### Author's Accepted Manuscript

The Surface Grafting of Graphene Oxide with Poly(ethylene glycol) as a Reinforcement for Poly(lactic acid) Nanocomposite Scaffolds for Potential Tissue Engineering Applications

Chunmei Zhang, Liwei Wang, Tianliang Zhai, Xinchao Wang, Yi Dan, Lih-Sheng Turng



 PII:
 S1751-6161(15)00327-6

 DOI:
 http://dx.doi.org/10.1016/j.jmbbm.2015.08.043

 Reference:
 JMBBM1603

To appear in: Journal of the Mechanical Behavior of Biomedical Materials

Received date:23 June 2015Revised date:26 August 2015Accepted date:28 August 2015

Cite this article as: Chunmei Zhang, Liwei Wang, Tianliang Zhai, Xinchac Wang, Yi Dan and Lih-Sheng Turng, The Surface Grafting of Graphene Oxide with Poly(ethylene glycol) as a Reinforcement for Poly(lactic acid Nanocomposite Scaffolds for Potential Tissue Engineering Applications, *Journa of the Mechanical Behavior of Biomedical Materials* http://dx.doi.org/10.1016/j.jmbbm.2015.08.043

This is a PDF file of an unedited manuscript that has been accepted fo publication. As a service to our customers we are providing this early version o the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable 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

# The Surface Grafting of Graphene Oxide with Poly(ethylene glycol) as a Reinforcement for Poly(lactic acid) Nanocomposite Scaffolds for Potential Tissue Engineering Applications

Chunmei Zhang<sup>a,b,d\*</sup>, Liwei Wang<sup>c</sup>, Tianliang Zhai<sup>b,d</sup>, Xinchao Wang<sup>b</sup>, Yi Dan<sup>d</sup>, and Lih-Sheng Turng<sup>b\*</sup>

<sup>a</sup>College of Chemistry and Materials Engineering, Guiyang University, Guiyang 550005, China <sup>b</sup>Wisconsin Institute for Discovery, University of Wisconsin–Madison, Madison, WI 53706, USA <sup>c</sup>Department of Biomedical Engineering, University of Wisconsin–Madison, Madison, WI 53706, USA <sup>d</sup>State Key Laboratory of Polymer Materials Engineering (Sichuan University), Chengdu 610065, China <sup>\*</sup>Corresponding authors:

Chunmei Zhang: zhangzhang\_87@126.com, Tel: +86 0851 85400760, Fax: +86 0851 85400760.

Lih-Sheng Turng: turng@engr.wisc.edu, Tel: +1 608 316 4310, Fax: +1 608 316 4606.

### Abstract

Graphene oxide (GO) was incorporated into poly(lactic acid) (PLA) as a reinforcing nanofiller to produce composite nanofibrous scaffolds using the electrospinning technique. To improve the dispersion of GO in PLA and the interfacial adhesion between the filler and matrix, GO was surface-grafted with poly(ethylene glycol) (PEG). Morphological, thermal, mechanical, and wettability properties, as well as Download English Version:

## https://daneshyari.com/en/article/7208364

Download Persian Version:

https://daneshyari.com/article/7208364

Daneshyari.com