Seminar/Talk

Sensing with quantum electronic devices: measuring qubits, motion, and time

Dr. Edward Laird
Oxford University

Host: Georgios Katasaros

Electronic devices that are engineered to exploit quantum behaviour open new prospects for computing, for communication, and for nanoscale sensors. I will present three experiments from my group that use nanofabricated devices, incorporated into electronic circuits, to measure delicate effects at or approaching quantum scales. First, I will show how to use a tunable radio-frequency circuit to make sensitive measurements of quantum dot impedance, a crucial requirement for reading out semiconductor spin qubits. Second, I will demonstrate optomechanical detection of the motion of a suspended carbon nanotube. Third, I will present measurements of a molecular spin resonance standard from which we are developing a chip-scale atomic clock. In each case, I will describe the route to fundamental quantum tests and new applications.

Friday, March 31, 2017 09:30am - 10:30am
Seminar room Ground floor / Office Bldg West (I21.EG.128)

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