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PREPARATION, CHARACTERIZATION, AND USE OF TRIMETHOXY[3-(METHYLAMINO)PROPYL]SILANE FUNCTIONALIZED SBA-15 FOR CONGO RED ADSORPTION

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SUPPORTING MATERIAL

Table S1. Non-linear and linear equations of the kinetic models studied

Model name	Nonlinear equation	Linear equation	Plot
PFO	PFO	$dq_t/dt=k_1\cdot(q_e-q_t)$	$\log(q_e-q_t)=\log q_e-\frac{k_1}{2.303}\cdot t$
PSO	PSO	$dq_t/dt=k_2\cdot(q_e-q_t)^2$	$\frac{t}{q_t}=\frac{1}{k_2.q_e^2}+\frac{1}{q_e}\cdot t$
Elovich	Elovich	$dq_t/dt=\alpha\cdot\exp(-\beta\cdot q_t)$	$q_t=\frac{\ln(\alpha\cdot\beta)}{\beta}+\frac{\ln t}{\beta}$
ID	ID	---	$q_t=k_{id}\cdot t^{0.5}+I$

Table S2. Effect of various parameters on the efficiency of CR adsorption onto FSBA-15

Term	p-value	f-value
Temperature (K)	0.0008	31.3
Initial dye concentration (mg/L)	0.04	6.3
Adsorbent dosage (g/L)	0.02	9.6

* The p-value < 0.05 & f-value > 5: Significant; the p-value > 0.05 & f-value < 5: Insignificant.

Table S3. Non-linear and linear equations of the isotherm models studied

Model name	Nonlinear equation	Linear equation	Plot
Langmuir	$q_e = Q_{max} \cdot \frac{K_L \cdot C_e}{1 + K_L \cdot C_e}$	$\frac{1}{q_e} = \frac{1}{Q_{max} K_L} \cdot \frac{1}{C_e} + \frac{1}{Q_{max}}$ $R_L = 1/(1 + (K_L \cdot C_o))$	$1/q_e$ *vs* $1/C_e$
Freundlich	$q_e = K_F \cdot (C_e)^{1/n}$	$\log q_e = \frac{1}{n} \cdot \log C_e + \log K_F$	$\log q_e$ *vs* $\log C_e$
Temkin	$q_e = \frac{R \cdot T}{B} \cdot \ln(K_T \cdot C_e)$	$q_e = B \cdot \ln K_T + B \cdot \ln C_e$	q_e *vs* $\ln C_e$