

Graphene oxide with zinc partially substituted magnetite (GO-Fe_{1-x}Zn_xO_y) for the UV-assisted heterogeneous Fenton-like reaction

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Electronic Supplementary Information

Table S1. Raw data for the catalytic test of GO-Fe_{1-x}Zn_xO₄ at different zinc molar ratios (*x*) for the heterogeneous Fenton-like reaction. The starting zinc ration (*z*) for the synthesis material is also listed.

Time (min)	C _t /C ₀							
	Conventional				UV-assisted			
	<i>z</i> = 0	<i>z</i> = 0.1	<i>z</i> = 0.2	<i>z</i> = 0.4	<i>z</i> = 0	<i>z</i> = 0.1	<i>z</i> = 0.2	<i>z</i> = 0.4
	<i>x</i> = 0	<i>x</i> = 0.09	<i>x</i> = 0.159	<i>x</i> = 0.285	<i>x</i> = 0	<i>x</i> = 0.09	<i>x</i> = 0.159	<i>x</i> = 0.285
0	1	1	1	1	1	1	1	1
15	0.849	0.806	0.735	0.842	0.854	0.779	0.773	0.834
30	0.769	0.706	0.573	0.738	0.708	0.651	0.598	0.698
45	0.702	0.632	0.464	0.669	0.486	0.472	0.391	0.527
60	0.653	0.553	0.395	0.617	0.348	0.276	0.199	0.319
90	0.603	0.460	0.346	0.571	0.043	0.044	0.027	0.061
120	0.556	0.404	0.313	0.531	0.017	0.009	0.005	0.016
180	0.496	0.348	0.280	0.480	-	-	-	-

Table S2a – XPS elemental composition of GO-Fe_{1-x}Zn_xO_y

Starting material Zn ²⁺	XPS Atomic concentration (%)				Remarks
	O 1s	C 1s	Fe 2p	Zn 2p	
z=0	46.04	34.98	18.97	0	z=0
z=0.1	44.18	36.33	17.72	1.76	$z=1.76/17.72 = 0.099 = \sim 0.1$
z=0.2	43.66	38.84	14.72	2.78	$z=2.78/14.72 = 0.189 = \sim 0.19$
z=0.4	40.51	38.57	14.95	5.97	$z=5.97/14.95 = 0.399 = \sim 0.4$

Table S2b – XPS elemental composition of Fe_{1-x}Zn_xO_y

Starting material Zn ²⁺	XPS Atomic concentration (%)				Remarks
	O 1s	C 1s	Fe 2p	Zn 2p	
z=0	59.40	0	40.76	0	z=0
z=0.1	57.76	0	42.21	0.03	$z=0.03/42.24 = 0.00071$
z=0.2	58.12	0	41.06	0.82	$z=0.82/41.06 = 0.01997 = \sim 0.02$
z=0.4	57.70	0	35.25	7.05	$z=7.05/35.25 = 0.2$