

## SEMINAR

## THE PENCIL IS MIGHTIER THAN THE SWORD

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A number of emerging areas are being driven by a fusion of ideas and techniques from a variety of disciplines. In particular, a fusion of ideas from the physical, chemical, and even biological sciences is being utilized to develop novel materials for new technology and applications. Of the various materials under investigation, none have received more attention than graphene-based materials --- carbon nanotubes, fullerenes, and, more recently, graphene sheets. These materials have a wealth of interesting and useful properties --- they raise a number of fascinating questions in the fundamental sciences, and they hold promise for countless applications. In this talk, I will describe some of our recent investigations of the electronic properties of graphene-based materials; I will discuss phenomena/applications which derive from their unique electronic properties. In particular, I will discuss how carbon nanotubes provide an ideal laboratory to probe exotic Kondo effects. Furthermore, I will show how a graphene nanoribbon coupled to a metallic nanoparticle could be extremely promising for novel applications in electronics as well as terahertz photonics.

**REMEMBER****EUGENE KIM****SPECIFIC SEMINAR:** The Pencil is Mightier than the Sword.**DATE:** June 1, 2010.**TIME:** 12:00 pm.**PLACE:** IFAE.