

2D vdWs Heterostructures (Graphene/hBN Heterostructures)

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Abstract

The assembly of two-dimensional materials in the form of vertical stacks known as – van der Waals heterostructures – leads to the discovery of new properties and functionality in these systems. A range of nano- and micro-fabrication techniques is used to fabricate heterostructures made of graphene and other 2D materials. Raman spectroscopy is one of the essential tools used to characterize graphene devices. Various applications of graphene heterostructure systems could be achieved. In this research work, we provide an overview of two-dimensional materials van der Waals heterostructures devices made of graphene and hexagonal boron nitride hBN. In addition, we present some optical applications of graphene devices.

Keywords: van der Waals heterostructures, graphene, hBN, Raman spectroscopy