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Interaction of silver with bilayer graphene: A Raman study

In this work, a system formed by two piled graphene layers: bilayer graphene (BLG), exhibits novel properties compared to its single layer counterpart. The electronic band structure of a BLG in AB stacking shows two k_2 dispersion at the conduction and two k_2 valence bands, in both cases located at the K-points of the Brillouin zone. Remarkably, twisting the BLG layers with respect to each other can lead to superconductivity effects and formation of flat bands.

Therefore, understanding the interaction between silver and graphene is fundamental to design and adjust the properties of those systems to fit the desirable applications. Motivated by this; we use Raman spectroscopy to investigate AgNPs deposited on BLG. Specifically, we investigate Raman spectroscopy has proven to be a powerful and versatile technique to investigate graphene-related material. The bands associated with the AgNPs and graphene present characteristic features that can elucidate aspects of the interaction between the involved systems.

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