

Low-dimensional carbon nanomaterials

Prof. Florian Banhart, IPCMS, Strasbourg
florian.banhart@ipcms.unistra.fr

Carbon is a unique element due to the different hybridizations of the carbon atom and the ability of forming materials in one-, two-, and three-dimensional space. Although the basic modifications of carbon - graphite and diamond - are known since ages, new and highly interesting structures have been discovered, synthesized, and characterized in the past years. Among these are the fullerenes, carbon nanotubes, graphene, and carbyne. These nanomaterials have unusual and extreme electrical, thermal, and mechanical properties, making them ideal components for many applications in future devices. The focus will be on real low-dimensional species such as graphene which is a layer with monoatomic thickness or carbyne that consists of linear chains of carbon atoms. Graphene, carbon nanotubes, or chains of carbon atoms are subject of several research projects in Strasbourg.

Main topics:

1. Hybridizations and bonding of the carbon atom
2. One-dimensional carbon: Carbyne
3. Two-dimensional carbon: Graphene
4. Three-dimensional carbon: Diamond
5. Bulk phases of carbon
6. Carbon nanomaterials: nanotubes, fullerenes
7. New technologies on the basis of carbon nanomaterials

Time: 21 and 28 January, 11, 18, 25 February and 3rd of March 2016 from 16:00 to 18:00

Place: Auditorium de l'Institut de Physique et Chimie des Matériaux de Strasbourg, 23 rue du Loess, 67034 Strasbourg.