Supporting Information

Microscale Curling and Aligning of $Ti_3C_2T_x$ MXene by Confining Aerosol Droplets for Planar Micro-supercapacitors

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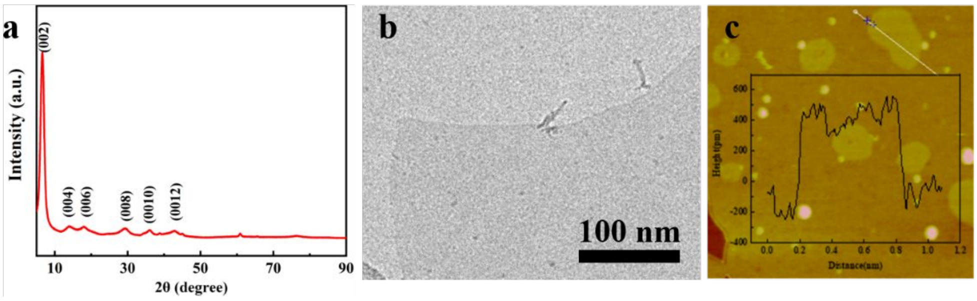

Figure S1. XRD pattern (a), TEM (b) and AFM (c) results of the delaminated $Ti_3C_2T_x$ nanosheets.

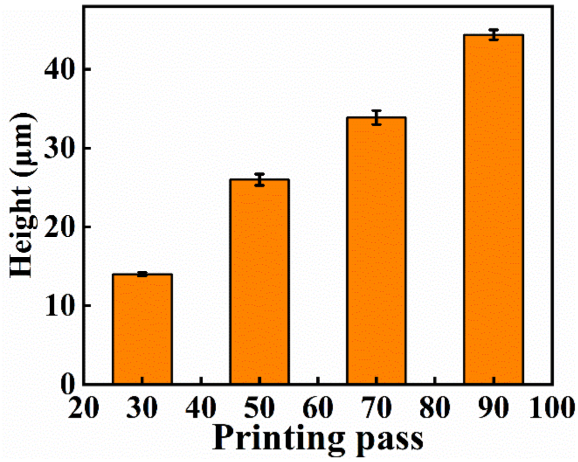

Figure S2. The dependence of pattern thickness on printing passes, showing a linear behavior.

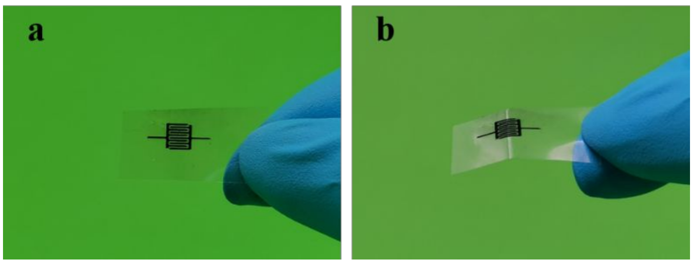

Figure S3. Photographs of the printed patterns on PET substrate, showing robust after being folded 100 times. (a) before, (b) after.

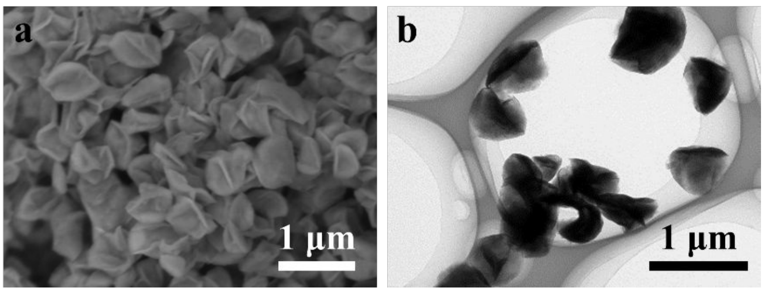

Figure S4. MXene crumpled nanospheres obtained by in situ collecting the aerosol droplets out of the nozzle at 100℃. (a) SEM image, (b) TEM image.

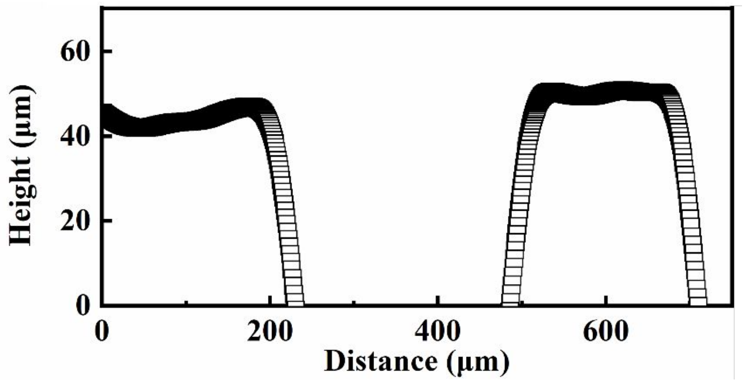

Figure S5. The height profile of adjacent patterns showing similar thickness and width.

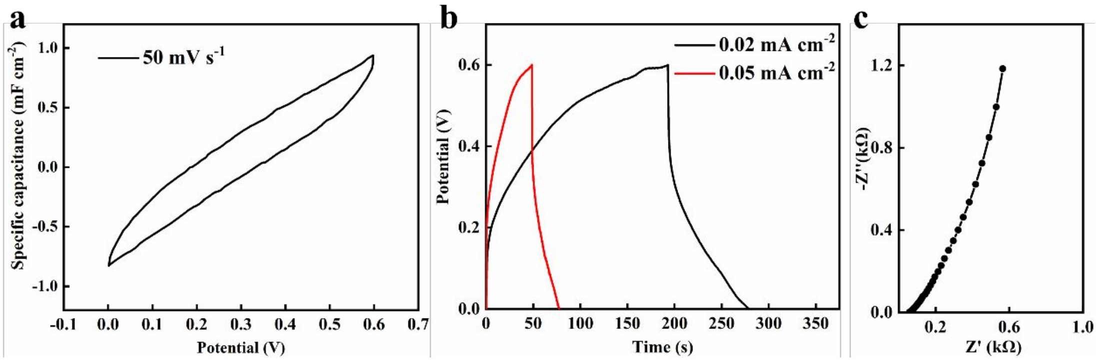

Figure S6. CV curve (a), GCD profiles (b) and EIS (c) of the MSC device of MXene via vacuum-assisted filtration process.

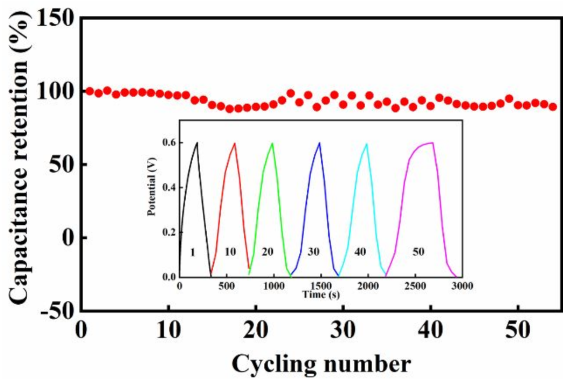

Figure S7. Cycling testing of the fabricated MSC device at a current density of 0.05 mA cm^{-2}.

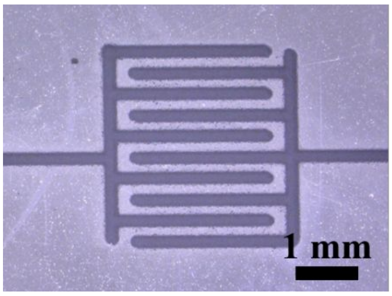

Figure S8. Optical image of one interdigital electrode with the gap distance of 170 µm.

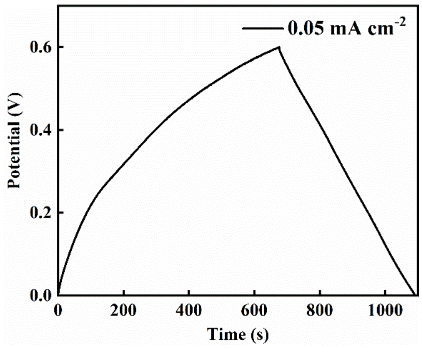

Figure S9. GCD profile of the MSC device with interdigital electrode (line width of 250 µm, gap distance of 170 µm and printing pass of 50) at a current density of 0.05 mA cm^{-2}.

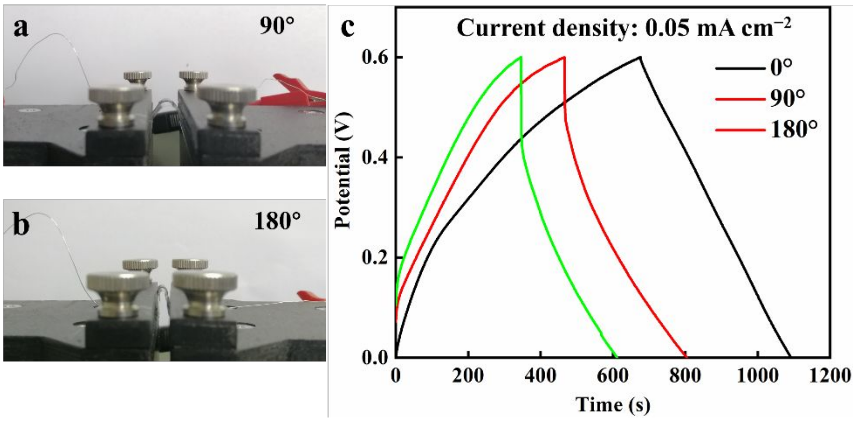

Figure S10. (a, b) MSC devices bended at 90° and 180° and the corresponding GCD profiles was given in (c).

Supplementary Table 1. Areal capacitance comparison of various MSCs.

Material	Additive manufacturing method	Areal capacitance (mF cm^{-2})	Reference
PEDOT/MnO_2	Inkjet printing	0.26	1
Graphene	Inkjet printing	0.7	2
Graphene/MXene	Spray coating	3.26	3

$Ti_3C_2T_x$	Direct writing	5	4
Graphene	Spray coating	5.4	5
$Ti_3C_2T_x$	Inkjet printing	12	6
$Ti_3C_2T_x$	Aerosol jet printing	34.87	This work

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