

Accepted Manuscript

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PII: S0008-6223(15)30037-3

DOI: <http://dx.doi.org/10.1016/j.carbon.2015.07.006>

Reference: CARBON 10078

To appear in: *Carbon*

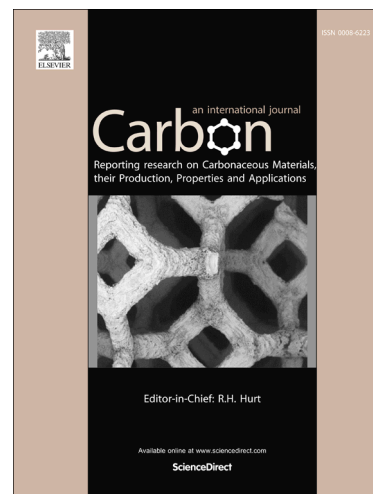
Received Date: 8 May 2015

Revised Date: 27 June 2015

Accepted Date: 1 July 2015

Please cite this article as: Chen, J., Shi, W., Fang, D., Wang, T., Huang, J., Li, Q., Jiang, M., Liu, L., Li, Q., Dong, L., Wang, Q., Xiong, C., A binary solvent system for improved liquid phase exfoliation of pristine graphene materials, *Carbon* (2015), doi: <http://dx.doi.org/10.1016/j.carbon.2015.07.006>

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A binary solvent system for improved liquid phase exfoliation of pristine graphene materials

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Abstract

Up to now, the cost-effective mass production of pristine graphene sheets remains a significant challenge. We report a binary solvent system of dimethylformamide and n-butylalcohol that facilitates the high concentration production of unoxidized graphene through liquid-exfoliation assisted with sonication. A stable dispersion with concentration as high as 6.5 mg/ml, was received via this method. The conductivity of a film made from the graphene sheets had a conductivity of 27,000 S/m. The supercapacitor fabricated by graphene exhibits a giant capacitance of 600 F/g and an outstanding long-term stability.

1. Introduction

The exceptional electrical and mechanical properties of graphene have stimulated extensive research activities since it is first discovered by Novoselov and Geim [1,2]. The past few years have evidenced a

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