

Ring Formation of Furan on Epitaxial Graphene

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The ring formation and electronic properties of furan adsorbed on graphene layers grown on 6H-SiC(0001) has been investigated using atomic force microscopy (AFM), near edge X-ray absorption fine structure (NEXAFS) spectra for the C K-edge, and high resolution photoemission spectroscopy (HRPES). Moreover, we observed that furan molecules adsorbed on graphene could be used for chemical functionalization via the lone pair of electrons on the oxygen group, allowing chemical doping. We also found that furan spontaneously formed rings with one of three different bonding configurations and the electronic properties of the ring formed by furan on graphene can be described using by AFM, NEXAFS and HRPES, respectively.

Keywords: Graphene, Surface Property, PES, NEXAFS