

Accepted Manuscript

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PII: S0925-8388(17)33815-X

DOI: [10.1016/j.jallcom.2017.11.069](https://doi.org/10.1016/j.jallcom.2017.11.069)

Reference: JALCOM 43762

To appear in: *Journal of Alloys and Compounds*

Received Date: 28 September 2017

Revised Date: 4 November 2017

Accepted Date: 6 November 2017

Please cite this article as: Z. Wang, J. Wang, Y. Li, R. Liu, Y. Zhang, X. Zhao, X. Zhang, Multi-interfacial $\text{Co@CoN}_x\text{@C(N)}$ nanocapsules with nitrogen substitutions in graphitic shells for improving microwave absorption properties, *Journal of Alloys and Compounds* (2017), doi: 10.1016/j.jallcom.2017.11.069.

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Multi-interfacial Co@CoN_x@C(N) Nanocapsules with Nitrogen Substitutions in Graphitic Shells for Improving Microwave Absorption Properties

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Keywords: Nitrogen substitutions, Core@shell, Heterogeneous interfaces, Dielectric polarizations

ABSTRACT: Integrating multiple components with heterogeneous interfaces has been widely proven effective for optimizing the microwave absorption properties of composites. We herein report on an arc-discharging strategy to synthesize the onion-like Co@CoN_x@C(N) nanocomposite with dual core@shell heterogeneous interfaces. The graphitic carbon shells are in-situ functionalized by nitrogen substitutions, resulting in the formation of pyridinic, pyrrolic and graphitic nitrogen substitutions. Such a structural configuration contributes to a significant enhancement in dielectric loss capacity, presenting three main attenuation peaks at the frequencies of 6.6 GHz, 13.5 GHz and 17.1 GHz, respectively. The

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