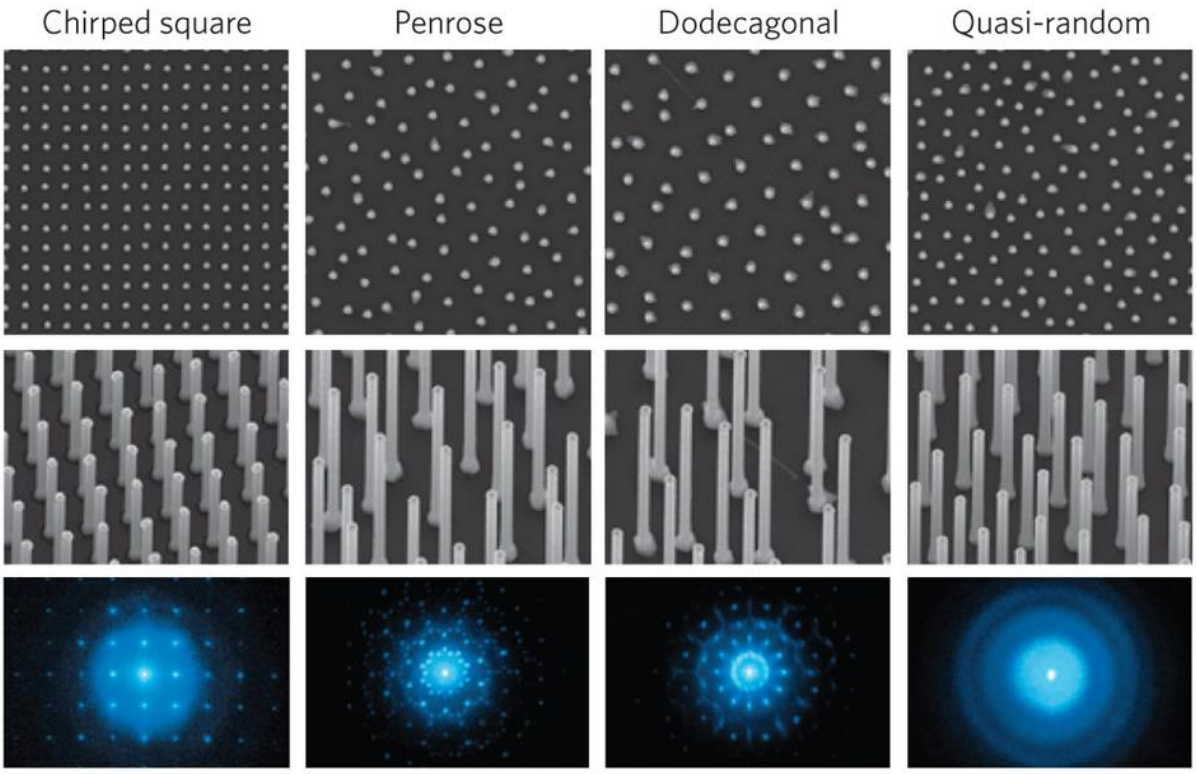
Nanowires and All That Jazz!

Stefania Carapezzi

Nanowires (NWs) provide the capability to realize building blocks of unprecedented structural and functional complexity, as a model platform for nanoscience and nanotechnology. But they also challenge established device processing methodologies and push towards new solutions in order to step out of the proof-of-concept, laboratory realizations towards real-world technological implementations. In this contribution I will briefly survey some recent results over physical properties of semiconductor nanowires and their cutting-edge applications.



Two-dimensional silicon wire patterns for solar applications, ranging from ordered (left), to quasi-crystalline and hyper-uniform (right). Top row: scanning electron microscopy images from a top-down perspective. Middle row: scanning electron microscopy images viewed at an angle of 20°. Bottom row: transmitted diffraction patterns of polymer-embedded wire arrays on a quartz slide, observed at a wavelength of 488 nm.