

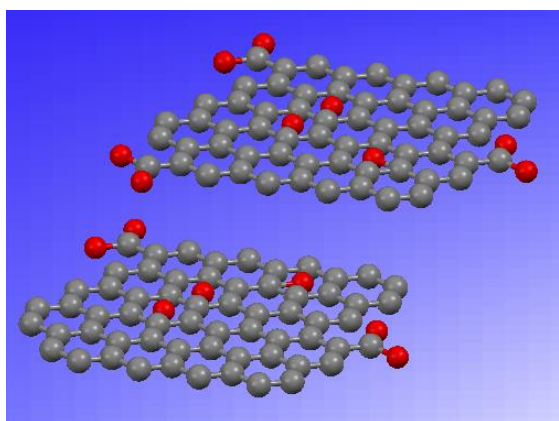
Seminář/Seminar 01/2015

Vás zve na seminář:

Syntéza materiálů na bázi GO a rGO využitelných pro dekontaminaci od těžkých kovů a dalších kontaminantů se zaměřením na odstraňování Cr, As a Se

Doc. RNDr. Pavel Kopel, Ph.D.

Abstrakt



Graphene is a two-dimensional layer of carbon atoms with a thickness of single atom, of a hexagonal arrangement of atoms in a shape of honeycomb, and is often visualized as a homogeneous network of a large size. It is the basic structural element of other allotropes, including graphite, charcoal, carbon nanotubes and fullerenes. In real life, such an ideal structure does not exist, however it is possible to produce such a structure as small adjacent monolayers. Graphene has many extraordinary properties such as an extremely high mechanical strength and flexibility, good thermal and electrical conductivity, is nearly transparent. There was the bipolar transistor effect identified as a quality of graphene as well as ballistic transport of charges and large

quantum oscillations in the material. Graphene is impermeable to virtually all substances, biological properties, the ability of sensory, high electron mobility and hydrophobicity (repulsion of water molecules). Of course, all these characteristics are present together only in theory. In practice, graphene is produced by various methods. The two main ones are: carbon deposition on metals and substrates of crystalline and multi-splitting (exfoliation) to a maximum of thin graphite flakes. The first process allows the fabrication of graphene monolayers mononuclear about the maximum size of the order of tens of microns. In the second one slightly thicker flakes made of several atomic layers on their surface are formed with significant amounts of oxygen. This results in formation of graphene oxide (GO), which in subsequent stages is subject to reduction (removal of oxygen) forms of reduced graphene oxide (rGO).

15. 5. 2015, 13:00 h

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