



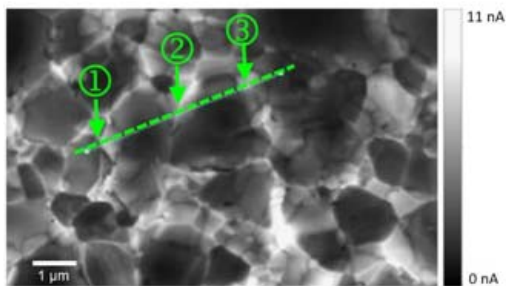
# NanoEngineering Research Group

Fully funded RA positions are available for Ph.D. students.

## 1. Eligibility

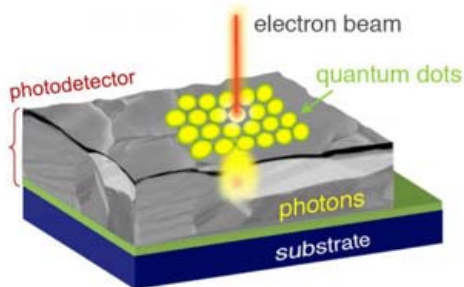
- Ph.D. students in Fall 2017
- Application Deadline: **January 1<sup>st</sup>, 2017**  
<http://www.ece.utah.edu/grad>
- Contact: Prof. Heayoung Yoon ([heayoung.yoon@utah.edu](mailto:heayoung.yoon@utah.edu))

## 2. Research Projects (<http://www.eng.utah.edu/~hyoon/>)



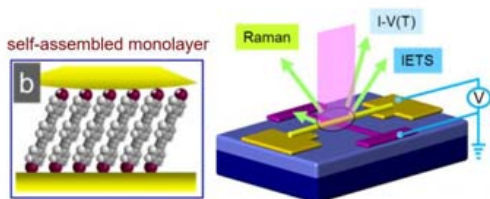
Solar Energy Harvesting

Thin film solar cells are the most successful PV technology in the market today. This attractive technique, however, has shown the module efficiency  $<18\%$  (theory  $\approx 30\%$ ). Based on scanning probes and an electron beam, we investigate individual micro/nano structural properties and correlate to device performance.



Multi-probe Microscopy

The capability to access individual nano structures and to measure their properties is critical for advanced technologies. We develop new multi-probe techniques by integrating micro/nano materials that have unique properties. The nanomaterials of interest include quantum dots, nanowires, and atomically-thin 2D materials.



Interface Engineering

The use of molecules provides flexibility to create top-down, nanoscale devices. We design and fabricate molecular electronic devices, where the active junctions are sandwiched between two nanowires. We use *in-situ* measurement techniques to investigate the molecular structures participating in charge transport.