Modeling of Nanotube Network Semiconductors[1] MEG NOAH, YOUNG-KYUN KWON, University of Massachusetts Lowell — Novel modeling techniques are used to characterize the structural, electronic and optical properties of nanocomposite network semiconductors. Ab initio computations of the structural properties of ensembles of nanotubes on a variety of substrates are presented. We use Monte Carlo and percolation simulations to predict manufacturing success rates given semiconductor design and processing constraints. The performance impact of flattening of nanotubes and topological defects on nanotubes will also be presented. The purpose of this study is to assist experimentalists and to stream-line and optimize nanomanufacturing. Our research focuses on the fundamental understanding of nanostructured materials and their application to molecular electronic devices.

[1]Nanomanufacturing Center of Excellence and Center for High-rate Nanomanufacturing

Meg Noah
University of Massachusetts Lowell

Electronic form version 1.4