

UNIVERSITY OF RHODE ISLAND
Department of Chemistry

SEMINAR

Room 105 Beapre
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***"Monolithically Integrated
Textile Electronics"***

HOST

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Monolithically Integrated Textile Electronics

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Abstract

Textiles are light-weight, pliable, and durable. If we can demonstrate ways to integrate (opto)electronic technology into textiles, we will build the foundation for creating wearable technology that boasts power generating, energy storing, or chemo- and biosensing capabilities. Today, *patching* is the main available method with which to build “electronic” textiles, where devices that are built on traditional, rigid backings are fitted into cut-out spaces within a fabric. However, patching ruins the pliability, breathability, wear-resistance and light-weight nature of simple fabrics. A superior approach would be to *directly fabricate* electronic devices on a pre-made textile substrate via a combination of physical vapor deposition and reactive vapor deposition techniques, thus realizing true integration into apparel. This approach is comparatively more complicated, less developed, and dependent on innovations in materials synthesis and processing. Some endeavors of the Wearable Electronics Lab at UMass Amherst to create monolithically-integrated textile electronics will be discussed.