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Seminar

Materials Science & Engineering

Presents:

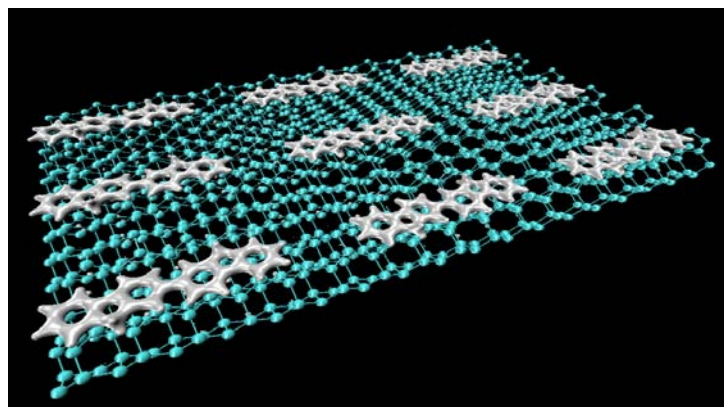
Dr. Elizabeth Lupton

**Research Professor, Materials Science and Engineering,
University of Utah**

“Mechanical Manipulation of Organic Semiconductors on the Molecular Level”

The application of organic semiconductors in light emitting diodes and photovoltaics opens new possibilities for the development of device components which are physically robust and can be produced at low cost. Understanding the function of these materials has proved a considerable scientific challenge on account of the number of inter and intra molecular interactions which affect charge and energy transfer. The morphology of an organic semiconducting polymer backbone has been shown to have a significant impact on its optoelectronic properties, which suggests that molecular function can be controlled through mechanical manipulation. We present a computational investigation into the affect of strain on molecular morphology, to understand both how constraints imposed on a molecule by its environment can modify optical absorption and emission, and whether mechanical manipulation can be a useful tool in enhancing the properties of organic semiconducting molecules.

The figure shows a semiconducting fluorene molecule compressed by adsorption on a silicon substrate



Wednesday September 30, 2009

4:10-5:00 p.m.

1230 WEB