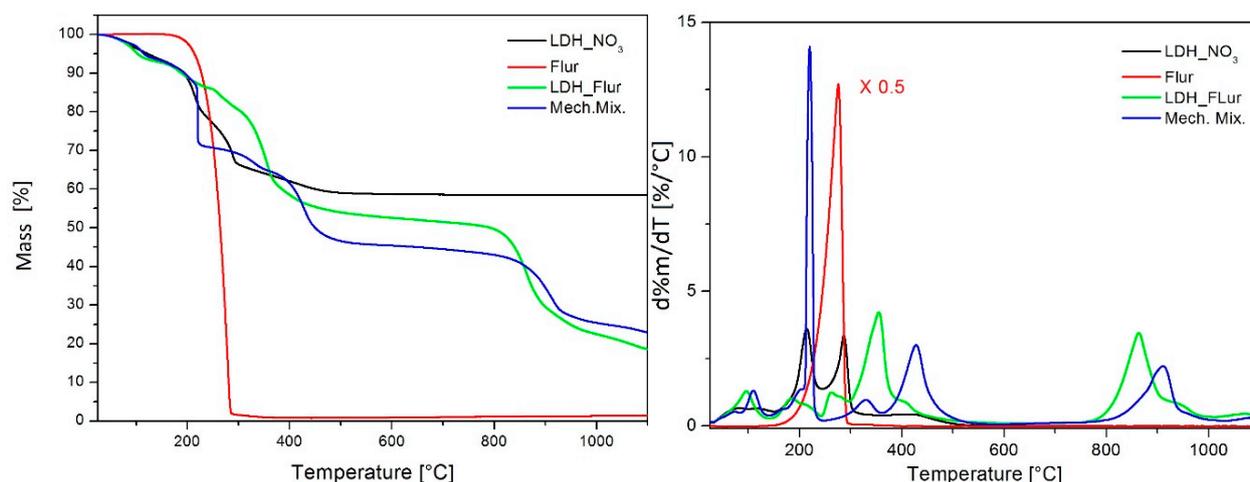
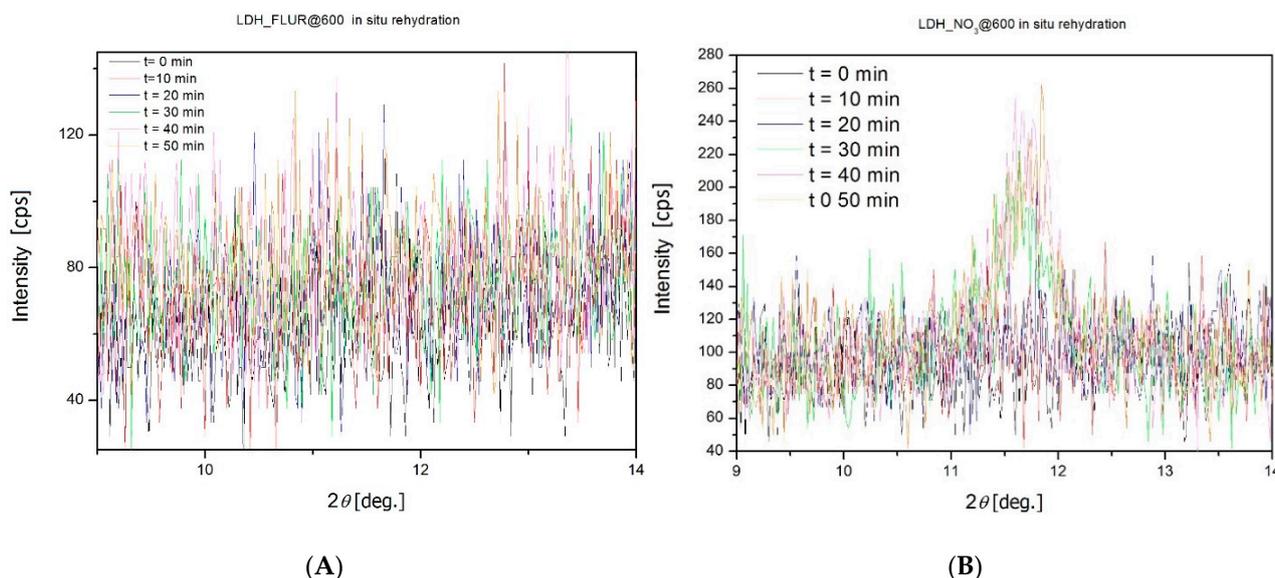


# Supplementary Materials: On the Rehydration of Organic Layered Double Hydroxides and the Dependence of the Memory Effect from Calcination Temperature

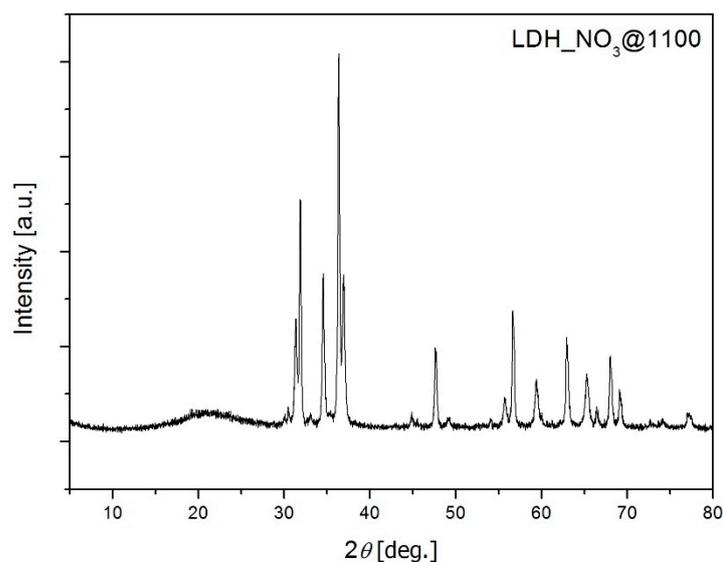
Eleonora Conterosito, Luca Palin, Diego Antonioli, Maria Pia Riccardi, Enrico Boccaleri, Maurizio Aceto, Marco Milanesio and Valentina Gianotti



**Figure S1.** Thermogravimetric analysis (TGA) plot (left) and first derivative (right) of the samples layered double hydroxide (LDH)\_NO<sub>3</sub> (black), Flurbipropfen (Flur) (red), LDH\_Flur (green), and of the mechanical mixture of LDH\_NO<sub>3</sub> and Flurbipropfen (blue).



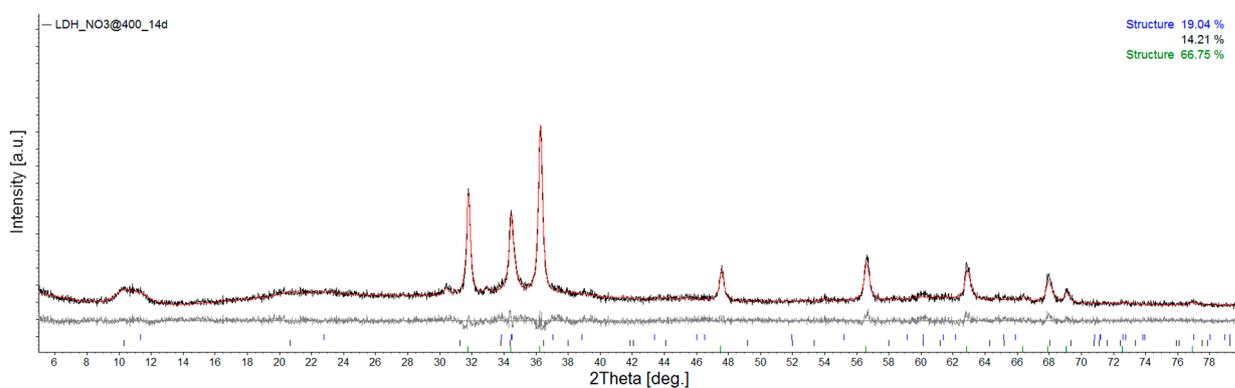
**Figure S2.** X-ray powder diffraction (XRPD) patterns collected during the in situ rehydration experiments on LDH\_FLUR@600 (A) and LDH\_NO<sub>3</sub>@600 (B). Selection of one pattern every 10 minutes.



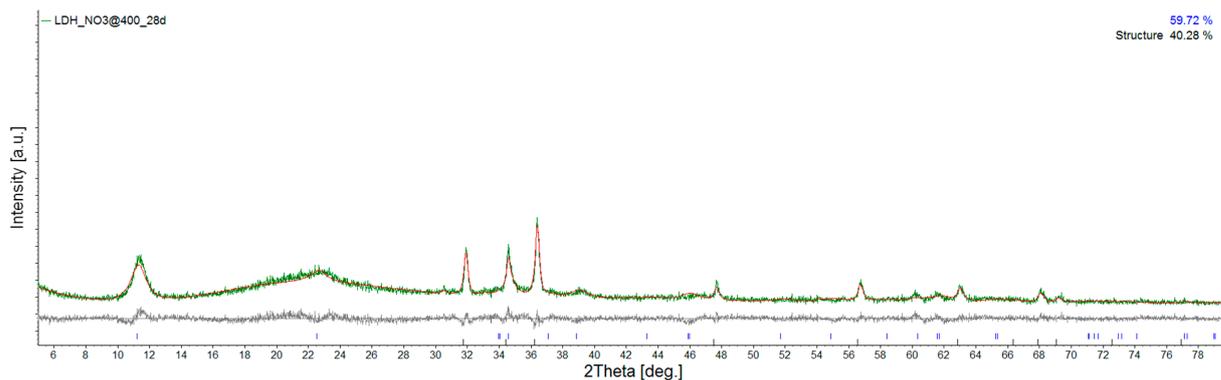
**Figure S3.** Plot of the XRPD pattern of LDH\_NO<sub>3</sub> after calcination at 1100°C.



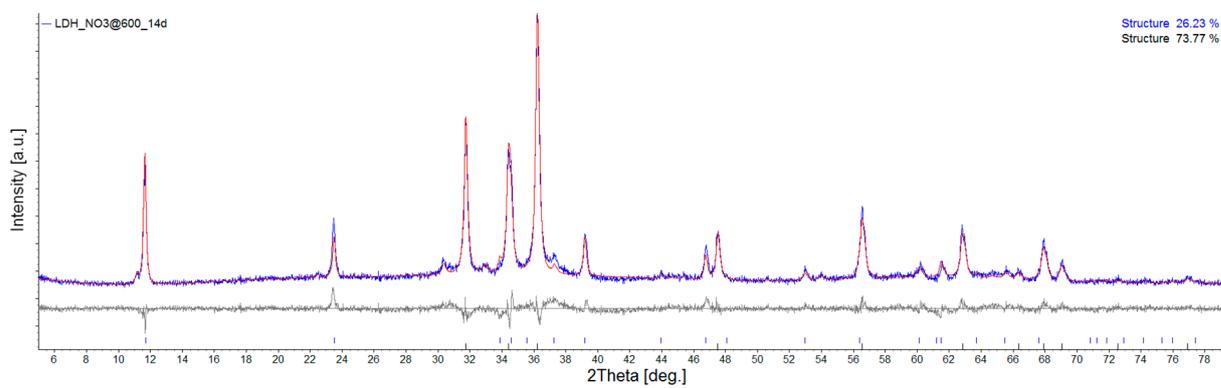
**Figure S4.** Picture of the samples after calcination showing that the inorganic calcined LDHs remain white, while organic intercalated LDHs are black after the calcination.



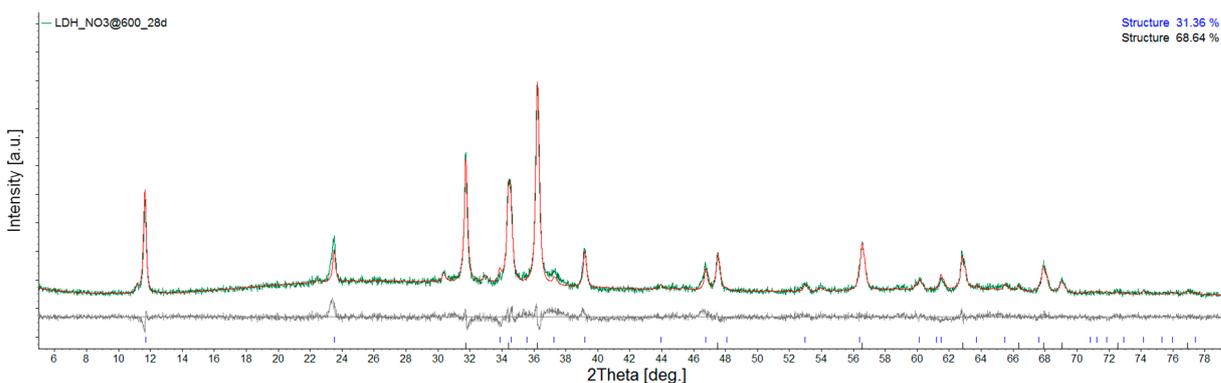
**Figure S5.** Plot of the Rietveld fit on the XRPD pattern of the LDH\_FLUR@400\_14d sample. Experimental pattern in black, calculated curve in red. Peak tickmarks of the LDH phases in blue and black, zinc oxide in green.



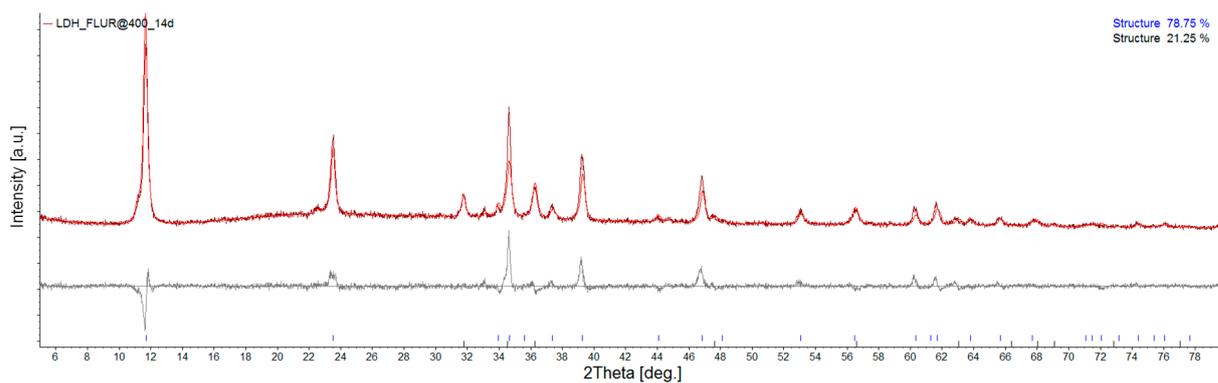
**Figure S6.** Plot of the Rietveld fit on the XRPD pattern of the LDH\_FLUR@400\_14d sample. Experimental pattern in green, calculated curve in red. Peak tickmarks of the LDH phase in blue, zinc oxide in black.



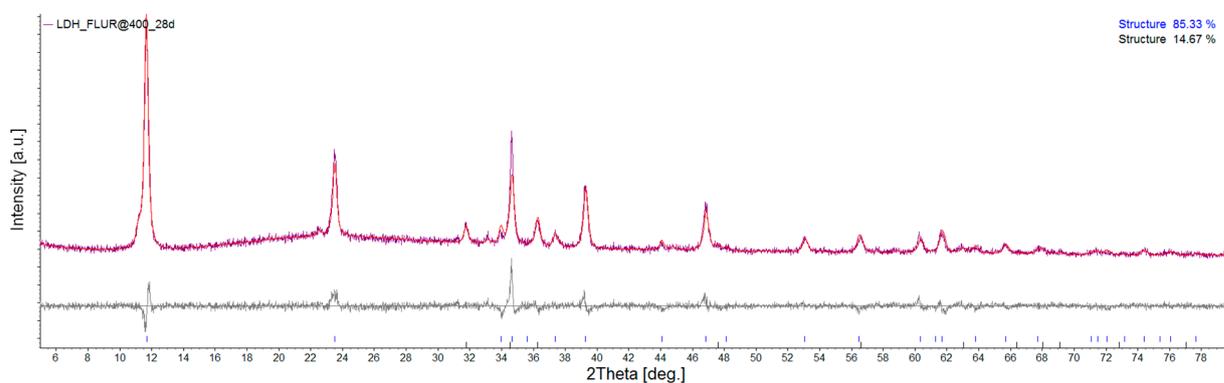
**Figure S7.** Plot of the Rietveld fit on the XRPD pattern of the LDH\_FLUR@600\_14d sample. Experimental pattern in blue, calculated curve in red. Peak tickmarks of the LDH phase in blue, zinc oxide in black.



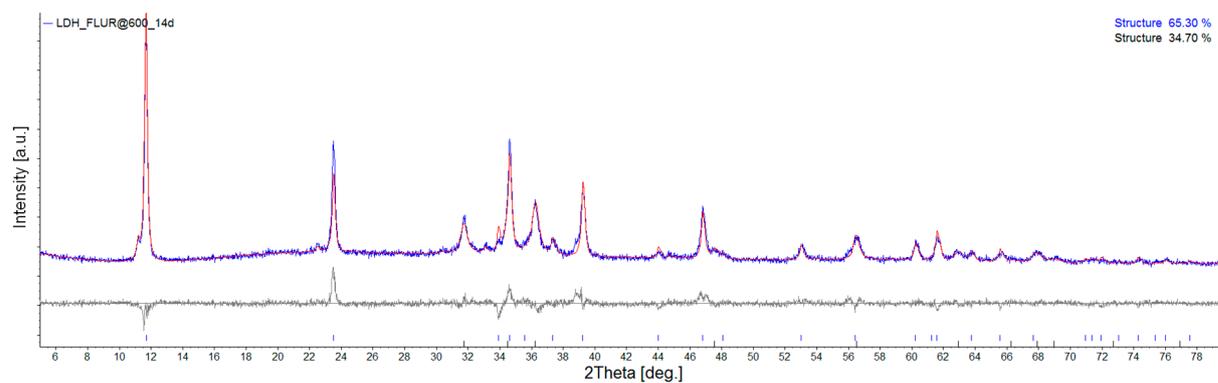
**Figure S8.** Plot of the Rietveld fit on the XRPD pattern of the LDH\_FLUR@600\_28d sample. Experimental pattern in green, calculated curve in red. Peak tickmarks of the LDH phase in blue, zinc oxide in black.



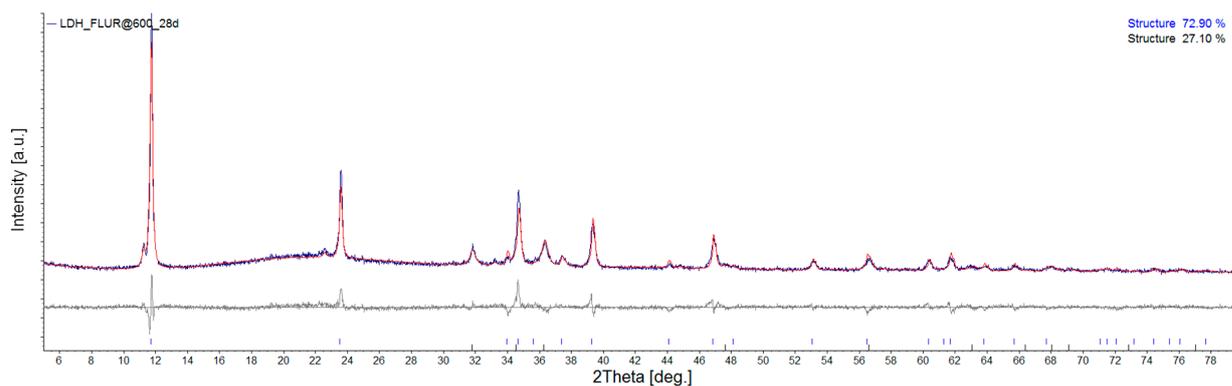
**Figure S9.** Plot of the Rietveld fit on the XRPD pattern of LDH\_NO<sub>3</sub>@400\_14d sample. Experimental pattern in brown, calculated curve in red. Peak tickmarks of the LDH phase in blue, zinc oxide in black.



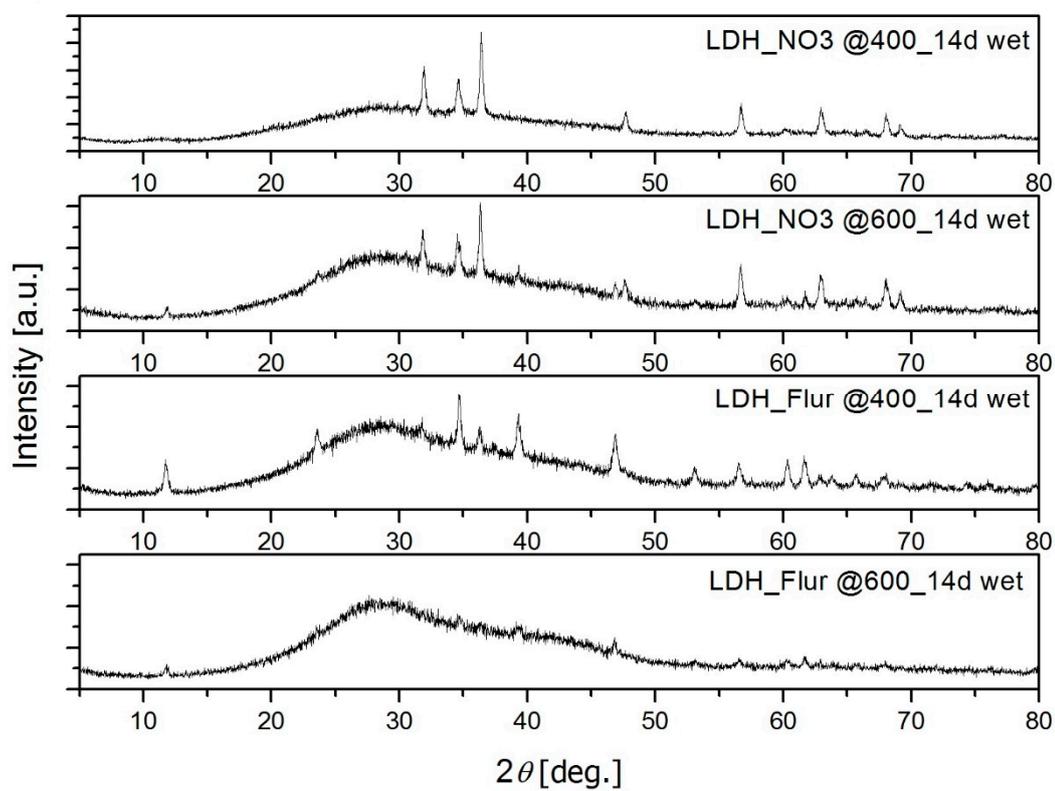
**Figure S10.** Plot of the Rietveld fit on the XRPD pattern of the LDH\_Flur@400\_28d sample. Experimental pattern in violet, calculated curve in red. Peak tickmarks of the LDH phase in blue, zinc oxide in black.



**Figure S11.** Plot of the Rietveld fit on the XRPD pattern of LDH\_Flur@600\_14d sample. Experimental pattern in blue, calculated curve in red. Peak tickmarks of the LDH phase in blue, zinc oxide in black.



**Figure S12.** Plot of the Rietveld fit on the XRPD pattern of LDH\_Flur@600\_28d sample. Experimental pattern in blue, calculated curve in red. Peak tickmarks of the LDH phase in blue, zinc oxide in black.



**Figure S13.** Comparison of the XRPD patterns of the wet samples after 14 days of rehydration.