Supplementary Information

The Gadolinium (Gd^{3+}) and Tin (Sn^{4+}) co-doped $BiFeO_3$ nanoparticles as new solar light active photocatalyst

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Table S1. Comparison of BET analysis of pure and Gd^{3+} and Sn^{4+} co-doped BFO nanoparticles.

Samples	Surface area	Pore size	Pore volume
	m^2/g	nm	cc/g
BFO	3.3	1.7	0.02
BGFO-5Sn	15	2.2	0.06
BGFO-10Sn	12	2.2	0.07

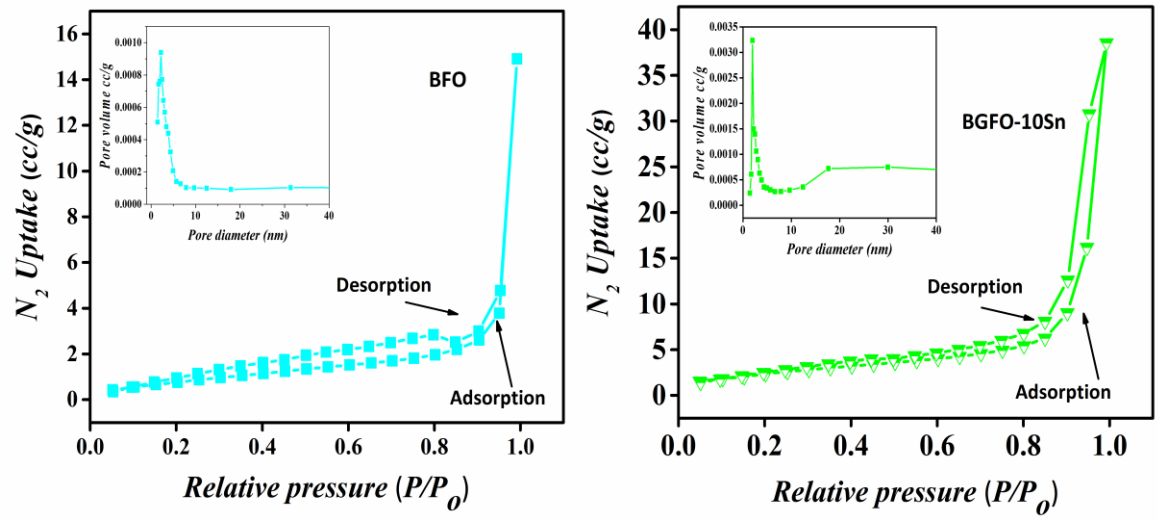

Figure S1. N_2 gas isotherms measured at 77K for pure BFO and BGFO-10Sn. The insets are the differential pore size distribution curves from BJH method.

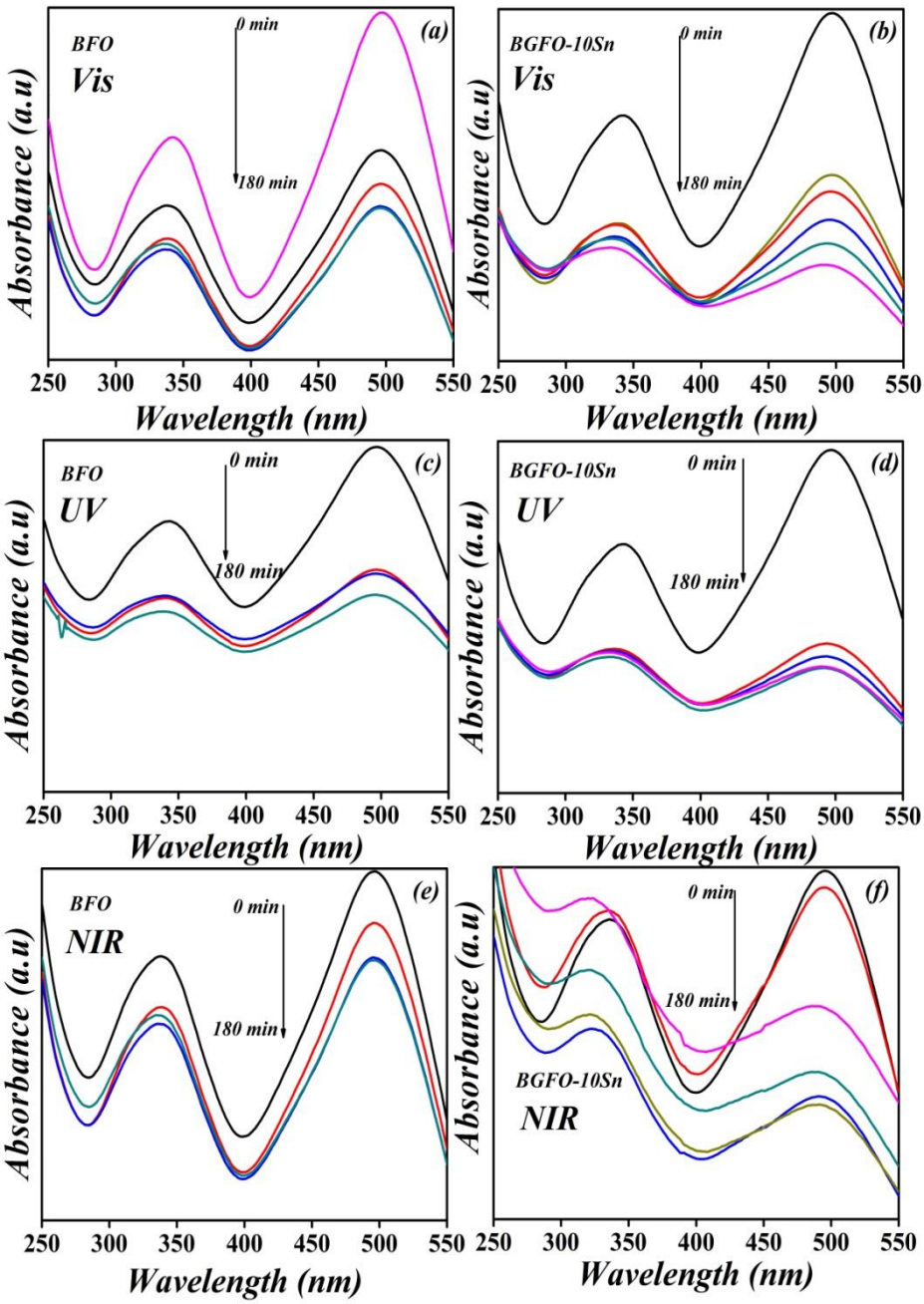

Figure S2. Absorption spectra of CR solution degraded in the presence of (a, c & e) BFO and (b, d & f) BGFO-10Sn under visible, UV, and NIR irradiation.

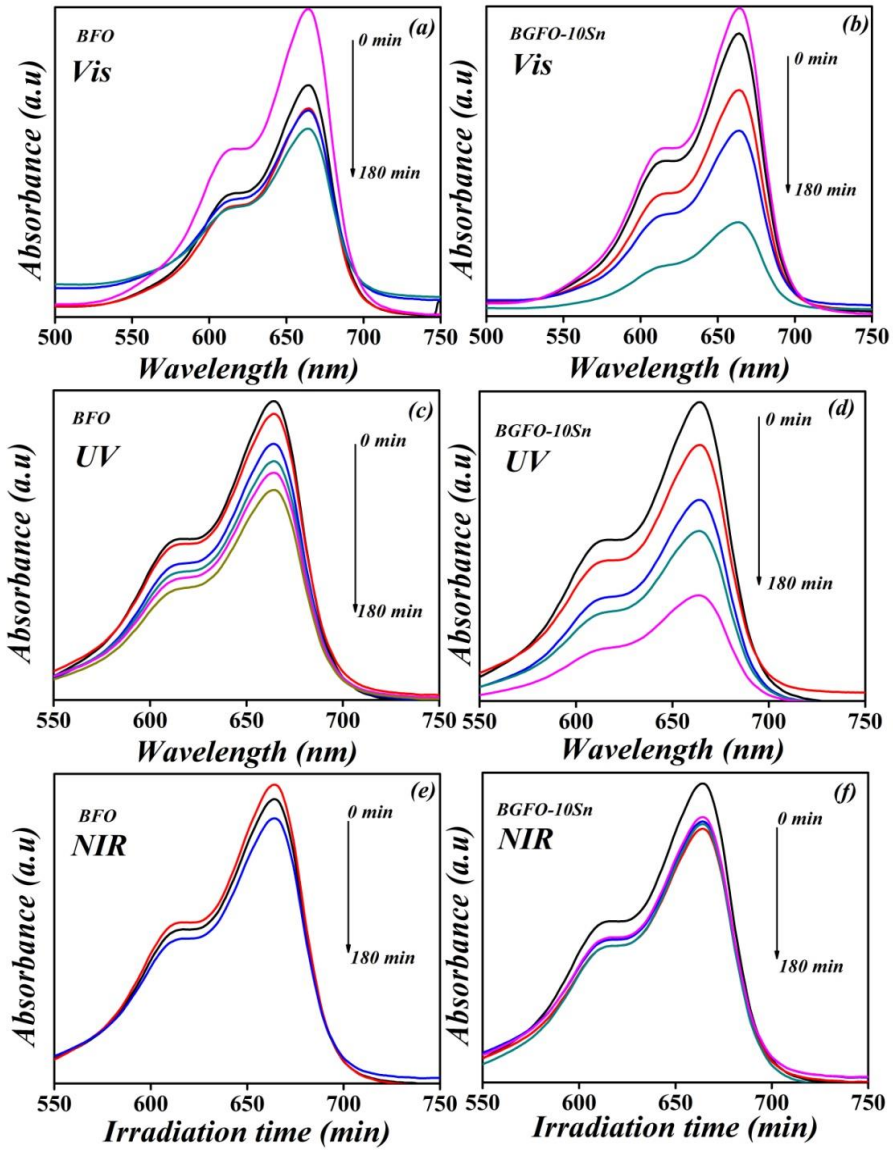

Figure S3. Absorption spectra of MB solution degraded in the presence of (a, c & e) BFO and (b, d & f) BGFO-10Sn under visible, UV, and NIR irradiation.

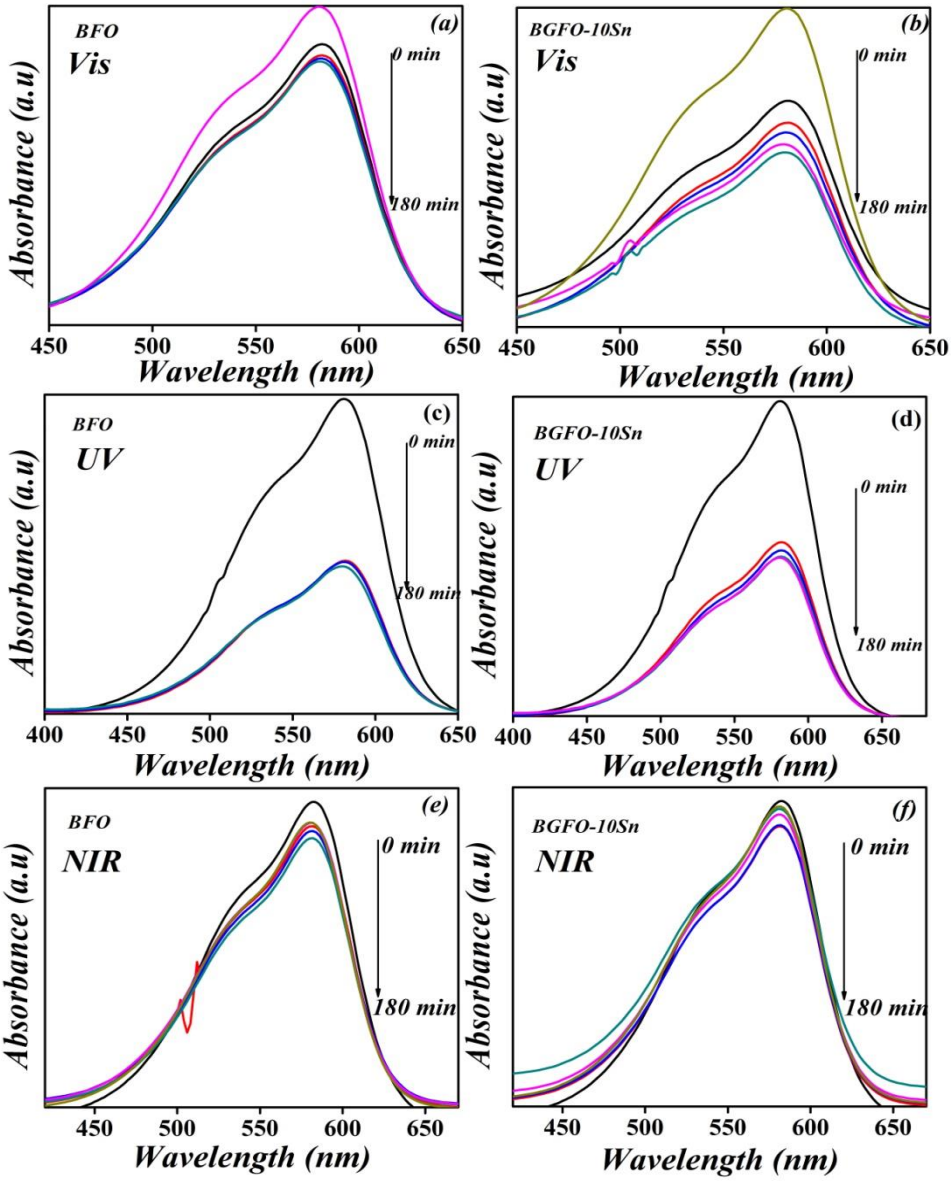

Figure S4. Absorption spectra of MV solution degraded in the presence of (a, c & e) BFO and (b, d & f) BGFO-10Sn under visible, UV, and NIR irradiation.