

TiO₂@MOF Photocatalyst for the Synergetic Oxidation of Microcystin-LR and Reduction of Cr(VI) in Aqueous Media

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Table S1. The precise position, FWHM and %area of Ti 2p fitted for different TiO₂ and MIL-101(Fe)/ TiO₂.

Name	Pos. (eV)	FWHM	AERA
Ti2p (TiO ₂)	464.5	1.48	32.15%
	458.8	0.88	67.85%
Ti2p (MIL-101(Fe)/ TiO ₂)	464.8	2.12	30.90%
	459.1	1.66	69.10%

Table S2. The precise position, FWHM and %area of O 1s fitted for different TiO₂ and MIL-101(Fe)/ TiO₂.

Name	Pos. (eV)	FWHM	AERA
O1s (TiO ₂)	529.9	1.20	43.44%
	530.4	1.50	43.44%
	532.2	1.05	13.13%
O1s (MIL-101(Fe))	532.3	1.97	84.81%
	531.4	2.02	15.19%
O1s (MIL-101(Fe)/TiO ₂)	532.2	1.90	57.65%
	531.3	2.00	21.96%
	530.1	1.22	43.44%

Table S3. The precise position, FWHM and %area of Fe 2p fitted for MIL-101(Fe).

Name	Pos. (eV)	FWHM	AERA
Fe 2p _{3/2}	712.3	3.20	44.9%
Fe 2p _{1/2}	725.9	5.00	31.9%
Fe(III)	715.6	5.00	15.9%
Fe(III)	729.2	2.60	1.9%
Fe 2p _{3/2}	719.5	3.00	3.2%
Fe 2p _{1/2}	732.9	3.00	2.2%

Table S4. The precise position, FWHM and %area of Fe 2p fitted for MIL-101(Fe)/TiO₂.

Name	Pos. (eV)	FWHM	AERA
Fe 2p _{3/2}	711.5	2.50	23.5%
Fe 2p _{1/2}	725.4	4.00	24.5%
Fe(III)	714.0	4.00	26.7%
Fe(III)	728.3	4.00	5.1%
Fe 2p _{3/2}	719.0	4.00	9.2%
Fe 2p _{1/2}	731.9	6.00	11.8%

Table S5. Rate constant k_{Cr} and k_{MC-LR} of photocatalytic reduction of Cr (VI) and MC-LR

Photocatalyst	Conditions	k_{Cr} (min ⁻¹)	k_{MC-LR} (min ⁻¹)	Reference
Zn-MOF	[Catalyst] = 1 g/ L; [Cr(VI)] ₀ = 20 ppm; pH= 4	0.0001	--	[1]
CuS/TiO ₂	[Catalyst] = 1 g/ L; [Cr(VI)] ₀ = 30 ppm; pH= 5.2	0.003	--	[2]
TiO ₂ /β-FeOOH	[Catalyst] = 0.2 g/ L; [Cr(VI)] ₀ = 100 ppm ; pH 4.0;	0.210	---	[3]
MIL-100(Fe)/g-C ₃ N ₄	[Catalyst] = 0.2 g/ L; [Cr(VI)] ₀ = 10 ppm ; pH=2.0;	0.037	--	[4]
Fe ₂ O ₃ /Bi ₂ WO ₆	[Catalyst] = 5 g/ L; [MC-LR] ₀ = 2 ppm; pH=3.7;	--	0.026	[5]
MIL-100/MIL-53 (Fe)	[Catalyst] = 0.02 g/ L; [MC-LR] ₀ = 4.5 ppm; pH=7;	--	0.184	[6]
GO–TiO ₂	[Catalyst] = 0.2 g/ L; [MC-LR] ₀ = 10 ppm; pH=5.8;	--	0.023	[7]
AgBr/Ag ₃ PO ₄ /TiO ₂	[Catalyst] = 0.3 g/L ; [MC-LR] ₀ = 0.12 ppm; pH = 6	--	0.637	[8]
Our work	[Catalyst] = 0.05 g/L; [MC-LR] ₀ = 1.5 ppm; [Cr(VI)] ₀ = 2 ppm; pH = 4.9	0.530	0.060	Our work

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