

Accepted Manuscript

Title: Preparation and Tribological Properties of MoS₂/Graphene Oxide Composites

Authors: Haojie Song, Biao Wang, Qiang Zhou, Jiakuan Xiao, Xiaohua Jia



PII: S0169-4332(17)31324-7
DOI: <http://dx.doi.org/doi:10.1016/j.apsusc.2017.05.022>
Reference: APSUSC 35957

To appear in: *APSUSC*

Received date: 5-1-2017
Revised date: 1-5-2017
Accepted date: 2-5-2017

Please cite this article as: Haojie Song, Biao Wang, Qiang Zhou, Jiakuan Xiao, Xiaohua Jia, Preparation and Tribological Properties of MoS₂/Graphene Oxide Composites, Applied Surface Science <http://dx.doi.org/10.1016/j.apsusc.2017.05.022>

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.

Preparation and Tribological Properties of MoS₂/Graphene Oxide Composites

Haojie Song^{1,2}, Biao Wang¹, Qiang Zhou¹, Jiaxuan Xiao¹, Xiaohua Jia^{1*}

¹School of Materials Science & Engineering, Shaanxi University of Science & Technology, Xi'an, Shaanxi, 710021, China

² School of Materials Science & Engineering, Jiangsu University, Zhenjiang, Jiangsu, 212013, China

* To whom Correspondence should be addressed. E-mail address: xhjia2003@126.com

Highlights

- The MoS₂-GO composites were fabricated by a simple hydrothermal method.
- The layered structure of MoS₂-GO nanocomposites as lubricating additives can form the transfer film and provide stable friction in a very short period of time.
- The internal shear in the transfer films of MoS₂-GO composites and slide over the dispersed MoS₂-GO composites reduces the friction.

Abstract

A hydrothermal route is developed for the synthesis of MoS₂/graphene oxide (GO) composites based on the hydrothermal reduction of Na₂MoO₄ and GO sheets with L-cysteine. The MoS₂/GO composites in improving friction and wear of the sunshine oil on sliding steel surfaces under low or high applied load were demonstrated. In tests with sliding steel surfaces, the sunshine oil that contains small amounts of MoS₂/GO composites exhibited the lowest specific friction coefficient and wear rate under all of

Download English Version:

<https://daneshyari.com/en/article/5346868>

Download Persian Version:

<https://daneshyari.com/article/5346868>

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