

## Electronic Supplementary Material

### Tubular adsorption devices obtained via facile *in-situ* synthesis of metal–organic framework particles in hydrogels

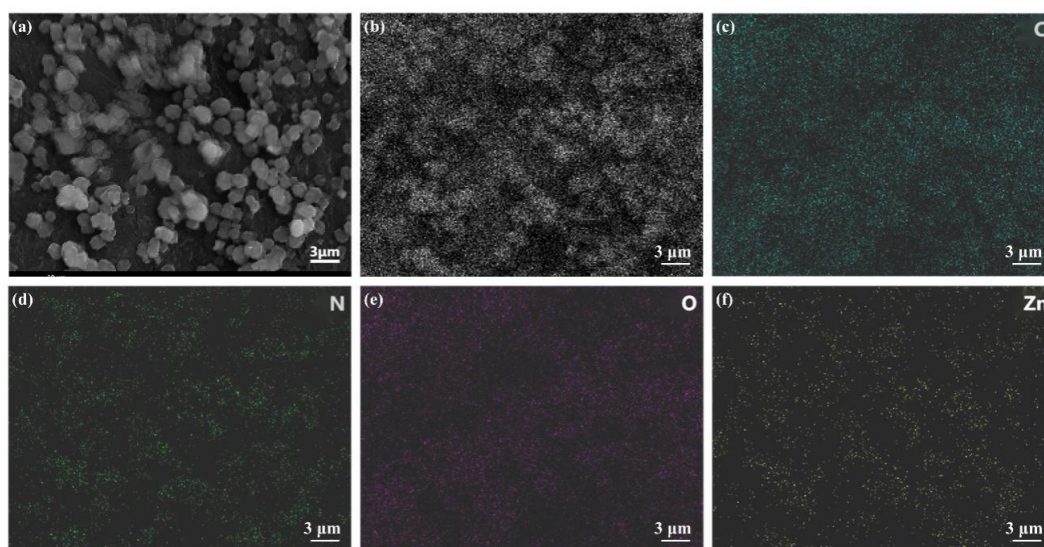
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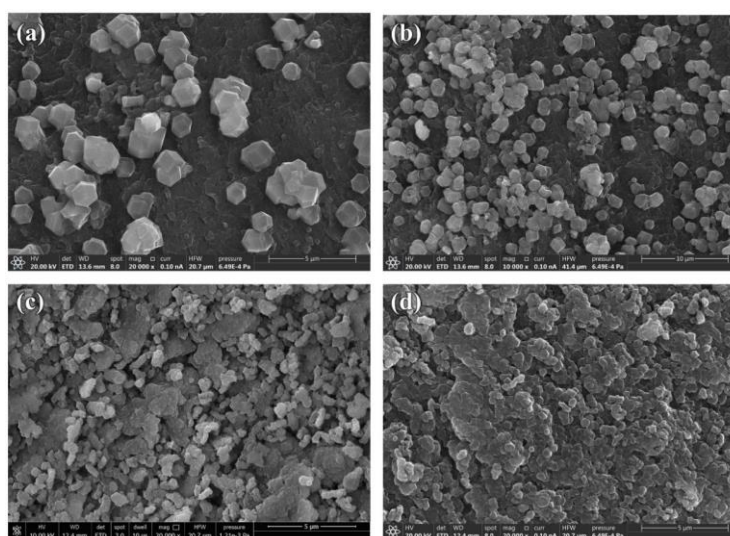
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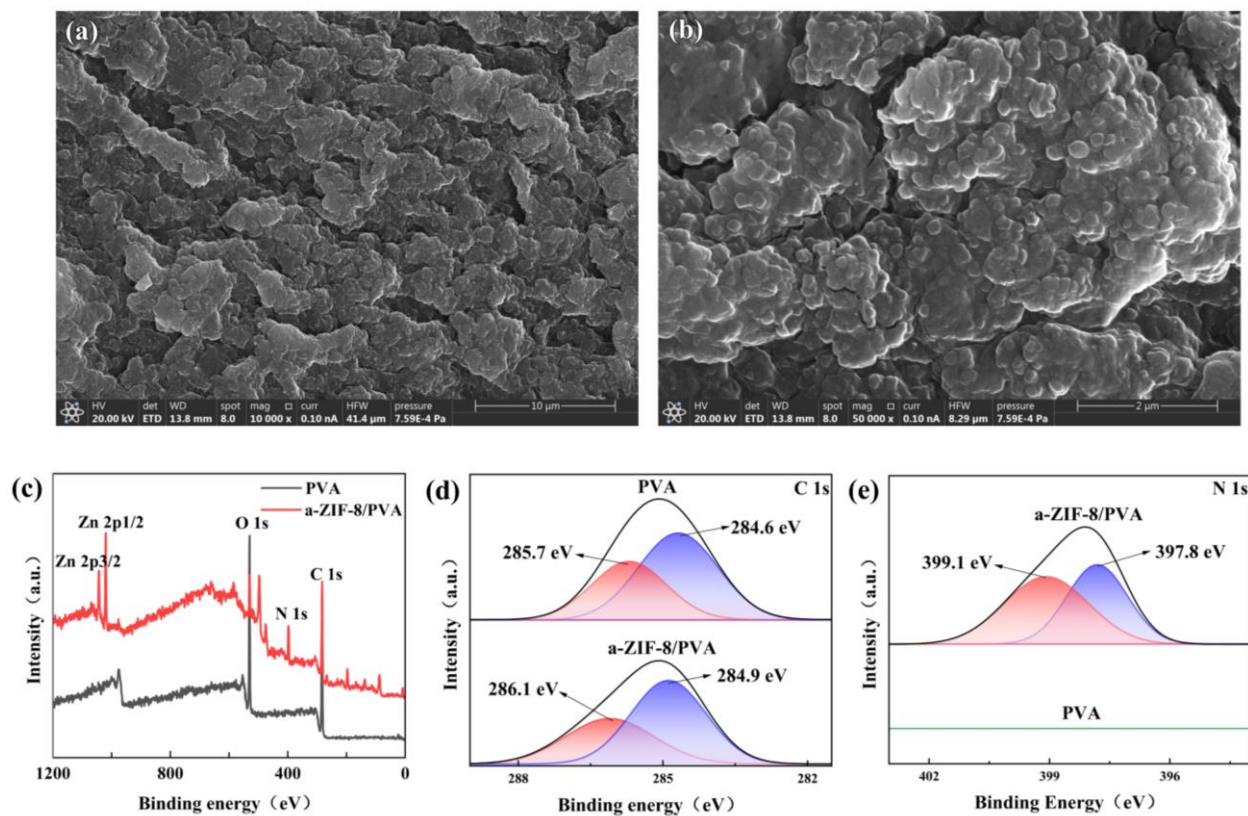
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**Fig. S1** (a) SEM image and (b)(c)(d)(e)(f) element mapping images of ZIF-PVA tubes.



**Fig. S2** (a) ZIF-8 on ZIF-8/PVA tubes. ZIF-8 particles growing into (b) bigger sizes and (c)(d) continuous coatings with sufficient chemicals.



**Fig. S3** (a)(b) SEM images of the MOF/PVA hydrogel prepared in the solution with much water. (c) Full XPS spectra for PVA and a-ZIF-8/PVA. (d) XPS spectra of C 1s for PVA and a-ZIF-8/PVA. (e) XPS spectra of N 1s for PVA and a-ZIF-8/PVA.