

Organic Colloquium

presenting

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“Exploring the Synthesis and Applications of Graphene”

Abstract. Graphene is the ultimate two-dimensional material consisting of a single layer of sp^2 hybridized carbon. Here we explore different approaches to synthesize this carbon allotrope, ranging from chemical conversion to vapor phase deposition. Briefly, graphite can be converted into graphene oxide (GO) sheets, which readily disperse in water, and then can be reduced by various methods. Due to its unique ability to be solution processed and patterned, GO and chemically converted graphene hold promise for applications ranging from sensors to transparent conducting electrodes. Chemical vapor deposition onto metal substrates enables the growth of continuous, large-area graphene (Fig.). The challenges of growing graphene, controlling the number of layers, transferring graphene and some exciting uses such as laser scribed graphene for supercapacitors will be discussed.

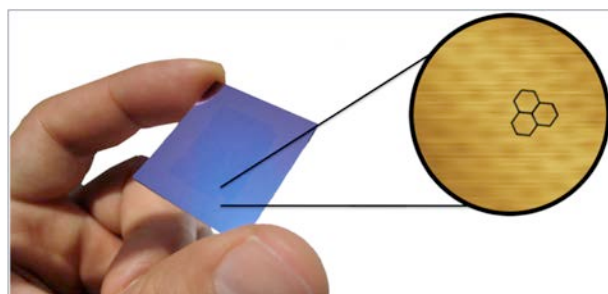


Fig. Large-area single layer graphene transferred onto a silicon substrate with a 300 nm oxide can be seen with the naked eye, while STM imaging enables seeing the honeycomb network of carbon that makes this material so robust.

Thursday, May 5, 2016

5:00 PM

Cram Conference Room – 3440 Molecular Sciences Bldg

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