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“Semiconductor Nanowires and Nanocrystals for Transistor and Photovoltaic Applications”

We have been working for several years to develop robust solution-based routes to the synthesis of nanocrystals and nanowires of many different semiconductors and metals. The general concept we pursue is to synthesize nanomaterials with unique size-tunable optical, electronic and optoelectronic properties and then manipulate them like building blocks into devices and materials with the potential to displace existing technologies. This talk will focus on the details of the wet chemical synthesis of silicon and germanium nanowires and copper-indium-gallium-selenide (CIGS) nanocrystals and their application as new materials for transistor and photovoltaic devices.