

Colloquium Notice

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Teaching old materials new tricks: Making metals emit light and organic semiconductors to crystallize on demand

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In this seminar, we will focus on two aspects of our work that look at materials which have been studied for quite some time, but try to utilize them in new and interesting ways. In the first part, we will look at metals, specifically Au and Ag. It turns out that metals, like semiconductors, can be quantized for diameters < 2 nm. At such sizes in fact, even relatively efficient quantum yields of emission have been demonstrated. Here, we look at thin films of metal nanoclusters (MNCs), and demonstrate a thin film LED with either Au or Ag MNCs as the emitting element. In both cases, the electroluminescence peak of the LED corresponds with the photoluminescence of the MNCs in solution. In the second part, we will focus on our recent efforts to template the growth of organic semiconductors. Through proper control of crystal phase, molecular orientation, and grain size (from nm to μm), we are able to realize higher solar cell performance from "classical" materials than otherwise possible.
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Monday

November 11, 2013

Starts at 12:15 PM

Coffee at 12:00 PM

Physics Conference Room, SB B326