Abstract:
This talk will present recent work at the intersection of photonics, nanofabrication, and materials design. The talk will start with an overview of the light emission properties of semiconductor nanowires, including single-nanowire light-emitting diodes, and optically pumped ultraviolet nanowire lasers. It will introduce nanoskiving as a technique for engineering the optical response of metallic nanostructures. Finally, the speaker will discuss two novel approaches for the design of new nanomaterials: point-defect engineered silicon for silicon photonics and rotationally twinned nanowires as a new type of superlattice.

Biography:
Dr. Bao received his Ph.D from the University of Michigan in applied physics in 2003. His M.S. and B.S. degrees are both from Zhejiang University in China. He has 15 journal publications in the field of nanotechnology and holds three patents. Currently he is a research associate at Harvard University’s School of Engineering and Applied Sciences, where his recent accomplishments include:

(1) Demonstrated the first sub-bandgap silicon LED at 1218 nm based on silicon selfinterstitials.
(2) Demonstrated silicon solar cells with an enhanced efficiency below silicon bandgap using sulfur implanted silicon.

For more information and other seminars:
http://www.ece.eng.wayne.edu/~apandya/Seminars/index.html

All ECE GRAs/GTAs are required to attend.