

# Supporting Information for

## Mg/Al-CO<sub>3</sub> Layered Double Hydroxide Nanorings

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1. Morphological and textural characterization of  $\text{Mg}_{10}(\text{OH})_{18}\text{Cl}_2 \cdot 5\text{H}_2\text{O}$  nanowires and Mg/Al- $\text{CO}_3$  LDH nanorings

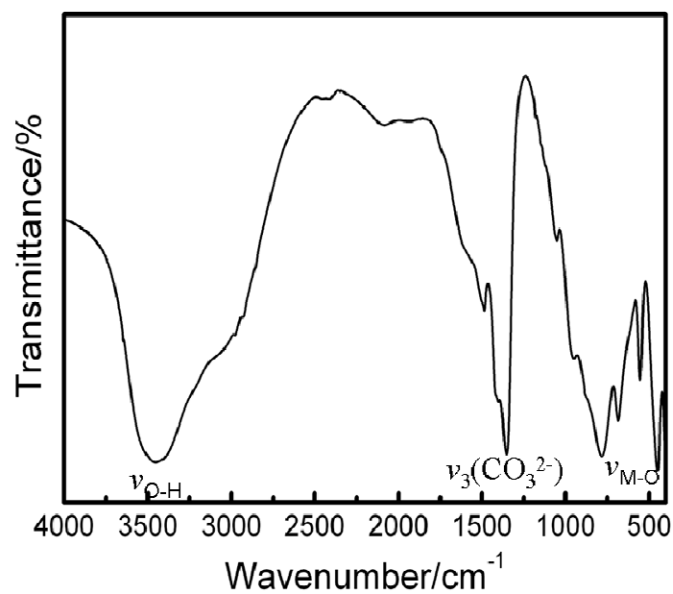


Figure S1. FT-IR pattern of MAC-R

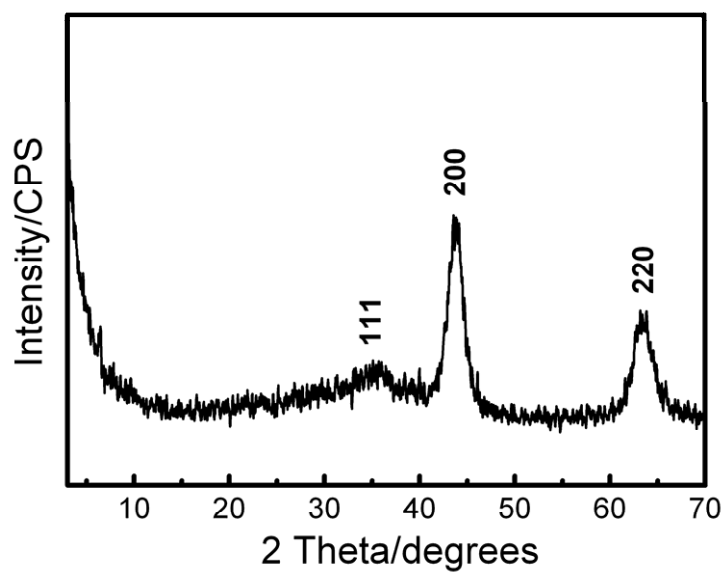
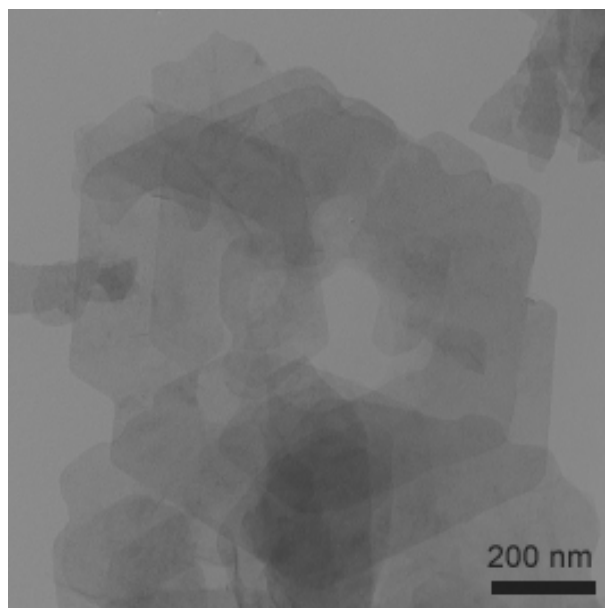
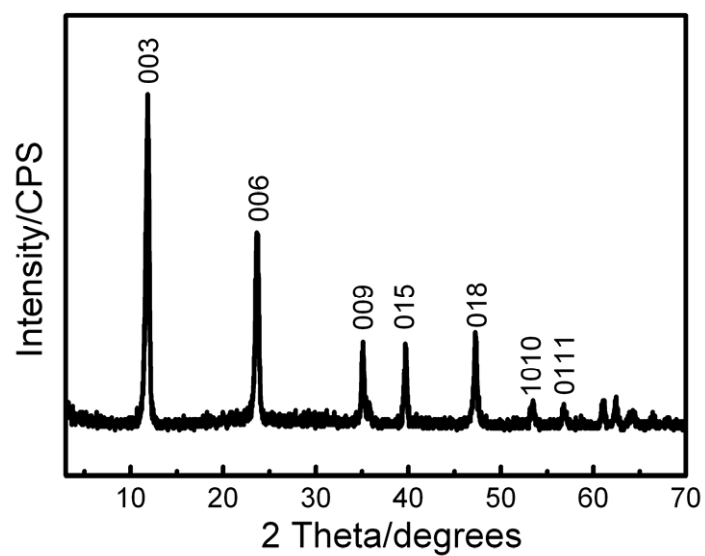


Figure S2. XRD pattern of MAC-R calcined at 500 °C for 6 h

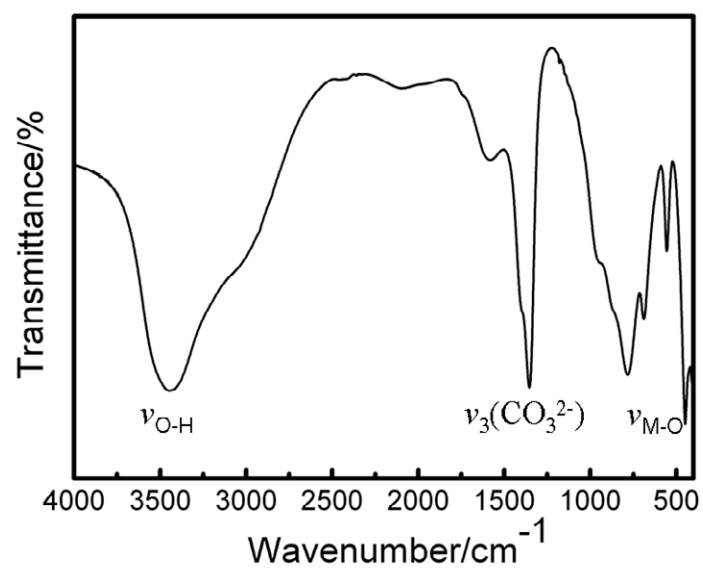


**Figure S3.** TEM image of MAC-R calcined at 500 °C for 6 h

## 2. Morphologic and textural characterization of Mg/Al-CO<sub>3</sub> LDH nanoflowers

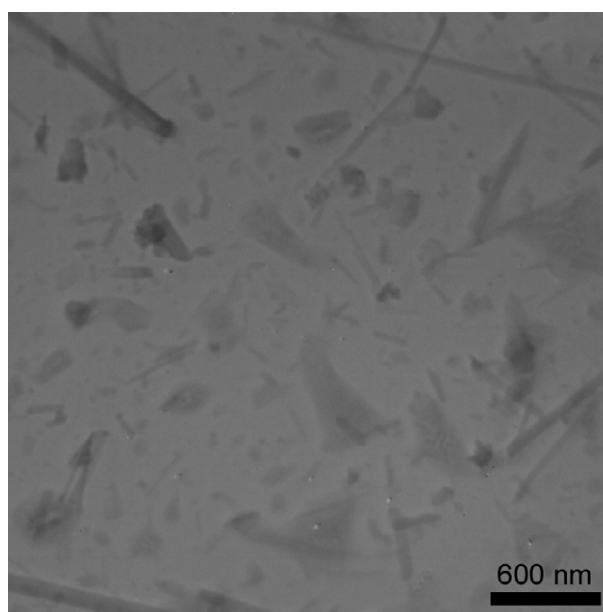


**Figure S4.** XRD pattern of MAC-F

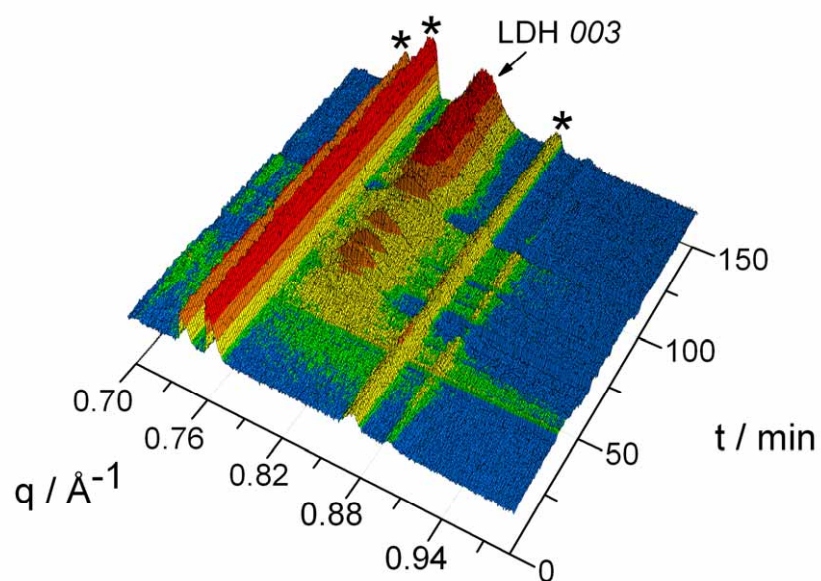


**Figure S5.** FT-IR pattern of MAC-F

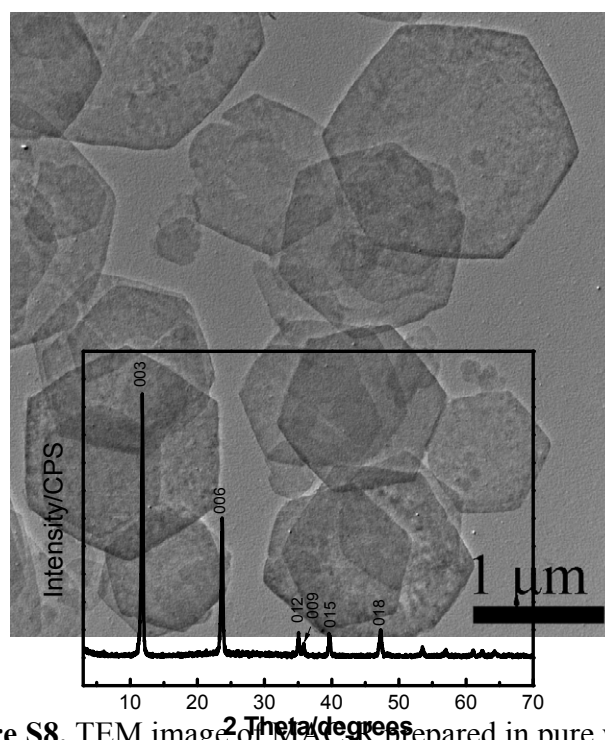
### 3. Discussion of synthesis mechanism



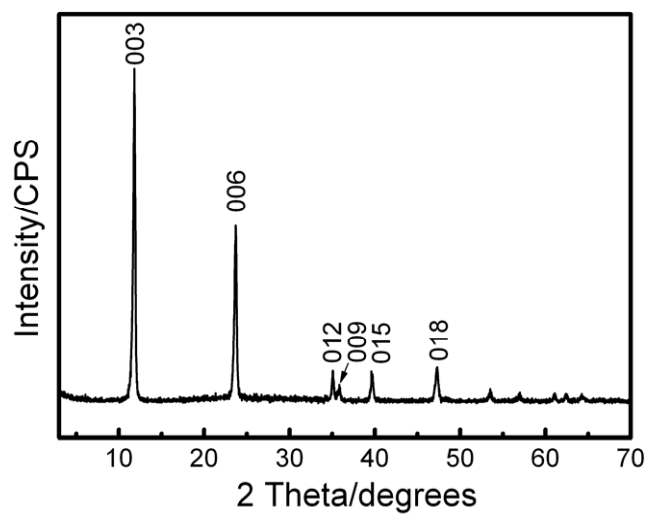
**Figure S6.** TEM image of MAC-R prepared after a reaction time of 40 min



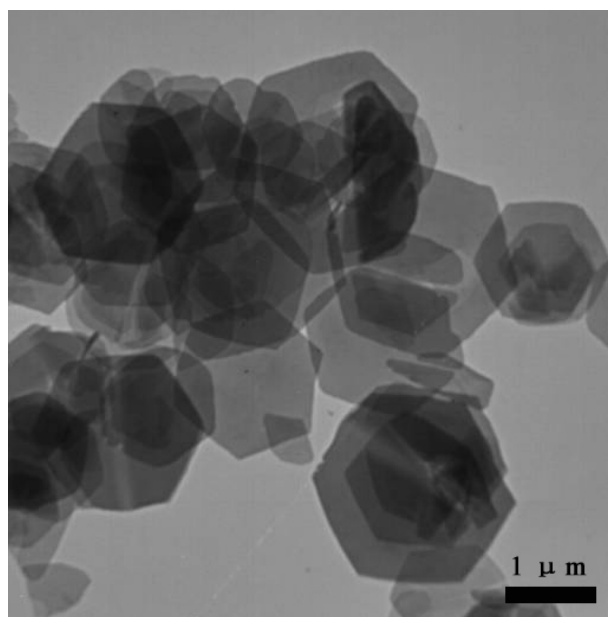
**Figure S7.** 3D stacked plot recorded for the transition of Mg10-NW into MAC-R. Reflections marked \* correspond to fluorescence from metals present inside the experimental hutch. After 150 min, the stirring mechanism jammed and no further data could be obtained.



**Figure S8.** TEM image of MAC-R prepared in pure water



**Figure S9.** XRD pattern of MAC-P



**Figure S10.** TEM image of MAC-P