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INITIAL STAGES OF GROWTH OF ORGANIC SEMICONDUCTORS ON GRAPHENE

Abstract

In a time when cutting-edge scientific research is expensive and complex, it seems absurd that a break-through in physics could be achieved by a simple adhesive tape in the form of graphene – a crystalline carbon just one atom thick. Due to its unusual electronic and optical properties, it may be used in organic field effect transistors (OFETs) and organic photovoltaic solar cells.

In my presentation, I will illustrate the initial stages of organic semiconductors on graphene by atomic force microscopy (AFM). The organic semiconductors can be successfully grown by organic molecular beam deposition (OMBD). Their growth is strongly dependent on growth parameters such as deposition rate, substrate temperature, substrate surface energy and the environmental conditions. Pentacene is one of the most studied organic semiconductors due to its excellent electronic properties. In the talk, I will review the existing experiments related to the growth of pentacene on graphene.