

Supporting Information

Synthesis of macroscopic monolithic metal-organic gels for ultra-fast destruction of chemical warfare agents

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Table S1 Synthesis conditions and porosity data for UiO-66 xerogel.

#	Sample	BDC:ZrOCl ₂	Washing procedure	Centrifugation procedure	Drying temperature	S _{BET} m ² g ⁻¹	W _o cm ³ g ⁻¹	V _{tot} cm ³ g ⁻¹
1	UiO-66-A	7.25:5	DMF (1 x 40 ml)	3000 rpm (1 x 10 min)	30°C	1042	0.26	0.90
2	UiO-66-B	7.25:5	DMF (1 x 40 ml)	3000 rpm (1 x 10 min)	50°C	1207	0.30	1.02
3	UiO-66-C	7.25:5	DMF (1 x 40 ml)	3000 rpm (1 x 10 min)	70°C	1406	0.36	1.30
4	UiO-66-D	7.25:5	DMF (3 x 40 ml)	3000 rpm (3 x 10 min)	30°C	1010	0.27	1.20
5	UiO-66-E	7.25:5	Ethanol (1 x 40 ml)	3000 rpm (1 x 10 min)	30°C	1274	0.33	0.80
6	UiO-66-F	7.25:5	Ethanol (3 x 40 ml)	3000 rpm (3 x 10 min)	30°C	1578	0.40	1.98
7	UiO-66-G	7.25:5	DMF (1 x 40 ml)	3000 rpm (1 x 60 min)	30°C	1008	0.25	0.91
8	UiO-66-H	5:5	DMF (1 x 40 ml)	3000 rpm (1 x 10 min)	30°C	1474	0.38	1.34
9	UiO-66-I	5:7.25	DMF (1 x 40 ml)	3000 rpm (1 x 10 min)	30°C	1546	0.40	1.08

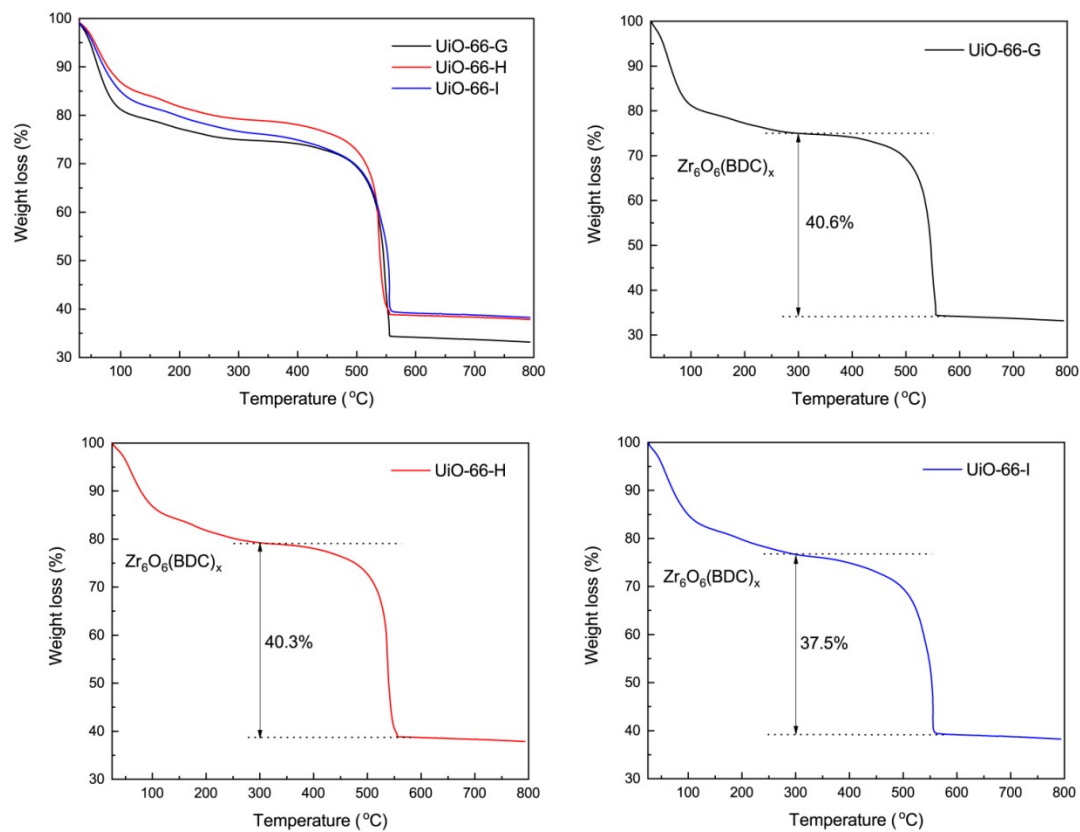


Fig. S1 TGA curves of UiO-66 xerogels with different metal-to-ligand ratios.

Table S2 Elemental analysis of UiO-66 and UiO-66-NH₂ xerogel.

	Composition (%)			
	Theoretical	UiO-66 xerogel	Theoretical	UiO-66-NH ₂ xerogel
Zirconium	32.9	27.0	31.2	25.5
Carbon	34.6	27.7	32.9	26.6
Hydrogen	1.7	3.6	2.0	3.5
Nitrogen	0.0	0	4.8	3.2

Table S3 Porosity data for monolithic UiO-66-X xerogels. S_{BET} = BET surface area; W_0 = micropore volume; V_{tot} = total pore volume.

	S_{BET} ($\text{m}^2 \text{g}^{-1}$)	W_0 ($\text{cm}^3 \text{g}^{-1}$)	V_{tot} ($\text{cm}^3 \text{g}^{-1}$)
UiO-66-NH ₂ xerogel	1275	0.27	1.45
UiO-66 xerogel	1913	0.44	2.25

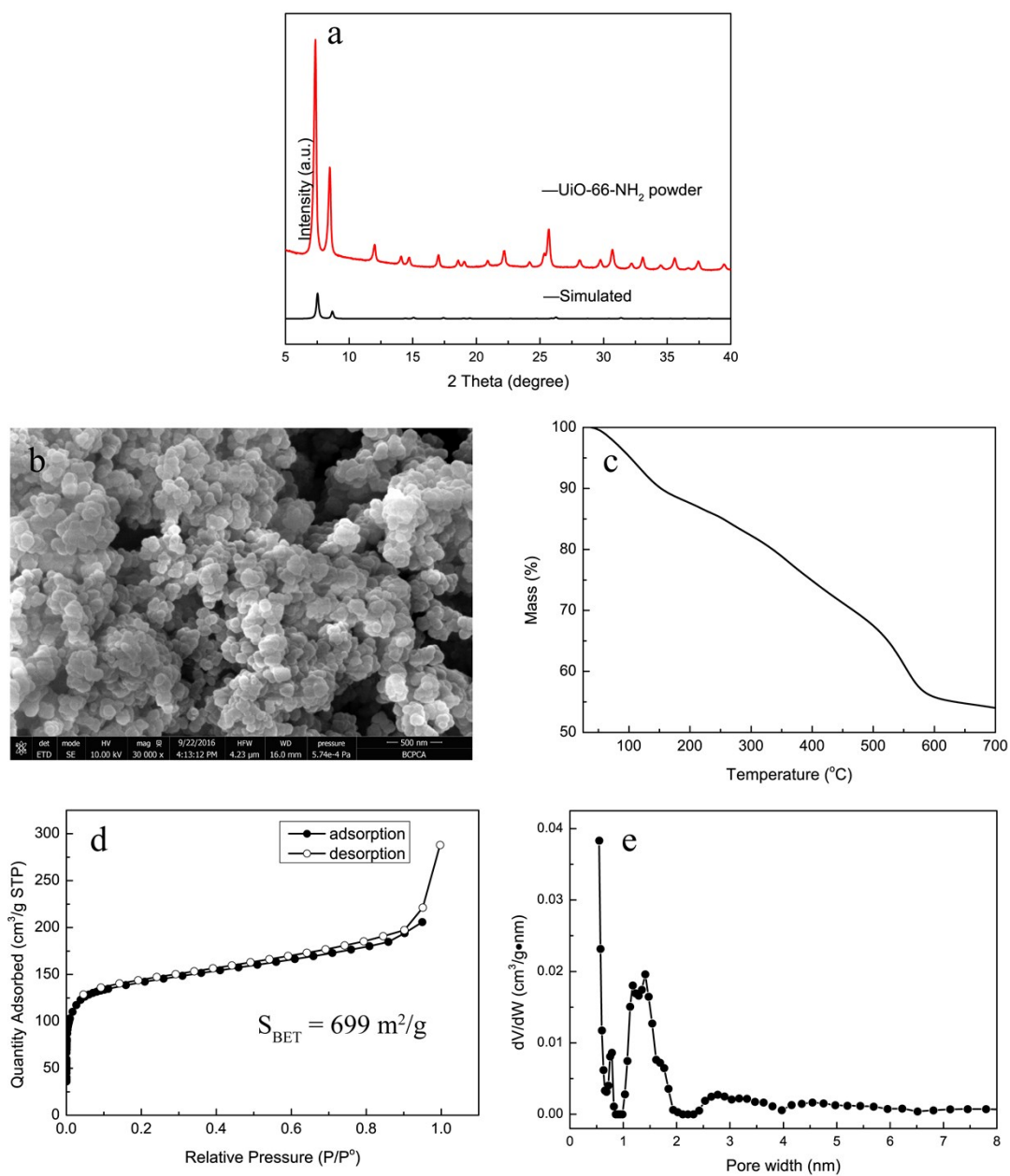


Fig. S2 Characterization of UiO-66-NH₂ powder. (a) The XRD pattern; (b) SEM image; (c) The TGA curve; (d) N₂ adsorption-desorption isotherm; (e) pore size distributions.