Electronic Supplementary Material (ESI) for CrystEngComm.

Combustion synthesis of highly crystalline boron nitride nanosheets and their application in thermoconductive polymeric composites

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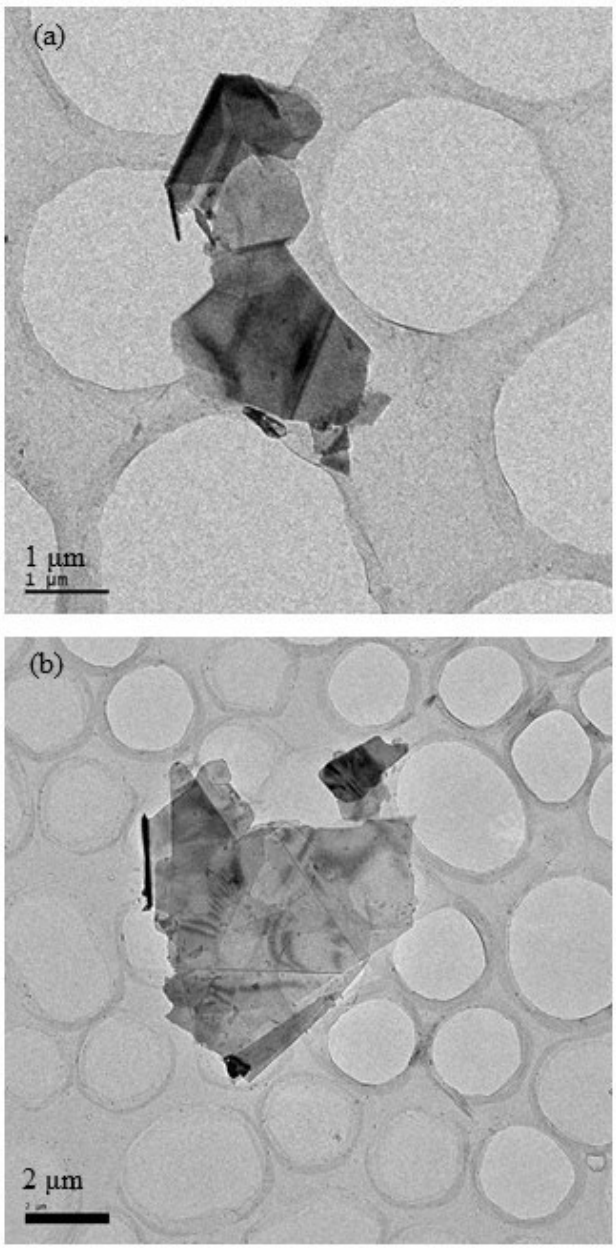

Fig. S1 (a,b) TEM image of combustion synthesis BNNS

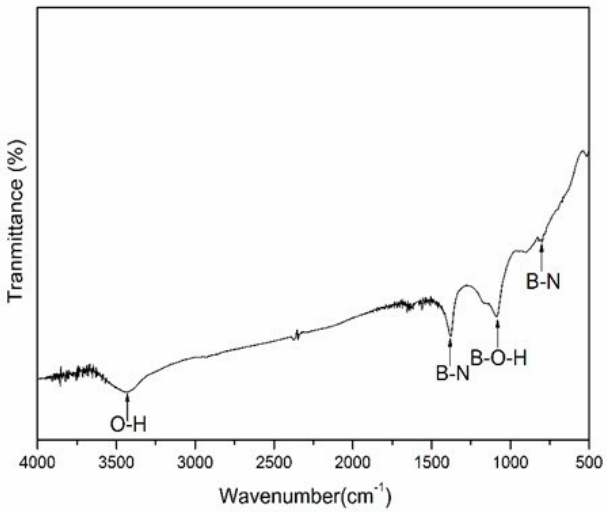

Fig. S2 FTIR Characterization of the combustion synthesis BNNS

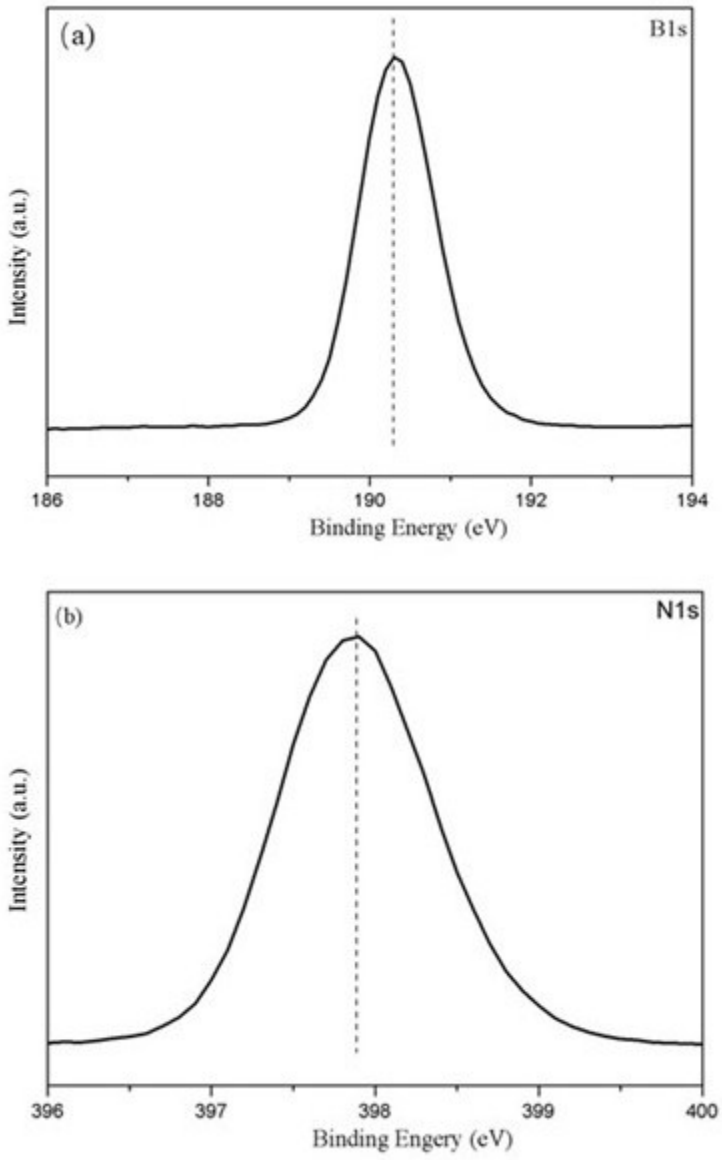

Fig. S3 (a) High-resolution B1s XPS scans of BNNS

(b) High-resolution N1s XPS scans of BNNS

Table S1 Conversion of mass fraction into volume fraction and calculation method

	BNNS wt%	BNNS vol%	Density/(g/cm^3)
EP	5.7	2.5	1.01
BNNS/EP	11.0	5.0	1.04
BNNS/EP	14.6	7.5	1.07
BNNS/EP	20.6	10	1.11
BNNS/EP	29.2	15	1.18
BNNS/EP	36.9	20	1.24
BNNS/EP	38.34	21	1.26

The volume fraction of BNNS can be calculated according to the following equation:

$$BNNS\ vol\%\ x = \frac{\frac{wt\%}{\rho_{BNNS}}}{\frac{wt\%}{\rho_{BNNS}} + \frac{(1 - wt\%)}{\rho_{EP}}}$$

$\rho_{BNNS} = 2.29$ g/cm^3, $\rho_{EP} = 0.98$ g/cm^3,

The density of BNNS/EP composites can be calculated according to the following equation:

$$\rho_{composites} = x * \rho_{BNNS} + (1 - x) * \rho_{EP}$$

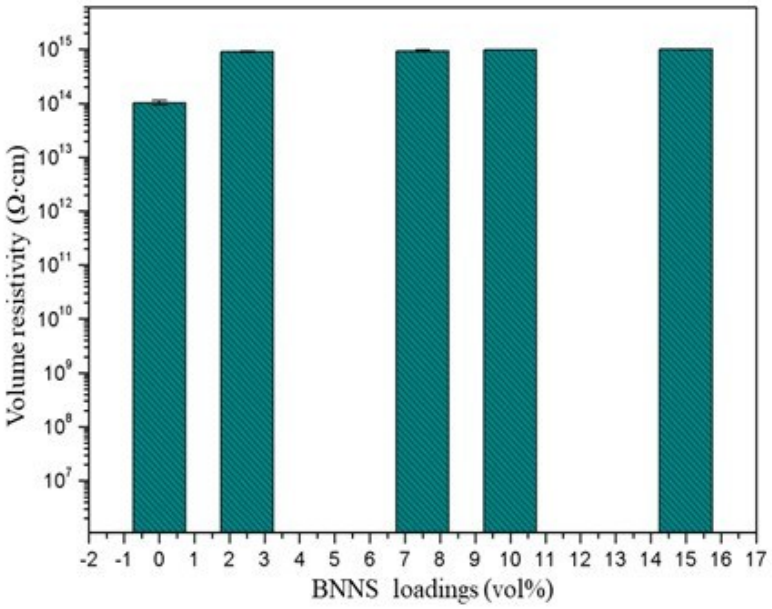

Fig. S4 Volume resistivity of BNNS/EP composites

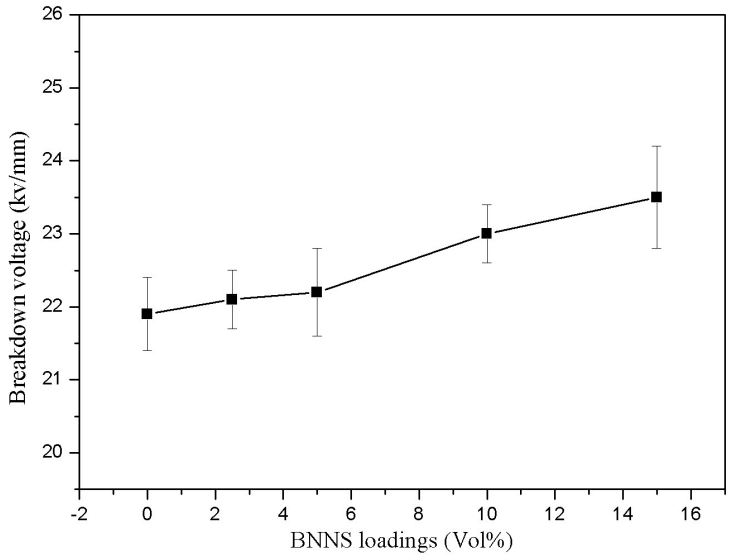

Fig. S5 Breakdown strength of BNNS/EP composites