Visible Light-Driven Photocatalytic Degradation of Rhodamine B and 5-Fluorouracil Using ZIF-8/GO: Unveiling Mechanisms

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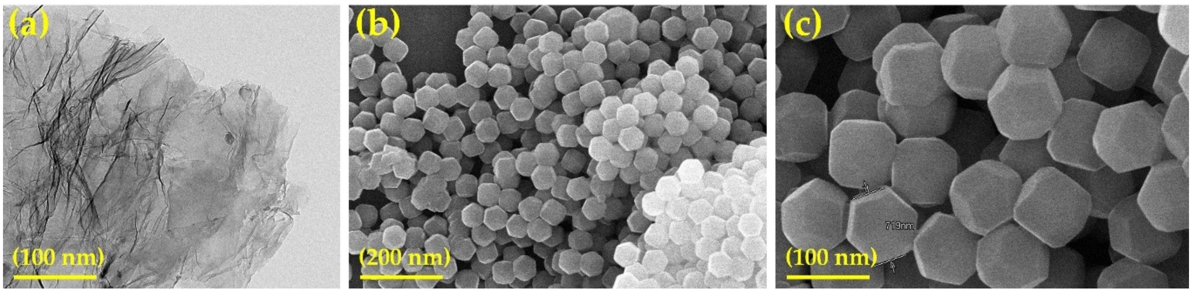

Figure S1: Morphology analysis for (a) TEM image of GO at 100 nm magnification and (b-c) FESEM images of the ZIF-8 at 200 nm and 100 nm magnifications.

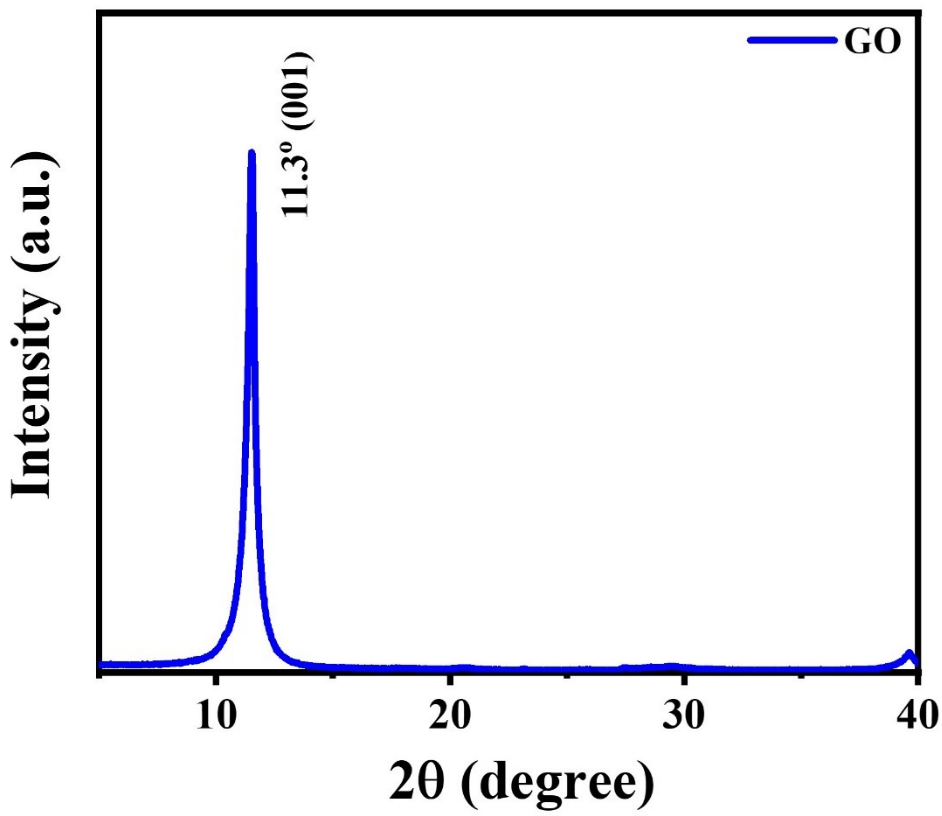

Figure S2: XRD pattern of the GO.

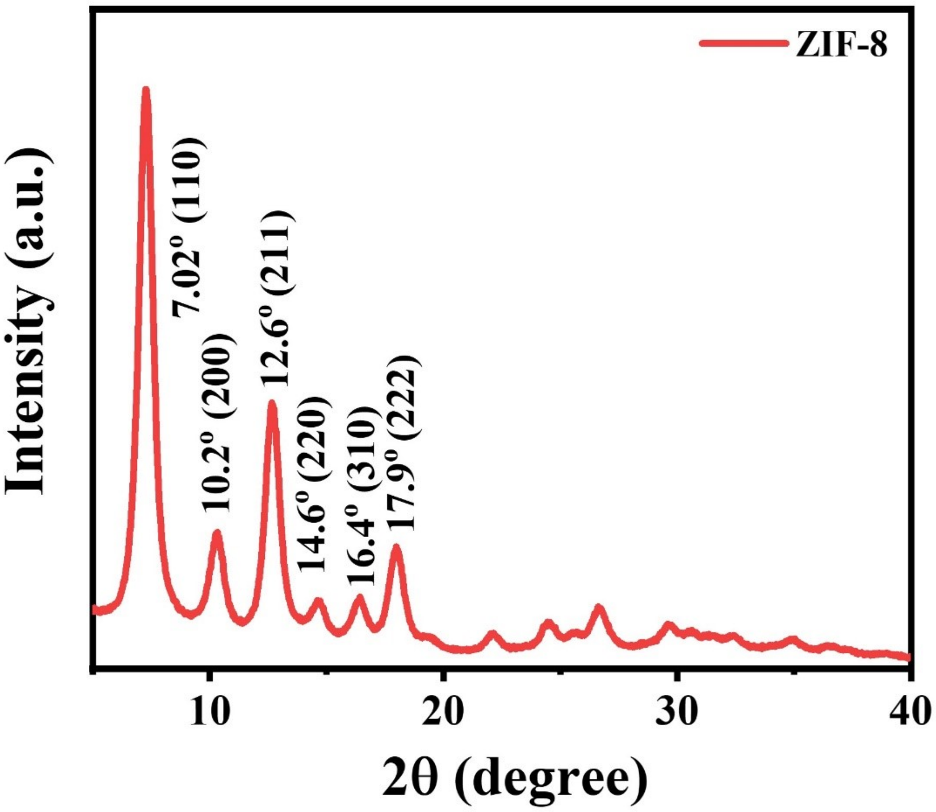

Figure S3: XRD pattern of the ZIF-8.

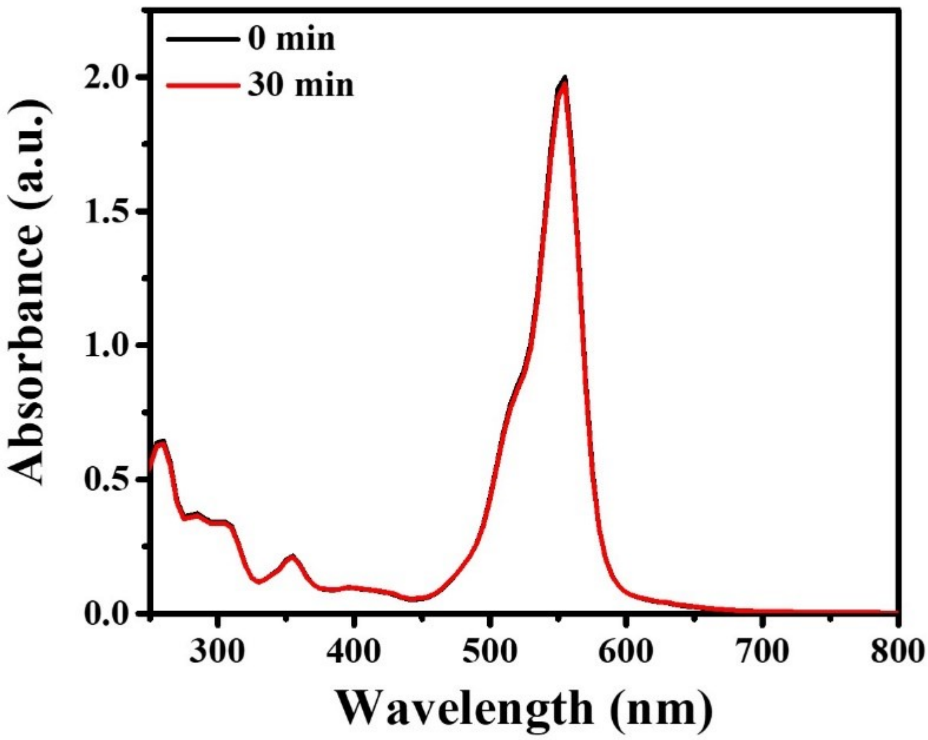

Figure S4: Absorbance spectrum of the GO in the absence of the visible light.

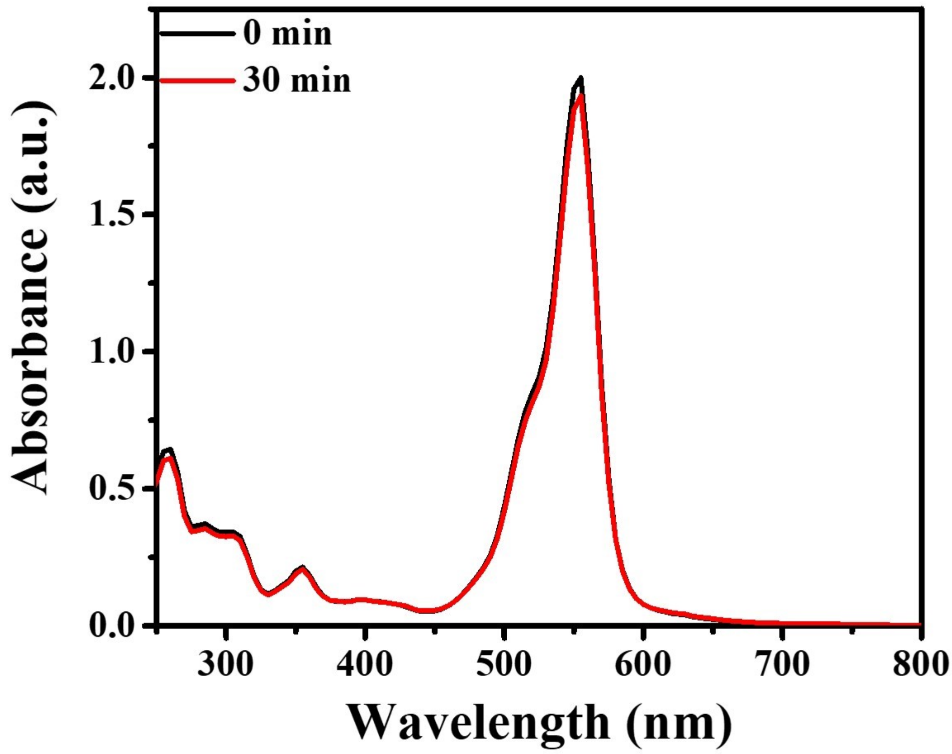

Figure S5: Absorbance spectrum of the ZIF-8 in the absence of the visible light.

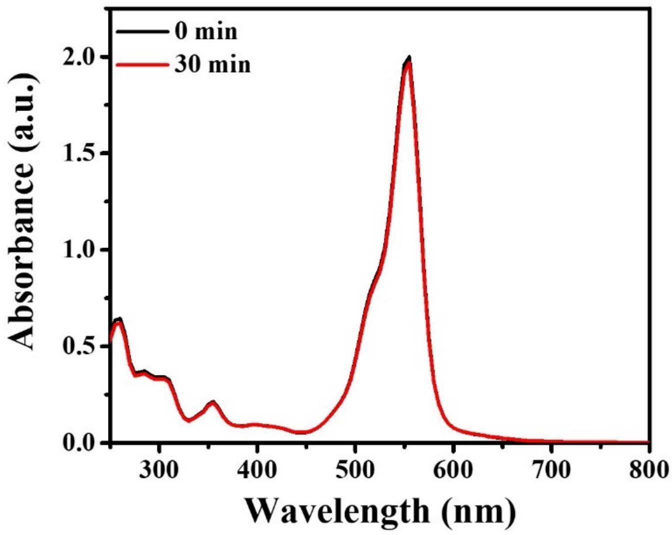

Figure S6: Absorbance spectrum of the ZIF-8/GO composite in the absence of the visible light.

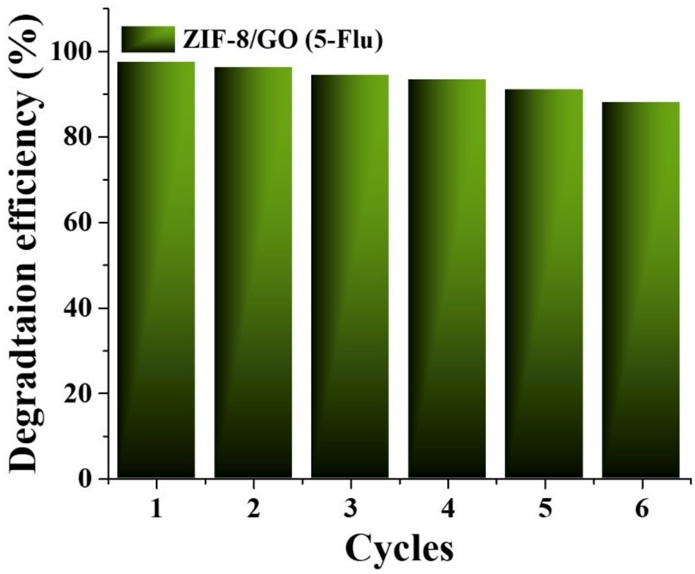

Figure S7: Degradation efficiency of the 5-Flu with the ZIF-8/GO over six cycles.

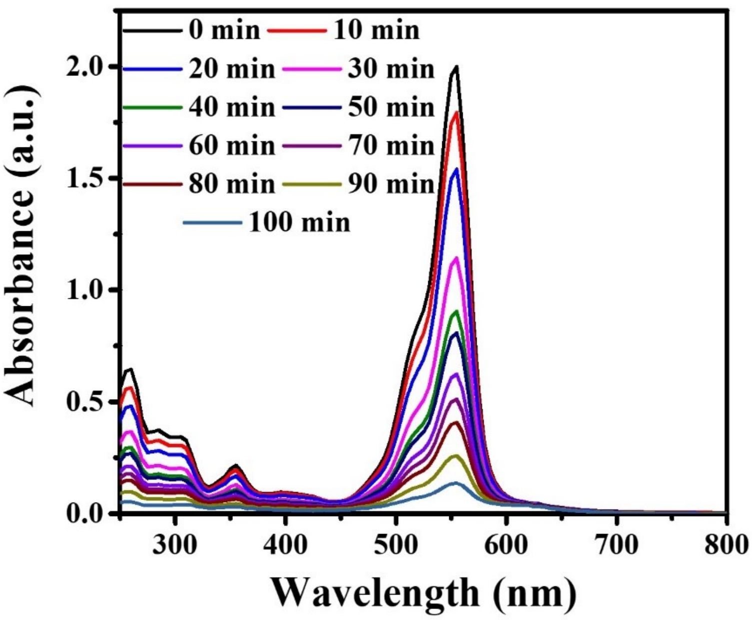

Figure S8: Absorbance spectra of Rho-B during photocatalysis by ZIF-8/GO in the presence of $K_2Cr_2O_7$ under visible light.

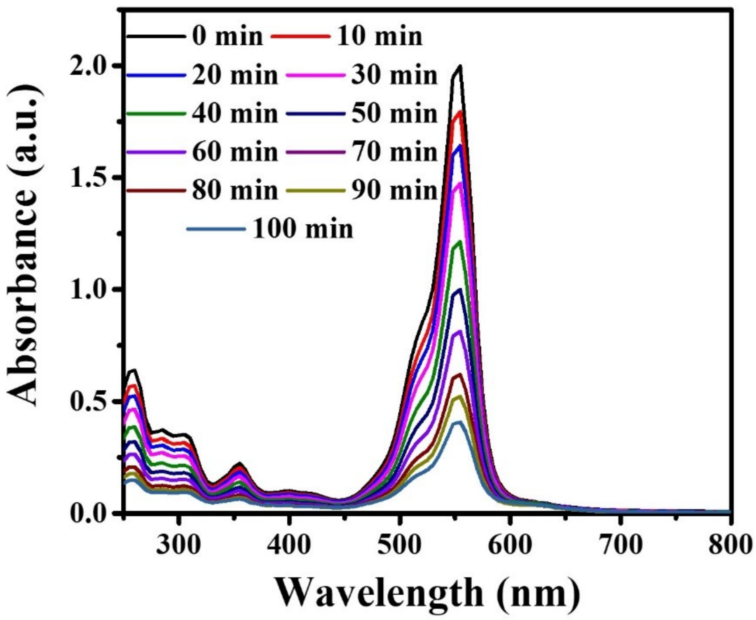

Figure S9: Absorbance spectra of Rho-B during photocatalysis by ZIF-8/GO in the presence of EDTA-2Na under visible light.

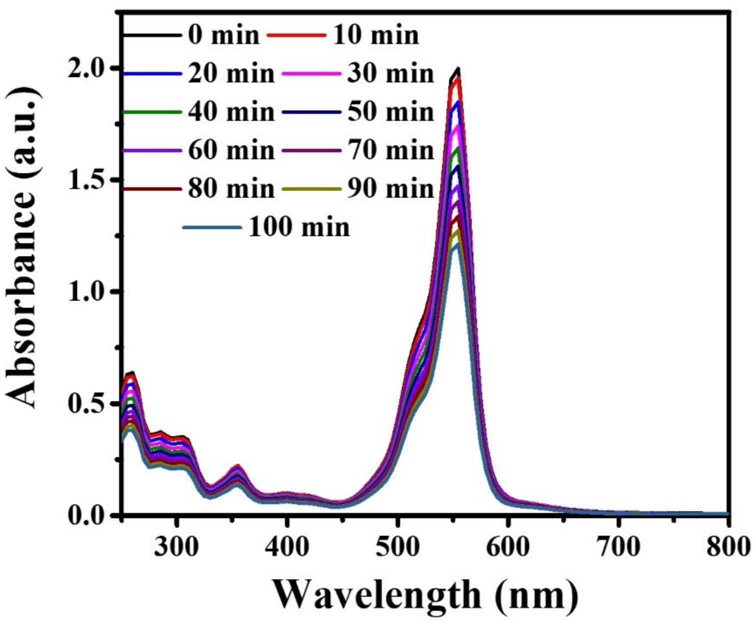

Figure S10: Absorbance spectra of Rho-B during photocatalysis by ZIF-8/GO in the presence of p-BQ under visible light.

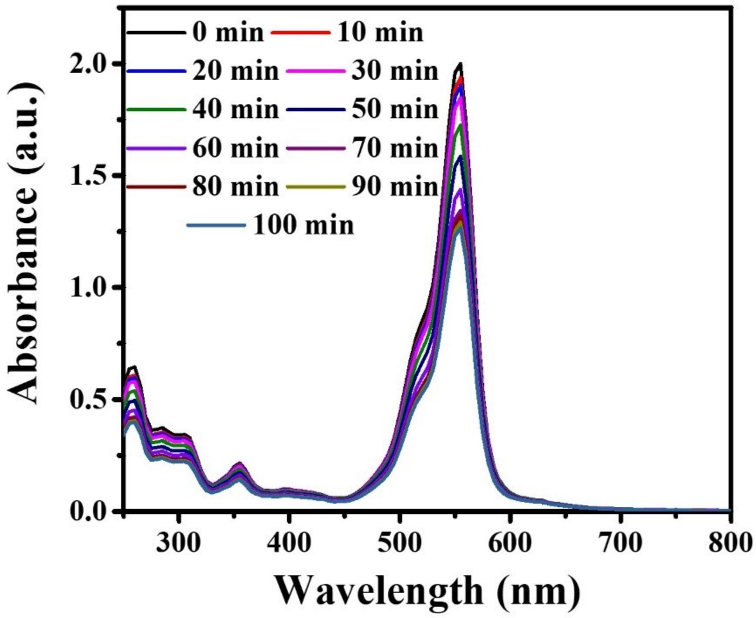

Figure S11: Absorbance spectra of Rho-B during photocatalysis by ZIF-8/GO in the presence of FFA under visible light.

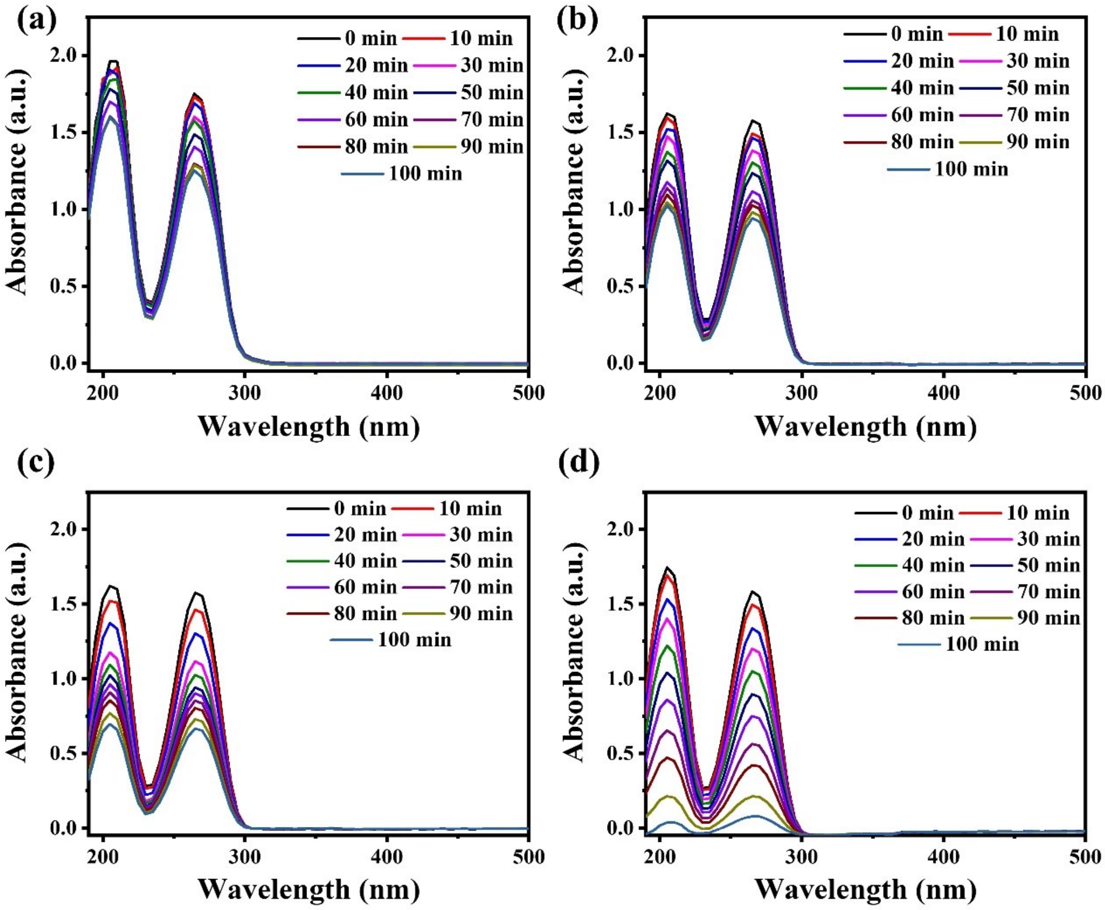

Figure S12: Absorbance spectra of 5-Flu during photocatalysis by ZIF-8/GO under visible light in the presence of the scavengers: **(a)** FFA, **(b)** p-BQ, **(c)** EDTA-2Na and **(d)** $K_2Cr_2O_7$.

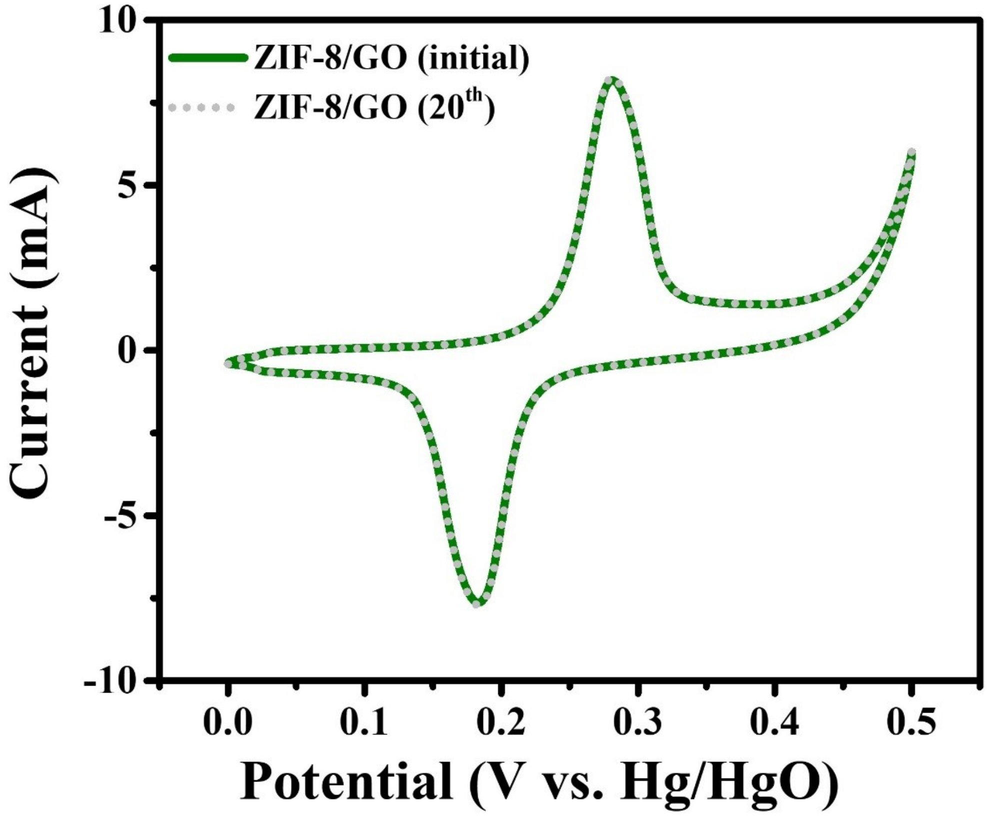

Figure S13: *CV profile of the ZIF-8/GO over the multiple cycles (20 cycles).*

Table S1: Comparable photocatalytic performance of the ZIF-8 related composites with the state-of-the-art literature.

Sr. No.	Materials Name	Dye/Drug	Degradation (%)	Time (min)	Irradiation Source	Ref.
1	**GO**	**Rho-B**	**37.4**	**100**	**Visible light**	**Present Work**
2	**ZIF-8**		**51.8**			
3	**ZIF-8/GO**		**100**			
4	**GO**	**5-FLU**	**42.1**			
5	**ZIF-8**		**67.7**			
6	**ZIF-8/GO**		**97.4**			
7	Nano $Fe_xZn_{1-x}O$	Bisphenol	99.1	90	Solar	[1]
8	N/Pd-codoped TiO_2	Eosin yellow	99.2	180	Visible light	[2]
9	Pt@CuO-SiO_2	Acridine orange	100	30	Visible light	[3]
10	Fe_3O_4/Mn_3O_4/ZnO-rGO	TWW	97.08	79.43	-----	[4]

11	MgAl-LDH@Fe_3O_4	Liquor of gas field wastewater	88.18	240	-----	5
12	Fe_3O_4 NPs@MOF	Landfill leachate	76	120	-----	6
13	Fe_3O_4-Mn_3O_4	Instant coffee production wastewater	88	60	-----	7
14	Pd/Fe NPs	2,4-D	99.5	90	-----	8
15	Pd_3/CMK-3	2,4-D	95.2	90	-----	9
16	Pd/CNT-Ni	4-Chlorophenol	99.9	-----	-----	10
17	Pd/ZrO_2	Monochloroacetic acid	100	120	-----	11
18	Pd/CeO_2	Diclofenac	100	60	-----	12
19	Au/Pd bimetallic NPs	Chloramphenicol	100	180	-----	13
20	Pd/Al_2O_3	Diclofenac	100	30	-----	14
21	0.5% Pd/TiO_2	Methyl Orange	92.6	120	UV	15
22	Pt doped BiOBr	p-Nitrophenol	100	30	Stimulated sunlight	16
23	Pd doped BiOBr	Phenol	100	300	Halogen tungsten	17

					lamp	
24	Pt-BiO_2-TiO_2	Amoxicillin	87.6	120	Tungsten lamp	[18]
25	Pd-$BiVO_4$	Paracetamol	98	300	Xe lamp	[19]
26	z-g-C_3N_4/TiO_2/Fe_3O_4@SiO_2	Ibuprofen	95	60	Philip fluorescence lamp	[20]
27	C_3N_4/Cu_2O/Fe_3O_4	Sulfamethoxazole	99.5	60	Xe lamp	[21]
28	BiOBr/I/Fe_3O_4@SiO_2	Benzophenone-3	60	60	-----	[22]
29	Pd-(Ti/Fe/Cr)	4-Nitrophenol	99	10	-----	[23]
30	Pt/TiO_2-ZnO@ZIF-8	Phenol	99.7	24	UV	[24]

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