




## Appendix H: SENIC 2019 Publications

Publications that acknowledge NSF support of SENIC using the grant number ECCS-1542174 (as identified through a Google Scholar search) are indicated below by the NNCI logo 

### Internal Journal Publications

Sedigheh Abbasi, Maryam Hasanpour, Fatemeh Ahmadpoor, Mika Sillanpää, Davoud Dastan, Amine Achour, "Application of the statistical analysis methodology for photodegradation of methyl orange using a new nanocomposite containing modified TiO<sub>2</sub> semiconductor with SnO<sub>2</sub>," *Int. J. Environ. An. Chem.*, pp.1-17, 2019.

Udhab Adhikari, Xiaoxian An, Nava Rijal, Tracy Hopkins, Shalil Khanal, Tom Chavez, Rigved Tatu, Jagannathan Sankar, Kevin J. Little, David B. Hom, Narayan Bhattarai, and Sarah K. Pixley, "Embedding magnesium metallic particles in polycaprolactone nanofiber mesh improves applicability for biomedical applications," *Acta Biomaterialia*, vol. 98, pp. 215-234, 2019. 


Sarah Adjei-Fremah, Mulumebet Worku, Maria Ortiz De Erive, Fuli He, Tao Wang, and Guibing Chen, "Effect of microfluidization on microstructure, protein profile and physicochemical properties of whole cowpea flours," *Innovative Food Science & Emerging Technologies*, vol. 57, p. 102207, 2019. 

H.-R. Ahn and M. M. Tentzeris, "Balanced-to-Unbalanced Power Dividers for Arbitrary Power Division Ratios and For Arbitrary Real Termination Impedances," *IET Microwaves, Antennas & Propagation*, vol. 13, no. 7, pp. 904-910, July 2019.

H.-R. Ahn and M. M. Tentzeris, "Compact and Wideband General Coupled-Line Ring Hybrids (GCRHs) for Arbitrary Circumferences and Arbitrary Power-Division Ratios," *IEEE Access*, vol. 7, pp. 33414-33423, 2019.


H.-R. Ahn and M. M. Tentzeris, "Complex Impedance Transformers Based on Allowed and Forbidden Regions," *IEEE Access*, vol. 7, pp. 39288-39298, 2019.

H.-R. Ahn and M. M. Tentzeris, "In-Phase T-Junction: Study and Application to Gysel Power Dividers for High Power-Division Ratios Requiring No High-Impedance Transmission-Line Section," *IEEE Access*, vol. 7, pp. 18146-18154, 2019.

J. Ahn and D. Qin, "Fabrication of nanoscale cage cubes by drilling orthogonal, intersected holes through all six side faces of Ag nanocubes," *Chemistry of Materials*, vol. 31, no. 21, pp. 9179-9187, 2019. (Impact factor: 10.1) 

J. Ahn, S. Shi, B. Vannatter, and D. Qin, "Comparative Study of the Adsorption of Thiol and Isocyanide Molecules on a Silver Surface by in Situ Surface-Enhanced Raman Scattering," *Journal of Physical Chemistry C*, vol. 123, no. 35, pp. 21571-21580, 2019. (Impact factor: 4.3)


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Q. Almas, M. A. Naeem, M. A. S. Baldanza, J. Solomon, J. C. Kenvin, C. R. Müller, V. Teixeira da Silva, C. W. Jones, and C. Sievers, "Transformations of FCC catalysts and Carbonaceous Deposits during Repeated Reaction-regeneration Cycles," *Catal. Sci. Technol.*, vol. 9, pp. 6977-6992, 2019. 

Q. Almas, C. Sievers, and C. W. Jones, "Role of Mesopore Generation Method in Structure, Activity and Stability of MFI Catalysts in Glycerol Acetylation," *Appl. Catal. A. Gen.*, vol. 571, pp. 107-111, 2019. 


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- M. Park, A. Clark, R. Dargis, and A. Ansari, "Super High Frequency Scandium Aluminum Nitride Crystalline Film Bulk Acoustic Resonators," IEEE International Ultrasonic Symposium (IUS) 2019, Glasgow, Scotland, UK, October 6-9, 2019.
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A. Parveen, N. Sirelkhatim, D. LaJeunesse, and L. Zhang, "Viability and Growth Behavior of Yeast Cells on Electrospun Nanofibrous Mat," The Fiber Society's Fall 2019 Technical Meeting and Conference: Revitalizing the Textile Industry Through Innovative Research, Education, and Entrepreneurship, Austin, TX, United States, October 28-30, 2019.

M.B. Pérez-Cuevas and M.R. Prausnitz, "High throughput synthesis of pharmaceutical ionic liquids as a tool for formulation discovery," Preclinical Form and Formulation for Drug Discovery, Gordon Research Conference, 2019.

R. J. Petrie and M. Losego "Controlling Crystallinity in Atomic Layer Deposited TiO<sub>2</sub> Thin Films," National Conference for Undergraduate Research, Kennesaw, GA, April 2019.

B. Piercy and M. D. Losego, "Atomic layer epitaxy of zinc oxide on c-plane sapphire from diethylzinc and water using pulsed-heating atomic layer deposition," ALD Conference, Bellevue, WA, July 2019.

S. Pourianejad, F. Aryeetey, A. Adesina, S. Aravamudhan, and T. Ignatova, "Characterization of 2D Hybrid Systems: Graphene and Beyond," APS March Meeting, Boston, MA, March 6, 2019.

S. Pourianejad and T. Ignatova, "Developing 2D heterostructure-based sensors," The Graphene and Beyond Workshop, State College, PA, May 9, 2019.

M.R. Prausnitz, "Collecting interstitial fluid from the skin as a novel source of biomarkers," American Institute of Chemical Engineers Annual Meeting, Orlando, FL, November 2019.

M.R. Prausnitz, "Collecting tissue interstitial fluid as a novel source of biomarkers," Biomedical Engineering Society Annual Meeting, Philadelphia, PA, October 2019.

M.R. Prausnitz, "Microneedle technology," 15<sup>th</sup> US-Japan Symposium on Drug Delivery Systems, Maui, HI, December 2019.

M.R. Prausnitz, "Translation of microneedles for drug delivery to skin and eye," 10th International Conference on Materials for Advanced Technology, Marina Bay Sands, Singapore, June 2019.


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Wulin Qiu, Justin Vaughn, Gongping Liu, Liren Xu, Mark Brayden, Marcos Martinez, Thomas Fitzgibbons, and William J. Koros, "Tuning Carbon Molecular Sieve Hollow Fiber Membranes for Gas Separation through Hyperaging," 2019 AIChE Annual Meeting, Orlando, FL, November 10-15, 2019.

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H. Rathnayake, A. Letfullina, and S. Dawood, "Electrically and Ionically Conductive Microstructures of Metal Organic Frameworks (MOFs)," American Chemical Society National Meeting Polymeric Materials Science and Engineering (PMSE), Orlando, FL, 2019.

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- J. Reynolds, "REVEALS Activities in Exploration, Graphene-based Antistatic Coatings Real-time & 2D Meta-material Radiation Detectors," IEEE International Conference on Wireless for Space and Extreme Environments, Ottawa, ON, Canada, October 2019.
- J. Reynolds, "Multi-Functional Composites for Space Travel: Design Considerations and Early Concepts Using Reduced Graphene Oxide as a Polymer Reinforcement," NASA Exploration Science Forum, NASA Ames Research Center, CA, July 2019.
- A. Rezvanitabar, E.F. Arkan, and F.L. Degertekin, "Broadband Impedance Matching with Negative Capacitance for Capacitive Micromachined Ultrasonic Transducers (CMUTs)," International Micromachined Ultrasonic Transducers (MUT) Workshop, Grenoble, France, 2019.
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- E. Sarpong, D. Smith, and S. Bililign, "Application of the Rayleigh-Debye-Gans (RDG) theory for determining optical properties of biomass burning aerosols," APS March Meeting 2019, Boston, MA, March, 2019.
- S. Saudi, U. Adhikari, S. Aravamudhan, J. Sankar, and N. Bhattarai, "Investigation of Drug Release from Electrospun Composite Nanofibers," 35th Annual Meeting of Southern Biomedical Engineering Conference, Hattiesburg, MS, USA, February 22-24, 2019.
- S. Saudi, U. Adhikari, S. Aravamudhan, J. Sankar, and N. Bhattarai, "Investigation of Drug Release from Electrospun Composite Nanofibers," Proceedings of the 35th Annual Meeting of Southern Biomedical Engineering Conference, Hattiesburg, MS, February 22-24, 2019.
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- A. Shiave and R. Mohan, "Effect of Current Density and Temperature on Template Assisted Cobalt Nanowire," ASME International Mechanical Engineering Congress and Exposition, 2019, p. IMECE2019-11673, V012T10A06.
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- M. L. Shofner, P. Verma, and A. C. Griffin, "Auxetic Behavior in Fiber Networks," ACS Fall 2019 National Meeting & Exposition, San Diego, CA, August 2019.

N. Sirelkhatim, A. Parveen, D. LaJeunesse, and L. Zhang, "Antifungal Functionality of Electrospun Polyacrylonitrile Nanofibers," The 6th International Conference on Electrospinning, Shanghai, China, June 19-21, 2019.

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B. G. Stewart, I. Bower, and S. K. Sitaraman, "Bladder Inflation Method for Mechanical Testing of Stretchable Electronics and Wearable Devices," IPC APEX EXPO 2019, San Diego, CA, 2019.

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T. Sun et al., "3D Packaging with Embedded High-Power-Density Passives for Integrated Voltage Regulators," 2019 IEEE 69th Electronic Components and Technology Conference (ECTC), Las Vegas, NV, 2019 pp. 1300-1305.

H. Taghinejad, A. A. Eftekhar, and A. Adibi, "Highly controlled lateral heterostructures in 2D transition metal dichalcogenides for optoelectronic applications," SPIE Optics and Photonics, San Diego, CA, 2019.

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M. Taghinejad, and W. Cai, "Hot-electron plasmonics for ultrafast control of intensity, phase and polarization of light," Materials Research Society (MRS) Spring Meeting, EP11.01.05, Phoenix, AZ, April 2019.

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D. Taylor, J. Wei, D. Darbare, and Z. Ji, "Evaluating the Physical, Chemical and Structural Properties of Carbon Nanodots Passivated with Macromolecules of Different Architectures," Las Vegas, NV, November 20-23, 2019.

A. C. Thenuwara, S. Sandoval, E. J. Klein, and M. T. McDowell, "Low-Temperature Behavior of Lithium Metal Anodes in Carbonate and Ether Electrolytes," 236<sup>th</sup> Electrochemical Society Meeting, Atlanta, GA, October 2019.

A. C. Thenuwara, P. V. Shetty, M. T. McDowell, "Understanding Low-Temperature Cycling of Lithium-Metal Anodes," Fall 2019 Materials Research Society Meeting, Boston, MA, December 2019.

M. Tian and J. Kacher, "Microstructure and property characterization of high entropy alloy using advanced transmission electron microscopy techniques," TMS, San Antonio, TX 2019.

R. Tomar, F. Ulu, A. Kelkar, and R. Mohan, "Investigation of Process Induced Variations in PolyJet Printing with Digital Polypropylene via Homogeneous Tensile Test Coupon," ASME International Mechanical Engineering Congress and Exposition, 2019, p. IMECE2019-11639, V012T10A060.

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R. Tummala, N. Nedumthakady, S. Ravichandran, B. DeProspero and V. Sundaram, "Heterogeneous and homogeneous package integration technologies at device and system levels," 2018 Pan Pacific Microelectronics Symposium (Pan Pacific), Waimea, HI, 2018 pp. 1-5.

F. Ulu, R. Mohan, and R. Tomar, "Development of Thermally Conductive Polymer/CNF Nanocomposite Material via PolyJet Additive Manufacturing by Improvement of Digital Material Design," ASME International Mechanical Engineering Congress and Exposition, 2019, p. IMECE2019-11556, V012T10A059.

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S. Wang, M. Tong, Y. Guan and M. M. Tentzeris, "3D Printed Inverted-F Antenna and Temperature Sensor Using Microfluidics Technologies," Proc. of the 2019 IEEE APS Symposium, pp. 599-600, Atlanta, GA, July 2019.

A. O. Watanabe et al., "Low-Loss Additively-Deposited Ultra-Short Copper-Paste Interconnections in 3D Antenna-Integrated Packages for 5G and IoT Applications," 2019 IEEE 69th Electronic Components and Technology Conference (ECTC), Las Vegas, NV, 2019, pp. 972-976.

X. Wang, W. Lanning, C. Muhlstein, and J. Kacher, "Grain boundary morphology evolution in low cycle fatigue of high purity aluminum," MS&T, Portland, OR, 2019.

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F. Wang and H. Wang, "A Highly Linear Super-Resolution Mixed-Signal Doherty Power Amplifier for High-Efficiency mm-Wave 5G Multi-Gb/s Communications," IEEE International Solid-State Circuits Conference (ISSCC) Dig. Tech. Papers, February 2019.

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J. Wei and Z. Ji, "Carbon Nanodots in Living Cells: The Effect on Oxidative Stress and Cytotoxicity," 26th Annual Conference of Society for Redox Biology and Medicine (SfRBM), Las Vegas, NV, November 20-23, 2019.

J. Wei, T. Mabe, Z. Zeng, "A chip-based nano-optic-fluidic biosensor for protein detection," Nano Boston Conference, Boston, MA, April 22-24, 2019.

J. Wei, W. Zhang, Z. Ji, Z. Zeng, A. Sheardy, and D. Arvapalli, "Carbon nanodots (CNDs): Fundamentals of the optoelectronic properties and antioxidation," ACS National Meeting, Orlando, FL, March 31-April 4, 2019.

George C. Wikes, Ajay D Upadhyaya, Ajeet Rohatgi, Mool C. Gupta, "Laser Crystallization and Dopant Activation for a-Si:H Film in Carrier-Selective Contacts for Silicon Solar cells", 46<sup>th</sup> IEEE PVSC Jun 16-21, Chicago IL, 2019.

X. Wu, T. Fan, A. A. Eftekhari, and A. Adibi, "High-Q microresonators integrated with microheaters on a 3C-SiC-on-insulator platform," Conference on Lasers and Electro-Optics OSA Technical Digest, 2019.

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Y.S. J. Yoo, S. Das, X. Wang, and J. Kacher, "Influence of dispersoids in bending performance of AA6451-T6," TMS, San Antonio, TX, 2019.

Woojun Yoon, Young-Woo Ok, David Scheiman, Ajeet Rohatgi, Phillip Jenkins, "Impact of Deposition of ITO on Tunnel Oxide Passivating Poly-Si Contact", 46<sup>th</sup> IEEE PVSC Jun 16-21, Chicago IL, 2019.

Katherine Young, Dale Hitchcock, Colter Smith, Tim Krentz, and Eric Vogel, "The Effects of Graphene and its Defects on Hydrogen Permeation in Cu," Materials Research Society Meeting, Boston, MA, December 5, 2019.

Katherine T. Young, Shelly S. Phillips, Jasmine T. Coley, Christopher J. Perini, Dale A. Hitchcock, Steve M. Serkiz, and Eric M. Vogel, "The Impact of Defect Density, Grain Size, and Cu Orientation on Thermal Oxidation of Graphene-Coated Cu," European Materials Research Society Meeting, Nice, France, May 29, 2019.

G. Yushin et al., Betty and Gordon Moore Foundation Inventor Fellows Workshop, Palo Alto, CA, 2019.

G. Yushin et al., "Conversion Chemistries for Anodes, Cathodes and Separators for Lithium-Ion Batteries," ACS Meeting, Orlando, FL, 2019.

G. Yushin et al., "Nanostructured Materials for High-Energy & High-Power Lithium-Ion Batteries," ECS spring meeting, Dallas, TX, 2019.

G. Yushin et al., “Next Generation Materials for Li-ion Batteries,” Battery and Energy Storage Workshop – AIChE, New York, NY, 2019.

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G. Yushin et al., “New Classes of Materials for Electrodes & Separators for Next Generation Li-ion Batteries,” MIT CEEPR Spring Research Workshop, Cambridge, MA, 2019.

G. Yushin et al., “Drop-In Replacement Materials from Abundant Resources to Double the Energy Density in EV Batteries,” ARPAE meeting, Dallas, TX, 2019.

B. Zhang, and L. J. Wang, “Molten salt activation of hydrochar produced from the digestate of anaerobic digestion for synthesis of porous carbon,” ASABE Annual International Meeting, Boston, MA, July 7-10, 2019.

Lifeng Zhang, “Antifungal Treatment with Electrospun Nanofibers,” Opportunity Meets Innovation Reverse Pitch Challenge Organized by Greensboro Chamber of Commerce and Launch Greensboro, Greensboro, NC, USA, November 7, 2019.

Lifeng Zhang, “Sustainable and Environment-friendly Bio-binder from Algae for Epoxy Based Composite Materials,” Center of Excellence Research Symposium, North Carolina A&T State University, Greensboro, NC, USA, November 15, 2019.

Y. Zhou, S. Sivapurapu, R. Chen, N. A. Amoli, M. Bellaredj, M. Swaminathan, and S. K. Sitaraman, “Study of Electrical and Mechanical Characteristics of Inkjet-Printed Patch Antenna under Uniaxial and Biaxial Bending,” 69<sup>th</sup> Electronic Components and Technology Conference IEEE-CPMT and EIA, pp. 1939-1945, Las Vegas, NV, May 2019.

M. Zia, B. Chung, M. Bakir, and S. Sober, "Neuromotor agility in the songbird: Flexible multielectrode arrays with 3-dimensional contacts to enhance electromyogram recordings," Proc. Neuroscience, Chicago, IL, 2019.


## External Conference Presentations

M. Blackledge, “Breaking bad bugs with repurposed drugs: Evaluating FDA-approved drugs to target biofilm formation and antibiotic resistance in pathogenic bacteria,” ACS Abstracts, vol. 257, 2019.

O. Brunhoeber, and L. Beckingham, “Role of mineralogy in controlling fracture formation,” Auburn University Graduate Research Symposium, Auburn, AL, November 2019.

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