



X-ray Standing Wave Mapping of Graphene/SiC



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Growth of epitaxial graphene from silicon carbon substrates (EG/SiC) is a promising route to achieve high-quality wafer-scale graphene. However, the presence of the poorly-understood “buffer layer” that exists at the EG/SiC interface has significant effects on the electronic behavior of the graphene itself. In order to understand the nature of this influential buffer layer, we employed X-ray Standing wave with Photoelectron spectroscopy to create a chemically-sensitive profile of atomic the atomic species within the buffer layer. We find that the buffer layer consists of two carbon species separate by 0.3 Å, consistent with the interpretation of a topologically graphene like interface layer that is highly interacting with the SiC substrate.

