

عنوان مقاله:

A Chemical Route for Production of Graphene

محل انتشار:

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خلاصه مقاله:

Graphene sheets offer extraordinary electronic, thermal and mechanical properties and are expected to find a variety of applications. Synthesis of this material in large quantity and with high quality has been a challenge. Here we report production of graphene via a facile, chemical method which can be used for large quantity production of graphene. Expanded graphite was used as a precursor in a chemical route involving graphite oxidation, ultrasonic exfoliation and chemical reduction. X-ray diffraction results showed complete oxidation of graphite. Fourier transform infrared spectroscopy was used to discover the presence of oxidizing agents and the removal of them after the reduction. Transmission electron microscopy observation showed that the synthesized graphene had the size of tens to hundreds of square nanometers. With regard to the size of the primary graphite it can be concluded that the product has the least amount of defects. Also the transparency of the particles was related to the few layers of the produced graphene

کلمات کلیدی:

Graphene, Chemical Synthesis, Expanded Graphite, Exfoliation

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