

**A three-dimensional porous MoS<sub>2</sub>-PVP aerogel as a highly efficient and recyclable sorbent for oils and organic solvents**

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## Supporting figures



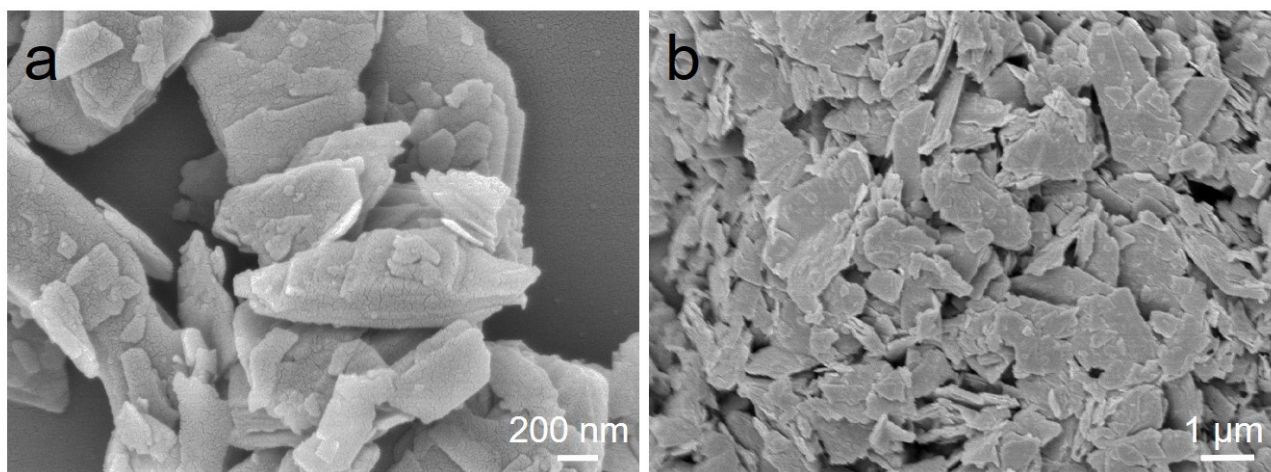
MoS<sub>2</sub>

Freezing drying

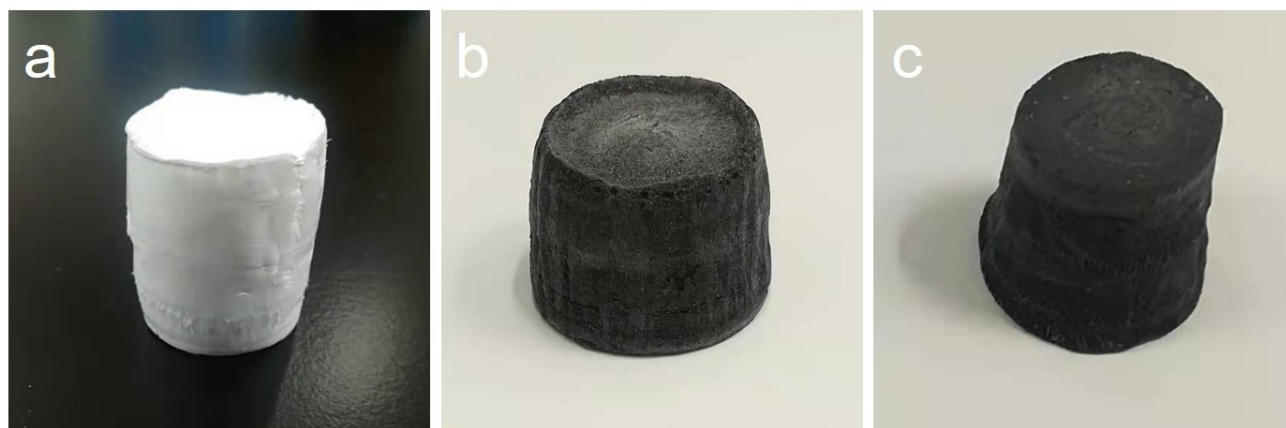


3D MoS<sub>2</sub>-PVP aerogel

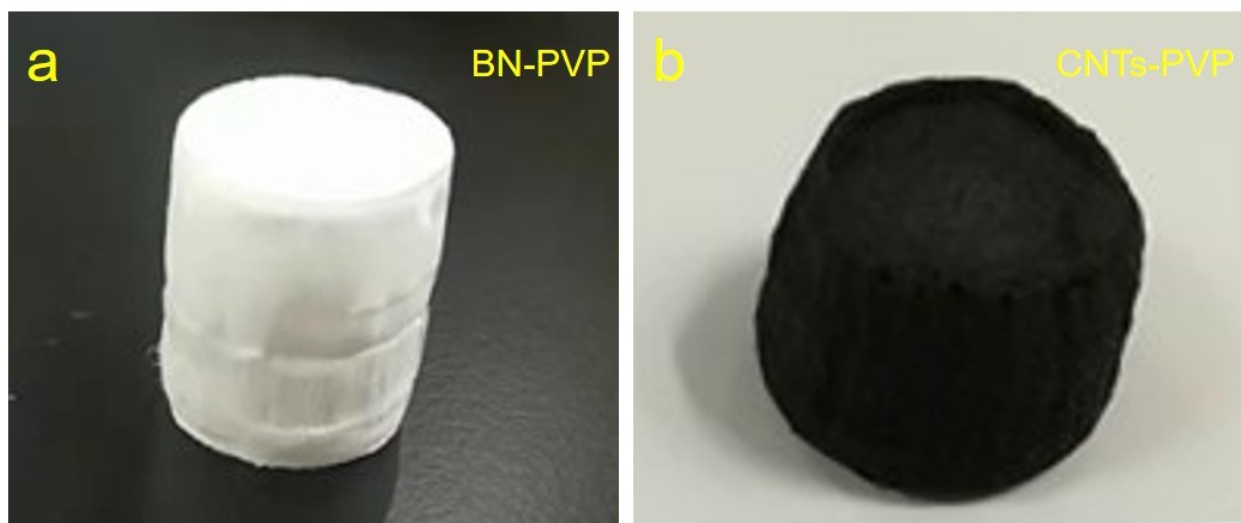
**Fig S1.** Optical photograph of MoS<sub>2</sub> powder to 3D MoS<sub>2</sub>-PVP aerogel.



**Fig S2.** SEM images of (a) MoS<sub>2</sub>, (b) MoS<sub>2</sub>-PVP.



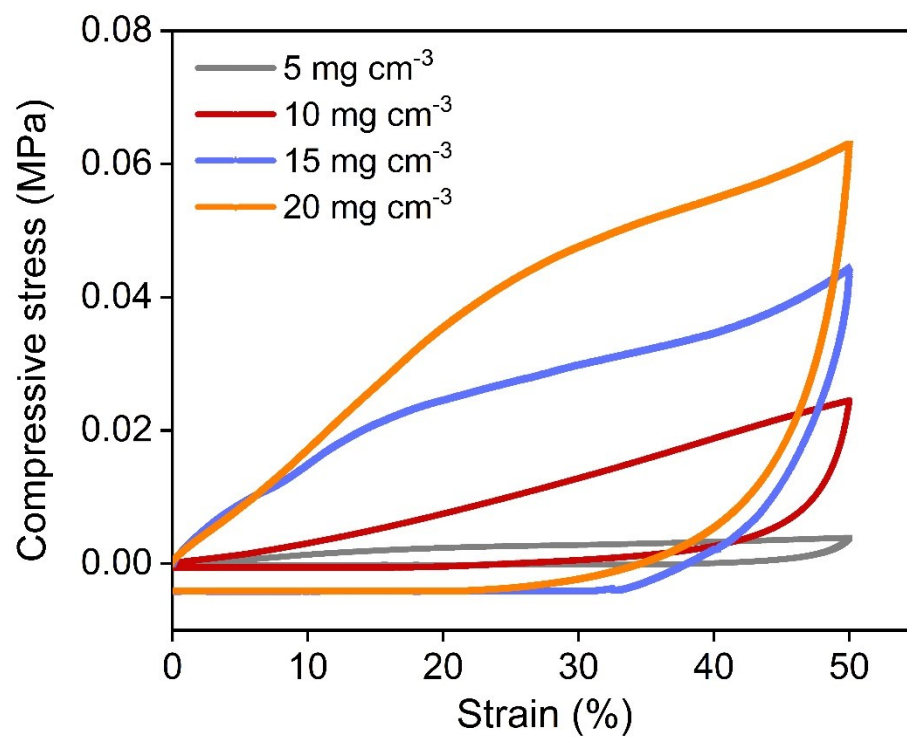
**Fig S3.** Photographs of 3D MoS<sub>2</sub>-PVP aerogels with different concentrations of MoS<sub>2</sub>. (a) 0, (b) 10, (c) 20 mg cm<sup>-3</sup>.



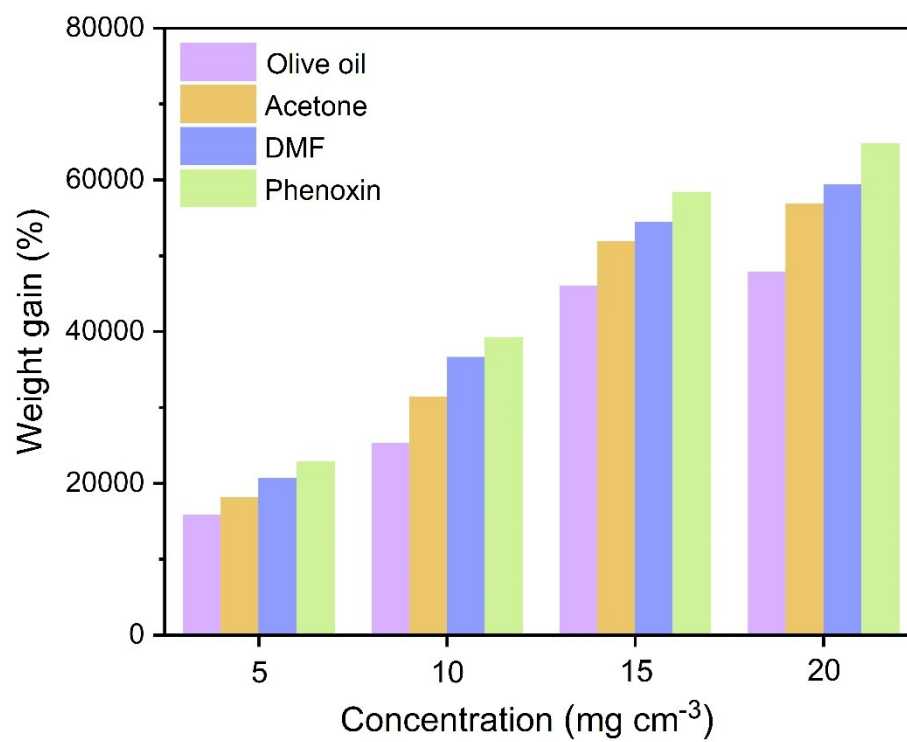
**Fig S4.** (a-b) Photographs of BN-PVP aerogels and CNTs-PVP aerogels.



**Fig S5.** Optical photograph of a water droplet on the 3D MoS<sub>2</sub>-PVP aerogel surface.

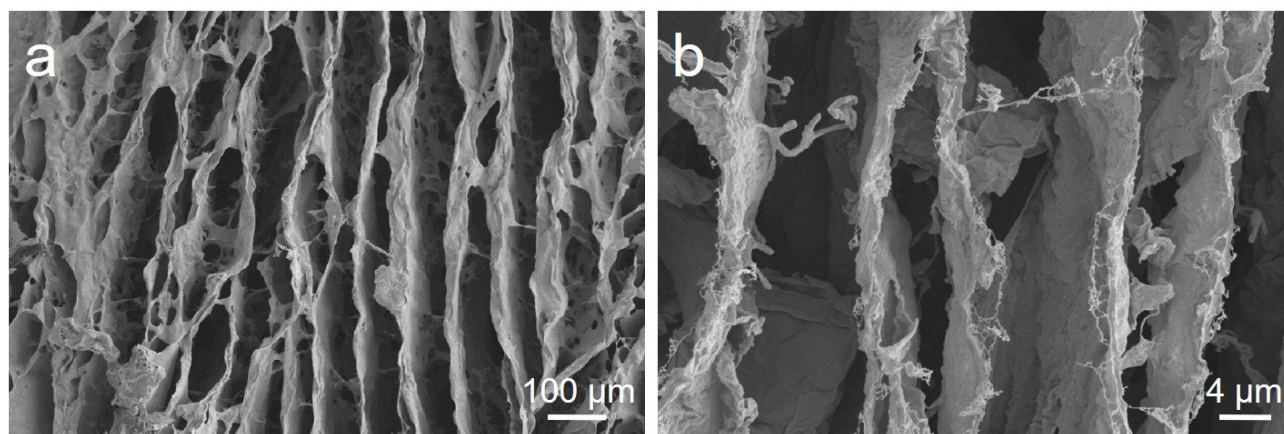


**Fig S6.** Compressive curves of 3D MoS<sub>2</sub>-PVP aerogel with different concentrations of MoS<sub>2</sub>. (a) 5, (b) 10, (c) 15, (d) 20 mg cm<sup>-3</sup>.

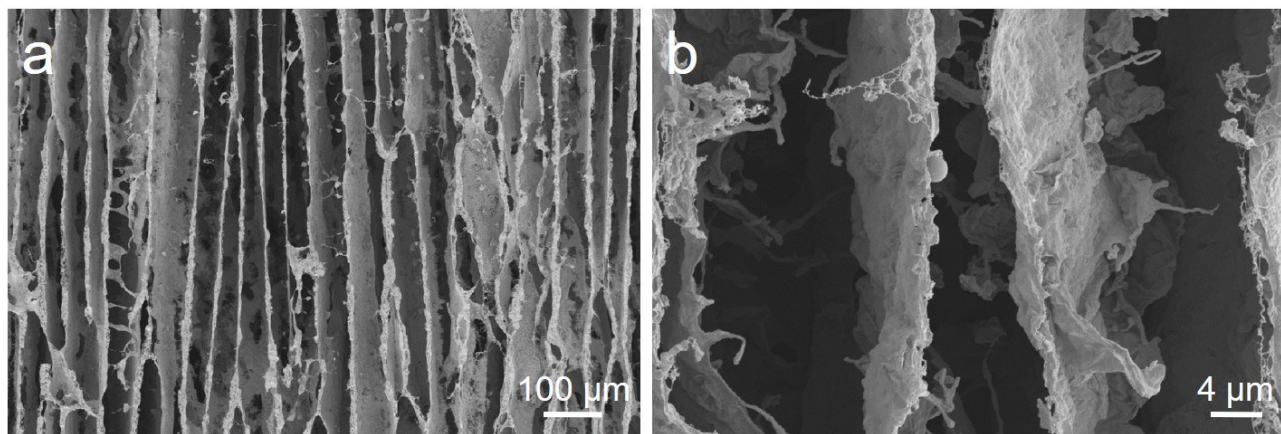


**Fig S7.** The Adsorption capacity of 3D MoS<sub>2</sub>-PVP aerogels with different concentrations of MoS<sub>2</sub>.





**Fig S8.** Photographs of the squeezing process of 3D MoS<sub>2</sub>-PVP aerogel.



**Fig S9.** Photographs of the distillation process of 3D MoS<sub>2</sub>-PVP aerogel.

## Supporting table

Table S1. The specific surface area of 3D MoS<sub>2</sub>-PVP aerogels with different concentrations of MoS<sub>2</sub>.

Concentration (mg cm <sup>-3</sup> )	0	5	10	15	20
Specific surface area (m <sup>2</sup> g <sup>-1</sup> )	44.5	75.2	79.6	83.5	90.4

## Supporting Movie

Movie S1