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R. Han and E. Afshari, “Filling the Terahertz Gap with Sand: High-Power Terahertz Radiators in Silicon,” IEEE Bipolar/BiCMOS Circuits and Technology Meeting (BCTM), Boston, MA, October 2015.
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Xiang, J. Aizenberg, and C. Ortiz, “Multifunctionality of
Chiton Biomineralized Armor with an Integrated Visual

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Kolle, “A Highly Conspicuous Mineralized Composite
Photonic Architecture in the Translucent Shell of the

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and J. Aizenberg, “Bioinspired Micrograting Arrays Mim-
icking The Reverse Color Diffraction Elements Evolved
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K.R. Phillips, N. Vogel, Y. Hu, M. Kolle, C.C. Perry, and J.
Aizenberg, “Tunable Anisotropy in Inverse Opals and
Emerging Optical Properties” Chemistry of Materials
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Aizenberg, “Three-Phase Co-Assembly: In-situ Incorpo-
ration of Nanoparticles into Tunable, Highly-Ordered,
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Spintronics; spin based logic and memory device; nanoscale magnetic material for information storage and microwave application; fabrication technique of magnetic nanodevices; spin related phenomena in semiconductor, topological insulator, superconductors and low dimensional material; magnetic dynamics.

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SELECTED PUBLICATIONS


C. Bao, L. Zhang, L. C. Kimerling, J. Michel, and C. Yang, “Raman Scattering and Kerr Shock Induced Breather Soli-
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Design, fabrication and characterization of novel electronic devices in wide bandgap semiconductors and two dimensional materials, polarization and bandgap engineering, transistors for sub-mm wave power and digital applications, new ideas for power conversion & generation, interaction of biological systems with semiconductor materials and devices, large area & ubiquitous electronics based on two dimensional materials.

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Intersection of interfacial engineering, thermal-fluids, and materials & manufacturing. Central theme is the design and manufacturing of nanoengineered surfaces and their applications to energy, water, oil & gas, agriculture, transportation, electronics cooling systems for significant efficiency enhancements.

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Micro- and nano-enabled multiplexed scaled-down systems for space, energy, healthcare, manufacturing, and analytical applications. 3-D printed MEMS/NEMS, carbon nanotubes, electrospray, electrospinning, field emission, field ionization, plasmas, X-rays; electrical and chemical nanosatellite propulsion, plasma sensors, portable mass spectrometry, high-voltage, 3D MEMS packaging, x-ray sources, tactile displays and sensors, ultracapacitors.

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