Supporting Information

Bismuth Ferrites ($Bi_2Fe_4O_9$) Nanosheets- An Efficient Adsorbent for Triclosan

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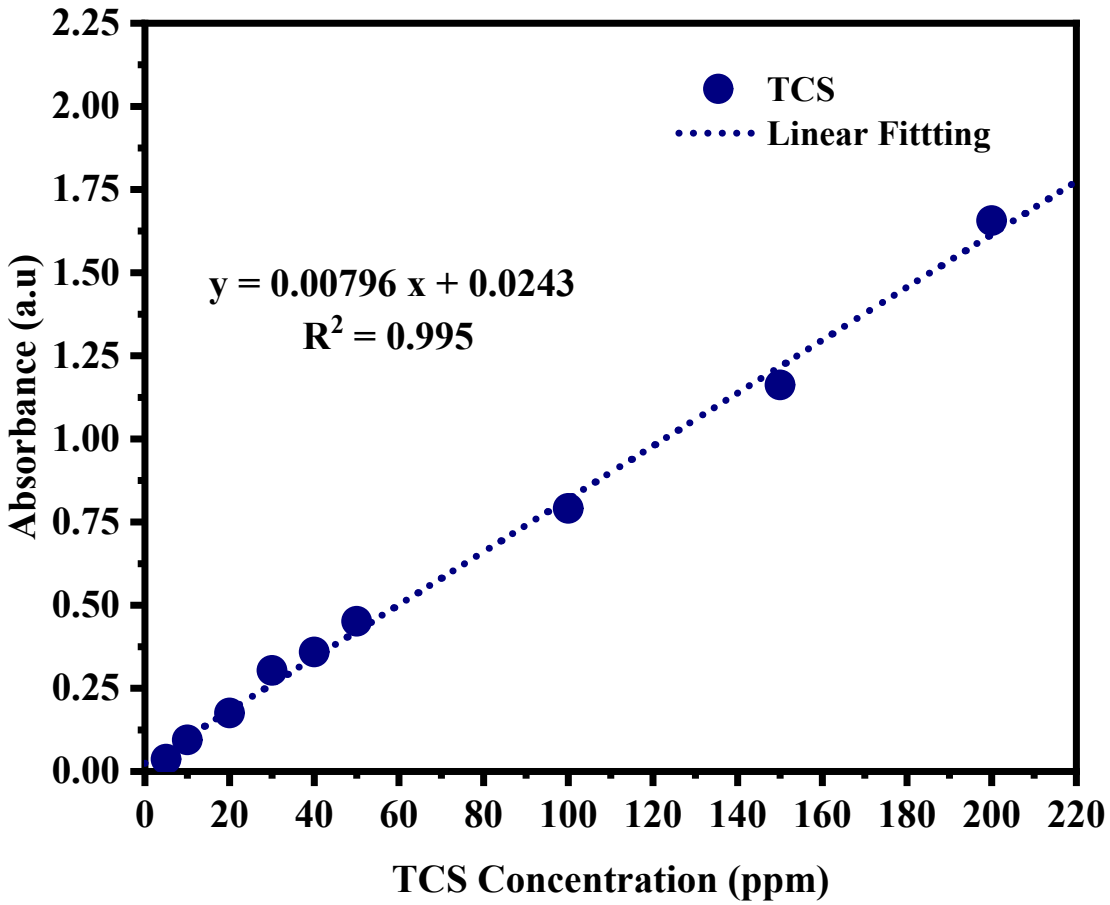

Figure S1. Calibration plot for triclosan (TCS).

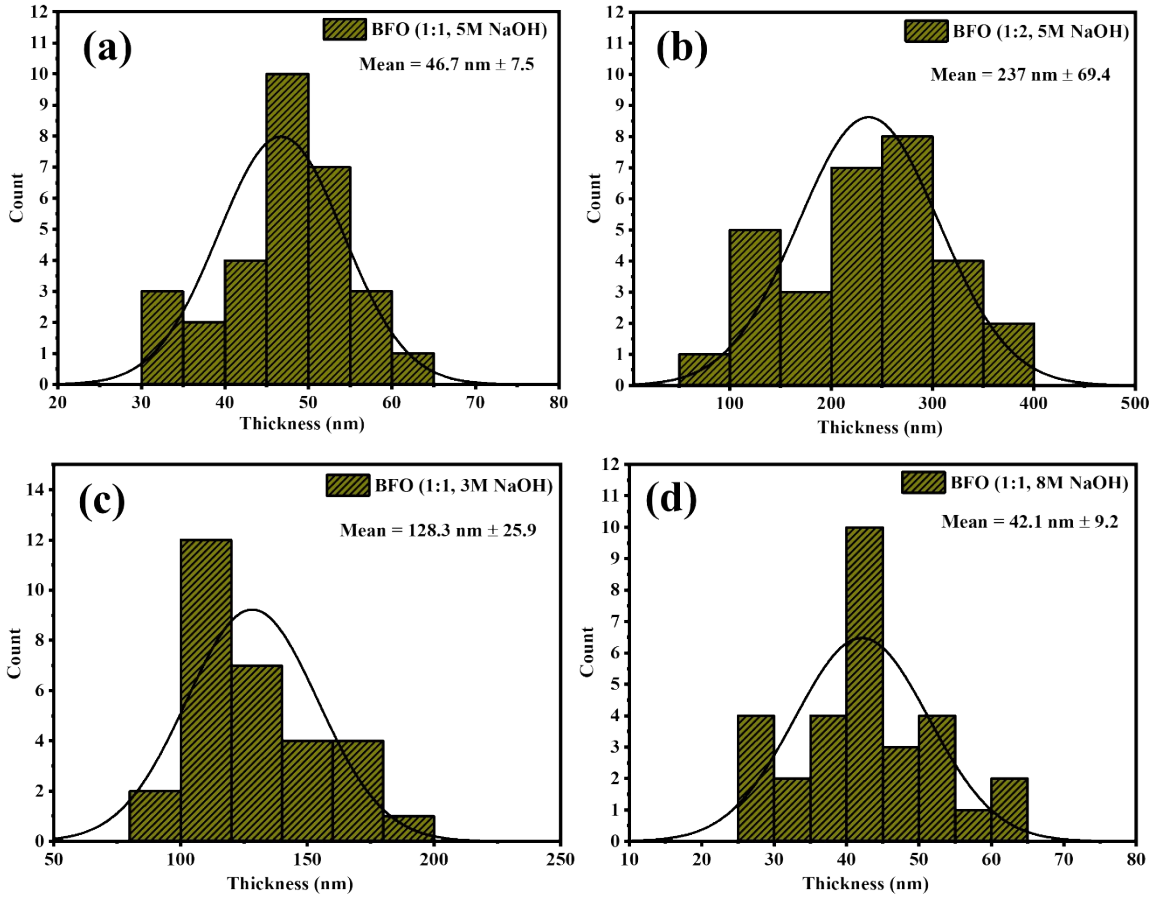

Figure S2. Thickness distribution plots of (a) BFO (1:1, 5M NaOH), (b) BFO (1:2, 5M NaOH), 5M NaOH, (c) BFO (1:1, 3M NaOH), (d) BFO (1:1, 8M NaOH)

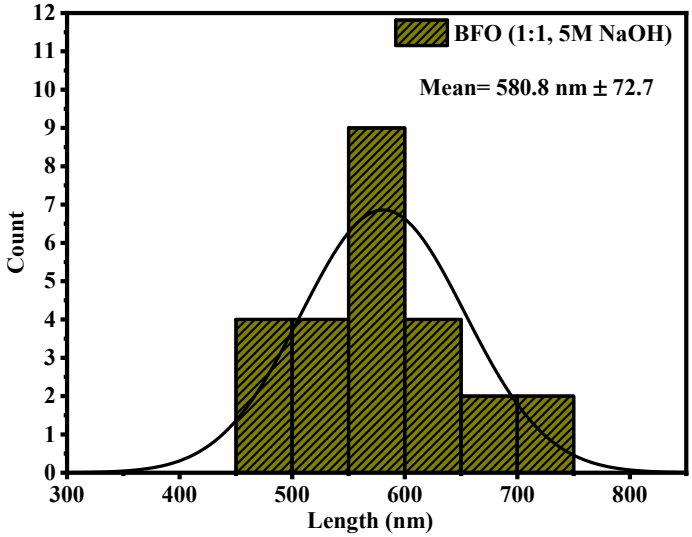

Figure S3. Length distribution plot for BFO (1:1, 5M NaOH).

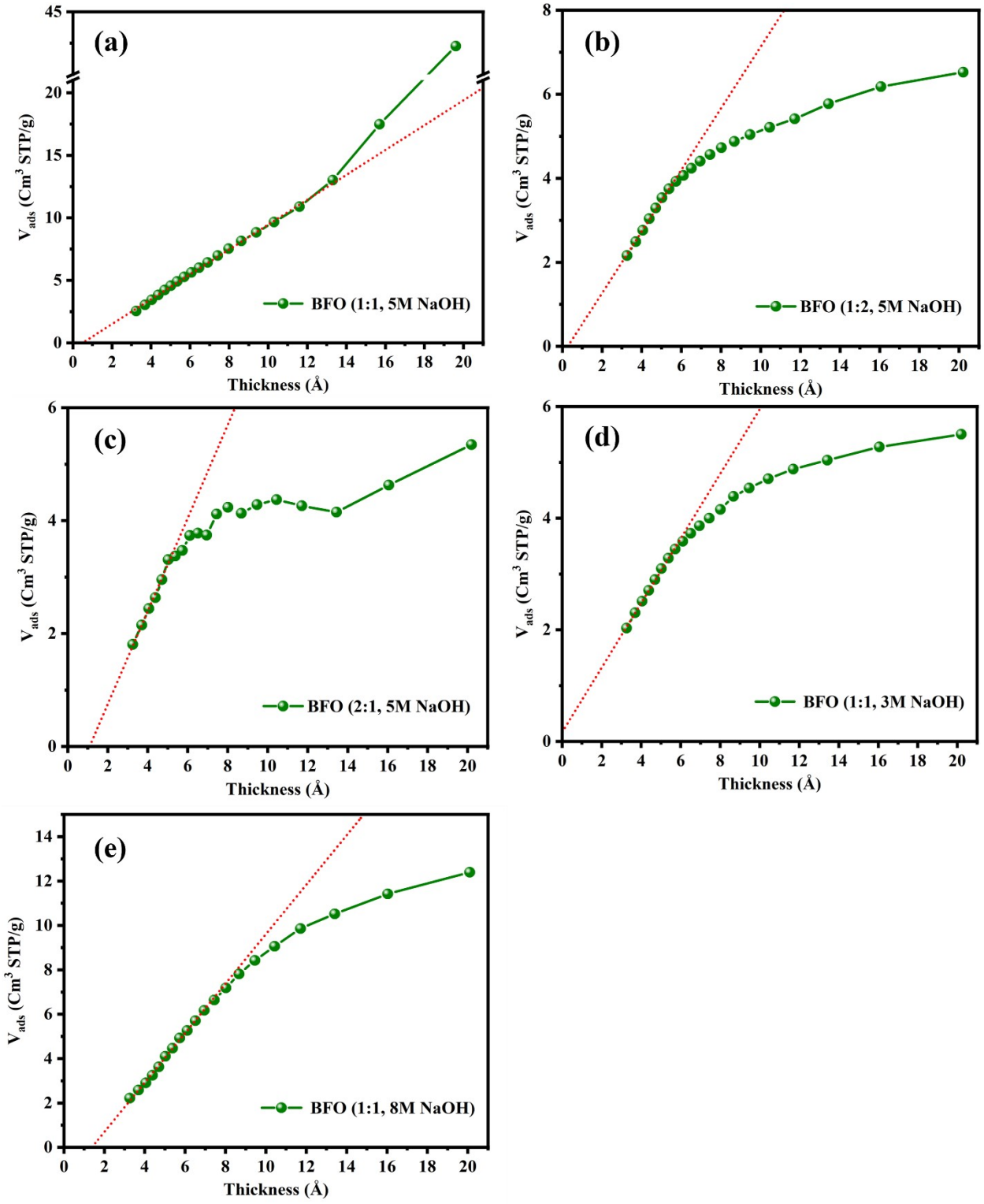

Figure S4. t-plot data (Micropore volume analysis) of different BFO samples.

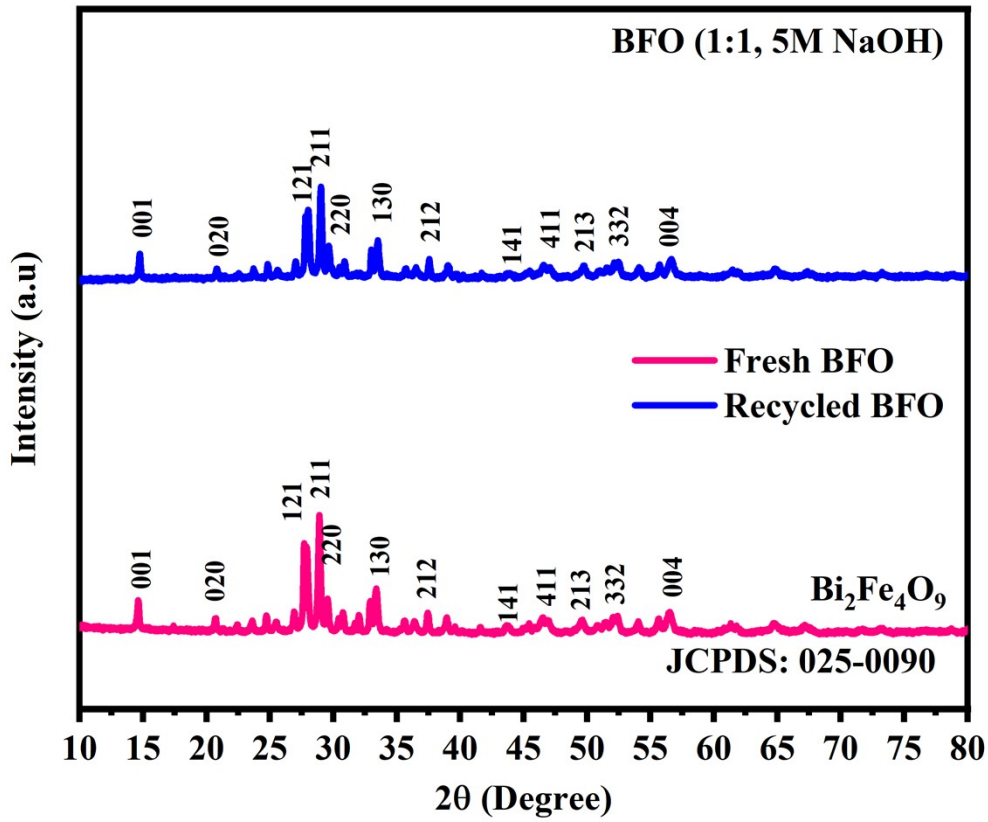

Figure S5. XRD data of the BFO (1:1, 5M NaOH) as fresh and recycled adsorbent.

Table S1. Crystallite size of BFO (1:1, 5M NaOH) calculated by the Debye-Scherrer formula.

2θ (degree)	hkl	FWHM or β (degree)	Crystallite Size (D), nm
27.92	121	0.2575	31.795
29.01	211	0.2768	29.641

Table S2. BET measurement data.

Sample	BET Surface area (m^2/g)	BJH Pore volume (cm^3/g)	Avg. Pore radius (nm)
BFO (1:1, 5M NaOH)	14.73	0.061	8.87
BFO (1:2, 5M NaOH)	11.19	0.0048	1.82
BFO (2:1, 5M NaOH)	10.11	0.0037	1.64
BFO (1:1, 3M NaOH)	9.71	0.0035	1.75
BFO (1:1, 8M NaOH)	12.47	0.013	3.07

Table S3. Adsorption isotherms parameters of TCS on different BFO samples (C_0 = 200 ppm, adsorbent loading = 0.2 g/L, T = 298 K).

		Value of parameters				
Isotherms	**Parameter**	**BFO (1:1, 5M NaOH)**	**BFO (1:2, 5M NaOH)**	**BFO (2:1, 5M NaOH)**	**BFO (1:1, 3M NaOH)**	**BFO (1:1, 8M NaOH)**
Experimental Data	$q_{m\ exp}$ (mg/g)	871.3	827.7	816.3	792.8	832.1
Langmuir	q_m (mg/g)	1144.4	878.4	999.1	853.1	1021.6
	K_L (L/mg)	0.146	0.364	0.139	0.237	0.127
	R^2	0.986	0.998	0.990	0.986	0.981
Freundlich	n	2.81	4.94	3.38	4.91	3.12
	K_f ((mg/g)· (L/mg)$^{1/n}$	291.7	404.1	293.1	364.8	271.3
	R^2	0.974	0.989	0.975	0.973	0.973
Temkin	Kt (L/g)	1.26	11.44	1.57	7.19	3.88
	b_1 (kJ/mol)	263.6	137.99	208.79	136.7	163.2
	R^2	0.982	0.993	0.983	0.977	0.962
Redlich–Peterson	K_r (L/g)	100.8	294.9	81.3	104.3	71.0
	A ($kJ.mol^{-1}$)	0.009	0.307	0.012	0.028	0.0037
	g	1.67	1.02	1.49	1.37	1.78
	R^2	0.993	0.998	0.998	0.992	0.986
Dubinin–Radushkevich	q_m (mg/g)	894.3	801.1	835.5	776.6	850.6
	K $(J/mol)^2$	-3.197E-06	-1.278E-06	-5.657E-06	-3.539E-06	-6.904E-06
	E (kJ/mol)	0.395	0.625	0.297	0.367	0.269

	R^2	0.998	0.964	0.998	0.980	0.997

Table S4. FTIR spectral characteristics of BFO before and after adsorption

Absorption frequency (cm^{-1})		
BFO before adsorption	**BFO after adsorption**	**Assignment**
803	795	Fe-O bond bending
609	601	Fe–O–Fe bending
486	482	Fe-O stretching in the FeO_6 octahedron
454	455	Fe–O stretching in the FeO_6 octahedral
426	425	bond stretching of FeO_6 octahedral sites