

Supplementary Material

Enhanced energy storage performance of PVDF based composites using BN@PDA sheets and titania nanosheets

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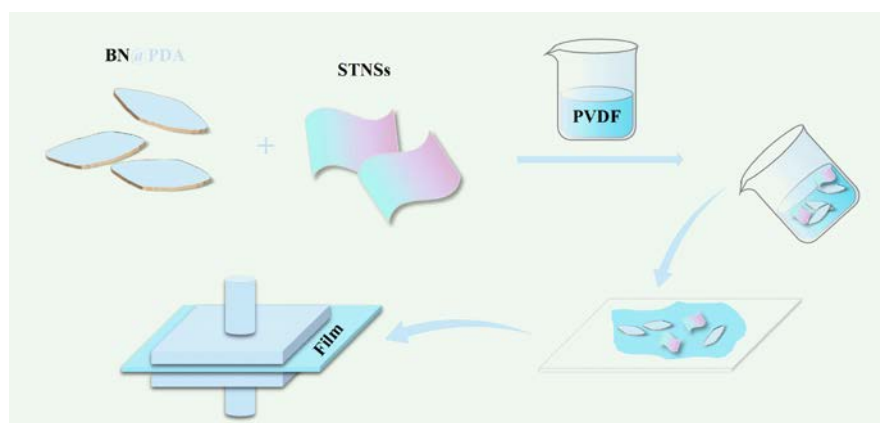


Figure S1. Schematic illustration of synthesizing the PVDF/BN@PDA-STNSs composites.

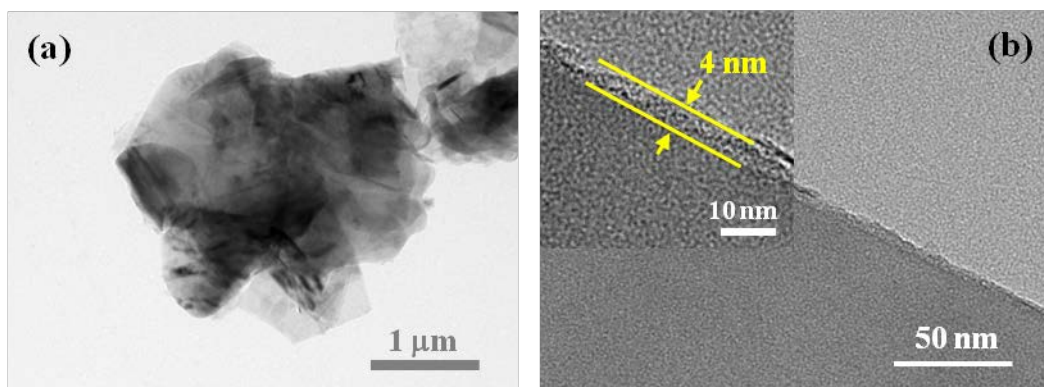


Figure S2. (a) Low power TEM image and (b) high power TEM image of 2D BN@PDA sheets.

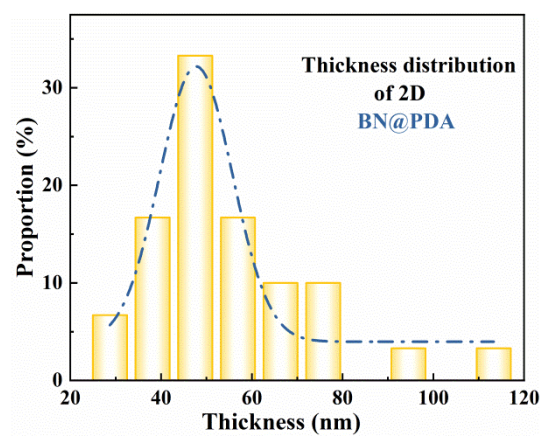


Figure S3. The thickness distribution of 2D BN@PDA sheets.

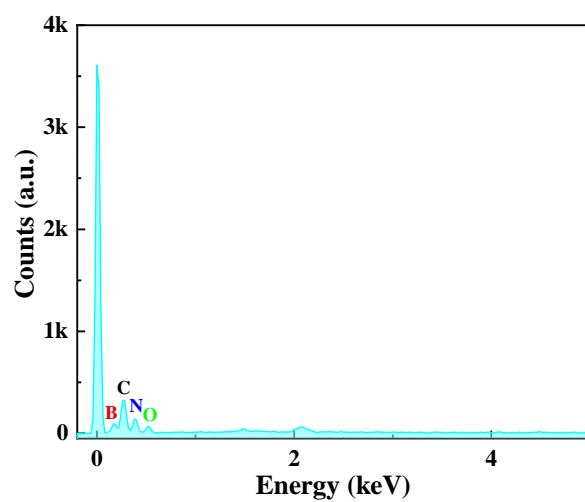


Figure S4. The EDS spectrum of BN@PDA.

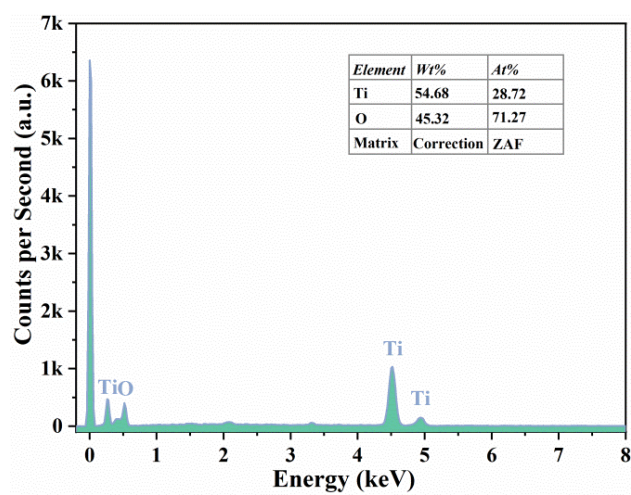


Figure S5. The EDS spectrum of STNSs.

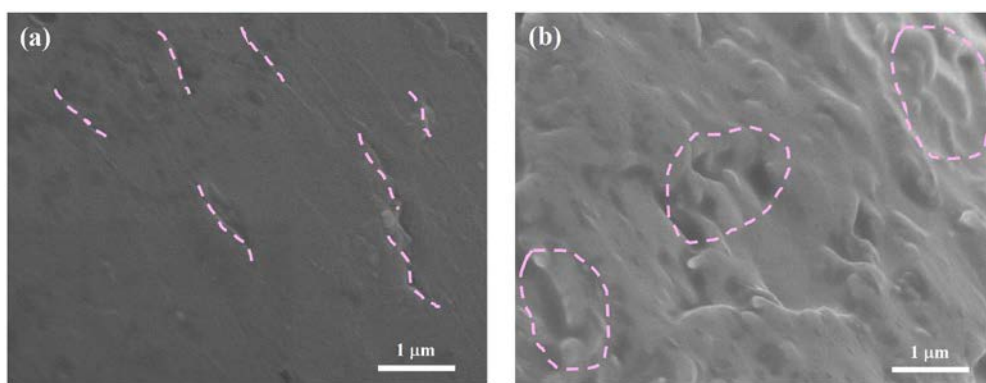


Figure S6. Cross-section morphology of the (a) 3 wt% and (b) 10 wt% PVDF/BN@PDA composite.

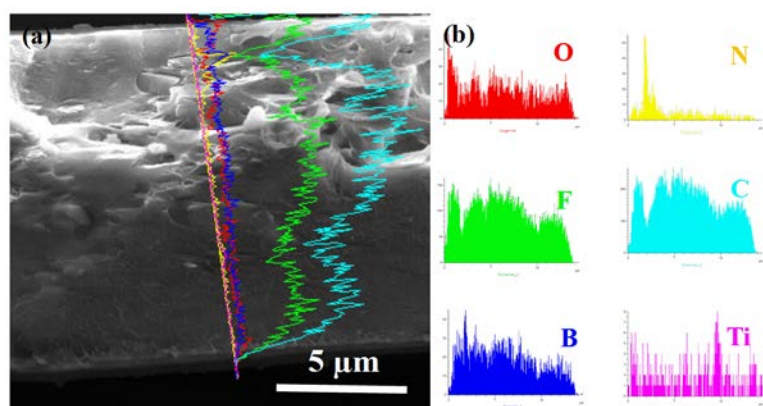


Figure S7. (a) Cross-section morphology and (b) mapping of 3 wt% PVDF/BN-STNSs composite.

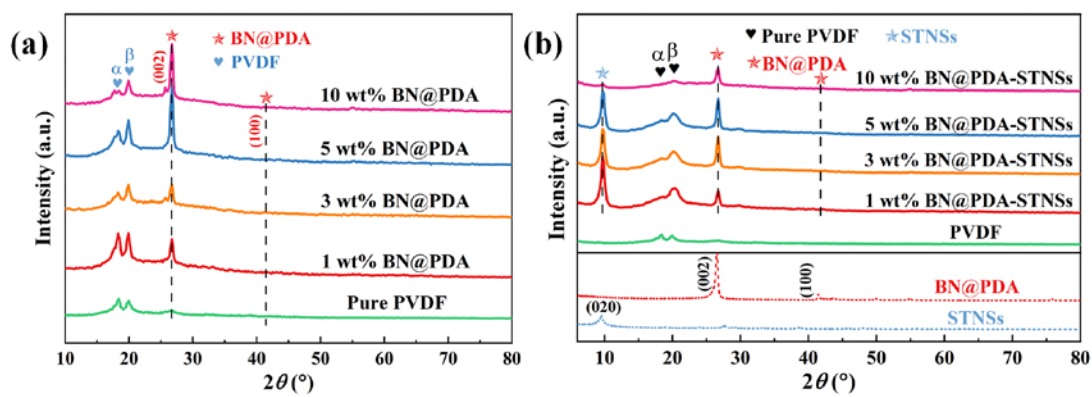


Figure S8. The XRD patterns of (a) PVDF/BN@PDA and (b) PVDF/BN@PDA-STNSs composites.

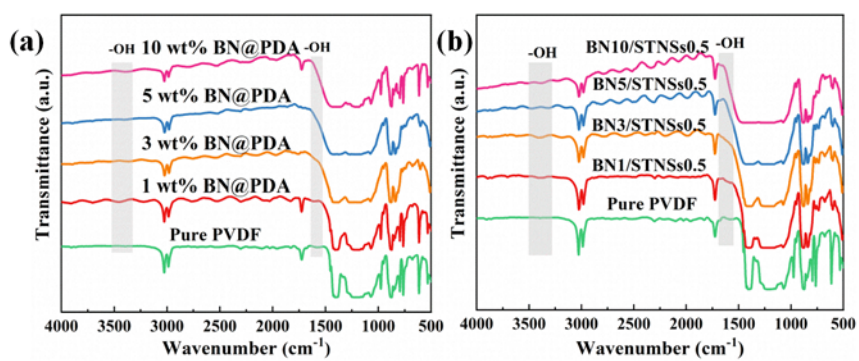


Figure S9. FTIR spectra of (a) PVDF/BN@PDA and (b) PVDF/BN@PDA-STNSs composites.

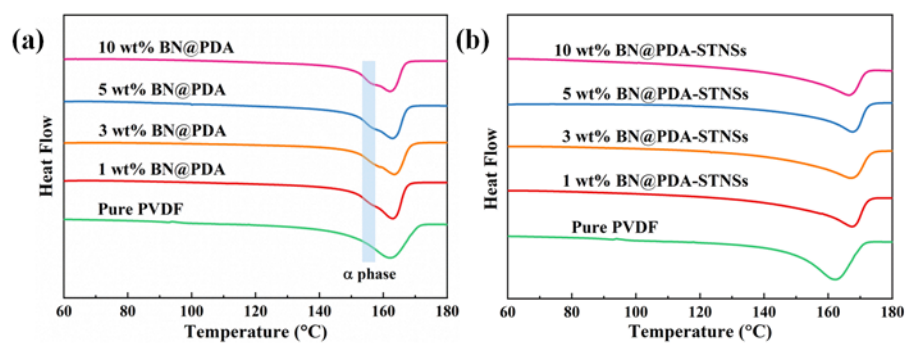


Figure S10. The DSC endothermic curves of (a) PVDF/BN@PDA and (b) PVDF/BN@PDA-STNSs composites.

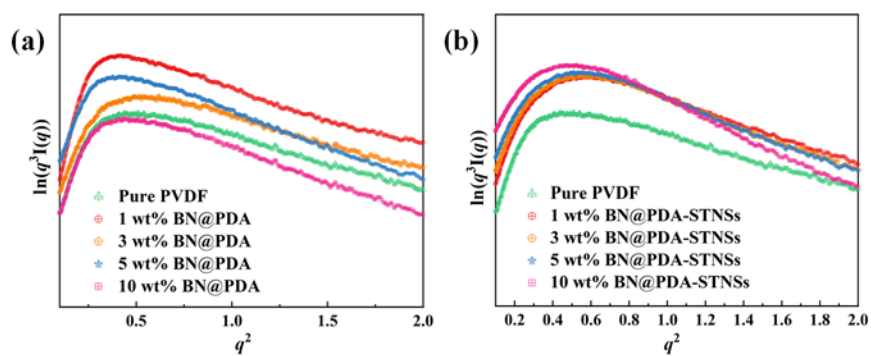


Figure S11. Porod curves of (a) PVDF/BN@PDA and (b) PVDF/BN@PDA-STNSs composites.

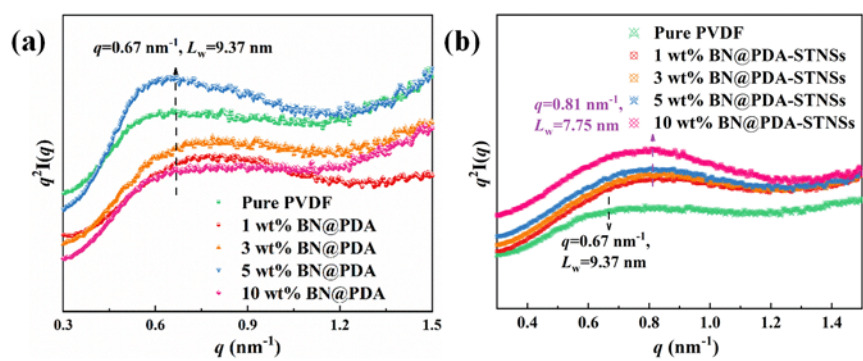


Figure S12. Lorentz corrected SAXS profiles of (a) PVDF/BN@PDA and (b) PVDF/BN@PDA-STNSs composites.

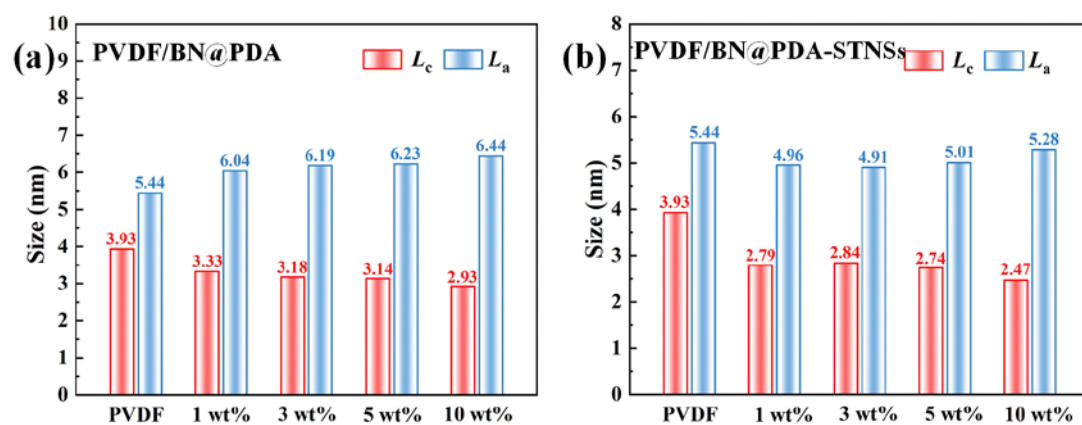


Figure S13. The L_c and L_a of (a) PVDF/BN@PDA and (b) PVDF/BN@PDA-STNSs composites.

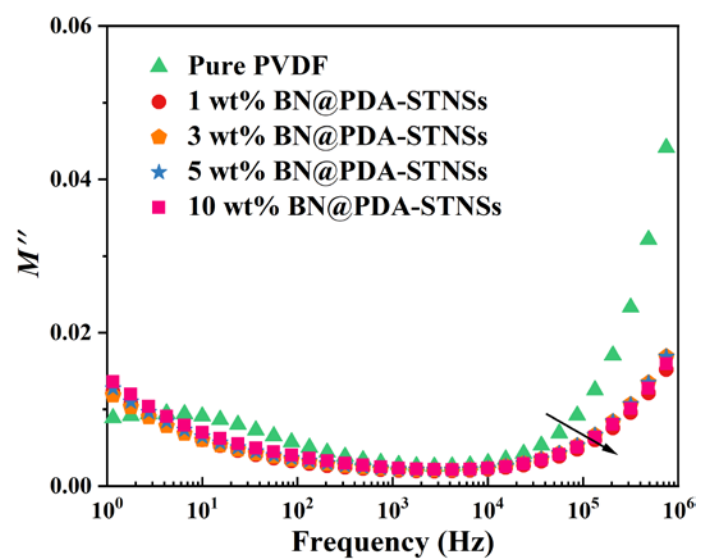


Figure S14. M'' of the PVDF/BN@PDA-STNSs ternary composites.

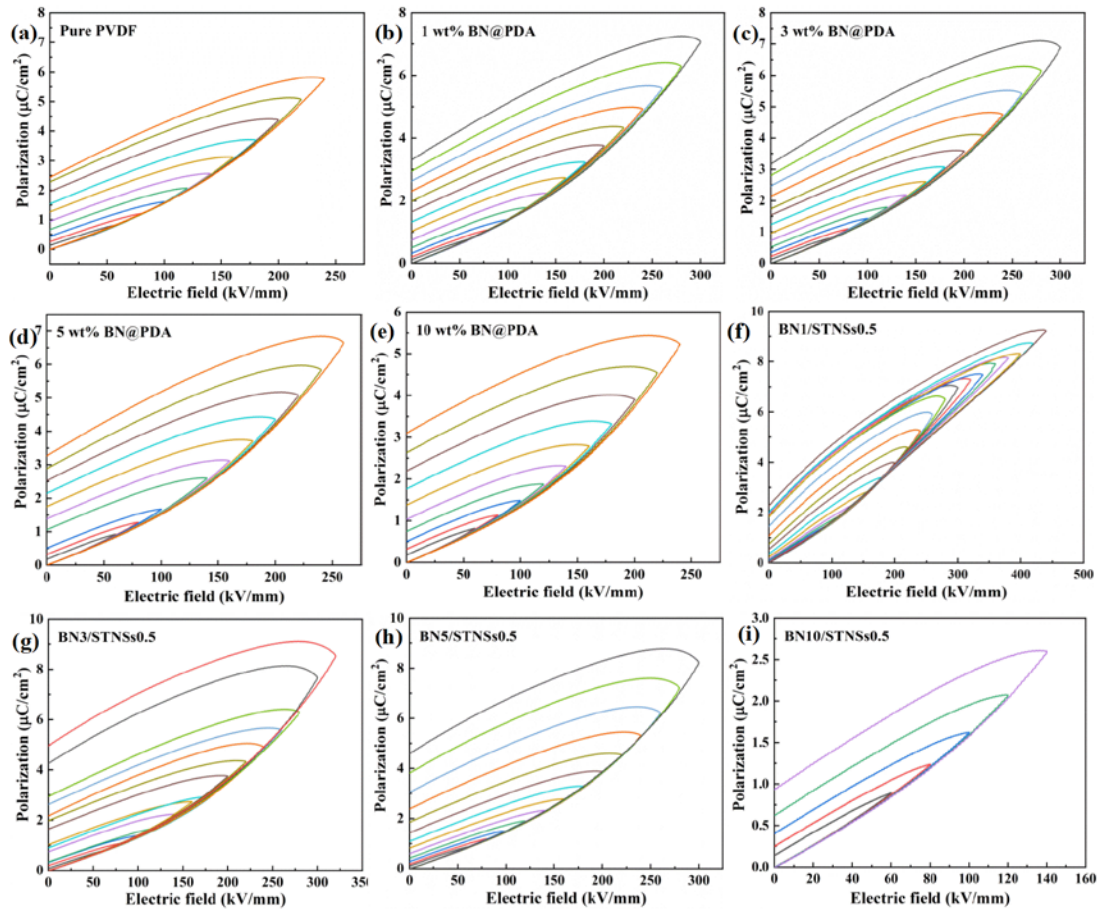


Figure S15. Hysteresis loops of pure PVDF, PVDF/BN@PDA and PVDF/BN@PDA-STNSs composites.

Table S1 DSC results and $F(\beta)$ of the composites.

Samples	Contents	$T_m(^{\circ}\text{C})$	$\Delta H_m(\text{J/g})$	$X_c(\%)$	$F(\beta)$
PVDF/BN@PDA	0 wt%	161.9	43.7	41.8	52.3
	1 wt%	162.6	35.3	35.6	59.9
	3 wt%	163.1	35.0	34.0	60.5
	5 wt%	162.6	34.8	33.5	60.3
	10 wt%	161.8	28.9	31.3	53.4
PVDF/BN@PDA-STNSs	1 wt%	167.2	37.5	35.9	60.5
	3 wt%	167.3	38.2	36.6	60.7
	5 wt%	167.5	37.0	35.4	60.3
	10 wt%	166.1	33.2	31.8	59.4