Evaluation of layer number of graphene with AFM, reflectance, and Raman scattering

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Graphene have been widely studied byresearchers from academic institutions, research institutes, and industries dueto its unique and interesting properties such as conductivity, mechanicalstrength, optical transparency and flexibility which are better than othermetals or semiconductors. These properties are influenced by the number of layersof graphene and disappear as the number of layers increase. Therefore, it isessential to investigate the number of layers of graphene.

The number of layers of graphene is usuallyobserved by atomic force microscope (AFM), transmission electron microscope(TEM), light transmittance, and Raman scattering. However, everyanalytical method has its own disadvantages in terms of measuring the number ofgraphene layers and may also cause ambiguity for providing reliableinformation.Owing tothese reasons, the easy, fast, and reliable methods for counting the number ofgraphene layers need to be developed.