

## Supporting Information

# A Highly Permeable Mixed Matrix Membrane Containing Vertically Aligned Metal-organic Framework for CO<sub>2</sub> Separation

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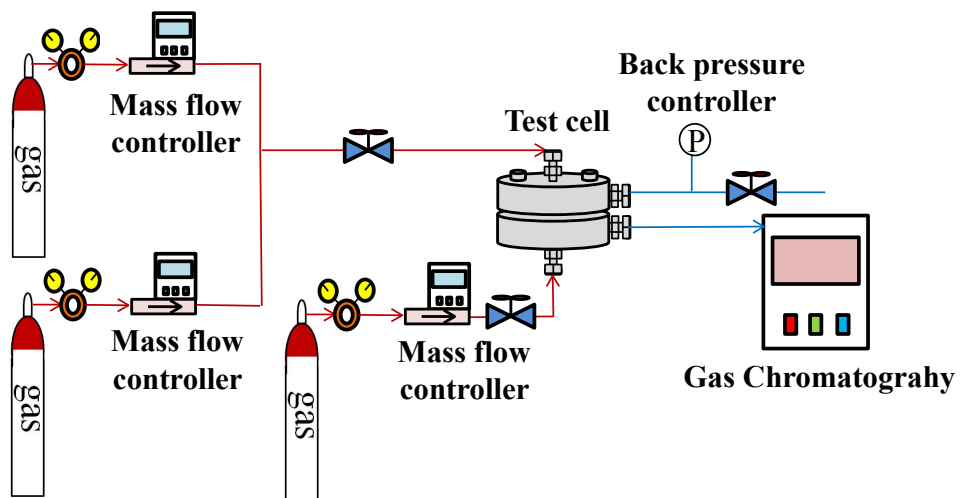
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1.



Scheme S1. Schematic illustration of the gas permeation equipment.

2.

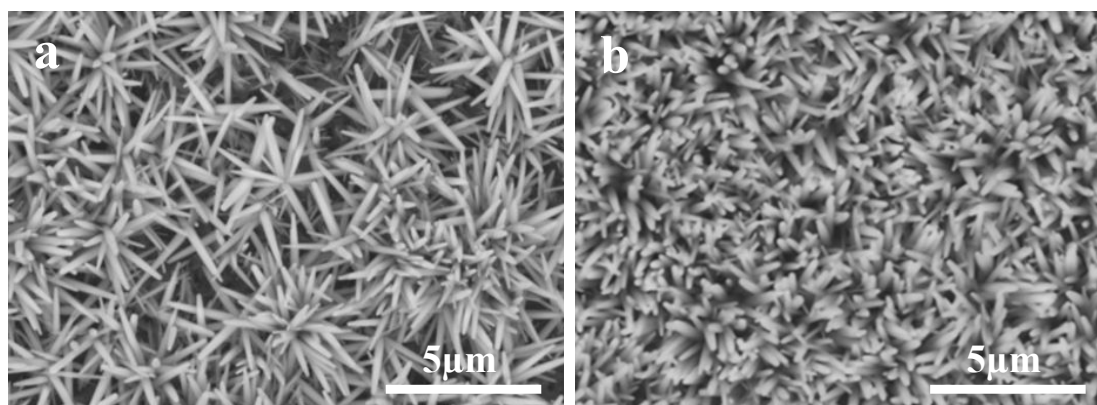


Figure S1. SEM images of ZnO nanowire without the addition of GO (a), and with the addition of GO (b).

3.

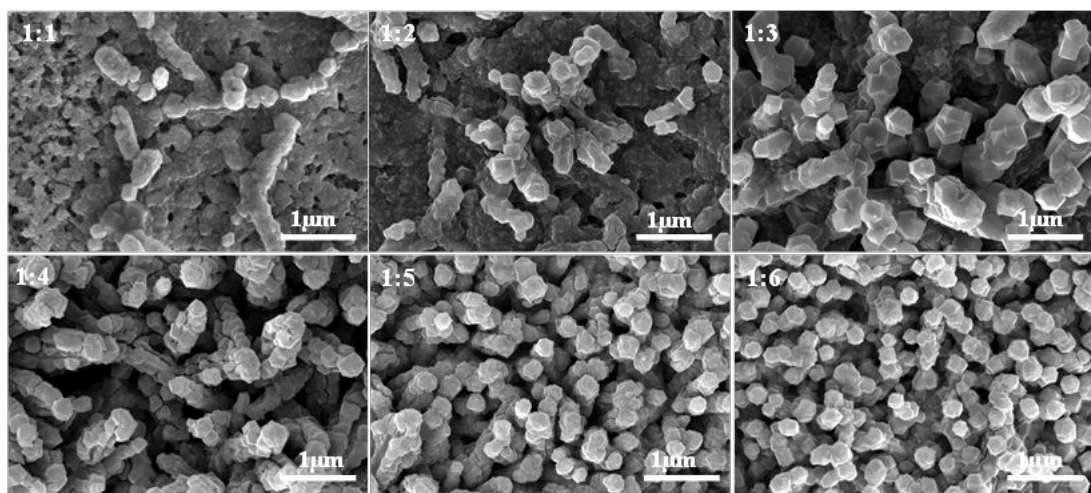


Figure S2. SEM images of the prepared V-ZIF-8 with different ratio of GO: ZnO.

4.

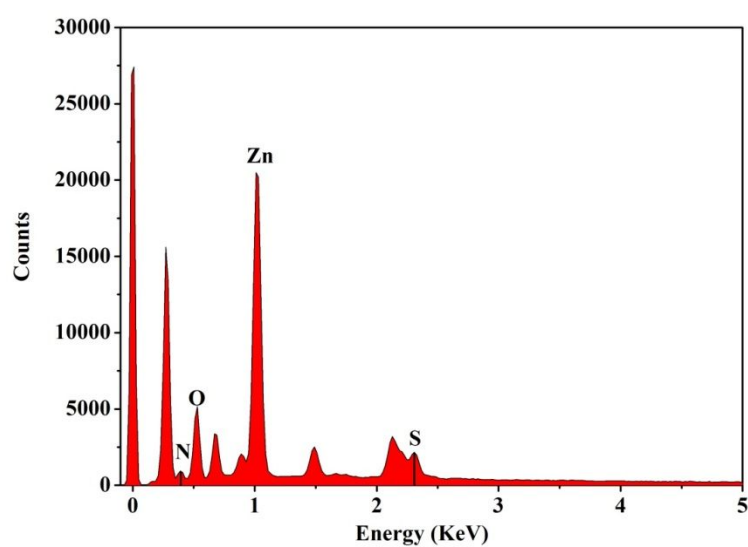


Figure S3 EDX spectrum of the V-ZIF-8/PSF membrane

5.

Table S1 Element contents of the V-ZIF-8/PSF membrane

Element	wt%
Zn	23.92
O	51.63
N	19.49
S	4.96