

AEM on Growth Mechanism of Synthesized Graphene on Ni Catalyst

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Graphene has recently been a subject of much interest as a potential platform for future nano-devices such as flexible thin-film transistors, touch panels, and solar cells. And chemical vapor deposition (CVD) and related surface segregation techniques are a potentially scalable approach to synthesizing graphite films on a variety of metal substrates. The structural properties of such films have been studied by a number of methods, including Raman scattering, x-ray photoelectron spectroscopy (XPS), atomic force microscopy (AFM), and transmission electron microscopy (TEM). An understanding of the structural quality and thickness of the graphite films is of paramount importance both in improving growth procedures and understanding the resulting films' electronic properties. In this study, we synthesized the few-layered graphene under optimized condition to figure out the growth mechanism seen in CVD-grown graphene by using various electron microscope. Especially, we observed directly film thickness, quality, nucleation site, and uniformity of graphene by using AEM. The details will be discussed in my presentation.

Keywords: AEM, Graphene, Growth mechanism