ANALYTICAL & MATERIALS SEMINAR

Date: Thursday, Jan. 30th

Time: 12:15 pm, 1315 Chemistry

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New Frontiers in Semiconductor Electrochemistry: Electrochemical Liquid-Liquid-Solid Crystal Growth

This presentation will highlight recent work by our research group on the design and synthesis of high aspect ratio semiconductors as nanomaterials in (photo) electrochemical energy conversion systems. A general and brief overview/ motivation for nanostructured semiconductor electrodes in energy conversion applications will first be given. The remaining time will be dedicated to our recent discovery of a bench-top electrodeposition method to produce crystalline nanostructured semiconductor films. We describe the process as an electrochemically gated melt crystal growth, referred to as an electrochemical liquid-liquid-solid (ec-LLS) process. Data will be presented on the ec-LLS crystal growth of group IV and III-V semiconductors. Results from experiments aimed at identifying the controlling features of the ec-LLS process will be presented.