

Supplementary Information

Flexible fluorinated multi-walled carbon nanotube/polyarylene ether nitrile metacomposites with negative permittivity

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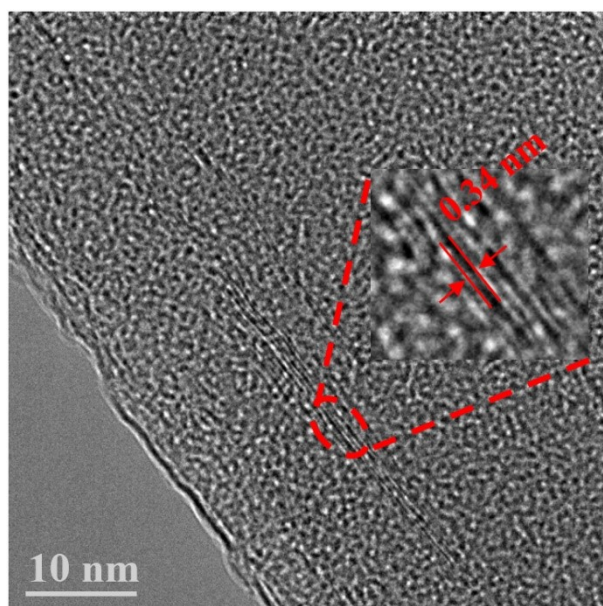


Figure S1 HRTEM micrograph of FMWCNT.

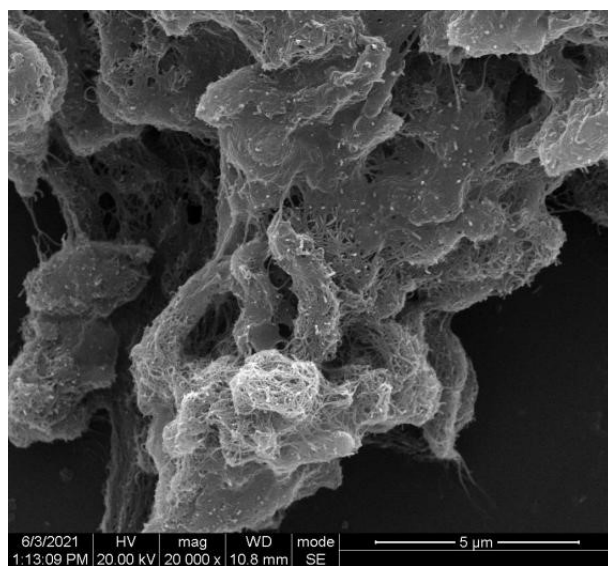


Figure S2 SEM micrograph of MWCNT.

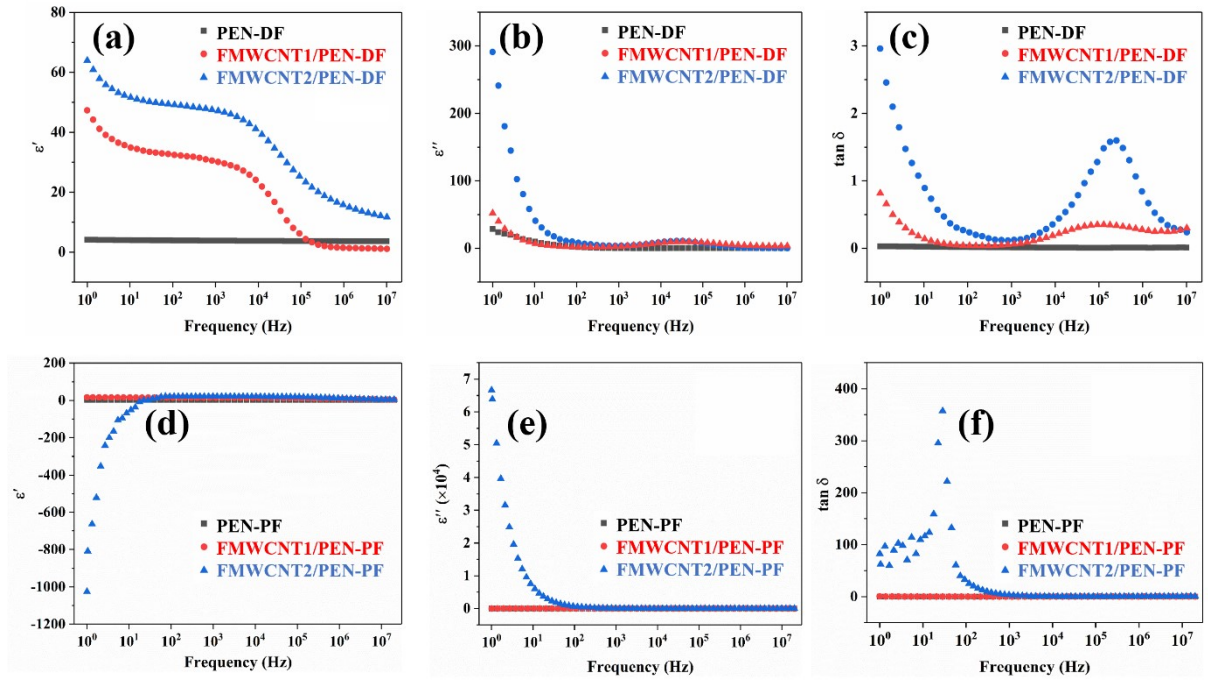


Figure S3 Real permittivity (a), imaginary permittivity (b) and $\tan \delta$ (c) of FMWCNT/PEN-DF composites; real permittivity (d), imaginary permittivity (e) and $\tan \delta$ (f) of FMWCNT/PEN-PF composites.

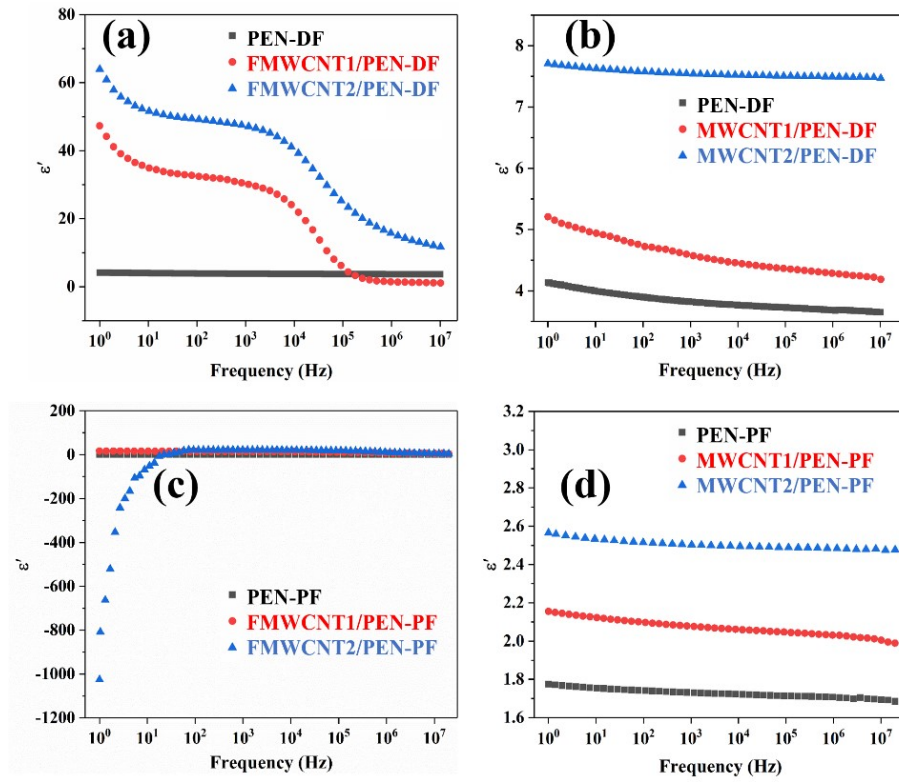


Figure S4 Real permittivity of FMWCNT/PEN-DF (a), MWCNT/PEN-DF (b), FMWCNT/PEN-PF (c) and MWCNT/PEN-PF (d).

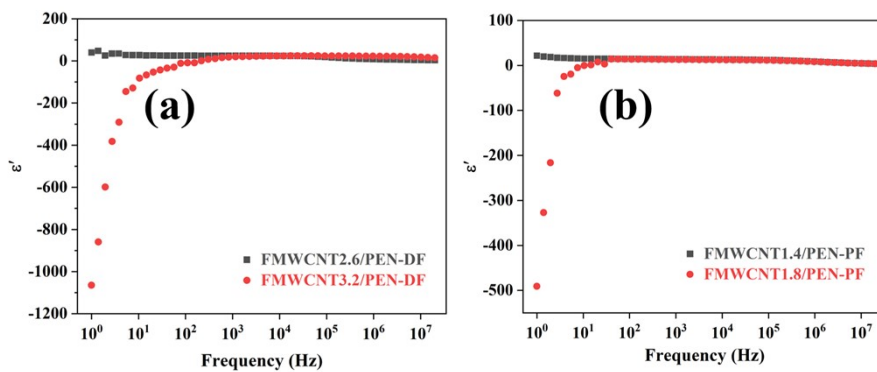


Figure S5 Permittivity of FMWCNT2.6/PEN-DF and FMWCNT3.2/PEN-DF (a), permittivity of

FMWCNT1.4/PEN-PF and FMWCNT1.8/PEN-PF (b).

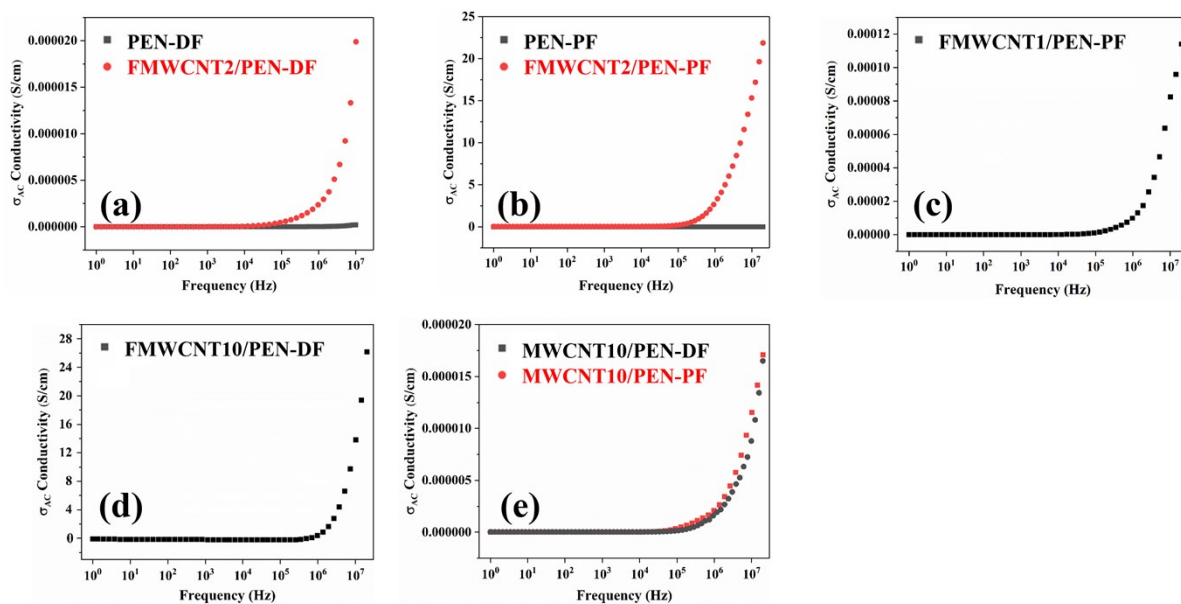


Figure S6 (a) AC conductivity of PEN-DF and FMWCNT2/PEN-DF; (b) AC conductivity of PEN-PF and FMWCNT2/PEN-PF; (c) AC conductivity of FMWCNT1/PEN-PF; (d) AC conductivity of FMWCNT10/PEN-DF; (e) AC conductivity of MWCNT10/PEN-DF and MWCNT10/PEN-PF.

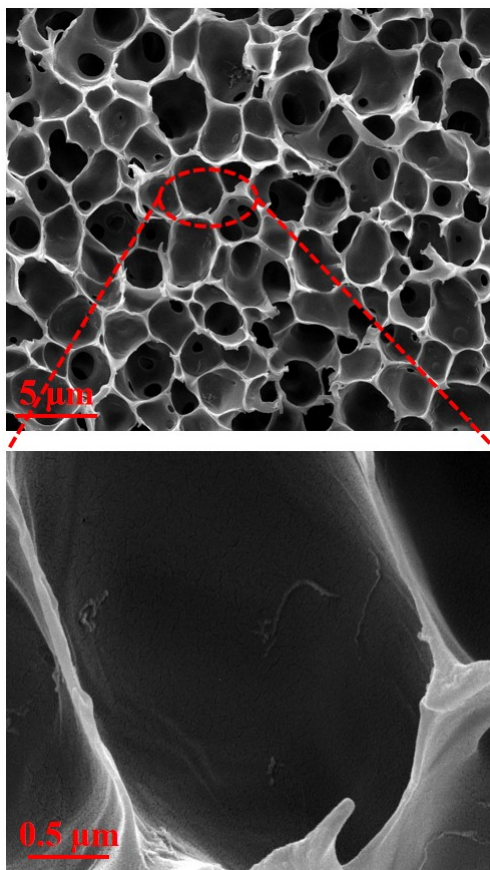


Figure S7 SEM micrograph of FWCNT1/PEN-PF.

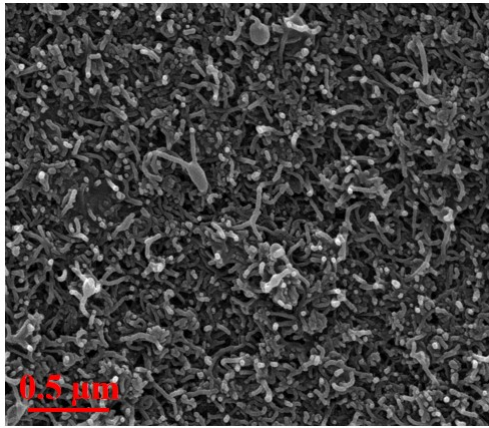


Figure S8 SEM micrograph of FMWCNT10/PEN-DF.

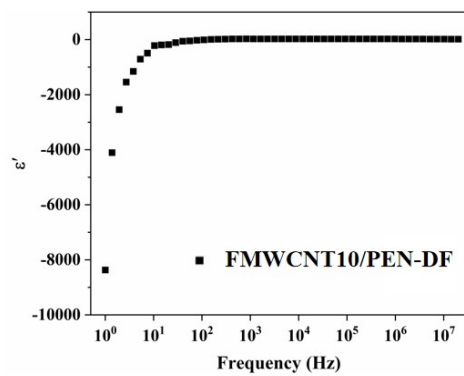


Figure S9 Permittivity of FMWCNT10/PEN-DF.

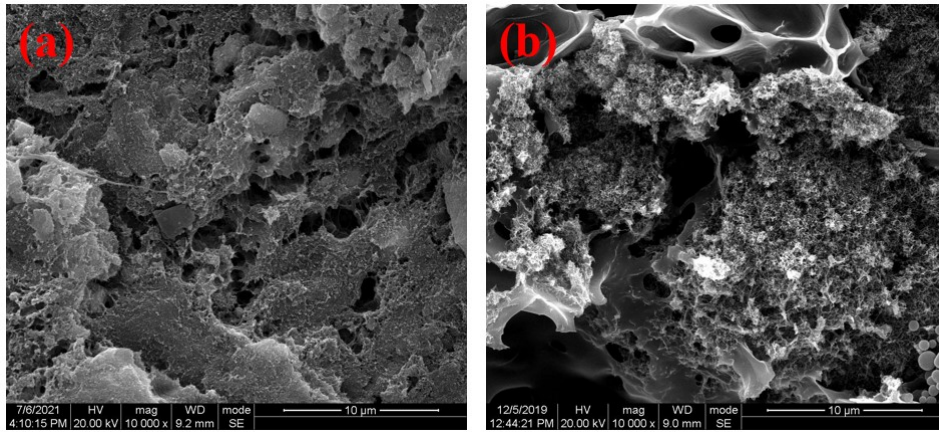


Figure S10 SEM micrographs of MWCNT10/PEN-DF and MWCNT10/PEN-PF.

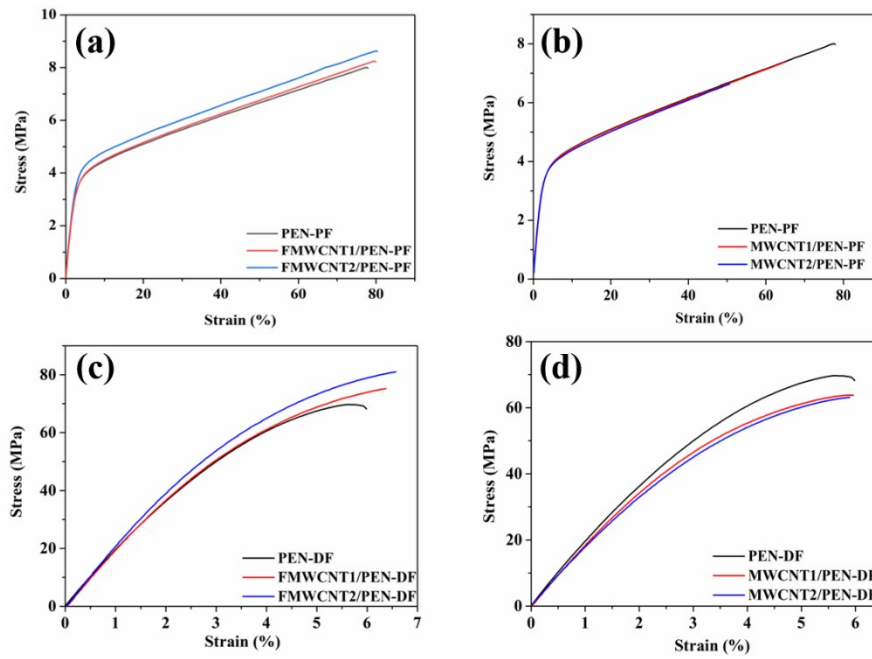


Figure S11 Strain-stress curves of FMWCNT/PEN-PF, MWCNT/PEN-PF, FMWCNT/PEN-DF, MWCNT/PEN-DF composites.