

Electronic Supplementary Information

Facile strategy for the synthesis of non-covalently bonded and para toluene sulfonic acid functionalized fibrous polyaniline@graphene-PVC nanocomposite for the removal of Congo red

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Table S1: Adsorption isotherm parameters for CR adsorption onto the PVC, GN-PVC and *p*TSA-Pani@GN-PVC fibers

	Langmuir isotherm model			Freundlich isotherm model			Temkin isotherm model		
Fibers	q_m	b	R^2	K_F	n	R^2	A	B	R^2
	(mg g ⁻¹)	(L mg ⁻¹)		(mg ^{1-1/n} L ^{1/n} g ⁻¹)			(L mg ⁻¹)		
PVC	10.75	0.099	0.957	2.238	2.702	0.880	1.216	2.192	0.918
GN-PVC	27.027	0.058	0.986	3.013	1.862	0.931	0.815	5.45	0.981
<i>p</i> TSA-Pani@GN-PVC	45.454	0.104	0.962	6.686	2.016	0.885	1.529	8.009	0.965

Table S2: Thermodynamic parameters for the adsorptive removal of CR onto the PVC, GN-PVC and *p*TSA-Pani@GN-PVC fibers

Fibers	ΔG°(kJ/mol)			ΔH°	ΔS°	R²
	30 °C	40 °C	50 °C	(kJ/mol)	(J/mol K)	
PVC	1.550	2.700	6.251	−30.445	−91.038	0.890
GN-PVC	−0.2633	0.115	1.582	−67.210	−232.542	0.910
<i>p</i>TSA-Pani@GN-PVC	−3.332	−2.219	−0.145	− 46.516	−158.21	0.972