Carbon Nanotubes and Graphene Nanoribbons

Hongjie Dai

J.G. Jackson-C.J. Wood Professor of Chemistry
Department of Chemistry
Stanford University Keck Science Building, Rm 125
380 Roth Way
Stanford, CA 94305

This talk will present our work on carbon nanotubes, graphene nanoribbons and graphene-inorganic hybrid nanomaterials. First, biological applications of carbon nanotubes will be discussed including a new fluorescence imaging method in the so called NIR-II region in the spectral window of 1000-1400nm. NIR fluorescence enhancement of carbon nanotubes and organic fluorophores will be presented on a novel plasmonic substrate for 3D molecular tracking and biological detection. I will then talk about graphene nanoribbons, including several methods recently developed in our lab to form high quality graphene nanoribbons with narrow widths and smooth edges. Lastly, I will talk about our recent work on making inorganic nanoparticles and nanocrystals on graphene sheets and carbon nanotubes for energy storage and electrocatalytic applications.