Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Data

Synthesis, characterization and sorption studies of Zirconium (IV) impregnated highly functionalized mesoporous sorbent

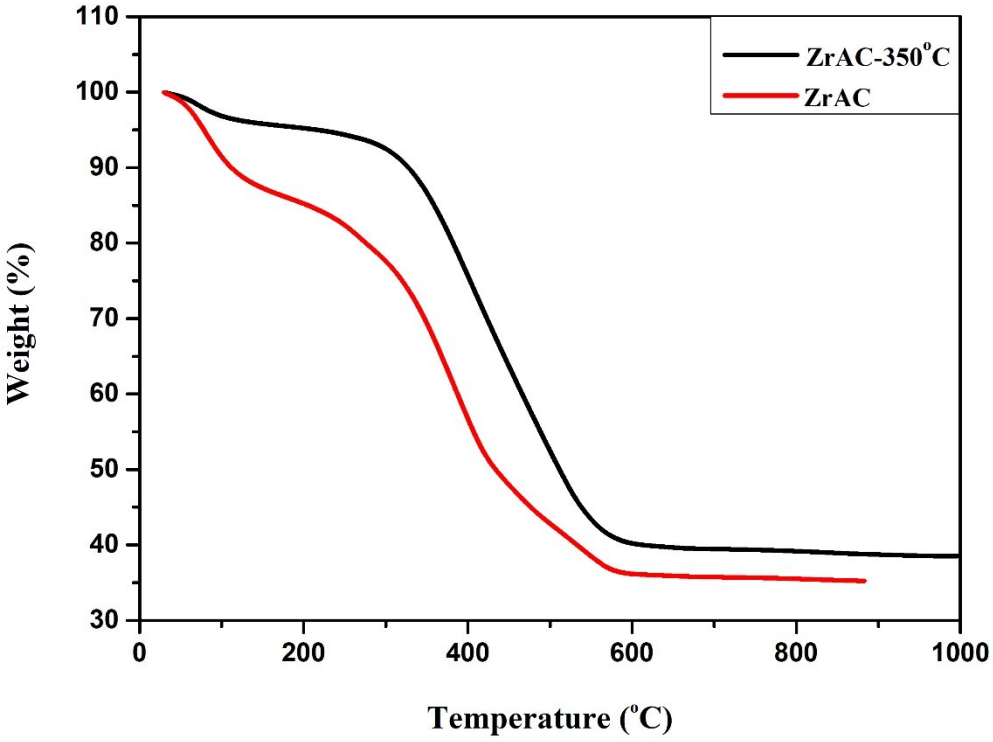

Figure S1: Thermal characteristics of heat-treated ZrAC_350^{0}C and ZrAC.

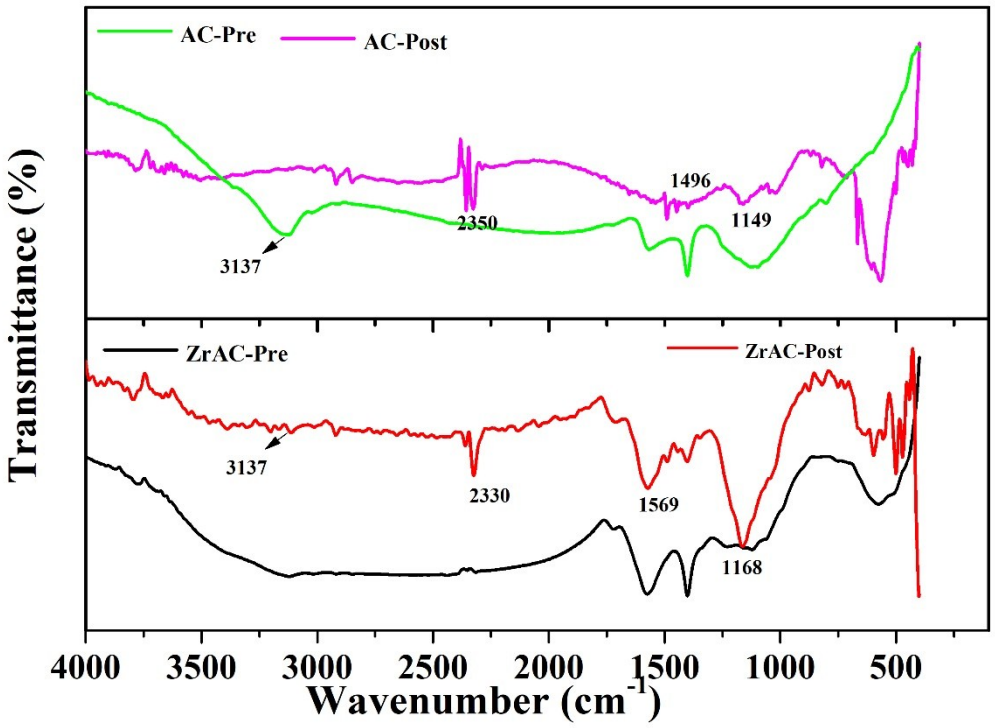

Figure S2: FTIR spectra of AC and ZrAC after adsorption of Reactive Blue 19

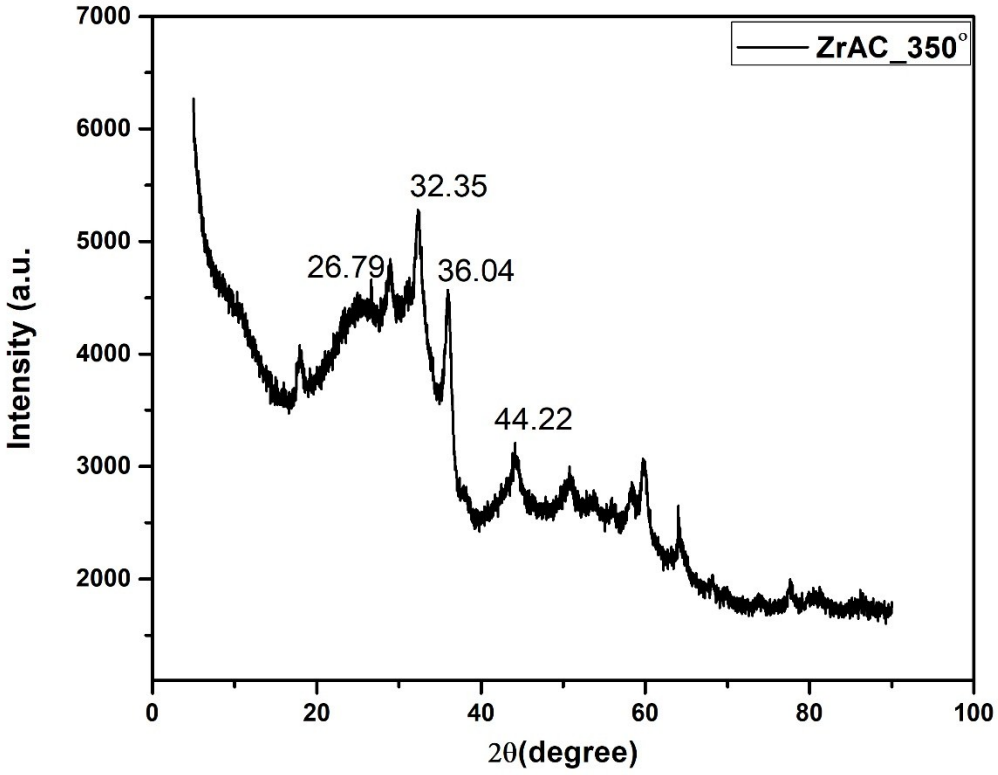

Figure S3: XRD diffraction pattern for heat-treated ZrAC at 350^{o}C (ZrAC_350^{o}C) and ZrAC.

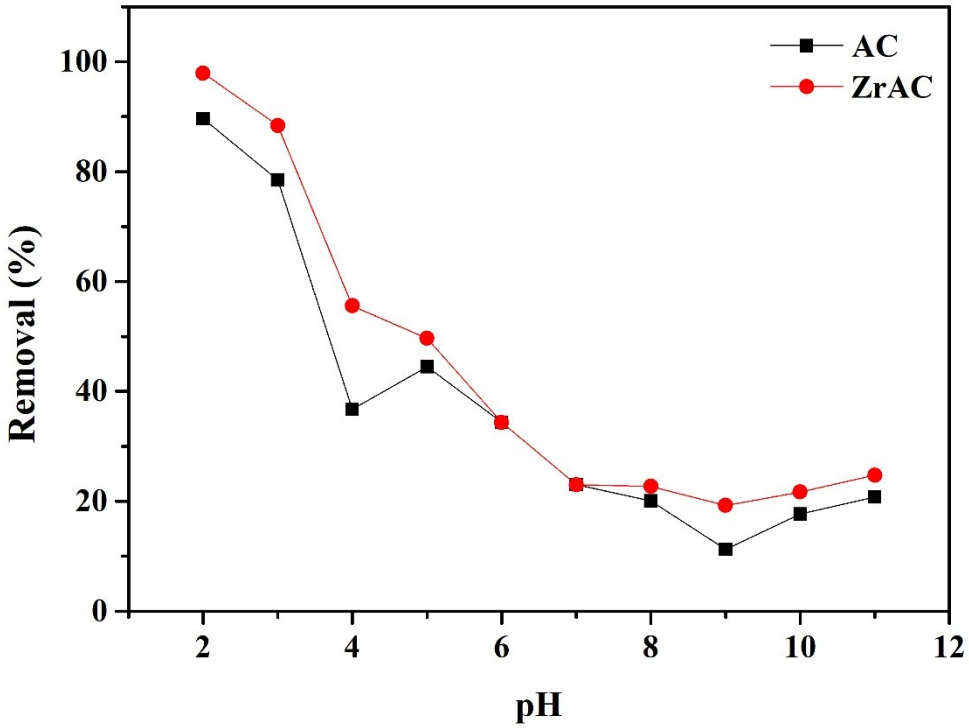

Figure S4: Effect of pH on the removal of Reactive Blue 19

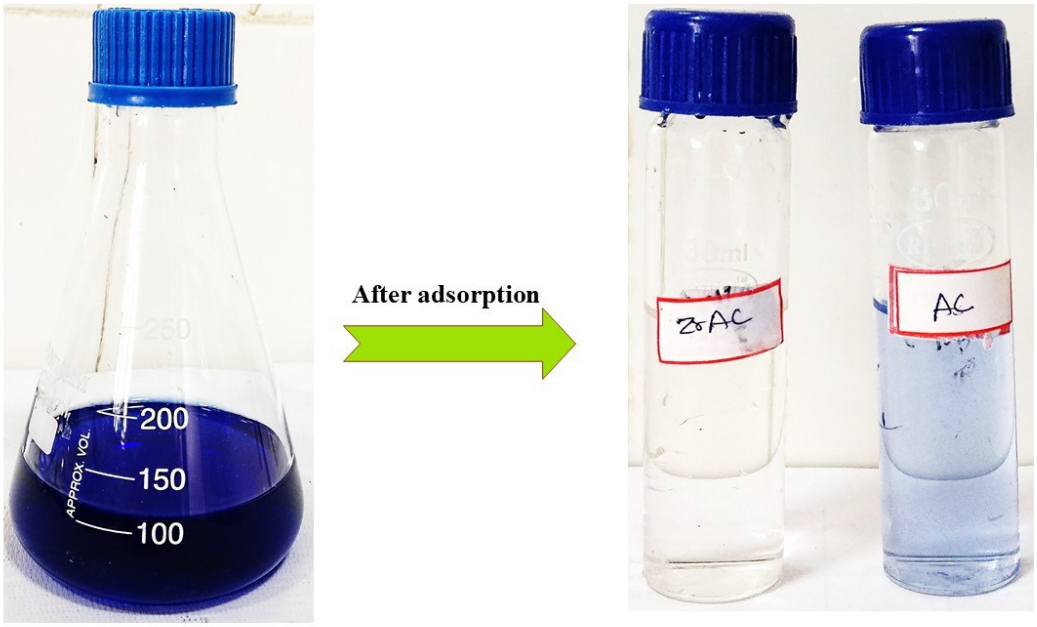

Figure S5: Experimental result: Adsorption difference of AC and ZrAC

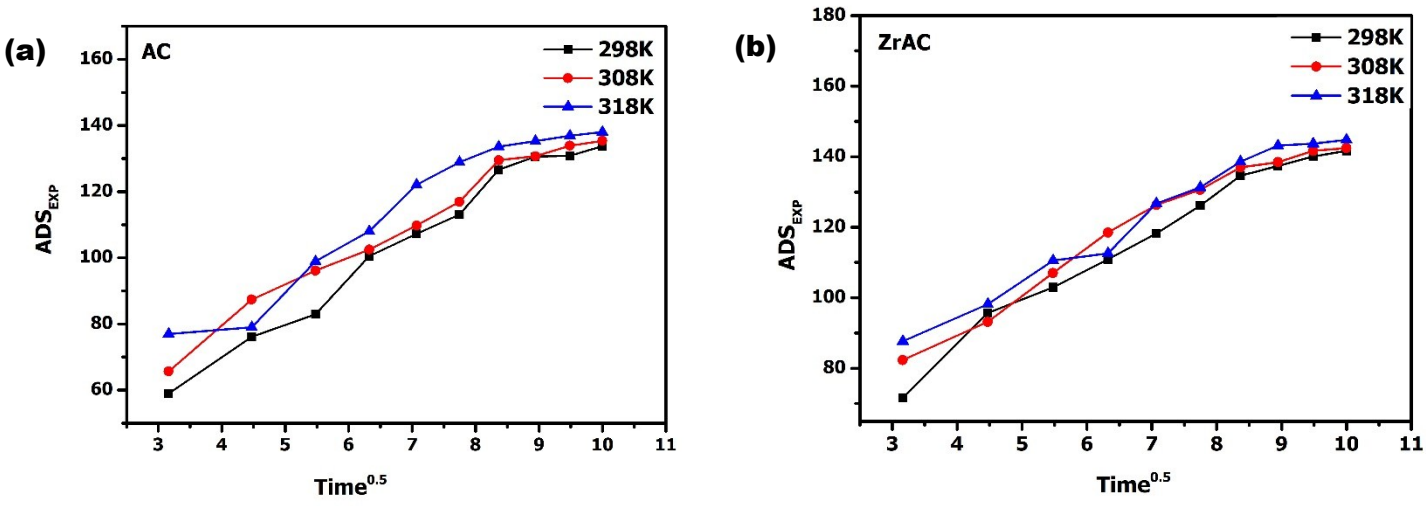

Figure S6: Intraparticle diffusion model of (a) AC and (b) ZrAC.

Table S1: EDX composition (weight %) of the elements present in AC and ZrAC.

Samples	Weight (%) of elements						
	C	O	Cl	K	Mn	Zr	Others including Si, N, etc
AC	85.33	12.56	-	0.68	-	-	1.53
ZrAC	49.85	25.25	0.12	0.17	5.43	14.11	5.07

Table S2: Concentration of Zirconium on ZrAC before and after the adsorption using ICP-MS

Adsorbent	Zr Concentration (mg/gm)
ZrAC-Pre	92.43 ±5
ZrAC-Post	86.49±5