Supporting Information

Improved Energy Storage Performance of Linear Ferroelectric Polymer Nanodielectrics with Polydopamine coated BN Nanosheets

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Chemical structure of grafted terpolymer P(VDF-TrFE-CTFE)-g-PMMA

Successful grafting of PMMA side chains from Cl sites in P(VDF-TrFE-CTFE) is characterized with ^{1}H NMR as shown in **Fig. S1**a. Comparing with P(VDF-TrFE-CTFE), new signals at 3.6-3.7 ppm is assigned to the protons on -OCH_3 of MMA in PMMA grafted terpolymers. The grafting of PMMA onto P(VDF-TrFE-CTFE) could also be confirmed by FTIR measurement as shown in **Fig. S2**b. The absorption band at 1726 cm^{-1} is assigned to the C=O on acrylate ester for the grafted terpolymer.

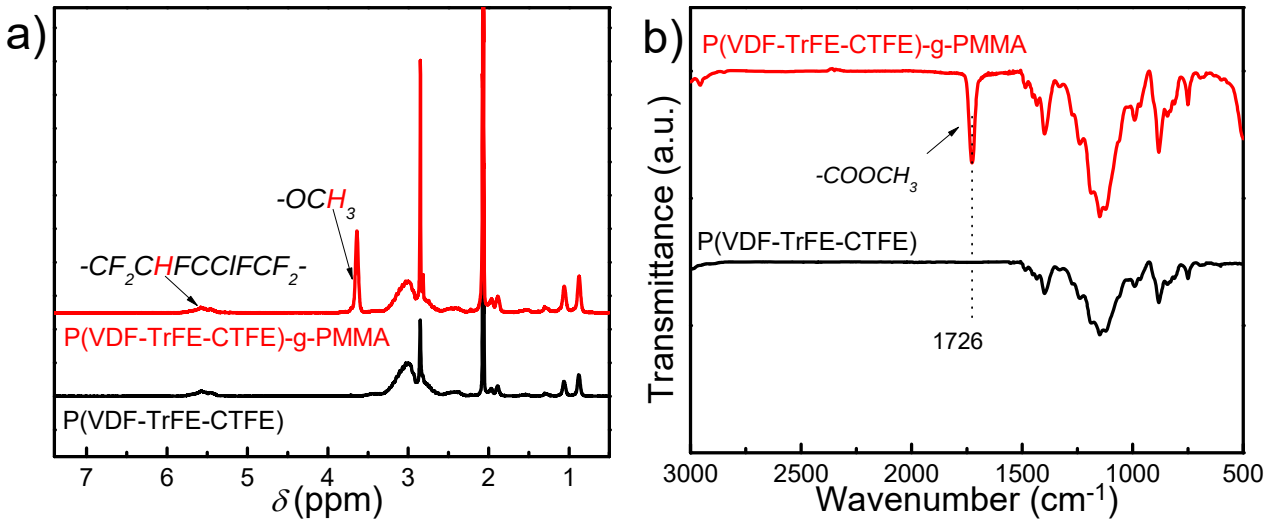

Fig. S1 (a) ^{1}H-NMR and (b) FT-IR spectra of P(VDF-TrFE-CTFE) and P(VDF-TrFE-CTFE)-g-PMMA containing varied PMMA concentration.

Chemical structure of grafted terpolymer P(VDF-TrFE-CTFE)-g-PMMA

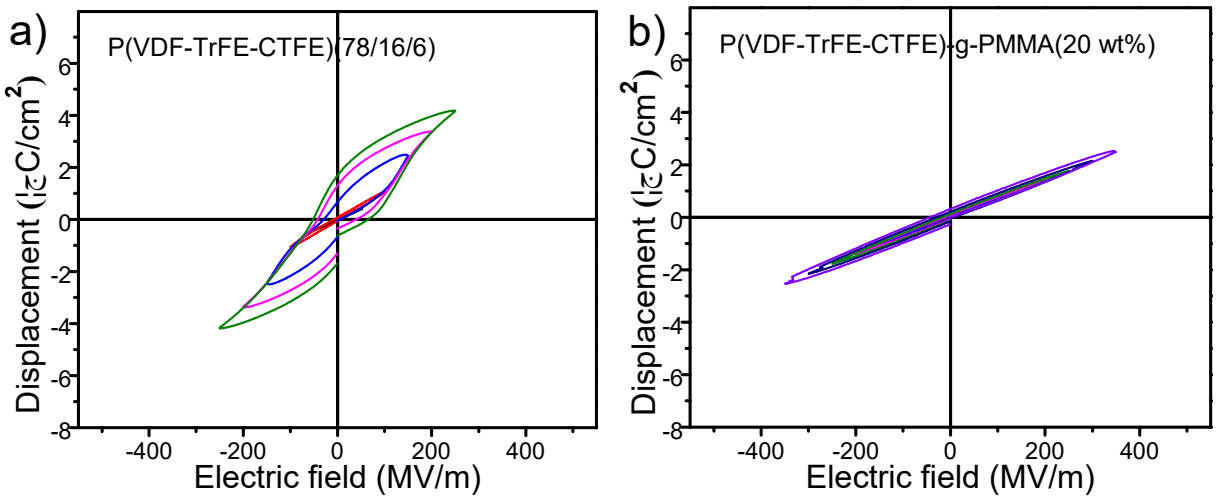

Fig. S2 Unipolar *D-E* hysteresis loops of P(VDF-TrFE-CTFE) (a) and P(VDF-TrFE-CTFE)-g-PMMA (b) containing 20 wt% PMMA, respectively.

Dielectric properties of the polymers and the composites

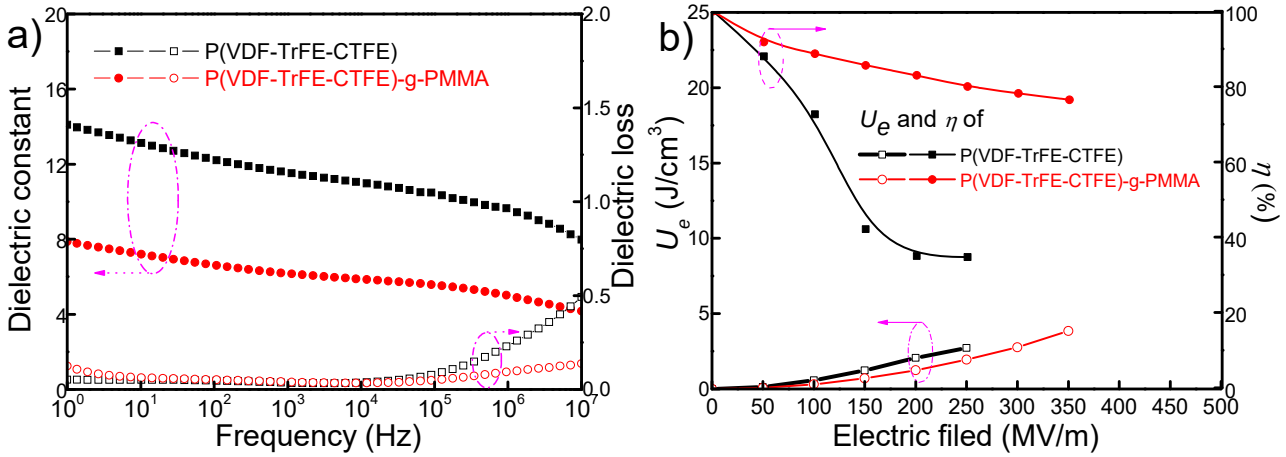

Fig. S3 (a) Dielectric constant and dielectric loss, (b) U_e and η of P(VDF-TrFE-CTFE) and P(VDF-TrFE-CTFE)-g-PMMA, respectively.

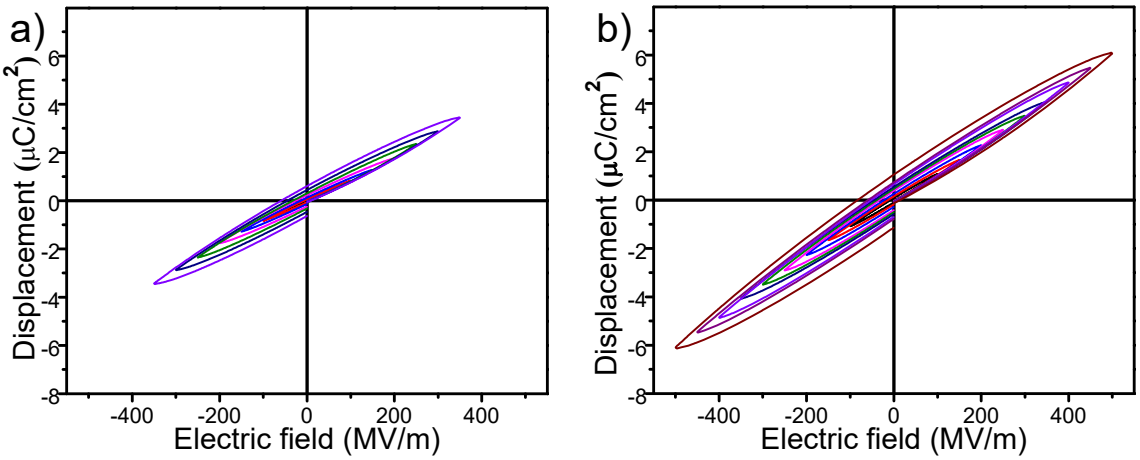

Fig. S4 Dipolar *D-E* hysteresis loops of (a) P(VDF-TrFE-CTFE)-g-PMMA/BNNS and (b) P(VDF-TrFE-CTFE)-g-PMMA/*m*BNNS composites with 6 wt% filler content.