Supporting Information

Enhanced Thermal Conductivity of Polymeric Composites

with BN@C Hybrid Fillers

Xuang Bai,^{†a} Yuhang Meng,^{†a} Fanyu Zhou,^{†a} Cong Ge,^a Dandan Sun,^a Dehong Yang,^a Xiangfen Jiang,^{*b} Pengcheng Dai,^{*c} and Xuebin Wang^{*a}

^{a.} National Laboratory of Solid State Microstructures (NLSSM), Collaborative Innovation Center of Advanced Microstructures, Frontiers Science Center for Critical Earth Material Cycling, College of Engineering and Applied Sciences, Nanjing University, Nanjing 210093, China. E-mail: wangxb@nju.edu.cn.

^{b.} State Key Laboratory of Mechanics and Control of Mechanical Structures, Key Laboratory for Intelligent Nano Materials and Devices of the Ministry of Education, College of Material Science and Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China. E-mail: xfjiang@nuaa.edu.cn.

^{c.} State Key Laboratory of Heavy Oil Processing, Institute of New Energy, China University of Petroleum (East China), Qingdao, 266580, China. E-mail: dpcapple@upc.edu.cn.

⁺ X. B., Y. M., and F. Z. contributed equally to this work.

Content

Fig. S1. EDS images of BN@C2.

Fig. S2. SEM images of (a)BN, (b)BN@C2, (c)BN@C1, and BN@C0.

Fig. S3. (a) XPS spectra of BN@C0 and BN. (b) XPS C1s spectra of BN@C0 and BN.

Fig. S4. Comparison of TC of composites constructed with different fillers.

Fig. S5. TG of BN@C0 in air.

Fig. S6. (a) Dielectric breakdown strength. (b) Electrical resistivity.

Fig. S7. Simulation of the thermal conduction process in composites.

Fig. S8. Temperature distribution and variation in LED system for BN@C0/epoxy,

BN/epoxy and epoxy.



Fig. S1. EDS images of BN and BN@C2.



Fig. S2. SEM images of (a)BN, (b)BN@C2, (c)BN@C1, and BN@C0.



Fig. S3. (a) XPS spectra of BN@C0 and BN. (b) XPS C1s spectra of BN@C0 and BN.



Fig. S4. Comparison of TC of composites constructed with different fillers.



Fig. S5. TG of BN@C0 in air.



Fig. S6. (a) Dielectric breakdown strength. (b) Electrical resistivity.



Fig. S7. Simulation of the thermal conduction process in composites.



Fig. S8. Temperature distribution and variation in LED system for BN@C0/epoxy, BN/epoxy and epoxy.