

Appendix E: SENIC 2018 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

Abdelhafiz, A. Vitale, P. Buntin, B. deGlee, C. Joiner, A. Robertson, E. M. Vogel, J. Warner, and F. M. Alamgir, "Epitaxial and atomically thin graphene–metal hybrid catalyst films: the dual role of graphene as the support and the chemically-transparent protective cap," *Energy & Environmental Science*, vol. 11, pp. 1610-1616, 2018.

A. Abdul-Latif, A. Kerkour-El Miad, R. Baleh, and H. Garmestani, "Modeling the mechanical behavior of heterogeneous ultrafine grained polycrystalline and nanocrystalline FCC metals," *Mechanics of Materials*, vol. 126, pp. 1-12, 2018.

A. Aboagye, Y. Liu, J. Ryan, J. Wei, L. Zhang, "Hierarchical Carbon Composite Nanofibrous Electrode Material for High-Performance Aqueous Supercapacitors," *Materials Chemistry and Physics*, vol. 214, pp. 557-563, 2018. 

Ahn, Jungho, Sei, Yoshitaka J., Jeon, Noo Li, and Kim, YongTae, "Probing the Effect of Bioinspired Nanomaterials on Angiogenic Sprouting with a Microengineered Vascular System," *IEEE Transactions on Nanotechnology*, vol. 17, vol. 3, pp. 393-397, 2018. 

T. Akter, S. Desai, "Developing a Predictive Model for Nanoimprint Lithography using Artificial Neural Networks," *Materials and Design*, vol. 160, no. 15, pp. 836-848, 2018.

P.K Alaboina, S. Rodrigues, M. Rottmayer, and S.-J. Cho, "In Situ Dendrite Suppression Study of Nanolayer Encapsulated Li Metal Enabled by Zirconia Atomic Layer Deposition," *ACS Appl. Mater. Interfaces*, vol. 10 (38), pp 32801–32808, 2018. 

M. Ali, F. Liu, A. Watanabe, P. M. Raj, V. Sundaram, M. M. Tentzeris, et al., "First Demonstration of Compact, Ultra-Thin Low-Pass and Bandpass Filters for 5G Small-Cell Applications," *IEEE Microwave and Wireless Components Letters*, vol. 28, pp. 1110-1112, 2018.

H. Alrowais, P. Getz, M. Kim, J.-J. Su, R. Tran, W. A. Lam, O. Brand, "Bio-inspired fluidic thermal angular accelerometer with inherent linear acceleration rejection," *Sensors and Actuators A: Physical*, vol. 279, pp. 566-579, 2018. 

H. Amini, L.J. Wang, A. Hashemisohi, A. Shahbazi, M. Bikdash, K.C. Dukka, W. Yuan, "An integrated growth kinetics and computational fluid dynamics model for the analysis of algal productivity in open raceway ponds," *Computer and Electronics in Agriculture*, vol. 145, pp. 363-372, 2018.

C.S.M. Amrine, H.A. Raja, B.A. Darveaux, C.J. Pearce, N.H. Oberlies, "Media studies to enhance the production of verticillins facilitated by in situ chemical analysis," *Journal of industrial microbiology & biotechnology*, vol. 45(12), pp. 1053-1065, 2018.

E. Ansah, L.J. Wang, B. Zhang, A. Shahbazi, "Catalytic pyrolysis of raw and hydrothermally carbonized *Chlamydomonas debaryana* Microalgae for denitrogenation and production of aromatic hydrocarbons, *Fuel*, vol. 228, pp. 234-242, 2018.

Babu, V. P., Koros, W. J., "The role of polyvinylpyrrolidone in forming open-porous, macrovoid-free mixed matrix sorbents from Torlon® a polyamide-imide polymer," *Polymer Engineering and Science*, vol. 58(11), pp. 2106-2114, 2018.

Babu, V. P., Kraftschik, B. E., Koros, W. J., "Crosslinkable TEGMC asymmetric hollow fiber membranes for aggressive sour gas separations," *Journal of Membrane Science*, vol. 558, pp. 94-105, 2018.

R.Bahr, B.Tehrani and M.M.Tentzeris, "Exploring 3-D Printing for New Applications: Novel Inkjet- and 3D-Printed Millimeter-Wave Components, Interconnects, and Systems," *Microwave Magazine*, vol.19, no.1, pp.57-66, 2018.

Manali Banerjee, Sisira Saraswatula, Laura Grace Willows, Hannah Woods, and Blair Brettmann, "Pharmaceutical crystallization in surface-modified nanocellulose organogels," *J. Mater. Chem. B*, vol. 6, pp. 7317-7328, 2018. 

A. Barrios, S. Gupta, G. Castelluccio, and O.N. Pierron, "Quantitative in situ SEM high cycle fatigue: the critical role of oxygen on nanoscale-void-controlled nucleation and propagation of small cracks in Ni microbeams," *Nano Letters*, vol. 18, no. 4, pp. 2595-2602, 2018.

D. Bekoe, L. Wang, B. Zhang, M. Scott Todd, A. Shahbazi, "Aerobic treatment of swine manure to enhance anaerobic digestion and microalgal cultivation," *Journal of Environmental Science and Health, Part B*, vol. 53(2), pp. 145-151, 2018.

Bellaredj, M., Pardue, C., Swaminathan, M., and Kohl, P. A., "Fabrication of Package Embedded Spiral Inductors with Two Magnetic Layers for Flexible SIP Point of Load Converters in Internet of Everything Devices," *Microelectronic Engineering*, vol. 189, pp. 18-27, 2018. 

Keaton M.Belli and Martial Taillefert, "Geochemical controls of the microbially mediated redox cycling of uranium and iron," *Geochimica et Cosmochimica Acta*, vol. 235, pp. 431-449, 2018. 

Belmabkhout, Y., Bhatt, P. M., Adil, K., Pillai, R. S., Cadiou, A., Shkurenkol, A., Maurin, G., Liu, G., Koros, W., Eddaoudi, M., "Natural gas upgrading using a fluorinated MOF with tuned H₂S and CO₂ adsorption selectivity," *Nature Energy*, vol. 3 (12), pp. 1059-1066, 2018.

Beveridge, J.M., Chenot, H.M., Crich, A., Jacob, A., Finn, M.G., "Covalent Functionalization of Flexible Polyvinyl Chloride Tubing," *Langmuir*, vol. 34, pp. 10407-10412, 2018. 

Bilyy, R., Paryzhak, S., Turcheniuk, K., Dumych, T., Barras, A., Boukherroub, R., Wang, F., Yushin, G., Szunerits, S., "Aluminum Oxide Nanowires as Safe and Effective Adjuvants for Next-Generation Vaccines," *Materials Today*, 2018.

M.G. Boebinger, D. Yeh, M. Xu, B. C. Miles, B. Wang, M. Papakyriakou, J.A. Lewis, N.P. Kondekar, F.J.Q. Cortes, S. Hwang, X. Sang, D. Su, R.R. Unocic, S. Xia, T. Zhu, and M.T. McDowell, "Avoiding Fracture in a Conversion Battery Material through Reaction with Larger Ions" *Joule*, vol. 2(9), pp. 1783-1799, 2018. 

Tom Bongiorno, Jeremy Gura, Priyanka Talwar, Dwight Chambers, Katherine Young, Dalia Arafat, Gonghao Wang, Emily Jackson-Holmes, Peng Qiu, Todd McDevitt, Todd Sulchek, "Biophysical Subsets of Embryonic Stem Cells Display Distinct Phenotypic and Morphological Signatures," *PLoS ONE*, vol. 13(3), e0192631, 2018.

E.R. Britton, J.J. Kellogg, O.M. Kvalheim, N.B. Cech, "Biochemometrics to identify synergists and additives from botanical medicines: a case study with *Hydrastis canadensis* (goldenseal)," *Journal of Natural Products*, vol. 81(3), pp.484-493, 2018.

J. Broughton, V. Smet, R.R. Tummala, and Y.K. Joshi, "Review of Thermal Packaging Technologies for Automotive Power Electronics for Traction Purposes," *Journal of Electronic Packaging*, vol. 140(4) 040801. 2018.

P. Campbell, C. Perini, J. Chiu, A. Gupta, H. Ray. H. Chen, K. Wenzel, E. Snyder, B. Wagner, W. Ready, and E. Vogel, "Plasma-Assisted Synthesis of MoS₂," *2D Materials*, 015005, 2018.

- Cao, J., Tao, S. X., Bobbert, P. A., Wong, C.-P., Zhao, N., "Interstitial Occupancy by Extrinsic Alkali Cations in Perovskites and Its Impact on Ion Migration," *Adv. Mater.*, vol. 30(26), 2018.
- L. Cao, R. Sedighi, A. Boston, L. Premadasa, J. Pinder, G.E. Crawford, E.M. Ongeri, "Undiagnosed kidney injury in uninsured and underinsured diabetic African American men and putative role of meprin metalloproteases in diabetic nephropathy," *International Journal of Nephrology*, p. 6753489, 2018.
- R. Chandran, H. Chevva, Z. Zeng, Y. Liu, W. Zhang, J. Wei, D.R. LaJeunesse, "Solid-state Synthesis of Silver Nanowires Using Biopolymer Thin Films," *Materials Today Nano*, vol. 1, pp. 22–28, 2018. 
- R. Chandran, K. Nowlin, D.R. LaJeunesse, "Nanosphere Lithography of Chitin and Chitosan with Colloidal and Self-Masking Patterning," *Polymers*, vol. 10 (2), p. 218, 2018. 
- Y. Chang, Y. Yoon, G. Li, E. Xu, S. Yu, C. Lu, Z. Wang, Y. He, C. Lin, B. K. Wagner, V. V. Tsukruk, Z. Kang, N. Thadhani, Y. Jiang*, and Z. Lin*, "All-Inorganic Perovskite Nanocrystals with a Stellar Set of Stabilities and Their Use in White Light-Emitting Diodes," *ACS Applied Materials & Interfaces*, vol. 10, p. 37267, 2018.
- Chen, J., Fang, K., Chen, Q., Xu, J., Wong, C.-P., Liu, X., "Integrated paper electrodes derived from cotton stalks for high-performance flexible supercapacitors," *Nano Energy*, vol. 53, pp. 337-344, 2018.
- Chen, J., Li, Y., Sheng, G., Xu, L., Ye, H., Fu, X.-Z., Sun, R., Wong, C.-P., "Iron-Doped Nickel Phosphide Nanosheets Insitu Grown on Nickel Submicrowires as Efficient Electrocatalysts for Oxygen Evolution Reaction," *ChemCatChem*, vol. 10(10), 2018.
- J. Chen, A. Lotfi, P. J. Hesketh, S. Kumar, "Carbon Nanotube Thin-film-transistors for Gas Identification," *Sensors and Actuators B: Chemical*, 2018.
- J. Chen, L.J. Wang, B. Zhang, R. Li, A. Shahbazi, "Enhancement of Hydrothermal Liquefaction of Dairy Manure with Ammonium Hydroxide, Phosphoric Acid and Glycerol for Co-production of Bio-oil and Biochar," *Sustainability*, vol. 10, 230, pp. 1-14, 2018.
- Peng Chen, Yutong Wu, Yamin Zhang, Tzu-Ho Wu, Yao Ma, Chloe Pelkowski, Haochen Yang, Yi Zhang, Xianwei Hu. and Nian Liu, "A deeply rechargeable zinc anode with pomegranate-inspired nanostructure for high-energy aqueous batteries," *J. Mater. Chem. A*, vol. 6, pp. 21933-21940, 2018. 
- Chen, Q., Chen, J., Zhou, Y., Song, C., Tian, Q., Xu, J., Wong, C.-P., "Enhancing Pseudocapacitive Kinetics of Nanostructured MnO₂through Anchoring onto Biomass-Derived Porous Carbon," *Appl. Surf. Sci.*, vol. 440, pp. 1027-1036, 2018.
- Y. Chen, B. deGlee, Y. Tang, Z. Wang, B. Zhao, Y. Wei, L. Zhang, S. Yoo, K. Pei, J. Kim, Y. Ding, P. Hu, F. Tao, M. Liu, "A Robust Fuel Cell Operated on Nearly Dry Methane at 500C Enabled by Synergistic Thermal Catalysis and Electrocatalysis", *Nature Energy*, vol. 3, pp. 1042–1050, 2018.
- Yu Chen, YM Choi, S Yoo, Y Ding, R Yan, K Pei, C Qu, L Zhang, I Chang, B Zhao, Y. Zhang, H. Chen, Yan Chen, C. Yang, B. deGlee, R. Murphy, J. Liu, M. Liu, "A Highly Efficient Multi-phase Catalyst Dramatically Enhances the Rate of Oxygen Reduction," *Joule*, vol. 2, pp. 1-12, 2018.
- Y. Chen, Y. Kim, B. Tillman, W. H. Yeo and Y. Chun "Advances in Materials for Recent Low-Profile Implantable Bioelectronics," *Materials*, vol. 11 (4), p. 522, 2018.
- Chen, Y., Shi, D., Mai, X., Li, L., Gao, J., Chen, X., Li, H.-X., Wong, C.-P., "Design and Fabrication of Inverted Tapered Micro-Pillars for Spontaneously Transporting Liquid Upward," *Microfluid. Nanofluid.*, vol. 22(1), 2018.
- Y. Chen, Y. Wang, Y. Zhang, H. Zou, Z. Lin, G. Zhang, C. Zou and Z. L. Wang, "Elastic-Beam Triboelectric Nanogenerator for High-Performance Multifunctional Applications: Sensitive Scale, Acceleration/Force/Vibration Sensor, and Intelligent Keyboard," *Advanced Energy Materials*, 2018.

Y. Chen, Z. Wang, Y. He, Y. J. Yoon, J. Jung, G. Zhang, and Z. Lin, "Light-Enabled Reversible Self-Assembly and Tunable Optical Properties of Stable Hairy Nanoparticles," *Proceedings of the National Academy of Sciences of the United State of America*, vol. 115, E1391, 2018.

Y. Chen, S. Yoo, Y. Choi, J. H. Kim, Y. Ding, K. Pei, R. Murphy, Y. Zhang, B. Zhao, W. Zhang, H. Chen, Y. Chen, W. Yuan, C. Yang and M. Liu, "A Highly Active, CO₂-tolerant Electrode for Oxygen Reduction Reaction", *Energy Environ. Sci.*, vol. 11, pp. 2458-2466, 2018.

Yu Chen, S. Yoo, K. Pei, D. Chen, L. Zhang, B. deGlee, R. Murphy, B. Zhao, Y. Zhang, Yan Chen, and M. Liu, "An in situ Formed, Dual-Phase Cathode with a Highly Active Catalyst Coating for Protonic Ceramic Fuel Cells," *Advanced Functional Materials*, vol. 28(5), p. 1704907, 2018.

Yu Chen, Seonyoung Yoo, Xiaxi Li, Dong Ding, Dongchang Chen, Yong Ding, Bote Zhao, Ryan Murphy, Ben deGlee, Jiang Liu, Meilin Liu, "An Effective Strategy to Enhancing Tolerance to Contaminants Poisoning of Solid Oxide Fuel Cell Cathodes," *Nano Energy*, vol. 47, pp. 474-490, 2018.

Y. Chen, Y. Zhang, Z. Wang, T. Zhan, Y. Wang, H. Zou, H. Ren, G. Zhang, C. Zou and Z. L. Wang, "Dynamic Electronic Doping for Correlated Oxides by a Triboelectric Nanogenerator," *Advanced Materials*, 2018.

Chen, Z., He, Y.-C., Chen, J.-H., Fu, X.-Z., Sun, R., Chen, Y.-X., Wong, C.-P., "PdCu Alloy Flower-Like Nanocages with High Electrocatalytic Performance for Methanol Oxidation," *J. Phys. Chem. C*, vol. 122(16), pp. 8976-8983, 2018.

Cheng, H., Huo, D., Zhu, C., Shen, S., Wang, W., Li, H., Zhu, Z., Xia, Y., "Combination Cancer Treatment through Photothermally Controlled Release of Selenous Acid from Gold Nanocages," *Biomaterials*, vol. 178, pp. 517-526, 2018.

J. Cheng, W. Ding, Y. Zi, Y. Lu, L. Ji, F. Liu, C. Wu and Z. L. Wang, "Triboelectric Microplasma Powered by Mechanical Stimuli," *Nature Communications*, 2018.

T. Chi, J. Park, S. Li, and H. Wang, "A Millimeter-Wave Polarization-Division-Duplex Transceiver Front-End with An On-Chip Multifeed Self-Interference-Canceling Antenna and An All-Passive Reconfigurable Canceler," *IEEE J. of Solid-State Circuits*, vol. 53, no. 12, pp. 3628 - 3639, 2018.

E. Cho, A. Rohatgi, and Y. Ok. "Comparison of Light-Induced Degradation and Regeneration in P-Type Monocrystalline Full Aluminum Back Surface Field and Passivated Emitter Rear Cells." *Current Applied Physics*, vol. 18.12, pp. 1600-1604, 2018.

M.-K. Cho, I. Song, S. Pavlidis, Z.E. Fleetwood, S.P. Buchner, D. McMorrow, P. Paki, and J.D. Cressler, "An Electrostatic Discharge (ESD) Protection Circuit Technique for the Mitigation of Single-Event Transients in SiGe BiCMOS Technology," *IEEE Transactions on Nuclear Science*, vol. 65, pp. 426-431, 2018.

M.-K. Cho, I. Song, Z.E. Fleetwood, and J.D. Cressler, "A SiGe-BiCMOS Wideband Active Bidirectional Digital Step Attenuator with Bandwidth Tuning and Equalization," *IEEE Transactions on Microwave Theory and Techniques*, vol. 66, pp. 3866-3876, 2018.

Chu, Y.-H., Yancey, D., Xu, L., Martinez, M., Brayden, M., Koros, W., "Iron-containing carbon molecular sieve membranes for advanced olefin/paraffin separations," *Journal of Membrane Science*, vol. 548, pp. 609-620, 2018.

Chung, P.Y. and Sitaraman, S.K., "Random Vibration Analysis of 3-Arc-Fan Compliant Interconnects," *Microelectronics Reliability*, vol. 81, pp. 7-21, 2018.

E. Clinton, E. Vadiee, S.-C. Shen, K. Mehta, P. D. Yoder, and W. A. Doolittle, "Negative Differential Resistance in GaN Homojunction Tunnel Diodes and Low-Voltage Loss Tunnel Contacts," *Applied Physics Letters*, vol. 112, pp. 252103, June 2018.

F. J. Q. Cortes, M. G. Boebinger, M. Xu, A. Ulvestad, M. T. McDowell, "Operando Synchrotron Measurement of Strain Evolution in Individual Alloying Anode Particles within Lithium Batteries," *ACS Energy Letters*, vol. 3(2), pp. 349-355, 2018.

Dahotre SN, Chang YM, Wieland A, Stammen SR, and Kwong GA., "Individually addressable and dynamic DNA gates for multiplexed cell sorting," *Proceedings of the National Academy of Science*, vol. 115(17), pp. 4357–4362, 2018. 

S Dai, Z Liu, B Zhao, J Zeng, H Hu, Q Zhang, D Chen, C Qu, D Dang, M Liu, "A high-performance supercapacitor electrode based on N-doped porous graphene," *Journal of Power Sources*, vol. 387, pp. 43-48, 2018.

Y. Dai, X. Wang, W. Peng, C. Xu, C. Wu, K. Dong, R. Liu and Z. L. Wang, "Self-Powered Si/CdS Flexible Photodetector with Broadband Response from 325 to 1550 nm Based on Pyro-phototronic Effect: An Approach for Photosensing below Bandgap Energy," *Advanced Materials*, 2018.

J. Dallas, G. Pavlidis, B. Chatterjee, J.S. Lundh, M-H. Ji, J. Kim, J., T. Kao, T. Detchprohm, R.D. Dupuis, S-C. Shen, S. Graham, S. Choi, "Thermal Characterization of Gallium Nitride p-i-n Diodes," *Applied Physics Letters*, vol. 112, no. 7, p. 073503, 2018.

Dai Dang, Bote Zhao, Dongchang Chen, Chong Qu, Shuge Dai, Xiaoyuan Zeng, Jing Liu, Yunfeng Lu, Shijun Liao, Meilin Liu, "A bi-functional WO₃-based anode enables both energy storage and conversion in an intermediate-temperature fuel cell," *Energy Storage Materials*, vol. 12, pp. 79-84, 2018.

S.N .Daskalakis, R.Correia, G.Goussetis, M.M.Tentzeris, N.B.Carvalho and A.Georgiadis, "Four-PAM Modulation of Ambient FM Backscattering for Spectrally Efficient Low-Power Applications", *IEEE Transactions on Microwave Theory and Techniques*, vol.66, no.12, pp.5909-5921, 2018.

S.N. Daskalakis, G.Goussetis, S.D.Assimonis, M.M.Tentzeris and A.Georgiadis, "A uW Backscatter-Morse-Leaf Sensor for Low-Power Agricultural Wireless Sensor Networks", *IEEE Sensors Journal*, vol.18, no.19, pp.7889-7898, 2018.

R. Dehghannasiri, A. A. Eftekhar, and A. Adibi, "Hypersonic Surface Phononic Bandgap Demonstration in a CMOS-Compatible Pillar-Based Piezoelectric Structure on Silicon," *Physical Review Applied*, vol. 10, no. 6, 064019, 2018. 

Giovanni DeLuca, Askhat N. Jumabekov, Yinghong Hu, Alexandr N. Simonov, Jianfeng Lu, Boer Tan, Gede W. P. Adhyaksa, Erik C. Garnett, Elsa Reichmanis, Anthony S. R. Chesman, and Udo Bach, "Transparent Quasi-Interdigitated Electrodes for Semitransparent Perovskite Back-Contact Solar Cells," *ACS Applied Energy Materials*, vol. 1 (9), pp. 4473-4478, 2018.

J. R. Gissinger, C. Pramanik, B. Newcomb, S. Kumar, H. Heinz, "Nanoscale Structure-Property Relationships of Polyacrylonitrile/CNT Composites as a Function of Polymer Crystallinity and CNT Diameter", *ACS Applied Materials and Interfaces*, vol. 10, pp. 1017–1027, 2018.

K. Demir, A. El Amrani, K. Ramachandran, V. Sukumaran, Y. Sato, V. Sundaram, P. M. Raj, and R. Tummala, "Reliability of Fine-Pitch Through-Vias in Glass Interposers and Packages for High-Bandwidth Computing and Communications," *Journal of Materials Science: Materials in Electronics*, vol. 29, issue 15, pp. 12669-12680, August 2018.

P. Deshmukh, M. Sharma, S. Nalamati, C. Reynolds Jr, Y. Liu, S. Iyer, "Molecular Beam Epitaxial Growth of High Quality Ga-Catalyzed GaAs 1-xSbx (x>0.8) Nanowires on Si (111) with Photoluminescence Emission reaching 1.7 μm", *Sem. Science & Tech*, vol. 33, p. 125007, 2018. 

W. Ding, C. Wu, Y. Zi, H. Zou, J. Wang, J. Cheng, A. C. Wang and Z. L. Wang, "Self-Powered Wireless Optical Transmission of Mechanical Agitation Signals," *Nano Energy*, 2018.

Y Ding, Y Chen, KC Pradel, W Zhang, M Liu, ZL Wang, "Domain structures and PrCo antisite point defects in double-perovskite $\text{PrBaCo}_2\text{O}_{5+\delta}$ and $\text{PrBa}_0.8\text{Ca}_0.2\text{Co}_2\text{O}_{5+\delta}$ ", *Ultramicroscopy*, vol. 193, pp. 64-70, 2018.

K. Dong, Z. Wu, J. Deng, A. C. Wang, H. Zou, C. Chen, D. Hu, B. Gu, B. Sun and Z. L. Wang, "A Stretchable Yarn Embedded Triboelectric Nanogenerator as Electronic Skin for Biomechanical Energy Harvesting and Multifunctional Pressure Sensing," *Advanced Materials*, 2018.

Dong, N., Fu, X., Lian, G., Lv, S., Wang, Q., Cui, D., Wong, C.-P., "Solvent-Assisted Thermal-Pressure Strategy for Constructing High-Quality $\text{CH}_3\text{NH}_3\text{PbI}_{3-x}\text{Cl}_x$ films as High-Performance Perovskite Photodetectors," *ACS Applied Materials and Interfaces*, vol. 10(10), pp. 8393-8398, 2018.

Eleanor M. Donnelly, Kelsey P. Kubelick, Diego S. Dumani, and Stanislav Y. Emelianov, "Photoacoustic Image-Guided Delivery of Plasmonic-Nanoparticle-Labeled Mesenchymal Stem Cells to the Spinal Cord," *Nano Lett.*, vol. 18 (10), pp 6625–6632, 2018. 

Elena Ewaldz, Riddhi Patel, Manali Banerjee, and Blair K. Brettmann, "Material selection in electrospinning microparticles," *Polymer*, vol. 153, pp. 529-537, 2018. 

T. Fan, H. Moradinejad, X. Wu, A. A. Eftekhar, and A. Adibi, "High-Q Integrated Photonic Microresonators on 3C-SiC-on-Insulator (SiCOI) Platform," *Optics Express*, vol. 26, no. 20, pp. 25814-25826, 2018.

T. Fan, Z. Xia, A. Adibi, and A. A. Eftekhar, "Highly-Uniform Resonator-Based Visible Spectrometer on a Si_3N_4 Platform with Robust and Accurate Post-Fabrication Trimming," *Optics Letters*, vol. 43, no. 20, pp. 4887-4890, 2018.

Fang, H., Bai, S.-L., Wong, C. P., "Microstructure Engineering of Graphene Towards Highly Thermal Conductive Composites," *Composites Part A: Applied Science and Manufacturing*, vol. 112, pp. 216-238, 2108.

Fang, K., Chen, J., Zhou, X., Mei, C., Tian, Q., Xu, J., Wong, C.-P., "Decorating Biomass-Derived Porous Carbon with Fe_2o_3 ultrathin Film for High-Performance Supercapacitors," *Electrochim. Acta*, vol. 261, pp. 198-205, 2018.

Figueroa-Cosme, L., Gilroy, K. D., Yang, T.-H., Vara, M., Park, J., Bao, S., da Silva, A. G. M., Xia, Y., "Synthesis of Pd Nanoscale Octahedra through a One-Pot, Dual-Reductant Route and the Kinetic Analysis," *Chemistry: A European Journal*, vol. 24, pp. 6133-6139, 2018.

Figueroa-Cosme, L., Hood, Z. D., Gilroy, K. D., Xia, Y., "Facile, Robust, Scalable Synthesis of Pd Nanoplates with Hydroxylamine as a Reducing Agent and the Mechanistic Insights from Kinetic Analysis," *Journal of Materials Chemistry C*, vol. 6, pp. 4677-4682, 2018.

Z.E. Fleetwood, A. Ildefonso, G.N. Tzintzarov, B. Wier, U. Raghunathan, M-K.Cho, I. Song, M.T. Wachter, A. Khachatrian, J. Warner, P. McMarr, H. Hughes, S.P. Buchner, D. McMorrow, P. Paki, A. Joseph, V. Jain, and J. D. Cressler, "SiGe HBT Profiles with Enhanced Inverse-Mode Operation to Mitigate Single-Event Transients," *IEEE Transactions on Nuclear Science*, vol. 65, pp. 399-406, 2018.

M. Frounchi, S.G. Rao, and J.D. Cressler, "A Ka-Band SiGe Phase-Controlled Gilbert-cell Based Frequency Doubler with 26.2% PAE," *IEEE Microwave and Wireless Components Letters*, vol. 28, pp. 1122-1124, 2018.

Fu, C., Li, Q., Lu, J., Mateti, S., Cai, Q., Zeng, X., Du, G., Sun, R., Chen, Y., Xu, J., Wong, C.-P., "Improving Thermal Conductivity of Polymer Composites by Reducing Interfacial Thermal Resistance between Boron Nitride Nanotubes," *Compos. Sci. Technol.*, vol. 165, pp. 322-330, 2018.

Fu, W., Zhao, E., Ren, X., Magasinski, A., Yushin, G., "Hierarchical Fabric Decorated with Carbon Nanowire/Metal Oxide Nanocomposites for 1.6 V Wearable Aqueous Supercapacitors," *Advanced Energy Materials*, 1703454, 2018.

Fu, W., Zhao, E., Sun, Z., Ren, X., Magasinski, A., Yushin, "G.Iron Fluoride–Carbon Nanocomposite Nanofibers as Free-Standing Cathodes for High-Energy Lithium Batteries," *Advanced Functional Materials*, 1801711, 2018.

Fu, X., Dong, N., Lian, G., Lv, S., Zhao, T., Wang, Q., Cui, D., Wong, C.-P., "High-Quality $\text{CH}_3\text{NH}_3\text{PbI}_3$ Films Obtained Via a Pressure-Assisted Space-Confining Solvent-Engineering Strategy for Ultrasensitive Photodetectors," *Nano Lett.*, vol. 18(2), pp. 1213-1220, 2018.

P.S. Goley, Z.E. Fleetwood, and J.D. Cressler, "Fundamental Limitations on Integrated Silicon Photonic Waveguides Operating in a Heavy Ion Environment," *IEEE Transactions on Nuclear Science*, vol. 65, no. 1, pp. 141-148, 2018.

Y. Gong, M.-K. Cho, I. Song, and J.D. Cressler, "A 28-GHz Switchless, SiGe Bi-Directional Amplifier Using Neutralized Common-Emitter Differential Pair," *IEEE Microwave and Wireless Components Letters*, vol. 28, pp. 717-719, 2018.

J. L. Gonzalez, P. K. Jo, R. Abbaspour, and M. S. Bakir, "A disposable and self-aligned 3D integrated bio-sensing interface module (BIM) for CMOS cell-based biosensor applications," *IEEE Electron Device Letters*, vol. 39, no. 8, pp. 1215-1218, 2018. 

J. L. Gonzalez, P. K. Jo, R. Abbaspour, and M. S. Bakir, "Flexible Interconnect Design using a Mechanically-focused, Multi-Objective Genetic Algorithm," *IEEE Journal of Microelectromechanical Systems*, vol. 27, no. 4, pp. 67 -685, 2018. 

Gordon, D., Huang, Q., Magasinski, A., Ramanujapuram, A., Bensalah, N., Yushin, G., "Mixed Metal Difluorides as High Capacity Conversion-Type Cathodes: Impact of Composition on Stability and Performance," *Advanced Energy Materials*, 2018.

N.S. Grama, A. M. Nagaraja, S. Gururaja, R. Mohan, "Effect of Process Induced Variables on Machining Characteristics of a Model Epoxy Resin System", *Machining Science and Technology*, vol. 22(5), pp. 811-828, 2018.

Michael T. Griffin, Yuanzheng Zhu, Zixiang Liu, Cyrus K. Aidun, and David N. Ku, "Inhibition of high shear arterial thrombosis by charged nanoparticles," *Biomicrofluidics*, vol. 12, p. 042210, 2018. 

Guan, Z., Wang, C., Li, W., Luo, S., Yao, Y., Yu, S., Sun, R., Wong, C.-P., "A Facile and Clean Process for Exfoliating MoS₂ Nanosheets Assisted by a Surface Active Agent in Aqueous Solution," *Nanotechnology*, vol. 29(42), 2018.

S. Gupta, A. Barrios, N. England, and O.N. Pierron, "Improved very high cycle bending fatigue behavior of Ni microbeams with Au coatings," *Acta Materialia*, vol. 161, pp. 444-455, 2018. 

J.M. Hales, A. Khachatrian, S. Buchner, N.J.-H. Roche, J. Warner, Z.E. Fleetwood, A. Ildefonso, J.D. Cressler, V. Ferlet-Cavrois, and D. McMorrow, "Experimental Validation of an Equivalent LET Approach for Correlating Heavy-Ion and Pulsed-Laser Charge Deposition," *IEEE Transactions on Nuclear Science*, vol. 65, pp. 1724-1733, 2018.

Han, C., Xu, L., Li, H., Shi, R., Zhang, T., Li, J., Wong, C.-P., Kang, F., Lin, Z., Li, B., "Biopolymer-Assisted Synthesis of 3D Interconnected Fe₃O₄@Carbon Core@Shell as Anode for Asymmetric Lithium Ion Capacitors," *Carbon*, vol. 140, pp. 296-305, 2018.

Han, F., Su, X., Huang, M., Li, J., Zhang, Y., Zhao, S., Liu, F., Zhang, B., Wang, Y., Zhang, G., Sun, R., Wong, C.-P., "Fabrication of a Flexible and Stretchable Three-Dimensional Conductor Based on Au-

Ni@Graphene Coated Polyurethane Sponge by Electroless Plating," *J. Mater. Chem. C*, vol. 6(30), pp. 8135-8143, 2018.

S. Y. Han, M. G. Boebinger, N. P. Kondekar, T. J. Worthy, M. T. McDowell, "Seeded Nanowire and Microwire Growth from Lithium Alloys," *Nano Letters*, vol. 18(7), pp. 4331-4337, 2018. 

S. Hanasoge, A. Alexeev, M. Erickson P. J. Hesketh, Y. R. Ortega, "Artificial Cilia for Microfluidics Particle Capture," *Transactions of the ECS*, vol. 86, no. 16, pp. 3-12, 2018.

S. K. G. Hanasoge, A. Alexeev, P. J. Hesketh, "Microfluidic pumping using artificial magnetic cilia," *J. Microsystems and NanoEngineering*, vol. 4, no. 1, pp. 11, 2018.

S. K. G. Hanasoge, P. J. Hesketh, A. Alexeev, "Metachronal motion of artificial magnetic cilia," *Soft Matter*, vol. 14, pp. 3689-3693, 2018.

Hardy ET, Wang YJ, Iyer S, Mannino RG, Sakurai Y, Barker TH, Chi T, Youn Y, Wang H, Brown AC, Lam WA., "Interdigitated Microelectronic Bandage Augments Hemostasis and Clot Formation at Low Applied Voltage in Vitro and in Vivo," *Lab Chip*, vol. 18(19), pp. 2985-2993, 2018. 

Headen DM, Woodward KB, Coronel MM, Shrestha P, Weaver JD, Zhao H, Tan M, Hunckler MD, Bowen WS, Johnson CT, Shea L, Yolcu ES, Garcia AJ, Shirwan H., "Local immunomodulation with Fas ligand-engineered biomaterials achieves allogeneic islet graft acceptance," *Nat Mater*, vol. 17, pp. 732-739, 2018.

Headen DM, García JR, García AJ., "Parallel droplet microfluidics for high throughput cell encapsulation and synthetic microgel generation," *Microsystems & Nanoengineering*, vol. 4, p. 17076, 2018.

R. Herbert, J. Kim, Y. Kim, H. Lee, and W. H. Yeo, "Soft Material-Enabled, Flexible Hybrid Electronics for Medicine, Healthcare, and Human-Machine Interfaces," *Materials*, vol. 11 (2), p. 187, 2018.

B. Høgsaa, E.H. Fini, J.D.C. Christiansen, A. Hung, M. Mousavi, E.A. Jensen, C.G. Sanporean, "A Novel Bioresidue to Compatibilize Sodium Montmorillonite and Linear Low Density Polyethylene," *Industrial & Engineering Chemistry Research*, vol. 57(4), pp. 1213-1224, 2018.

Holt BA, Mac QD, and Kwong GA., "Nanosensors to detect protease activity in vivo for noninvasive diagnostics," *Journal of Visualized Experiments*, 137, e57937, 2018.

Hood, Z. D., Wang, H., Pandian, A. S., Peng, R., Gilroy, K. D., Chi, M., Liang, C., Xia, Y., "Fabrication of Sub-Micrometer-Thick Solid Electrolyte Membranes of β -Li₃PS₄ via Tiled Assembly of Nanoscale, Plate-Like Building Blocks," *Advanced Energy Materials*, vol. 8, 1870096, 2018.

E. Hosseini, S. Gupta, O.N. Pierron and M. Legros, "Size effects on intergranular crack growth mechanisms in ultrathin nanocrystalline gold free-standing thin films," *Acta Materialia*, vol. 143, pp. 77-87, 2018.

C. Howe, S. Mishra, Y. Kim, Y. Chen, S. Ye, W. Wagner, J. Jeong, H. Byun, J. Kim, Y. Chun, and W. H. Yeo, "Stretchable, Implantable, Nanostructured Flow-Diverter System for Quantification of Intra-aneurysmal Hemodynamics," *ACS Nano*, vol. 12, p. 8706, 2018. 

Hao Hu, Bote Zhao, Haoyan Cheng, Shuge Dai, Nicholas Kane, Ying Yu, and Meilin Liu, "A robust 2D organic polysulfane nanosheet with grafted polycyclic sulfur for highly reversible lithium-sulfur batteries," *Nano Energy*, vol. 57, pp. 635-643, 2018.

Hu, J., Huang, Y., Zeng, X., Li, Q., Ren, L., Sun, R., Xu, J.-B., Wong, C.-P., "Polymer Composite with Enhanced Thermal Conductivity and Mechanical Strength through Orientation Manipulating of Bn," *Compos. Sci. Technol.*, vol. 160, pp. 127-137, 2018.

W. Hu, M. A. Filler, "Enhanced Photodesorption from Near- and Mid-Infrared Plasmonic Nanocrystal Thin Films," *J. Vac. Sci. Tech. A*, vol. 36, 2018.

Hu, Y., Zhao, T., Zhu, P., Zhang, Y., Liang, X., Sun, R., Wong, C.-P., "A Low-Cost, Printable, and Stretchable Strain Sensor Based on Highly Conductive Elastic Composites with Tunable Sensitivity for Human Motion Monitoring," *Nano Res.*, vol. 11(4), pp. 1938-1955, 2018.

Rixiang Huang, Ci Fang, Bei Zhang, and Yuanzhi Tang, "Transformations of Phosphorus Speciation during (Hydro)thermal Treatments of Animal Manures," *Environ. Sci. Technol.*, vol. 52 (5), pp 3016–3026, 2018.



T.-C. Huang, V. Smet, S. Kawamoto, M.R. Pulugurtha, and R.R. Tummala, "Accelerated Metastable Solid-liquid Interdiffusion Bonding with High Thermal Stability and Power Handling," *Journal of Elec Materials*, vol. 47(1), pp. 368-377, 2018.

Huang, Y., Chen, Y., Fan, X., Luo, N., Zhou, S., Chen, S.-C., Zhao, N., Wong, C. P., "Wood Derived Composites for High Sensitivity and Wide Linear-Range Pressure Sensing," *Small*, vol. 14(31), 2018.

Zheng-Yang Huo, Jian-Feng Zhou, Yutong Wu, Yin-Hu Wu, Hai Liu, Nian Liu, Hong-Ying Hu, Xing Xie, "A Cu₃P nanowire enabling high-efficiency, reliable, and energy-efficient low-voltage electroporation-inactivation of pathogens in water," *Journal of Materials Chemistry A*, vol. 6(39), pp. 18813-18820, 2018.

A. Idefonso, C.T. Coen, Z.E. Fleetwood, G.N. Tzintzarov, M.T. Wachter, A. Khachatrian, D. McMorrow, S.P. Buchner, J.H. Warner, P. Paki, and J.D. Cressler, "Utilizing SiGe HBT Power Detectors for Sensing Single-Event Transients in RF Circuits," *IEEE Transactions on Nuclear Science*, vol. 65, pp. 239-248, 2018.

A.I. Islam, A. Kelkar, E. Azzi, T.J. Ryan, J.G. Ryan, "STEM Outreach Using In-House and Mobile Demonstrations," *Journal of STEM Education: Innovations and Research*, vol. 19(4), 2018.

Muhymin Islam, Roman Mezencev, Brynn McFarland, Hannah Brink, Betsy Campbell, Bushra Tasadduq, Edmund K. Waller, Wilbur Lam, Alexander Alexeev, and Todd Sulchek, "Microfluidic Cell Sorting by Stiffness to Examine Heterogenic Responses of Cancer Cells to Chemotherapy," *Cell Death and Disease*, vol. 9:239, 2018.

A.T. Issa, K.A. Schimmel, M. Worku, A. Shahbazi, S.A. Ibrahim, R. Tahergorabi, "Sweet Potato Starch-Based Nanocomposites: Development, Characterization, and Biodegradability," *Starch-Stärke*, vol. 70(7-8), p. 1700273, 2018.

Y. Jang, W. T. Choi, C. T. Johnson, A. J. Garcia, P. M. Singh, V. Breedveld, D. W. Hess, and J. A. Champion, "Inhibition of Bacterial Adhesion on Nanotextured Stainless Steel 316L by Electrochemical Etching," *ACS Biomaterials Science & Engineering*, vol. 4, pp. 90-97, 2018.

Jenny L, Dobó J, Gál P, Lam WA, Schroeder V., "MASP-1 of the Complement System Enhances Clot Formation in a Microvascular Whole Blood Flow Model," *PLoS One*, vol. 13(1), e0191292, 2018.

M.-H Ji, J. Kim, T. Detchprohm, Y. Zhu, S.-C. Shen, and R. D. Dupuis, "p-i-p-i-n Separate Absorption and Multiplication Ultraviolet Avalanche Photodiodes with Large Detection Area," *IEEE Photon. Tech. Lett.*, vol. 30, no. 2, pp. 181-184 (2018).

Ji Y, Shang J, Gan Q, et al., "Improvement of Sensitivity by Using Microfabricated Spherical Alkali Vapor Cells for Chip-Scale Atomic Magnetometers," *IEEE Transactions on Components, Packaging and Manufacturing Technology*, vol. 8(10), pp. 1715-1722, 2018.

Ji, Y., Shang, J., Gan, Q., Wu, L., Wong, C.-P., "Improvement of Sensitivity by Using Microfabricated Spherical Alkali Vapor Cells for Chip-Scale Atomic Magnetometers," *IEEE Trans. Compon. Packag. Manuf. Technol.*, vol. 8(10), pp. 1715-1722, 2018.

Ji, Y., Xie, J., Wu, J., Yang, Y., Fu, X.-Z., Sun, R., Wong, C.-P., "Hierarchical Nanothorns Mnco₂O₄ Grown on Porous/Dense Ni Bi-Layers Coated Cu Wire Current Collectors for High Performance Flexible Solid-

State Fiber Supercapacitors," *J. Power Sources*, vol. 393, pp. 54-61, 2018.

Jian, G., Shao, H., Zhang, C., Yan, C., Zhao, N., Song, B., Wong, C. P., "Orientation Dependence of Magnetoelectric Coefficient in 1-3type BaTiO₃/CoFe₂O₄," *J. Magn. Magn. Mater.*, vol. 449, pp. 263-270, 2018.

Jian, G., Zhang, C., Yan, C., Moon, K., Wong, C.-P., "Scalable Preparation of Fully Coated Ag@BaTiO₃ Core@Shell Particles via Poly(vinylpyrrolidone) Assistance for High-k Applications," *ACS Applied Nano Materials*, vol. 1(3), pp. 1396-1405, 2018.

Jiao, S., Lian, G., Jing, L., Xu, Z., Wang, Q., Cui, D., Wong, C.-P., "Sn-Doped Rutile TiO₂ Hollow Nanocrystals with Enhanced Lithium-Ion Batteries Performance," *ACS Omega*, vol. 3(1), pp. 1329-1337, 2018.

Jing, L., Lian, G., Niu, F., Yang, J., Wang, Q., Cui, D., Wong, C.-P., Liu, X., "Few-Atomic-Layered Hollow Nanospheres Constructed from Alternate Intercalation of Carbon and MoS₂ Monolayers for Sodium and Lithium Storage," *Nano Energy*, vol. 51, pp. 546-555, 2018.

P. K. Jo, X. Zhang, J. L. Gonzalez, G. S. May, and M. Bakir, "Heterogeneous Multi-Die Stitching Enabled by Fine-Pitch & Multi-Height Compressible MicroInterconnects (CMIs)," *IEEE Transactions on Electron Devices*, vol. 65, no. 7, pp. 2957-2963, 2018. 

Joglekar, M., Itta, A. K., Kumar, R., Wenz, G. B., Mayne, J., Williams, P. J., Koros, W. J., "Carbon molecular sieve membranes for CO₂/N₂ separations: Evaluating subambient temperature performance," *Journal of Membrane Science*, vol. 569, pp. 1-6, 2018.

I. Ju and J.D. Cressler, "A Highly Efficient X-band Inverse Class-F SiGe HBT Cascode Power Amplifier with Harmonic-tuned Wilkinson Power Combiner," *IEEE Transactions on Circuit and System II, Express Brief*, vol. 65, pp. 1609-1613, 2018.

I. Ju, C. Cheon, and J.D. Cressler, "A Compact, Highly Efficient High Power Ka-band SiGe HBT Cascode Frequency Doubler with Four-Way Input Transformer Balun," *IEEE Transactions on Microwave Theory and Techniques*, vol. 66, pp. 2879-2887, 2018.

G. Jung, C. Tekes, A. Pirouz, F. L. Degertekin, and M. Ghovanloo. "Supply-Doubled Pulse-Shaping High Voltage Pulser for CMUT Arrays." *IEEE Transactions on Circuits and Systems II: Express Briefs* 65, vol. 3, pp. 306-310, 2018.

Kamath, M. G., Fu, S., Itta, A. K., Qiu, W., Liu, G., Swaidan, R., Koros, W. J., "6FDA-DETDA: DABE polyimide-derived carbon molecular sieve hollow fiber membranes: Circumventing unusual aging phenomena," *Journal of Membrane Science*, vol. 546, pp. 197-205, 2018.

Kang, J., Sheng, J., Xie, J., Ye, H., Chen, J., Fu, X.-Z., Du, G., Sun, R., Wong, C.-P., "Tubular Cu(OH)₂ Arrays Decorated with Nanothorny Co-Ni Bimetallic Carbonate Hydroxide Supported on Cu Foam: A 3D Hierarchical Core-Shell Efficient Electrocatalyst for the Oxygen Evolution Reaction," *J. Mater. Chem. A*, vol. 6(21), pp. 10064-10073, 2018.

D. Kao, J.M. Henkin, D.D. Soejarto, A.D. Kinghorn, N.H. Oberlies, "Non-destructive chemical analysis of a Garcinia mangostana L.(Mangosteen) herbarium voucher specimen," *Phytochemistry Letters*, vol. 28, pp. 124-129, 2018.

K. Kim, H. Luo, T. Zhu, O.N. Pierron and S. Graham, "The influence of polymer substrate damage on the time dependent cracking of SiN_x barrier films," *Scientific Reports*, vol. 8, no. 1, p. 4560, 2018.

M. Kim, C. Kim, H. Alrowais, O. Brand, "Multiscale and Uniform Liquid Metal Thin-Film Patterning Based on Soft Lithography for 3D Heterogeneous Integrated Soft Microsystems: Additive Stamping and Subtractive Reverse Stamping Approaches," *Advanced Materials Technologies*, vol. 3, no. 7, pp. 1800061, 2018. 

M. Kim, H. Alrowais, O. Brand, "3D Integrated and Multifunctional All-Soft Physical Microsystems Based on Liquid Metal for Electronic Skin Applications," *Advanced Electronic Materials*, doi: 10.1002/aelm.201700434, 2018. 

M. S. Kim, M. R. Pulugurtha, V. Sundaram, R. R. Tummala, and H. Yun, "Ultrathin High-Q 2-D and 3-D RF Inductors in Glass Packages," *IEEE Transactions on Components, Packaging and Manufacturing Technology*, vol. 8, pp. 643-652, 2018.

M.S. Kim, P. M. Raj, Y. Kim, G. Park, K. Cho. V. Smet, V. Sundaram, J. Kim, and R. Tummala, "Miniaturized and High-Performance RF Packages with Ultra-thin Glass Substrates", *Microelectronics Journal*, vol. 77, pp. 66-72, July 2018.

J. Kimionis, W. Su, J. Hester, J. Bito, X. He, T.-H. Lin and M.M. Tentzeris, "Zero-Power Sensors for Smart Objects: Novel Zero-Power Additively Manufactured Wireless Sensor Modules for IoT Applications", *IEEE Microwave Magazine*, vol.19, no.6, pp.32-47, 2018.

Maxine J. Kirshenbaum, Matthew G. Boebinger, Michael J. Katz, Matthew T. McDowell, and Mita Dasog, "Solid-State Route for the Synthesis of Scalable, Luminescent Silicon and Germanium Nanocrystals." *ChemNanoMat*, vol. 4, pp. 423-429, 2018. 

Kumar, A., Melkote, S.N., "Diamond Wire Sawing of Solar Silicon Wafers: A Sustainable Manufacturing Alternative to Loose Abrasive Slurry Sawing," *Procedia Manufacturing*, vol. 21, pp. 549-566, 2018. 

Kumar, A., Melkote, S.N., "Wear of Diamond in Scribing of Multicrystalline Silicon," *Journal of Applied Physics*, vol. 128, p. 065101, 2018. 

Y. Kwon, Y. Kim, Y. Lee, S. Kwon, M. Lim, Y. Song, Y. Choa, W. H. Yeo, "Ultrahigh Conductivity and Superior Interfacial Adhesion of a Nanostructured, Photonic Sintered Copper Membrane for Printed Flexible Hybrid Electronics," *ACS Applied Materials & Interfaces*, vol. 10 (50), p. 44071, 2018. 

Kwon, Yo-Han, Minnici, Krysten, Park, Jung Jin, Lee, Sujin R, Zhang, Guoyan, Takeuchi, Esther, Takeuchi, Kenneth, Marschilok, Amy, Reichmanis, Elsa, "SWNT Anchored with Carboxylated Polythiophene Links on High-Capacity Li-Ion Battery Anode Materials," *J. Am. Chem. Soc.*, vol. 140(17), pp. 5666-5669, 2018.

Kwon, Yo-Han, Minnici, Krysten, Park, Jung Jin, Lee, Sujin R, Zhang, Guoyan, Takeuchi, Esther, Takeuchi, Kenneth, Marschilok, Amy, Reichmanis, Elsa, "SWNT Networks with Polythiophene Carboxylate Links for High-Performance Silicon Monoxide Electrodes," *ACS Appl. Energy Mater.*, vol.1 (6), pp. 2417-2423, 2018.

Kwon, Yo-Han, Park, Jung Jin, Housel, Lisa, Minnici, Krysten, Zhang, Guoyan, Lee, Sujin R, Lee, Seung Woo, Chen, Zhongming, Noda, Suguru, Takeuchi, Esther, Takeuchi, Kenneth, Marschilok, Amy, Reichmanis, Elsa, "Carbon Nanotube Web with Carboxylated Polythiophene 'Assist' for High-Performance Battery Electrodes," *ACS Nano*, vol. 12(4), pp. 3126-3139, 2018.

Lai, W., Wang, Y., Lei, Z., Wang, R., Lin, Z., Wong, C.-P., Kang, F., Yang, C., "High Performance, Environmentally Benign and Integratable Zn/MnO₂ Microbatteries," *J. Mater. Chem. A*, vol. 6(9), pp. 3933-3940, 2018.

F. A. Larrain, C. Fuentes-Hernandez, W.-F. Chou, V. A. Rodriguez-Toro, T.-Y. Huang, M. F. Toney, B. Kippelen, "Stable Solvent for Solution-Based Electrical Doping of Semiconducting Polymer Films and its Application to Organic Solar Cells," *Energy & Env. Science*, vol. 11, pp. 2216-2224, 2018. 

Lee, D.-C., Lei, D., Yushin, G., "Morphology and Phase Changes in Iron Anodes Affecting their Capacity and Stability in Rechargeable Alkaline Batteries," *ACS Energy Letters*, vol.3, pp. 794-801, 2018.

J. Lee, J. I. Choi, A. E. Cho, S. Kumar, S. S. Jang, Y. H. Kim, "Origin and Control of Polyacrylonitrile Alignment on Carbon Nanotubes and Graphene Nanoribbons", *Advanced Functional Materials*, vol. 28, p. 1706970, 2018.

Lee, K., Phillips, O., Engler, A., Kohl, P. A., and Rand, B., "Phototriggered Depolymerization of Flexible Poly(phthalaldehyde) Substrates by Integrated Light-Emitting Diodes," *ACS Applied Materials and Interfaces*, vol. 10, pp. 28062-28068, 2018.

Lee, S. R., Vara, M., Hood, Z., Zhao, M., Gilroy, K. D., Chi, M., Xia, Y., "Rhodium Decahedral Nanocrystals: Facile Synthesis, Mechanistic Insights, and Experimental Controls," *ChemNanoMat*, vol. 4, pp. 66-70, 2018. 

Timothy J. Lee, Aditi Kumar, Aishwarya H. Balwani, Derrick Brittain, Sam Kinn, Craig A. Tovey, Eva L. Dyer, Nuno M. da Costa, R. Clay Reid, Craig R. Forest, and Daniel J. Bumbarger, "Large-scale neuroanatomy using LASSO: Loop-based Automated Serial Sectioning Operation," *PLoS ONE*, vol. 13(10), p. e0206172, 2018. 

Y. Lee, C. Howe, S. Mishra, D. Lee, M. Mahmood, M. Piper, Y. Kim, K. Tieu, H. Byun, J. Coffey, M. Shayan, Y. Chun, R. Costanzo, and W. H. Yeo "Wireless, Intraoral Hybrid Electronics for Real-Time Quantification of Sodium Intake Toward Hypertension Management," *Proceedings of the National Academy of Sciences of the United States of America*, vol. 115 (21), p. 5377, 2018.

Lei, D., Lee, D.-C., Zhao, E., Magasinski, A., Jung, H.-R., Berdichevsky, G., Steingart, D., Yushin, G., "Iron Oxide Nanoconfined in Carbon Nanopores as High Capacity Anode for Rechargeable Alkaline Batteries," *Nano Energy*, vol. 48, pp. 170-179, 2018.

C. Z. Leng, M. D. Losego, "A physiochemical processing kinetics model for the vapor phase infiltration of polymers: measuring the energetics of precursor-polymer sorption, diffusion, and reaction," *Phys. Chem. Chem. Phys.*, vol. 20, pp. 21506, 2018. 

Li, G., He, Y., Zhu, P., Zhao, T., Sun, R., Lu, D., Wong, C.-P., "Tailored Surface Chemistry of SiO₂ Particles with Improved Rheological, Thermal-Mechanical and Adhesive Properties of Epoxy Based Composites for Underfill Applications," *Polymer*, vol. 156, pp. 111-120, 2018.

Li, H., Wu, T., Shen, S., Xie, M., Shi, Y., Zhao, M., Yang, X., Figueroa-Cosme, L., Ke, Q., Xia, Y., "Enhancing the Tactile and Near-Infrared Sensing Capabilities of Electrospun PVDF Nanofibers with the Use of Gold Nanocages," *Journal of Materials Chemistry C*, vol. 6, pp. 10263-10269, 2018.

Li, J., Liu, Q., Ho, D., Zhao, S., Wu, S., Ling, L., Han, F., Wu, X., Zhang, G., Sun, R., Wong, C.-P., "Three-Dimensional Graphene Structure for Healable Flexible Electronics Based on Diels-Alder Chemistry," *ACS Applied Materials and Interfaces*, vol. 10(11), pp. 9727-9735, 2018.

R. Li, A. Shahbazi, L.J. Wang, B. Zhang, C.C Chung, D. Dayton, Q. Yuan, "Nanostructured molybdenum carbide on biochar for CO₂ reforming of CH₄," *Fuel*, vol. 225, pp. 403-410, 2018.

Li, Y., Chen, J., Ji, Y., Yang, W., Fu, X.-Z., Sun, R., Wong, C.-P., "Hierarchical Graphite Foil/CoNi₂S₄ Flexible Electrode with Superior Thermal Conductivity for High-Performance Supercapacitors," *Journal of Energy Chemistry*, vol. 27(2), pp. 463-471, 2018.

Li, Y., Yang, W., Ding, S., Fu, X.-Z., Sun, R., Liao, W.-H., Wong, C.-P., "Tuning Dielectric Properties and Energy Density of Poly(Vinylidene Fluoride) Nanocomposites by Quasi Coreshell Structured BaTiO₃@Graphene Oxide Hybrids," *J. Mater. Sci.: Mater. Electron.*, vol. 29(2), pp. 1082-1092, 2018.

Li, Y., Ye, H., Chen, J., Wang, N., Sun, R., Wong, C.-P., "Flexible -Ni(OH)₂/Graphene Electrode with High Areal Capacitance Enhanced by Conductive Interconnection," *J. Alloys Compd.*, vol. 737, pp. 731-739, 2018.

Xiaxi Li, Kevin Blinn, Dongchang Chen, Meilin Liu, "In-situ and Surface Enhanced Raman Spectroscopy Study of Electrode Materials in Solid Oxide Fuel Cells," *Electrochemical Energy Reviews*, vol. 1 (3), pp. 433-459, 2018.

Z. Li, B. Qi, X. Zhang, S. Zeinolabedinzadeh, X. Tao, L. Sang, R. Cao, and J.D. Cressler, "A 0.32 THz SiGe Imaging Array with Polarization Diversity," *IEEE Transactions on Terahertz Science and Technology*, vol. 8, pp. 215-223, 2018.

Liao, J., Zou, P., Su, S., Nairan, A., Wang, Y., Wu, D., Wong, C.-P., Kang, F., Yang, C., "Hierarchical Nickel Nanowire@NiCo₂S₄ Nanowhisker Composite Arrays with a Test-Tube-Brush-Like Structure for High-Performance Supercapacitors," *J. Mater. Chem. A*, vol. 6(31), pp. 15234-15293, 2018.

Chun Hao Lin, Qingji Zeng, Evan Lafalce, Shengtao Yu, Marcus J. Smith, Young Jun Yoon, Yajing Chang, Yang Jiang, Zhiqun Lin, Zeev Valy Vardeny, Vladimir V. Tsukruk, "Large-Area Lasing and Multicolor Perovskite Quantum Dot Patterns", *Advanced Optical Materials*, vol. 6(16), 1800474, 2018.

Ling, L., Li, J., Zhang, G., Sun, R., Wong, C.-P., "Self-Healing and Shape Memory Linear Polyurethane Based on Disulfide Linkages with Excellent Mechanical Property," *Macromol. Res.*, vol. 26(4), pp. 365-373, 2018.

Anna Liu, Muhymin Islam, Nicholas Stone, Vikram Varadarajan, Jenny Jeong, Samuel Bowie, Peng Qiu, Edmund K. Waller, Alexander Alexeev, Todd Sulcik, "Microfluidic Generation of Transient Cell Volume Exchange for Convectively Driven Intracellular Delivery of Large Macromolecules," *Materials Today*, 2018.

C.S. Liu, R. Tabrizian and F. Ayazi, "A ± 0.3 ppm Oven-Controlled MEMS Oscillator Using Structural Resistance-Based Temperature Sensing," *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, vol. 65, issue 8, pp. 1492-1499, 2018.

F. Liu, C. Nair, A. Kubo, T. Ando, F. Wei, V. Sundaram, and R. R. Tummala, "Organic Damascene Process for 1.5 μm Panel-Scale Redistribution Layer Technology using 5 μm Thick Dry Film Photosensitive Dielectrics," *IEEE CPMT*, vol. 8, issue 5, pp. 792-801, May 2018.

Liu, G., Cadiau, A., Liu, Y., Adil, K., Chernikova, V., Carja, I.-D., Belmabkhout, Y., Karunakaran, M., Shekhah, O., Zhang, C., Itta, A. K., Yi, S., Eddaoudi, M., Koros, W. J., "Enabling Fluorinated MOF-Based Membranes for Simultaneous Removal of H₂S and CO₂ from Natural Gas," *Angewandte Chemie-International Edition*, vol. 57 (45), pp. 14811-14816, 2018.

Liu, G., Labreche, Y., Chernikova, V., Shekhah, O., Zhang, C., Belmabkhout, Y., Eddaoudi, M., Koros, W. J., "Zeolite-like MOF nanocrystals incorporated 6FDA-polyimide mixed-matrix membranes for CO₂/CH₄ separation," *Journal of Membrane Science*, vol. 565, pp. 186-193, 2018.

Liu, L., and Kohl, P. A., "Anion Conducting Multiblock Copolymers with Different Tethered Cations," *Journal of Polymer Science A*, vol. 56, pp. 1395-1403, 2018.

Liu, L., Huang, G., and Kohl, P. A., "Anion Conducting Multiblock Copolymers with Multiple Head-Groups," *Journal of Materials Chemistry A*, vol. 6, pp. 9000-9008, 2018.

R. Liu, N. Wang, N. Asmare, and A. F. Sarioglu, "Scaling code-multiplexed electrode networks for distributed Coulter detection in microfluidics," *Biosens. Bioelectron.*, doi:10.1016/j.bios.2018.07.075, 2018.

Liu, S., Zhao, B., Jiang, L., Zhu, Y.-W., Fu, X.-Z., Sun, R., Xu, J.-B., Wong, C.-P., "Core-Shell Cu@Rgo Hybrids Filled in Epoxy Composites with High Thermal Conduction," *J. Mater. Chem. C*, vol. 6(2), pp. 257-265, 2018.

Liu, S.-Q., Wen, H.-R., Ying, G., Zhu, Y.-W., Fu, X.-Z., Sun, R., Wong, C.-P., "Amorphous Ni(OH)₂ Encounter with Crystalline Cus in Hollow Spheres: A Mesoporous Nano-Shelled Heterostructure for

Hydrogen Evolution Electrocatalysis,” *Nano Energy*, vol. 44, pp.7-14, 2018.

Tianyuan Liu, Byeongyong Lee, Byoung Gak Kim, Michael J. Lee, Jinho Park, and Seung Woo Lee, “In Situ Polymerization of Dopamine on Graphene Framework for Charge Storage Applications,” *Small*, vol. 14, p. 1801236, 2018. 

Tianyuan Liu, Byeongyong Lee, Michael J. Lee, Jinho Park, Zhongming Chen, Suguru Noda, and Seung Woo Lee, “Improved Capacity of Redox-Active Functional Carbon Cathode by Dimension Reduction for Hybrid Supercapacitors,” *Journal of Materials Chemistry A*, vol. 6, pp. 3367 – 3375, 2018. 

Liu, Y., Liu, G., Zhang, C., Qiu, W., Yi, S., Chernikova, V., Chen, Z., Belmabkhout, Y., Shekhhah, O., Eddaoudi, M., Koros, W., “Enhanced CO₂/CH₄ Separation Performance of a Mixed Matrix Membrane Based on Tailored MOF-Polymer Formulations,” *Advanced Science*, vol. 5 (9), 2018.

Y. Liu, Z. Zeng, B. Bloom, D. Waldeck, J. Wei, “Stable Low-current Electrodeposition of α-MnO₂ on Super-aligned Electrospun Carbon Nanofibers for High-performance Energy Storage,” *Small*, vol. 14(3) p. 201703237, 2018. 

A. Lotfi, M. Navaei, P. J. Hesketh, “A Platinum Cantilever-based TCD for 3-Omega Sensing of Gas Mixtures,” *Transactions of the ECS*, vol. 86, no. 16, pp. 71-78, 2018.

N.E. Lourenco, A. Ildefonso, G.N. Tzintzarov, Z.E. Fleetwood, K. Motoki, P. Paki, M. Kaynak, and J.D. Cressler, “Single-Event Upset Mitigation in a Complementary SiGe HBT BiCMOS Technology,” *IEEE Transactions on Nuclear Science*, vol. 65, pp. 231-238, 2018.

J. Luo, H. Chang, P. H. Wang, R. J. Moon, S. Kumar, “Cellulose nanocrystals effect on the stabilization of polyacrylonitrile composite films”, *Carbon*, vol. 134, pp. 92-102, 2018.

J. Luo, N. Semenikhin, H. Chang, R. J. Moon, S. Kumar, “Post-sulfonation of cellulose nanofibrils with a one-step reaction to improve dispersibility”, *Carbohydrate Polymers*, vol. 181, pp. 247-255, 2018.

Jian Luo, Wei Yuan, Shimin Huang, Bote Zhao, Yu Chen, Meilin Liu, Yong Tang, “From Checkerboard-Like Sand Barriers to 3D Cu@CNF Composite Current Collectors for High-Performance Batteries,” *Advanced Science*, vol. 5, p. 1800031, 2018.

Lyu, Z., Gilroy, K. D., Xie, M., Hood, Z. D., Zhao, M., Zhou, S., Liu, J., Xia, Y., “A Rationally Designed Route to the One-Pot Synthesis of Right Bipyramidal Nanocrystals of Copper,” *Chemistry of Materials*, vol. 30, pp. 6469-6477, 2018.

Ma, C., Koros, W. J., “Physical aging of ester-cross-linked hollow fiber membranes for natural gas separations and mitigation thereof,” *Journal of Membrane Science*, vol. 551, pp. 214-221, 2018.

Ma, R., Gordon, D., Yushin, G., Tsukruk, V. V., “Robust and Flexible Micropatterned Electrodes and Micro-Supercapacitors in Graphene–Silk Biopapers,” *Advanced Materials Interfaces*, vol. 5, 1801203, 2018.

T. Mabe, Z. Zeng, B. Bagra, J. Ryan, J. Wei, “Surface Plasmon Resonance of a Bimetallic Nanostructured Film for Enhanced Optical Sensitivity,” *ChemistrySelect*, vol. 3, pp. 3018-3023, 2018. 

Mac QD, Mathews DV, Kahla JA, Stoffers C, Delmas OM, Holt BA, Adams AB, and Kwong GA., “Noninvasive early detection of acute transplant rejection via granzyme-B activity nanosensors,” *Nature Biomedical Engineering*, 2018.

Mac QD, Mathews D, Kahla J, Stoffers C, Delmas O, Holt B, Adams A, and Kwong GA., “Activity nanosensors for early and noninvasive detection of acute organ transplant rejection,” *American Journal of Transplantation*, vol. 18, pp. 399-400. 2018.

Mac QD, Mathews D, Kahla J, Stoffers C, Delmas O, Holt B, Adams A, and Kwong GA., "Sensing T cell killing activity with granzyme B activity probesm," *American Journal of Transplantation*, vol. 18, pp. 492-493, 2018.

Robert G. Mannino, David R. Myers, Erika A. Tyburski, Christina Caruso, Jeanne Boudreaux, Traci Leong, G. D. Clifford, and Wilbur A. Lam, "Smartphone app for non-invasive detection of anemia using only patient-sourced photos," *Nature Communications*, vol. 9, p. 4924, 2018. 

J. McKenzie, S. Desai, "Investigating Sintering Mechanisms for Additive Manufacturing of Conductive Traces," *American Journal of Engineering and Applied Science*, Vol. 11, No. 2, pp. 652-662, 2018. 

X. Meng, X. Cui, M. Rager, S. Zhang, Z. Wang, J. Yu, Y. Harn, Z. Kang, B. K. Wagner, Y. Liu, C. Yu, J. Qiu, and Z. Lin, "Cascade charge transfer enabled by incorporating edge-enriched graphene nanoribbons for mesostructured perovskite solar cells with enhanced performance," *Nano Energy*, vol. 52, p. 123, 2018.

K. Mehta, Y-S. Liu, J. Wang, H. Jeong, T. Detchprohm, Y.J. Park, S.R. Alugubelli, S. Wang, F.A. Ponce, S-C. Shen, R.D. Dupuis, P.D. Yoder, "Lateral Current Spreading in III-N Ultraviolet-cavity Surface-emitting Lasers Using Modulation-doped Short Period Superlattices," *IEEE Journal of Quantum Electronics*, vol. 54, no. 4, p. 2400507, 2018.

A. K. Menon, R. M. W. Wolfe, S. R. Marder, John R. Reynolds, S. K. Yee, "Systematic Power Factor Enhancement in n-Type NiETT/PVDF Composite Films", *Adv. Funct. Mater.*, vol. 28, p. 1801620, 2018.

Michael McBride, Nils Persson, Danny Keane, Guillermo Bacardi, Elsa Reichmanis; Martha Grover, "A Polymer Blend Approach for Creation of Effective Conjugated Polymer Charge Transport Pathways," *ACS Appl. Mater. Interfaces*, vol. 10 (42), pp. 36464-36474, 2018.

McClure, J., Chu, D., Kohl, P. A., and Ahlfield, J., "Understanding Transport at the Acid-Alkaline Interface of Bipolar Membranes," *Innovations in Army Energy and Power Materials Technologies*, vol. 36, pp. 219, 2018.

K. Mehta, Y. Liu, J. Wang, H. Jeong, T. Detchprohm, Y. Park, S. Algubelli, S. Wang, F. Ponce, S.-C. Shen, R. Dupuis, and P. Yoder, "Lateral Current Spreading in III-N Ultraviolet Vertical-Cavity Surface-Emitting Lasers Using Modulation-Doped Short Period Superlattices," *IEEE Journal of Quantum Electronics*, vol. 54, no. 4, 2400507, August 2018.

Mehta, Karan, Liu, Yuh-Shiuan, Wang, Jialin, Jeong, Hoon, Detchprohm, Theeradetch, Park, Young Jae, Alugubelli, Shanthan Reddy, Wang, Shuo, Ponce, Fernando A, Shen, Shyh-Chiang, Dupuis, Russell D, Yoder, P Douglas, "Theory and Design of Electron Blocking Layers for III-N-Based Laser Diodes by Numerical Simulation," *IEEE J. Quant. Electron.*, vol. 54, no. 6, p. 2001310, 2018.

A. K. Menon, R. M. Wolfe, S. R. Marder, J. R. Reynolds, "Systematic Power Factor Enhancement in n-Type NiETT/PVDF Composite Films," *Adv. Func. Mater.*, vol. 28, 1801620, 2018.

Miller IC, Gamboa Castro M, Maenza J, Weis JP, and Kwong GA., "Remote control of mammalian cells with heat-triggered gene switches and photothermal pulse trains," *ACS Synthetic Biology*, vol. 7(4), pp. 1167–1173, 2018. 

K. Mohan, N. Shahane, R. Liu, V. Smet, and A. Antoniou, "A Review of Nanoporous Metals in Interconnects," *JOM*, vol. 70(10), pp. 2192-2204, 2018.

A. Muhammad et al., "A screen printed carbon electrode modified with carbon nanotubes and gold nanoparticles as a sensitive electrochemical sensor for determination of thiamphenicol residue in milk," *Rsc Advances*, vol. 8, no. 5, pp. 2714-2722, 2018.

R. Nashed, C. Pan, K. Brenner, and A. Naeemi, "Field emission from graphene sheets and its application in floating gate memories," *Semiconductor Science and Technology*, vol. 33 (12), p. 125003.

S.A.Nauroze, L.S.Novelino, M.M.Tentzeris and G.H.Paulino, "Continuous-Range Tunable Multi-Layer Frequency Selective Surfaces Using Origami and Inkjet Printing", *Proceedings of National Academy of Science*, vol.115, no.52, pp.13210-13215, 2018.

M. Nazemi, S.R. Panikkanvalappil, and M. A. El-Sayed, "Enhancing the rate of electrochemical nitrogen reduction reaction for ammonia synthesis under ambient conditions using hollow gold nanocages," *Nano Energy*, vol. 49, pp. 316-323, 2018. 

M. Nazemi and M. A. El-Sayed, "Electrochemical Synthesis of Ammonia from N₂ and H₂O under Ambient Conditions Using Pore-Size-Controlled Hollow Gold Nanocatalysts with Tunable Plasmonic Properties," *J. Phys. Chem. Lett.*, vol. 9 (17), pp 5160–5166, 2018. 

H. Nguyen, T. Chi, S. Li, and H. Wang, "A Linear High-Efficiency Millimeter-Wave CMOS Doherty Radiator Leveraging Multi-Feed On-Antenna Active Load-Modulation," *IEEE J. of Solid-State Circuits*, vol. 53, no. 12, pp. 3587 - 3598, 2018.

Niu, G., Zhang, L., Ruditskiy, A., Wang, L., Xia, Y., "A Droplet Reactor System Capable of Automation for the Continuous and Scalable Production of Noble-Metal Nanocrystals," *Nano Letters*, vol. 18, pp. 3879-3884, 2018.

A.N. Ofori-Boadu, R. Abrokwaah, S. Gbewonyo, E. Fini, "Effect of Swine-waste Bio-Char Treatment Temperatures on Water Absorption Characteristics of Cement Pastes," *International Journal of Building Pathology and Adaptation*, vol. 36(3), pp. 283-299, 2018.

A.N. Ofori-Boadu, F. Aryeetey, Z. Assefa, E. Fini, "Hydration of Modified Cement Pastes with Swine-waste Bio-char," *International Journal of Modern Engineering*, vol. 18 (2), p. 33, 2018.

Y.-W. Ok, A. M. Tam, Ying-Yuan Huang, Vijay Yelundur, Arnab Das, Adam M. Payne, Vinodh Chandrasekaran, Ajay D. Upadhyaya, Aditi Jain, and Ajeet Rohatgi, "Screen Printed, Large Area Bifacial N-type Back Junction Silicon Solar Cells with Selective Phosphorus Front Surface Field and Boron Doped Poly-Si/SiO_x Passivated Rear Emitter," *Applied Physics*, letter 113, 263901, 2018.

D. Oldham, A. Hung, M.M. Parast, E.H. Fini, "Investigating bitumen rejuvenation mechanisms using a coupled rheometry-morphology characterization approach," *Construction and Building Materials*, vol. 159, pp. 37-45, 2018.

Orlando, T. M., Jones, B., Paty, C., Schaible, M. J., Reynolds, J. R., First, P. N., Robinson, S. K., Saponara, V. L., Beltran, E., "Catalyst: Radiation Effects on Volatiles and Exploration of Asteroids and the Lunar Surface," *Chem*, vol. 4, no. 1, pp. 8–12, 2018.

F. Pahlavan, A.M. Hung, E.H. Fini, "Evolution of molecular packing and rheology in asphalt binder during rejuvenation," *Fuel*, vol. 222, pp. 457-464, 2018.

F. Pahlavan, A.M. Hung, M. Zadshir, S. Hosseinnezhad, E.H. Fini, "Alteration of π -electron distribution to induce deagglomeration in oxidized polar aromatics and asphaltenes in an aged asphalt binder," *ACS Sustainable Chemistry & Engineering*, vol. 6(5), pp. 6554-6569, 2018.

F. Pahlavan, M. Mousavi, A.M. Hung, E.H. Fini, "Characterization of oxidized asphaltenes and the restorative effect of a bio-modifier," *Fuel*, vol. 212, pp. 593-604, 2018.

V.Palazzi, J.Hester, J.Bito, F.Alimenti, C.Kalialakis, A.Collado, P.Mezzanotte, A.Georgiadis, L.Roselli and M.M.Tentzeris, "A Novel Ultra-Lightweight Multiband Rectenna on Paper for RF Energy Harvesting in the Next Generation LTE Bands," *IEEE Transactions on Microwave Theory and Techniques*, vol.66, no.1, pp.366-379, 2018.

W-J Pan, SY Lee, J Billings, M Nezafati, W Majeed, E Buckley, S Keilholz, "Detection of neural light-scattering activity *in vivo*: optical transmittance studies in the rat brain," *Neuroimage*, vol. 179, pp. 207-214, 2018.

Pan, Z., Liang, S., Garmestani, H., Shih, D., Hoar, E., "Residual Stress Prediction based on MTS model during Machining Ti-6Al-4V," *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*, 2018.

Z. P. Pan, A. Tabei, D. S. Shih, H. Garmestani, and S. Y. Liang, "The effects of dynamic evolution of microstructure on machining forces," *Proceedings of the Institution of Mechanical Engineers Part B-Journal of Engineering Manufacture*, vol. 232, no. 14, Dec 2018.

M. Papakyriakou, X. Wang, and S. Xia, "Characterization of Stress-Diffusion Coupling in Lithiated Germanium by Nanoindentation," *Exp. Mech.*, vol. 58, p. 613, 2018. 

Pardue, C., Bellaredj, M., Davis, A., Fujii, T., Kohl, P. A., and Swaminathan, M., "Design and Characterization of Inductors for Self-Powered IoT Edge Devices," *IEEE Components, Manufacturing, and Packaging Technology*, vol. 8, pp. 1263-1271, 2018.

C. Pardue, M. L. F. Bellaredj, H. M. Torun, M. Swaminathan, P. A. Kohl, A. K. Davis, "RF Wireless Power Transfer using Integrated Inductor," *IEEE transactions on components, packaging and manufacturing technology*, 2018.

J. Park, S. I. Grijalva, M. K. Aziz, T. Chi, S. Li, M. N. Sayegh, A. Wang, H. Cho and H. Wang, "Multi-parametric cell profiling with a CMOS quadmodality cellular interfacing array for label-free fully automated drug screening," *Lab Chip*, vol. 18, pp. 3037-3050, 2018.

J. Park, Y. Wang, S. Pellerano, C. Hull, and H. Wang, "A CMOS Wideband Current-Mode Digital Polar Power Amplifier with Built-In AM-PM Distortion Self-Compensation," *IEEE J. of Solid-State Circuits*, vol. 53, no. 2, pp. 340 - 356, 2018.

Kalina Paunovska, Carmen J. Gil, Melissa P. Lokugamage, Cory D. Sago, Manaka Sato, Gwyn N. Lando, Marielena Gamboa Castro, Anton V. Bryksin, and James E. Dahlman, "Analyzing 2000 in Vivo Drug Delivery Data Points Reveals Cholesterol Structure Impacts Nanoparticle Delivery," *ACS Nano*, vol. 12 (8), pp 8341–8349, 2018. 

Kalina Paunovska, Cory D. Sago, Christopher M. Monaco, William H. Hudson, Marielena Gamboa Castro, Tobi G. Rudoltz, Sujay Kalathoor, Daryll A. Vanover, Philip J. Santangelo, Rafi Ahmed, Anton V. Bryksin, and James E. Dahlman, "A Direct Comparison of in Vitro and in Vivo Nucleic Acid Delivery Mediated by Hundreds of Nanoparticles Reveals a Weak Correlation," *Nano Lett.*, vol. 18 (3), pp 2148–2157, 2018. 

C. J. Perini, M. J. Muller, B. K. Wagner, and E. M. Vogel, "Low-temperature, plasma assisted, cyclic synthesis of MoS₂," *Journal of Vacuum Science & Technology B*, vol. 36, p. 031201, 2018.

C. J. Perini, P. Basnet, M. P. West, and E. M. Vogel, "Impact of Synthesized MoS₂ Wafer-Scale Quality on Fermi Level Pinning in Vertical Schottky-Barrier Heterostructures," *ACS Applied Materials & Interfaces*, vol. 10, pp. 39860-39871, 2018. 

A. Pirouz, and F. Levent Degertekin. "Low Temperature CMUT Fabrication Process with Dielectric Lift-Off Membrane Support for Improved Reliability." *Journal of Micromechanics and Microengineering*, vol. 28, no. 8, 2018: 085006.

S. L. Pittelli, D. E. Shen, A. M. Österholm, J. R. Reynolds, "Chemical Oxidation of Polymer Electrodes for Redox Active Devices: Stabilization through Interfacial Interactions," *ACS Appl. Mater. Interfaces.*, vol. 10, pp. 970-978, 2018.

Pogue, V., Melkote, S.N., Danyluk, S., "Measurement and Analysis of Residual Stresses in Multi-Crystalline Silicon Photovoltaic Wafers Due to Casting and Wire Sawing," *Materials Science in Semiconductor Processing*, vol. 75, pp. 173-182, 2018.

P. Pooyan, L. P. Brewster, R. Tannenbaum, and H. Garmestani, "Biomimetic synthesis of two different types of renewable cellulosic nanomaterials for scaffolding in tissue engineering," *Green Processing and Synthesis*, vol. 7, no. 3, pp. 181-190, 2018.

R. Pourabolghasem, R. Dehghannejad, A. A. Eftekhar, A. Adibi, "Waveguiding Effect in the Gigahertz Frequency Range in Pillar-Based Phononic-Crystal Slabs," *Physical Review Applied*, vol. 9, no. 1 014013, 2018. 

A.P.G. Prakash, V.N. Hegde, T.M. Pradeep, N. Pushpa, P.K. Bajpai, S.P. Patel, T. Trivedi, and J.D. Cressler, "5 MeV Proton Irradiation Effects on 200 GHz Silicon-Germanium Heterojunction Bipolar Transistors," *Journal of Radiation Effects and Defects in Solids*, DOI: 10.1080/10420150.2017.1418874, 2018.

C. Pramanik, D. Nepal, M. Nathanson, J. R. Gissinger, A. Garley, R. J. Berry, A. Davijani, S. Kumar, H. Heinz, "Molecular Engineering of Interphases in Polymer/Carbon Nanotube Composites to Reach the Limits of Mechanical Performance", *Composites Science and Technology*, vol. 166, pp. 86-94, 2018.

Qian, J., Shen, M., Zhou, S., Lee, C.-T., Zhao, M., Lyu, Z., Hood, Z. D., Vara, M., Gilroy, K. D., Wang, K., Xia, Y., "Synthesis of Pt Nanocrystals with Different Shapes Using the Same Protocol to Optimize their Catalytic Activity Toward Oxygen Reduction," *Materials Today*, vol. 21, pp. 834-844, 2018.

Qiu Y, Ahn B, Sakurai Y, Hansen CE, Tran R, Mimche PN, Mannino RG, Lamb TJ, Joiner CH, Ofori-Acquah SF, Lam WA. "Microvasculature-on-a-Chip for the Long-Term Study of Endothelial Barrier Dysfunction and Microvascular Obstruction in Disease," *Nature Biomedical Engineering*, vol. 2, pp. 453-463, 2018. 

C Qu, Z Liang, Y Jiao, B Zhao, B Zhu, D Dang, S Dai, Y Chen, R Zou, M Liu, " "One-for-All" Strategy in Fast Energy Storage: Production of Pillared MOF Nanorod-Templated Positive/Negative Electrodes for Application of High-Performance Hybrid Supercapacitors," *Small*, vol. 14, p. 1800285, 2018.

P. M. Raj, "Next-Generation Nanopackaging [Guest Editorial]," *IEEE Nanotechnology Magazine*, vol. 12, pp. 4-5, 2018.

P. M. Raj, R. G. Spurney, S. Dwarakanath, K. Mohanalingam, and R. Tummala, "Nanostructures for Enabling Implantable Bioelectronic Systems," in *2018 IEEE 13th Nanotechnology Materials and Devices Conference (NMDC)*, pp. 1-5, 2018.

Bailey Risteen, Gwendoline Delepierre, Christoph Weder, Paul Russo, Elsa Reichmanis, Justin Zoppe, "Thermally switchable liquid crystals based on cellulose nanocrystals with patchy polymer grafts," *Small*, vol. 14, issue 2, 1703086, 2018.

V. Raghavan, P. Gulgunje, K. Gupta, M. G. Kamath, Y. Liu, C. Pramanik, B. Newcomb, H. G. Chae, S. Kumar, "Correlation between inhomogeneity in polyacrylonitrile spinning dopes and carbon fiber tensile strength", *Polymer Engineering and Science*, 2018.

U.S. Raghunathan, R.P. Martinez, B.R. Wier, A.P. Omprakash, H. Ying, T.G. Bantu, H. Yasuda, P. Menz, and J.D. Cressler, "Hot-Carrier-Damage-Induced Current Gain Enhancement (CGE) Effects in SiGe HBTs," *IEEE Transactions on Electron Devices*, vol. 65, pp. 2430-2438, 2018.

Ramanujapuram, A., Yushin, G., "Understanding the Exceptional Performance of Lithium-Ion Battery Cathodes in Aqueous Electrolytes at Subzero Temperatures," *Advanced Energy Materials*, vol. 8, 1802624, 2018.

Ren, L., Li, Q., Lu, J., Zeng, X., Sun, R., Wu, J., Xu, J.-B., Wong, C.-P., "Enhanced Thermal Conductivity for Ag-Deposited Alumina Sphere/Epoxy Resin Composites through Manipulating Interfacial Thermal Resistance," *Composites Part A: Applied Science and Manufacturing*, vol. 107, pp. 561-569, 2018.

Ren, X., Turcheniuk, K., Lewis, D., Fu, W., Magasinski, A., Schauer, M. W., Yushin, G., "Iron Phosphate Coated Flexible Carbon Nanotube Fabric as a Multifunctional Cathode for Na-Ion Batteries," *Small*, 1703425, 2018.

Ren, X., Turcheniuk, K., Lewis, D., Fu, W., Magasinski, A., Zhang, M., Yushin, G., "Conformal Vapor Deposition of Iron Phosphate onto Carbon Nanotubes for Flexible High-Rate Cathodes," *Materials Today Energy*, vol. 8, pp. 143-150, 2018.

C. Rosu, H. Lin, L. Jiang, V. Breedveld, and D. W. Hess, "Sustainable and Long-time 'Rejuvenation' of Biomimetic Water-repellent Silica Coating on Polyester Fabrics Induced by Rough Mechanical Abrasion," *Journal of Colloid and Interface Science*, vol. 516, pp. 202-214, 2018. 

Cornelia Rosu, Yeongseon Jang, Lu Jiang, and Julie Champion, "Nature-Inspired and "Water-Skating" Paper and Polyester Substrates Enabled by the Molecular Structure of Poly(γ -stearyl- α ,l-glutamate) Homopolypeptide," *Biomacromolecules*, vol. 19 (12), pp 4617–4628, 2018. 

Thomas J. Rudzik and Rosario A. Gerhardt, "Comparison of hot pressing and spark plasma sintering in the densification behavior of indium tin oxide-borosilicate glass composites," *J Am Ceram Soc.*, vol. 101, pp. 577-589, 2018.

K. Ryu, K. Madani, A. Rohatgi, and Y.-W. Ok. "High Efficiency Screen-Printed N-Type Silicon Solar Cell using Co-Diffusion of APCVD Boron Emitter and POCl₃ Back Surface Field." *Current Applied Physics*, vol. 18, no. 2, pp. 231-235, 2018.

Sakurai Y, Hardy ET, Ahn B, Tran R, Fay ME, Ciciliano JC, Mannino RG, Myers DR, Qiu Y, Carden MA, Baldwin WH, Meeks SL, Gilbert GE, Jobe SM, Lam WA. "A Microengineered Vascularized Bleeding Model that Integrates the Principal Components of Hemostasis." *Nature Communications*, vol. 9(1), p.509, 2018. 

Samet, D., Rambhatla, V. N. N. T., Kwatra, A., Sitaraman, S. K., "A Fatigue Crack Propagation Model with Resistance Curve Effects for an Epoxy/Copper Interface," *Engineering Fracture Mechanics*, vol. 180, pp. 60-72, 2018.

Sanyal, O., Hicks, S. T., Bhuwania, N., Hays, S., Kamath, M. G., Karwa, S., Swaidan, R., Koros, W. J., "Cause and effects of hyperskin features on carbon molecular sieve (CMS) membranes," *Journal of Membrane Science*, vol. 551, pp. 113-122, 2018.

Kipp Schoenwald and Todd Sulcik, "High Force Sensitivity Composite Nanofluidic AFM Cantilever," *JMEMS*, 2018.

J. Schwartz, A. Engler, O. Phillips, J. Lee, and P. A. Kohl, "Determination of Ceiling Temperature and Thermodynamic Properties of Low Ceiling Temperature Polyaldehydes," *Journal of Polymer Science A*, vol. 56, pp. 221-228, 2018.

Sei, Yoshitaka J., Ahn, Jungho, Kim, Taeyong, Shin, Eunjung, Satiago-Lopez, Angel J., Jang, Seung Soon, Jeon, Noo Li, Jang, Young C., and Kim, YoungTae, "Detecting the functional complexities between high-density lipoprotein mimetics," *Biomaterials*, vol. 170, pp. 58-69, 2018. 

N. Shahane, P. M. Raj, C. Nair, V. Smet, C. Buch, and R. Tummala, "Nanopackaging for Component Assembly and Embedded Power in Flexible Electronics: Heterogeneous Component Integration for Flexible Systems," *IEEE Nanotechnology Magazine*, vol. 12, pp. 6-18, 2018.

Shao, W., Li, G., Zhu, P., Zhang, Y., Ouyang, Q., Sun, R., Chen, C., Wong, C.-P., "Facile Synthesis of Low Temperature Sintering Ag Nanoparticles for Printed Flexible Electronics," *J. Mater. Sci.: Mater. Electron.*, vol. 29(6), pp. 4432-4440, 2018.

Manish Sharma, Estiak Ahmad, Durjoy Dev, Jia Li, C Lewis Reynolds Jr., Yang Liu and Shanthi Iyer, "Improved Performance of GaAsSb/AlGaAs Nanowire Ensemble Schottky Barrier based Photodetector via In-Situ Annealing", *Nanotechnology*, vol. 30 (3), p. 034005, 2018. 

Sheng, G., Chen, J., Li, Y., Ye, H., Hu, Z., Fu, X.-Z., Sun, R., Huang, W., Wong, C.-P., "Flowerlike NiCo₂S₄ hollow Sub-Microspheres with Mesoporous Nanoshells Support Pd Nanoparticles for Enhanced Hydrogen Evolution Reaction Electrocatalysis in Both Acidic and Alkaline Conditions," *ACS Applied Materials and Interfaces*, vol. 10(26), pp. 22248-22256, 2018.

Sheng, G., Chen, J., Ye, H., Hu, Z., Fu, X.-Z., Sun, R., Huang, W., Wong, C.-P., "Hollow Pdco Alloy Nanospheres with Mesoporous Shells as High-Performance Catalysts for Methanol Oxidation," *J. Colloid Interface Sci.*, vol. 522, pp. 264-271, 2018.

Sheng, J., Kang, J., Hu, Z., Yu, Y., Fu, X.-Z., Sun, R., Wong, C.-P., "Octahedral Pd Nanocages with Porous Shells Converted from Co(OH)₂ Nanocages with Nanosheet Surfaces as Robust Electrocatalysts for Ethanol Oxidation," *J. Mater. Chem. A*, vol. 6(32), pp. 15789-15796, 2018.

Sheng, J., Kang, J., Ye, H., Xie, J., Zhao, B., Fu, X.-Z., Yu, Y., Sun, R., Wong, C.-P., "Porous Octahedral Pdcu Nanocages as Highly Efficient Electrocatalysts for the Methanol Oxidation Reaction," *J. Mater. Chem. A*, vol. 6(9), pp. 3906-3912, 2018.

Shi, D., Chen, Y., Chen, X., Chen, X., Gao, J., He, Y., Wong, C.-P., "Ladder-like Tapered Pillars Enabling Spontaneous and Consecutive Liquid Transport," *ACS Applied Materials and Interfaces*, vol. 10, pp. 34735-34743, 2018.

Shi, R., Han, C., Li, H., Xu, L., Zhang, T., Li, J., Lin, Z., Wong, C.-P., Kang, F., Li, B., "NaCl-Templated Synthesis of Hierarchical Porous Carbon with Extremely Large Specific Surface Area and Improved Graphitization Degree for High Energy Density Lithium Ion Capacitors," *J. Mater. Chem. A*, vol. 6(35), pp. 17057-17066, 2018.

Shi, R., Han, C., Xu, X., Qin, X., Xu, L., Li, H., Li, J., Wong, C.-P., Li, B., "Electrospun N-Doped Hierarchical Porous Carbon Nanofiber with Improved Degree of Graphitization for High-Performance Lithium Ion Capacitor," *Chem.-Eur. J.*, vol. 24(41), pp. 10460-10467, 2018.

Skenes, K., Kumar, A., Prasath, R.G.R. et al., "Crystallographic Orientation Identification in Multicrystalline Silicon Wafers Using NIR Transmission Intensity," *Journal of Elec. Materials*, vol. 47, p. 1030, 2018. 

E. J. Snider, K. P. Kubelick, K. Tweed, R. K. Kim, Y. Li, K. Gao, A. T. Read, S. Emelianov, and C. R. Ethier. "Improving Stem Cell Delivery to the Trabecular Meshwork Using Magnetic Nanoparticles," *Scientific Reports*, vol. 8, p. 12251, 2018. 

A.G.N. Sofiah, M. Samykano, K. Kadigrama, R. Mohan, and N.A.C. Lah, "Review – Metallic Nanowires: Mechanical Properties – Theory and Experiment", *Applied Materials Today*, Vol. 11, pp. 320-337, 2018.

Song, A. Y., Xiao, Y., Turcheniuk, K., Upadhyra, P., Ramanujapuram, A., Benson, J., Magasinski, A., Olguin, M., Meda, L., Borodin, O., "Protons Enhance Conductivities in Lithium Halide Hydroxide/Lithium Oxyhalide Solid Electrolytes by Forming Rotating Hydroxy Groups," *Advanced Energy Materials*, vol. 8, 1700971, 2018.

Song, A. Y., Xiao, Y., Turcheniuk, K., Upadhyra, P., Ramanujapuram, A., Benson, J., Magasinski, A., Olguin, M., Meda, L., Borodin, O., Yushin, G., "Ion Conductivities: Protons Enhance Conductivities in Lithium Halide Hydroxide/Lithium Oxyhalide Solid Electrolytes by Forming Rotating Hydroxy Groups," *Advanced Energy Materials*, vol. 8, 1870014, 2018.

Song, B., Li, J., Wu, F., Patel, S., Hah, J., Wang, X., Moon, K., Wong, C.-P., "Processing and Characterization of Silver-Filled Conductive Polysulfide Sealants for Aerospace applications," *Soft Mat.*,

vol. 14, pp. 9036-9043, 2018.

Song, B., Wu, F., Zhu, Y., Hou, Z., Moon, K.-S., Wong, C.-P., "Effect of Polymer Binders on Graphene-Based Free-Standing Electrodes for Supercapacitors," *Electrochim. Acta*, vol. 267, pp. 213-221, 2018.

I. Song, M.-K. Cho, and J.D. Cressler, "Design and Analysis of a Low-Loss, Wideband Digital Step Attenuator with Minimized Amplitude and Phase Variations," *IEEE Journal of Solid-State Circuits*, vol. 53, pp. 2202-2213, 2018.

J. Song, A. Ge, B. Piercy, M. D. Losego, T. Lian, "Effects of Al₂O₃ atomic layer deposition on interfacial structure and electron transfer dynamics at Re-bipyridyl complex/TiO₂ interfaces," *Chem. Phys.*, vol. 512, pp. 68, 2018.

I. Song, Z.E. Fleetwood, M.-K. Cho, S. Pavlidis, S.P. Buchner, D. McMorrow, P. Paki, M. Kaynak, and J.D. Cressler, "SET-Mitigated PNP-Based RF Switches in a Complementary SiGe BiCMOS Platform," *IEEE Transactions on Nuclear Science*, vol. 65, pp. 391-398, 2018.

S. Song, R. Hill, K. Choi, K. Wojciechowski, S. Barlow, J. Leisen, H. J. Snaith, S. R. Marder, T. Park, "Surface Modified Fullerene Electron Transport Layers for Stable and Reproducible Flexible Perovskite Solar Cells," *Nano Energy*, vol. 49, pp. 324-332, 2018.

R. G. Spurney, H. Sharma, M. R. Pulugurtha, R. Tummala, N. Lollis, M. Weaver, et al., "Ultra-High Density, Thin-Film Tantalum Capacitors with Improved Frequency Characteristics for MHz Switching Power Converters," *Journal of Electronic Materials*, vol. 47, pp. 5632-5639, 2018.

D. Struk, A. Shirke, A. Mahdavifar, P. J. Hesketh, J. R. Stetter, "Investigating time-resolved response of micro-thermal conductivity sensor under various modes of operation," *Sensors and Actuators: B Chemical*, vol. 254, pp. 771-777, 2018.

Sujan, A. R., Koh, D.-Y., Zhu, G., Babu, V. P., Stephenson, N., Rosins, A., Du, H., Luo, Y., Koros, W. J., Lively, R. P., "High-Temperature Activation of Zeolite-Loaded Fiber Sorbents," *Industrial & Engineering Chemistry Research*, vol. 57(34), pp. 11757-11766, 2018.

H. Sun, F. Wu, Y.J. Park, T.M. Al tahtamouni, C-H Liao, W. Guo, N. Alfaraj, K-H Anjum, H. Dalaver, T. Detchprohm, R.D. Dupuis, X. Li, "Revealing Microstructure and Dislocation Behavior in BAIN/AIGaN Heterostructures," *Applied Physics Express*, vol. 11, no. 1, p. 011001, 2018.

H. Sun, Y.J. Park, L. Kuang-Hui, X. Liu, T. Detchprohm, X. Zang, R.D. Dupuis, X. Li, "Nearly-zero Valence Band and Large Conduction Band Offset at BAIN/GaN Heterointerface for Optical and Power Device Application," *Applied Surface Science*, vol. 458, pp. 949-953, 2018.

H. Taghinejad, A. A. Eftekhar, P. M. Campbell, B. Beatty, M. Taghinejad, Y. Zhou, C. J. Perini, H. Moradinejad, W. E. Henderson, E. V. Woods, X. Zhang, P. Ajayan, E. J. Reed, E. M. Vogel, and A. Adibi, "Strain relaxation via formation of cracks in compositionally modulated two-dimensional semiconductor alloys," *npj 2D Materials and Applications*, vol. 2, p. 10, 2018.

H. Taghinejad, D. A. Rehn, C. Muccianti, A. A. Eftekhar, M. Tian, T. Fan, X. Zhang, Y. Meng, Y. Chen, T. Nguyen, S. Shi, P. M. Ajayan, J. Schaibley, E. J. Reed, A. Adibi, "Defect-Mediated Alloying of Monolayer Transition-Metal Dichalcogenides," *ACS Nano*, vol. 12, no. 12, pp. 12795-12804, 2018. 

M. Taghinejad, H. Taghinejad, Z. Xu, K. Lee, S. P. Rodrigues, J. Yan, A. Adibi, T. Lian, W. Cai, "Ultrafast Control of Phase and Polarization of Light Expedited by Hot-Electron Transfer," *Nano Letters*, vol. 18, no. 9, pp. 5544-5551, 2018. 

M. Taghinejad, H. Taghinejad, S. T. Malak, H. Moradinejad, E. V. Woods, Z. Xu, Y. Liu, A. A. Eftekhar, T. Lian, V. V. Tsukruk, A. Adibi, "Sharp and Tunable Crystal/Fano-Type Resonances Enabled by Out-of-Plane Dipolar Coupling in Plasmonic Nanopatch Arrays," *Annalen der Physik*, vol. 530, no. 10, 1700395, 2018.

M. Taghinejad, H. Taghinejad, Z. Xu, Y. Liu, S. P Rodrigues, K. Lee, T. Lian, A. Adibi, W. Cai, "Hot-Electron-Assisted Femtosecond All-Optical Modulation in Plasmonics," *Advanced Materials*, vol. 30, no. 9, 1704915, 2018. 

Tian, Y., Ren, N., Jian, X., Shang, S. and Sitaraman, S.K., "Scaling effect on Ag₃Sn growth behaviours in micro-joints for flip chip assemblies," *Science and Technology of Welding and Joining*, vol. 23, issue 7, pp. 551-557, 2018.

Tian, Z., Sun, J., Wang, S., Zeng, X., Zhou, S., Bai, S., Zhao, N., Wong, C.-P., "A Thermal Interface Material Based on Foam-Templated Three-Dimensional Hierarchical Porous Boron Nitride," *J. Mater. Chem. A*, vol. 6(36), pp. 17540-17547, 2018.

A.N. Tsoras, J.A. Champion, "Crosslinked Peptide Nanoclusters for Delivery of Oncofetal Antigen as a Cancer Vaccine," *Bioconjugate Chemistry*, vol. 29(3), pp. 776-785, 2018. 

Md-J. Uddin and S.-J. Cho, "Reassessing the bulk ionic conductivity of solidstate electrolytes," *Sustainable Energy Fuels*, vol. 2, p. 1458, 2018. 

M. Vara, X. Wang, J. Howe, M. Chi, and Y. Xia, "Understanding the Stability of Pt-Based Nanocages under Thermal Stress Using In Situ Electron Microscopy," *ChemNanoMat*, vol. 4, pp. 112-117, 2018. 

Vara, M., Xia, Y., "Facile Synthesis of Pd Concave Nanocubes: From Kinetic Analysis to Mechanistic Understanding and Rationally Designed Protocol," *Nano Research*, vol. 11, pp. 3122-3131, 2018. 

E.D. Wallace, N.H. Oberlies, N.B. Cech, J.J. Kellogg, "Detection of adulteration in *Hydrastis canadensis* (goldenseal) dietary supplements via untargeted mass spectrometry-based metabolomics," *Food and Chemical Toxicology*, vol. 120, pp. 439-447, 2018.

Wan, Y.-J., Zhu, P.-L., Yu, S.-H., Sun, R., Wong, C.-P., Liao, W.-H., "Anticorrosive, Ultralight, and Flexible Carbon-Wrapped Metallic Nanowire Hybrid Sponges for Highly Efficient Electromagnetic Interference Shielding," *Small*, vol. 14(27), 2018.

Wang, C., Guan, Z., Shen, Y., Yu, S., Fu, X.-Z., Sun, R., Wong, C.-P., "Shape-Controlled Synthesis of CoMoO₄@Co_{1.5}Ni_{1.5}S₄ hybrids with Rambutan-Like Structure for High-Performance All-Solid-State Supercapacitors," *Chemical Engineering Journal*, vol. 346, pp. 193-202, 2018.

Wang, F., Turcheniuk, K., Wang, B., Song, A.-Y., Ren, X., Vallamattam, A., Park, A., Hanley, K., Zhu, T., Yushin, G., "Mechanisms of Transformation of Bulk Aluminum–Lithium Alloys to Aluminum Metal–Organic Nanowires," *Journal of the American Chemical Society*, vol. 140, pp. 12493-12500, 2018.

J. Wang, W. Ding, L. Pan, C. Wu, H. Yu, L. Yang, R. Liao and Z. L. Wang, "Self-Powered Wind Sensor System for Detecting Wind Speed and Direction Based on a Triboelectric Nanogenerator," *ACS Nano*, 2018.

P. Wang, R. Liu, W. Ding, P. Zhang, L. Pan, G. Dai, H. Zou, K. Dong, C. Xu and Z. L. Wang, "Complementary Electromagnetic-Triboelectric Active Sensor for Detecting Multiple Mechanical Triggering," *Advanced Functional Materials*, 2018.

P. Wang, L. Pan, J. Wang, M. Xu, G. Dai, H. Zou, K. Dong and Z. L. Wang, "An Ultra-Low-Friction Triboelectric–Electromagnetic Hybrid Nanogenerator for Rotation Energy Harvesting and Self-Powered Wind Speed Sensor," *ACS Nano*, 2018.

P. Wang, C. Perini, A. O'Hara, B. R. Tuttle, E. X. Zhang, H. Gong, C. Liang, R. Jiang, W. Liao, D. M. Fleetwood, R. D. Schrimpf, E. M. Vogel, and S. T. Pantelides, "Radiation-Induced Charge Trapping and Low-Frequency Noise of Graphene Transistors," *IEEE Transactions on Nuclear Science*, vol. 65, pp. 156-163, 2018.

P. H. Wang, S. Sarkar, P. Gulgulje, N. Verghese, S. Kumar, "Structure and rheological behavior of polypropylene interphase at high carbon nanotube concentration", *Polymer*, vol. 150, pp. 10-25, 2018.

P. H. Wang, S. Sarkar, P. Gulgulje, N. Verghese, S. Kumar, "Fracture mechanism of high impact strength polypropylene containing carbon nanotubes", *Polymer*, vol. 151, pp. 287-298, 2018.

W. Wang, D. Shen, X. Li, Y. Yao, J. Lin, A. Wang, J. Yu, Z. L. Wang, S. W. Hong, Z. Lin, and S. Lin, "Light-Driven Shape Memory Porous Films with Precisely Controlled Dimensions," *Angewandte Chemie International Edition*, vol. 57, p. 2139, 2018.

Wang, W., Zhou, S., Shen, M., Hood, Z. D., Xia, K., Xia, Y., "Facile Synthesis of Silver Icosahedral Nanocrystals with Uniform and Controlled Sizes," *ChemNanoMat*, vol. 4, pp. 1071-1077, 2018.

Wang, X., Zhang, Q., Sun, J., Zhou, Z., Li, Q., He, B., Zhao, J., Lu, W., Wong, C.-P., Yao, Y., "Facile Synthesis of Hierarchical Porous Manganese Nickel Cobalt Sulfide Nanotube Arrays with Enhanced Electrochemical Performance for Ultrahigh Energy Density Fiber-Shaped Asymmetric Supercapacitors," *J. Mater. Chem. A*, vol. 6(17), pp. 8030-8038, 2018.

Z. Wang, A. A. Gaskell, M. Dopita, D. Kriegner, N. Tasneem, J. Mack, N. Mukherjee, Z. Karim, A. I. Khan, "Antiferroelectricity in Lanthanum Doped Zirconia without Metallic Capping Layers and Post-Deposition/-Metallization Anneals," *Appl. Phys. Lett.*, vol. 112, 222902, 2018. 

A. O. Watanabe, P. M. Raj, D. Wong, R. Mullapudi, and R. Tummala, "Multilayered Electromagnetic Interference Shielding Structures for Suppressing Magnetic Field Coupling," *Journal of Electronic Materials*, vol. 47, pp. 5243-5250, 2018.

B.R. Wier, U.S. Raghunathan, Z.E. Fleetwood, M.A. Oakley, A.J. Joseph, V. Jain, and J.D. Cressler, "Limiting Effects on the Design of Vertical Superjunction Collectors in SiGe HBTs," *IEEE Transactions on Electron Devices*, vol. 65, pp. 793-797, 2018.

R. M. W. Wolfe, A. K. Menon, T. R. Fletcher, Seth R. Marder, J. R. Reynold, S. K. Yee, "Simultaneous Enhancement in Electrical Conductivity and Thermopower of n-Type NiETT/PVDF Composite Films by Annealing," *Adv. Funct. Mater.*, vol. 28, p. 1803275, 2018.

S. Woosley, N.A. Galehdari, A. Kelkar, S. Aravamudhan, "Fused deposition modeling 3D printing of boron nitride composites for neutron radiation shielding," *Journal of Materials Research*, vol. 33(22), pp. 3657-3664, 2018. 

C. Wu, W. Ding, R. Liu, J. Wang, A. C. Wang, J. Wang, S. Li, Y. Zi and Z. L. Wang, "Keystroke Dynamics Enabled Authentication and Identification using Triboelectric Nanogenerator Array," *Materials Today*, 2018.

Wu, F., Pollard, T. P., Zhao, E., Xiao, Y., Olguin, M., Borodin, O., Yushin, G., "Layered LiTiO₂ for the Protection of Li₂S Cathodes Against Dissolution: Mechanisms of the Remarkable Performance Boost," *Energy & Environmental Science*, vol. 11, pp. 807-817, 2018.

Wu, F., Song, B., Hah, J., Tuan, C.-C., Moon, K.-S., Wong, C.-P., "Polyimide Incorporated Cyanate Ester/Epoxy Copolymers for High-Temperature Molding Compounds," *J. Polym. Sci., Part A: Polym. Chem.*, vol. 56(21), pp. 2412-2421, 2018.

Wu, F., Tuan, C.-C., Song, B., Moon, K.-S., Wong, C.-P., "Controlled Synthesis and Evaluation of Cyanate Ester/Epoxy Copolymer System for High Temperature Molding Compounds," *J. Polym. Sci., Part A: Polym. Chem.*, vol. 56(13), pp. 1337-1345, 2018.

Wu, L., Shang, J., Ji, Y., Gan, Q., Wong, C.-P., "Influence of Buffer-Gas Pressure inside Micro Alkali Vapor Cells on the Performance of Chip-Scale Serf Magnetometers," *IEEE Trans. Compon. Packag. Manuf. Technol.*, vol. 8(4), pp. 621-625, 2018.

Wu, T., Xue, J., Li, H., Zhu, C., Mo, X., Xia, Y., "General Method for Generating Circular Gradients of Active Proteins on Nanofiber Scaffolds Sought for Wound Closure and Related Applications," *ACS Applied Materials & Interfaces*, vol. 10, pp. 8536-8545, 2018.

Wu, X., Li, J., Li, G., Ling, L., Zhang, G., Sun, R., Wong, C.-P., "Heat-Triggered Poly(Siloxane-Urethane)S Based on Disulfide Bonds for Self-Healing Application," *J. Appl. Polym. Sci.*, vol. 135(31), 2018.

Y. Wu, D. Qin, "In Situ Atomic-Level Tracking of Heterogeneous Nucleation in Nanocrystal Growth with an Isocyanide Molecular Probe," *Journal of the American Chemical Society*, vol. 140, pp. 8340-8349, 2018.

Y. Wu, Y. Zhang, Y. Ma, J. D. Howe, H. Yang, P. Chen, S. Aluri, N. Liu, "Ion-Sieving Carbon Nanoshells for Deeply Rechargeable Zn-Based Aqueous Batteries," *Adv. Energy Mater.*, vol. 8, 1802470, 2018. 

Z. Wu, J. Min, M. R. Pulugurtha, S. Ravichandran, V. Sundaram, and R. R. Tummala, "3D Integrated High-Precision Passives on Thin Glass Substrates for Miniaturized and High-Performance RF Components," *Journal of Microelectronics and Electronic Packaging*, vol. 15, no. 3, pp. 107-116, July 2018.

Z. Wu, W. Ding, Y. Dai, K. Dong, C. Wu, L. Zhang, Z. Lin, J. Cheng and Z. L. Wang, "Self-Powered Multifunctional Motion Sensor Enabled by Magnetic-Regulated Triboelectric Nanogenerator," *ACS Nano*, 2018.

Z. Wu, S. Zou, B. Zhang, L.J. Wang, Z. He, "Forward osmosis promoted in-situ formation of struvite with simultaneous water recovery from digested swine wastewater," *Chemical Engineering Journal*, vol. 342, pp. 274-280, 2018.

C. Xu, A. C. Wang, H. Zou, B. Zhang, C. Zhang, Y. Zi, L. Pan, P. Wang, P. Feng, Z. Lin and Z. L. Wang, "Raising the Working Temperature of a Triboelectric Nanogenerator by Quenching Down Electron Thermionic Emission in Contact-Electrification," *Advanced Materials*, 2018.

C. Xu, Y. Zi, A. C. Wang, H. Zou, Y. Dai, X. He, P. Wang, Y.-C. Wang, P. Feng, D. Li and Z. L. Wang, "On the Electron-Transfer Mechanism in the Contact-Electrification Effect," *Advanced Materials*, 2018.

Xu, J., Chen, J., Zhou, S., Han, C., Xu, M., Zhao, N., Wong, C.-P., "Sequentially-Processed Na₃V₂(PO₄)₃ for Cathode Material of Aprotic Sodium Ion Battery," *Nano Energy*, vol. 50, pp. 323-330, 2018.

Xu, L., Shi, R., Li, H., Han, C., Wu, M., Wong, C.-P., Kang, F., Li, B., "Pseudocapacitive Anthraquinone Modified with Reduced Graphene Oxide for Flexible Symmetric All-Solid-State Supercapacitors," *Carbon*, vol. 127, pp. 459-468, 2018.

Xue, J., Li, H., Xia, Y., "Nanofiber-Based Multi-Tubular Conduits with a Honeycomb Structure for Potential Application in Peripheral Nerve Repair," *Macromolecular Bioscience*, vol. 18, 1800090, 2018.

Xue, J., Zhu, C., Li, J., Li, H., Xia, Y., "Integration of Phase-Change Materials with Electrospun Fibers for Promoting Neurite Outgrowth under Controlled Release," *Advanced Functional Materials*, vol. 28, 1705563, 2018H. Ying, J. Dark, A.P. Omprakash, B.R. Wier, L. Ge, U. Raghunathan, N.E. Lourenco, Z.E. Fleetwood, M. Mourigal, D. Davidovic, and J.D. Cressler, "Collector Transport in SiGe HBTs Operating at Cryogenic Temperatures," *IEEE Transactions on Electron Devices*, vol. 65, pp. 3697-3703, 2018.

Yu Yan, Yamin Zhang, Yutong Wu, Zhongzhen Wang, Anmol Mathur, Haochen Yang, Peng Chen, Sankar Nair, and Nian Liu, "A Lasagna-Inspired Nanoscale ZnO Anode Design for High-Energy Rechargeable Aqueous Batteries," *ACS Applied Energy Materials*, vol. 1(11), pp. 6345-6351, 2018. 

D. Yang, Y. Chen, H. Peng, G. Chen, and Z. Lin, "An integrated experimental and theoretical study on optical properties of uniform hairy noble metal nanoparticles," *Nanoscale*, vol. 10, p. 22750, 2018.

Yang, N., Zeng, X., Lu, J., Sun, R., Wong, C.-P., "Effect of Chemical Functionalization on the Thermal Conductivity of 2D Hexagonal Boron Nitride," *Appl. Phys. Lett.*, vol. 113(17), 2018.

Yao, Y., Li, Y., Zeng, X., Sun, N., Sun, R., Xu, J.-B., Wong, C.-P., "Liquid Nitrogen Driven Assembly of

Nanomaterials into Spongy Millispheres for Various Applications," *J. Mater. Chem. A*, vol. 6(14), pp. 5984-5992, 2018.

Yao, Y., Sun, J., Zeng, X., Sun, R., Xu, J.-B., Wong, C.-P., "Construction of 3d Skeleton for Polymer Composites Achieving a High Thermal Conductivity," *Small*, vol. 14(13), 2018.

Yao, Y., Zhu, X., Zeng, X., Sun, R., Xu, J.-B., Wong, C.-P., "Vertically Aligned and Interconnected Sic Nanowire Networks Leading to Significantly Enhanced Thermal Conductivity of Polymer Composites," *ACS Applied Materials and Interfaces*, vol. 10(11), pp. 9969-9678, 2018.

Ye, H., Li, Y., Chen, J., Sheng, J., Fu, X.-Z., Sun, R., Wong, C.-P., "Pdcu Alloy Nanoparticles Supported on Reduced Graphene Oxide for Electrocatalytic Oxidation of Methanol," *J. Mater. Sci.*, vol. 53(23), pp. 15871-15881, 2018.

Yung Suk Jeremy Yoo, Todd A. Book, Michael D. Sangid, and Josh Kacher, "Identifying strain localization and dislocation processes in fatigued Inconel 718 manufactured from selective laser melting," *Materials Science and Engineering: A*, vol. 724, pp. 444-451, 2018. 

Qingji Zeng, Evan Lafalce, Chun Hao Lin, Marcus J. Smith, Sidney T. Malak, Jaehan Jung, Young Jun Yoon, Zhiqun Lin, Vladimir V. Tsukruk, Zeev Valy Vardeny, "Spectral and directional properties of elliptical quantum-dot microlasers," *J. of Photonics for Energy*, vol. 8(3), 032218, 2018.

Z. Zeng, T. Mabe, W. Zhang, B. Bagra, Z. Ji, Z. Yin, K. Allado, J. Wei, "Plasmon-exciton coupling in photosystem I based biohybrid photoelectrochemical cells," *ACS Appl. Bio. Mater.*, vol. 1(3), pp. 802-807, 2018. 

Z. Zeng, J. Wei, Y. Liu, W. Zhang, T. Mabe, "Magnetoreception of photoactivated cryptochrome 1 in electrochemistry and electron transfer," *ACS Omega*, vol. 3 (5), pp. 4752-4759, 2018. 

Z. Zeng, T. Zhang, Y. Liu, W. Zhang, Z. Yin, Z. Ji, J. Wei, "Magnetic Field Enhanced 4-electron Pathway of Well-aligned Co₃O₄/ECNFs in the Oxygen Reduction Reaction," *ChemSusChem.*, vol. 11, pp. 580-588, 2018. 

Zhang, C., Li, L., Tuan, C.-C., Zhou, J., Xue, F., Wong, C.-P., "A High-Performance TiO₂ Nanotube Supercapacitor by Tuning Heating Rate During H₂ Thermal Annealing," *J. Mater. Sci.: Mater. Electron.*, vol. 29(17), pp. 15130-15137, 2018.

Zhang, C., Zhang, K., Cao, Y., Koros, W. J., "Composite Carbon Molecular Sieve Hollow Fiber Membranes: Resisting Support Densification via Silica Particle Stabilization," *Industrial & Engineering Chemistry Research*, vol. 57 (47), pp. 16051-16058, 2018.

Zhang, F.-T., Xu, L., Chen, J.-H., Zhao, B., Fu, X.-Z., Sun, R., Chen, Q., Wong, C.-P., "Electroless Deposition Metals on Poly(Dimethylsiloxane) with Strong Adhesion as Flexible and Stretchable Conductive Materials," *ACS Applied Materials and Interfaces*, vol. 10(2), pp. 2075-2082, 2018.

Zhang, L., Yu, X., Zhu, P., Zhou, F., Li, G., Sun, R., Wong, C.-P., "Laboratory Filter Paper as a Substrate Material for Flexible Supercapacitors," *Sustainable Energy and Fuels*, vol. 2(1), pp. 147-154, 2018.

Q.B. Zhang, H. Chen, L. Luo, B. Zhao, H. Luo, H. Xiang, J. Wang, C. Wang, Y. Yang, T. Zhu, M. Liu, "Harnessing the concurrent reaction dynamics in active Si and Ge to achieve high performance of lithium-ion batteries," *Energy Environ. Sci.*, vol. 11, pp. 669-681, 2018.

Zhang, R., Jin, Z., Zhang, C., Yang, R., Sun, M., Wong, C.-P., "An Ultrasensitive Biosensor Based on Electroactive Nanoparticles Self-Assembled from 3-Thiophenecarboxylic Acid-Modified Starch," *Colloid Polym. Sci.*, vol. 296(8), pp. 1365-1372, 2018.

Zhang, R., Lv, J., Zhang, C., Yang, R., Sun, X., Song, B., Wong, C.-P., "Alginate-Based Colloid Particles from Direct Chemical Self-Assembly Using as Particulate Emulsifiers," *Colloids Surf., A*, vol. 542, pp. 15-

20, 2018.

S. L. Zhang, M. Xu, C. Zhang, Y.-C. Wang, H. Zou, X. He, Z. Wang and Z. L. Wang, "Rationally Designed Sea Snake Structure Based Triboelectric Nanogenerators for Effectively and Efficiently Harvesting Ocean Wave Energy with Minimized Water Screening Effect," *Nano Energy*, 2018.

W. Zhang, J. Chavez, Z. Zeng, B. Bloom, A. Sheardy, Z. Ji, Z. Yin, D. H. Waldeck, Z. Jia, J. Wei, "Antioxidant capacity of Nitrogen, Sulfur co-doped carbon nanodots," *ACS Appl. Nano Mater.*, vol. 1(6), pp. 2699-2708, 2018. 

Zhang, X., Turcheniuk, K., Benson, J., Zusmann, B., Fu, W., Zhao, E., Magasinski, A., Yushin, G., "Lithium Titanate Confined in Nanoporous Copper for High-Rate Battery Applications." *MRS Advances*, vol. 3, pp. 1249-1253, 2018.

Zhang, X., Turcheniuk, K., Zusmann, B., Benson, J., Nelson, S., Luo, S., Magasinski, A., Yushin, G., "Synthesis of Copper Oxide Nanowires and Nanoporous Copper via Environmentally Friendly Transformation of Bulk Copper–Calcium Alloys," *Chemical Communications*, vol. 54, pp. 5446-5449, 2018.

Y. Zhang, J. Ahn, J. Liu, D. Qin, "Syntheses, Plasmonic Properties, and Catalytic Applications of Ag-Rh Core-Frame Nanocubes and Rh Nanoboxes with Highly Porous Walls," *Chemistry of Materials*, vol. 30, pp. 2151-2159, 2018.

Y. Zhang, Y. Wu, and D. Qin, "Rational Design and Synthesis of Bifunctional Metal Nanocrystals for Probing Catalytic Reactions by Surface-Enhanced Raman Scattering," *Journal of Materials Chemistry C*, vol. 6, pp. 5353-5362, 2018.

Yamin Zhang, Yutong Wu, Haoran Ding, Yu Yan, Zhubo Zhou, Yong Ding, Nian Liu, "Sealing ZnO nanorods for deeply rechargeable high-energy aqueous battery anodes", *Nano Energy*, vol. 53, pp. 666-674, 2018. 

Yun Zhang, Yongzhi Qiu, Aaron T. Blanchard, Yuan Chang, Josh M. Brockman, Victor Pui-Yan Ma, Wilbur A. Lam, and Khalid Salaita, "Platelet integrins exhibit anisotropic mechanosensing and harness piconewton forces to mediate platelet aggregation," *Proc. Natl. Acad. Sci.*, vol. 115(2), pp. 325-330, 2018. 

Z. Zhang, J. Ahn, J. Kim, Z. Wu, D. Qin, "Facet-Selective Deposition of Au and Pt on Ag Nanocubes for the Fabrication of Bifunctional Ag@Au-Pt Nanocubes and Trimetallic Nanoboxes," *Nanoscale*, vol. 10, pp. 8642-8649. 2018.

Zhang, Z., Luo, S., Yu, S., Guan, Z., Sun, R., Wong, C.-P., "Significantly Enhanced Dielectric and Energy Storage Performance of Blend Polymer-Based Composites Containing Inorganic 3D Network," *Mater. Des.*, vol. 142, pp. 106-113, 2018.

B. Zhao, L. Zhang, Q. Zhang, D. Chen, Y. Cheng, X. Deng, Y. Chen, R. Murphy, X. Xiong, B. Song, CP Wong, M. Wang, M. Liu, "Rational design of nickel hydroxide-based nanocrystals on graphene for ultrafast energy storage," *Advanced Energy Materials*, vol. 8, p. 1702247, 2018.

Zhao, E., Borodin, O., Gao, X., Lei, D., Xiao, Y., Ren, X., Fu, W., Magasinski, A., Turcheniuk, K., Yushin, G., "Lithium–Iron (III) Fluoride Battery with Double Surface Protection," *Advanced Energy Materials*, vol. 8, 1800721, 2018.

Zhao, M., Xu, L., Vara, M., Elnabawy, A. O., Gilroy, K. D., Hood, Z. D., Zhou, S., Figueroa-Cosme, L., Chi, M., Mavrikakis, M. and Xia, Y., "Synthesis of Ru Icosahedral Nanocages with a Face-Centered-Cubic Structure and Evaluation of their Catalytic Properties," *ACS Catalysis*, vol. 8, pp. 6948-6960, 2018.

Zhao, M., Yang, X., Hood, Z. D., Chi, M., Xia, Y., "Facile Synthesis of Pt-Ag Octahedral and Tetrahedral Nanocrystals with Enhanced Activity and Durability toward Methanol Oxidation," *Journal of Materials*

Research, vol. 33, pp. 3891-3897, 2018.

Zhao, S., Han, F., Li, J., Meng, X., Huang, W., Cao, D., Zhang, G., Sun, R., Wong, C.-P., "Advancements in Copper Nanowires: Synthesis, Purification, Assemblies, Surface Modification, and Applications," *Small*, vol. 14(26), 2018.

Zhao, X., Rosen, D.W., "An implementation of real-time feedback control of cured part height in Exposure Controlled Projection Lithography with in-situ interferometric measurement feedback," *Additive Manufacturing*, vol. 23, pp. 253-263, 2018.

H. Zheng, Y. Zi, X. He, H. Guo, Y.-C. Lai, J. Wang, S. L. Zhang, C. Wu, G. Cheng and Z. L. Wang, "Concurrent Harvesting of Ambient Energy by Hybrid Nanogenerators for Wearable Self-Powered Systems and Active Remote Sensing," *ACS Appl. Mater. Interfaces*, 2018.

Zhibo Yuan, Carolyn Buckley, Simil Thomas, Guoyan Zhang, Ilaria Bargigia, Gang Wang, Boyi Fu, Carlos Silva, Jean-Luc Bredas and Elsa Reichmanis, "A Thiazole-Naphthalene Diimide based n-Channel Donor-Acceptor Conjugated Polymer," *Macromolecules*, vol. 51 (18), pp. 7320-7328, 2018. 

Zhou, S., Huo, D., Goines, S., Yang, T.-H., Lyu, Z., Zhao, M., Gilroy, K. D., Wu, Y., Hood, Z. D., Xie, M., Xia, Y., "Enabling Complete Ligand Exchange on the Surface of Gold Nanocrystals through the Deposition and then Etching of Silver," *Journal of the American Chemical Society*, vol. 140, pp. 11898-11901, 2018.

Zhou, S., Mesina, D. S., Organt, M. A., Yang, T.-H., Yang, X., Huo, D., Zhao, M., Xia, Y., "Site-Selective Growth of Ag Nanocubes for Sharpening their Corners and Edges, Followed by Elongation into Nanobars through Symmetry Reduction," *Journal of Materials Chemistry C*, vol. 6, pp. 1384-1392, 2018.

Zhou, S., Yang, T.-H., Zhao, M., Xia, Y., "Quantitative Analysis of the Reduction Kinetics of a Pt(II) Precursor in the Context of Pt Nanocrystal Synthesis," *Chinese Journal of Chemical Physics*, vol. 31, pp. 370-374, 2018.

Zhou, Y., Jia, Y.-H., Fang, H.-H., Loi, M. A., Xie, F.-Y., Gong, L., Qin, M.-C., Lu, X.-H., Wong, C.-P., Zhao, N., "Composition-Tuned Wide Bandgap Perovskites: From Grain Engineering to Stability and Performance Improvement," *Adv. Funct. Mater.*, vol. 28(35), 2018.

Zhu, C., Pongkitwittoon, S., Qiu, J., Thomopoulos, S., Xia, Y., "Design and Fabrication of a Hierarchically Structured Scaffold for Tendon-to-Bone Repair," *Advanced Materials*, vol. 30, 1707306, 2018.

Zhu, C., Qiu, J., Pongkitwittoon, S., Thomopoulos, S., Xia, Y., "Inverse Opal Scaffolds with Gradations in Mineral Content for Spatial Control of Osteogenesis," *Advanced Materials*, vol. 30, 1706706, 2018.

Guanghui Zhu, Jan-Michael Y. Carrillo, Achintya Sujan, Claudia N. Okonkwo,, Sangjae Park, Bobby G. Sumpter, Christopher W. Jones, and Ryan P. Lively, "Molecular blends of methylated-poly(ethylenimine) and amorphous porous organic cages for SO₂ adsorption," *J. Mater. Chem. A*, vol. 6, pp. 22043-22052, 2018. 

Y. Zi, C. Wu, W. Ding, X. Wang, Y. Dai, J. Cheng, J. Wang, Z. Wang and Z. L. Wang, "Field Emission of Electrons Powered by a Triboelectric Nanogenerator," *Advanced Functional Materials*, 2018.

M. Zia, H. Oh, and M. S. Bakir, "Post CMOS Fabrication Technology Enabling Simultaneous Fabrication of 3D Solenoidal Micro-inductors and Flexible I/Os," *IEEE Transactions on Components, Packaging and Manufacturing Technology*, vol. 8, no. 11, pp. 2039-2044, 2018.

External Journal Publications

Alam, T., Li, W., Chang, W., Yang, F., Khan, J., and Li, C., "A comparative study of flow boiling HFE-7100 in silicon nanowire and plainwall microchannels," *International Journal of Heat and Mass Transfer*, vol. 124, pp. 829-840, 2018.

M. B. Bostan Abad, T. Ignatova, M. Turvey, P. Collins, "In Situ Scanning Probe Microscopy of MnO₂ Cathodes for Li-Ion Batteries," *Bulletin of the American Physical Society*, vol. 3, 2018.

R.D. Carpenter, B.S. Klosterhoff, F.B. Torstrick, K.T. Foley, J.K. Burkus, C.S.D. Lee, K. Gall, R.E. Guldberg, and D.L. Safranski, "Effect of porous orthopaedic implant material and structure on load sharing with simulated bone ingrowth: A finite element analysis comparing titanium and PEEK," *Journal of the Mechanical Behavior of Biomedical Materials*, vol. 80, pp. 68-76, 2018. 

E. Fox, E. Meyer, N. Panasiak, A.R. Taylor, "Calcein staining as a tool to investigate coccolithophore calcification," *Frontiers in Marine Science*, vol. 5, p. 326, 2018.

A.V. Gulyuk, D.R. LaJeunesse, R. Collazo, A. Ivanisevic, "Characterization of *Pseudomonas aeruginosa* Films on Different Inorganic Surfaces Before and After UV Light Exposure," *Langmuir*, vol. 34(36), pp. 10806–10815, 2018.

J. Krisfalusi-Gannon, W. Ali, K. Dellinger, L. Robertson, T.E. Brady, M.K. Goddard, A.L. Dellinger, "The role of horseshoe crabs in the biomedical industry and recent trends impacting species sustainability," *Frontiers in Marine Science*, vol. 5, p. 185, 2018.

Li, W., Yang, F., Alam, T., Qu, X., Peng, B., Khan, J., and Li, C., "Enhanced flow boiling in microchannels using auxiliary channels and multiple micronozzles (I): Characterizations of flow boiling heat transfer," *International Journal of Heat and Mass Transfer*, vol. 116, pp. 208-217, 2018.

Li, W., Ma, J., Alam, T., Yang, F., Khan, J., and Li, C., "Flow boiling of HFE-7100 in silicon microchannels integrated with multiple micro-nozzles and reentry micro-cavities," *International Journal of Heat and Mass Transfer*, vol. 123, pp. 354-366, 2018.

S. Lo, J. Lee, S. Weiss, and P. Fauchet, "Bloch mode selection in silicon photonic crystal microring resonators," *Opt. Lett.*, vol. 43, pp. 2957-2960, 2018.

C. Okoli, K.A. Kuttiyiel, K. Sasaki, K. Su, D. Kuila, D. Mahajan, R.R. Adzic, "Highly Dispersed Carbon Supported PdNiMo Core with Pt Monolayer Shell Electrocatalysts for Oxygen Reduction Reaction," *ECS Transactions*, vol. 85(12), pp. 67-89, 2018.

F. Rivas, O.K. Zahid, H.L. Reesink, B.T. Peal, A.J. Nixon, P.L. DeAngelis, A.R. Hall, "Label-free analysis of physiological hyaluronan size distribution with a solid-state nanopore sensor," *Nature Communications*, vol. 9(1), p. 1037, 2018.

A.J. Robb, S. Vinogradov, A.S. Danell, E. Anderson, M.S. Blackledge, C. Melander, E.G. Hvastkovs, "Electrochemical detection of small molecule induced *Pseudomonas aeruginosa* biofilm dispersion," *Electrochimica Acta*, vol. 268, pp. 276-282, 2018.

Maedeh Roushan, Zubair Azad, Saeid Movahed, Paul D. Ray, Gideon I. Livshits, Shuang Fang Lim, Keith R. Weninger and Robert Riehn, "Motor-like DNA motion due to an ATP-hydrolyzing protein under nanoconfinement," *Scientific Reports*, vol. 8, 10036, 2018.

P.J. Snyder, D.R. LaJeunesse, P. Reddy, R. Kirste, R. Collazo, A. Ivanisevic, "Bioelectronics Communication: Encoding Yeast Regulatory Responses Using Nanostructured Gallium Nitride Thin Films," *Nanoscale*, vol. 10 (24), pp. 11506–11516, 2018. 

P.J. Snyder, P. Reddy, R. Kirste, D.R. LaJeunesse, R. Collazo, A. Ivanisevic, “Noninvasive Stimulation of Neurotypic Cells Using Persistent Photoconductivity of Gallium Nitride,” *ACS omega*, vol. 3(1), pp. 615–621, 2018.

C.E. Walker, A.R. Taylor, G. Langer, G.M. Durak, S. Heath, I. Probert, G.L. Wheeler, “The requirement for calcification differs between ecologically important coccolithophore species,” *New Phytologist*, vol. 220(1), pp. 147-162, 2018.

Y. Zhu and L. Zhu, “Accessing the exceptional points in coupled Fabry-Perot resonators through hybrid integration,” *ACS Photonics*, vol. 5, 2018.

Y. Zhu and L. Zhu, “Integrated single frequency, high power laser sources based on monolithic and hybrid coherent beam combining,” *IEEE J. Sel. Top. Quantum Electron.*, vol. 24(6), 2018.

Y. Zhu, Y. Zhao, and L. Zhu, “Loss induced coherent combining in InP-Si₃N₄ hybrid platform,” *Sci. Rep.*, vol. 8(1), p. 878, 2018.

Internal Conference Presentations

S. Abdollahramezani, H. Taghinejad, A. A. Eftekhar, and A. Adibi, “Reconfigurable Metasurfaces in a Hybrid Material Platform Through Integration of Plasmonic Nanostructures with Phase-change Materials.” SPIE Photonics West Meeting, San Francisco, CA, 2018.

A. Adesina, T. Ignatova, “Single-walled carbon nanotube-biopolymer hybrids as an effective carrier for gene delivery system,” Multifunctional Materials Workshop, Nov 2018.

A. Adesina, S. Pourianejad, J. Halman, K. Afonin, T. Ignatova, “Single Wall Carbon Nanotube (SWCNT) as an Intracellular Gene Delivery Cargo,” Nano Manufacturing 2018 Conference, Sept 2018.

U. Adhikari, S. Saudi, S. Jun, J. Sankar, N. Bhattarai “PCL-Chitosan-Magnesium Oxide Based Composite Nanofibers for Tissue Engineering Applications,” Society for Biomaterials 2018 Annual Meeting and Exposition, Atlanta, GA, Apr 2018.

U. Adhikari, S. Khanal, J. Sankar, N. Bhattarai, “PCL/Magnesium Based Composite Nanofiber Scaffolds,” 34th Annual Meeting of Southern Biomedical Engineering Conference, SBEC 2018, Charlotte, NC, Mar 8-10, 2018.

P. Agbo, S.R. Karnati, L. Zhang, “Application of Surface-Modified Glass Nanoparticles in Epoxy Matrix Nanocomposite,” Carolina Science Symposium, Raleigh, NC, Nov 9, 2018.

M. Ali, F. Liu, A. Watanabe, P.M. Raj, V. Sundaram, M.M. Tentzeris and R.R. Tummala, “Miniaturized High-Performance Filters for 5G Small-Cell Applications”, Procs. 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp.1068-1075, San Diego, CA, June 2018.

J.R Alston. “Fluoroalkoxy Functionalization of Boron Nitride Nanomaterials,” ACS, Division of Polymer Chemistry, Fluoropolymer, Denver, CO, 2018.

Rickard Andersson, Amin M Saleem, Vincent Desmaris, Bo Song, Ching Ping Wong, “On-chip Solid-State CMOS Compatible Micro-Supercapacitors,” IEEE 68th Electronic Components and Technology Conference (ECTC), pp 1382-1388, 2018.

A.R. Armando, H. Mendoza, L. Zhang, S. Mantripragada, L. Zhang, “Electrospun Nanofiber Supported Zero Valent Iron Nanoparticles for Heavy Metal Ion Remediation in Wastewater,” North Carolina Academy of Science 2018: 115th Annual Meeting of the NCAS, Raleigh, NC, Mar 23-24, 2018.

D. Arvapalli, J. Wei, “High Quantum Yield Carbon Nanodots for Selective and Sensitive Detection of Iron (III) ions and Bioimaging,” Nanomanufacturing Conference,” Greensboro, NC, Sept 2018.

N. Asmare, A. K. M. Arifuzzman, M. Boya, N. Wang and A. F. Sarioglu, "Electronic Cell Analyzer for High Throughput Microfluidic Mechanotyping," Proc. MicroTAS, pp. 1308-1310, Kaohsiung, Taiwan, 2018.

Z Assefa, K Brown, M. Kanipes-Spinks, C. Roroe, "Synthesis, x-ray crystallography, spectroscopic and cytotoxicity studies of higher coordinate Gold (I) phosphine complexes," ACS National Meeting, Boston, MA, Aug 2018.

Bhawna Bagra, T. Mabe, Z. Zeng, J. Wei, "Plasmon-exciton coupling in photosystem I for enhanced energy conversion," Carolina Science Symposium, Raleigh, NC, Nov 2018.

Bhawna Bagra, T. Mabe, Z. Zeng, J. Wei, "Plasmon-exciton coupling in photosystem I for enhanced energy conversion", Nanomanufacturing Conference, Greensboro, NC, Sept 2018.

R.Bahr, B.Tehrani, M.Tentzeris and K.Byers, "A Novel Integration of Stereolithography and Inkjet Printing for Multichip Modules with High Frequency Packaging Applications", Procs. 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp.2498-2504, San Diego, CA, June 2018.

R.Bahr, X.He, B.Tehrani and M.M.Tentzeris, "A Fully 3D Printed Multi-Chip Module with an On-Package Enhanced Dielectric Lens for mm-Wave Applications Using Multimaterial Stereo-lithography", Procs. 2018 IEEE/MTT-S International Microwave Symposium – IMS, pp.1561-1564, Philadelphia, PA, June 2018.

A. Barrios Santos, G. Castelluccio and O. Pierron, "In situ SEM small fatigue crack investigation in Ni microbeams," 24th International Conference on Plasticity, Damage & Fracture, San Juan, Puerto Rico, January 2018.

A. Barrios, J. Alonso, G. Castelluccio and O. Pierron, "Effect of the environment on void-controlled fatigue crack nucleation and propagation in Ni microbeams," 12th International Fatigue Congress, Poitiers Futuroscope, France, May 2018.

L. Beervali, S. Aravamudhan, J.M. Starobin, "Study of toxicity of ceria nanoparticles on an in-vitro alveolo-capillary barrier," Proceedings of the 2nd Quantifying Exposure to Engineered Nanomaterials from Manufactured Products Conference, Washington DC, 2018.

L. Beervali, S. Aravamudhan, J.M. Starobin, "Study of toxicity of ceria nanoparticles on an in-vitro alveolo-capillary barrier," Proceedings of the 7th Sustainable Nanotechnology Organization Conference, Alexandria VA, 2018.

S.M. Boyd, R. Edmonson, A.J. Ewenkum, K. Rhinehardt, J. Graves, "Bacterial Adaptations to Metallotoxins," BEACON Congress, East Lansing, MI, Aug 2018.

S.M. Boyd, A. Tapia, A. Ewenkum, K. Rhinehardt, J. Graves, "Evolution of general metal resistance in Copper Resistant E. coli," BEACON Congress, East Lansing, MI, Aug 2018.

G. Cahn, S. Graham, O. Pierron, "Strain effects on electrical performance of polymer supported conductive inks (poster presentation)," MRS Fall Meeting 2018, Boston, MA, November 2018.

W. Cai, "Active and nonlinear plasmonics facilitated by field effect and carrier transport, (invited)" SPIE Optics + Photonics, 10721-47, San Diego, CA, August 19-23, 2018.

W. Cai, "All-optical control of light with hot electrons, (invited)" The International Symposium on Plasmonics and Nano-photonics (iSPN2018), Hangzhou, China, May 24-27, 2018.

W. Cai, "Femtosecond light modulation expedited by hot carriers in plasmonics, (invited)" The Greater Bay Area Symposium for Wave Functional Materials, Shenzhen, China, June 1-3, 2018.

W. Cai, "Structured chirality in nanophotonics," (keynote) 10th International Conference on Information Optics and Photonics (CIOP 2018), Beijing, China, July 8-11, 2018.

W. Cai, "Ultrafast all-optical modulation of light with hot-carrier plasmonics, (invited)" IEEE Research and Applications of Photonics In Defense Conference (RAPID), FE2.2, Miramar Beach, FL, August 22-24, 2018.

Chapman, J. D., Kottke, P. A., and Fedorov, A. G, "Nanoelectrosprayed liquid jets for evaporative heat transfer enhancement," ITherm 2018: IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems, San Diego, CA, USA, May 29 – June 1 2018.

Chen, J., Ye, H., Xie, J., Yan, C., Sun, R., Wong, C.-P., "Metal-Organic Framework Derived PdCu/C as an Efficient Catalyst for Electroless Copper Deposition," 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

Chen, R., Chow, J., Taylor, C., Meth, J., and Sitaraman, S. K., "Adaptive Curvature Flexure Test to Assess Flexible Electronic Systems," 68th Electronic Components and Technology Conference, IEEE-CPMT and EIA, San Diego, CA, May 2018.

H. Chevva, D. LaJeunesse, J. Wei, "Solid state silver nanowire growth," 10th Walkway of Discovery, Bangalore, India, 2018.

H. Chevva, J. Wei, "Nature inspired and Green synthesis of self-grown silver(Ag) nanowires (NWs) on biopolymer film," UNCG Graduate Research and Creativity Expo, Apr 2018.

Chilmonczyk, M., Kottke, P.A., Stevens, H. Y., Guldberg, R. and Fedorov, A., "Monolithically fabricated micro/nano-mass exchanger for dynamic ESI-MS monitoring of therapeutic cell bioreactors," 66th ASMS Conference on Mass Spectrometry & Allied Topics, San Diego, CA, June 2018.

T. Chi, J. Park, S. Li, and H. Wang, "A Mm-Wave Full-Duplex Transceiver Front-End with an On-Chip Multi-feed Self-Interference-Cancelling Antenna and an All-Passive Canceler," Proc. the Government Microcircuit Applications and Critical Technology Conference (GOMACTech), March 2018.

T. Chi, J. Park, S. Li, and H. Wang, "A 64GHz Full-Duplex Transceiver Front-End with An On-Chip Multi-Feed Self-Interference-Cancelling Antenna and An All-Passive Canceler Supporting 4Gb/s Modulation in One Antenna Footprint," IEEE International Solid-State Circuits Conference (ISSCC) Dig. Tech. Papers, Feb. 2018.

T.-H. Chang, D. Struk, M. Navaei, V. M. Doroshenko; V. Laiko; E. Moskovets; K. Novoselov, J. D. Dimandja, Peter J. Hesketh, "MEMS-GC with Integrated Heater for Ion Trap Mass Spectrometer," IMCS-17, Vienna, Austria, July 2018.

M.-K. Cho, I. Song, and J.D. Cressler, "A True Time Delay-based SiGe Bi-directional T/R Chipset for Large-Scale Wideband Timed Array Antennas," Proceedings of the 2018 IEEE MTT-S RFIC Symposium, pp. 1-4, 2018

M.-K. Cho, I. Song, Z.E. Fleetwood, S.P. Buchner, D. McMorrow, P. Paki, and J.D. Cressler, "Best Practices for Using Electrostatic Discharge (ESD) Protection Techniques for Single-Event Transient Mitigation," 2018 IEEE Nuclear and Space Radiation Effects Conference, paper PD-4, 2018.

J. Chow, K. Kim, G. Cahn, R. Chen, J. Meth, S. Graham, O. Pierron, and S. Sitaraman, "Stretch Testing of Flexible Electronics," 2018 FLEX. Monterey, CA, February 2018.

Chow, J., May, C., May, J. and Sitaraman, S. K., "Study of Wearables with Embedded Electronics through Experiments and Simulations," 68th Electronic Components and Technology Conference, IEEE-CPMT and EIA, San Diego, CA, May 2018.

C. H. Chu, R. Liu, T. Ozkaya-Ahmadov and A. F. Sarioglu, "Leukocyte Immunodepletion Using an Additively-Manufactured Multi-Layer Microfluidic Device," Proc. MicroTAS, pp. 1260-1262, Kaohsiung, TAIWAN, 2018.

O. Civelekoglu, N. Wang, M. Boya, T. Ozkaya-Ahmadov, R. Liu and A. F. Sarioglu, "High Dynamic Range Electrical Profiling of Surface Expression via Flow-Rate-Modulated-Magnetophoresis," Proc. MicroTAS, pp. 1251-1253, Kaohsiung, TAIWAN, 2018.

A. Daruwalla, H. Wen, C.S. Liu and F. Ayazi, "A piezo-capacitive BAW accelerometer with extended dynamic range using a gap changing moving electrode," in Proc. of 2018 IEEE/ION Position, Location and Navigation Symposium (PLANS 2018), pp. 283-287, Monterey, CA, USA, April 2018.

A. Daruwalla, H. Wen, R. Mirjalili and F. Ayazi, "Epitaxially-grown thick polysilicon for BAW disk resonator gyroscopes with very low dissipation," in Proc. of the 31st IEEE International Micro Electro Mechanical Systems Conference (MEMS 2018), pp. 1008-1011, Belfast, UK, January 2018.

S.N.Daskalakis, R.Correia, G.Goussetis, M.M.Tentzeris, N.B.Carvalho and A.Georgiadis, "Spectrally Efficient 4-PAM Ambient FM Backscattering for Wireless Sensing and RFID Applications", Procs. 2018 IEEE/MTT-S International Microwave Symposium – IMS, pp.266-269, Philadelphia, PA, June 2018.

D. Dastan and H. Garmestani, "Nano-sized ionic materials," Abstracts of Papers of the American Chemical Society, vol. 256, Aug 2018.

S. Dawood, H. Rathnayake, "Metal-organic frameworks (MOFs) for patterning on useful CMOS platforms", PMSE division, American Chemical Society National Meeting, Boston, 2018.

R. Dehghannasiri, H. Moradinejad, T. Fan, A. H. Hosseinnia, A. A. Eftekhar, and A. Adibi, "Integrated Optomechanical Resonators in Double-Layer Crystalline Silicon Platforms." IEEE Photonics Conference (IPC), Reston, VA, 2018.

D. Deng, A.N. Ofori-Boadu, E. Fini, E., "Physiochemical characterization of swine-manure towards more sustainable engineering applications," 6th IAJC International Conference, Orlando, Florida, Oct 11-14, 2018.

B. DeProposo, et al., "First Demonstration of Silicon-Like >250 I/O Per mm Per Layer Multilayer RDL on Glass Panel Interposers by Embedded Photo-Trench and Fly Cut Planarization", 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp. 179-184. IEEE, 2018.

Prithviraj Deshmukh, Manish Sharma, Surya Nalamati, C. Lewis Reynolds Jr., Yang Liu, Shanthi Iyer, "GaAsSbN based Core-shell Nanowires with Photoluminescence Emission reaching 1.55 μ m", 2018 MRS Fall Meeting and Exhibit, Boston, MA, Nov 2018.

Prithviraj Deshmukh, Manish Sharma, Surya Nalamati, C. Lewis Reynolds Jr., Yang Liu, Shanthi Iyer, "GaAsSb(N) based axial and core-shell nanowires with photoluminescence emission reaching 1.7 μ m", Carolina Science Symposium, Raleigh, NC, Nov 2018.

Prithviraj Deshmukh, Manish Sharma, Surya Nalamati, C. Lewis Reynolds Jr., Yang Liu and Shanthi Iyer, "The Effects of N Incorporation in GaAsSb based Core-shell Nanowires", 34th NAMBE, Banff, Alberta, Canada, Oct 2018.

Prithviraj Deshmukh, Manish Sharma, Surya Nalamati, Shisir Devkota, Priyanka Ramaswamy, Jia Li and Shanthi Iyer, "Study of Opto-electronic Properties of GaAsSb(N) based Core-shell Nanowires", Nano Manufacturing Conference, Greensboro, NC, Sept 2018.

T. Detchprohm, K. Mehta, J. Park, Y. Liu, O. Moreno*, S.-C. Shen, D. Yoder, and R. Dupuis, "Highly reflective 369.5nm AlGaN-metal hybrid distributed Bragg reflectors," 2018 SPIE Photonic West OPTO – Conference on Gallium Nitride Materials and Devices XIII, San Francisco, CA, January 27-February 1, 2018.

T. Detchprohm, Y.-J. Park, K. Mehta, O. Moreno, Y.-S. Liu, S. Wang, S. Alugubelli, S.-C. Shen, P. D. Yoder, F. A. Ponce, and R. D. Dupuis, "Highly Reflective 369.5nm AlGaN-Metal Hybrid Distributed Bragg Reflectors," SPIE Photonics West 2018, San Francisco, CA, January 2018.

Shisir Devkota, Mehul Parakh, Siamak Khorasani, Priyanka Ramaswamy, Shanthi Iyer. "N-type Doping of GaAs Nanowires Using GaTe Source Grown by Ga-Assisted Molecular Beam Epitaxy". Carolina Science Symposium, Raleigh, NC, Nov 2018.

V. M. Doroshenko, V. Laiko, E. Moskovets, K. Novoselov, T.-H. Chang, D. Struk, J. D. Dimandja, M. Navaei, P. J. Hesketh, "Development of a Low-Power Miniature GC-MS Instrument for Fieldable Applications," 66th ASMS Conference on Mass Spectrometry and Allied Topics, San Diego, CA, June 2018.

V. M. Doroshenko, V. Laiko, E. Moskovets, K. Novoselov, T.-H. Chang, J. D. Dimandja, M. Navaei, P. J. Hesketh, "Practical Aspects of MS Miniaturization for Fieldable Applications," Pittcon - Mini Mass Spectrometers Symposium, Orlando, FL, Feb 26 – March 1 2018.

R. Dupuis, Y. Park, M. Ji, Y. Liu, J. Kim, H. Jeong, T. Detchprohm, S.-C. Shen, K. Mehta, P. Yoder, S. Wang, S. Alugubelli, F. Ponce, A. Sood, and N. Dhar, "Growth and Characterization of II-N ultraviolet vertical-cavity surface emitting lasers and avalanche photodiodes by MOCVD," 19th International Conference on Metalorganic Vapor Phase Epitaxi (ICMOVPE XIX), Nara Kasugano International Forum, Nara, Japan, June 3-8, 2018.

Akshita Dutta, Nina Tymińska, Guanghui Zhu, James Collins, Ryan P. Lively, J. R. Schmidt, and Sergey Vasenkov, "Influence of Hydrogen Sulfide Exposure on the Transport and Structural Properties of the Metal–Organic Framework ZIF-8," *J. Phys. Chem. C*, vol. 122 (13), pp 7278–7287, 2018. 

S. Dwarakanath, P. M. Raj, V. Smet, V. Sundaram, M. D. Losego, and R. R. Tummala. "High-Temperature and Moisture-Ageing Reliability of High-Density Power Packages for Electric Vehicles." 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp. 179-184. IEEE, 2018.

Z. Enderson, A. C. Elder, T. M. Orlando, and P. N. First, "Non-contact Atomic Force Microscopy of Ordered Porous Materials," March Meeting of the American Physical Society, Los Angeles, CA, March 5-9 2018.

A.Eid, J.Hester, A.Nauroze, T.-H.Lin, J.Costantine, Y.Tawk, A.H.Ramadan and M.M.Tentzeris, "A Flexible Compact Rectenna for 2.40GHz ISM Energy Harvesting Applications", Procs. 2018 IEEE International Symposium on Antennas and Propagation, pp.1887-1888, Boston, MA, July 2018.

A.Eid, B.Tehrani, J.Hester, X.He and M.M.Tentzeris, "Nanotechnology-Enabled Additively-Manufactured RF and Millimeter-Wave Electronics", Procs. 2018 IEEE 13th Nanotechnology Materials and Devices Conference (NMDC), Portland, OR, October 2018.

SB.Fan, TH.Chang, XY.Liu, Y.Fan and M.M.Tentzeris, "A Depolarizing Chipless RFID Tag with Humidity Sensing Capability", Procs. 2018 IEEE International Symposium on Antennas and Propagation, pp.2469-2470, Boston, MA, July 2018.

T. Fan, A. A. Eftekhar and A. Adibi, "High-Q Microresonators at Near-Infrared/Near Visible Wavelengths on a 3C-SiC-on-Insulator (SiCOI) Platform.", IEEE Photonics Conference (IPC), Reston, VA, 2018. 

T. Fan, A. H. Hosseinnia, H. Moradinejad, X. Wu, A. A. Eftekhar, and A. Adibi, "Hybrid Graphene Modulator on CMOS-Compatible Platform for Integrated Photonic Applications (Conference Presentation)." SPIE Photonics West, San Francisco, CA, 2018.

T. Fan, A. H. Hosseinnia, H. Moradinejad, X. Wu, A. A. Eftekhar, and A. Adibi, "Hybrid h-BN/Graphene/h-BN Silicon Device for Electro-optic Modulation." Conference on Lasers and Electro-optics (CLEO), San Jose, CA, 2018.

T. Fan, H. Moradinejad, X. Wu, A. A. Eftekhar, and A. Adibi, "High-Q Integrated Photonic Microresonators on 3C SiC-on-Insulator Platform." Conference on Lasers and Electro-optics (CLEO), San Jose, CA, 2018.

T. Fan, H. Moradinejad, A. H. Hosseinnia, X. Wu, A. A. Eftekhar, and A. Adibi, "High-Quality Hybrid Double-layer-Silicon on Silicon Nitride Platform for Integrated Photonic Applications." Conference on Lasers and Electro-optics (CLEO), San Jose, CA, 2018.

M. Frounchi, C. Coen, C.D.Y. Cheon, N. Lourenco, W. Williams, and J.D. Cressler, "A V-Band SiGe Image-Reject Receiver Front-End for Atmospheric Remote Sensing," Proceedings of the 2018 IEEE BiCMOS and Compound Semiconductor Integrated Circuits and Technology Symposium, pp. 223-226, 2018.

Fu, C., Zeng, X., Sun, R., Xu, J.-B., Wong, C.-P., "Facile Synthesis of Silver Nanoparticles Decorated Boron Nitride Nanotube Hybrids," 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

S. Gbewonyo, L. Zhang, "Low Thermal Conductivity Carbon Fibers from Electrospinning," 2018 Fiber Society Technical Meeting and Conference: Advanced, Smart, and Sustainable Fibers, Materials, and Textiles, Davis, CA, Oct 29-31, 2018.

S. Gbewonyo, L. Zhang, "Low Thermal Conductive Carbon Fibers Derived from Chemical Activation of Electrospun Polyacrylonitrile," Nano Manufacturing 2018: From Innovation to Commercialization, Greensboro, NC, Sept 26, 2018.

P. Getz, C. Carron, O. Brand, "Enhancing selectivity of cantilever-based resonant chemical sensors through transient measurements at elevated temperatures," in *Solid-State Sensors, Actuators and Microsystems Workshop (Hilton Head 2018)*, Hilton Head, USA, 2018, pp. 295-298.

S.Ghosh, R.Phon, M.M.Tentzeris and S.Lim, "An Improved Multifunctional Frequency Selective Surface based on Microfluidic Technology", Procs. 2018 International Symposium on Antennas and Propagation (ISAP), pp.1-2, Busan, KOREA, October 2018.

S.Ghosh, M.M.Tentzeris and S.Lim, "Lightweight 3D Printed Metamaterial for Electromagnetic Wave Absorption", Procs. 2018 International Symposium on Antennas and Propagation (ISAP), pp.1-2, Busan, KOREA, October 2018.

P.S. Goley, G.N. Tzintzarov, S. Zeinolabedinzadeh, A. Ildefonso, E.X. Zhang, D. M. Fleetwood, L. Zimmermann, and J.D. Cressler, "An Investigation of Total Ionizing Dose Effects in the 70 GHz Bandwidth Photodiodes of a Novel SiGe Integrated Photonics Platform," 2018 IEEE Nuclear and Space Radiation Effects Conference, paper B-5, 2018.

S. A. Gregory, "Vapor Modification of Polymers," New York Academy of Science, New York, NY, August 2018.

S. A. Gregory, "Vapor Phase Modification of Bulk Lumber for Moisture Management," Tennessee Valley Chapter of AVS Symposium 2018, Knoxville, TN, October 2018.

P.Gupta, Y. Jeong, J. Choi, M. Faingold, A. Daruwalla and F. Ayazi, "Precision high-bandwidth out-of-plane accelerometer as contact microphone for body-worn auscultation devices," in Technical Digest of 2018 Solid-State Sensors, Actuators and Microsystems Workshop (Hilton Head), pp. 30-33, Hilton Head Island, SC, USA, June 2018.

S. Gupta, C. Barr, W. Mook, B. Boyce, K. Hattar, J. Kacher, O. Pierron, "MEMS-based quantitative in situ TEM nanomechanical testing (poster presentation)," Gordon Research Conference on Thin Film and Small Scale Mechanical Behavior, Lewiston, ME, July 2018.

S. Gupta, J. Kacher, and O. Pierron, "In situ TEM Activation Volume Measurements," CINT Users Meeting, Santa Fe, NM, September 2018.

Jinho Hah, Bo Song, Kyoung-Sik Moon, Samuel Graham, CP Wong, "Design and Surface Modification of PET Substrates Using UV/Ozone Treatment for Roll-to-Roll Processed Solar Photovoltaic (PV) Module

- Packaging," 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp 2397-2403.
- S. Hanasoge, A. Alexeev, M. Erickson, J. Xu, P. J. Hesketh, "Artificial cilia for microfluidics particle capture," Fall ECS Meeting, Cancun, October 2018.
- S. Hanasoge, A. Alexeev, M. Erickson, J. Xu, P. J. Hesketh, "Magnetic Actuated Beating Cilia for Preconcentration of Bacteria," Spring ECS Meeting, Seattle, WA, May 2018.
- S. Hanasoge, A. Alexeev, P. J. Hesketh, M. Erickson, J. Xu, "Magnetic Beads and Artificial Cilia for Efficient Pre-concentration of Salmonella Bacteria," American Microbiology Meeting, Atlanta GA, April 2018.
- S. Hanasoge, A. Alexeev, P. J. Hesketh, "Designing magnetic cilia that exhibit metachronal motion," Abstract 2928, Biomedical Engineering Society Annual Meeting, Atlanta, GA, October 2018.
- H. Harrison, J.R. Alston, "Quantification of Boron Nitride Nanotube Purity and Applications towards Evaluating Fluoroalkoxy Functionalized Boron Nitride Nanomaterials," ACS, Division of Polymer Chemistry, Fluoropolymer, Denver, CO, 2018.
- M. Hawkins, H. Rathnayake, Joseph Starobin, "Novel organic-inorganic nanohybrids for FRET Communication network," PMSE division, American Chemical Society National Meeting, Boston, MA, 2018.
- D. Herr, "Convergence in the Era of Intelligent Cognitive Assistants: What does this mean? Opportunities and Challenges," NSF Grantees Conference, Alexandria, VA, Dec 2018.
- D. Herr, "Sustainable functional nanomaterials and methods in electronics," 22nd Annual Green Chemistry and Engineering Conference, American Chemical Society, Portland, OR, Jun 2018.
- D. Herr, "Hydroponic Routes to Nutritionally Enhanced Produce, Nutraceuticals and Sustainable Functional Textiles: An Innovation Bridge to Help Address Strategic 21st Century Food Security Needs," Environmental Protection Agency, RTP, NC, Mar 2018.
- J.G.D.Hester, J.Kimionis, R.Bahr, W.Su, B.Tehrani and M.M.Tentzeris, "Radar & Additive Manufacturing Technologies: The Future of Internet of Things (IoT)", Proc. of the 2018 IEEE Radar Conference, pp. 447-452, Oklahoma City, OK, April 2018.
- A. H. Hosseinnia, N. Sodagar, H. Moradinejad, T. Fan, A. A. Eftekhar, and A. Adibi, "Hybrid Material Platforms for Reconfigurable Integrated Nanophotonics, Stegeman Symposium." Orlando, FL, 2018. (invited conference talk)
- A. H. Hosseinnia, N. Sodagar, H. Moradinejad, T. Fan, A. A. Eftekhar, and A. Adibi, "Hybrid Material Platforms for Low-power, High-speed, and Miniaturized Integrated Photonic Devices and Systems." Optics and Photonics Conference, Philadelphia, PA, 2018. (invited keynote talk)
- A. H. Hosseinnia, T. Fan, H. Moradinejad, N. Sodagar, S. Taghavi, A. A. Eftekhar, and A. Adibi, "Low-power High-speed Resonance-based Integrated Photonic Modulators." IEEE Photonics Conference (IPC), Reston, VA, 2018. (invited conference talk)
- Hu, Y., Zhang, X., Zhu, P., Zhao, T., Zhang, Y., Sun, R., Wong, C.-P., "In Cost-Efficient Formation of Flexible Pressure Sensor with Micropillar Arrays by Metal-Assisted Chemical Etching for Wearable Electronic Skin," 68th IEEE Electronic Components and Technology Conference, ECTC 2018, pp 790-795.
- Hu, Z., Ye, H., Chen, J., Fu, X.-Z., Yu, S., Sun, R., Wong, C.-P., "Li_{0.33}La_{0.56}TiO₃/PEO composite solid electrolytes for flexible all-solid-state lithium batteries," 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

T. Ignatova, S. V. Rotkin, S. S. Jedlicka, "Developing SWCNT Nano-Sensors for C17.2 Neural Stem Cells," Workshop on Innovative Nanoscale Devices and Systems (WINDS 2018), 2018.

A. Ildefonso, H. Ying, A. Imprakash, Z. Fleetwood, G. Tzintzarov, "Silicon-Germanium Platforms: An Enabling Technology for Next-Generation Space Systems," Symposium on Space Innovations, 2018.

A. Ildefonso and J.D. Cressler, "Radiation Hardening Strategies for SiGe-Based RF Circuits and Systems," Proceedings of the 2018 GOMAC-Tech - Government Microcircuit Applications and Critical Technology Conference, pp. 1-4, 2018

A. Ildefonso, Z.E. Fleetwood, G.N. Tzintzarov, J.M. Hales, M. Frounchi, A. Khachatrian, D. McMorrow, J.H. Warner, J. Harms, A. Erickson, and J.D. Cressler, "Optimizing Optical Parameters to Facilitate Correlation of Laser- and Heavy-Ion-Induced Single-Event Transients in SiGe HBTs," 2018 IEEE Nuclear and Space Radiation Effects Conference, paper H-3, 2018.

A. Islam, A. Kelkar, "Design, Processing, and Characterization of Interlaminar Response of a Multi-Layer Carbon-Epoxy Prepreg" Proceedings of SAMPE Spring Conference, Long Beach, CA, 2018.

M. Jasper, A. Shahbazi, K. Schimmel, L.J. Wang, "Techno-Economic Analysis of Simultaneous Biomass Gasification and Syngas Upgrading via Chemical Looping Technology," AIChE Annual International Meeting, Oct 28th-Nov 2, 2018

M. Ji, J. Kim, B. Chaiyasarakul, T. Detchprohm, S.-C. Shen, R. D. Dupuis, A. Sood, and N. Dhar, "Demonstration of GaN p-i-p-i-n ultraviolet avalanche photodiodes," 2018 SPIE Photonic West OPTO – Conference on Gallium Nitride Materials and Devices XIII, San Francisco, CA, January 27 - February 1, 2018.

M. Ji, J. Kim, M. Bakhtiary-Noodeh, H. Jeong, T. Detchprohm, S.-C. Shen, A. Sood, N. Dhar, S. Babu, and R. Dupuis, "Uniform and reliable 4x4 GaN p-i-p-i-n separate absorption and multiplication ultraviolet avalanche photodiode arrays with large detection area," 19th International Conference on Metalorganic Vapor Phase Epitaxy (ICMOVPE XIX), Nara Kasugano International Forum, Nara, Japan, June 3-8, 2018.

M.-H. Ji, H. Jeong, M. Bakhtiary-Noodeh, J. Kim, T. Detchprohm, S.-C. Shen, P. Ghuman, S. Babu, A. K. Sood, and R. D. Dupuis, "Growth and Device Characterization of III-N Deep-Ultraviolet Avalanche Photodiodes and Arrays," Paper Fr4.1, Seventh International Symposium of Growth of III-Nitrides (ISGN-7), Warsaw, Poland, August 2018.

M.-H. Ji, J. Kim, H. Jeong, M. Bakhtiary, T. Detchprohm, and R. D. Dupuis, "Demonstration of GaN p-i-p-i-n Separate-Absorption and Multiplication Ultraviolet Avalanche Photodiodes Arrays with Large Detection Area," 60th Electronic Materials Conference, Santa Barbara, CA, June 2018.

Z. Ji, A. Sheardy, J. Wei, "Tuning Carbon Nanodots and Antioxidation Studies," Nanomanufacturing Conference, Greensboro, NC, Sept 2018.

P. K. Jo, M. O. Hossen, X. Zhang, Y. Zhang, and M. S. Bakir, "Heterogeneous Multi-Die Stitching: Technology Demonstration and Design Considerations," in Proc. 68th IEEE Electronic Components and Technology Conf. (ECTC), San Diego, CA, May 2018.

P. K. Jo, T. Zheng, and M. S. Bakir, "Multi-Die Polylithic Integration Enabled by Heterogeneous Interconnect Stitching Technology (HIST)," in 27th IEEE Conf. on Electrical Performance of Electronic Packaging and Systems (EPEPS), San Jose, CA, October 2018. 

Sean Johnson, Mehul Parakh, Manish Sharma, J. Li and S. Iyer, "Analysis of temperature dependent current-voltage and noise measurements in heterostructure GaAsSb nanowires," Carolina Science Symposium, Raleigh, NC, Nov 2018.

G. Joseph, L.J. Wang, "A comparative study on the life cycle assessment (LCA) of an agricultural wastes-based biogas production process," ASABE Annual International Meeting, Detroit, MI, Jul 29-Aug 1, 2018

S. Jun, U. Adhikari, S. Khanal, S. Fialkova, J. Sankar, N. Bhattacharai "Chitin based Nanofibrils and Nanocomposites for Biomedical Application" 34th Annual Meeting of Southern Biomedical Engineering Conference, SBEC 2018, Charlotte, NC, Mar 8-10, 2018.

D. Jung, H. Zhao, and H. Wang, "A Highly Linear Doherty Power Amplifier with Multigated Transistors Supporting 80MSymbol/s 256-QAM," Proc. IEEE International Microwave Symposium (IMS), June 2018.

G. Jung, A. Pirouz, C. Tekes, T. Carpenter, M. W. Rashid, A. Revanitabar, D. Cowell, S. Freear, M. Ghovanloo, and F. L. Degertekin. "Single-chip reduced-wire CMUT-on-CMOS system for intracardiac echocardiography." In 2018 IEEE International Ultrasonics Symposium (IUS), pp. 1-4. IEEE, 2018.

S.R. Karnati, P. Agbo, L. Zhang, "Surface Modified SiO₂ Nanomaterials for Reinforcing Epoxy Matrix Nanocomposite," Nano Manufacturing 2018: From Innovation to Commercialization, Greensboro, NC, Sept 26, 2018.

S. R. Karnati, E. Fini, L. Zhang, "Epoxy Nanocomposite with Biobinder from Swine Manure," Invent Triad: The forum on the Invention Ecosystem in the Bio-economy Crossing Paths with Higher Education, Greensboro, NC, Jan 29-31, 2018.

S. R. Karnati, D. Oldham, E. Fini, L. Zhang, "Surface Modification of Nano-SiO₂ for Asphalt Binder Applications," Invent Triad: The forum on the Invention Ecosystem in the Bio-economy Crossing Paths with Higher Education, Greensboro, NC, Jan 29-31, 2018.

K. Kim, H. Luo, T. Zhu, O. Pierron, S. Graham, "Substrate cracking effect on mechanical reliability of barrier films for flexible electronics," InterPACK, San Francisco, CA, Aug 2018.

K. Kim, H. Luo, T. Zhu, S. Graham, O. Pierron, "Mechanical reliability of barrier films for flexible electronics," 45th International Conference on Metallurgical Coatings and Thin Films (ICMCTF), San Diego, CA, April 2018.

K. Kim, G. Cahn, S. Sitaraman, O. Pierron, S. Graham, "Reliability assessment of conductive interfaces for flexible electronics," MRS Fall Meeting 2018, Boston, MA, November 2018.

M. Kim, B. Lee, S. W. Lee, O. Brand, "All-soft and liquid-phase supercapacitors based on CNT-integrated liquid metal electrodes", in *MRS Fall Meeting and Exhibit (MRS Fall 2018)*, Boston, USA, USA, BM08.06.25, Nov. 2018 (*nominated for best poster award*).

M. Kim, C. Kim, H. Alrowais, P. Getz, O. Brand, "Multiscale liquid metal thin-film patterning based on soft lithography for skin-mountable, soft and 3D-integrated biological microsystems," in *Solid-State Sensors, Actuators and Microsystems Workshop (Hilton Head 2018)*, Hilton Head, USA, 2018, pp. 42-45 (*nominated for best paper award*).

M. Kim, O. Brand, "All-soft and 3D-integrated functional microsystems enabled by gallium-based liquid metal and soft lithography", in *Flex Conference 2018*, Monterey, CA, USA, February 2018.

J.Kimionis, S.Shahramian, Y.Baeyens, A.Singh and M.M.Tentzeris, "Pushing Inkjet Printing to W-Band: An all-printed 90-GHz beamforming array", Procs. 2018 IEEE/MTT-S International Microwave Symposium – IMS, pp.63-66, Philadelphia, PA, June 2018.

S. Ko, B. Hamelin, J. Yang and F. Ayazi, "High-Q monocrystalline silicon carbide disk resonators fabricated using drie of thick SiC-on-insulator substrates," in Proc. of the 31st IEEE International Micro Electro Mechanical Systems Conference (MEMS 2018), pp. 996-999, Belfast, UK, January 2018.

Gabriel Kwong, "Activity nanosensors for early and noninvasive detection of acute organ transplant rejection," American Transplant Congress, Seattle, WA, 2018.

Gabriel Kwong, "Engineering DNA gates for extensible, multiplexed cell sorting," AIChE Annual Meeting, Pittsburgh, PA, 2018.

Gabriel Kwong, "Engineering DNA gates for extensible, multiplexed cell sorting," Biomedical Engineering Society Meeting, Atlanta, GA, 2018.

Gabriel Kwong, "Harnessing protease activity as 'biological bits' for programmable medicine," nanoDDS, Portland, OR, 2018.

Gabriel Kwong, "Noninvasive prediction of response to immunosuppressive therapy in organ transplantation," Biomedical Engineering Society Meeting, Atlanta, GA, 2018.

Gabriel Kwong, "Protease activity signatures of NASH," 4th Paris NASH Meeting, Institut Pasteur, Paris, 2018.

Gabriel Kwong, "Remote control of engineered T cells using photothermal pulses," AIChE Annual Meeting, Pittsburgh, PA, 2018.

W. Lang; A. M. Österholm, M. De Keersmaecker, D. E. Shen, R. J. Moon, J. R. Reynolds, "Robust Paper-based Electrochromic Devices Enabled by Nanocellulose-Coated Paper and Chitin Nanofiber Barrier Layers," TAPPI International Conference on Nanotechnology for Renewable Materials, June 11-16 2018.

S. W. Lee, "Designing Multi-Functional Electrodes for Next-Generation Energy Storage Devices," Micro/Nano- Electronics for Global Challenges Conference, Atlanta, GA, May 2018.

Lei, J. Y., Moon, T., Chow, J., Sitaraman, S. K., and Chatterjee, A., "A Monobit Built-In Test and Diagnostic System for Flexible Electronic Interconnect," 2018 IEEE 27th Asian Test Symposium (ATS), pp. 191-196, October 2018.

Li, C., Zeng, X., Zhu, D., Sun, R., Wong, C.-P., "A novel graphene oxide millisphere/epoxy resin composite with Enhanced Thermal Conductivity," 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

Li, H., Gao, Y., Zhu, P., Gang, L., Sun, R., Wong, C.-P., "High thermal conductive epoxy resin composites filled with $\text{Al}_2\text{O}_3@\text{BN}$ core-shell hybrid particles," 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

S. Li, T. Chi, T. Huang, H. Nguyen, and H. Wang, "A 28GHz Packaged Chireix Transmitter with Direct On-Antenna Outphasing Load Modulation Achieving 56%/38% PA Efficiency at Peak/6dB Back-Off Output Power," Proc. IEEE Radio Frequency Integrated Circuits (RFIC), May 2018.

S. Li, T. Chi, H. Nguyen, and H. Wang, "Performance of V-Band On-Chip Antennas in GlobalFoundries 45nm CMOS SOI Process for Mm-Wave 5G Applications," Proc. IEEE International Microwave Symposium (IMS), June 2018.

T. Li and H. Wang, "A Continuous-Mode 23.5-41GHz Hybrid Class-F/F-1 Power Amplifier with 46% Peak PAE for 5G Massive MIMO Applications," Proc. IEEE Radio Frequency Integrated Circuits (RFIC), May 2018.

T. Liu, B. Lee, M. Lee, S. W. Lee, "Redox-Active Carbon Positive Electrodes for High-Performance Hybrid Supercapacitors," The 233rd Electrochemical Society Meeting, Seattle, WA, May 2018.

Y. Li, "Vapor Phase Modification of Cellulose Fiber," National Graduate Research Polymer Conference, Minneapolis, MN, June 2018.

Y. Li, "Vapor Phase Modification of Cellulose Freestanding Film," Tennessee Valley Chapter of AVS Symposium 2018, Knoxville, TN, October 2018.

Lim, Jaemyung, Coskun Tekes, Ahmad Rezvanitabar, Evren F. Arkan, F. Levent Degertekin, and Maysam Ghovanloo. "Highly-integrated guidewire vascular ultrasound imaging system-on-a-chip." 2018 IEEE Custom Integrated Circuits Conference (CICC), pp. 1-4. IEEE, 2018.

Chun Hao Lin, Qingji Zeng, Evan Lafalce, Marcus Smith, Sidney Malak, Jaehan Jung, Youngjun Yoon, Zhiqun Lin, Zeev Valy Vardeny, Vladimir Tsukruk, "Large-Scale Robust Quantum Dot Microdisk Lasers with Controlled Cavity Modes", APS March Meeting 2018, Los Angeles, CA, March 2018.

Chun Hao Lin, Qingji Zeng, Evan Lafalce, Marcus Smith, Shengtao Yu, Youngjun Yoon, Yajing Chang, Zhiqun Lin, Zeev Valy Vardeny, Vladimir Tsukruk, "Large-area inorganic perovskite quantum dot microdisk microlasers enabled by orthogonal photolithography", APS March Meeting 2018, Los Angeles, CA, March 2018.

T.-H. Lin, Ryan A. Bahr, and Manos M. Tentzeris, P. Markondeya Raj, Venky Sundaram, and Rao Tummala, "Novel 3D-/Inkjet-Printed Flexible On-Package Antennas, Packaging Structures, and Modules for Broadband 5G Applications", Proceedings of the 68th IEEE Electronic Components and Technology Conference (ECTC), pp.214-220, San Diego, CA, May 29 - June 1, 2018.

T.-H. Lin, W. Su and M.M. Tentzeris, "Expand Horizons of Microfluidic Systems: An Inkjet Printed Flexible Energy Autonomous Micropump System for Wearable and IoT Microfluidic Applications", Procs. 2018 IEEE/MTT-S International Microwave Symposium – IMS, pp.812-815, Philadelphia, PA, June 2018.

F. Liu, H. Ito, R. Zhang, B. H. DeProspo, F. Benthaus, H. Akimaru, K. Hasegawa, V. Sundaram, R. R. Tummala, "Low Cost Panel-based 1-2 Micron RDL Technologies with Lower Resistance than Si BEOL for Large Packages," 2018 ECTC Proceedings, 2018.

R. Liu, C. H. Chu, N. Wang and A. F. Sarioglu, "Microfluidic Antibody Microarray with an Electronic Readout for Combinatorial Immunophenotyping of Cell Populations," Proc. MicroTAS, pp. 1248-1250, Kaohsiung, Taiwan, 2018.

R. Liu, C. H. Chu, O. Civelekoglu, H. Chen and A. F. Sarioglu, "Soft Lithography Compatible Fabrication of Parallel Electrodes in Microfluidic Devices," Proc. MicroTAS, pp. 825-827, Kaohsiung, TAIWAN, 2018.

R. Liu, N. Wang and A. F. Sarioglu, "Bit Error Rate Analysis of Code-Multiplexed Coulter Sensor Networks," Proc. MicroTAS, pp. 476-478, Kaohsiung, TAIWAN, 2018.

M. Losego, "Quantifying the Processing Kinetics of Vapor Phase Infiltration for Organic-Inorganic Hybrid Materials Synthesis," ACerS Electronic Materials and Applications, Orlando, FL, January 2018.

M. Losego, "Vapor Phase Infiltration (VPI) for Transforming Polymers into Organic-Inorganic Hybrid Materials: Processing Kinetics and Applications," Special Session: Future Stars of the AVS, AVS 65, Long Beach, CA, October 2018.

M. Losego, "Vapor Phase Infiltration (VPI) for Transforming Polymers into Organic-Inorganic Hybrid Materials: Processing Kinetics and Applications," European Materials Research Society (EMRS) Spring Meeting 2018, Strasbourg, France, June 2018.

M. Losego, "Vapor Phase Infiltration (VPI) of Polymers with Intrinsic Microporosity: Structure and Chemical Separations Performance," AVS 65, Long Beach, CA, October 2018.

Luo, B., Shang, J., Su, Z., Wong, C.-P., "Predicting Height and Determining Mass of Foaming Agents for Glass Shell Resonators," 5th IEEE International Symposium on Inertial Sensors and Systems, INERTIAL 2018, pp 1-2, 2018.

S. Mantripragada, L. Zhang, "Zero-valent Iron Nanoparticles as Versatile Medium for Heavy Metal Removal from Acidic Waste Water," Nano Manufacturing 2018: From Innovation to Commercialization, Greensboro, NC, Sept 2018.

Michael McBride, Elsa Reichmanis, Martha Grover, "Controlling Self-Assembly for Enhanced Interconnection in Conjugated Polymer Networks," 2018 AIChE Annual Meeting, Pittsburgh, PA, October 2018.

E. McGuinness, "Creation of Solvent Stable Microporous Polymeric Membranes via Vapor Phase Infiltration," National Graduate Research Polymer Conference, Minneapolis, MN, June 2018.

K. Mehta, Y-S. Liu, J. Wang, H. Jeong, T. Detchprohm, Y-J. Park, S-C. Shen, R.D. Dupuis, and P.D. Yoder, "Thermal Management and Design of III-N Vertical-Cavity Surface-Emitting Laser Diodes Using Electro-Opto- Thermal Simulations," 76th Device Research Conference, Santa Barbara, CA, June 2018.

Krysten Minnici, Elsa Reichmanis, "Tuning Semi-Conducting Polymers for Binder Applications in Fe₃O₄ Li-Ion Battery Anodes," 2018 AIChE Annual Meeting, Pittsburgh, PA, October 2018.

K. Mohan, N. Shahane, R. Sosa, S. Khan, P.M. Raj, A. Antoniou, V. Smet, R. Tummala, "Demonstration of Patternable All-Cu Compliant Interconnections with Enhanced Manufacturability in Chip-to-Substrate Applications," 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp. 301-307, IEEE, 2018.

R. Mohan, "Molecular Level Deformation in Hydrated Cement Paste at Nanoscale", International Conference on Damage Mechanics, Tongji University, Shanghai, China, Jul 2018.

R. Mohan, "Newtonian Mechanics – Engineering and Bio Applications at Nanoscale", Dalian University of Technology, Dalian, China, Jul 2018.

Z. Mousavi-Karimi, D. Brown, E. Woods, B. Costello, W. Henderson, and J.A. Davis, "Characterization and Simulation of Permittivity Enhancements of SiO₂/Si₃N₄ Nanolaminates Layers," IEEE Proceedings for the Nanotechnology Materials and Device Conference, Portland, OR, October 14-17, 2018. 

N. R. Mucha, F. Aryeetey, S. Shaji, S. Gbewonyo, L. Zhang, S. Aravamudhan, D. Kumar, "Electrospun Carbon Nanofibers; structural and electrical properties," In APS Meeting Abstracts, 2018.

Surya Nalamati, Manish Sharma, Prithviraj Deshmukh, David Snyder, Jeffrey Kronz, Michael Zugger, Lewis Reynolds, Yang Liu, Shanthi Iyer, "Self-catalyzed growth of GaAs_xSb_{1-x} axial nanowires on monolayer graphene by molecular beam epitaxy", MRS Fall, Boston, MA, Nov 2018.

Surya Nalamati, Manish Sharma, Prithviraj Deshmukh, Jeffrey Kronz, Robert Lavelle, David Snyder, C. Lewis Reynolds Jr., Yang Liu, Shanthi Iyer, "Growth of High-Quality Vertical GaAs(1-x)Sb(x) Nanowires Grown on Monolayer Graphene by Ga-Assisted Molecular Beam Epitaxy", Carolina Science Symposium, Raleigh, NC, Nov 2018.

Surya Nalamati, Manish Sharma, Prithviraj Deshmukh, David Snyder, Jeffrey Kronz, Michael Zugger, Lewis Reynolds, Yang Liu, Shanthi Iyer, "Growth of GaAs_xSb_{1-x} axial nanowires on graphene by molecular beam epitaxy", 34th NAMBE, Banff, Alberta, Canada, Oct 2018.

Surya Nalamati, Manish Sharma, Prithviraj Deshmukh, David Snyder, Jeffrey Kronz, Michael Zugger, Lewis Reynolds, Yang Liu and Shanthi Iyer, "A Study of GaAs_{1-x}Sb_x Axial Nanowires Grown on Monolayer Graphene by Ga-Assisted Molecular Beam Epitaxy", Nanomanufacturing Conference, Greensboro, NC, Sept 2018.

Surya Nalamati, Ashlee Gordon, Roderick Gray Jr, Dennis Hernandez, Shanthi Iyer and Manish Sharma, "Nanowires", 2018 NSF Stem for All Video Showcase, May 2018.

S.A. Nauroze, A. Eid and M.M. Tentzeris, "n-RiM: A Paradigm Shift in the Realization of Fully Inkjet-printed Broadband Tunable FSS using Origami Structures", Procs. 2018 IEEE/MTT-S International Microwave Symposium – IMS, pp.51-54, Philadelphia, PA, June 2018.

S.A. Nauroze, B. Tehrani and M.M. Tentzeris, "An Inkjet-Printed Origami-based Frequency Selective Surface with Wide Frequency and Bandwidth Tunability", Procs. 2018 IEEE International Symposium on Antennas and Propagation, pp.1677-1678, Boston, MA, July 2018.

A.A. Nawaz, J.A. Qayyum, A.C. Ulusoy, N. Karaulac, S. Jung, D. Fleischhauer, S. Shankar, J.D. Cressler, and W. Van Noort, "A New Figure-of-Merit for CML Gate Delay Estimation," Proceedings of the IEEE Topical Conference on Sensors and Sensor Networks, pp. 73-76, 2018.

N. Nedumthakady, B. Deprospo, P. Markondeya Raj, V. Sundaram, R. R. Tummala, K. Byers, S. Garrison, C. Gibson, M. Elsbury, "Integrated Cu Heat Spreaders in Glass Fan-Out (GFO) Packages Using Near-Zero Resistance Thermal Interface Material (TIM) for High-Power Devices," Proceedings of the 68th IEEE Electronic Components and Technology Conference (ECTC), San Diego, CA, May 29 - June 1, 2018.

H. Nguyen and H. Wang, "A 62-68GHz Multi-Feed Antenna-Based CMOS Doherty Radiator Achieving 27.5%/20.1% PAE at Peak/6dB Back-Off Output Power and 20.2% Average PAE for 6Gb/s 64-QAM Modulation," Proc. the Government Microcircuit Applications and Critical Technology Conference (GOMACTech), March 2018.

H. Nguyen, T. Chi, S. Li, and Hua Wang, "A 62-to-68GHz linear 6Gb/s 64-QAM CMOS Doherty radiator with 27.5%/20.1% PAE at peak/6dB back-off output power leveraging high-efficiency multi-feed antenna-based active load modulation," IEEE International Solid-State Circuits Conference (ISSCC) Dig. Tech. Papers, Feb. 2018.

A.N. Ofori-Boadu, P. Akangah, C. Bock-Hyeng, E. Fini, "Hydration characteristics of cement blended with swine-manure bio-char as a partial cement replacement material," 6th IAJC International Conference, Orlando, Florida, Oct 11-14, 2018.

Young Woo Ok, Ajeet Rohatgi "Development of a carrier selective passivated contact for high efficiency, large area and commercial ready n-type bifacial Si solar cells" CKC 2018 Conference on Science & Technology, Vancouver, BC, Canada, June 17-20, 2018.

A.P. Omprakash, A. Ildefonso, G. Tzintzarov, J. Babcock, R. Mukhopadhyay, and J.D. Cressler, "Using SiGe-on-SOI HBTs to Build 300C Capable Analog Circuits," Proceedings of the 2018 IEEE BiCMOS and Compound Semiconductor Integrated Circuits and Technology Symposium, pp. 206-209, 2018.

A.P. Omprakash, Z.E. Fleetwood, A. Ildefonso, G. Tzintzarov, A.S. Cardoso, J. Babcock, R. Mukhopadhyay, A. Khachatrian, J.H. Warner, D. McMorrow, S.P. Buchner, and J.D. Cressler, "The Effects of High Temperature on the Single Event Transient Response of a High-Voltage ($>30V$) Complementary SiGe-on-SOI Technology," 2018 IEEE Nuclear and Space Radiation Effects Conference, paper PH-3, 2018.

I. Padilla, W. Hodo, J. Rivas, R. Mohan, "Hydrostatic Compression Constitutive Material Modeling of Two-Phase Cement Paste Composite Material Chemistry Structures, ASME IMECE 2018, Nov 2018.

W-J Pan, J Billings, M Nezafati, W Majeed, S Keilholz, "Transmission Measurement of Brain Activity in vivo," Biophotonics Congress: Biomedical Optics, April 2018.

W-J Pan, W Majeed, J Billings, S Keilholz, "Detecting Ultra-low Light Level Signals with Optical Fiber Probe for Intrinsic Neural Signals in vivo," Biophotonics Congress: Biomedical Optics, April 2018.

Mehul Parakh, Sean Johnson, Rabin Pokharel, Manish Sharma, Jia Li and Shanthi Iyer, "Study of Space Charge Limited Conduction Mechanism using Temperature-Dependent Current-Voltage measurements for GaAsSb Nanowire Photodetector", Carolina Science Symposium, Raleigh, NC, Nov 2018.

Mehul Parakh, Rabin Pokharel, Sean Johnson, Manish Sharma, Jia Li and Shanthi Iyer, "Study of Barrier height inhomogeneity's and Trap density using Temperature Dependent electrical characteristics of Ti/GaAsSb Nanowire Schottky Diode", Nano Manufacturing Conference, Greensboro, NC, Sept 2018.

G. Park, Y. Kim, K. Cho, J. Park, A. Watanabe, P. Markondeya Raj, et al., "Design and Analysis of Receiver Channels of Glass Interposers for 5G Small Cell Front End Module," 2018 IEEE 27th Conference on Electrical Performance of Electronic Packaging and Systems (EPEPS), pp. 107-109, 2018.

J. Park, C. Perini, M. Navaei, J. Hankinson, B. Lee, M. West, E. M. Vogel, S. W. Lee, and I. Stern, "Reduced Graphene Oxide as an Advanced Anode for Li-Ion Battery," Spring Electrochemical Society Meeting, 2018.

J. Park, J. Hankinson, S. W. Lee, M. Navaei, "Synthesis of Pt-M (M=Ir, Pd) Bimetallic Nanocrystals with Controlled Shape and Composition as a High-Performance Electrocatalyst for Ammonia Electrolysis," The 233rd Electrochemical Society Meeting, Seattle, WA, May 2018.

J. Park, M. Wang, M. Navaei, Z. Feng, S. W. Lee, "Tailoring Electrooxidation Kinetics by Controlling Shape and Composition of Nanocatalysts," The 256th American Chemical Society National Meeting, Boston, MA, August, 2018.

J. Park, Z. Feng, Y. Shao-Horn, S. W. Lee, "Facets of Nanocrystal: A Knob to Tune Electrocatalytic Activity," The 233rd Electrochemical Society Meeting, Seattle, WA, May 2018.

M. Park and A. Ansari, "Phononic Frequency Combs in Stand-alone Piezoelectric Resonators," IEEE International Frequency Control Symposium, May 2018.

M. Park and A. Ansari, "Self-sustained Dual-mode Mechanical Frequency Comb Sensors," Solid-State Sensors, Actuators and Microsystems Workshop (Hilton Head), Hilton Head Island, SC, June 2018.

Y.-J. Park, T. Detchprohm, K. Mehta, O. Moreno, Y.-S. Liu, S. Wang, S.-C. Shen, P. D. Yoder, F. Ponce, and R. D. Dupuis, "Stimulated Emission at 375nm From Optically Pumped Vertical-Cavity Surface-Emitting Lasers with Air-Gap/Al_{0.05}Ga_{0.95}N Distributed Bragg Reflectors," 60th Electronic Materials Conference, Santa Barbara, CA, June 2018.

Y.-J. Park, T. Detchprohm, K. Mehta, J. Wang, H. Jeong, Y.-S. Liu, S. Wang, S.-C. Shen, P. D. Yoder, F. Ponce, and R. D. Dupuis "Optically Pumped Vertical-Cavity Surface-Emitting Lasers with Air-Gap/Al_{0.05}Ga_{0.95}N Distributed Bragg Reflectors," Paper Mo2.3, Seventh International Symposium of Growth of III-Nitrides (ISGN-7), Warsaw, Poland, August 2018.

A. Parveen, D. Lajeunesse, L. Zhang, "Biological Behavior of Yeast/Fungus on Electrospun Nanofibers," 6th International Conference on Nano and Materials Science, Florida Polytechnic University, Florida, Jan 15-17, 2018.

Nils Persson, Michael McBride, Elsa Reichmanis, Martha Grover, "Quantitation and optimization of process-structure-property relationships in polymer organic electronics," American Chemical Society Spring Meeting, New Orleans, LA, March 2018.

R. J. Petrie, "Exploration of Crystalline Transformations in TiO₂ Thin Films Deposited Through ALD Reactions Between TDMAT and Water," Tennessee Valley Chapter of AVS Symposium 2018, Knoxville, TN, October 2018.

O. Pierron, "Microbeam bending: how stress gradients, coatings and environment affect the high / very high cycle fatigue behavior," Gordon Research Conference on Thin Film and Small Scale Mechanical Behavior, Lewiston, ME, July 2018.

O. Pierron, "The effects of brittle and ductile coatings on the fatigue properties of Ni microbeams," 45th International Conference on Metallurgical Coatings and Thin Films (ICMCTF), San Diego, CA, April 2018.

S. L. Pittelli, D. E. Shen, A. M. Österholm, M. Ochieng, J. F. Ponder, J. R. Reynolds, "Structural Tuning of Charge Transport Properties and Use of Dioxythiophene Polymers for Scalable Electrochemical Device Applications," Eastman Chemical Award Symposium at the American Chemical Society Meeting, August 2018.

S. Pixley, U. Adhikari, X. An, S. Khanal, T. Hopkins, N. Bhattarai, W. Heineman, "Magnesium metal electrospun with polycaprolactone into nanofibrous fabrics has tissue reparative effects in vivo" 10th Symposium on Biodegradable Metals, Aug 2018.

Rabin Pokharel, Manish Sharma and Shanthi Iyer, "Study of GaAsSbN axial inserts in GaAsSb NW heterostructure by molecular beam epitaxy," Carolina Science Symposium, Raleigh, NC, Nov 2018.

S. Pourianejad, F. Aryeetey, A. Adesina, S. Aravamudhan, T. Ignatova, "Transfer of 2-D materials: Graphene and Beyond," Nano Manufacturing 2018 Conference, Sept 2018.

S. Pourianejad, T. Ignatova, "Developing 2D heterostructure-based sensors," Multifunctional Materials Workshop, Nov 2018.

U.S. Raghunathan, B.R. Wier, Z. Fleetwood, M.A. Oakley, V. Jain, and J.D. Cressler, "Emitter-Base Profile Optimization of SiGe HBTs for Improved Thermal Stability and RF Linearity," Proceedings of the 2018 IEEE BiCMOS and Compound Semiconductor Integrated Circuits and Technology Symposium, pp. 190-193, 2018.

S. Rao, T. Chang, I. Song, M.-K. Cho, and J.D. Cressler, "A 1-20 GHz Distributed, Stacked SiGe Power Amplifier," Proceedings of the 2018 IEEE BiCMOS and Compound Semiconductor Integrated Circuits and Technology Symposium, pp. 202-205, 2018.

S. Ravichandran, et al., "Design and demonstration of Glass Panel Embedding for 3D System Packages for heterogeneous integration applications," 2018 International Symposium on Microelectronics. 2018.

S. Ravichandran, S. Yamada, G. Park, H.-W. Chen, T. Shi, C. Buch, F. Liu, V. Smet, V. Sundaram, and R. Tummala, "2.5 D Glass Panel Embedded (GPE) Packages with Better I/O Density, Performance, Cost and Reliability than Current Silicon Interposers and High-Density Fan-Out Packages," 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp. 625-630, IEEE, 2018.

A. Rawal, K. Rhinehardt, R. Mohan, "Mechanical Properties of Synthetic Collagen Molecules via Molecular Dynamics Modeling," ASME IMECE 2018, Nov 2018.

Elsa Reichmanis, "From silicon to plastic: materials design and process considerations," American Chemical Society Spring Meeting, New Orleans, LA, March 2018.

Elsa Reichmanis, "Opportunities for nanomaterials in storage applications: the importance of surfaces and interfaces," American Chemical Society Fall Meeting, Boston, MA, August 2018.

Ren, L., Zeng, X., Sun. R., Xu, J.-B., Wong, C.-P., "Preparation and Characterization of Al₂O₃-AgNP hybrids for Application in Thermally Conductive Polymer Composites," 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

Bailey Risteen, Elsa Reichmanis, "Engineering Polymer-Nanoparticle Systems Towards Sustainable Devices and Sensors," 2018 AIChE Annual Meeting, Pittsburgh, PA, October 2018.

S. P. Rodrigues, L. Kang, M. Taghinejad, S. Lan, K.-T. Lee, Y. Liu, D. H. Werner, A. M. Urbas, W. Cai, "Linear and nonlinear characterization of a chiral meta-mirror that preserves handedness upon reflection," Materials Research Society (MRS) Spring Meeting, NM09.16, Phoenix, AZ, April 2-6, 2018.

Ajeet Rohatgi, Young Woo Ok "Pushing the efficiency limit of low-cost, industrially-relevant Si solar cells to >22.5% by advancing cell structures and technology innovations," Solar Energy Technologies Office Portfolio Review, U.S Department of Energy, Washington, DC, USA, February 12-14, 2018.

S. Saudi, U. Adhikari, S. Khanal, S. Aravamudhan, J. Sankar, N. Bhattarai "Fabrication of PLGA/PCL composite fibers for controlled drug release" 34th Annual Meeting of Southern Biomedical Engineering Conference, SBEC 2018, Charlotte, NC, Mar 8-10, 2018.

Manish Sharma, Jia Li and Shanthi Iyer, "Effect of ex-situ Passivation of the GaAsSb Nanowires", 34th NAMBE, Banff, Alberta, Canada, Oct 2018.

Manish Sharma, Estiak Ahmad, Mehul Parakh, Rabin Pokharel and Shanthi Iyer, "Effect of in-situ Annealing on the GaAsSb Nanowire-based Photodetector", 34th NAMBE, Banff, Alberta, Canada, Oct 2018.

T. Shi, Y. Gong, S. Ravichandran, V. Sundaram, J.D. Cressler and R. Tummala, "Next Generation of Automotive Radar with Leading-Edge Advances in SiGe Devices and Glass Panel Embedding (GPE)," Proceedings of the 2018 IEEE 68th Electronic Components and Technology Conference, pp. 1245-1250, 2018. doi: 10.1109/ECTC.2018.00192

I. Shiave, R. Tomar, I. Padilla, R. Mohan, "Tensile Deformation Mechanisms in Nickel-Cobalt Core-Shell Nanowires via Molecular Dynamics Simulations, ASME IMECE 2018, Nov 2018.

N. Sirelkhatim, A. Parveen, D. LaJeunesse, L. Zhang, "Electrospun Polyacrylonitrile Nanofibers: An Antifungal Material," 2018 Fiber Society Technical Meeting and Conference: Advanced, Smart, and Sustainable Fibers, Materials, and Textiles, Davis, CA, Oct 29-31, 2018.

Sitaraman, M. Swaminathan, "Multi-physics Modeling and Characterization of Aerosol Jet Printed Transmission Lines", IEEE MTT-S International Conference on Numerical electromagnetic and multiphysics modeling and optimization (NEMO), 2018.

S. Sivapurapu, C. Mehta, R. Chen, X. Jia, Y. Zhou, M. L. F. Bellaredj, P. A. Kohl, T-C. Huang, S. K. S.I.H.Shah, S.Gosh, M.M.Tentzeris and S.Lim, "A Novel Bio Inspired Pattern Reconfigurable Quasi-Yagi Helical Antenna Using Origami DNA", Procs. 2018 International Symposium on Antennas and Propagation (ISAP), pp.1-2, Busan, KOREA, October 2018.

Marcus Smith, Sidney Malak, Young Jun Yoon, Chun Hao Lin, Jaehan Jung, Zhiqun Lin, Vladimir Tsukruk, "Decay-to-Recovery Behavior and on-off Recovery of Photoluminescence Intensity from Core/Shell Quantum Dots", MRS spring meeting 2018, Phoenix, AZ, 2018.

B. Song, F. Wu, K.-S. Moon, R. Bahr, M. Tentzeris, C.P. Wong, "Stretchable, Printable and Electrically Conductive Composites for Wearable RF Antennas", Procs. 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp.9-14, San Diego, CA, June 2018.

Song, Z., Luo, S., Wang, C., Yu, S., Sun. R., Wong, C.-P., "Effect of ZnS size on the dielectric and energy storage properties of ZnS/polymer composites," 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

A. K. Sood, J. W. Zeller, and R. D. Dupuis, "High Performance Ultraviolet Avalanche Photodiode Detector Technologies," US Workshop on the Physics and Chemistry of II-VI Materials, Pasadena, CA, October 2018.

R. Spurney, H. Sharma, M. Pulugurtha, R. Tummala, N. Lollis, M. Weaver, et al., "Demonstration of Hermetic Sealing on Ultra-Thin, Wafer-Integrated Aluminum-Polymer Capacitors for High-Voltage and High-Temperature Applications," 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp. 1414-1420, 2018.

W.Su, S.Wang, R.Bahr and M.M.Tentzeris, "Smart Floating Balls: 3D Printed Spherical Antennas and Sensors for Water Quality Monitoring", Procs. 2018 IEEE/MTT-S International Microwave Symposium – IMS, pp.55-58, Philadelphia, PA, June 2018.

Su, Z., Shang, J., Luo, B., Wong, C.-P., "Study on an Improved Wafer Level Fabrication Process to Achieve Size Uniformity for Micro Glass Shell Resonators," 68th IEEE Electronic Components and Technology Conference, ECTC 2018, pp 962-966, 2018.

H. Sun, K-H Li, Y. J. Park, T. Detchprohm, R. D. Dupuis, and X Li, "Tuning the Growth Mode and Polarity of AlN Films via TMAI Preflow of Al₂O₃," ICMOVPE XIX Conference, Nara, Japan, June 2018.

H. Sun, K-H Li, Y. J. Park, T. Detchprohm, R. D. Dupuis, and X Li, "Revealing Microstructure and Band Offsets of BAIN/AIGaN Heterostructures," ICMOVPE XIX Conference, Nara, Japan, June 2018.

I. Taghavi, R. Dehghannasiri, T. Fan, H. Moradinejad, H. Taghinejad, A. H. Hosseinnia, A. A. Eftekhar, and A. Adibi, "Enhanced Polling and Infiltration of Highly-Linear Mach-Zehnder Modulators on Si/SiN-Organic Hybrid Platform." Conference on Lasers and Electro-optics (CLEO), San Jose, CA, 2018. 

H. Taghinejad, A. A. Eftekhar, and A. Adibi, "Planar heterostructures through selective-area alloying of 2D transition metal dichalcogenide." Invited for presentation in SPIE Photonics West, San Francisco, CA, 2018. (invited conference talk)

H. Taghinejad, A. A. Eftekhar, A. Adibi, "Lateral heterostructures in two-dimensional transition metal dichalcogenides for optoelectronic applications." SPIE Optics and Photonics, San Diego, CA, 2018. (invited conference talk)

H. Taghinejad, A. A. Eftekhar, M. Taghinejad, Y. Zhou, E. Reed, and A. Adibi, "Crack Formation Induced by the Post-growth Alloying of Two-Dimensional Transition-metal Dichalcogenides." Bulletin of the American Physical Society (APS March Meeting), Los Angeles, CA, 2018.

H. Taghinejad, A. A. Eftekhar, P. Campbell, M. Taghinejad, Y. Zhou, E. Reed, E. Vogel, and A. Adibi, "Alloying-Induced Biaxial Strain in Ternary Alloys of Transition-Metal Dichalcogenides (TMDs)." SPIE Photonics West, San Francisco, CA, 2018.

H. Taghinejad, M. Taghinejad, A. Tarasov, T. Fan, A. A. Eftekhar, E. M. Vogel, A. Adibi, "Strong Light Enhancement and Confinement in Two-Dimensional Transition Metal Dichalcogenides." SPIE Photonics West, San Francisco, CA, 2018.

M. Taghinejad, H. Taghinejad, and A. Adibi, "Ultra-Sharp and Tunable Lattice Plasmons in Film-Coupled Metallic Nanostructures." SPIE Photonics West, San Francisco, CA, 2018.

M. Taghinejad, H. Taghinejad, S. P. Rodrigues, W. Cai, "femtosecond all-optical control of plasmons: Hot-electron versus phonon relaxation," American Physical Society (APS) March Meeting, H18, Los Angeles, CA, March 5-9, 2018.

M. Taghinejad and W. Cai, "Field- and carrier-induced nonlinear metamaterials," FTh1D.4, Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 13-18, 2018.

C. Taylor, X. He, V. Smet, M. Tentzeris and S. Sitaraman, "Low-Temperature Assembly of Surface-Mount Device on Flexible Substrate Using Additive Printing Process", Procs.2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp.379-385, San Diego, CA, June 2018.

B.Tehrani, R.Bahr, D.Revier, B.Cook and M.Tentzeris, "The Principles of "Smart" Encapsulation: Using Additive Printing Technology for the Realization of Intelligent Application-Specific Packages for IoT, 5G, and Automotive Radar Applications", Procs. 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp.111-117, San Diego, CA, June 2018.

B.K.Tehrani and M.M.Tentzeris, "Fully Inkjet-Printed Ramp Interconnects for Wireless Ka-Band MMIC Devices and Multi-Chip Module Packaging", Procs. 2018 48th European Microwave Conference (EuMC), pp.1037-1040, Madrid, SPAIN, September 2018.

H. M. Torun, C. Pardue, M. L. F. Bellaredj, A. K. Davis and M. Swaminathan, "Machine Learning Driven Advanced Packaging and System Miniaturization of IoT for Wireless Power Transfer Solutions", IEEE 68th Electron. Compon. Technol. Conf. (ECTC), 2018.

C.-W. Tsou, M.-H. Ji, M. Bakhtiary-Noodeh, T. Detchprohm, V. Smeet, T. Hashimoto, R. D. Dupuis, and S.-C. Shen, “1.2-kV 10-A Homojunction GaN PIN Rectifiers with Field-Plated Ion-Implanted Buried Junction Isolation,” International Workshop on Nitride Semiconductors (IWN 2018), Kanazawa, Japan, November, 2018.

G. Tzintzarov, P. Goley, M. Frounchi, S. Rao, A. Ildefonso, and J.D. Cressler, “Silicon-Based Electronic-Photonic Integrated Circuits for Future Space Systems,” Symposium on Space Innovations, 2018.

F. Ulu, R. Tomar, R. Mohan, “Investigation of Digital Computer Aided Design Assembly and Tessellation Effects on Digital ABS Part Quality in PolyJet-3D Additive Printing, SAMPE, Long Beach, CA, May 2018.

F. Ulu, R. Tomar, R. Mohan, “Additive Manufacturing of Multi-Material Microstructural Features – Comparison of Print Part Quality and Characteristics from Voxel and STL Digital Designs,” ASME IMECE 2018, Nov 2018.

Eric M. Vogel, “Tri-partite collaborative: development & validation of an on-farm, electronic disease diagnosis platform for cattle,” 99th Annual Conference of Research Workers in Animal Diseases, Chicago, IL, December 2018.

Eric M. Vogel, “Two-dimensional Materials for Vertical Heterostructures,” US-EU Workshop on Two-dimensional Materials, San Sebastian, Spain, September 2018.

Eric M. Vogel, “Application and Synthesis of Large-area 2D Materials,” TMS Meeting, Phoenix, AZ, March 2018.

Eric M. Vogel, “Large Area Synthesis, Characterization and Application of 2D Materials,” AVS Appalachian Regional Microscopy Society Meeting, Knoxville, TN, October 2018.

Eric M. Vogel, “Nano-material Potentiometric Biochemical Sensors for Diagnostic Applications,” Biomedical Engineering Society Meeting, Atlanta, GA, Oct. 20, 2018.

A. Wang, D. Jung, J. Park, G. Junek, and H. Wang, "Electrode-Electrolyte Interface Impedance Characterization of Ultra-Miniaturized Microelectrode Arrays over Materials and Geometries for Sub-Cellular and Cellular Sensing and Stimulation," Proc. IEEE EMBS Micro and Nanoengineering in Medicine Conference (MNM), Dec 2018.

A. Wang, J. Park, D. Jung, G. Junek, and H. Wang, "Enabling AI-Assisted Drug Screening and Synthetic Biology Engineering: Multi-Parametric Data-Driven Cell Profiling by CMOS Multi-Modal Cellular Interfacing Arrays," Proc. Association for the Advancement of Artificial Intelligence (AAAI) Fall Symposium: Artificial Intelligence for Synthetic Biology, Oct 2018.

Wang, C., Guan, Z., Wei, M., Yu, S., Sun. R., Wong, C.-P., “Synthesis and characterization of 3D CoMoO₄/rGO aerogel for supercapacitor electrodes,” 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

Wang, H., Yang, G., Wang, N., Sun. R., Wong, C.-P., “Effect of Catalysts on Hydrothermal Preparation of BN nanostructures,” 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

L.J. Wang, M. Todd, A. Hashemisohi, A. Shahbazi, “A web-based interactive virtual laboratory system for enhancing education in biorefineries and instrumentation,” ASABE Annual International Meeting, Detroit, MI, Jul 29-Aug 1, 2018.

N. Wang, R. Liu and A. F. Sarioglu, “Code-Multiplexed Sensor Networks for Microfluidic Impedance Spectroscopy” Proc. MicroTAS, pp. 776-779, Kaohsiung, Taiwan, 2018.

N. Wang, R. Liu and A. F. Sarioglu, “Convolutional Neural Network Based Processing of Code-Multiplexed Coulter Signals,” Proc. MicroTAS, pp. 1266-1269, Kaohsiung, Taiwan, 2018.

W. Ross Warren, D. LaJeunesse, "Morphological Control of Hydroxyapatite Nanoparticles During Deposition on Never-Dried Bacterial Cellulose," Gordon Research Conference, Fundamental Biotic and Abiotic Mechanisms of Biominerization, Jul 29-Aug 3, 2018.

A. Watanabe, T. -H. Lin, P. M. Raj, V. Sundaram, M. M. Tentzeris, and R. R. Tummala, T. Ogawa, Design and demonstration of ultra-thin 3D glass-based 5G modules with low-loss interconnects, 2018 International Conference on Electronics Packaging and iMAPS All Asia Conference (ICEP-IAAC), DOI: 10.23919/ICEP.2018.8374698, Apr 17-21, 2018.

A. Watanabe, T.-H. Lin, P.M. Raj, V. Sundaram, M.M. Tentzeris, R.R. Tummala and T. Ogawa, "Leading-Edge and Ultra-Thin 3D Glass-Polymer 5G Modules with Seamless Antenna-to-Transceiver Signal Transmissions", Procs. 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp.2026-2031, San Diego, CA, June 2018.

A.O. Watanabe, T.-H. Lin, T. Ogawa, P.M. Raj, V. Sundaram, M.M. Tentzeris and R. Tummala, "Design and Demonstration of Ultra-Thin 3D Glass-Based 5G Modules with Low-Loss Interconnects", Proc. of the 2018 International Conference on Electronics Packaging and iMAPS All Asia Conference (ICEP-IAAC), pp. 180-183, Mie, JAPAN, April 2018.

H. Wen, A. Daruwalla, Y. Jeong, P. Gupta, J. Choi, C.S. Liu and F. Ayazi, "A high-performance single-chip timing and inertial measurement unit with robust mode-matched gyroscopes," in Proc. of the 31st IEEE International Micro Electro Mechanical Systems Conference (MEMS 2018), pp. 105-108, Belfast, NIR, UK, January 2018.

H. Wen, A. Daruwalla, Y. Jeong, P. Gupta, J. Choi, C.S. Liu and F. Ayazi, "Wafer-level-packaged HARPSS+ MEMS platform: Integration of robust timing and inertial measurement units (TIMU) on a single chip," in Proc. of 2018 IEEE/ION Position, Location and Navigation Symposium (PLANS 2018), pp. 261-266, Monterey, CA, USA, April 2018.

B.R. Wier, R.P. Martinez, U.S. Raghunathan, H. Ying, S. Zeinolabedinzadeh, and J.D. Cressler, U.S. Raghunathan, B.R. Wier, Z. Fleetwood, M.A. Oakley, V. Jain, and J.D. Cressler, "Revisiting Safe Operating Area: SiGe HBT Aging Models for Reliability-Aware Circuit Design," Proceedings of the 2018 IEEE BiCMOS and Compound Semiconductor Integrated Circuits and Technology Symposium, pp. 215-218, 2018.

X. Wirth, N.N.N. Yeboah, and S. Burns, "Lead Adsorption by Biomass and Weathered Coal Fly Ashes," Proceedings of the 8th International Congress on Environmental Geotechnics Volume 1. ICEG 2018. Environmental Science and Engineering. Springer, Singapore, 2018. 

Fan Wu, Bo Song, Kyoung-Sik Moon, CP Wong, "Cyanate Ester/Epoxy Co-Curing System with Thermal Stabilizers for High Temperature Stability," 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp 2237-2242.

X. Wu, T. Fan, T. G. Allen, S. Abdollahramezani, A. A. Eftekhar, M. Bosi, J. W. Perry, A. Adibi, "Nonvolatile Tunable Integrated Mid-Infrared GST-SiC Metasurfaces." IEEE Photonics Conference (IPC), Reston, VA, 2018.

Yan, C., Ji, C., Chen, J., Zeng, X., Sun. R., Wong, C.-P., "Interconnecting the Promising Mxenes via Ag Nanowire in Epoxy Nanocomposites for High-Performance Thermal Management," 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

Yang, G., Wang, H., Wang, N., Sun. R., Wong, C.-P., "Hydrothermal assembly of one-dimensional boron nitride nanostructures," 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

Yang, G., Wang, H., Wang, N., Sun, R., Wong, C.-P., "In Hydrothermal Exfoliation for Two-Dimension Boron Nitride Nanosheets," 68th IEEE Electronic Components and Technology Conference, ECTC 2018,

pp 1421-1426, 2018.

J. Yang, B. Hamelin, S. D. Ko, and F. Ayazi, "Ultra-high Q monocrystalline silicon carbide disk resonators anchored upon a phononic crystal," in Technical Digest of 2018 Solid-State Sensors, Actuators and Microsystems Workshop (Hilton Head), pp. 83-86, Hilton Head Island, SC, USA, June 2018.

R. Yarbrough, H. Rathnayake, "Versatile synthesis of novel n-type thermoelectric nanomaterials from binary metal oxides of group IIA and VIB", PMSE division, American Chemical Society National Meeting, Boston, MA, 2018.

Shengtao Yu, Sidney Malak, Marcus Smith, Young Jun Yoon, Chun Hao Lin, Jaehan Jung, Zhiqun Lin, Vladimir Tsukruk, "Programmed Emission Transformations—Negative-to-Positive Patterning Using the Decay-to-Recovery Behavior of Quantum Dots", MRS spring meeting 2018, Phoenix, AZ, 2018.

Yu, X., Zhang, L., Jiang, W., Zhu, P., Sun, R., Wong, C.-P., "Micropypamid silicon wafer with ZnO nanowires as high efficiency piezoelectric nanogererator," 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

X. M, Yun. Chen, D. S, et al., "A novel organic coating assisted laser drilling method for TSV fabrication," 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

B. Zhang, L.J. Wang, G. Joseph, A. Shahbazi, "Hydrothermal carbonization of the digestate of anaerobic digestion for co-production of biochar and fertilizer compounds," ASABE Annual International Meeting, Detroit, MI, Jul 29-Aug 1, 2018.

Guoyan Zhang, Elsa Reichmanis, "Self-organized interpenetrating polymer network in semiconducting films for stretchable electronics," American Chemical Society Spring Meeting, New Orleans, LA, March 2018.

Guoyan Zhang, Michael McBride, Elsa Reichmanis, "Polymer Fibrils, Transport Pathways and Stretchable Electronics," American Chemical Society Fall Meeting, Boston, MA, August 2018.

Zhang, J., Shang, J., Li, G., Lu, L., Pan, Z., Ji, Y., Wong, C.-P., "Integration of the Serf Magnetometer and the Mz Magnetometer Using Micro-Fabricated Alkali Vapor Cell," 68th IEEE Electronic Components and Technology Conference, ECTC 2018, pp 2007-2012, 2018.

R. Zhang, F. Liu, M. Gallagher, E. Anzures, V. Sundaram, and R. R. Tummala, "Co-integration of High-Bandwidth Photonic and Electronic RDL on 2.5 D Glass Interposers Using Low Optical Absorption Photoimageable Dielectric Polymer" 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp. 1130-1135, IEEE, 2018.

Zhang, W., Huang, C.-H., Dobson, J., Renew, J. E. Mineralogy Optimization for Metal and Halide Immobilization in Co-Disposed Flue Gas Desulfurization Brines and Bituminous Coal Fly Ash, Global Waste Management Symposium, Indian Wells, CA, February 11-14, 2018.

Zhao, X., Rosen, D.W., "Interferometry sensing data mining for real-time geometric profile measurement in photopolymer based additive manufacturing," Solid Freeform Fabrication Symposium, Austin, TX, August 2018.

Zhu, X., Luo, S., Yu, S., Chu, B., Sun. R., Wong, C.-P., "Enhanced Energy Storage Performance of BT-BN/epoxy composites by Constructing Three-dimensional Dielectric-Thermal Networks," 2018 19th International Conference on Electronic Packaging Technology (ICEPT), 8-11 Aug. 2018.

M. Zia, B. Chung, S. J. Sober and M.S. Bakir, "Fabrication and Characterization of 3D Multi-Electrode Array on Flexible Substrate for In Vivo EMG Recording from Expiratory Muscle of Songbird," in Proc. IEEE International Electron Devices Meeting (IEDM), San Francisco, CA, December 2018.

W. Zihan, S. Viswanathan, M. Jotz, H. Maune, M. Jost, P. M. Raj, et al., "Glass in Electronic Packaging and Integration: High Q Inductances for 2.35 GHz Impedance Matching in 0.05 mm Thin Glass Substrates," in 2018 IEEE 68th Electronic Components and Technology Conference (ECTC), pp. 1089-1096, 2018.

External Conference Presentations

M. B. Bostan Abad, T. Ignatova, M. Turvey, P. Collins, "In Situ Scanning Probe Microscopy of Li-Ion Battery Cathode Materials," Proceedings of the Electrochemical Society, Issue 3, p. 245, 2018.

A. Dellinger, "Innovation for Horseshoe Crab Bleeding and Management," 148th American Fisheries Conference, Atlantic City, NJ, Aug 2018.

K. Gillard, M. Seeman, H. Miller, M. Blackledge, "Identification of a pharmacophore capable of potentiating beta-lactam antibiotics in methicillin-resistant *Staphylococcus aureus* (MRSA) via fragment based screening," ACS Abstracts, vol. 255, 2018.

Pearce, K., Boshers, A., Greenwald, R., Goldsmith, T., Yang, C. & Watson-Wright, C., "Characterization of an aerosol generation system to assess the impact of nano-enabled consumer product exposures on pulmonary health," Sustainable Nanotechnology Organization Conference, Alexandria, Virginia, November 8, 2018.

Wang, S., Chen, H.H., and Chen, C.L., "Flow Boiling Heat Transfer of HFE7000 in Manifold Microchannels through Integrating Three-dimensional Flow and Silicon Nanowires," 17th Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems, San Diego, California, 2018.

Y. Zhu, S. Zeng, X. Zhao, Y. Zhao, and L. Zhu, "Narrow-linewidth, tunable external cavity diode lasers through hybrid integration of quantum-well/quantum-dot SOAs with Si₃N₄ microresonators," CLEO: S&I, San Jose, CA, SW4B-2, 2018.

Books and Book Chapters

A. Antonelli, D.J.C. Herr, S. King, Special Issue: Materials; Metrology; and Modeling for Beyond CMOS, APL Materials, 2018.

O. Brand, K. J. Wolter, P. J. Hesketh, "Microfabrication and Sensor Packaging Technology," in Handbook of Packaging, Edited by R. Tummala, 2018.

Green, C. E., Sahu, V., Hu, Y., Joshi, Y. K., and Fedorov, A.G., "Passive and active thermal technologies: modeling and evaluation," in Handbook on 3D Electronic Packaging: Design, Test, and Thermal Management, Edited by M. Bakir, vol. 4, pp. 35, Wiley-VCH Books, 2018.

S. Hanasoge, P. J. Hesketh, A. Alexeev, "Magnetic thin film cilia for microfluidic applications," in Atlas of Cilia Bioengineering and Biocomputing, Edited by Richard Mayne, Jaap den Toonder, River Publishers, 2018. ISBN: 9788770220026.

G. Joseph, L.J. Wang, "Production of biofuels from biomass by fungi," in Fungal Biorefineries, Edited by S. Kumar, P. Dheeran, M. Taherzadeh, S. Khanal, Springer International Publishing AG, 2018.

Y. Liu, Z. Zeng, J. Wei, "Nano-architected Carbon-Metal Oxide Electrodes for Supercapacitance Energy Storage" in Fundamentals of Nanoparticles, Edited by Abdel Salam Hamdy Makhlof, Ahmed Barhoum, Elsevier Publisher, 2018.

T. Mabe, J. Ryan, J. Wei, "Functional Thin Films and Nanostructures for Sensors", in Fundamentals of Nanoparticles, Edited by Abdel Salam Hamdy Makhlof, Ahmed Barhoum, Elsevier Publisher, 2018.

N. R. Mucha, R. Ravella, M. Reddy, L. Zhang, "Electrospun carbon nanofiber supported zero-valent iron nanoparticles for heavy metal remediation in ground and waste water," in [Carbon Nanofibers: Synthesis, Applications and Performance](#), Nova Science Publishers, Inc., 2018.

P. M. Raj, G. C. Jha, S. Teng, H. Sharma, S. K. Bhattacharya, and R. R. Tummala, "Inductors: Micro-to Nanoscale Embedded Thin Power Inductors," in [Nanopackaging](#), pp. 311-343, Springer, 2018.

J. Rivas-Murillo, R. Mohan, A. Ahmed, "Constitutive Material Models for High Strain Rate Behavior of Cementitious Materials from Material Chemistry – Molecular Dynamics Modeling Methodology with Illustrative Application to Hydrated Calcium Silicate Hydrate Jennite", [Blast Mitigation Strategies in Marine Composite and Sandwich Structures](#), Springer Nature, Singapore, 2018.

Q. Tian, D. Yu, L. Zhang, A. Kelkar, "Composite laminate prepared from boron nitride nanoparticle (BNNP) enhanced prepgs," in [Chemistry Research Summaries](#), Nova Science Publishers, Inc., 2018.

L.J. Wang, B. Zhang, G. Joseph, "Biogas production and quality control, in [Bioenenergy and Biofuels](#), Edited by O. Konur, CRC Press, 2018.

Patents Awarded, Patent Applications, and Invention Disclosures

F. Ayazi, P. Gupta, Y. Jeong, "Precision high-bandwidth out-of-plane accelerometer as contact microphone for body-worn auscultation devices", GTRC ID 7891, provisional patent piling date: April 18, 2018.

Bowen J, Mac Q, and Kwong GA., "Compositions and methods for immunotherapy profiling," Provisional Patent Application No. 62/729,470.

Dahotre S, and Kwong GA., "Methods for multiplexed cell isolation using DNA gates," Provisional Patent Application No. 62/627,441.

B. DeProposo, V. Sundaram, et al., "Sidewall Protected Semi-Additive Process (SP SAP)," Innovation Disclosure GTRCID8053.

M. Filler, E. Vogel, "Lithography-Free Nanowire Transistors," U.S. Patent Application No. 62/747,196, October 18, 2018.

S. Hanasoge, P. J. Hesketh, A. Alexeev, "System and Methods to Produce Metachronal Motion of Artificial Magnetic Cilia" U.S. Patent Application No. 62/748,641, October 22, 2018.

P. J. Hesketh, A. Mahdavifar, D. Britton, J. Xu, W. Daley, "Cell differentiation devices and method," U.S. Patent #14/925,558, February 2018, Oct. 28, 2015.

Holt BA, and Kwong GA, "Self titrating, bacterial protease-activated prodrug," Provisional Patent Application No. 62/733,347.

Holt BA, and Kwong GA, "Biological bits as computable elements within living systems," Provisional Patent Application No. 62/733,287.

S. Iyer, P. Deshmukh, J. Li, "GaAsSb/GaAsSbN Core-shell Nanowires", Invention Disclosure JSNN0027 1218, 2018.

A. D. Kelkar, "Manufacturing controlled dispersion hig concentration nanoparticles in nanocomposites," U.S. Patent Application Serial No. 16/211,987 Dec 6, 2018.

C. Kepley, "Autologous mast cells from adipose tissue and compositions and methods thereof," US Application No. 62/523,059, 2018.

C. Kepley, "Therapeutic mast cells, compositions, and methods of treating a tumor comprising administering autologous mast cells from adipose tissue," US Application No. 62/527,566, 2018.

Kwong GA, and Bhatia SN, "Multiplexed detection with isotope-coded reporters," US Patent No. 10,006,916.

A.N. Ofori-Boadu, "Swine-waste bio-char as a partial cement replacement material," US Provisional Application, 2018.

N. Raj, V. Breedveld, and D. W. Hess, "3D Microfluidic Devices in Paper Using Plasma Deposition and Etching Process," GTRC7826PRV, February 20, 2018.

S. Ravichandran, V. Sundaram, et al., "Molded Glass Panel Embedding" Provisional filed, GTRCID 8061, application 62810502.

S. Ravichandran, V. Sundaram, et al., "3D Embedded Package for Heterogeneous Integration" (Provisional Application Filed). GTRC 7842, application 62637620.

C. Rosu, V. Breedveld, and D. W. Hess, "Methods for Forming Water-Repellent, Long-term, Durable and Biomimetic Coating from Inorganic Silicas and Silanes", GTRC7656PCT, January 16, 2018.

J.M. Starobin, V. Varadarajan, W. Krassowska Neu, "Method and system for evaluating stability of propagation reserve," US Patent No.10, 076,259, 2018.

Ajay Upadhyaya, Ajeet Rohatgi et. al "Selective Boron Emitter Formation for Commercial Solar Cells" U.S. Patent Application No. 62/725,284, Filed: August 31, 2018, GTRC Reference No.: 7991.

J. Wei, Y. Liu, Z. Zeng, "Separator-Free Energy Storage Devices and Methods," US Application No. 62/478,773, 2018.

J. Wei, Z. Zeng, "Compositions and Methods for Enhancing Electrocatalytic Efficiencies," US Application No. 62/721,278, 2018.

H. Wen and F. Ayazi, "Comb-driven substrate decoupled annulus pitch/roll BAW gyroscope with slanted quadrature tuning electrode." Patent application US20180321037A1, filed November 8, 2018.

H. Wen and F. Ayazi, "MEMS inertial measurement apparatus having slanted electrodes for quadrature tuning." Patent application US20180216936A1, filed August 2, 2018.

L. Zhang, E. Fini, S. R. Karnati, "Green Epoxy Resin with the Biobinder from Swine Manure," U.S. Provisional Patent Application 62/622,866, 2018.