Supporting Information

Surface Modifications of Boron Nitride Nanosheets for Poly(vinylidene Fluoride) Based Film Capacitor: Artful Virtue of Edge-Hydroxylation

Lingyu Wu[†a], Kai Wu[†a], Chuxin Lei[a], Dingyao Liu[a], Rongni Du[a], Feng Chen[*a], Qiang Fu[*]

[a] College of Polymer Science and Engineering, State Key Laboratory of Polymer Materials Engineering, Sichuan University, Chengdu 610065, China

[†] These authors contributed equally to this work

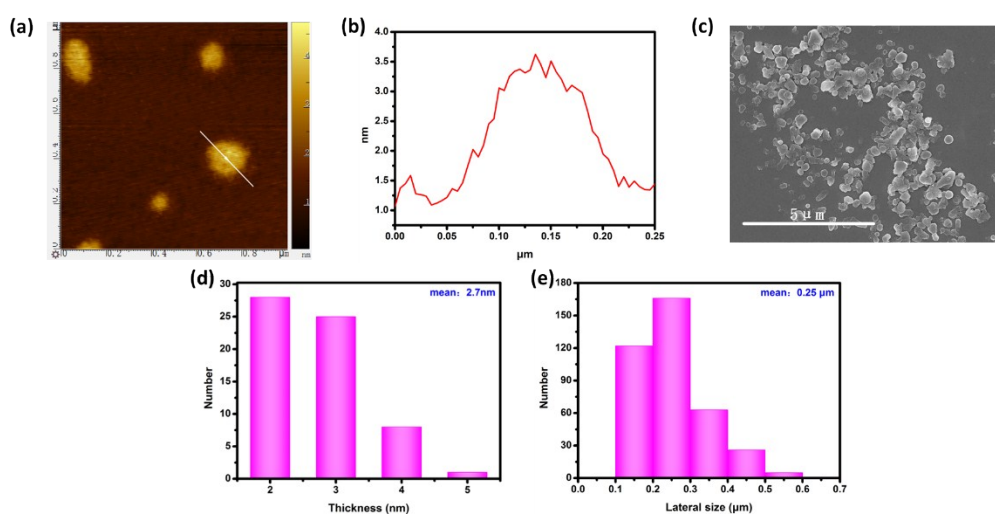E-mail: fengchen@scu.edu.cn (F. Chen); qiangfu@scu.edu.cn (Q. Fu)

Fig. S1 (a) AFM image of BNNSs and (b) the corresponding height information for BNNSs. (c) SEM image of BNNSs. (d) Statistical analysis on the thickness of a sheet of BNNSs. (e) Statistical analysis on the lateral size of a set of BNNSs.
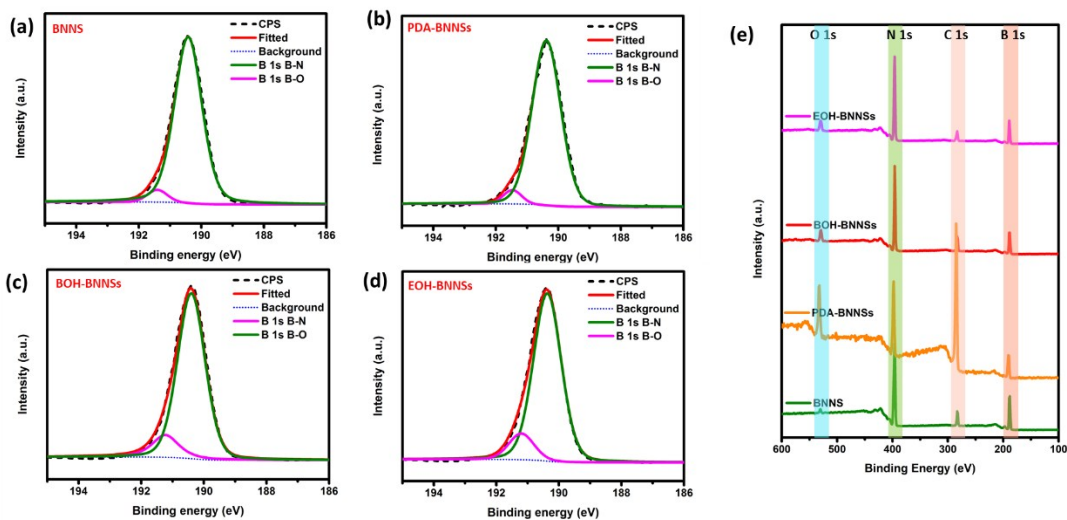
Fig. S2 B1s core level of (a) BNNSs, (b) PDA-BNNSs, (c) BOH-BNNSs and (d)

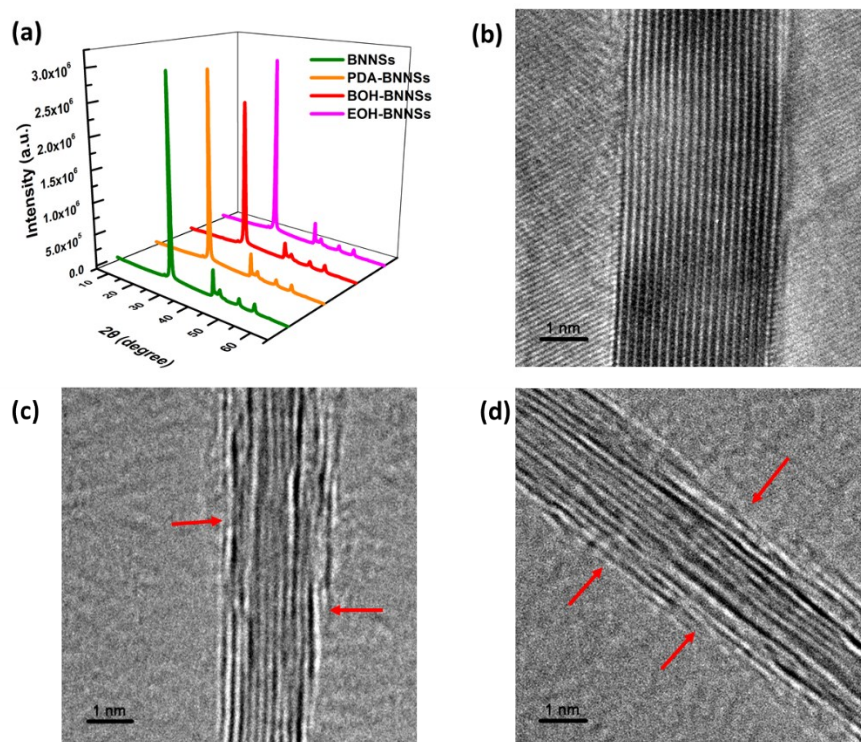EOH-BNNSs; (e) XPS wide spectrum of BNNSs and f-BNNSs.

Fig. S3 (a) XRD spectra of BNNSs and f-BNNSs. HRTEM images at the edge of (b)
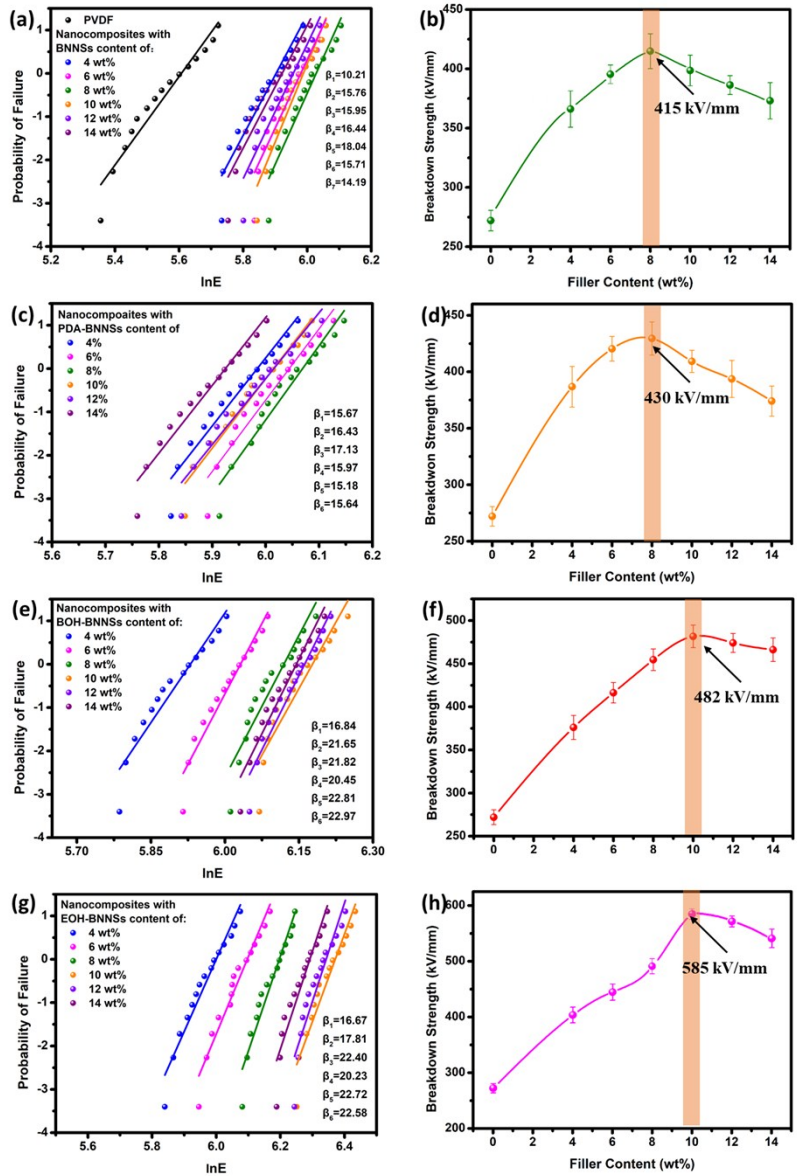
BNNSs, (c) BOH-BNNSs and (d) EOH-BNNSs.

Fig. S4 (a, c, e, g) Weibull plots for PVDF/BNNSs (PVDF/f-BNNSs) nanocomposites with various BNNSs (f-BNNSs) contents. (b, d, f, h) Weibull breakdown strength (scale parameter) of PVDF/BNNSs (PVDF/f-BNNSs) nanocomposites as functions of BNNSs (f-BNNSs) fraction.
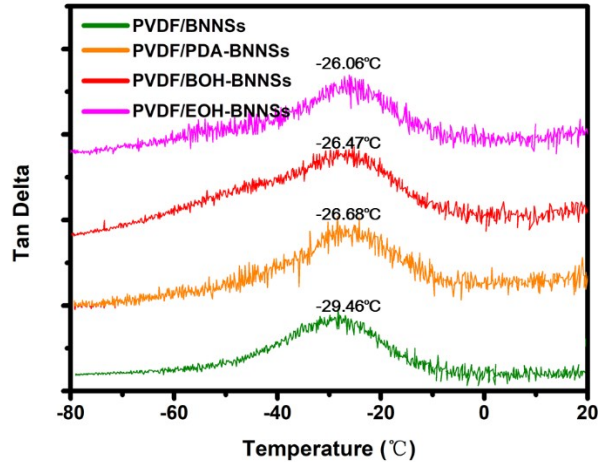
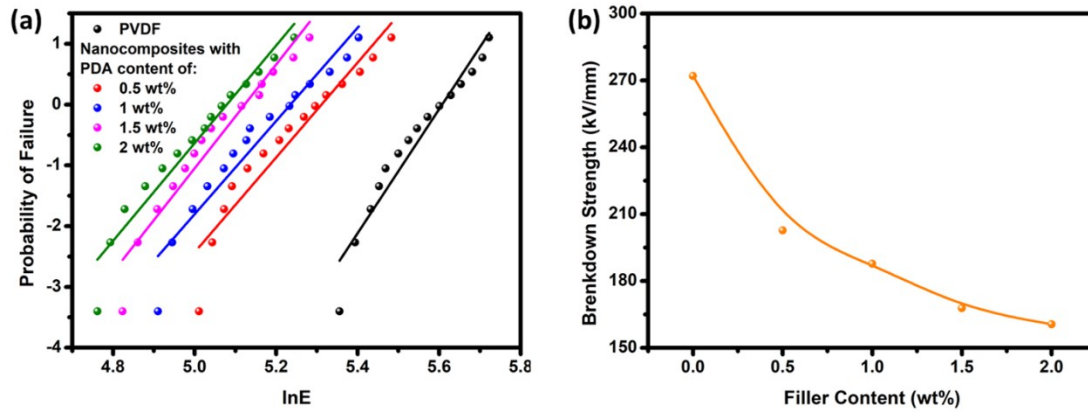Fig. S5 Temperature dependence of tan delta of PVDF/10 wt% BNNSs and PVDF/10 wt% f-BNNSs nanocomposites.

Fig. S6 (a) Weibull plots for PVDF/PDA nanocomposites with various PDA content.

(b) Weibull breakdown strength of PVDF/PDA nanocomposites as functions of PDA fraction.