



Carolinas Central Chapter

January 2012 Meeting

Thursday
January 19, 2012
EBI, Third Floor
6:30 pm

Dielectric Core-Shell Optical Nano-Antenna for Extraordinary Solar Absorption Enhancement

Dr. Linyou Cao

Assistant Professor– NCSU Materials Science & Engineering

The key challenge for massive utilization of solar energy is the high cost of existing solar conversion devices. Enhancing solar absorption by light trapping is a major strategy for the cost reduction and efficiency improvement of the devices. Regardless of the significant advances that have been achieved so far, techniques to trap solar light more efficiently are needed to further lower the cost. We have demonstrated a new approach to achieve extraordinary enhancement in the absorption of sunlight by exploring core-shell nanostructures. The core-shell structure consists of absorbing semiconductors and non-absorbing dielectric materials, such as ZnO, Si₃N₄. We will examine the fundamental physics underlying this strong absorption enhancement, and, building on the fundamental understanding, propose new designs of high-performance light trapping for practical solar cells.

Linyou Cao is an assistant professor of Materials Science and Engineering at North Carolina State University (NCSU). He received his PhD from Stanford University, and was a Miller Research Fellow at the University of California, Berkeley prior to joining NCSU. His research focuses on seeking better understanding of the fundamental photophysics and photochemistry properties of nanostructures. In the past five years, Cao has been the leading author for more than 20 scientific papers published at highly influential journals.

The meeting will take place in Room 3003 on the third floor of Engineering Building I on the NCSU Centennial Campus on January 19, 2012 at 6:30 p.m.

Sustaining Members



Accident
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2011 – 2012 Officers

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If you plan to attend, please RSVP by no later than January 18th by registering at the chapter website, contacting one of the officers listed at left, or emailing Frank Watson at frank.watson@pgnmail.com.

6:30 – 7:00 pm Dinner

7:15 – 8:00 pm Presentation