

Accepted Manuscript

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PII: S1359-835X(18)30009-5
DOI: <https://doi.org/10.1016/j.compositesa.2018.01.009>
Reference: JCOMA 4890

To appear in: *Composites: Part A*

Received Date: 26 November 2017
Revised Date: 3 January 2018
Accepted Date: 8 January 2018

Please cite this article as: Lee, D., Lee, S., Byun, S., Paik, K-W., Ho Song, S., Novel dielectric BN/epoxy nanocomposites with enhanced heat dissipation performance for electronic packaging, *Composites: Part A* (2018), doi: <https://doi.org/10.1016/j.compositesa.2018.01.009>

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performance for electronic packaging

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Abstract

Two-dimensional hexagonal boron nitride (h-BN) has excellent and useful mechanical and thermal properties, and can be used as a novel filler to enhance the thermal conductivity of polymer composites. We prepared exfoliated h-BN nanoplatelets (BNNP) with hydroxyl functional groups using a hydroxide-assisted ball milling process, and demonstrated the enhanced thermal conductivity of its epoxy nanocomposites. The prepared BNNP are highly soluble and retain their in-plane structure. The dielectric constant and dielectric loss of the nanocomposites increase with the addition of BNNP owing to interfacial polarization by the large surface area of BNNP and the ionic and electronic relaxation polarizations by the surface functional groups on the BNNP. Notably, the thermal conductivity of the epoxy nanocomposites

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