

## Accepted Manuscript

Title: Antibacterial property of fabrics coated by magnesium-based brucites

Author: Ying Wang Lin Sha Jiao Zhao Qian Li Yimin Zhu Ninghui Wang



PII: S0169-4332(16)32919-1  
DOI: <http://dx.doi.org/doi:10.1016/j.apsusc.2016.12.188>  
Reference: APSUSC 34735

To appear in: *APSUSC*

Received date: 13-10-2016  
Revised date: 5-12-2016  
Accepted date: 22-12-2016

Please cite this article as: Ying Wang, Lin Sha, Jiao Zhao, Qian Li, Yimin Zhu, Ninghui Wang, Antibacterial property of fabrics coated by magnesium-based brucites, Applied Surface Science <http://dx.doi.org/10.1016/j.apsusc.2016.12.188>

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.

# Antibacterial property of fabrics coated by magnesium-based brucites

Ying Wang, Lin Sha, Jiao Zhao, Qian Li, Yimin Zhu\*, Ninghui Wang

Collaborative Innovation Center for Vessel Pollution Monitoring and Control, Dalian Maritime University, Dalian 116026, China.

E-mail: ntp@dlnu.edu.cn

## Highlights

- The magnesium-based antibacterial agents composited by brucites with different particle sizes were proposed for the first time.
- The coating process for making antibacterial fabrics was easy to operate and apply in industrial application.
- The materials used in the antibacterial fabrics were environmental-friendly and cost-effective.
- The reduction percentage of the as-prepared antibacterial fabrics against *Escherichia coli* (*E.coli*) and *Staphylococcus aureus* (*S.aureus*) reached to 96.6% and 100% respectively and the antibacterial fabrics attained excellent washing durability.

## Abstract

A kind of environmental-friendly magnesium-based antibacterial agent was reported for the first time, which was composited by brucites with different particle sizes. The antibacterial fabrics were produced by coating the magnesium-based antibacterial agents on the 260T polyester pongee fabrics with waterborne polyurethane. The coating process was simple, low-cost, and harmless to human health and environment. Characteristics of the antibacterial agents and fabrics were studied by particulate size distribution analyzer (PSDA), X-ray diffraction (XRD), and scanning electron microscopy (SEM). The results demonstrated that the coating layer was covered tightly on the

Download English Version:

<https://daneshyari.com/en/article/5354226>

Download Persian Version:

<https://daneshyari.com/article/5354226>

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