

## Accepted Manuscript

Two-phase interface-facilitated synthesis of graphene-like carbon nanosheets and their interfacial assembly behaviors

Hongyi Gao, Junyong Wang, Mengyi Jia, Xiao Chen, Radoelizo S. Andriamitantsoa, Panpan Liu

PII: S0301-0104(18)30655-4

DOI: <https://doi.org/10.1016/j.chemphys.2018.09.002>

Reference: CHEMPH 10170

To appear in: *Chemical Physics*

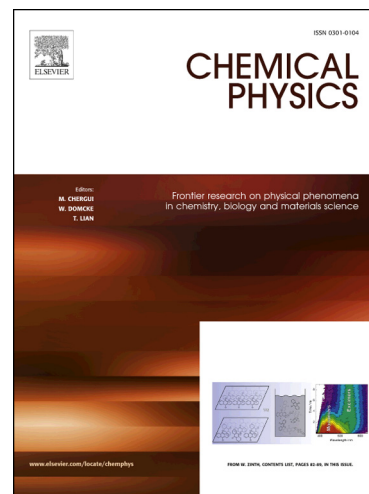
Received Date: 12 June 2018

Revised Date: 3 September 2018

Accepted Date: 3 September 2018

Please cite this article as: H. Gao, J. Wang, M. Jia, X. Chen, R.S. Andriamitantsoa, P. Liu, Two-phase interface-facilitated synthesis of graphene-like carbon nanosheets and their interfacial assembly behaviors, *Chemical Physics* (2018), doi: <https://doi.org/10.1016/j.chemphys.2018.09.002>

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 proof before it is published in its final 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.



**Two-phase interface-facilitated synthesis of graphene-like carbon nanosheets and their interfacial assembly behaviors**

Hongyi Gao\*, Junyong Wang, Mengyi Jia, Xiao Chen, Radoelizo S. Andriamitantoa\*, Panpan Liu,

Beijing Key Laboratory of Function Materials for Molecule & Structure Construction, School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, 100083, PR China.

\*Corresponding author.

E-mail: [hygao2009@163.com](mailto:hygao2009@163.com) (H. Y. Gao); [zoliedora@yahoo.fr](mailto:zoliedora@yahoo.fr) (R. S. Andriamitantoa)

**Abstract**

A novel interface-facilitated synthesis of graphene-like carbon nanosheets from P123 is reported. The morphology and structure of the carbon nanosheets were characterized through FESEM, TEM, AFM, XRD, Raman and FTIR. The formation mechanism of the graphene-like carbon nanosheets is proposed. P123 serves a dual function of structure-directing agent and carbon precursor, which first assembles at the toluene-HCl interface and then is in situ carbonized to carbon nanosheets. This process shows several advantages such as mild condition, simple procedure and low cost. In addition, the obtained carbon nanosheets can be effectively confined at the interface and self-organize into film with high uniformity.

*Keywords:* interface-facilitated synthesis, carbon nanosheets, assembly behaviors.

Download English Version:

<https://daneshyari.com/en/article/9577170>

Download Persian Version:

<https://daneshyari.com/article/9577170>

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