

Supporting Information for Publication

**MOFabric: An Effective and Wearable Protective Garment Towards CWAs
Detoxification**

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Section S1: Elemental mapping studies.

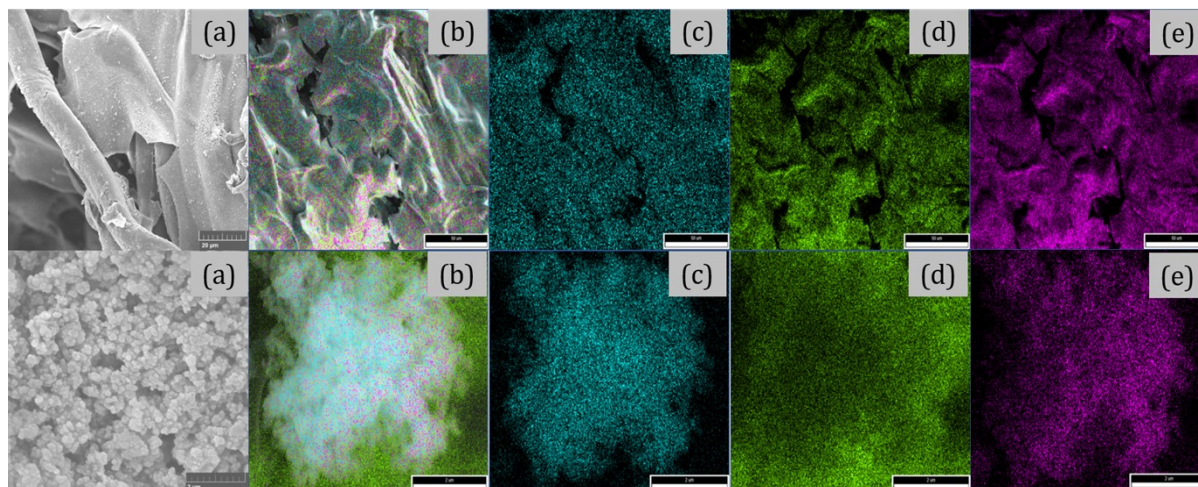


Fig. S1. SEM micrograph & elemental mapping of UiO-66 modified cotton fabric (Top layer) & UiO-66 powder (bottom layer): (a) morphology (b) elements overlay, (c) Zr, (d) C, and, (e) O.

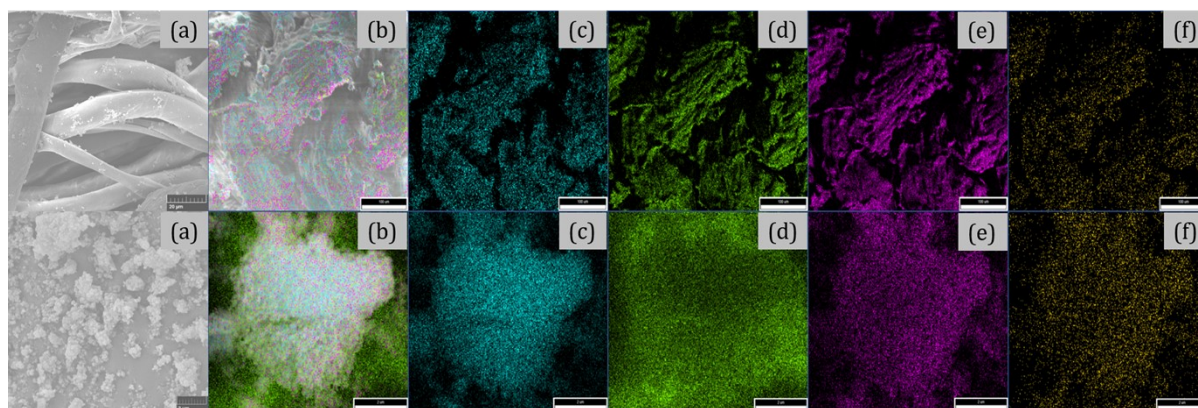


Fig. S2. SEM micrograph & elemental mapping of UiO-66-NH₂ modified cotton fabric (Top layer) & UiO-66-NH₂ powder (bottom layer): (a) morphology (b) elements overlay, (c) Zr, (d) C, (e) O and (f) N.

Table S1: Elemental weight percentage of UiO-66 (powder & fabric) and UiO-66-NH₂ (powder & fabric) samples.

Sample description		Elements Weight %			
		Zr	C	O	N
UiO-66	Powder	7.57	68.05	24.38	---
	Fabric	2.52	51.53	45.95	---
UiO-66-NH ₂	Powder	9.05	63.33	21.74	5.87
	Fabric	2.41	50.20	44.86	2.53

Section S2: Chemical composition of UiO-66 (powder & fabric) and UiO-66-NH₂ (powder & fabric) samples.

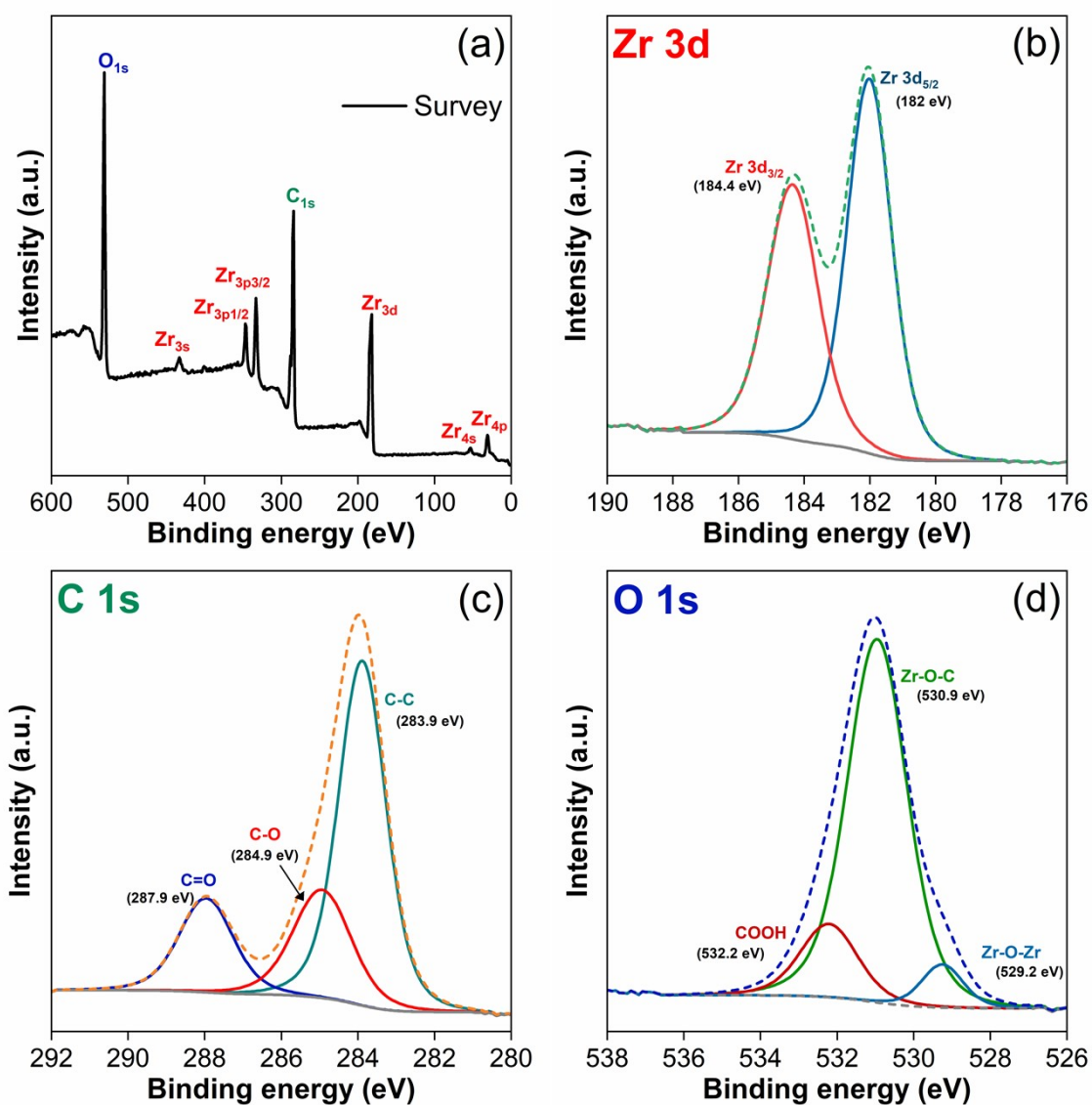


Fig. S3. XPS spectra of UiO-66 powder samples. (a) survey, (b) Zr, (c) C, and (d) O.

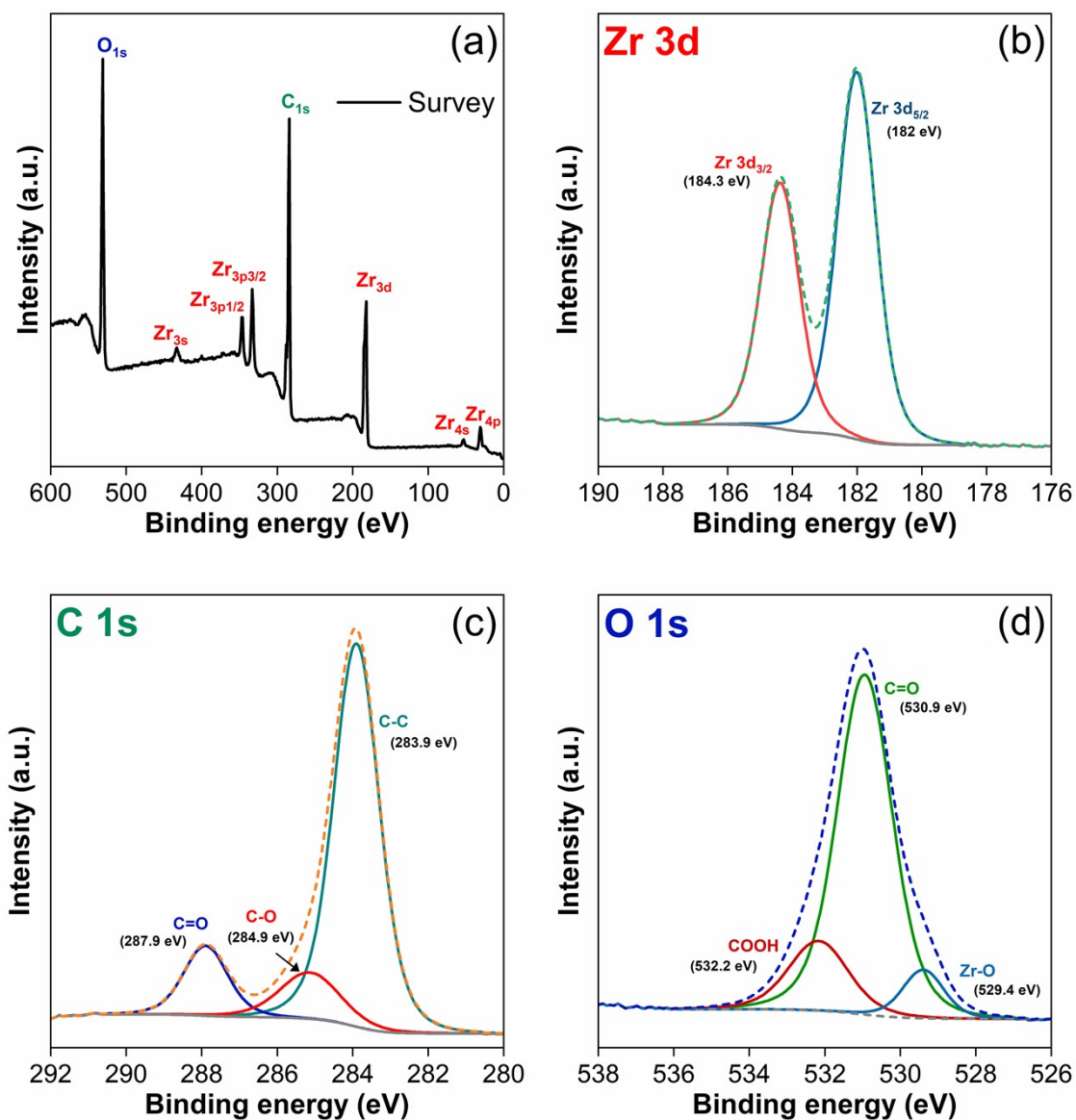


Fig. S4. XPS spectra of UiO-66 fabric samples. (a) survey, (b) Zr, (c) C, and (d) O.

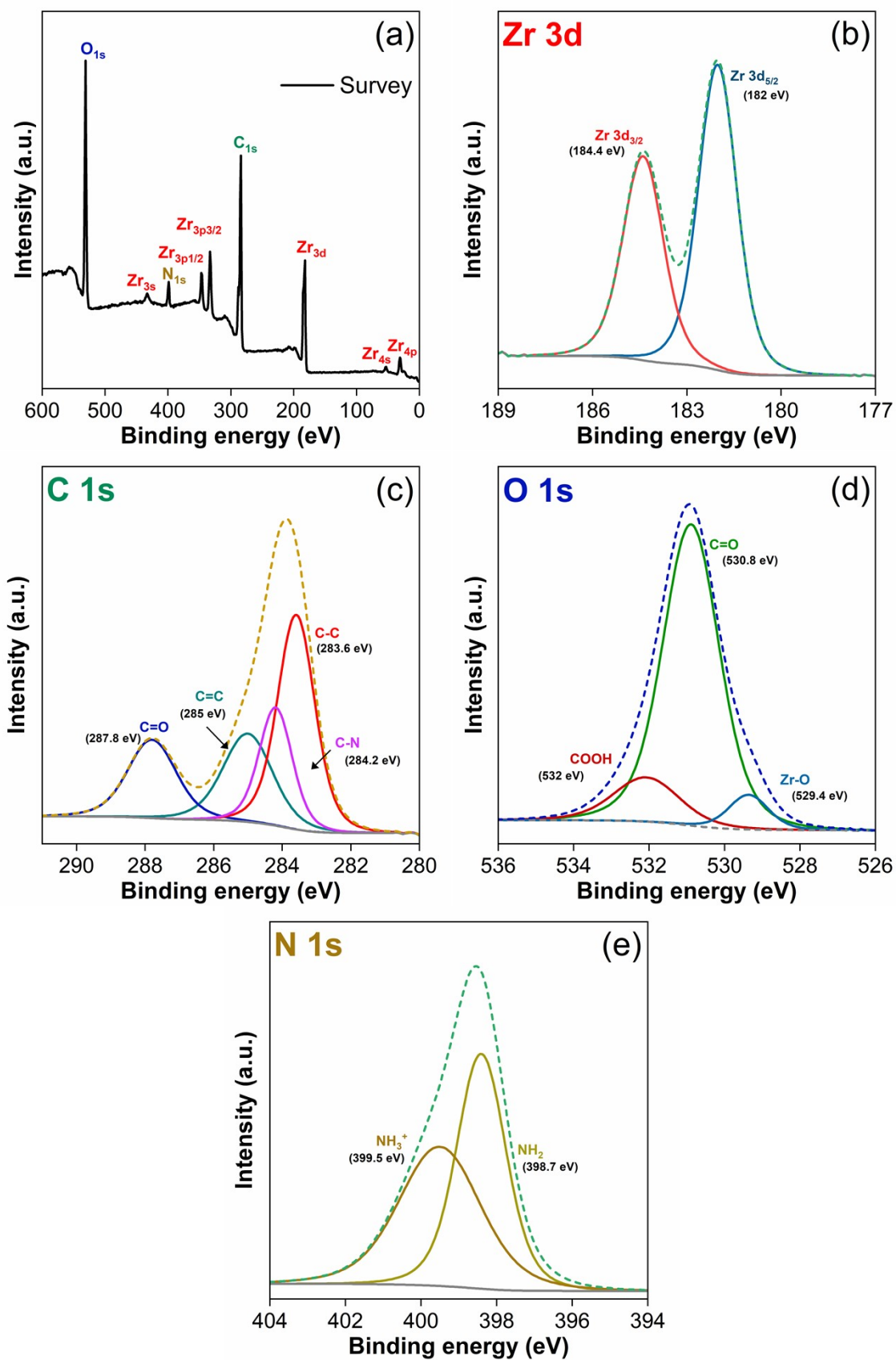


Fig. S5. XPS spectra of UiO-66-NH₂ powder samples. (a) survey, (b) Zr, (c) C, (d) O, and (e) N.

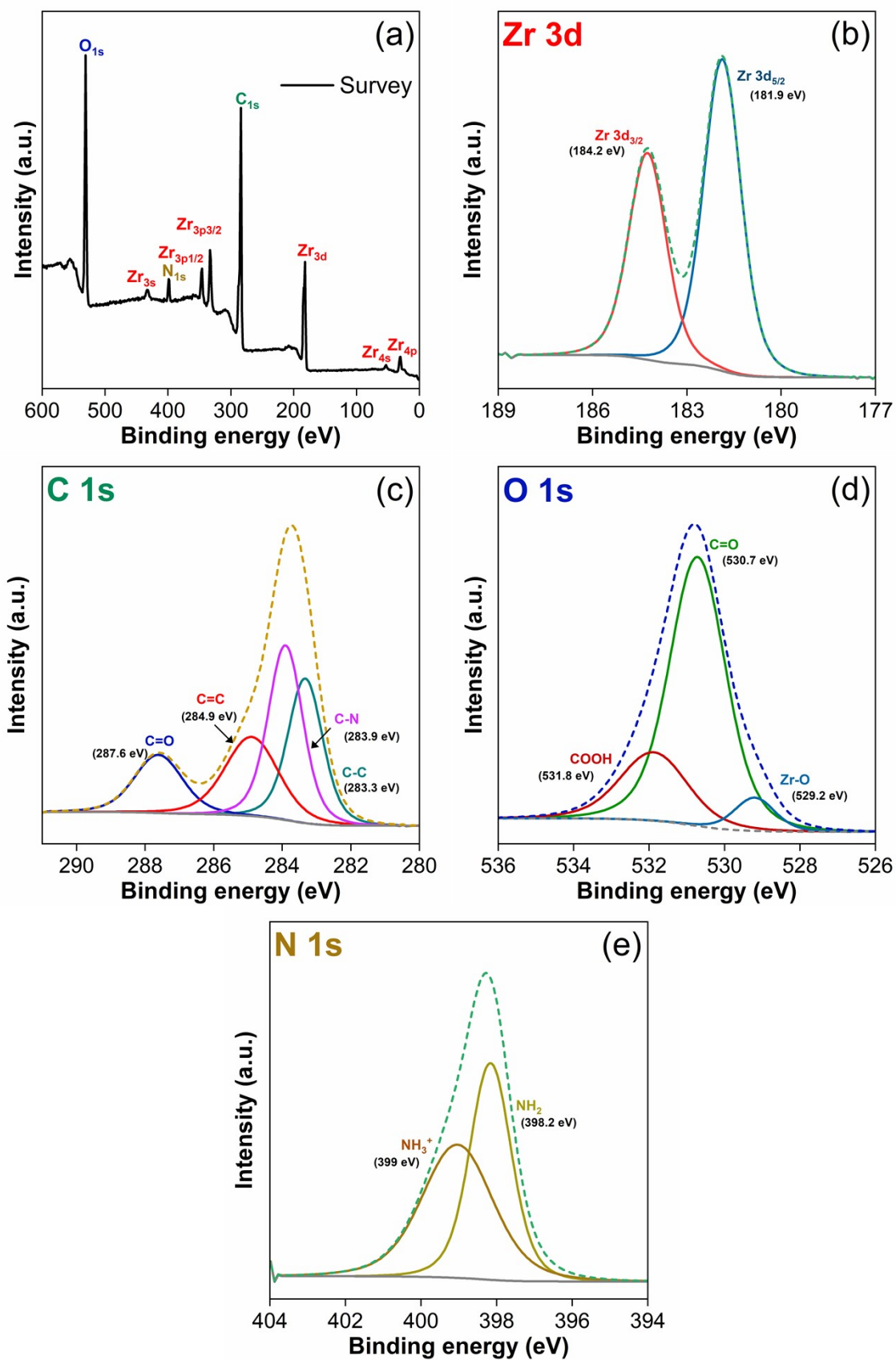


Fig. S6. XPS spectra of UiO-66-NH₂ fabric samples. (a) survey, (b) Zr, (c) C, (d) O, and (e)

N.

Table S2: Chemical composition of UiO-66 (powder & fabric) and UiO-66-NH₂ (powder & fabric) samples.

Sample Description		Zr 3d		O 1S			C 1S		
		Zr 3d _{5/2}	Zr 3d _{3/2}	COOH	Zr-O-C	Zr-O-Zr	C=O	C-O	C-C
UiO-66	Powder	56.18	43.82	15.07	78.48	6.45	18.35	22.68	58.97
	Fabric	60.19	39.81	16.66	75.30	8.04	13.23	11.96	74.81

Table S3: Chemical composition of UiO-66 (powder & fabric) and UiO-66-NH₂ (powder & fabric) samples.

Sample Description		Zr 3d		O 1S			C 1S				N 1S	
		Zr 3d _{5/2}	Zr 3d _{3/2}	COOH	C=O	Zr-O	C=O	C=C	C-N	C-C	NH ₂	NH ₃ ⁺
UiO-66-NH ₂	Powder	58.65	41.35	13.66	79.86	6.48	18.89	21.77	19.55	39.88	50.44	49.56
	Fabric	59.93	40.07	21.83	71.79	6.38	15.46	23.32	33.42	27.80	48.85	51.15

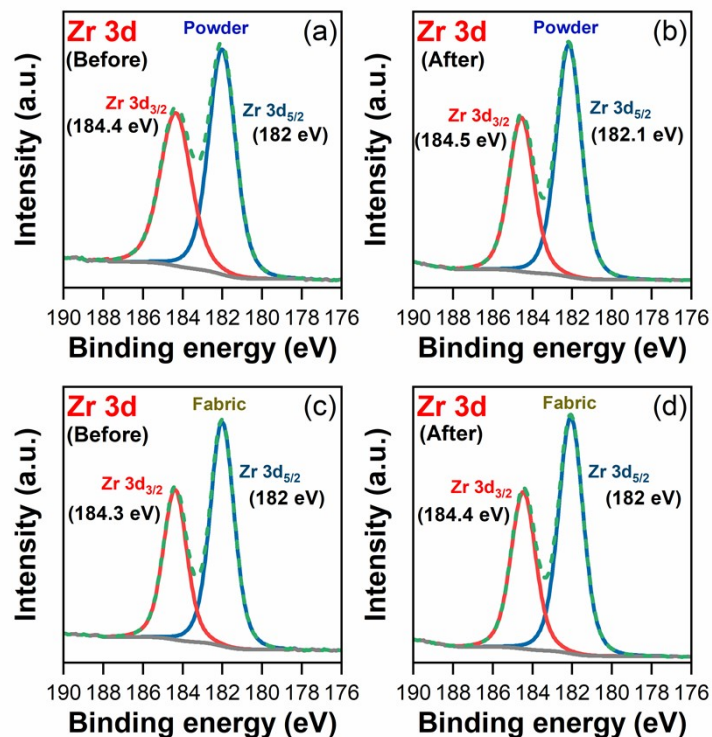


Fig. S7. High resolution spectra of Zr 3d before and after DMNP hydrolysis. (a) & (b) UiO-66 powder samples, and (c) & (d) UiO-66 fabric samples.

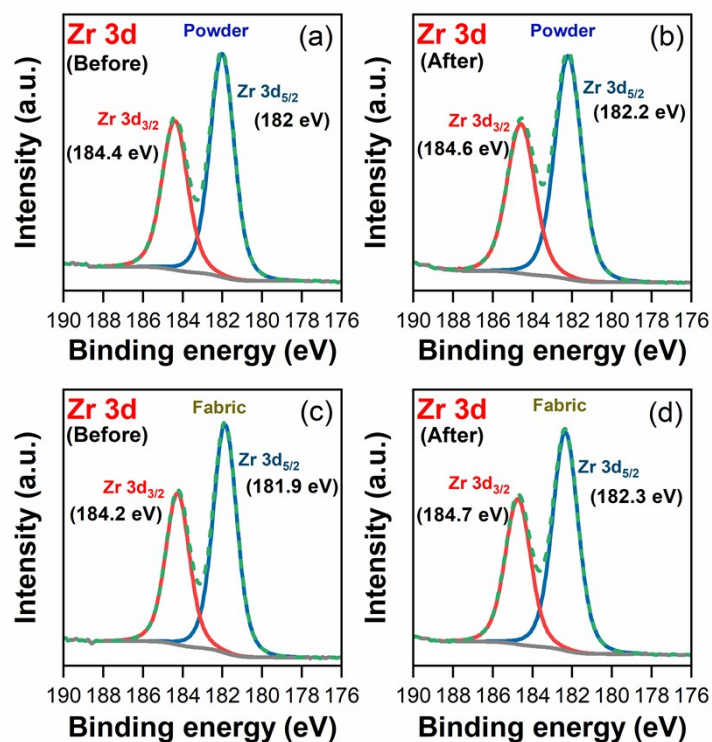


Fig. S8. High resolution spectra of Zr 3d before and after DMNP hydrolysis. (a) & (b) UiO-66-NH₂ powder samples, and (c) & (d) UiO-66-NH₂ fabric samples.