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Electronic Supplementary Information (ESI) for:

The influence of the leaving iodine atom on phyllosilicate syntheses and useful application in toxic metal removal with favorable energetic effects

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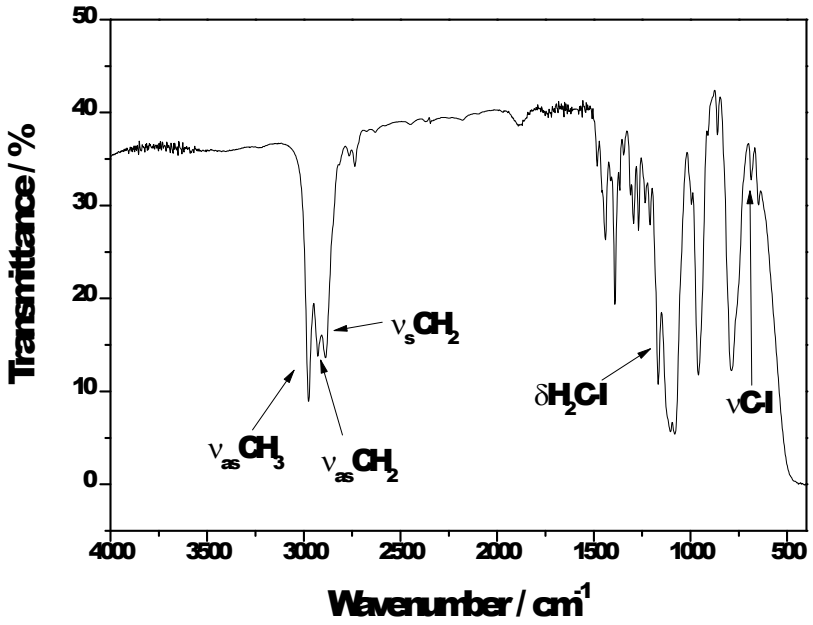


Figure S1 Infrared spectrum of synthesized 3-iodopropyltriethoxisilane.

Table S1 Percentages of nitrogen (N) and degree of functionalization (G) for all hybrids (Hyb).

Hyb	N / %	G / mmol g^{-1}
PhCoCl	1.81 ± 0.02	1.29 ± 0.01
PhNiCl	0.82 ± 0.02	0.59 ± 0.02
PhCoI	2.27 ± 0.08	1.62 ± 0.01
PhNiI	2.57 ± 0.03	1.83 ± 0.01

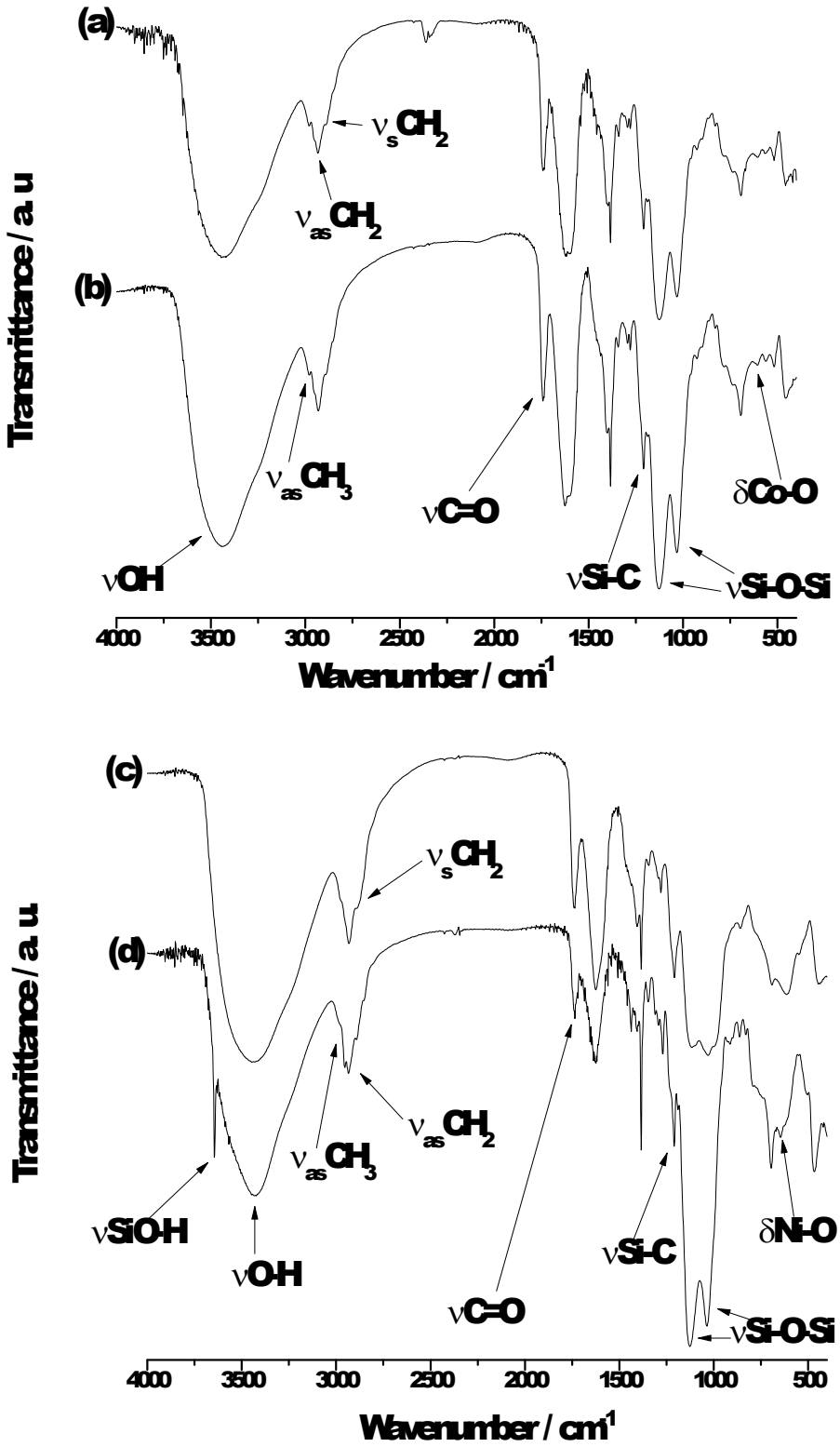
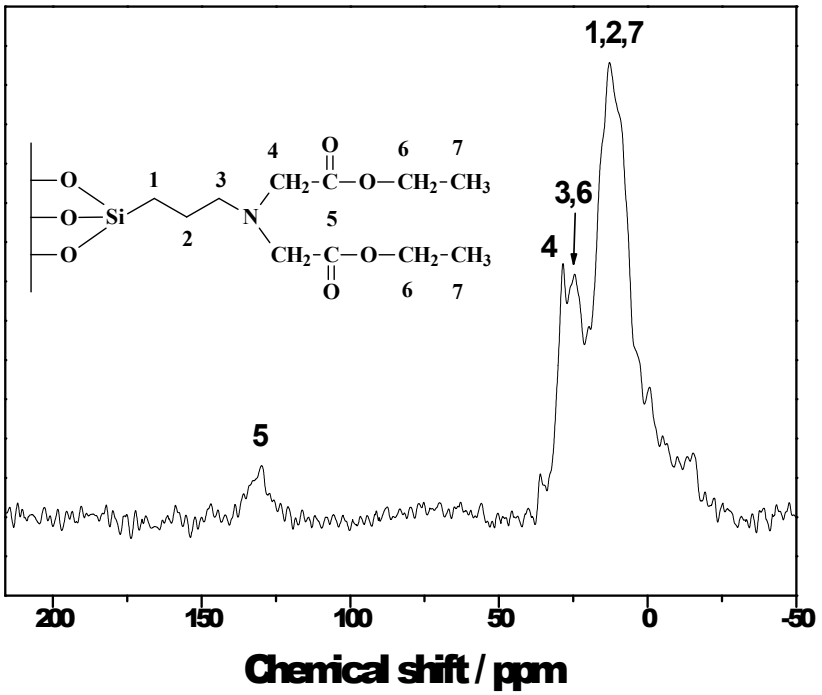
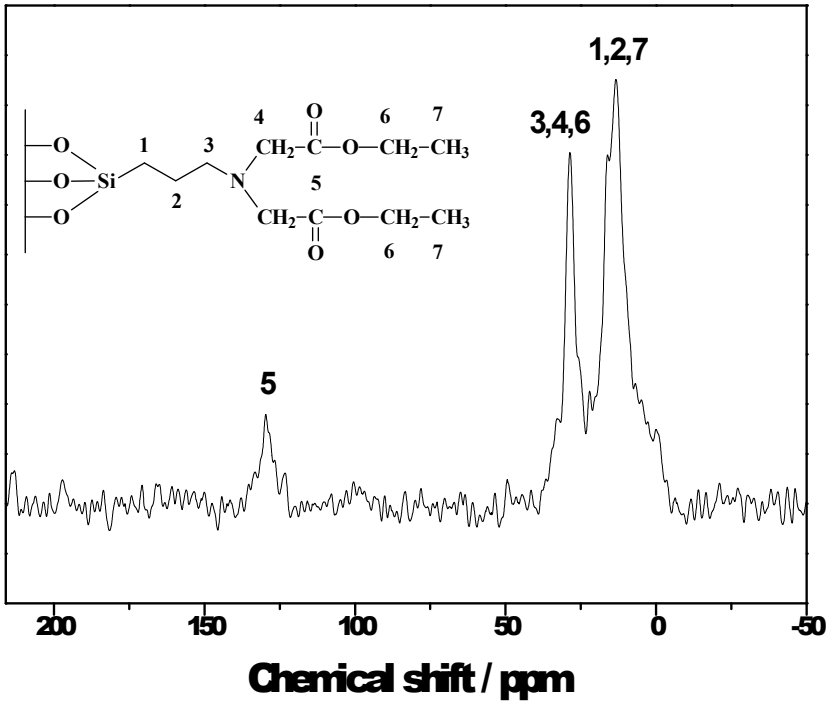


Figure S2 Infrared spectra of PhCoCl (a), PhCoI (b), PhNiCl (c) and PhNiI (d) phyllosilicates.

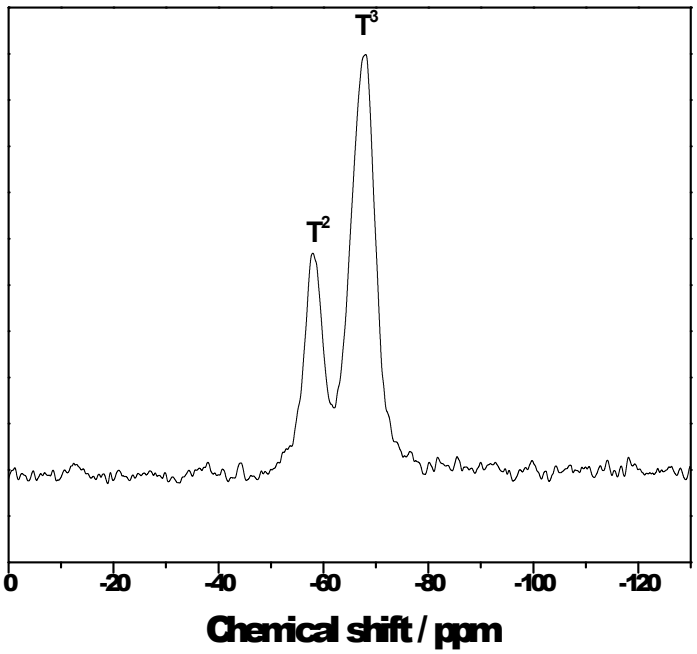


(a)

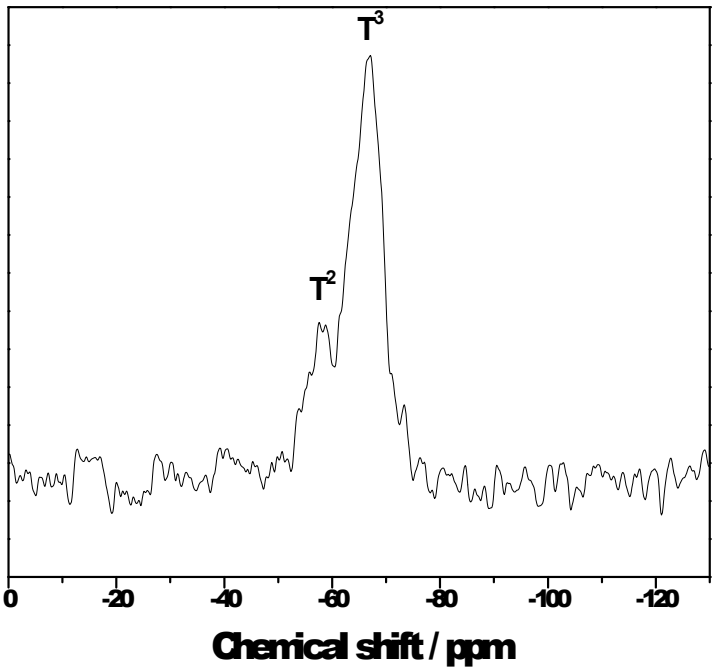


(b)

Figure S3 Solid-state ^{13}C nuclear magnetic resonance spectra of PhCoI (a) and PhNiI (b).



(a)



(b)

Figure S4 Solid-state ^{29}Si NMR spectra of PhCoI (a) and PhNiI (b) hybrids.

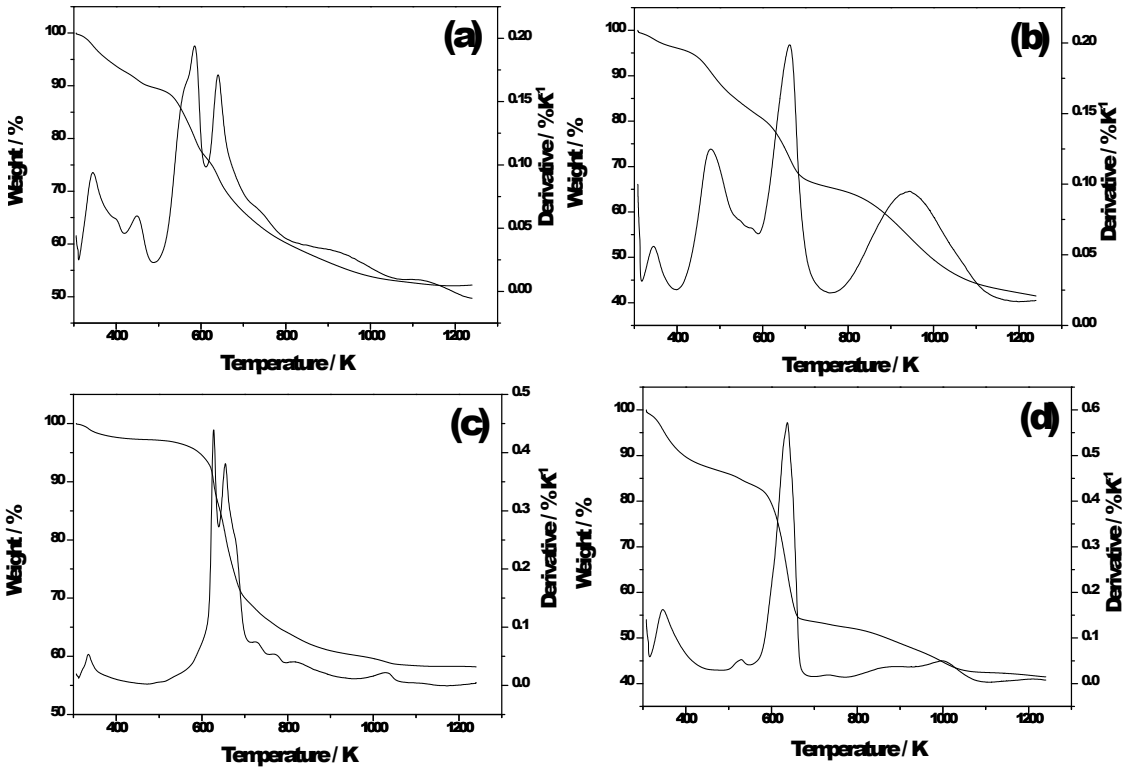


Figure S5 Thermogravimetric and respective derivative curves for PhCoCl (a), PhCoI (b), PhNiCl (c) and PhNiI (d) hybrids.

Table S2 Values of number of moles needed to form the cation monolayer on the hybrid (Hyb) surface (N^s) and equilibrium constant (b), for lead (Pb^{2+}) and cadmium (Cd^{2+}) sorption processes.

Hyb	Pb^{2+}		Cd^{2+}	
	N^s / mmol g^{-1}	b	N^s / mmol g^{-1}	b
PhCoCl	1.67 ± 0.08	1064 ± 19	0.58 ± 0.04	1352 ± 32
PhCoI	1.84 ± 0.07	1872 ± 29	0.58 ± 0.01	4722 ± 30
PhNiCl	1.99 ± 0.11	1275 ± 24	0.49 ± 0.05	890 ± 29
PhNiI	2.11 ± 0.16	1628 ± 44	1.00 ± 0.08	484 ± 11

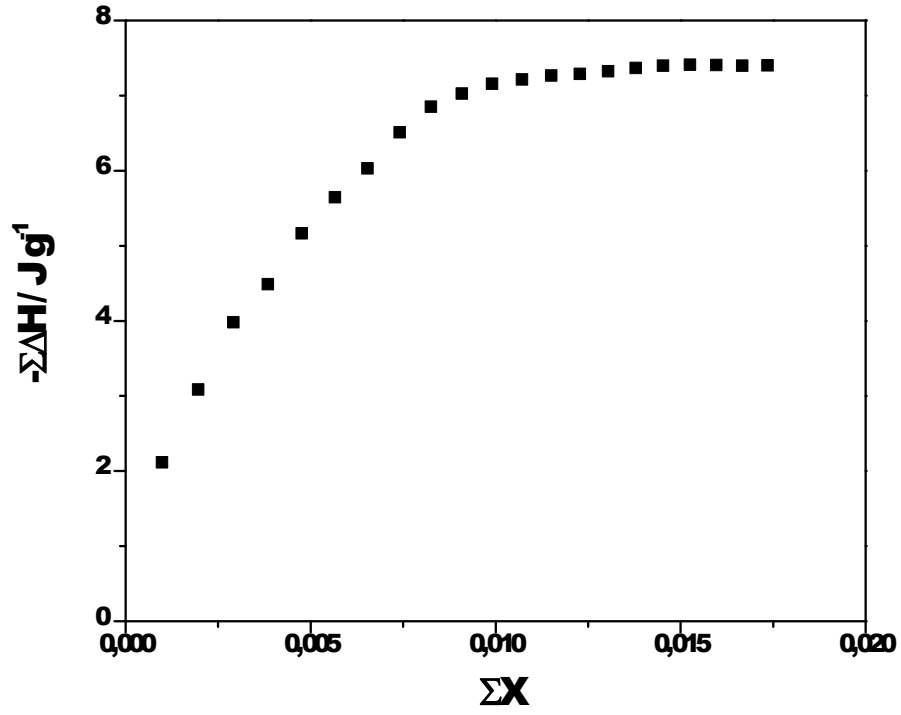


Figure S6 Langmuir isotherm obtained from calorimetric titration of 0.02012 g of PhNiI with 0.20 mol dm^{-3} aqueous solution of $Pb(NO_3)_2$ at 298.15 ± 0.20 K.