Department of
Chemical and Environmental Engineering

2013—2014 Seminar Series

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Silicon Carbide Micro/Nanosystems for Sensing And Energy Applications

Silicon has been the dominant semiconducting material in micro-/nanosystems technologies. However, the material and surface properties of silicon impose limitations on its use in applications involving harsh environment (such as high temperature, high radiation and corrosive conditions). Silicon carbide (SiC), a wide bandgap semiconductor, is emerging as a material to address the limitations of silicon as it is temperature tolerant, radiation resistant, and chemically inert. In this talk, I will present recent advances, by our group and others, in the materials science and manufacturing technology of SiC thin film and low dimensional structures. This includes deposition, metallization, and fabrication of semiconductor microdevices, with particular emphasis on sensor and energy technologies.