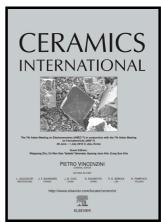
## Author's Accepted Manuscript

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

Shuai Ren, Ping Rong, Qi Yu



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ACCEPTED MANUSCRIPT

Preparations, properties and applications of graphene in functional

devices: A concise review

Shuai Ren, Ping Rong, Oi 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

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