Graphene for Biomedical Applications

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Abstract

Graphene has emerged as a very interesting nanomaterial for biomedical applications. Graphene based materials could be used in sensing and diagnostic platforms as well as for diverse medical treatments. During this talk I will cover the use of CVD graphene in biosensors[1] and functionalized graphene oxide for the targeted treatment of bacteria.[2] CVD graphene in combination with gold nanoparticles has shown attomolar sensitivity to detect DNA hybridization processes.[1] Furthermore, this could be extended to the use of graphene plasmons in sensing applications.[3,4] On the other hand, nanopores in CVD graphene could in the future provide a platform for the sequencing of DNA.[5]

In addition, the future industrialization of graphene in some of these applications will require large scale, reliable and relatively fast fabrication methods, therefore, I will also cover some relevant aspects for the processing of graphene devices.

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