

Supplementary material for

Article

Adsorption of Pb²⁺ by activated carbon produced by microwave assisted K₂CO₃ activation of leaf sheath fibre of date palm

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Captions

Table S1 Kinetic parameters for Pb²⁺-LSDPFAC adsorption system.

Table S2 Thermodynamic parameters.

Table S1. Kinetic parameters for Pb²⁺-LSDPFAC adsorption system.

C ₀ (mg/L)	q _{e, exp} (mg/g)	Pseudo-first order (PFO)				Pseudo-second order (PSO)			
		q _{e, cal} (mg/g)	k ₁ (min ⁻¹)	RMSE	R ²	q _{e, cal} (mg/g)	k ₂ (g mg ⁻¹ min ⁻¹)	RMSE	R ²
1	0.97	0.38	0.0061		0.9251	0.86	0.11679		0.9994
2	1.91	1.07	0.0089		0.9356	1.86	0.02425		0.9979
4	3.69	2.25	0.0086	1.48	0.9410	3.60	0.01050	0.22	0.9971
6	5.46	3.83	0.0078		0.9407	5.32	0.00504		0.9985
8	7.09	5.08	0.0075		0.9713	6.76	0.00394		0.9977
10	8.76	6.94	0.0069		0.9832	8.38	0.00231		0.9895

Table S2. Thermodynamic parameters.

Temperature (K)	ΔH° (kJ/mol)	ΔS° (kJ/mol K)	E _a (kJ/mol)	ΔG° (kJ/mol)
303.15				-31.28
313.15	6.39	0.12	15.90	-32.53
323.15				-33.77