

Revealing Graphene Oxide Structure using Synchrotron and DFT techniques

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Graphene oxide (GO) is the oxidized form of graphene. GO is known for its complex non-stoichiometric structure and unique optical, electronic, and chemical properties which contributes to many applications in electronic devices and is a good precursor for synthesizing reduced graphene at a large scale. Despite being one of the most promising materials, the detailed structure of GO remains unknown, which gives us opportunity to study the material thoroughly. Our study focuses on the local structure and electronic properties of GO. We use synchrotron-based X-ray absorption (XAS) and X-ray emission (XES) spectroscopy, along with density functional theory (DFT), to describe GO structure.