

Supplementary Material

Selective Intercalation of Chlorophenoxyacetates into the Layered Double Hydroxide $[\text{LiAl}_2(\text{OH})_6]\text{Cl}\cdot x\text{H}_2\text{O}$

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Figure Captions

Figure 1 Arrhenius plot for the intercalation of 2,4,5-T into [Li-Al-Cl] LDH.

Figure 2 Least squares fits of the Avrami-Erofe'ev equation for the intercalation of 2,4-D into [Li-Al-Cl] LDH at 50 °C (▲), 55 °C (▼), 65 °C (■), and 70 °C (●).

Figure 3 Sharp-Hancock plots for the intercalation of 2,4,-D into [Li-Al-Cl] LDH at 50 °C (▲), 55 °C (▼), 65 °C (■), and 70 °C (●).

Figure 4 Arrhenius plot for the intercalation of 2,4-D into [Li-Al-Cl] LDH

Figure 5 Least squares fits of the Avrami-Erofe'ev equation for the intercalation of 4-CPA into [Li-Al-Cl] LDH at 0 °C (●) and 5 °C (■).

Figure 6 Sharp-Hancock plots for the intercalation of 4-CPA into [Li-Al-Cl] LDH at 5 °C (■), and 0 °C (●).

Figure 7. XRD data of the [Li-Al-Cl] LDH intercalates of (a) 4-CPA (b) 2,4-D, and (c) 2,4,5-T.

Figure 1

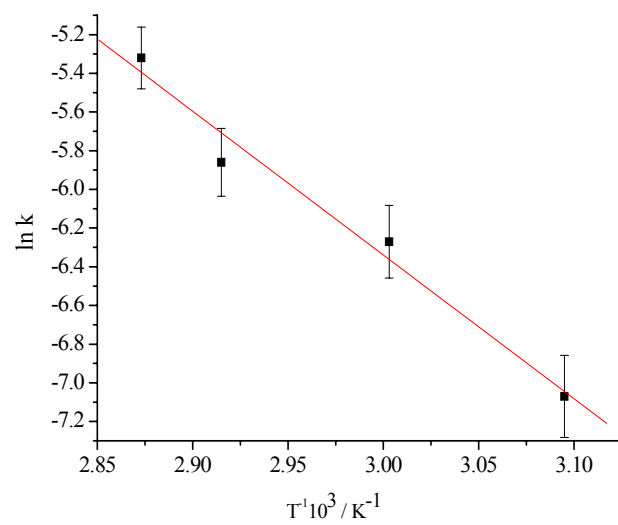


Figure 2

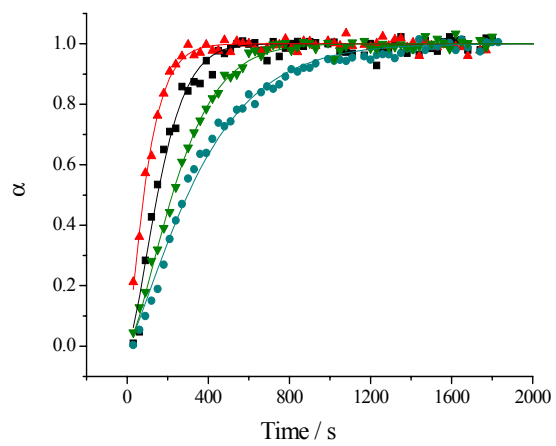


Figure 3

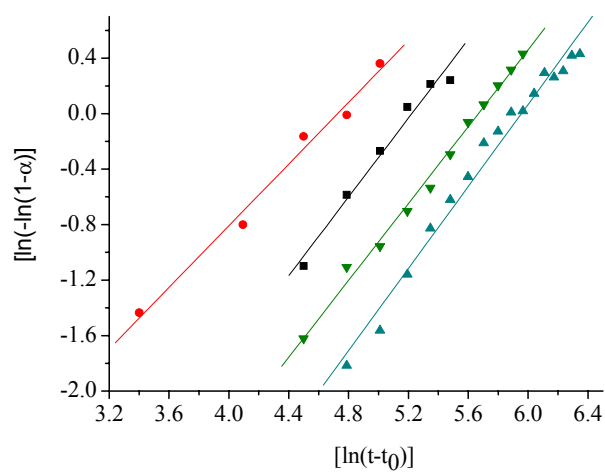


Figure 4

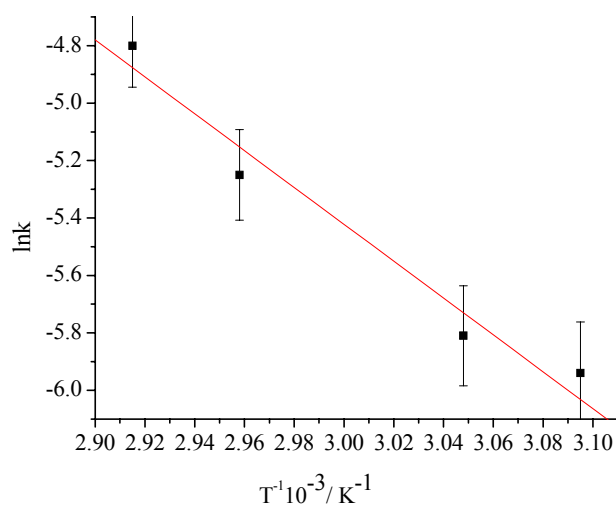


Figure 5

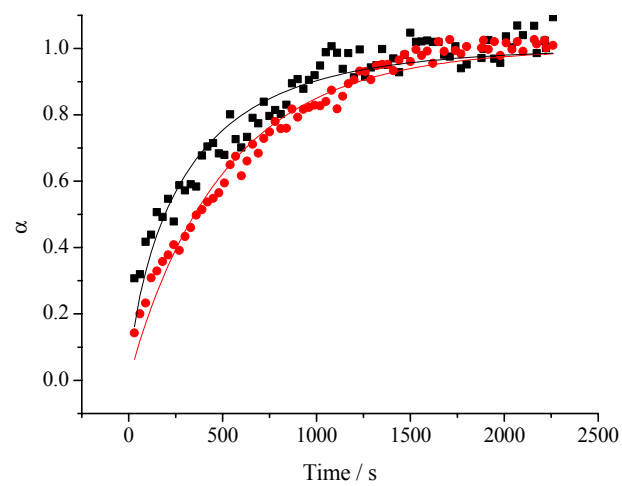


Figure 6

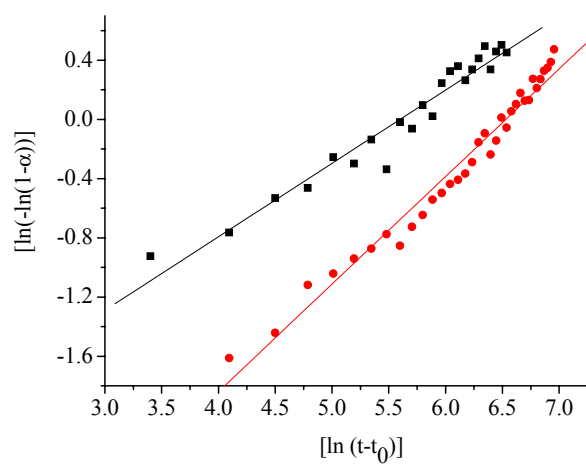


Figure 7

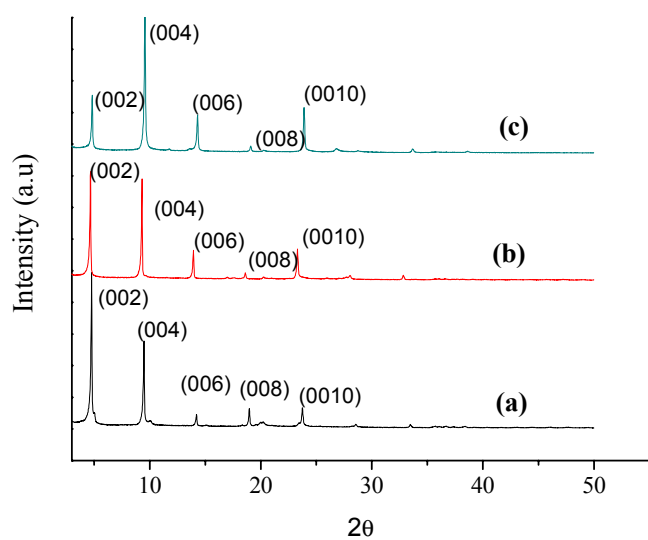


Table 1 Percentage of chlorophenoxy herbicides intercalated into [Li-Al-Cl] LDH at different temperatures from a two component mixture.

Table 2 Percentage of chlorophenoxy herbicides intercalated into [Li-Al-Cl] LDH at different temperatures from a three component mixture.

Table 1

Guest		Temperature (°C)	Guest Intercalated (%)	
A	B		A	B
4-chlorophenoxyacetate (4-CPA)	2,4-dichlorophenoxyacetate (2,4-D)	20	35	65
		40	36	64
		60	30	70
		80	33	66
4-chlorophenoxyacetate (4-CPA)	2,4,5-trichlorophenoxyacetate (2,4,5-T)	20	64	36
		40	65	35
		60	60	40
		80	62	38
2,4-dichlorophenoxyacetate (2,4-D)	2,4,5-trichlorophenoxyacetate (2,4,5-T)	20	89	11
		40	90	10
		60	85	15
		80	88	12

Table 2

Temperature (°C)	Guest Intercalated (%)		
	4-chlorophenoxyacetate (4-CPA)	2,4-dichlorophenoxyacetate (2,4-D)	2,4,5-trichlorophenoxyacetate (2,4,5-T)
20	34	53	13
40	33	59	8
60	39	54.5	6.5
80	36	53	11