Supplementary information

Preparation of silver ferrite assisted tungsten oxide nanocomposite for proficient sonocatalytic degradation of organic pollutant activated by PMS followed by toxicity evaluation

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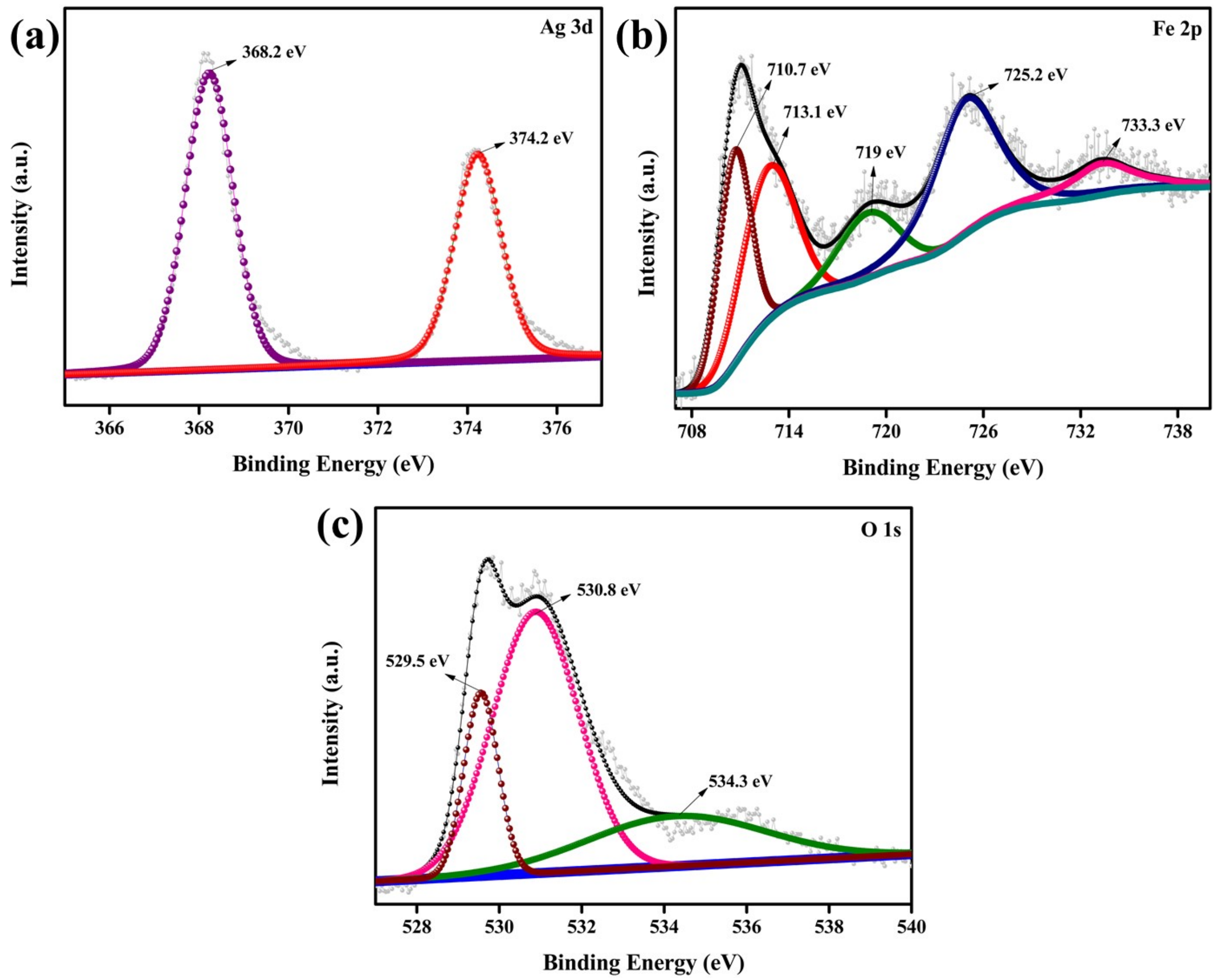

Figure S1: The high resolution XPS spectrum of (a) Ag 3d and (b) Fe 2p and (c) O 1s for AFO

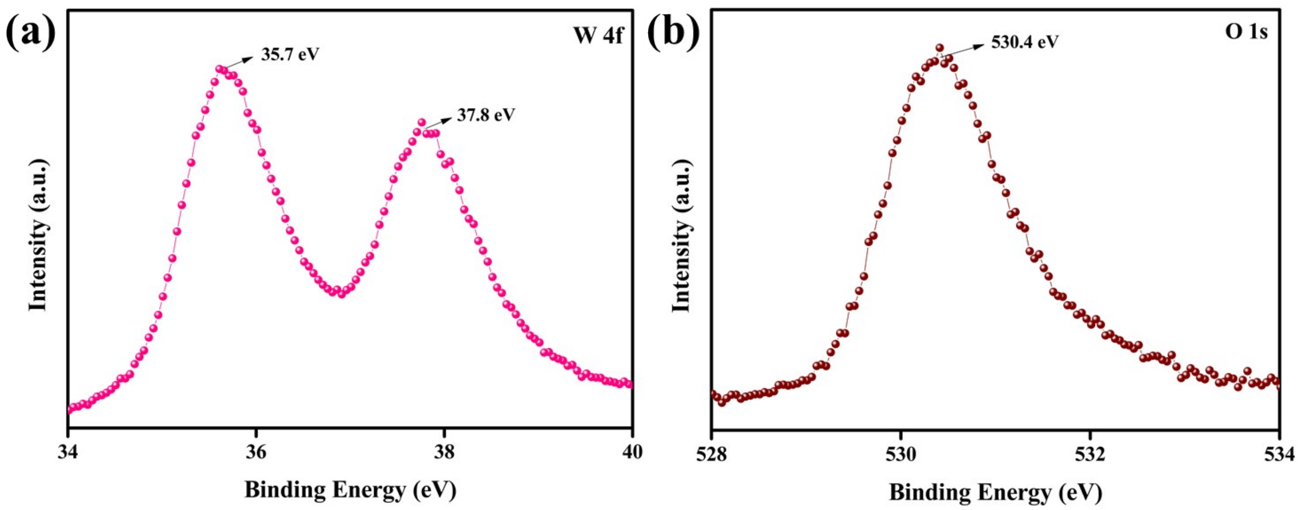

Figure S2: The high resolution XPS spectrum of (a) W 4f, (b) O 1s for WO_3

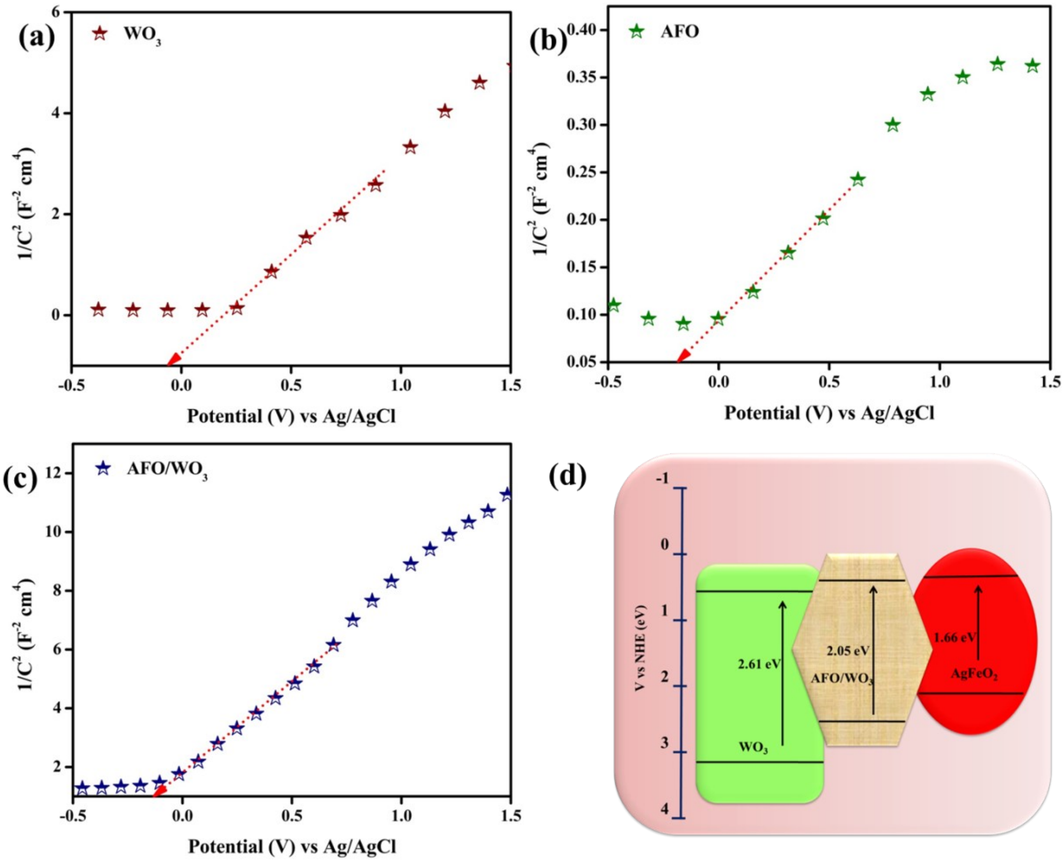

Figure S3: Mott–Schottky plot of (a) WO_3, (b)AFO, (c)AFO/WO_3 and (d) band potential of WO_3,AFO, AFO/WO_3

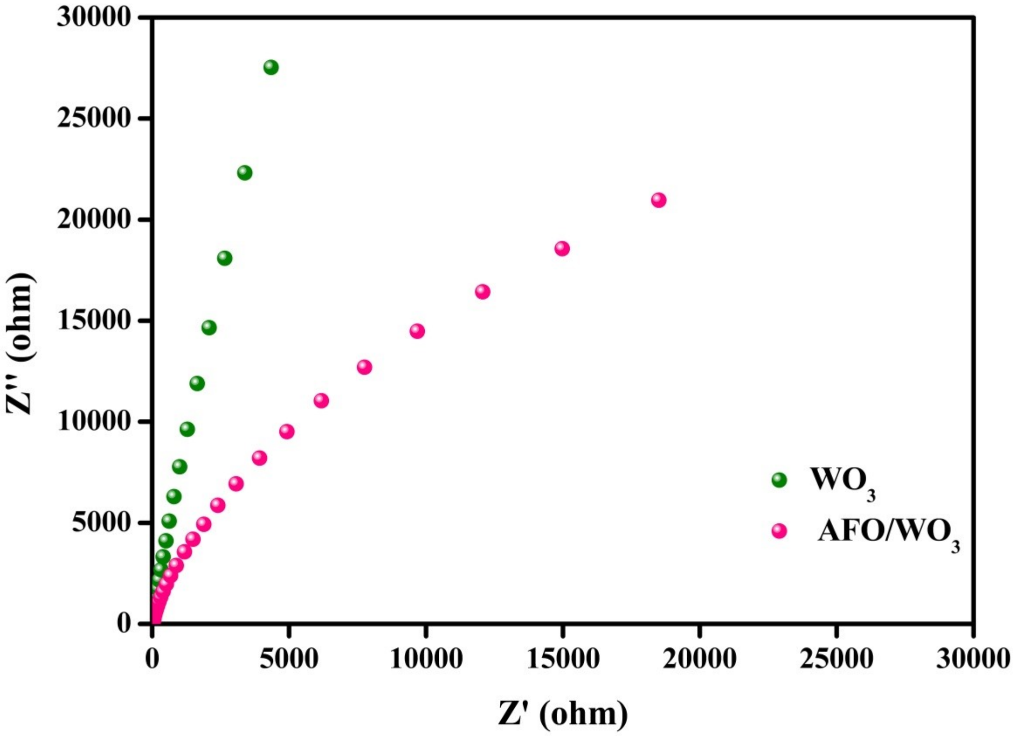

Figure S4: Electrochemical impedance spectroscopy analysis of WO_3andAFO/WO_3composite

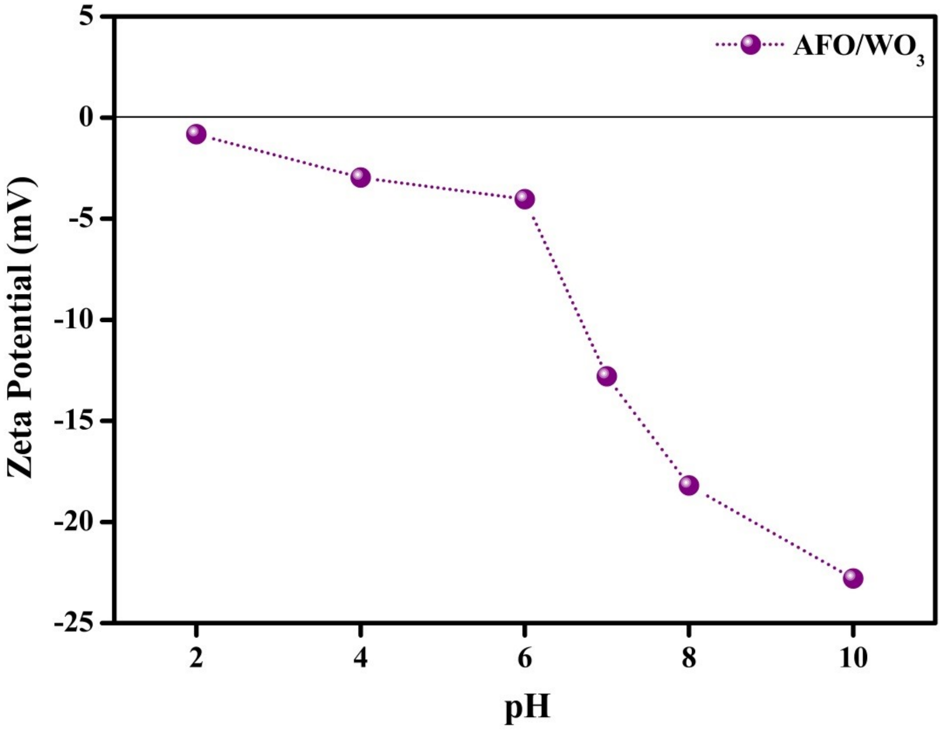

Figure S5: Zeta potential analysis of AFO/WO_3 composite at various pH conditions

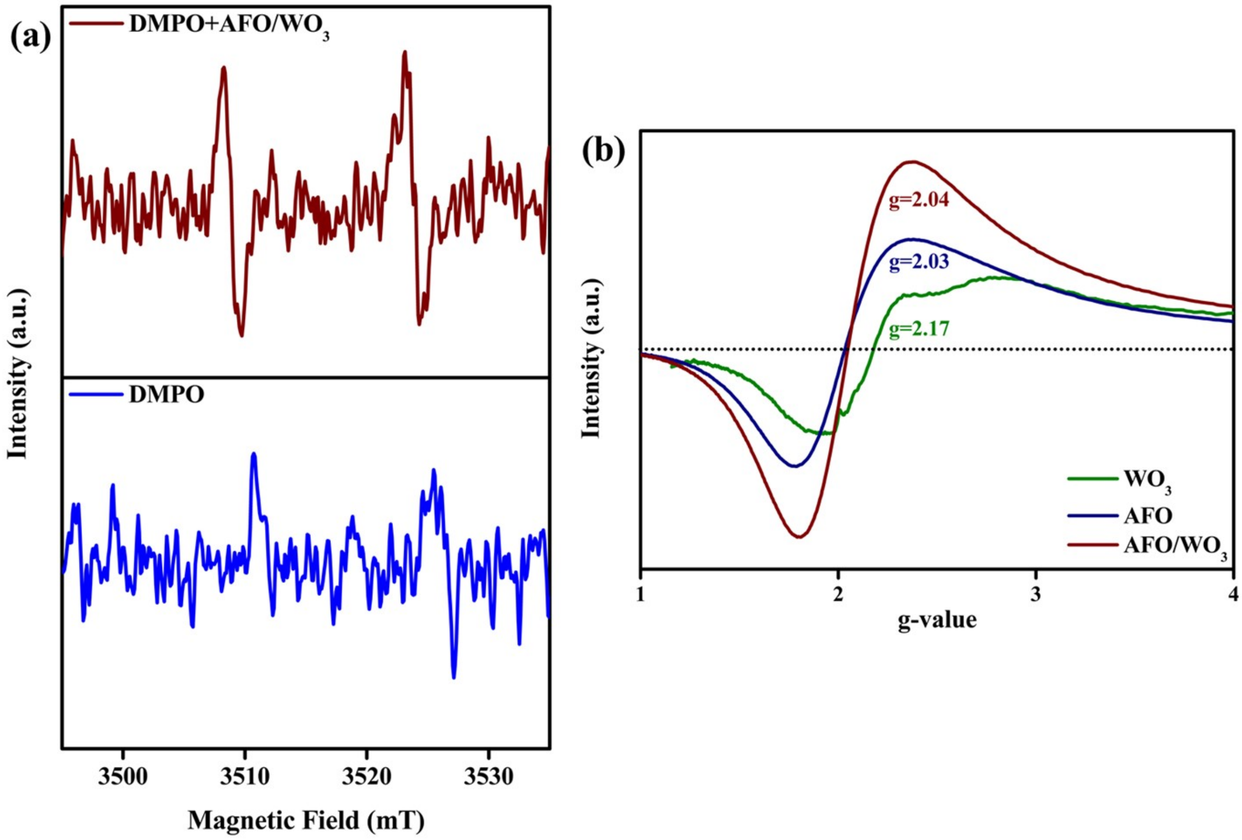

Figure S6: (a) Electron spin resonance (ESR) spectra of AFO/WO_3 composite by using DMPO as trapping agent (b) The solid ESR signals of AFO, WO_3, and AFO/WO_3 composite

Table S1: The comparison table of previously reported sonocatalyst with AFO/WO_3 composite

S. No	Sonocatalyst	Pollutant	Catalyst Dosage	Power/ Oxidant	Duration	Degradation	Ref
1.	MIL-101(Cr)/ $CoFe_2O_4$	RhB (25 mg/L) MO	0.5 g/L	37kHz/ H_2O_2	140 min	96% 88%	[23]
2.	$MnFe_2O_4$/MIL-101(Cr)	RhB (25 mg/L)	0.5 g/L	37kHz/ H_2O_2	180 min	96%	[26]
3.	Ordered mesoporous C/TiO_2	RhB (50 mg/L)	1g/L	300kHz	60 min	86%	[41]
4.	ZnSe-graphene/TiO_2	RhB (9.5mg/L)	2g/L	20kHz	150 min	82%	[55]
5.	Fe_3O_4-graphene/ZnO@ mesoporous-SiO_2	MB RhB MO (25mg/L)	0.5g/L	20kHz	60 min	95% 84% 87%	[56]
6.	CdS NRs/ $NiFe_2O_4$/NaX	RhB (25mg/L)	1g/L	37kHz/ H_2O_2	60 min	97.4%	[57]
7	TiO_2/AC	RhB (200mg/L)		30kHz	60 min	82.21%	[58]
8	CdS	RhB (5-20 mg/L)	0.1-0.15g	40kHz	240 min	70%	[59]
9.	β-Bi_2O_3	RhB (5mg/L)	3g/L	60kHz	90 min	98.7%	[60]
10.	TiO_2 Nanotubes	RhB (44.8mg/L)	2.14g/L	35kHz	180 min	94.6%	[61]
11.	$LuFeO_3$	RhB (5mg/L)	4g/L	60kHz	90 min	90%	[62]
12.	MIL101(Cr)/ RGO/$ZnFe_2O_4$	RhB (25mg/L)	0.5g/L	37kHz/ H_2O_2	50 min	94%	[63]

13.	Peat moss-derived biochar	RhB (100mg/L)	1g/L	40kHz	60 min	51.8%	[64]
14.	SiO_2/Ag core/ shell particles	RhB (10ppm)	15mg/L	35kHz/ H_2O_2	90 min	67%	[65]
15.	$Ag_2O/MgWO_4$	RhB (10mg/L)	0.1g/L	40kHz	120 min	91.74%	[66]
16	$Bi_{12}O_{17}Cl_2$	RhB (8mg/L)	2g/L	45kHz	30 min	90%	[67]
17.	**$AgFeO_2/WO_3$**	**RhB (470 mg/L) Mal G (360 mg/L) Mixed dye**	**0.1 g/L**	**PMS**	**35 Min**	**96% 95% 70%**	**This Work**