Electronic Supplementary Information

for

Suppression of Energy Dissipation and Enhancement of Breakdown Strength in Ferroelectric Polymer-Graphene Percolative Composites

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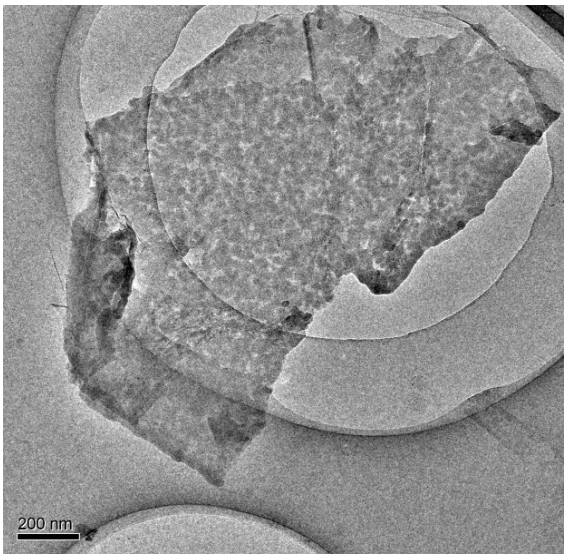

Fig.S1 TEM image of GO@SiO_2.

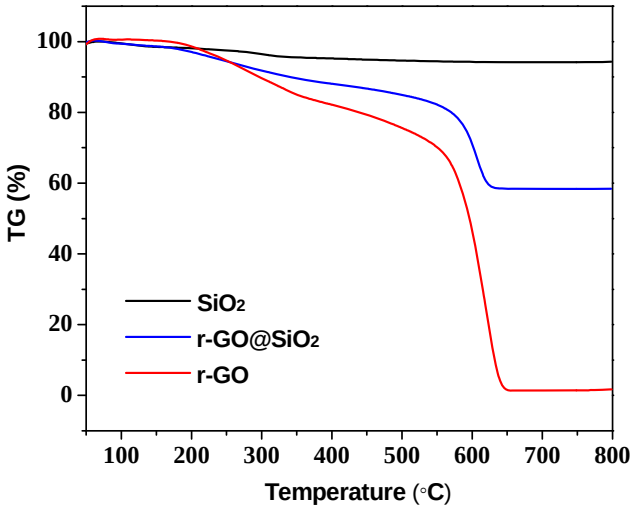

Fig.S2 TGA trace of SiO_2, r-GO@SiO_2 and r-GO.

Tab.S1 Atomic ratio of C, O, and Si elements in r-GO@SiO_2.

Element	**C**	**O**	**Si**
Atomic ratio (%)	48.0	36.7	15.3

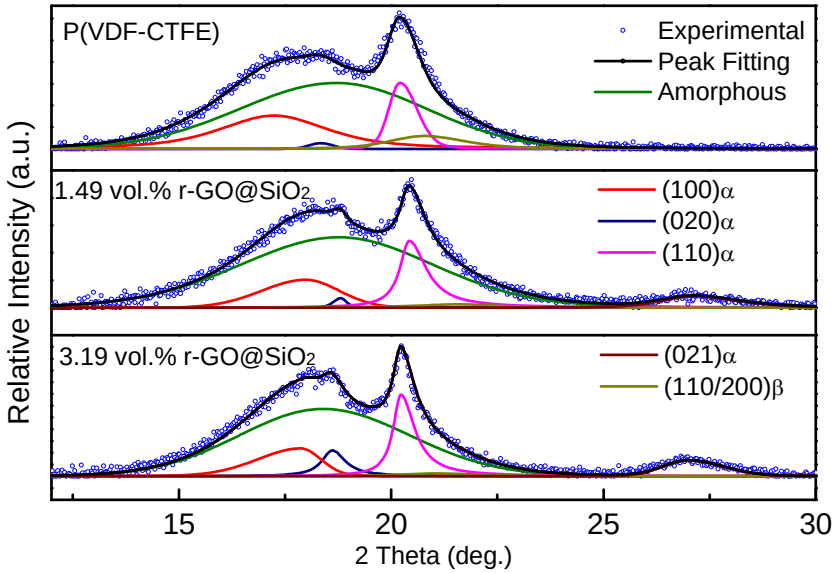

Fig.S3 XRD profiles of pure PVDF-CTFE, 1.49 vol.% r-GO@SiO_2 and 3.19 vol.% r-GO@SiO_2.

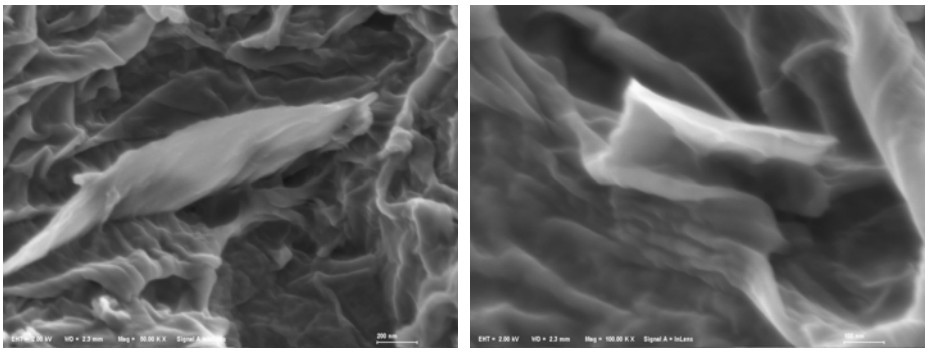

Fig.S4 SEM images of the fracture surface of the r-GO@SiO_2/P(VDF-CTFE) composite film. Scale bar: left: 200 nm, right: 100 nm.

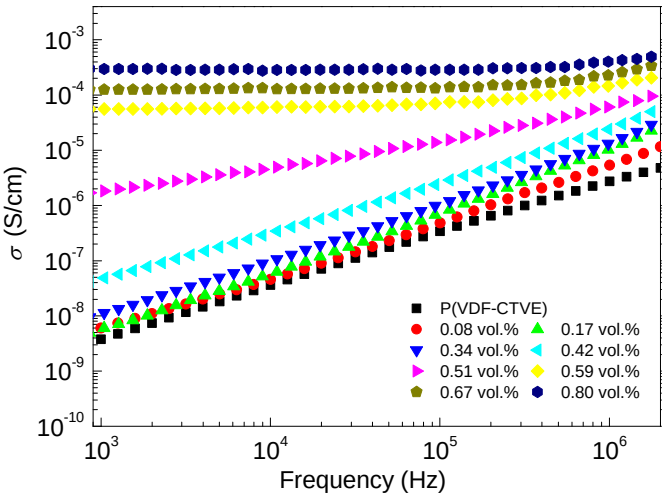

Fig.S5 Dependence of electrical conductivity of r-GO/P(VDF-CTFE) films on frequency.

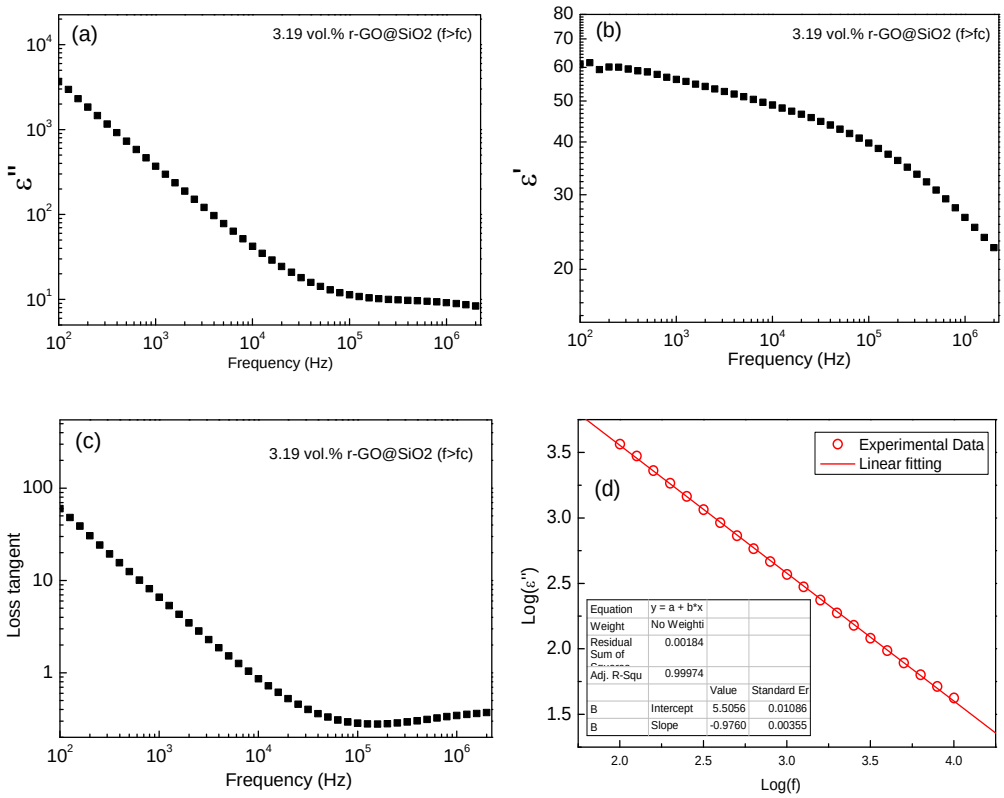

Fig.S6 Dependence of (a) imaginary part, (b) real part of dielectric permittivity and (c) loss tangent of r-GO/P(VDF-CTFE) on frequency. (d) Linear fitting of imaginary part of dielectric permittivity as a function of frequency, showing a slope very close to -1.

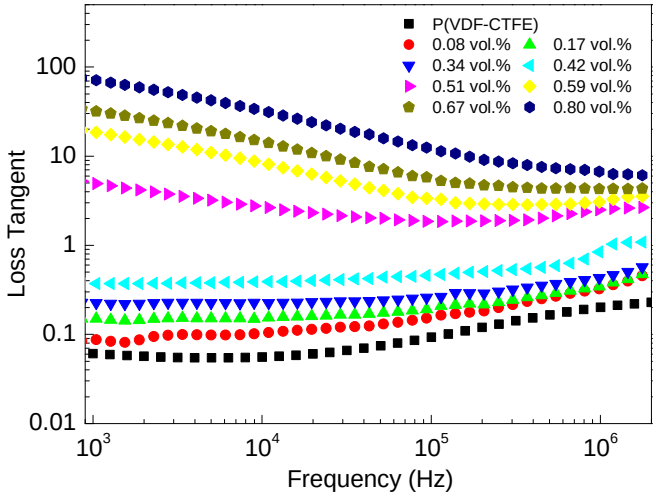

Fig.S7 Dependence of loss tangent of r-GO/P(VDF-CTFE) films on frequency.

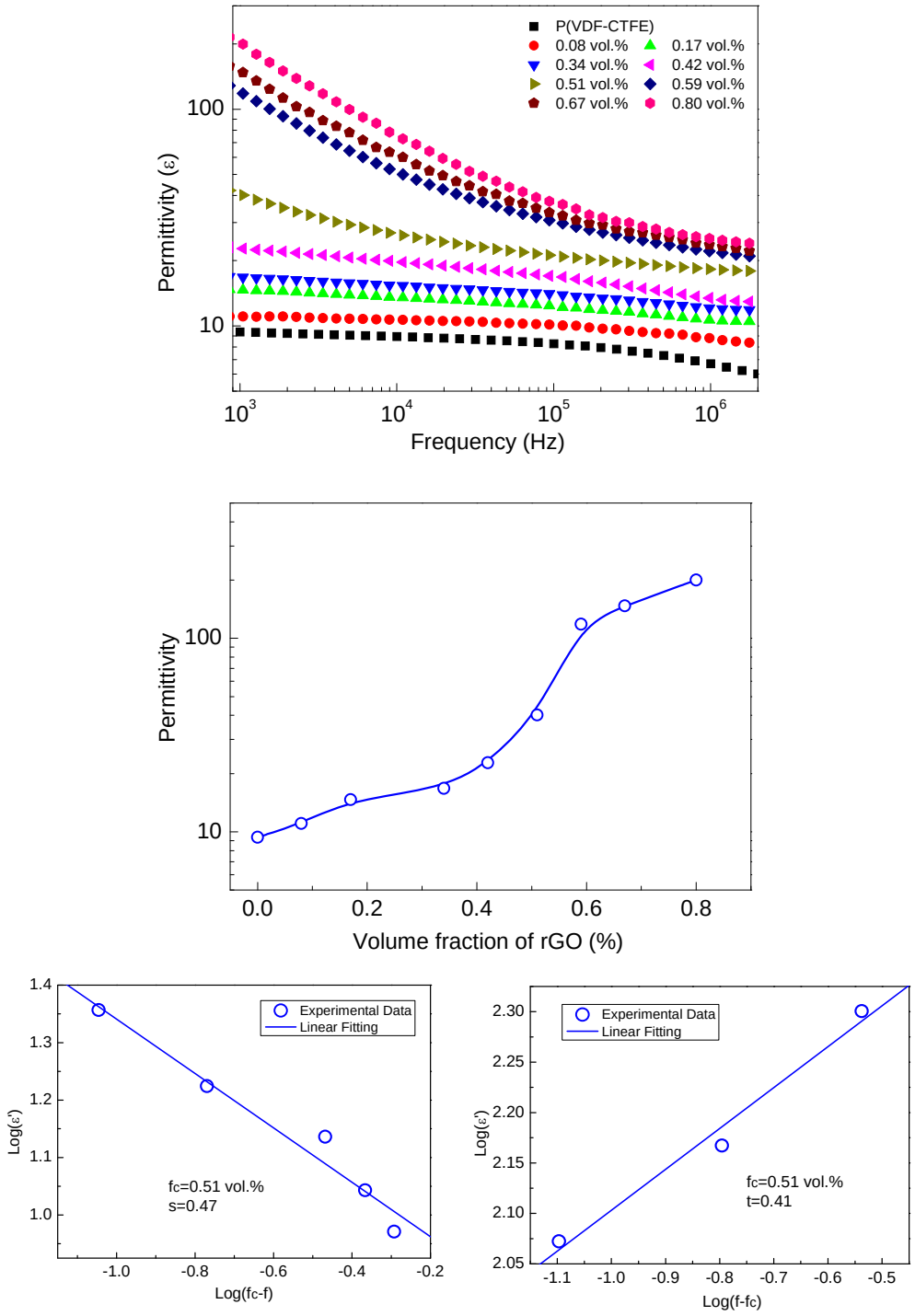

Fig.S8 Dependence of permittivity of r-GO/P(VDF-CTFE) composites on (a) the frequency and (b) the r-GO content at 1 KHz.