

Electronic Supplementary Information

Topotactic intercalation of a bulky organic anion (thiacalix[4]arene) into LDH through osmotic swelling/restoration reaction in formamide

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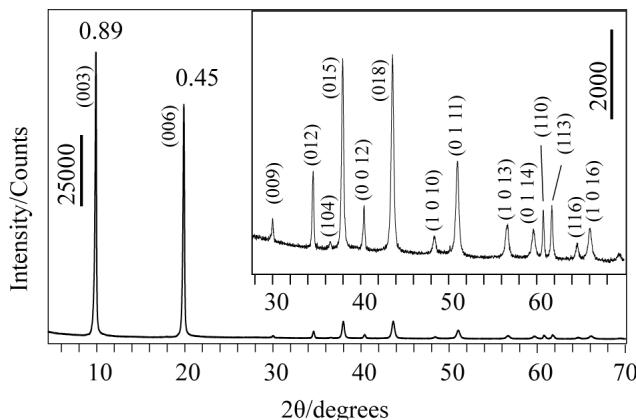


Fig. S1 XRD pattern of NO_3^- -type MgAl-LDH. The peaks are indexable to hexagonal symmetry ($a = 0.30475(5)$, $c = 2.6776(4)$ nm). d -value in nanometers.

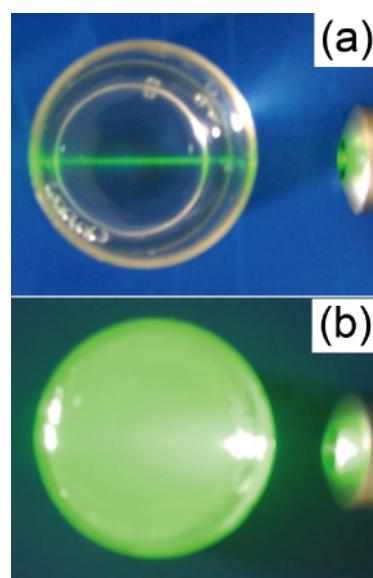


Fig. S2 Photographs of (a) the colloidal suspension of NO_3^- -type LDH in formamide for 24 h without stirring or shaking, and (b) the sample after TCAS was added to the suspension.

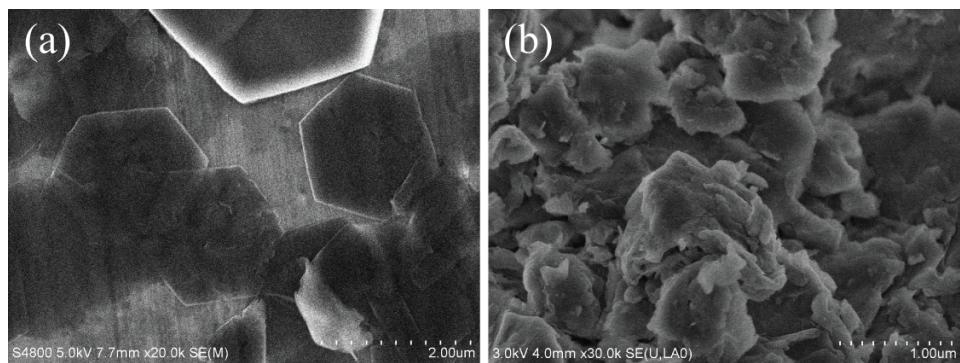


Fig. S3 (a) SEM images of dried colloidal aggregate from the suspension of LDH (0.075 g) in formamide (30 cm³). The well retained hexagonal morphology and size suggest that only a swelling occurred. The existence of a small amount of rumple plates suggests that the swelling collapse takes place a little, probably due to the evacuation of formamide. (b) SEM images of dried colloidal aggregate from the suspension of LDH (0.1 g) in formamide (160 cm³) after ultrasonic and stirring treatment to delaminate.

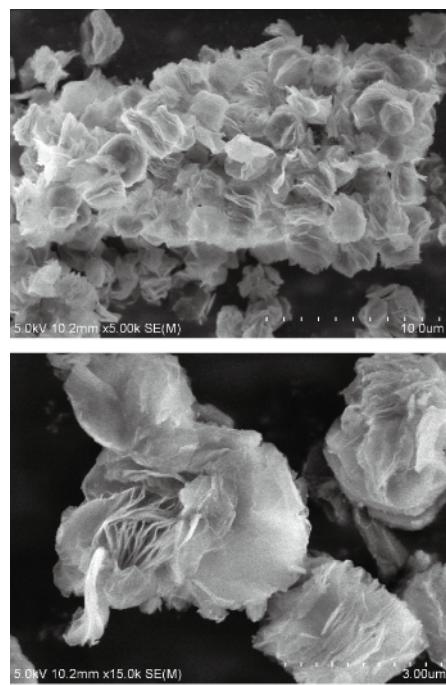


Fig. S4 SEM images of the obtained sample when using low concentration of LDH (0.075 g NO₃⁻-type LDH in 120 cm³ formamide).