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NEBRASKA CENTER FOR MATERIALS AND  
NANOSCIENCE SEMINAR SERIES PRESENTS



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## PROF. YA-HONG XIE

Department of Materials Science & Engineering  
University of California, Los Angeles

### GRAPHENE: PROMISES AND CHALLENGES

Graphene is an interesting material that inspires scientific curiosity and boasts promising industrial applications. Dr. Xie will present an annotated review of a number of recent publications exploring the application potential of graphene in electronics, optoelectronics, spintronics, as well as other areas with the objective of elucidating future research opportunities. Currently, the fabrication of high quality graphene of wafer scale is the most prevalent obstacle. While graphene has been obtained by a number of methods including mechanical exfoliation of HOPG, wet chemical intercalation, and epitaxial growths on SiC, the technique that holds the highest promise for industrial scale applications will have to be chemical vapor deposition. He will report his research on CVD graphene and discuss the promises and challenges encountered.

Ya-Hong Xie obtained his BSc in Physics from Purdue University in 1981, and his MSc and PhD in Electrical Engineering from the University of California at Los Angeles in 1983 and 1986, respectively. He became a member of the technical staff in the Physical Sciences and Engineering Research Division of Bell Laboratories, Lucent technologies in 1986 where he remained until joining the faculty of UCLA in 1999 as a professor in the department of Materials Science and Engineering. He is currently the vice chairman of the department.

Dr. Xie has conducted research in the various fields aimed at increasing the functionality of Si-based electronics and optoelectronics. His recent research focuses have been in the fabrication and understanding of guided self-assembly of quantum dots of semiconductor materials, the study of RF cross talk isolation in mixed signal integrated circuits on Si, quantum dot based electro-optical modulator for chip-to-chip optical interconnects, the fabrication of high mobility 2-dimensional electron systems for quantum transport studies, and graphene epitaxy.

Ya-Hong Xie has authored and co-authored over 140 scientific articles in refereed journals, and holds 29 US patents and numerous patents in other countries. He is a member of the American Physical Society, the Materials Research Society, and a senior member of IEEE.

Friday, December 4, 2009  
237 Scott Engineering Center  
1:30 p.m.

(refreshments at 1:00 pm in 237 SEC)

Host:  
Professor  
Rod Soukup  
Electrical Eng.

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