"GaAs nanowire heterostructures: single photon emission and energy harvesting"

Nanowires are filamentary crystals with a tailored diameter between few and ~100 nm. Their especial morphology and dimensions render them especially interesting for the study of low dimensional semiconductor physics and for opto-electronic and energy harvesting applications.

The small footprint renders them also ideal for the integration with the silicon electronics platform. I will discuss the challenges of growing GaAs nanowires on silicon and show two of our latest results concerning special functionality of III-V nanowires: 1) the formation of extremely bright and high quality GaAs quantum dots in an AlGaAs shell to be used in quantum information technology and 2) the advantages of nanowires in next generation photovoltaics which constitute a potential way to overcome the Shockley-Queisser limit in efficiency.

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Cook Hall 2058

2:00 – 3:00 p.m.