

Electronic Supplementary Information (ESI)

Selective Adsorption and Extraction of C70 and Higher Fullerenes on Reusable Metal-Organic Framework MIL-101(Cr)

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Table S1. Intraparticle diffusion constants for different initial fullerene concentrations.

	C_0 (mg L ⁻¹)	K_{i1} (mg g ⁻¹ h ^{-0.5})	c_1	R^2	K_{i2} (mg g ⁻¹ h ^{-0.5})	c_2	R^2
C60	50	1.0 ± 0.2	-0.2	0.851	0.008 ± 0.002	0.7	0.939
	100	0.5 ± 0.1	-0.2	0.921	0.049 ± 0.006	0.3	0.934
	200	0.3 ± 0.1	-0.1	0.982	0.033 ± 0.004	0.2	0.904
C70	50	17.4 ± 3.8	6.6	0.908	1.3 ± 0.4	18.3	0.849
	100	8.1 ± 3.3	3.9	0.917	0.9 ± 0.3	8.9	0.913
	200	4.6 ± 0.3	1.2	0.992	0.2 ± 0.05	4.4	0.921

Table S2. Surface area datas for the different stages of MIL-101(Cr).

MOFs	BET surface area (m ² g ⁻¹)
MIL-101(Cr)	1845
MIL-101(Cr) after adsorption of C70	803
MIL-101(Cr) after regeneration	1686

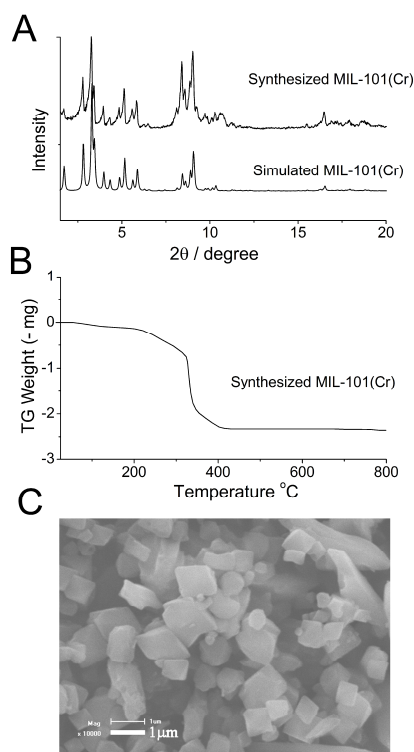


Fig. S1 Characterization of the synthesized MIL-101(Cr): (A) XRD patterns; (B) TGA curve; (C) SEM image.



Fig. S2 MIL-101(Cr) crystals before (left) and after (right) adsorption of C70.

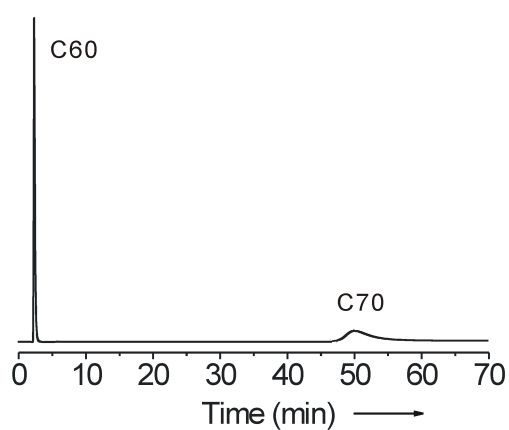


Fig. S3 HPLC separation of C60 and C70 mixture (5 μL , 400 mg L^{-1} each) on a MIL-101(Cr) packed column (3 cm long \times 4.6 mm i.d.) using toluene as the mobile phase (1 mL min^{-1}) at room temperature with a UV detector at 340 nm.

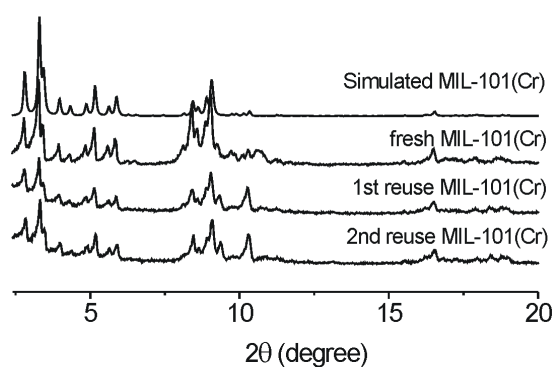


Fig. S4 Comparison of the XRD patterns of fresh and regenerated MIL-101(Cr).