David Huitink, Ph.D.

479-575-6263, dhuitin@uark.edu

Education

Texas A&M University, College Station, TX
PhD, Mechanical Engineering (2011)
MS, Mechanical Engineering (2007)
BS, Mechanical Engineering (2006)

Experience

Assistant Professor, *University of Arkansas (8/16 – present)*
Description: Tenure-track faculty appointment, developing novel materials and systems for managing thermal loads in power electronics for electric vehicle applications. Research areas include materials synthesis & characterization for thermal & reliability enhancements, as well as use of additive manufacturing technologies for engineering new thermal management devices.

Quality and Reliability Program Manager, *Intel Corporation (8/15 – 7/16)*
Description: Lead responsible engineer for delivering technology and manufacturing readiness for products contracted under Intel Custom Foundry, including Flip Chip BGA, Low Cost packaging and 3D Embedded Interconnect Bridge (EMIB) packaging technologies. Leads cross functional teams to develop materials, process and quality methods for multi-million dollar projects as well as providing rapid execution of root-cause analyses for process quality incidents.

Quality and Reliability Engineer, *Intel Corporation (6/11 – 7/15)*
Description: Project manager for the product development cycle of semiconductor components through evaluating and mitigating quality and reliability risks in the product performance. Developed test methodologies and provided design recommendations to ensure optimal quality and reliability, including >$100M in savings for chip storage project and other continuous improvement projects.

Instructor, *Texas A&M University (1/11 – 5/11)*
Course: ENGR112 – Fundamentals of Engineering II
Description: Freshman engineering introductory course covering design, programming, and problem solving skills.

Research Assistant & NSF Graduate Research Fellow, *Texas A&M University (9/08 – 12/10)*
Advisor: Dr. Hong Liang
Dissertation title: Mechanochemical Fabrication & Characterization of Low-dimensional Materials
Research: Advanced materials and synthesis methods including: Atomic Force Microscope based Nano-Material Synthesis & Characterization, Biotribology/biolubricants, Nanotribology, Nanomechanics, Mechanochemistry, & Colloidal Nanoparticle synthesis

Research Engineer, *Texas Engineering Experimentation Station (12/07 – 9/08)*
Supervisor: Dr. Yassin Hassan
Research: Nuclear Reactor Thermal-Fluid Systems, Particle Image Velocimetry study of aerosol spray interaction, Reactor Cavity Cooling System Experimentation, Nanofluid Boiling Heat transfer & fluid mechanics

Graduate Research Assistant, *Texas A&M University (9/06 – 12/07)*
Advisor: Dr. Debjyoti Banerjee
Thesis title: Nanolithographic Control of CNT Synthesis
Research: Carbon Nanotube Synthesis & Characterization, Dip Pen Nanolithography

Summer Research Fellow, *Air Force Research Laboratory – Propulsion Directorate (5/07 – 8/07)*
Supervisor: Dr. Kirk Yerkes
Research: Investigated Convective Heat Transfer Capability of CNT Nanofluids

Publications (Peer Reviewed Papers)

1. B. Frost, H. Carlton, R. Martinez, E. Lovett, D. Huitink, and E.J. Foster. "Controlled shape memory effects of magnetic polymer nanocomposites by induction heating." Green Materials (2021) *in press*.
2. R. Whitt, D. Huitink, A. Emon, A. Deshpande and F. Luo, "Thermal and Electrical Performance in High-Voltage Power Modules With Nonmetallic Additively Manufactured Impingement Coolers," in IEEE Transactions on Power Electronics, vol. 36, no. 3, pp. 3192-3199, March 2021, doi: 10.1109/TPEL.2020.3015226.
3. M. Montazeri ; David R. Huitink; Andrea Wallace; Hongwu Peng; Sayan Seal; Alan Mantooth; Fang Luo, "Vertically Stacked, Flip-Chip Wide Bandgap MOSFET Co-Optimized for Reliability and Switching Performance," in IEEE Journal of Emerging and Selected Topics in Power Electronics, doi: 10.1109/JESTPE.2020.3032886.
4. Cody Marbut, Bakhtiyar Nafis, and David Huitink, "Accelerated mechanical low cycle fatigue in isothermal solder interconnects", Microelectronics Reliability (2021), vol. 116. p.113998ff. DOI: 10.1016/j.microrel.2020.113998
5. Joshua Tompkins & David Huitink (2020) Induction heating response of iron oxide nanoparticles in varyingly viscous mediums with prediction of brownian heating contribution, Nanoscale and Microscale Thermophysical Engineering, 24:3-4, 123-137, DOI: 10.1080/15567265.2020.1806968
6. Whitt, R., Hudson, S., Huitink, D., Yuan, Z., Emon, A., and Luo, F. (October 12, 2020). "Additive Manufactured Impinging Coolant, Low Electromagnetic Interference, and Nonmetallic Heat Spreader: Design and Optimization." ASME. J. Electron. Packag. December 2020; 142(4): 041004. https://doi.org/10.1115/1.4048493
7. Carlton, H.; Huitink, D.; Liang, H. Tribochemistry as an Alternative Synthesis Pathway. Lubricants 2020, 8, 87
8. Castilla-Casadiego, D. A., Carlton, H., Gonzalez-Nino, D., Miranda-Munoz, K. A., Daneshpour, R., Huitink, D., Prinz, G., Powell, J., Greenlee, L., Design, Characterization, and Modeling of a Chitosan Microneedle Patch for Transdermal Delivery of Meloxicam as a Pain Management Strategy for Use in Cattle. Materials Science & Engineering C 2020, 118, 111544
9. Ange-Christian Iradukunda, Andres Vargas, David Huitink, Danny Lohan, "Transient Thermal Performance using Phase Change Material Integrated Topology Optimized Heat Sinks", *Applied Thermal Engineering* (2020), 115723. https://doi.org/10.1016/j.applthermaleng.2020.115723
10. de Bock, H. P., Huitink, D., Shamberger, P., Lundh, J. S., Choi, S., Niedbalski, N., and Boteler, L. (June 29, 2020). "A System to Package Perspective on Transient Thermal Management of Electronics." ASME. *J. Electron. Packag*. December 2020; 142(4): 041111. doi: https://doi.org/10.1115/1.4047474
11. Nafis, B. M., Iradukunda, A., and Huitink, D. (June 26, 2020). "System-Level Thermal Management and Reliability of Automotive Electronics: Goals and Opportunities Using Phase-Change Materials." ASME. J. Electron. Packag. December 2020; 142(4): 041108. https://doi.org/10.1115/1.4047497
12. Carlton, H., Pense, D., and Huitink, D. (May 21, 2020). "Thermomechanical Degradation of Thermal Interface Materials: Accelerated Test Development and Reliability Analysis." ASME. *J. Electron. Packag*. September 2020; 142(3): 031112. https://doi.org/10.1115/1.4047099
13. Iradukunda, A., Kasitz, J., Carlton, H., Huitink, D., Deshpande, A., and Luo, F. (May 4, 2020). "Concurrent Thermal and Electrical Property Effects of Nano-Enhanced Phase Change Material for High-Voltage Electronics Applications." ASME. J. Electron. Packag. September 2020; 142(3): 031109. https://doi.org/10.1115/1.4046935
14. Carlton, H., Krycka, K., Bleuel, M., Huitink, D., "In Situ Dimensional Characterization of Magnetic Nanoparticle Clusters during Induction Heating." Particle and Particle Systems Characterization (2020), 37, 1900358. https://doi.org/10.1002/ppsc.201900358

15. Bakhtiyar Mohammad Nafis, Reece Whitt, Ange-Christian Iradukunda & David Huitink. Additive Manufacturing for Enhancing Thermal Dissipation in Heat Sink Implementation: A Review, (2020) Heat Transfer Engineering, DOI: 10.1080/01457632.2020.1766246
16. A. Iradukunda, D. R. Huitink and F. Luo, "A Review of Advanced Thermal Management Solutions and the Implications for Integration in High-Voltage Packages," IEEE Journal of Emerging and Selected Topics in Power Electronics (2020) vol. 8, no. 1, pp. 256-271. doi: 10.1109/JESTPE.2019.2953102
17. Liu, X. Marbut, C. Huitink, D. Feng, G. and Fleischer, A. "Influence of Crystalline Polymorphism on the Phase Change Properties of Sorbitol-Au Nanocomposites." Materials Today Energy (2019), Vol 12, 379-388.
18. Carlton, H., Kundu, S., Huitink, D. "Tribochemical formation of high aspect ratio graphitic structures via platinum nanoparticle catalysts." Diamond and Related Materials, (2019) Vol 94, 101-109.
19. Montazeri, M., Marbut, C. and Huitink, D. "Interconnect Fatigue Failure Parameter Isolation for Power Device Reliability Prediction in Alternative Accelerated Mechanical Cycling Test" J. Electronic Packaging 141(3), 031011-22.
20. Carlton, H.; Xu, S.; Hong, M. N.; Begishev, I.; Huitink, D., "TX-100 capped iron oxide nanoparticle transformation and implications for induction heating and hyperthermia treatment." (2018) *Journal of Nanoparticle Research*, 20 (9), 13.
21. Luo, F. Liang, L. Huitink, D. Spiesshoefer, S. "Advanced Power Module Packaging and Integration Structures for High Frequency Power Conversion: from Silicon to GaN." (2018*) Chinese Journal of Power Electronics* 52(8), p. 9-18.
22. Marbut, C. J., Montazeri, M., and Huitink, D. R. "Rapid Solder Interconnect Fatigue Life Test Methodology for Predicting Thermomechanical Reliability." (2018) *IEEE Transactions on Device and Materials Reliability*, 18(3), pp.412-421.
23. Cristancho, D., Zhou, Y., Cooper, R., Huitink, D., Aksoy, F., Liu, Z., Liang, H., Seminario, J. "Degradation of Polyvinal alcohol under Mechanothermal Stretching." (2013) *J. Molecular Modeling.* 19, 3245-3253.
24. Konomi, B., Dhavala, S., Huang, J., Kundu, S., Huitink, D., Liang, H., Ding, Y., Mallick, B. (2013) Bayesian Object Classification of Gold Nanoparticles." *Annals of Applied Statistics*. 7 (2), 640-668.
25. Huitink, D., Dominguez-Ontiveros, E.E., and Hassan, Y. (2012) "The Bubble Fossil Record: Insight into Boiling Nucleation using Nanofluid Pool-Boiling." *Heat and Mass Transfer*. 48(2), 267-274.
26. Zhou, Y. Huitink, D. and Liang, H. "Lubrication Behavior of Slug Mucus." (2012) *ASTM: Materials Performance and Characterization.* 1(1), 0021-0029.
27. Park, C., Huang, J., Huitink, D., Kundu, S., Mallick, B., Liang, H. and Ding, Y. (2012) "A Multistage, Semi-automated Procedure for Analyzing the Morphology of Nanoparticles" *IIE Transactions*. 44(7), 507-522.
28. Huitink, D., Zarrin, T., Sanders, M., Kundu, S. and Liang, H. (2011) "Effects of Particle-induced Crystallization on Tribological Behavior of Polymer Nanocomposites." *ASME Journal of Tribology*. 133(2), 021603-021612.
29. Huitink, D., Gao, F., and Liang, H., (2010) "Tribo-Electrochemical Surface Modification of Tantalum using In Situ AFM Techniques." *Scanning*. 32(5) 336-344. (***Invited***)
30. Huitink, D., Gao, F., Wang, K. and Liang, H. (2010), "In Situ Monitoring of Tantalum during Electrochemical-Mechanically Induced Oxidation", *Electrochemical and Solid-State Letters*. 13(9), F16-F19.
31. Kundu, S., Huitink, D., Wang, K. and Liang, H. (2010), "Photochemical formation of electrically conductive silver nanowires on polymer scaffolds", *Journal of Colloid and Interface Science*. 344(2), 334-342.
32. Kundu, S., Huitink, D. and Liang, H. (2010), "Formation of electrically conductive palladium nanowires on polymer scaffolds by photochemical approach", *Colloids and Surfaces A: Physicochemical and Engineering Aspects.* 360(1-3), 129-136.
33. Kundu, S., Huitink, D. and Liang, H. (2010), "Formation and catalytic application of electrically conductive Pt nanowires", *Journal of Physical Chemistry C.* 114(17), 7700-7709.

34. Huitink, D., Kundu, S., Park, C., Mallick, B., Huang, J.Z. and Liang, H. (2010), "Nanoparticle shape evolution identified through multivariate statistics", *Journal of Physical Chemistry A*. 114(17), 55965600.
35. Kundu, S., Wang, K., Huitink, D. and Liang, H. (2009), "Photoinduced formation of electrically conductive thin palladium nanowires on DNA scaffolds", *Langmuir*. 25(17), 10146-10152.
36. Huitink, D., Peng, L., Ribeiro, R. and Liang, H. (2009), "In situ observation of stress-induced Au-Si phase transformation", *Applied Physics Letters*. 94(18), 183111 (183113 pp.).

Conference Publications

1. J. Tompkins and D. Huitink, "Air Flow Inversion for Enhanced Electronics Cooling in Additively Manufactured Air Channels," *2020 19th IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITherm)*, 2020, pp. 734-739, doi: 10.1109/ITherm45881.2020.9190389.
2. Montazeri, M, & Huitink, DR. "Development of a Novel Test Setup to Study the Combined Effects of Electromigration and Mechanical Stress in Solder Interconnects." Proceedings of the ASME 2020 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems. ASME 2020 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems. Virtual, Online. October 27–29, 2020. V001T03A004. ASME. https://doi.org/10.1115/IPACK2020-2598
3. A. Krone, H. Alpert, S. Shetty, D. G. Senesky, G. Salamo, D. Huitink; "Degradation of Gallium Nitride-Based Hall-Effect Sensors in High Temperature Environments" Proceedings of the ASME 2020 International Techinical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems (InterPACK), Anaheim, CA, USA 2020
4. Olatunji, T, & Huitink, D. "Additive Fabricated Compliant Interconnects: Design, Fabrication and Reliability Effects." Proceedings of the ASME 2020 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems. ASME 2020 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems. Virtual, Online. October 27–29, 2020. V001T07A010. ASME.
5. J. Kasitz, A. Vargas, H. Carlton and D. Huitink, "Nanoparticle Enhanced Crystallization of Sorbitol PCMs for Latent Heat and Temperature Control," 2020 19th IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITherm), Orlando, FL, USA, 2020, pp. 690-696, doi: 10.1109/ITherm45881.2020.9190536.
6. T. Olatunji, M. Montazeri and D. Huitink, "Fabrication of Copper Compliant interconnects on a Printed Circuit Board: An Additive Approach," 2020 19th IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITherm), Orlando, FL, USA, 2020, pp. 1147-1151, doi: 10.1109/ITherm45881.2020.9190531.
7. Bakhtiyar Mohammad Nafis, David Huitink, Ange-Christian Iradukunda, Yarui Peng, Imam Al Razi. “System-Level Thermal Management and Reliability of Automotive Electronics: Goals and Opportunities in the Next Generation of Electric and Hybrid Electric Vehicles.” October 2019. In ASME 2019 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems (InterPACK). American Society of Mechanical Engineers.
8. Mahsa Montazeri, John Harris, David Huitink, Adithya Venkatanarayanan, Simon Ang. “Thermomechanical Stress and Warpage Augmentation Using Auxetic Features in Electronic Design” October 2019. In ASME 2019 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems (InterPACK). American Society of Mechanical Engineers.
9. Ange-Christian Iradukunda, Joshua Kasitz, Fernando Moreno, David Huitink. “Evaluation of Thermal and Electrical Properties of Nano-Enhanced PCM for Usage in High-Voltage Systems.” October 2019. In ASME 2019 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems (InterPACK). American Society of Mechanical Engineers.
10. Dustin Pense, Hayden Carlton, David Huitink, “Thermo-Mechanical Degradation of Thermal Interface Materials: Accelerated Test Development and Reliability Analysis” October 2019. In ASME 2019

International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems (InterPACK). American Society of Mechanical Engineers.

11. Reece Whitt, David Huitink, Skyler Hudson, Bakhtiyar Mohammad Nafis, Zhao Yuan, Balaji Narayanasamy, Amol Deshpande, Fang Luo, Asif Imran, Zion Clarke, Sonya Smith. “Additive Manufactured, Low EMI, Non-Metallic Convective Heat Spreader Design and Optimization”. October 2019. In ASME 2019 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems (InterPACK). American Society of Mechanical Engineer
12. Reece Whitt and David Huitink. THERMAL VALIDATIONS OF ADDITIVE MANUFACTURED NON-METALLIC HEAT SPREADING DEVICE FOR HOT SPOT MITIGATION IN POWER MODULES . International Microelectronics Assembly and Packaging Conference. Boston, MA September 30 – October 2.
13. A. Iradukunda and D. Huitink, "Topology Optimized Fins for a PCM-Based Thermal Management System," 2019 18th IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITherm), Las Vegas, NV, 2019.
14. R. Whitt, D. Huitink, Z. Yuan, A. Deshpande, B. Narayanasamy and F. Luo, "Heat Transfer and Pressure Drop Performance of Additively Manufactured Polymer Heat Spreaders for Low-Weight Directed Cooling Integration in Power Electronics," 2019 18th IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITherm), Las Vegas, NV, 2019.
15. Z. Yuan, A. Deshpande, B. Narayanasamy, H. Peng, A. Emon, R. Whitt, B. Nafis, F. Luo and D. Huitink. "Design and Evaluation of A 150 kVA SiC MOSFET Based Three Level TNPC Phase-leg PEBB for Aircraft Motor Driving Application," *2019 IEEE Energy Conversion Congress and Exposition (ECCE)*, Baltimore, MD, USA, 2019, pp. 6569-6574, doi: 10.1109/ECCE.2019.8913071.
16. C. Marbut, M. Montazeri and D. Huitink, "In Situ Resistance Monitoring and Fatigue Life Prediction for Flip-Chip Solder Interconnects Using RAPID Mechanical Cycling Method," *2019 18th IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITherm)*, Las Vegas, NV, USA, 2019, pp. 912-916.
17. A. Deshpande, F. Luo, A. Iradukunda, D. Huitink and L. Boteler, "Stacked DBC Cavitied Substrate for a 15-kV Half-bridge Power Module," *2019 IEEE International Workshop on Integrated Power Packaging (IWIPP)*, Toulouse, France, 2019, pp. 12-17.
18. Marbut, C. J., Montazeri, M., & Huitink, D. (2018, August). Interconnect Fatigue Failure Parameter Isolation for Power Device Reliability Prediction. In ASME 2018 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems (pp. V001T04A005. American Society of Mechanical Engineers.
19. Nafis B, Iradukunda A, Huitink D. “Drive Schedule Impacts to Thermal Design Requirements and the Associated Reliability Implications in Electric Vehicle Traction Drive Inverters.” ASME 2018. International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems: V001T05A002. doi:10.1115/IPACK2018-8280.
20. Montazeri, M., S. Seal, A. Wallace, A. Mantooth, and D. Huitink, “Co-optimized Reliability and Parasitic inductance in Small Footprint Vertical Silicon Carbide MOSFET”, 2018 HiTEC, Albuquerque, NM, May 8-10. Pp. 000087-000092.
21. Huitink D. “Thermomechanical Reliability Challenges and Goals and Design for Reliability Methodologies for Electric Vehicle Systems.” ASME 2017 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems ():V001T05A002.
22. Huitink, David, and Alan Lucero. "Semi-empirical stress/energy-based acceleration of temperature cycling failure." *Reliability Physics Symposium (IRPS), 2015 IEEE International*. IEEE, 2015.
23. Aggarwal, Ankur, Enamul, K., Huitink, D., Sinha, N., Armagan, E., & Cao, K. "Coupled accelerated stress tests for comprehensive field reliability—Synergistic effects of moisture and temperature cycling." *Reliability Physics Symposium (IRPS), 2015 IEEE International*. IEEE, 2015.
24. Huitink, D., Enamul, K., Rangaraj, S., & Lucero, A. “Acceleration of Chip-Package failures in temperature cycling.” *Reliability Physics Symposium (IRPS), 2014 IEEE International* (pp. 2F-4). IEEE, 2014.

25. Lucero, A. E., G. Xu, and D. Huitink. "Low-κ-package integration challenges and options for reliability qualification." *Reliability Physics Symposium (IRPS), 2012 IEEE International*. IEEE, 2012.
26. D. Huitink, J. Sweeney, C. Ortiz, Y. A. Hassan, R. Gauntt, Spray interaction with aerosolized contaminant. *Proc. of the American Nuclear Society*, Reno, NV, United states, (2008), pp. 796-797.
27. D. Huitink, C. Ortiz, Y. A. Hassan, High speed flow visualization of spray suppression containment safety systems. *Proceedings of the American Nuclear Society*, Anaheim, CA, United states, (2008), pp. 624-625.
28. D. Huitink, Y. A. Hassan, Thermal-fluid phenomena in reactor cavity cooling systems. *Transactions of the American Nuclear Society*, 99 (2008) 848-849.
29. S. D. Fortenberry, E. E. Dominguez-Ontiveros, D. R. Huitink, Y. A. Hassan, The temporal evolution of nanoparticle suspensions. *Transactions of the American Nuclear Society*, 99 (2008) 785.
30. D. R. Huitink, S. K. Sinha, D. Banerjee, Precise control of carbon nanotube synthesis of a single chirality. *Proceedings of the American Society of Mechanical Engineers*, Seattle, WA, United states, (2008), pp. 527-534.D.
31. Huitink, D. Banerjee, S. K. Sinha, Nanolithography of metal catalysts by dip pen nanolithography. *Proceedings of SPIE - The International Society for Optical Engineering*, USA, (2007), pp. 6556065561.
32. Huitink, D., Ganguly, S., Banerjee, D. and Yerkes, K. Convective Heat Transfer Enhancements Using Nanofluids. *Proceedings of the Nanofluids: Fundamentals and Applications (Engineering Conferences International)*, September 16–20, (2007) Copper Mountain, CO.

Awards and Honors

Mechanical Engineering Departmental Research Award (2020)
UA TFSC Commitment to Teaching Award (2018)
Society of Tribologists and Lubrication Engineers (STLE) Young Tribologist Award (2010)
STLE Houston section scholarship recipient (2010, 2011)
Graduate Diversity Fellow from TAMU Association of Former Students (2008)
NSF Graduate Research Fellow (2007)
Kozik-Hervey Award for outstanding graduate performance in MEEN dept. (2007)
Graduate Merit Fellow from TAMU Association of Former Students (2006)
Nominated for Texas A&M University Student Employee of the Year (2006)
Holderidge Award for highest GPR in MEEN dept. upon senior classification (2005)
National Dean's List Scholarship (2005)
ConocoPhillips MEEN Scholarship (2004)
Turbomachinery Symposium MEEN Scholarship (2003)
Finished in Top 20 at Bovay-Spence Engineering Design Graphics Competition (2003)
Dean's Honor Award (Dwight Look College of Engineering) (2003)
President's Endowed Scholarship – Texas A&M (2002)
Director's Excellence Award – Texas A&M (2002)
National Merit Scholar (2002)
Eagle Scout Award (2001)

Other Related Achievements & Experience

- 5 patent disclosures submitted through Intel Corp and 5 through UofA related to microelectronic packaging and thermal management (in evaluation), **provisional patents filed** in 2018 (3), 2019 (1) and 2020 (1)
- **Tutorial Speaker**. Fang Luo, David Huitink and Yarui Peng. "Advanced Power Module Packaging: from Design to Validation" WiPDA 2018, Atlanta, GA. October 31, 2018. Competitively awarded by conf. organizers.
- Invited Lecture: "Auxetic Warpage Control in Electronics" IBM, Poughkeepsie, NY, February 21, 2020.

- Invited Lecture: “Rapid Mechanical Testing Method for Flip-Chip Solder Interconnects in Next Gen WBG Packages.” Army Research Laboratory, Adelphi, MD, December 18, 2018.
- Invited **Panelist**: “Reliability Challenges in Electronic Packaging for Harsh Environment” ITherm 2019, Las Vegas, NV. May 2019.
- Invited talk: David Huitink & Fang Luo. “Packaging and Integration at UofA” Texas Instruments, November 30, 2017.
- Invited **Panelist**: “Transient Thermal Management” ASME InterPACK 2019, Anaheim, CA. Oct. 2019.
- Huitink, D., Peng, L., Ribeiro, R. and Liang, H. “Nano-scale contact behavior observed in real time.” *Tribology and Lubrication Technology Magazine* November 2010. **Invited** 2-page abstract based on Ref #8 above.
- Huitink, David, Debjyoti Banerjee, and Kirk Yerkes. "Flow Loop Experiments Using PAO/CNT Nanofluids." *PROPULSION AND POWER RAPID RESPONSE R&D SUPPORT* (2009): 115.
- Invited talk: “SPM-Based Fabrication of Nanostructures.” China Int. Workshop on Surface Texturing, CIWST 2010, Sept. 19-21, 2010.
- Appeared in promotional video about Dip Pen Nanolithography (2009).
  - Viewable at *http://www.nanoink.net/d/NanoInk_TexasAM_2009.wmv*
- Co-author of *Texas Size Energy Savings! A Step-by-Step Assessment Guide and Calculator for Small and Medium-Sized Manufacturers* (2005)
  - Manual and spreadsheet calculator provided to manufacturers as a service of Texas Industries of the Future, made available at *http://texasiof.ces.utexas.edu/*

Professional Service and Activities

Associate Editor for *Microelectronics Reliability* Journal 2018-2019

Organizing Co-chair for of *High Temperature Electronics Workshop* held in Fayetteville, AR (Oct 2018)

Reviewer for *Nuclear Engineering and Design, Langmuir, Ultra Microscopy, Tribology Letters, Journal of Physical Chemistry, IEEE Transactions on Power Electronics, J. of Electronic Packaging, J. of Nanoparticle Science*

Proposal Reviewer for KSEF 2018

Conference Session Co-Chair for IRPS 2017, IWIPP 2017, InterPACK 2017, IWIPP 2019, ITherm 2019, InterPACK 2019

Poster Judge for InterPACK 2017, ITherm 2018 and InterPACK 2018 conferences

President and Founder of TAMU Student Chapter of STLE

Member of ASME, IEEE (PELS, EPS)

Community Service and Activities

Prairie Grove Building Ministries: Flood damage relief in home building. 2 houses framed in Hattiesburg, MS 2018 and 2 in Auburn, AL 2020

Volunteer Worship Team Musician, Prairie Grove Christian Church (‘19-present)

Construction of Driveway/Main entrance to Huruma Children’s Orphanage in Ngong, Kenya (2015)

Cornerstone Christian Fellowship “Small Group” Leader & Children’s ministry teacher (’11 to ‘16)

Youth Soccer Coach (Chandler YMCA, Santan Youth Soccer Association, Washington County United Soccer: ’11 to ‘21)

Grace Bible Church “Home Church” Leader (’07 to ‘11)

Volunteer Work with Twin Cities Mission, Habitat for Humanity, Grace Bible Church Nursery/Children's Ministry, Prairie Grove Christian Church Children’s Ministry

TAMU Jazz Society (’02 – ’04)