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Coupling of fluorescence and adsorptive properties of biomass based cellulose-CdS nanocomposite for alleviation of water contaminants

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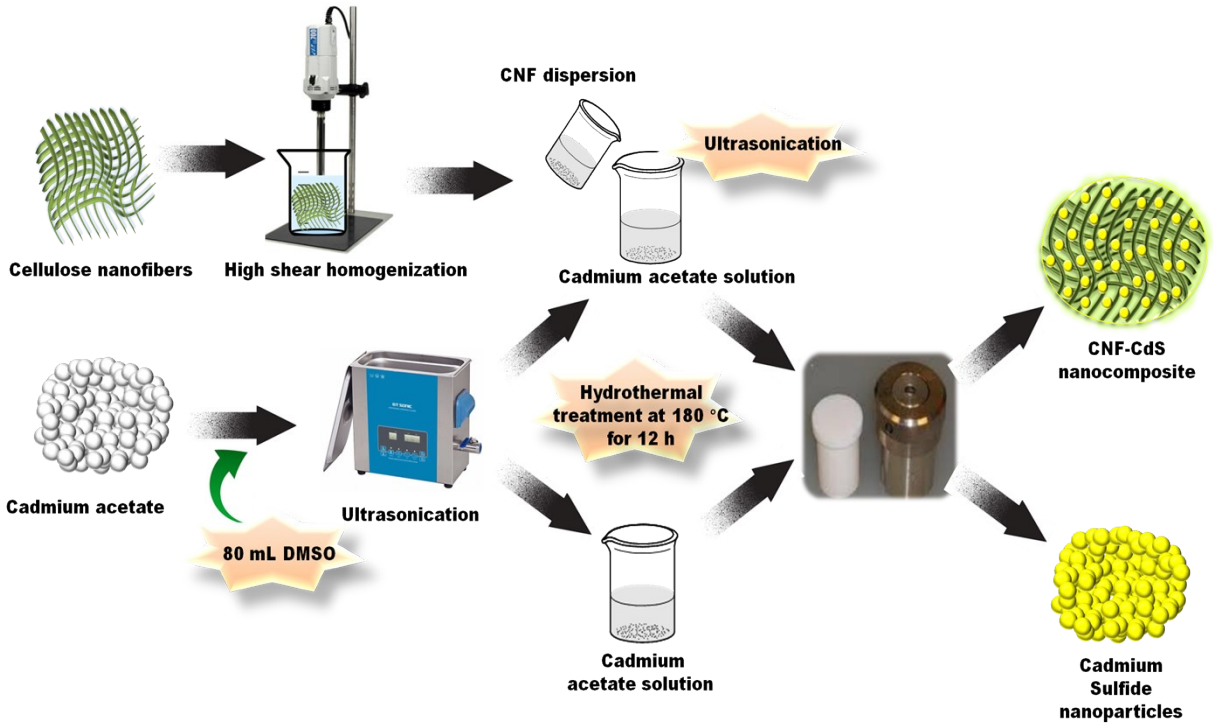

Fig. S1. Schematic illustration of synthetic methodology for CNF-CdS nanocomposite.

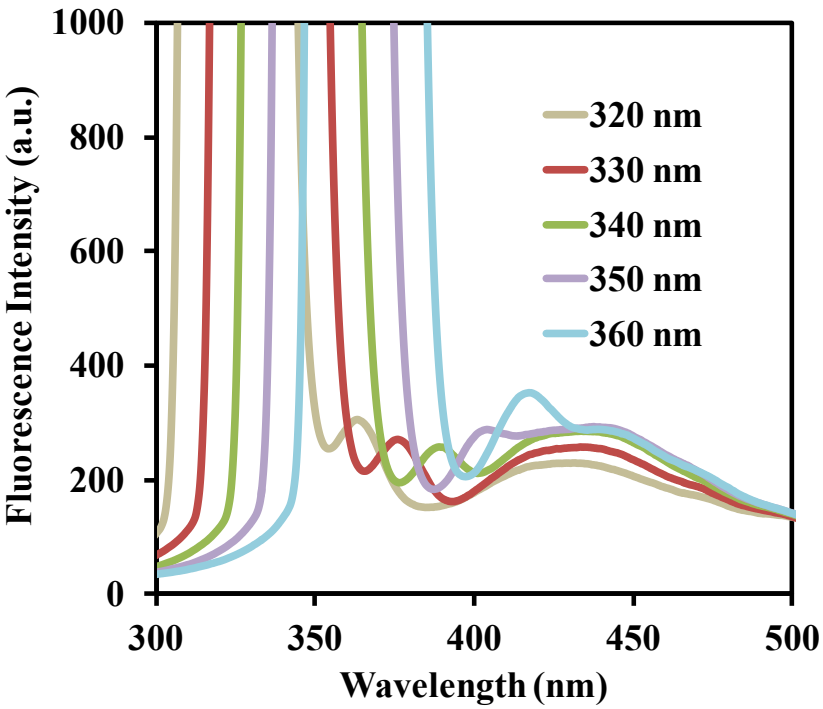

Fig.S2. Effect of excitation wavelength on emission spectra of CNF-CdS nanocomposite.

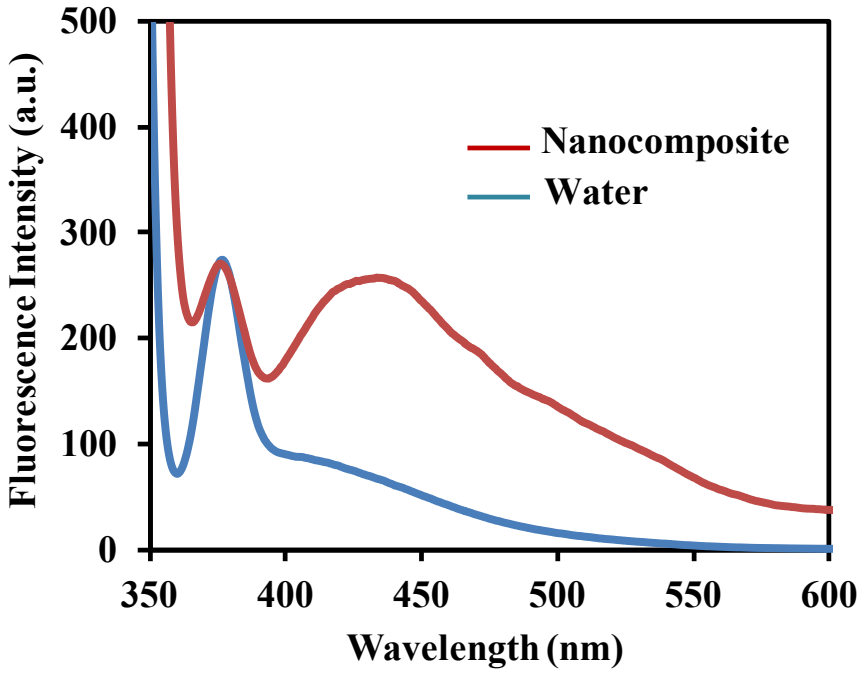

Fig.S3. Fluorescence emission spectra for CNF-CdS nanocomposite with respect to that of water.

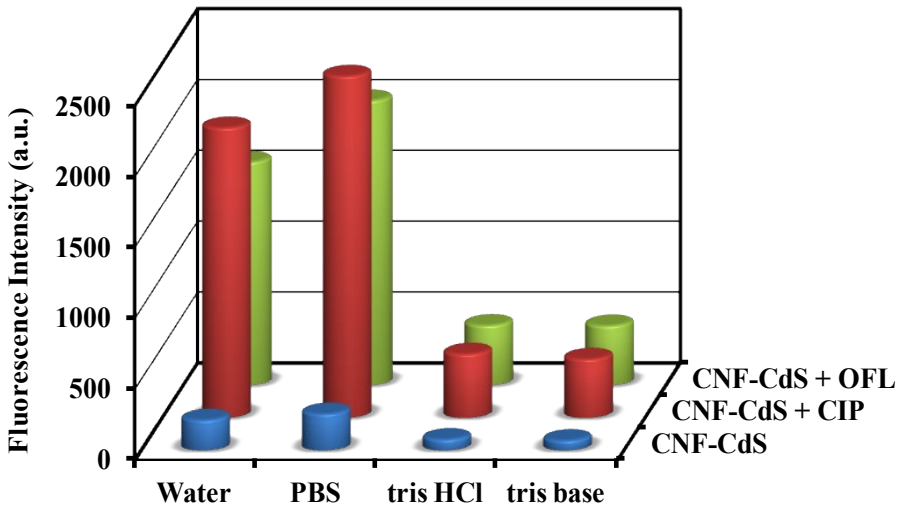

Fig. S4. Influence of buffer system on the fluorescence signal of CNF-CdS nanocomposite with and without the presence of fluoroquinolones.

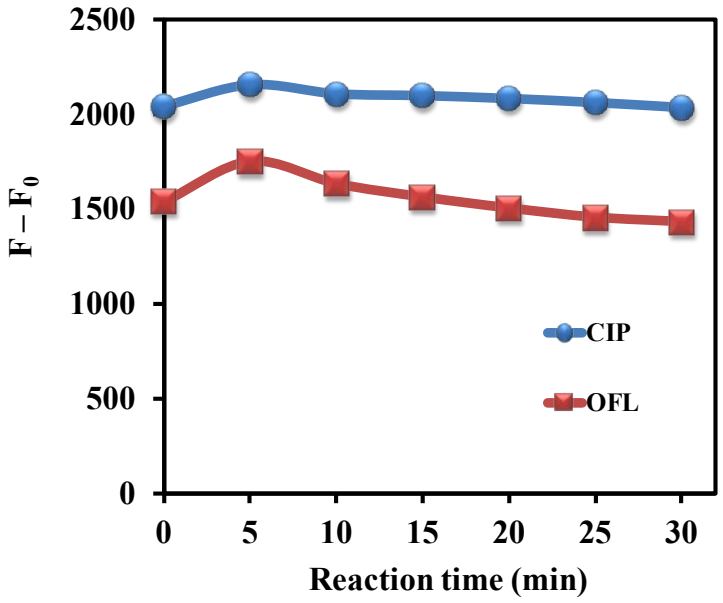

Fig. S5. Influence of reaction time on the fluorescence enhancement of CNF-CdS nanocomposite in the presence of fluoroquinolones.

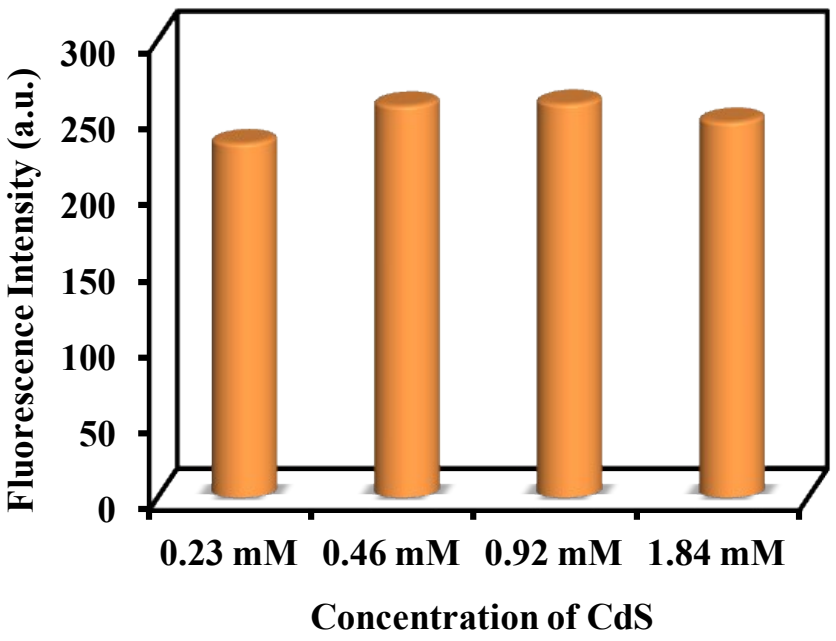

Fig. S6. Effect of concentration of CdS on the fluorescence intensity of CNF-CdS nanocomposite.

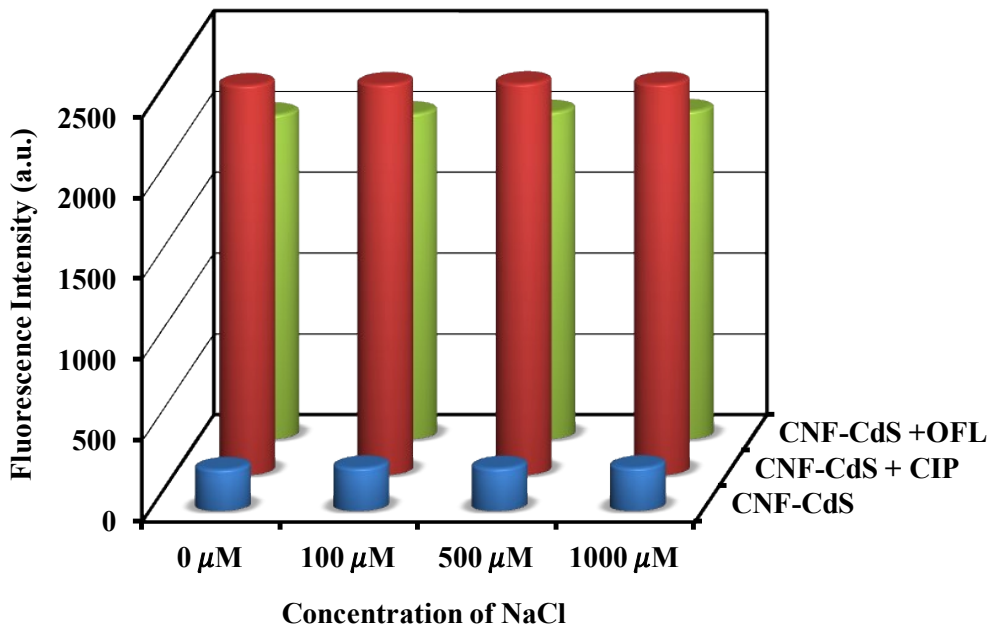

Fig. S7. Influence of electrolyte concentration on the fluorescence intensity of CNF-CdS nanocomposite in the absence and presence of fluoroquinolones.

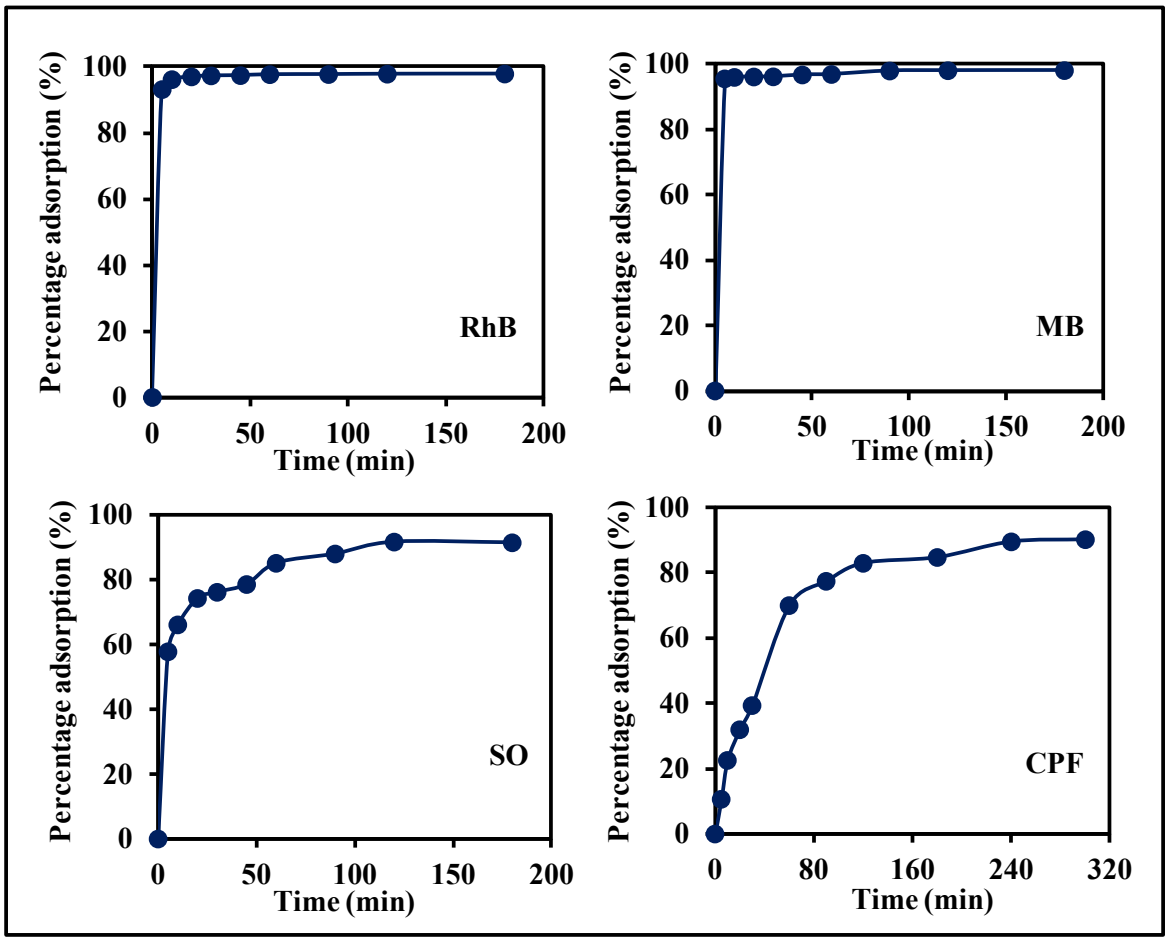

Fig. S8. Effect of contact time for the adsorption of pollutants over CNF-CdS nanocomposite.

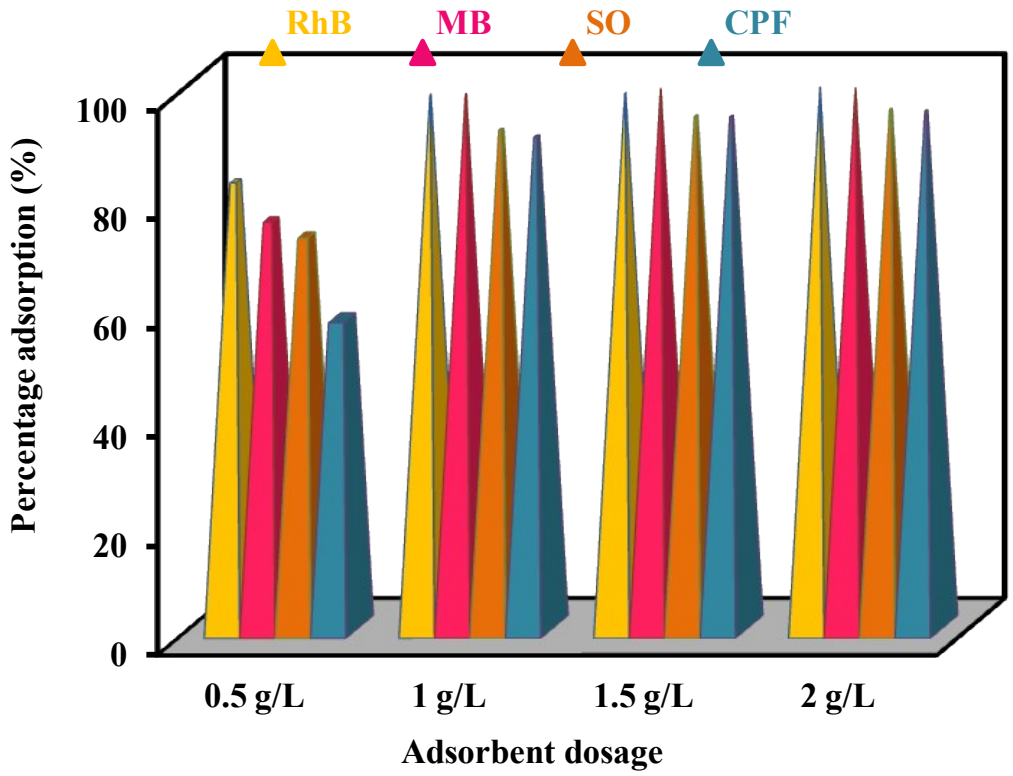

Fig. S9. Effect of adsorbent quantity for the adsorption of pollutants over CNF-CdS nanocomposite.

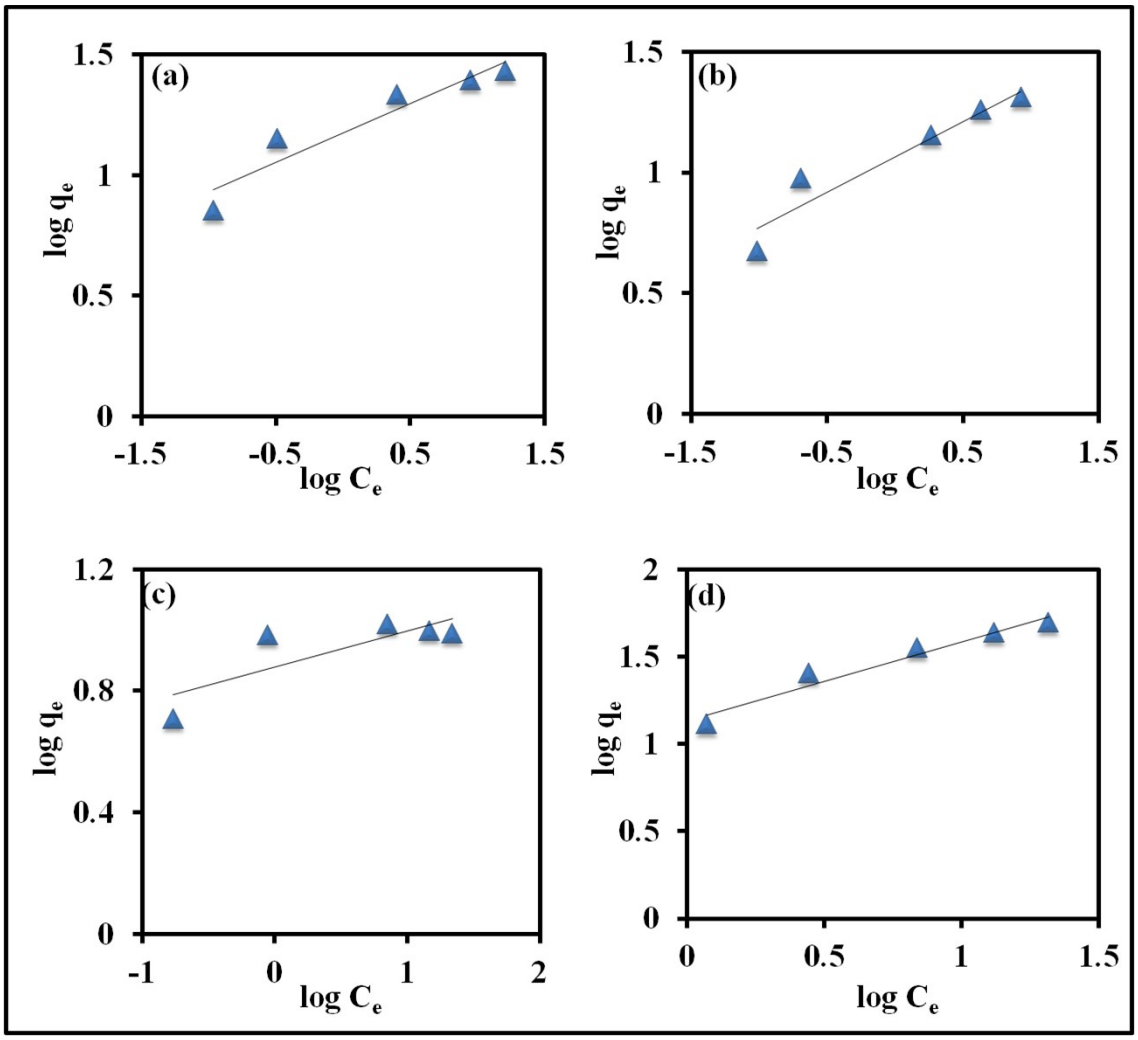

Fig. S10. Freundlich isotherm curves for (a) RhB, (b) MB, (c) SO and (d) CPF for adsorption over CNF-CdS nanocomposite.

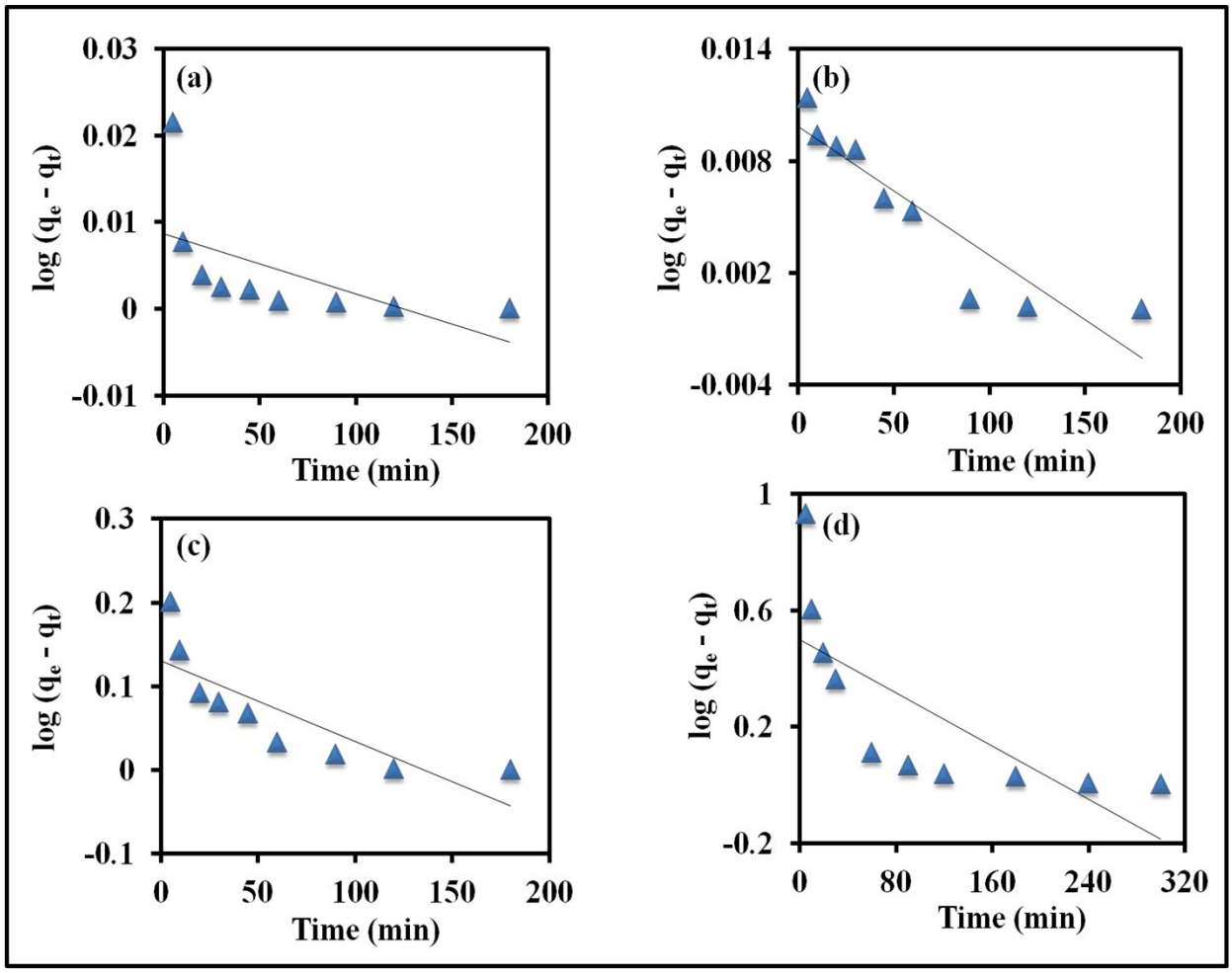

Fig. S11. Pseudo-first-order kinetic curves for (a) RhB, (b) MB, (c) SO and (d) CPF for adsorption over CNF-CdS nanocomposite.

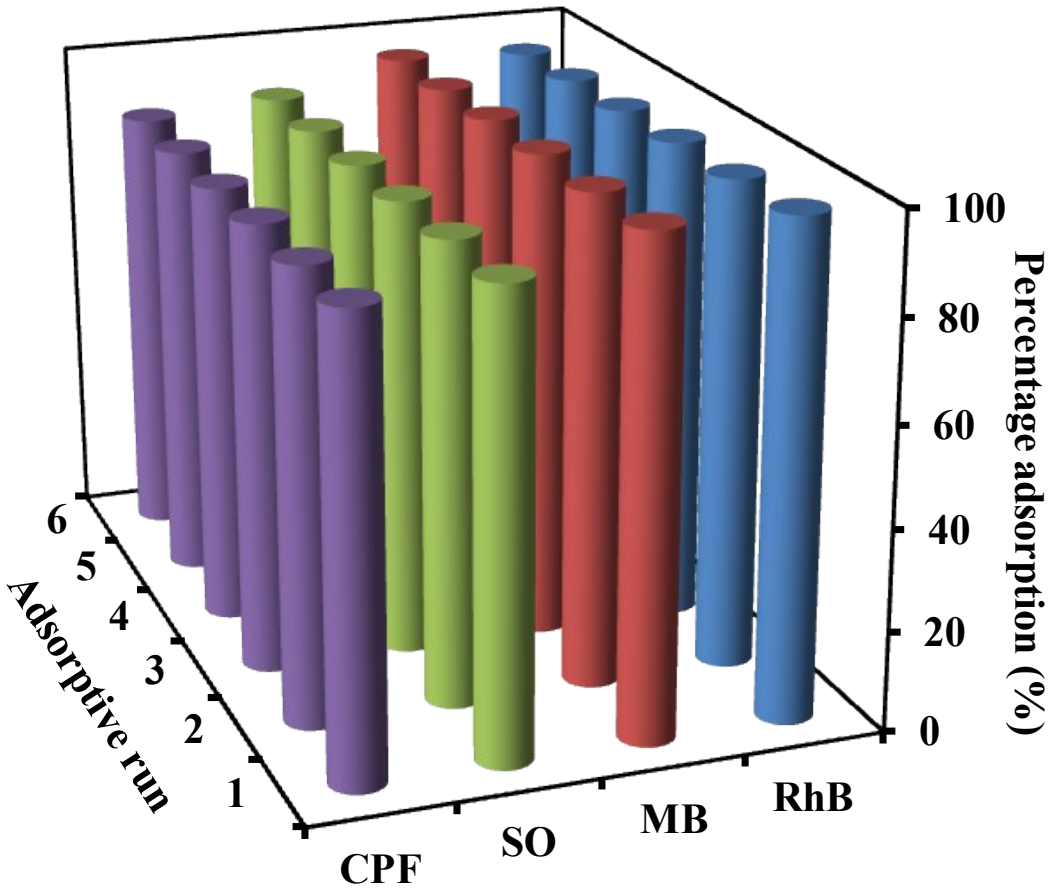

Fig. S12. Reusability studies for the adsorption of RhB, MB, SO nad CPF over CNF-CdS nanocomposite.

Table S1: Different parameters computed from pseudo-first-order and pseudo-second-order models for the adsorption of RhB, MB, SO and CPF onto the surface of CNF-CdS nanocomposite

	Pseudo-first-order			**Pseudo-second-order**		
Pollutant	q_e *(mg g^{-1})*	k_1 *(min^{-1})*	R^2	q_e *(mg g^{-1})*	k_2 *(g mg^{-1} min^{-1})*	R^2
RhB	1.0199	0.0001	0.3477	14.0643	0.4012	1.0000
MB	1.0230	0.0001	0.8497	9.4070	0.2883	1.0000
SO	1.3486	0.0023	0.6824	9.8042	0.0226	0.9983
CPF	3.1557	0.0053	0.5520	27.9330	0.0012	0.9855