y., and Longtin, J. P., 2011, "A Novel Nanoparticle-Enhanced Biophysical Stimulus for Bone Tissue Engineering," *Tissue Engineering A*, Vol. 17, No. 13-145, pp. 1851–1858.
16. Bhardwaj, R., Longtin, J.P., and Attinger, D., 2010, "Interfacial temperature measurements, high-speed visualization and finite-element simulations of droplet impact and evaporation on a solid surface," *International Journal of Heat and Mass Transfer*, Vol. 53, No. 19-20, pp. 3733–3744.
17. Tan, Y., Longtin, J.P., Sampath, S., and Zhu, D., 2010 "Temperature Gradient Effects in Thermal Barrier Coatings: An Investigation through Modeling, High Heat Flux Test and Embedded Sensor," *J Am Ceram Soc*, Vol. 93, No. 10, pp. 3418–3426.
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19. Bar-Kochba, E., Govil, S., Longtin, J.P., Gouldstone, A., and Frame, M., 2009, "Uniform-Intensity, Visible Light Source for *in-situ* Imaging," *Journal of Biomedical Optics*, Vol. 14, No. 2, Article No. 024024.
20. Tan, Y., Longtin, J.P., Sampath, S., and Wang, H., 2009, "Effect of Starting Microstructure on Thermal Properties for As-Sprayed and Thermally Exposed Plasma-Sprayed YSZ Coatings," *Journal of the American Ceramic Society*, Vol. 92, No. 3, pp.710–716.
21. Bhardwaj R., Longtin J.P., and Attinger D., 2007, "A Numerical Investigation on the Influence of Liquid Properties and Interfacial Heat Transfer during Microdroplet Deposition onto a Glass Substrate," *International Journal of Heat and Mass Transfer*, Vol. 50, Nos. 15–16, pp. 2912–2923.

22. Li, J., Longtin, J.P., Tankiewicz, S., Gouldstone, A., and Sampath, S., 2007, "Interdigital Capacitive Strain Gauges Fabricated by Direct Write Thermal Spray and Ultrafast Laser Micromachining," *Sensors and Actuators-A*, Vol. 133, No. 1, pp.1–8.
23. Tan, Y., Longtin, J. P., and Sampath, S., 2006, "Modeling Thermal Conductivity of Thermal Spray Coatings: Comparing Predictions to Experiments," *Journal of Thermal Spray Technology*, Vol. 15, No. 4, 545–552.
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25. Mishra, D., Longtin, J. P., Singh, R. P., and Prasad, V., 2005, "Coherent Gradient Sensing Interferometry: Application in Convective Fluid Medium for Tomographic Measurements," *Experiments in Fluids*, Vol. 38, pp. 59–69.
26. Tong, T., Li, J., Chen, Q., Longtin, J. P., Tankiewicz, S., and Sampath, S., 2004, "Ultrafast Laser Micromachining of Thermal Sprayed Coatings for Microheaters: Fabrication and Characterization," *Sensors and Actuators A: Physical*, Vol. 114, No. 1, pp. 102–111.
27. Chen, Q., Tong, T., Longtin, J.P., Tankiewicz, S., Sampath, S., and Gambino, R. J., 2004, "Novel Sensor Fabrication Using Direct-Write Thermal Spray and Precision Laser Micromachining," *Journal of Manufacturing Science and Engineering*, Vol. 126, No. 4, pp.830–836.
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29. Sun, J., and Longtin, J. P., 2004, "Effects of a Gas Medium on Ultrafast Laser Beam Delivery and Materials Processing," *J. Optical Society America, B*, Vol. 21, No. 5, pp. 1081–1088.
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35. Longtin, J. P., 2002, "The Uncertainty Tree: Reducing the Uncertainty of Uncertainty Analysis," *Review of Scientific Instruments*, Vol. 73, pp. 3698–3700.
36. M. Jaime Vasquez, G. P. Halada, C. R. Clayton, J. P. Longtin, 2002, "On the Nature of the Chromate Conversion Coating Formed on Intermetallic Constituents of AA2024-T3," *Surface and Interface Analysis*, Vol. 33, pp. 607–616.

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38. Fan, C. H., Sun, J., and Longtin, J. P., 2001, "Breakdown Threshold and Localized Electron Density in Water Induced by Ultrashort Laser Pulses," *Journal of Applied Physics*, Vol. 91, pp. 2530–2536.
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44. Krishna, V., Fan, C. H., and Longtin, J. P., 2000, "Real-Time Precision Concentration Measurement for Flowing Systems," *Review of Scientific Instruments*, Vol. 71, pp. 3864–3868.
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Conference Proceedings

1. Zhang, T., Tewolde, M., Longtin, J.P., and Hwang, D., 2017, "Laser Assisted Hybrid Additive Manufacturing of Thermoelectric Modules," *Laser Applications in Microelectronic and Optoelectronic Manufacturing (LAMOM) XXII*, SPIE LASE 2017, Jan 28 – February 2, San Francisco, CA. DOI: 10.1117/12.2251263.
2. Chen, H., and Longtin, J.P., 2017, "Thermodynamic Modeling of a Free Piston Vuilleumier Heat Pump," *American Society of Thermal and Fluid Engineering — 2nd Conference*, Las Vegas, Nevada, USA, April 2 – 5.
3. Zhang, T., Tewolde, M., Hwang, D. ,and Longtin, J.P., 2017, "Fabrication of Bi₂Te₃-based Thermoelectric Modules by Thermal and Laser Assisted Ink Dispensing Printing Technology," *American Society of Thermal and Fluid Engineering — 2nd Conference*, Las Vegas, Nevada, USA, April 2 – 5.
4. Ravikumar, D.K., Than, Y., Xu, W., and Longtin, J.P., 2017, "Heat Transfer Analysis in a Higher Order Mode Waveguide for the Electron – Ion Collider At BNL," *American Society of Thermal and Fluid Engineering — 2nd Conference*, Las Vegas, Nevada, USA, April 2 – 5.
5. He, T., Zhong, W., Hardick, S., Magee, D., Butcher, Wagner, T., Chudnovsky, Y., and Longtin, J. P., 2017, "Thermosyphon-Based Flue Gas Condensation To Improve The Performance Of Dry-Cooled Power Plant," *American Society of Thermal and Fluid Engineering — 2nd Conference*, Las Vegas, Nevada, USA, April 2 – 5.
6. Zheng, K., Longtin, J.P., and Gupta, H., 2017, "Vibration Control Analysis on Energy Saving for Data Centers using Optical Wireless Communication (OWC)," *American Society of Thermal and Fluid Engineering — 2nd Conference*, Las Vegas, Nevada, USA, April 2 – 5.
7. Kavehrad, M., Gupta, H., Longtin, J.P., Das, S. R., and Sekar, V., 2017, "FireFly: Reconfigurable Optical Wireless Networking Data Centers," *Proceedings of the SPIE, 10128, Broadband Access Communication Technologies XI, 1012804*, Feb. 5–7, San Francisco. doi:10.1117/12.2250637 10.1117/2.1201612.006821.
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9. Abraham. S. P., Abdelaziz, S.L., and Longtin, J.P., 2016, "Heat Exchangers for Pavement Surface De-icing," to be presented at the *Geo-Chicago 2016: Sustainability, Energy and the Geoenvironment* conference, Aug. 14–18, Chicago, IL.
10. Masoumi, M., Wang, Y., Liu, M.Z., Tewolde, M., Longtin, J.P., 2015, "Multifunctional Magneto-Plasmonic Nanotransducers for Advanced Theranostics: Synthesis, Modeling And Experiment," pre-

sented at the *Conference on Active and Passive Smart Structures and Integrated Systems*, San Diego, CA., Mar. 9-12. *Active and Passive Smart Structures and Integrated Systems 2015*, Proceedings of SPIE, Vol. 9431, Article No. 94311X.

11. Tao He, Wei Zhong, Shanshan Huang, and Jon P. Longtin, 2015, "Co-current Loop Thermosyphon with Active Working Fluid Management: Application for Water Recovery in Flue Gas," presented at the *ASTFE First Thermal and Fluids Engineering Summer Conference*, New York, NY, Aug. 9–12, 2015.
12. Hanfei Chen, Longtin, J. P., Hofbauer P., Convey S., 2015, "Preliminary Modeling of a Heat Pump Based on the Vuilleumier Thermodynamic Cycle," presented at the *ASTFE First Thermal and Fluids Engineering Summer Conference*, New York, NY, Aug. 9–12, 2015.
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15. Zheng, K., Worek, W., Longtin, J.P., and Butcher, T., 2015, "Evaporative Cooling and Data Acquisition System for Data Centers" presented at the *ASTFE First Thermal and Fluids Engineering Summer Conference*, New York, NY, Aug. 9–12, 2015.
16. Masoumi M., Ya Wang, Y., Mingzhao Liu, M. Tewolde, M., and Longtin, J. P., 2016, "Multifunctional magneto-plasmonic nanotransducers for advanced theranostics: synthesis, modeling and experiment," under review for the *SPIE Smart Structures/NDE Conference*, Las Vegas, NV, March 20–24, 2016.
17. Brundage, M.P., Chang, Q., Longtin, J.P., and He, T. 2015, "Evaluating and Reducing Production Impact on HVAC Cooling Load," presented at the 2015 IEEE Conference on Automation Science and Engineering (CASE), Aug. 24–28, Gothenburg, Sweden.
18. Hamedazimi, N., Qazi, Z. A., Himanshu, G., Das, S. R., Vyes, S., and Longtin, J.P., "FireFly: A Reconfigurable Wireless Data Center Fabric using Free-Space Optics," presented at the ACM SIGCOMM 2014, Chicago, IL, Aug. 17–22, 2014.
19. Bedekar, Y., Gadiraju, S., Hofbauer, P., Longtin, J.P., Schwartz, P., Erik Kauppi, E., and Huang, Y., 2014, "Development and Selection of Gas-Liquid High Pressure Heat Exchangers for External Combustion Heat driven Heat Pumps," presented at the *2014 11th AIAA/ASME Joint Thermophysics and Heat Transfer Conference*, June 16-20, 2014, Atlanta.
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21. Tewolde, M., Lin, C.C., Chen, H., Tao, H., Fu, G., Liu, D., Zhang, T., Benjamin, D., Liu, F., Zuo, L., Hwang, D., and Longtin, 2014, "Sensors for Small Modular Reactors Powered by Thermoelectric Generators," presented at the *ASME Small Modular Reactor Symposium*, Apr. 15–17, 2014, Washington, DC.

22. Tewolde, M., Lin, C.C., Chen, H., Tao, H., Fu, G., Liu, D., Zhang, T., Nie, C., Zheng, W., Benjamin, D., Liu, F., Zuo, L., Hwang, D., and Longtin, J.P., 2013, "Thermoelectrically Powered Sensing for Nuclear Power Plants," *ANS Winter National Meeting*, Nov. 13–14, 2013, Washington, DC.
23. He, T., Mei, C., Butcher, T., and Longtin, J.P., 2013, "Use of a Two-Phase Thermosyphon as a Low-Cost, High-Performance Economizer for Refrigeration Systems," presented at the *2013 ASME Heat Transfer Conference*, Minnesota, MN, July 14–19.
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25. Lin, C.C., Chen, H., Tewolde, M., Fu, G., Liu, D., Zhang, t., Tao, H., Chao, N., Zheng, W., Liu, F., Zuo, L., Hwang, D., and Longtin, J.P., 2013, "Thermoelectrically Powered Sensing for Small Modular Reactors" presented at the *2013 ASME Heat Transfer Conference*, Minnesota, MN, July 14–19.
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27. Young, C.N., Clayton, C.R., Longtin, J.P., and Granata, R., 2012, "Surface and Interface Analysis of Polymer Composites Facilitated by Ultrafast Laser Ablation," *Abstracts of the Papers of the American Chemical Society*, Vol. 243, Meeting Abstract 238-ANYL, Published: Mar 25, 2012.
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29. Fu, G., Zuo, L., Zhang, B., and Longtin, J.P., 2012, "Review of Exhaust Heat Energy of Automobiles," presented at the *ASME 2012 Summer Heat Transfer Conference*, July 8–12, Puerto Rico.
30. Zhang, B., Chen, Y., Fu, G., Zuo, L., and Longtin, J.P., 2012, "Thermoelectric Properties of Mg₂Si Prepared by Thermal Spraying," presented at the *ASME 2012 Summer Heat Transfer Conference*, July 8–12, Puerto Rico.
31. Chen, Y., Zhang, B., Fu, G., Zuo, L., Longtin, J., and Sampath, S., 2012 "Thermal and Electrical Properties of Mg₂Si Layers Prepared with Plasma Spraying methods," presented at the *International Thermal Spray 2012 Conference and Exposition (ITSC 2012)*, May 21–24, Houston, TX.
32. Tewolde, M., Fritch, J.C., and Longtin, J.P., 2011, "High-Resolution Meter Reading Technique for Appliance Gas Usage Monitoring for the Smart Grid," *Proceedings of the IEEE, Emerging Technologies for a Smarter World (CEWIT) 2011: 8th International Conference & Expo*, Nov. 2–3, Hauppauge, NY.
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34. Doan, D., and Longtin, J.P., 2011, "Femtosecond Laser Micromachining of Multilayer Glass Structures for Microfluidic Applications," National Heat Transfer Symposium sponsored by *The Heat Transfer Society of Japan*, Okayama, Japan, June 1–3.
35. Trelewicz, J.R., Gouldstone, C., Longtin, J.P., and Donbar, J.M., 2011, "Diagnostic Sensing for Scramjet Combustors," presented at the *58th JANNAF meeting* April 18–22, Arlington, VA.

36. Zuo, L., Longtin, J.P., Sampath, S., Li, B., and Li, Q., 2011, "Integrated Design and Manufacturing of Cost-Effective and Industrial Scalable TEG for Vehicle Applications," presented at the 2nd DoE Thermo-electric Applications Workshop, San Diego, CA, Jan. 3–6.
37. Tewolde, M., and Longtin, J.P., 2010, "High-Resolution Meter Reading System For Gas Utility Meter," *Proceedings of the 2010 IEEE Sensors Conference*, Waikoloa, HI, Nov. 1–4.
38. Trelowicz, J., Gouldstone, C., Longtin, J. P., and Donbar, J.M., 2010, "Direct Write Sensors for Hyper-sonics and Sounding Rocket Test Platforms," presented at the 57th JPM / 7th Modeling and Simulation / 5th Liquid Propulsion / 4th Spacecraft Propulsion Joint Subcommittee Meeting, Colorado Springs, CO, May 3–7.
39. Longtin, J. P., Gouldstone, A., Sampath, S., and Gambino, R., 2009, "Direct-Write Thermal Spray for Embedded Sensor Manufacturing and Integration onto Structures and Components," *Proceedings of the 2009 NSF Engineering Research and Innovation Conference*, Honolulu, HI, June 22–25.
40. Young, C., Clayton, C., Longtin, J.P., Granata, C., 2009, "Depth Profiling of Polymer Composites by Ultrafast Laser Ablation," presented at the 2009 ASME IMECE, Nov. 13–19, Lake Buena Vista, FL.
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42. Kumar, M., Donetsky, D., and Longtin, J., 2008, "Passivation of the GaSb Surface by Micromachining and Formation of a Native Oxide," *50th Conference on Electronic Materials*, EMC-08, Santa Barbara, CA, June 24–27.
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