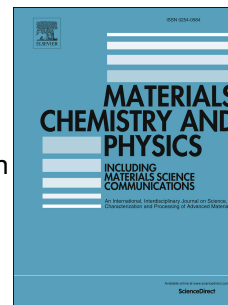


# Accepted Manuscript

Adsorptive characterization of a pure magadiite and an organic modified magadiite on removal of methylene blue from related aqueous solution

Mingliang Ge, Luoxiang Cao, Mingyi Du, S.M. Jahangir Alam



PII: S0254-0584(18)30584-4

DOI: [10.1016/j.matchemphys.2018.06.085](https://doi.org/10.1016/j.matchemphys.2018.06.085)

Reference: MAC 20785

To appear in: *Materials Chemistry and Physics*

Received Date: 1 November 2017

Revised Date: 15 May 2018

Accepted Date: 30 June 2018

Please cite this article as: M. Ge, L. Cao, M. Du, S.M. Jahangir Alam, Adsorptive characterization of a pure magadiite and an organic modified magadiite on removal of methylene blue from related aqueous solution, *Materials Chemistry and Physics* (2018), doi: 10.1016/j.matchemphys.2018.06.085.

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.

# Adsorptive Characterization of a pure Magadiite and an Organic Modified Magadiite on Removal of Methylene Blue from Related Aqueous Solution

Mingliang Ge<sup>a,b</sup>, Luoxiang Cao<sup>a</sup>, Mingyi Du<sup>a</sup>, Jahangir Alam S.M.<sup>a,\*</sup>

<sup>a</sup> Key Laboratory of Polymer Processing Engineering of Ministry of Education, National, <sup>2</sup>Engineering Research Center of Novel Equipment for Polymer Processing, South China University of Technology, Guangzhou 510640, China

<sup>b</sup> Key Laboratory of Polymeric Composite & Functional Materials of Ministry of Education, Sun Yat-Sen University, Guangzhou, 510275, P.R. China

\* Corresponding author, E-mail address: mejahangir@scut.edu.cn (**Jahangir Alam S.M.**)

## Abstract

Organic modified magadiite (MAG-CTAB-KH550) was used as an adsorbent to study its adsorption capacity on methylene blue (MB) in this research. MAG-CTAB-KH550 was synthesized via ion-exchange method in the presence of pristine magadiite (MAG), cetyltrimethylammonium-Bromide (CTAB) and  $\gamma$ -aminopropyltriethoxysilane (KH550) in aqueous solution. The formation of MAG-CTAB-KH550 was characterized by scanning electron microscope (SEM) and X-ray diffraction (XRD) analyses. The effect(s) of adsorbent dosage, adsorption time and the pH value of the solution were investigated to characterize the performance and mechanism by MAG for removing the MB from aqueous solutions. It was found that the maximum adsorption capacity of MAG-CTAB-KH550 on MB was 96.60 mg/g and it was 22.9% higher than adsorption capacity of MAG while the adsorption parameters were set to the maximum adsorption time at 60 min as initial concentration of MB with 100 mg/L, sorbents mass with 1 g/L, pH with 12, and

Download English Version:

<https://daneshyari.com/en/article/7921298>

Download Persian Version:

<https://daneshyari.com/article/7921298>

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