IBS Center for Multidimensional Carbon Materials

Special Guest Speaker

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Chemistry on Graphene and Chemical Reduction of Graphene Oxide

Thursday, DEC 10
9 AM

Bldg. 101
Seminar room on the 1st floor

This talk will focus on the fundamental core issues of reactivity of graphene and graphene oxide. We will discuss functionalization of graphene and graphene oxide reduction (of oxygen functionalities) from a synthetic chemistry point of view. In the first part of the talk, I will cover the recent solution-based functionalization methods of graphene in a concise and mechanistic manner. I will focus on the reactions of the graphene sp^2 backbone. In the second part, I will discuss various methods for reduction of graphene oxide. Although the term 'reduction' is most often defined as the gain of electrons or decrease in oxidation number by inorganic chemists, organic chemists often view such a process as a loss of oxygen or gain of hydrogen. In fact, the practice of organic chemistry qualitatively defined reduction as conversion of a functional group in a molecule from one category to a lower one. Such conversion can occur based on several mechanisms, such as direct electron transfer, hydride transfer or hydrogen atom transfer. Emphasis of this talk is placed on the techniques, reaction mechanisms and the quality of the produced graphene.

Literature:

C. K. Chua, M. Pumera, Chem. Soc. Rev., 2014, 43, 291.
C. K. Chua, M. Pumera, Chem. Soc. Rev., 2013, 42, 3222

You are cordially invited to attend!