Supplementary Information for

Improved Adsorption Cooling Performance of

MIL-101(Cr)/GO Composites by Tuning Water Adsorption Rate

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Table S1. Fitting parameters of the universal adsorption isotherm model and the fitting Fitting parameters of modified LDF equation

Adsorbent	μ_i	ε_{oi} (J/mol)	m_i (J/mol)	κ	β
MIL-101(Cr)	$\mu_1=0.85$	$\varepsilon_{o1}=1.86\times10^3$	$m_1=6.61\times10^1$		
	$\mu_2=0.14$	$\varepsilon_{o2}=2.87\times10^3$	$m_2=2.67\times10^3$	4.604×10^{-4}	0.696
	$\mu_3=0.01$	$\varepsilon_{o3}=9.49\times10^3$	$m_3=1.38\times10^2$		
MIL-101(Cr)/GO-5	$\mu_1=0.49$	$\varepsilon_{o1}=1.88\times10^3$	$m_1=1.38\times10^2$		
	$\mu_2=0.10$	$\varepsilon_{o2}=6.27\times10^3$	$m_2=5.36\times10^3$	2.015×10^{-3}	1.138
	$\mu_3=0.41$	$\varepsilon_{o3}=1.90\times10^3$	$m_3=4.99\times10^1$		
MIL-101(Cr)/GO-10	$\mu_1=0.47$	$\varepsilon_{o1}=1.87\times10^3$	$m_1=3.69\times10^1$		
	$\mu_2=0.39$	$\varepsilon_{o2}=1.89\times10^3$	$m_2=1.07\times10^1$	2.344×10^{-3}	1.203
	$\mu_3=0.14$	$\varepsilon_{o3}=3.76\times10^3$	$m_3=3.57\times10^3$		
MIL-101(Cr)/GO-15	$\mu_1=0.42$	$\varepsilon_{o1}=1.84\times10^3$	$m_1=8.26\times10^1$		
	$\mu_2=0.13$	$\varepsilon_{o2}=3.26\times10^3$	$m_2=2.97\times10^3$	2.633×10^{-3}	1.191
	$\mu_3=0.45$	$\varepsilon_{o3}=1.89\times10^3$	$m_3=2.41\times10^1$		

	μ_1=0.80	ε_{o1}=1.96×10^3	m_1=5.63×10^1		
MIL-101(Cr)/GO-20	μ_2=0.14	ε_{o2}=1.47×10^3	m_2=4.12×10^2	2.698×10^{-3}	1.209
	μ_3=0.06	ε_{o3}=6.58×10^3	m_3=2.16×10^3		
	μ_1=0.81	ε_{o1}=1.91×10^3	m_1=7.91×10^1		
MIL-101(Cr)/GO-35	μ_2=0.05	ε_{o2}=8.18×10^2	m_2=2.81×10^1	2.912×10^{-3}	1.121
	μ_3=0.14	ε_{o3}=3.12×10^3	m_3=1.52×10^3		

Table S2. True density (ρ_t), bulk density (ρ_b) and porosity (φ) for MIL-101(Cr)/GO and MIL-101(Cr)

Adsorbent	ρ_t (g/cm^3)	ρ_b (g/cm^3)	φ
MIL-101(Cr)	1.303 (± 0.0383)	0.182 (± 0.0094)	0.860 (± 0.0113)
MIL-101(Cr)/GO-5	1.305 (± 0.0305)	0.190 (± 0.0102)	0.854 (± 0.0111)
MIL-101(Cr)/GO-10	1.310 (± 0.0339)	0.179 (± 0.0076)	0.863 (± 0.0093)
MIL-101(Cr)/GO-15	1.321 (± 0.0293)	0.174 (± 0.0084)	0.868 (± 0.0092)
MIL-101(Cr)/GO-20	1.329 (± 0.0358)	0.170 (± 0.0072)	0.872 (± 0.0090)
MIL-101(Cr)/GO-35	1.340 (± 0.0392)	0.159 (± 0.0078)	0.881 (± 0.0093)