Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A. This journal is © The Royal Society of Chemistry 2021

## **Supporting Information**

Plasmolysis-inspiredYolk-ShellHydrogel-core@Void@MXene-shellMicrospheres with Strong Electromagnetic Interference Shielding Performance

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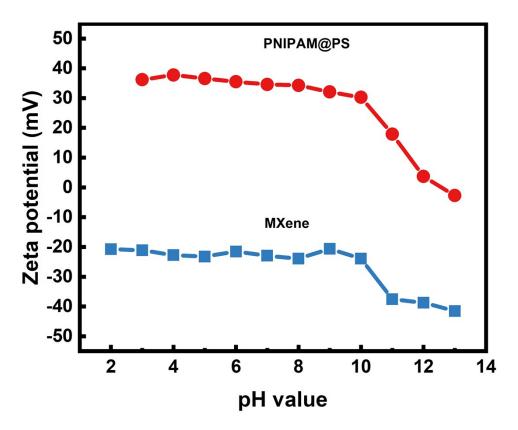


Figure S1. Zeta potentials of positively charged PNIPAM@PS microspheres and negatively charged MXene nanosheets

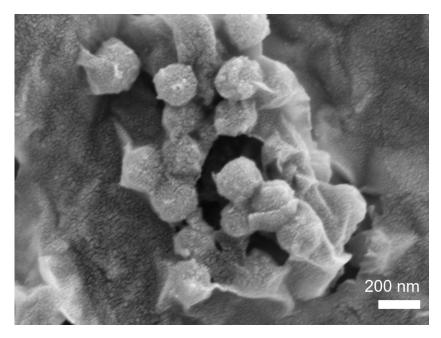


Figure S2. SEM images of film with 1:2 mass ratio of PNIPAM@void@PS and

 $Ti_3C_2T_x$ .

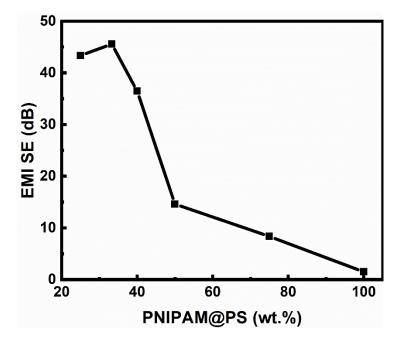


Figure S3. Maximum EMI SE value of PNIPAM@void@PS@Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> films in Xband (8.2 GHz -12.4 GHz). Variation of Maximum EMI SE upon increasing the content of PNIPAM@PS microspheres in X-band.

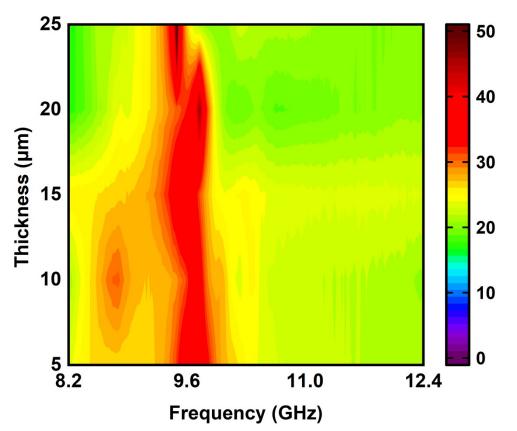


Figure S4. Plot of the  $SE_a$  of the films based on yolk-shell PNIPAM@void@PS@Ti\_3C\_2T\_x microspheres.

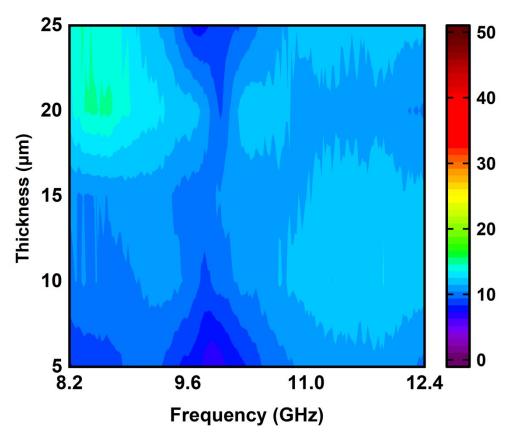


Figure S5. Plot of the  $SE_r$  of the films based on yolk-shell PNIPAM@void@PS@Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> microspheres.