

Accepted Manuscript

Title: Facile synthesis of nano-MoS₂ and its visible light photocatalytic property

Author: Fenping Yang Zhiyong Zhang Yingnan Wang
Manzhang Xu Wu Zhao Junfeng Yan Cheng Chen



PII: S0025-5408(16)30832-7
DOI: <http://dx.doi.org/doi:10.1016/j.materresbull.2016.11.029>
Reference: MRB 9028

To appear in: *MRB*

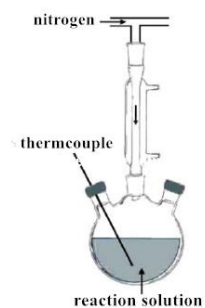
Received date: 1-9-2016
Revised date: 16-11-2016
Accepted date: 19-11-2016

Please cite this article as: Fenping Yang, Zhiyong Zhang, Yingnan Wang, Manzhang Xu, Wu Zhao, Junfeng Yan, Cheng Chen, Facile synthesis of nano-MoS₂ and its visible light photocatalytic property, Materials Research Bulletin <http://dx.doi.org/10.1016/j.materresbull.2016.11.029>

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.

ABSTRACT: MoS₂ nanomaterial with diameter about 200 nm was successfully synthesized by a facile hot-injection method, using molybdenum trichloride (MoCl₃) and sulfur powder as the precursors. As-prepared MoS₂ sample was characterized by X-ray diffraction (XRD) spectroscopy, scanning electron microscope (SEM), energy dispersive spectrometer (EDS) and X-ray photoelectron spectroscopy (XPS). The characterization results showed that the MoS₂ sample possessed a pure phase. In addition, it was investigated by the degradation of rhodamine B (RhB) in aqueous solution to demonstrate the photocatalytic activity of the nano-MoS₂. Photocatalytic results showed that the degradation rate of RhB could reach to 97% by the nano-MoS₂ under visible light irradiation, which indicated that the morphology of the sample with a decent photocatalytic activity could donate some effects to the generation and transfer of the electron-hole.

Keywords: Hot-injection; Rhodamine B; Nano-MoS₂; Photocatalytic



Download English Version:

<https://daneshyari.com/en/article/5442228>

Download Persian Version:

<https://daneshyari.com/article/5442228>

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