

**Support information**

**Constructing layer-by-layer architecture to prepare a transparent, strong and thermally conductive boron nitride nanosheets/cellulose nanofiber multilayers film**

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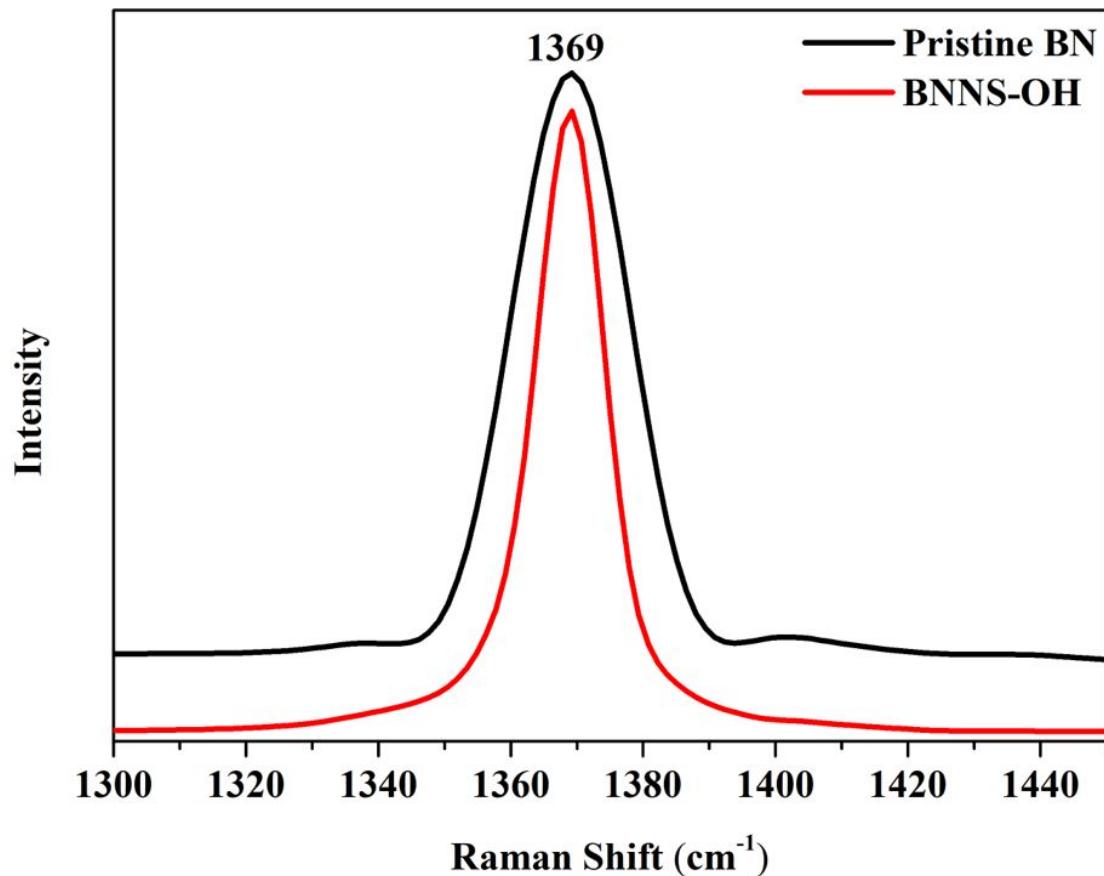


Figure S1 Raman spectra of the Pristine BN and BNNS-OH.

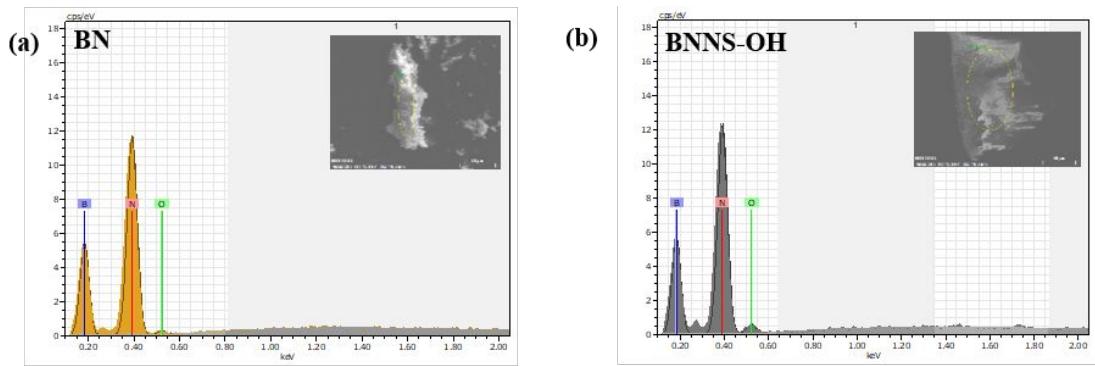


Figure S2 (a) EDS of pristine BN. (b) EDS of BNNS-OH

Table S1 EDS analysis of BN and BNNS-OH

Material	Element	Series	unn.C (wt%)	norm.C (wt%)	C Atom (at%)	C Error (3-sigma) (wt%)
BN	Nitrogen	K-series	52.08	52.08	45.77	23.61
	Oxygen	K-series	0.93	0.93	0.72	1.47
	Boron	K-series	46.99	46.99	53.51	25.19
BNNS-OH	Nitrogen	K-series	50.57	50.57	44.48	22.05
	Oxygen	K-series	2.18	2.18	1.68	2.20
	Boron	K-series	47.25	47.25	53.85	23.90

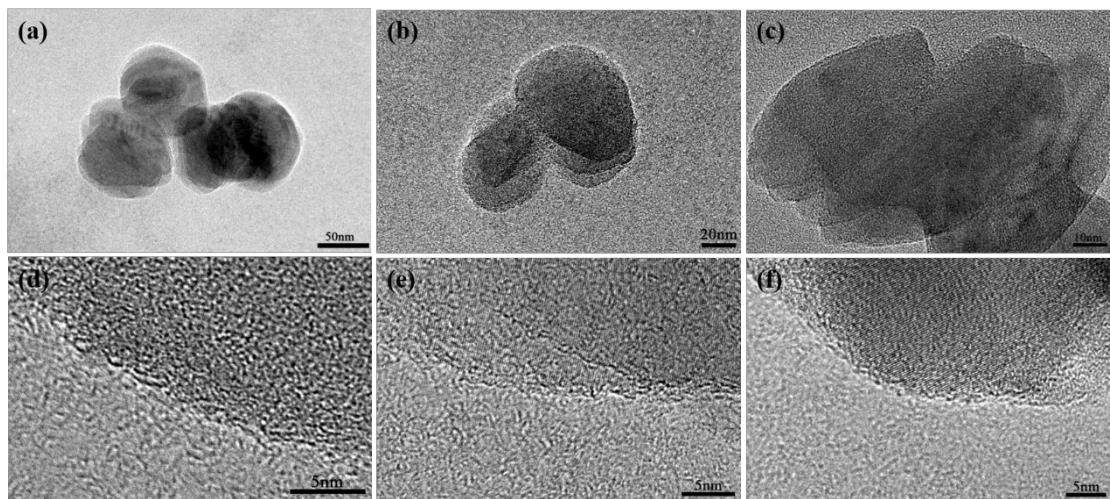


Figure S3 (a-f)TEM images of BNNS-OH.

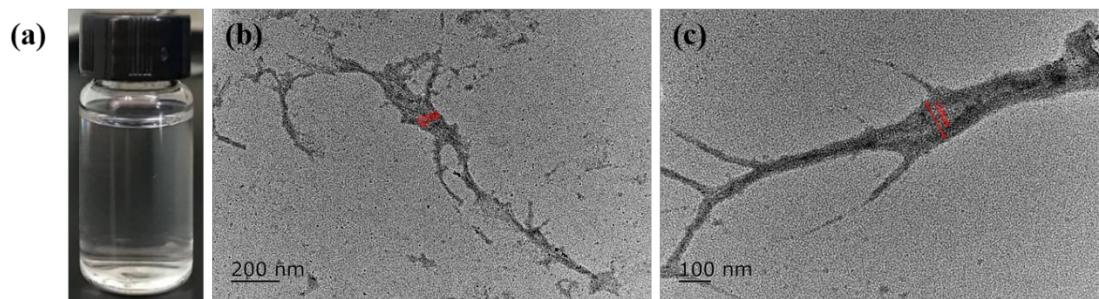


Figure S4(a)CNF dispersion. (b-c) TEM images of CNF.

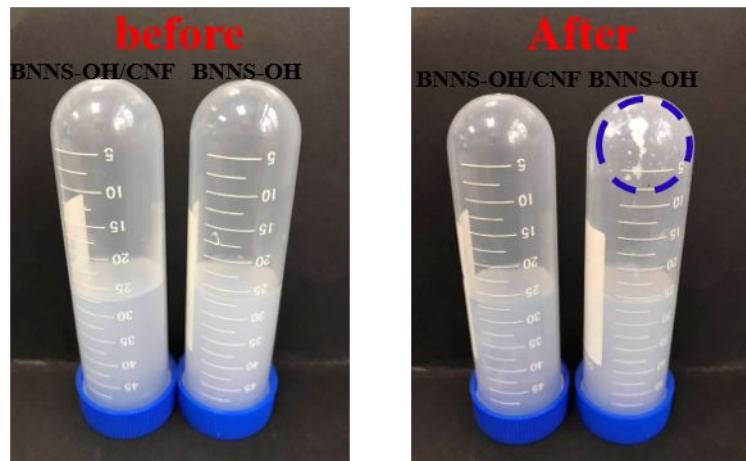


Figure S5 BNNS-OH dispersion (0.1mg/ml) and BNNS-OH/CNF dispersion (proportion: 1:1, about 0.1mg/ml) before and after centrifugation (3000rpm, 5min).

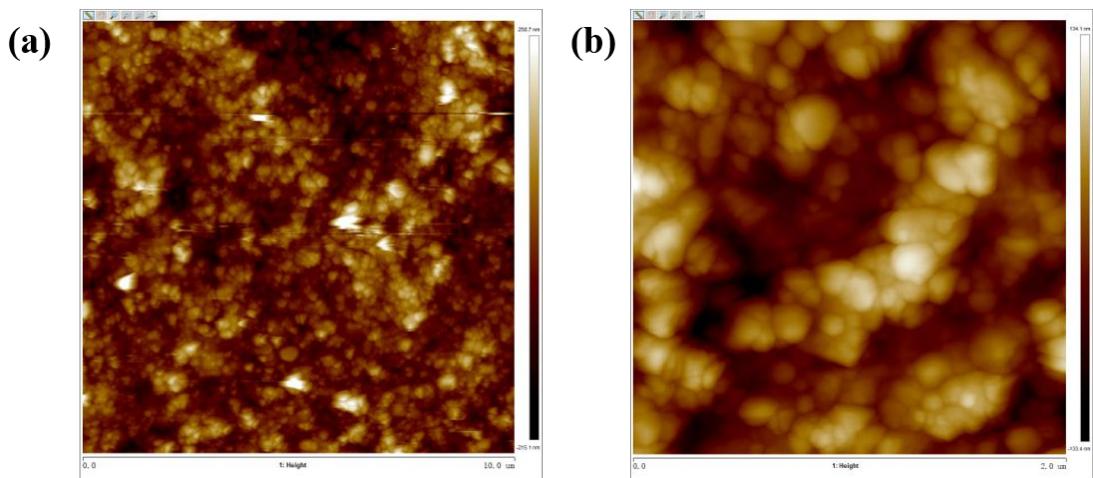


Figure S6(a-b) AFM images of the BNNS-OH surface of C8B8 film.

Table S2 Comparison of mechanical property in BN/CNF hybrid film previously reported.

Composition (filler/matrix)	Filler content (wt%)	Tensile stress (MPa)	Number of layers	Ref
BNNS/CNF	50	~50	One layer	2014 <sup>29</sup>
BNNS/CNF	2.5	-	Two layers	2016 <sup>34</sup>
BNNS/CNF	70	66	One layer	2017 <sup>30</sup>
BNNT/CNF	25	-	One layer	2017 <sup>56</sup>
BNNS/CNF	25	45.6	One layer	2018 <sup>31</sup>
BNNS/CNF	0.16	97.6	Eight layers	This work

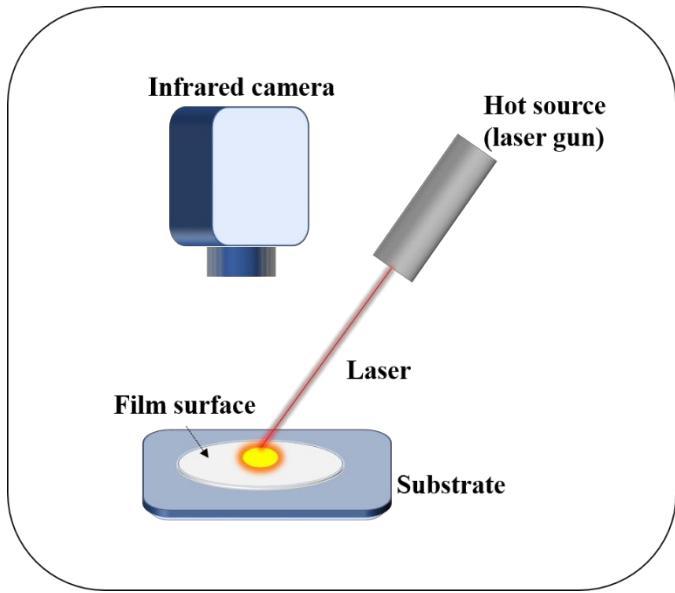


Figure S7 Model of laser flash for thermograph.