A high heat-resistance bioplastic foam with efficient electromagnetic interference shielding

Cheng-Hua Cui, Ding-Xiang Yan, Huan Pang, Li-Chuan Jia, Xin Xu, Su Yang, Jia-Zhuang Xu, Zhong-Ming Li

PII: S1385-8947(17)30584-3
DOI: http://dx.doi.org/10.1016/j.cej.2017.04.050
Reference: CEJ 16804

To appear in: *Chemical Engineering Journal*

Received Date: 16 December 2016
Revised Date: 6 April 2017
Accepted Date: 11 April 2017

Please cite this article as: C-H. Cui, D-X. Yan, H. Pang, L-C. Jia, X. Xu, S. Yang, J-Z. Xu, Z-M. Li, A high heat-resistance bioplastic foam with efficient electromagnetic interference shielding, *Chemical Engineering Journal* (2017), doi: http://dx.doi.org/10.1016/j.cej.2017.04.050

A high heat-resistance bioplastic foam with efficient electromagnetic interference shielding

Cheng-Hua Cui,[†] Ding-Xiang Yan,*[,†,‡] Huan Pang,[†] Li-Chuan Jia,[†] Xin Xu,[†] Su Yang,[†] Jia-Zhuang Xu,[†] Zhong-Ming Li*[,†]

[†]*College of Polymer Science and Engineering, State Key Laboratory of Polymer Materials Engineering, Sichuan University, No.24 South Section 1, Yihuan Road, Chengdu 610065, People's Republic of China*

[‡]*School of Aeronautics and Astronautics, Sichuan University, No.24 South Section 1, Yihuan Road, Chengdu 610065, People's Republic of China*

*Corresponding authors: yandinxgiang@scu.edu.cn; zmli@scu.edu.cn

ABSTRACT: Owing to the growing awareness of sustainability, bioplastic based composites arouse considerable attention. However, the low use temperature (usually < 100 ^{o}C) limits their applications. To improve the heat resistance and simultaneously meet the lightweight requirement for microwave shielding, a high heat-resistance crystallite, stereocomplex crystallites (sc) formed by the stereocomplexation crystallization between enantiomeric poly(L-lactide) (PLLA) and poly(D-lactide) (PDLA), was introduced into the conductive carbon nanotube (CNT)/poly(lactic acid) (PLA) composite foam. The composite foam was fabricated by a nonsolvent induced