Physics AT QUEENS COLLEGE

Colloquium Notice

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Nanoscopic Transport in the Ultrathin Metal Films and Molecular Organic Crystals

A description of the properties of low dimensional electron gases remains one of the most important and challenging problems in condensed matter physics. I will present electron transport and tunneling measurements on ultrathin, metal films. I will show that in the strong disorder limit a gap emerges in the density of states that is solely attributable to fundamental many body electron-electron interaction effects, i.e. the Coulomb gap.

Interestingly, a quantum metal state can be realized, in otherwise highly insulating films, by suppressing the Coulomb gap via a magnetic field. In the second part of my talk I will describe ongoing research into the properties of the two dimensional electron gas of Field Effect Transistors (FETs) fabricated on high quality organic molecular single crystals. Practical optoelectronic applications of the molecular organic materials, such as flexible, large-area electronic devices will also be discussed.

Wednesday
March 17, 2004
Starts at 12:15 PM
Coffee at 12:00 PM
Physics Conference Room, SB B326