Supplementary Data

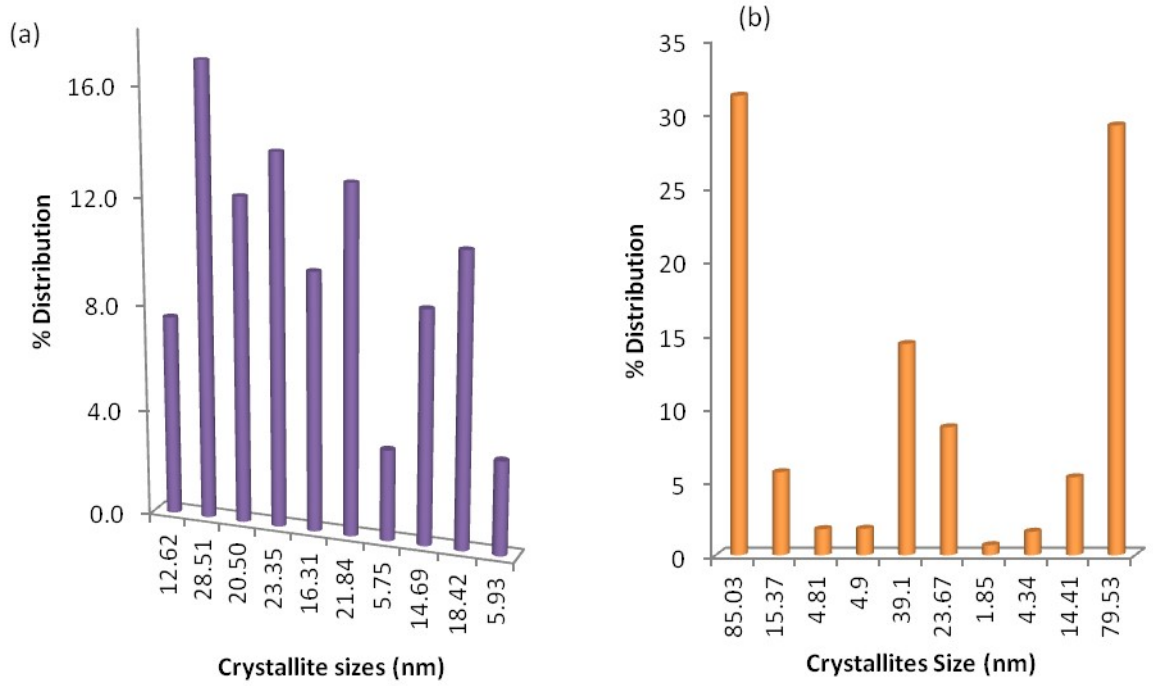

Figure S1: Crystallite Size distribution of the developed (a) TiB/MWCNTs and (b)B_2O_3/MWCNTs nanoadsorbent

Table 1S: d-spacing and phase identification of TiB/MWCNTs nanoadsorbent

S/N	Ring Diameter (nm)	hkl indexing
1	6.006	111 (FCC)
2	9.838	110 (BCC)
3	12.812	100 (FCC)
4	16.764	100 (FCC)
	B_2O_3/MWCNTs nanoadsorbent	
1	4.988	002 (FCC)
2	8.976	110 (BCC)
3	11.170	100 (FCC)
4	15.220	100 (FCC)

Table 2S: Comparison of batch adsorption parameters, maximum adsorption capacity, isotherm and kinetic model for Phenol and Cyanide removal by different nanoadsorbents in the literature

Nanoadsorbent	Batch Adsorption parameters				Adsorptive capacity (mg/g)		Isotherms	Kinetic Model	Reference
	pH	Contact time (min)	Dosage (mg)	Temp. (°C)	Pollutants Removed				
Multi-walled carbon nanotube/Titanium (IV) oxide composite	7	70	300	40	Phenol Cyanide	430.00 509.95	Langmuir	Pseudo second order	[22]
Multi-walled carbon nanotubes	3	90	600	25	Direct blue 71	3.42	Langmuir	Pseudo second order	[32]
Functionalised multi-walled carbon nanotubes	3	75	500	25	Phenol	76.92	Langmuir	Pseudo second order	[33]
Multi-walled carbon nanotubes	7	120	300	25	Phenol	56.90	Langmuir	Pseudo second order	[34]
Carbon nanotubes grafted with Polyethylene glycol	6	30	20	25	Phenol	21.23	Langmuir	Pseudo second order	[35]
B_2O_3/MWCNTs	7	70	300	60	Phenol	423.45	Langmuir	Pseudo second order	This study
TiB/MWCNTs	7	70	300	60	Phenol	434.45	Langmuir	Pseudo second order	This study
B_2O_3/MWCNTs	7	70	300	60	Cyanide	515.51	Langmuir	Pseudo second order	This study
TiB/MWCNTs	7	70	300	60	Cyanide	538.85	Langmuir	Pseudo second order	This study