

Supporting information for:

Lightweight and Flexible PAN@PPy/MXene Films with Outstanding
Electromagnetic Interference Shielding and Joule Heating Performance

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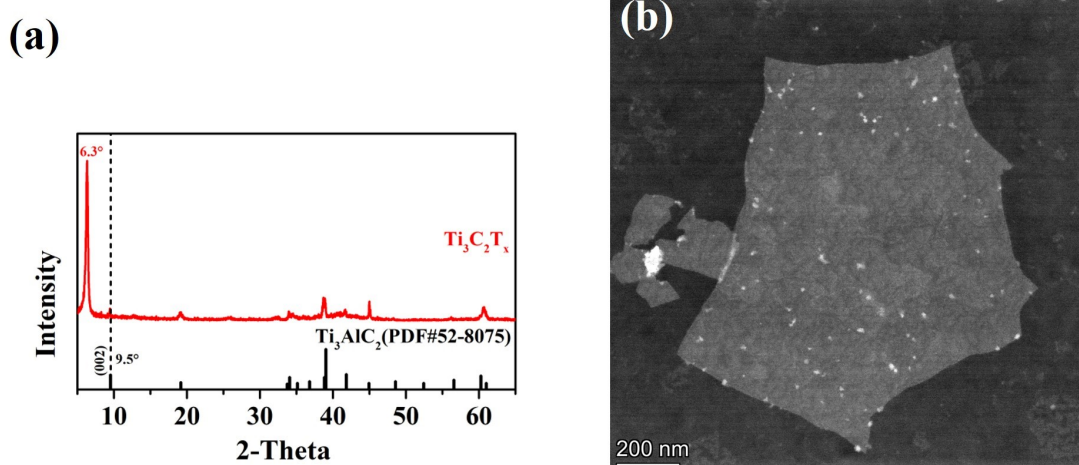


Fig. S1 (a) XRD patterns of Ti_3AlC_2 and $\text{Ti}_3\text{C}_2\text{T}_x$ MXene. (b) a TEM image of $\text{Ti}_3\text{C}_2\text{T}_x$ nanosheets.

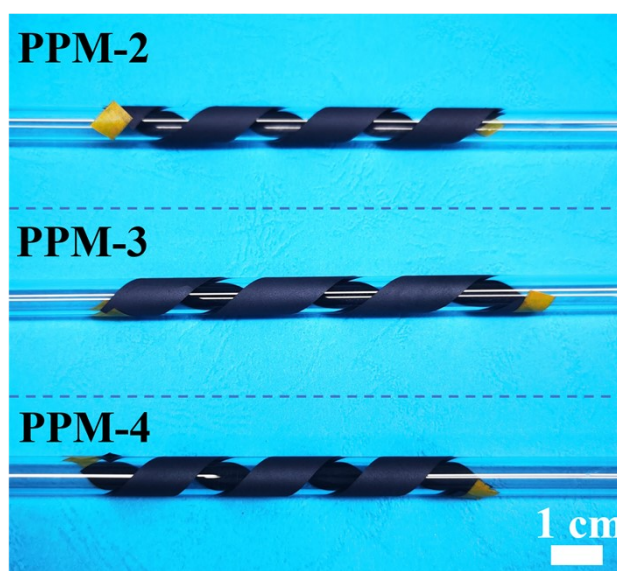


Fig. S2 Digital images of PAN@PPy/MXene films showing their flexibility.

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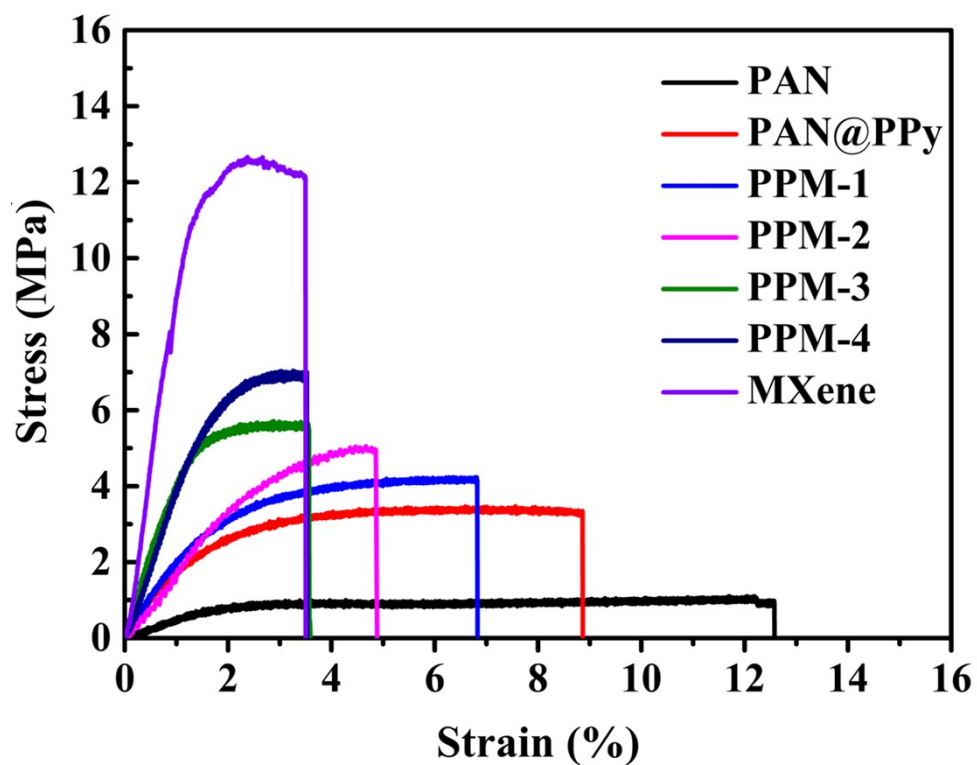


Fig. S3 Stress–strain curves of PAN, PAN@PPy, PAN@PPy/MXene and MXene films.

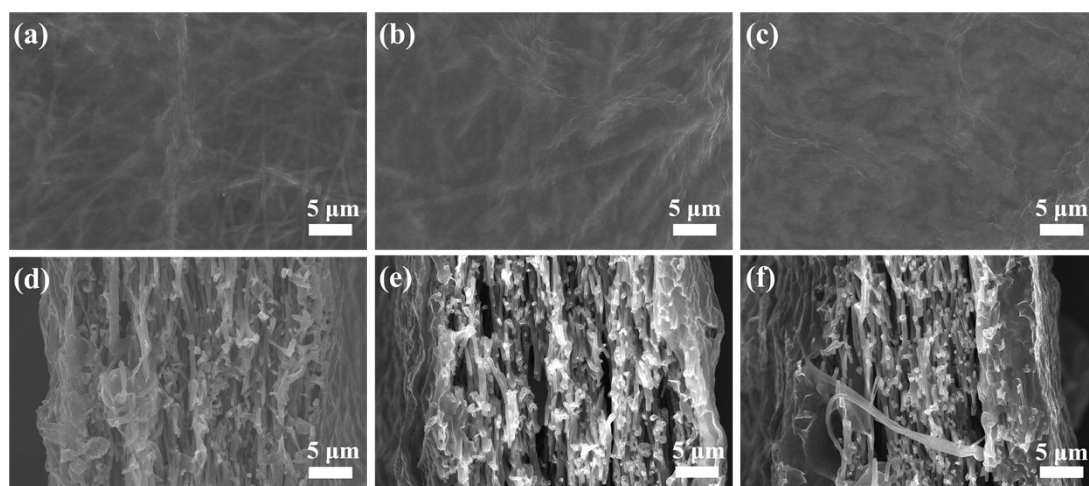


Fig. S4 Surface morphology of PAN@PPy/MXene films: (a) PPM-2 films; (b) PPM-3 films; (c) PPM-4 films. Cross-section morphology of PAN@PPy/MXene films: (d) PPM-2 films; (e) PPM-3 films; (f) PPM-4 films.