

Accepted Manuscript

Comparative analysis among coating methods of flexible polyurethane foams with graphene oxide

Bruna R. Fenner, Matheus V.G. Zimmermann, Michelle P. da Silva, Ademir J. Zattera



PII: S0167-7322(18)31342-4
DOI: doi:[10.1016/j.molliq.2018.08.113](https://doi.org/10.1016/j.molliq.2018.08.113)
Reference: MOLLIQ 9558
To appear in: *Journal of Molecular Liquids*
Received date: 14 March 2018
Revised date: 31 July 2018
Accepted date: 21 August 2018

Please cite this article as: Bruna R. Fenner, Matheus V.G. Zimmermann, Michelle P. da Silva, Ademir J. Zattera , Comparative analysis among coating methods of flexible polyurethane foams with graphene oxide. Molliq (2018), doi:[10.1016/j.molliq.2018.08.113](https://doi.org/10.1016/j.molliq.2018.08.113)

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.

**COMPARATIVE ANALYSIS AMONG COATING METHODS OF FLEXIBLE
POLYURETHANE FOAMS WITH GRAPHENE OXIDE**

Bruna R. Fenner^{a*}, Matheus V. G. Zimmermann^b, Michelle P. da Silva^c, Ademir J. Zattera^c

^a *Federal University of Rio Grande do Sul (UFRGS), 9500 Bento Gonçalves Avenue, 91501-970 Farroupilha, Porto Alegre - RS, Brazil.*

^b *SENAI Institute of Polymer Engineering and Innovation, 682 Presidente João Goulart Avenue, 93030-090 Morro do Espelho, São Leopoldo - RS, Brazil.*

^c *University of Caxias do Sul (UCS), 1130 Francisco Getúlio Vargas Street, 95070-560 Petrópolis, Caxias do Sul - RS, Brazil.*

** Corresponding author.*

E-mail address: bruna.fenner@hotmail.com (B. R. Fenner)

Abstract: The growth in the exploration of petroleum and the transportation of this and its derivatives in marine environments increased the concern with potential environmental disasters caused by accidents of oil spillage. With this, several materials are being studied to minimize these environmental impacts. In this study, facile and inexpensive methods of coating polyurethane foams with graphene oxide to produce reusable sorbents with hydrophobic and oleophilic characteristics were evaluated. To compare the coating methods of the sorbent foams produced in suspensions of graphene oxide in ethanol and in petroleum ether, density, morphology, sorption capacity, selectivity, contact angle and reusability tests were performed. The main results indicate higher homogeneity in the coating produced in petroleum ether suspension than in ethanol, but the sorption capacity in both sorbents was similar, about 60 g.g⁻¹. In addition, developed sorbents also presented selectivity to apolar solvents and also fluctuating capacity.

Keywords: *Coating method, graphene oxide, polyurethane foam, sorbent.*

Download English Version:

<https://daneshyari.com/en/article/8955306>

Download Persian Version:

<https://daneshyari.com/article/8955306>

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