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Thermal Reduction Study of Graphene Oxide Paper

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ABSTRACT BOOK

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Thermal Reduction Study of Graphene Oxide Paper

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ABSTRACT. The unique electronic property of graphene provides potential applications such as electromechanical resonator, protective layers, chemical filters, components of electrical batteries or supercapacitors [1]. Some of those applications require a free-standing paper-like form [2]. Graphene-like material can be prepared from graphene oxide (GO) following by reduction process [3]. We report the preparation, reduction and characterization of GO paper that obtained by assembly of individual GO sheets. The free standing GO paper-like was prepared in petri dish from 4 mg/ml GO dispersed in water, and following by evaporation of water in atmospheric and room until it is almost dry. It was further dried at 60°C the vacuum oven overnight and then detach from the petri dish. In order to obtained graphene-like film, the free-standing GO film then thermally reduced by heating the samples at 250 C at varied heating time. Characteristic properties of the thermally reduced GO paper-like was measured by means of Raman spectroscopy, infrared spectroscopy, X-ray diffraction and scanning electron microscopic.

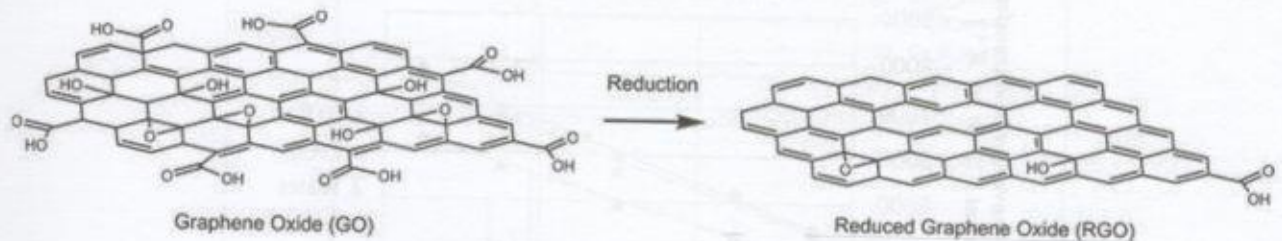


Figure 1. Schematic illustration of the reduction of graphene oxide (GO) to reduced graphene oxide (RGO) [3]

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