

Accepted Manuscript

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PII: S0266-3538(17)33044-0

DOI: [10.1016/j.compscitech.2017.12.027](https://doi.org/10.1016/j.compscitech.2017.12.027)

Reference: CSTE 7015

To appear in: *Composites Science and Technology*

Received Date: 27 May 2017

Revised Date: 29 November 2017

Accepted Date: 23 December 2017

Please cite this article as: Wu H-Y, Jia L-C, Yan D-X, Gao J-f, Zhang X-P, Ren P-G, Li Z-M, Simultaneously improved electromagnetic interference shielding and mechanical performance of segregated carbon nanotube/polypropylene composite *via* solid phase molding, *Composites Science and Technology* (2018), doi: 10.1016/j.compscitech.2017.12.027.

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Simultaneously Improved Electromagnetic Interference Shielding and Mechanical Performance of Segregated Carbon Nanotube/Polypropylene Composite *via* Solid Phase Molding

Hong-Yuan Wu ^a, Li-Chuan Jia ^a, Ding-Xiang Yan ^{b,*}, Jie-feng Gao ^c, Xiao-Peng

Zhang ^a, Peng-Gang Ren ^d, Zhong-Ming Li ^a

^a*College of Polymer Science and Engineering, State Key Laboratory of Polymer Materials Engineering, Sichuan University, Chengdu 610065, China*

^b*School of Aeronautics and Astronautics, Sichuan University, Chengdu 610065, China*

^c*The College of Chemistry and Chemical Engineering, Yangzhou University, Yangzhou, 225009, China*

^d*Institute of Printing, Packaging Engineering and Digital Media Technology, Xi'an University of Technology, Xi'an, Shaanxi 710048, China*

*E-mail: yandingxiang@scu.edu.cn

Abstract

Conductive polymer composite with segregated structure has been well demonstrated to achieve high electromagnetic interference shielding effectiveness (EMI SE) due to the selectively distributed electrical nanofillers to establish desirable conductive networks. Nevertheless, the formation of segregated structure in low-melt-viscosity semi-crystalline polymer is still challenged and the segregated composite always suffers poor mechanical performance. Herein, elevated pressure and temperature were utilized to make a typical semi-crystalline polymer, polypropylene (PP), hold solid phase to restrict the diffusion of carbon nanotube (CNT) into its interior. Segregated

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