

Supporting Information

2D MXene nanosheets enable small-sulfur electrode to be flexible for lithium-sulfur batteries

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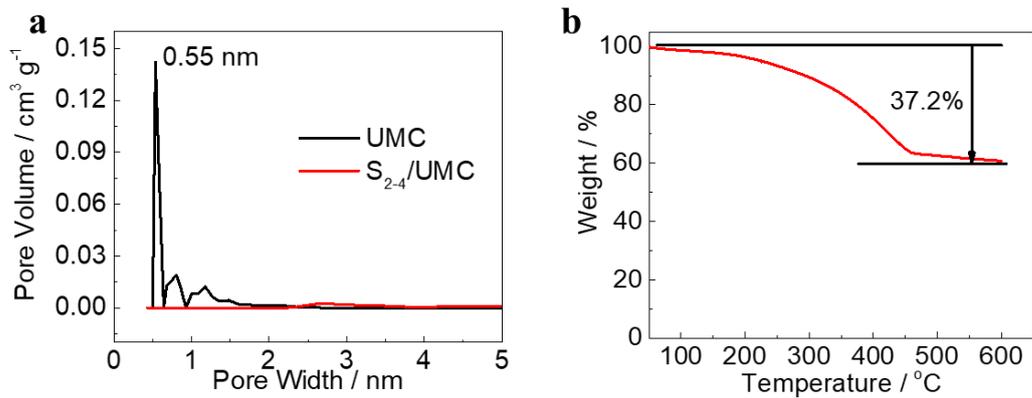


Figure S1 (a) pore size distribution of UMC and S₂₋₄/UMC, (b) TGA curve of the S₂₋₄/UMC composite.

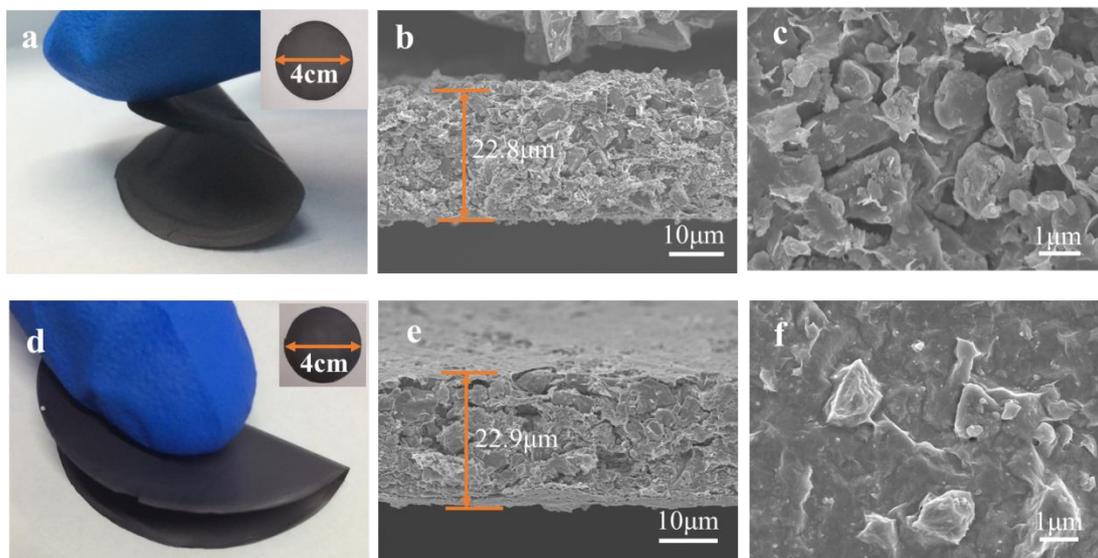


Figure S2 Digital photos (a, d), and SEM images of the cross section (b, e), the surface (c, f) of the MSC-1 (a-c) and MSC-3 (d-f) film.

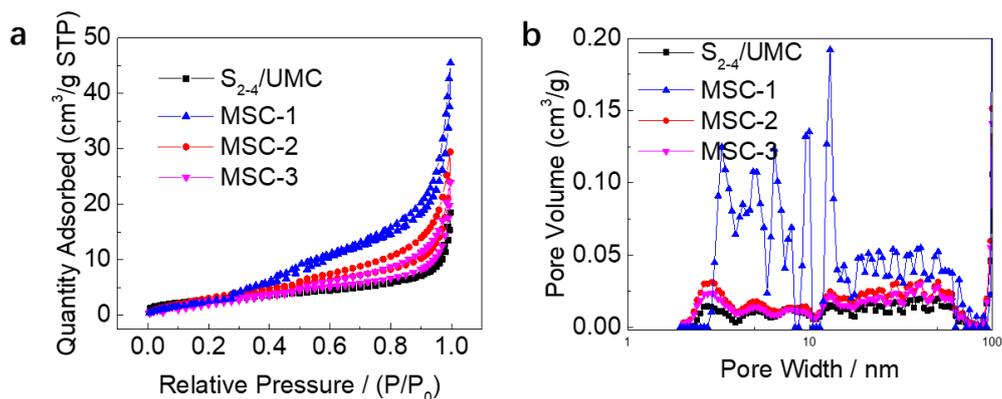


Figure S3 Nitrogen adsorption/desorption isotherms (a), and pore size distribution (b) of the flexible MSC films.

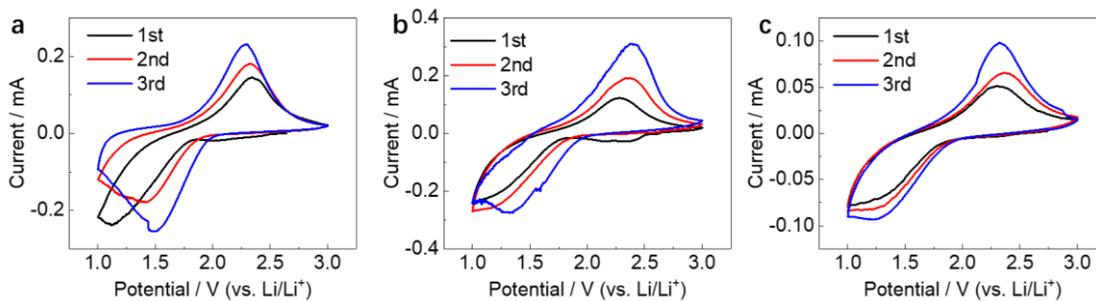


Figure S4 The CV curves during the initial three cycles of the cells for the cells with flexible electrode: MSC-1(a), MSC-2(b), MSC-3(c).

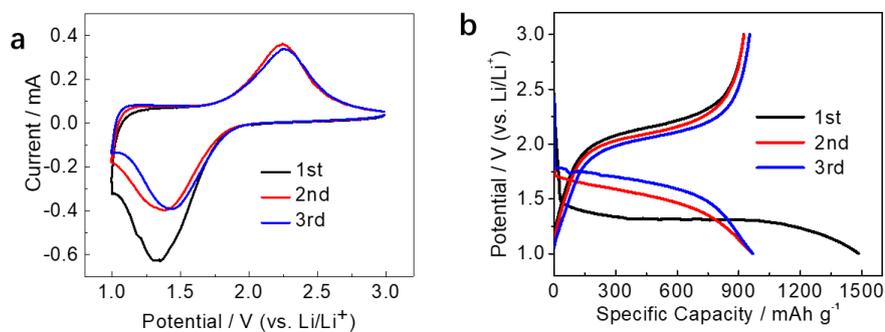


Figure S5 CV curves (a) and charge-discharge profiles (b) of the cells with traditional PVDF-bonded S_{2-4}/UMC electrode.

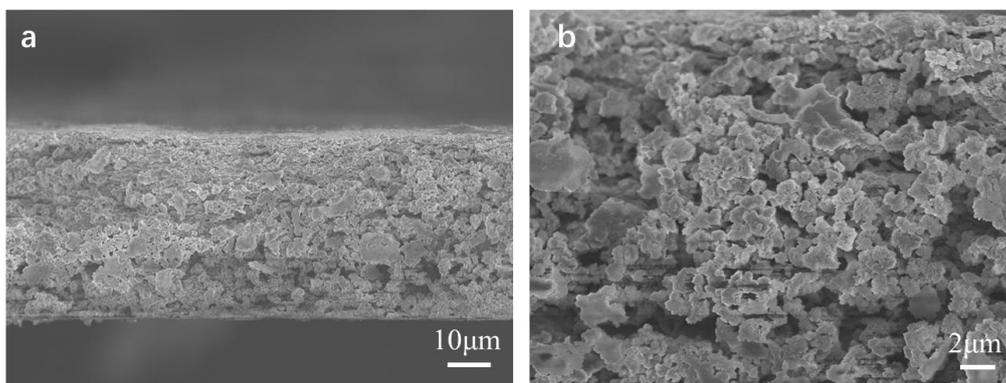


Figure S6 (a, b) the SEM images of the MSC-2 electrode after 100 cycles at 0.1 C current density, both the pictures are the cross side of the electrode.

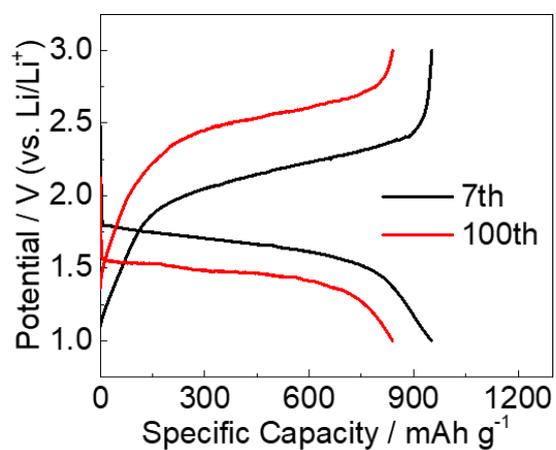


Figure S7 the charge-discharge profiles of the cells after activation and undergo 100 cycles for MSC-1.

Table S1 BET specific surface area and pore volume of the S₂₋₄/UMC composite and the flexible MSC electrodes.

Electrode	Specific Surface Area (m ² g ⁻¹)	Pore Volume (cm ³ g ⁻¹)
S ₂₋₄ /UMC	10.0	0.030
MSC-1	24.5	0.070
MSC-2	11.5	0.046
MSC-3	9.8	0.037