

Supporting information

to

Optimisation of the synthesis parameters of mechanochemically prepared CaAl-layered double hydroxide

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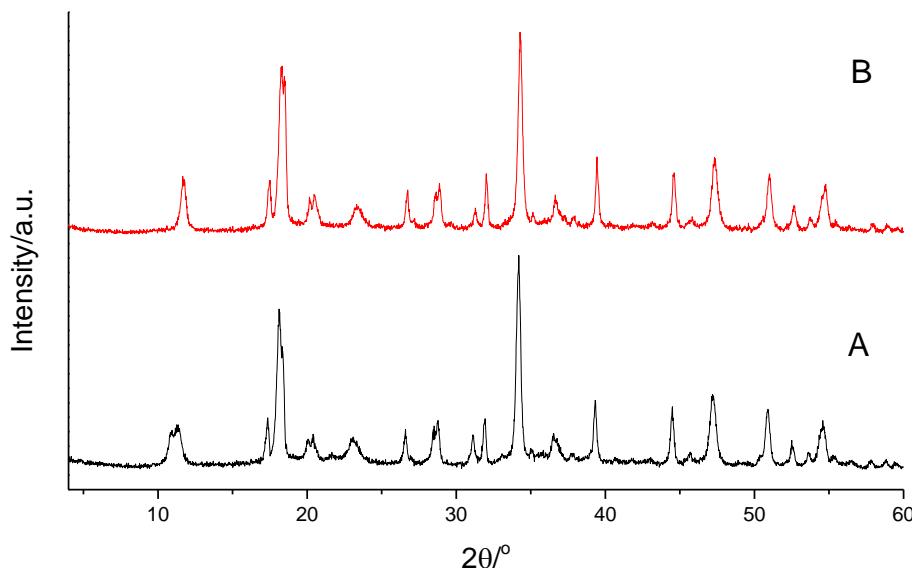


Fig. S1. The powder X-ray diffractograms of the $\text{Ca}_2\text{Al}_{-60}$ ($\text{B}/\text{S} = 60$) sample (A) before and (B) after washing.

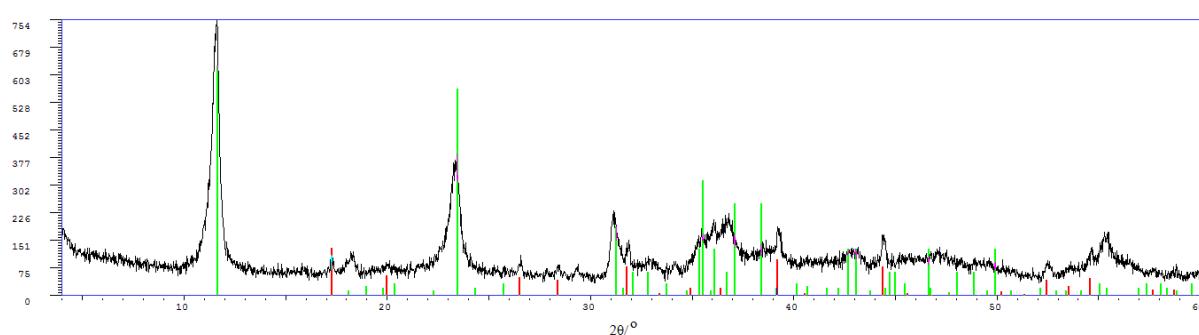


Fig. S2. The phase composition of the Ca_2Al LDH sample prepared with the optimised parameters: $\text{B}/\text{S} = 140$, $n(\text{H}_2\text{O}):n(\text{Al}) = 1,75$ and $v = 11.6$ Hz. Black curve: the sample, green line: the diffraction pattern of the JCPDS #41-0219, red line: the diffraction pattern of the JCPDS #74-2281 (calcium-aluminium hydroxide).

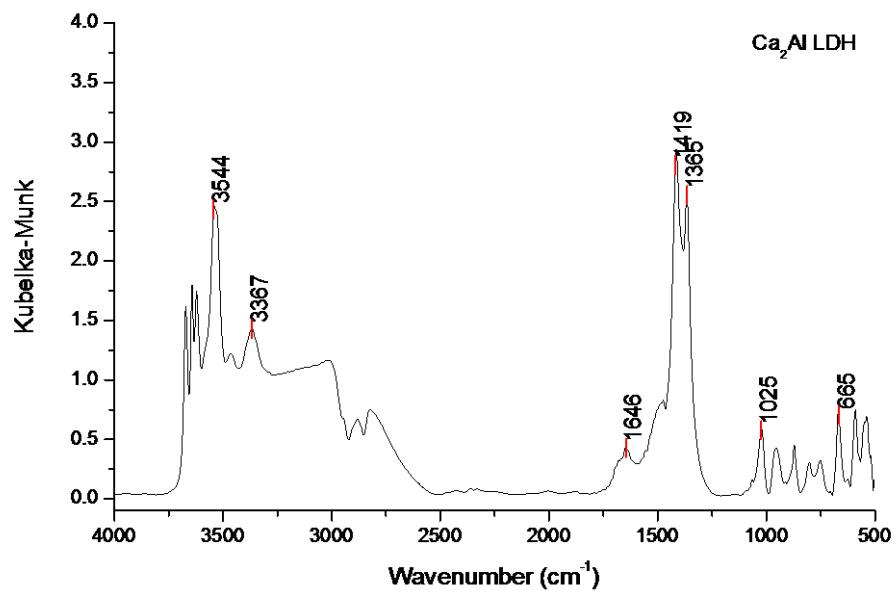


Fig. S3. FT-IR spectrum of the Ca_2Al -LDH prepared under the optimised conditions (see the vibration 1365 cm^{-1} , typical of interlayer carbonate ion).

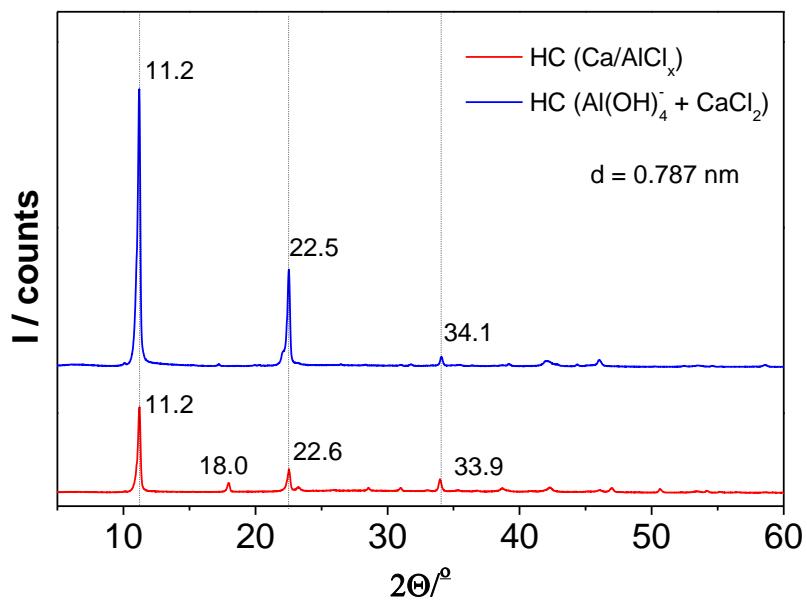


Fig. S4. The powder XRD diffraction patterns of two hydrocalumite samples (red: $\text{NaOH} + \text{CaCl}_2/\text{AlCl}_3$; blue: $\text{Al(OH)}_4^-/\text{NaOH} + \text{CaCl}_2$) prepared by the co-precipitation technique (Tóth et al., 2014).

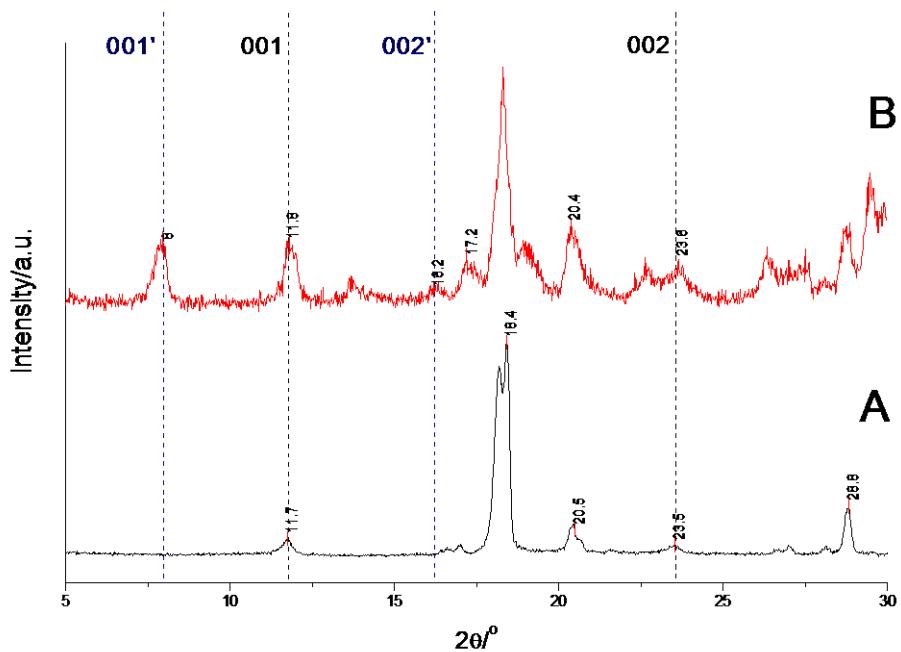


Fig. S5. Powder X-ray diffractograms of (A) the pristine Ca_2Al_1 -LDH and (B), its tyrosinate intercalated derivative (B).

Reference

Tóth, V., Sipiczki, M., Pallagi, A., Kukovecz, A., Kónya, Z., Sipos, P., Pálinkó, I., 2014, Synthesis and properties of CaAl-layered double hydroxides of hydrocalumite-type, 68, 633–637.