Physics
AT QUEENS COLLEGE

# Colloquium Notice

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## *Optical and electrical probes for organic field effect transistor performance*

Organic field effect transistors (OFETs) have been applied to a number of sensing and actuation systems which can take advantage of their low thermal budget and mechanical flexibility. Characterization of OFETs has been, however, a controversial topic because the conduction and transport models are unlike other well understood systems with accepted transport and device models. We have developed a family of techniques for the analysis and characterization of OFETs using a combination of optical and electrical probe techniques grounded in the physics underlying transport in organic semiconductor thin films. These techniques provide unique insights into device performance and also indicate ways to better fabricate and drive devices in practical circuits. These probes include the use of quasi-static charge metrology techniques, spatially and spectrally resolved photocurrent analysis, and the analysis of switching noise in OFET circuits. The physical basis behind these tools, as well as some analytical results which they have yielded in practical devices, circuits, and deliberately doped systems will be presented. The application of OFETs to a number of sensor systems including additive photodetectors and strain sensing will also be presented, along with what these analytical strategies can tell us about better ways to fabricate and drive these devices.

*Note: COLLOQUIUM CANCELLED DUE TO SNOWSTORM*

Monday
**March 2, 2009**
Starts at 12:15 PM
Coffee at 12:00 PM
Physics Conference Room, SB B326