

Author's Accepted Manuscript

Preparations, properties and applications of
graphene in functional devices: A concise review

Shuai Ren, Ping Rong, Qi Yu



www.elsevier.com/locate/ceri

PII: S0272-8842(18)30964-7
DOI: <https://doi.org/10.1016/j.ceramint.2018.04.089>
Reference: CERII8006

To appear in: *Ceramics International*

Received date: 16 March 2018
Revised date: 10 April 2018
Accepted date: 11 April 2018

Cite this article as: Shuai Ren, Ping Rong and Qi Yu, Preparations, properties and applications of graphene in functional devices: A concise review, *Ceramics International*, <https://doi.org/10.1016/j.ceramint.2018.04.089>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Preparations, properties and applications of graphene in functional devices: A concise review

Shuai Ren, Ping Rong, Qi Yu*

School of Materials Science and Engineering, Institute of Graphene at Shaanxi Key Laboratory of Catalysis, Shaanxi University of Technology, Hanzhong 723001, China

Abstract

The present review focuses on the preparations, properties and applications of graphene materials in a few selected functional devices. We have summarized the mechanical exfoliation method, liquid phase stripping, oxidation-reduction method and chemical vapor deposition for the growth of graphene. Several factors such as the substrate, the temperature and reducing agents that influence the properties of graphene are also discussed. In addition, selected applications of graphene, including graphene bulbs, graphene superconductors, graphene chips, rapid heating of graphene, drug carriers, hydrogen storage materials, and graphene battery are surveyed.

Keywords: graphene; function device; application; review

1. Introduction

In 2004, Geim *et al.* at the University of Manchester prepared a stable monolayer of graphene by mechanical stripping [1]. This accomplishment solved the issue that had challenged the international physics and material communities for half a century with regards to whether graphene is merely a hypothetical structure or can it actually be experimentally

** Correspondence to: Assoc. Prof. Dr. Qi Yu, kukukoko2004@163.com

Download English Version:

<https://daneshyari.com/en/article/7886579>

Download Persian Version:

<https://daneshyari.com/article/7886579>

[Daneshyari.com](https://daneshyari.com)