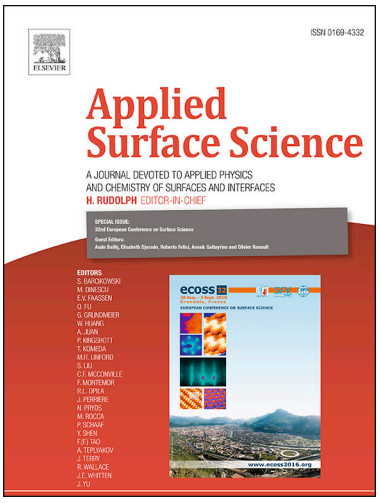
Accepted Manuscript



Full Length Article

Graphene oxide/waterborne polyurethane composites for fine pattern fabrication and ultrastrong ultraviolet protection cotton fabric via screen printing

Weihua Song, Bo Wang, Lihua Fan, Fangqing Ge, Chaoxia Wang

PII: S0169-4332(18)32302-X
DOI: https://doi.org/10.1016/j.apsusc.2018.08.167
Reference: APSUSC 40204

To appear in: *Applied Surface Science*

Received Date: 27 June 2018
Revised Date: 10 August 2018
Accepted Date: 20 August 2018

Please cite this article as: W. Song, B. Wang, L. Fan, F. Ge, C. Wang, Graphene oxide/waterborne polyurethane composites for fine pattern fabrication and ultrastrong ultraviolet protection cotton fabric via screen printing, *Applied Surface Science* (2018), doi: https://doi.org/10.1016/j.apsusc.2018.08.167

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.

ACCEPTED MANUSCRIPT

Graphene oxide/waterborne polyurethane composites for fine pattern fabrication and ultrastrong ultraviolet protection cotton fabric via screen printing

Weihua Song, Bo Wang, Lihua Fan, Fangqing Ge, Chaoxia Wang*

Key Laboratory of Eco-Textile, Ministry of Education, School of Textiles and Clothing, Jiangnan University, Wuxi, 214122, China

*Corresponding author, E-mail address: wangchaoxia@sohu.com

Abstract: This work reported the preparation and application of graphene oxide (GO)/waterborne polyurethane (WPU) composite paste. The rheological properties of GO/WPU composite paste which were strongly affecting the printing pattern definition of printed patterns were analyzed. The influences of reduced GO (RGO)/WPU composite paste printed fabrics with various GO contents on UV protection factor (UPF) values and UV transmittance were investigated. The color performance and fastness of RGO/WPU composite paste printed fabrics were evaluated. GO/WPU composite paste showed as shear thinning behavior or pseudo-plastic characterization. GO/WPU 0.9% composite paste possessed the lowest printing viscosity index (PVI) and excellent printing definition. In terms of UV protection, RGO/WPU composite paste printed fabrics with low GO loading still exhibited great UV protection ability, and super higher UPF value (757) was obtained at RGO/WPU 1.2% composite paste printed fabric. The K/S values of RGO/WPU composite paste printed fabrics were gradually increased with the increase of

Download English Version:

https://daneshyari.com/en/article/8955273

Download Persian Version:

https://daneshyari.com/article/8955273

Daneshyari.com