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Photoluminescence of colloids of pristine MgAl layered double hydroxides

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Experimental section.

Exfoliation. The decarbonated LDH_NO_3 powdery product was dispersed in formamide in a conical beaker. The system was purged with nitrogen gas and subsequently tightly capped. Then, the dispersion system was ultra-sonicated for 20 min and subsequently stood for 1 day. The translucent dispersion was collected for characterization.

Characterizations. X-ray diffraction (XRD) patterns were collected using a Rigaku D/max 2400 diffractometer with Cu Kα radiation (λ = 0.154 nm) at a scanning rate of 4° min^{-1} in 2θ range of 3–70°. The size and morphology of the LDHs were observed by a HITACHI S-4300 scanning electron microscopy (SEM). Its accelerating voltage was 15 kV. Ultraviolet-visible (UV-vis) absorption spectra were collected in the range from 200 to 800 nm on a Shimadzu UV-1601 spectrophotometer, with a slit width of 5.0 nm. Luminescence spectra were obtained on an F-4500 fluorospectrophotometer with the slit of 5.0 nm. The ranges of emission and excitation spectra were 380-600 nm and 260-420 nm, respectively.

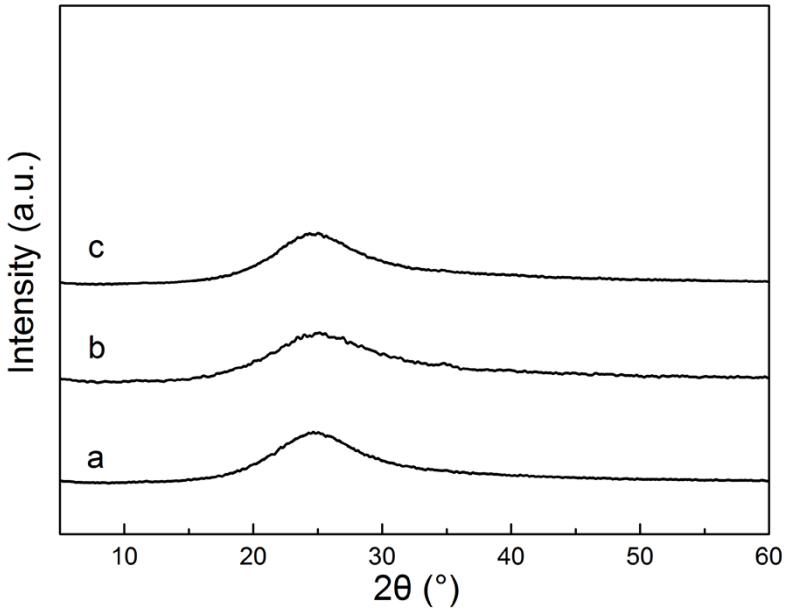

Figure S1 XRD patterns with wider 2θ range for the exfoliated MgAl LDH_NO_3 centrifuged gel-like sediments, wherein the MgAl LDH_NO_3 samples were obtained after the HNO_3-$NaNO_3$ exchange of the MgAl LDH_CO_3 synthesized *via* (a) urea, (b) urea + NaOH, and (c) urea + HMT method, respectively.