Supporting Information

Sandwich Structured Poly(vinylidene fluoride)/Polyacrylate Elastomers with Significantly Enhanced Electric Displacement and Energy Density

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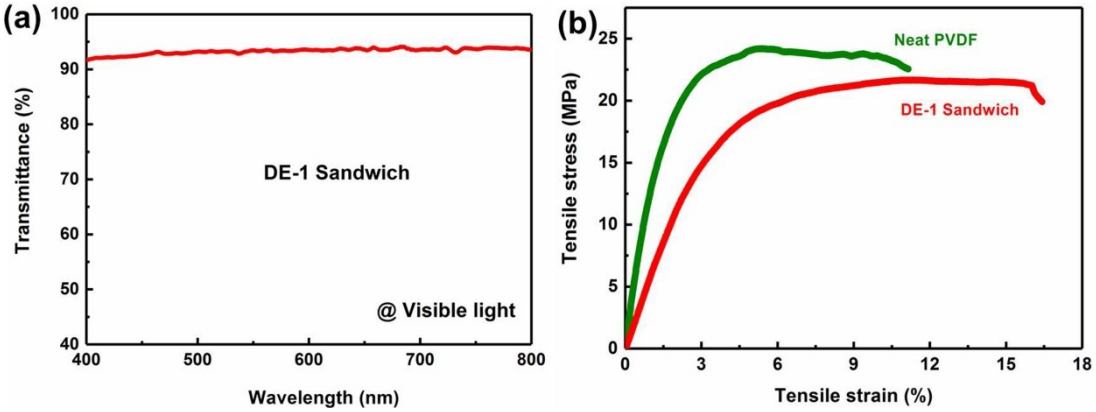

Fig. S1. (a) Optical transmittance curves. (b) Strain-stress curves of pristine PVDF and the DE-1 sandwiched polymer film.

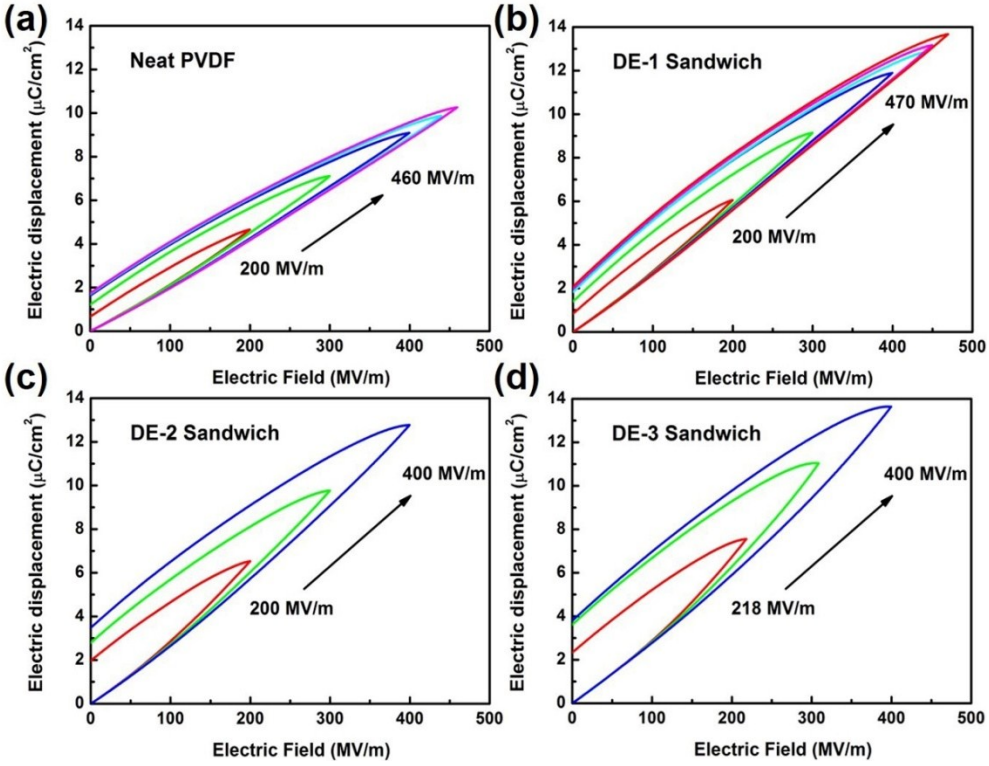

Fig. S2. Displacement-electric field loops under different applied electric fields of (a) pristine PVDF and (c)-(d) the sandwich-structured polymer films.

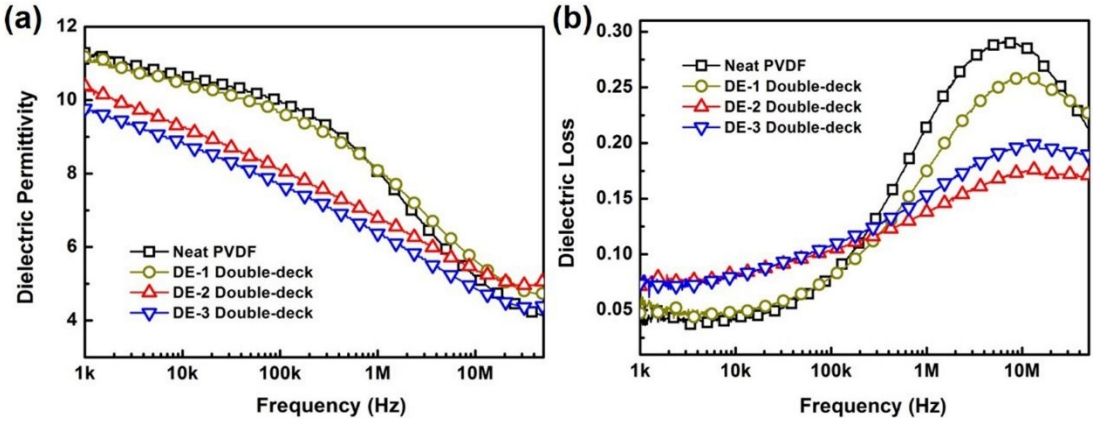

Fig. S3. (a) Frequency dependent dielectric permittivity. (b) Dielectric loss of the pristine PVDF and double-deck polymer films as a function of DE thickness.

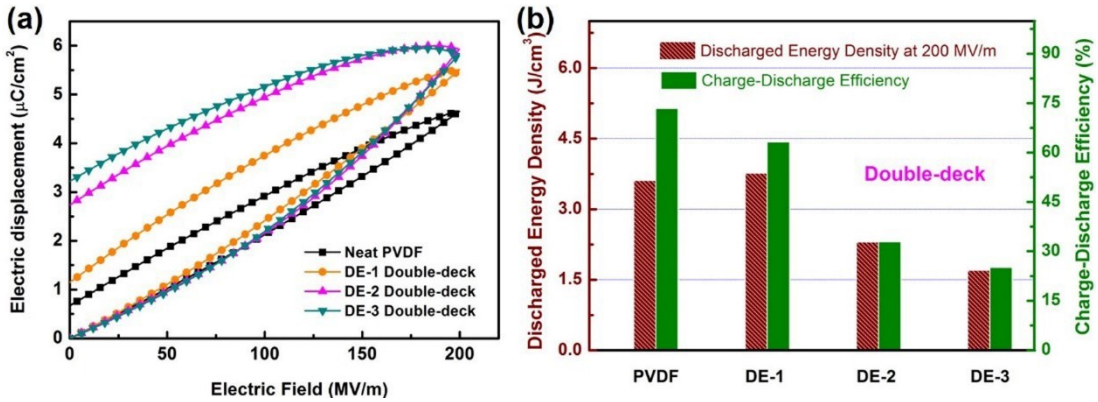

Fig. S4. (a) Typical electric displacement−electric field (D−E) loops. (b) Discharged energy density and charge–discharge efficiency of the double-deck polymer films at 200 MV/m as a function of DE thickness.

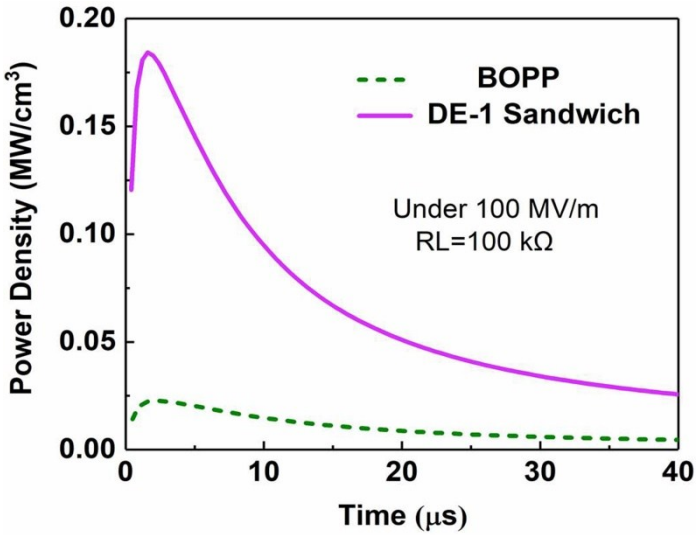

Fig. S5. Power density as a function of time of BOPP and the DE-1 sandwiched polymer film.

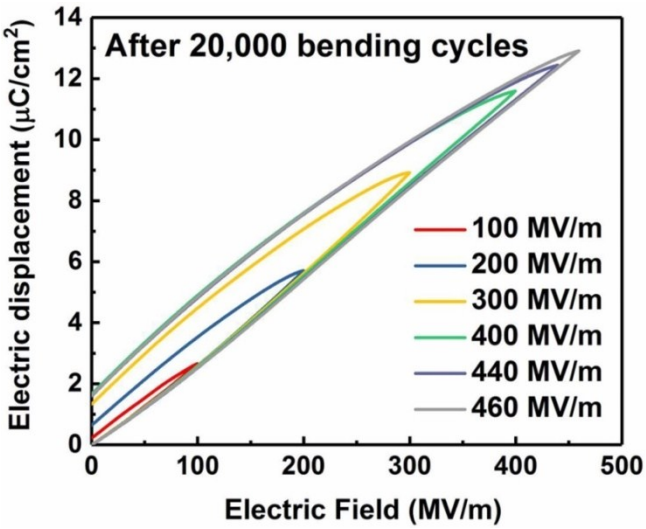

Fig. S6. Displacement-electric field loops under different applied electric fields of the DE-1 sandwiched film after bending tests.

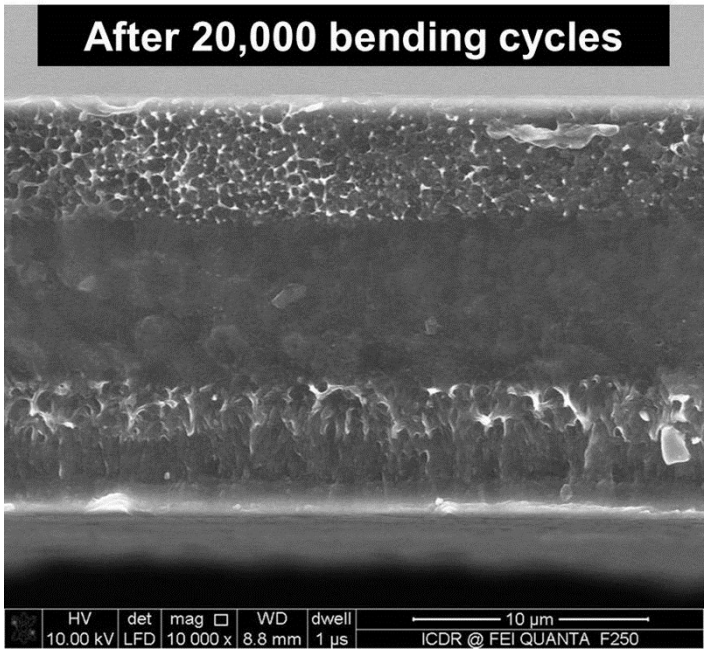

Fig. S7. Cross-sectional SEM images of the DE-1 sandwiched film after bending tests. Scale bar, 10 µm.

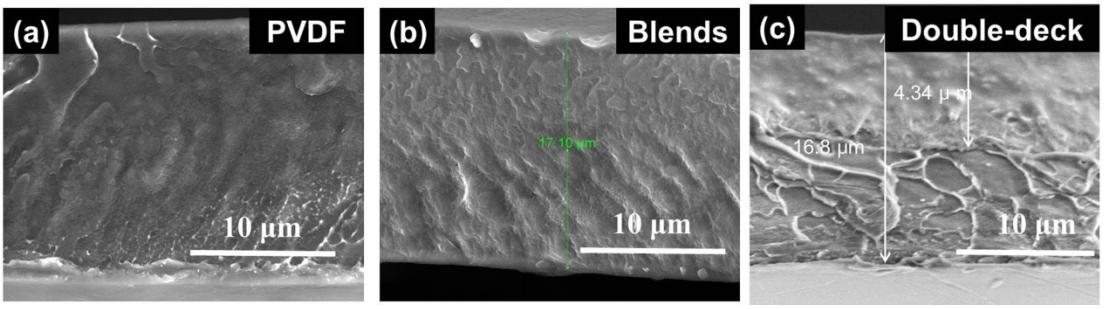

Fig. S8. Cross-section SEM morphologies of (a) PVDF. (b) DE-1 blend and (c) DE-1 double-deck films.

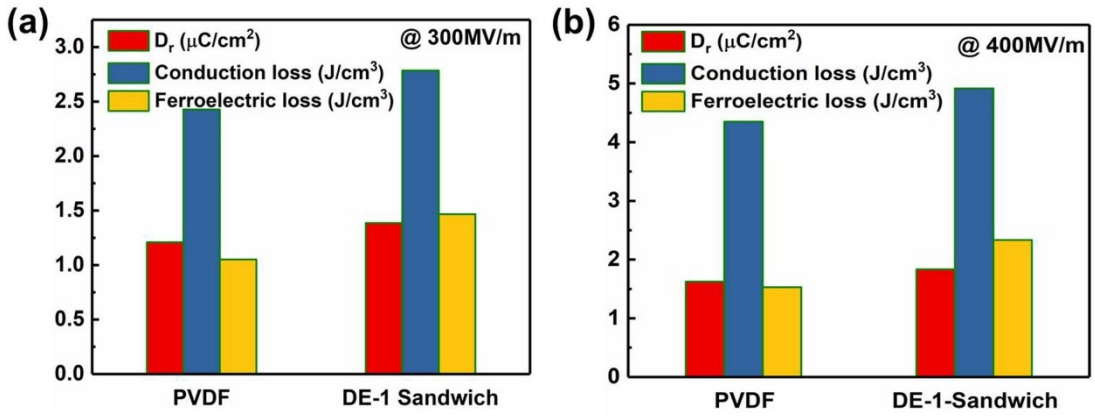

Fig. S9. The remnant displacement, ferroelectric and conduction loss of pristine PVDF and the DE-1 sandwiched films under an electric field of (a) 300 MV/m and (b) 400 MV/m.

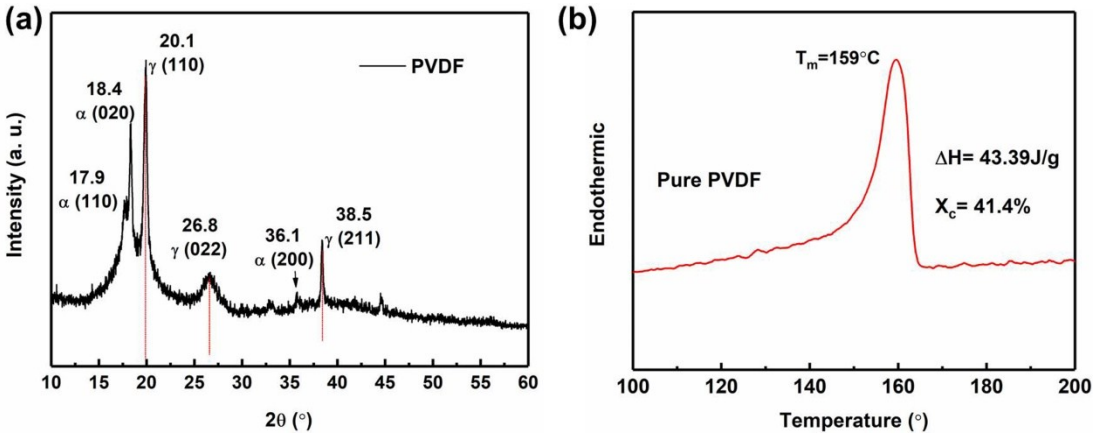

Fig. S10 (a) The X-ray diffraction and (b) DSC patterns of PVDF.

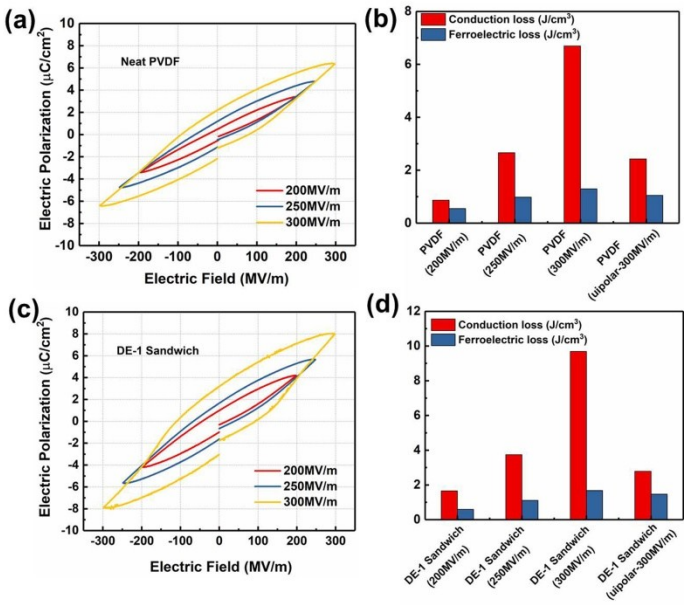

Fig. S11. (a)-(c) Bipolar electrical displacement–electrical field loops (10 Hz), (b)-(d) ferroelectric and conduction loss of PVDF and the DE-1 sandwiched films under different applied electric fields.