

Supporting Information

Preparation of Mesoporous ZnAl₂O₄ Nanoflakes by Ion Exchange from Na-Dawsonite Parent in the Presence of Ionic Liquid

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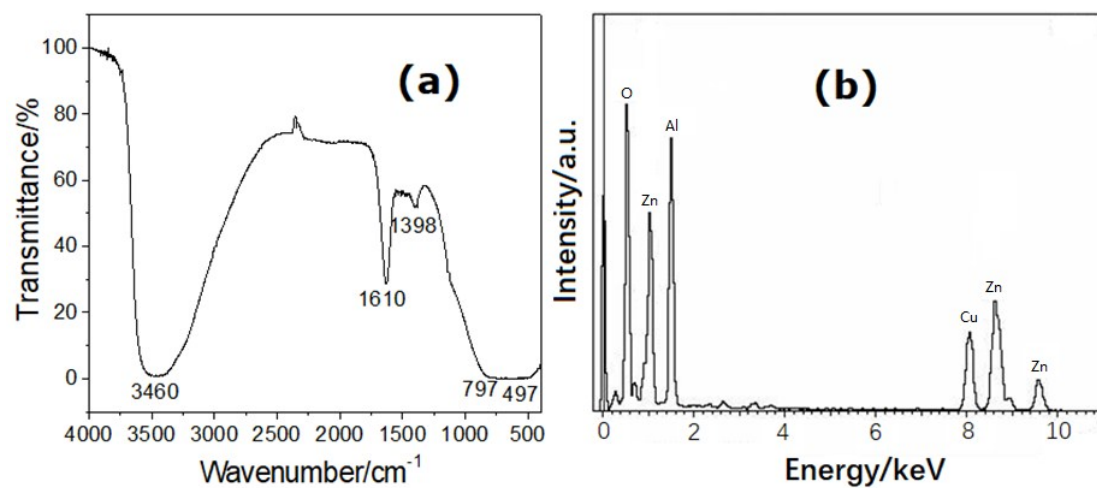


Figure S1. (a) FTIR and (b) EDX spectra of the ZnAl_2O_4 product obtained after calcined at 700 °C.

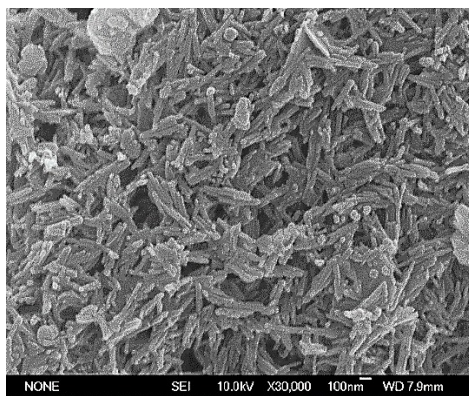


Figure S2. FE-SEM image of the Na-Dw product prepared by hydrothermal method at 120 °C for 12 h.

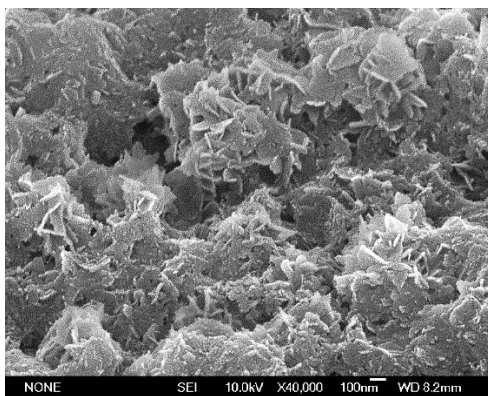


Figure S3. FE-SEM image of the product obtained by ion exchange from the Na-Dw in the absence of ILs at 50 °C for 10 h.

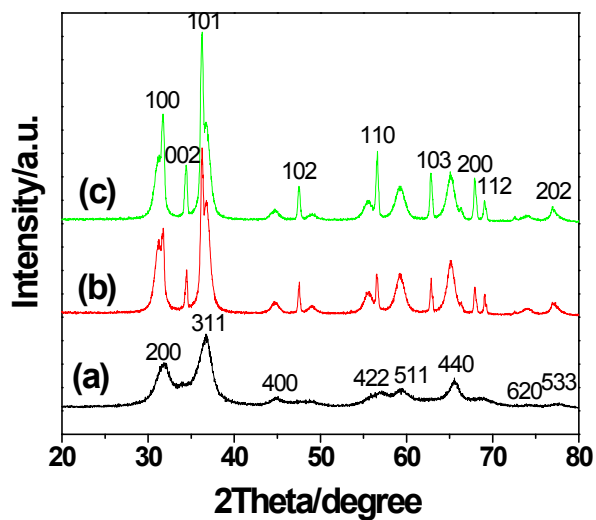


Figure S4. XRD patterns of the samples obtained by calcining the precursors at 700 °C for 2 h. The precursors were prepared by using different mole ratios of Zn²⁺:NaDw: (a) 1:2, (b) 1:1 and (c) 2:1.

When the mole ratio is 1:2, pure ZnAl₂O₄ crystals can be obtained. When it is 2:1, however, ZnO phase becomes the main crystal phase of the product.

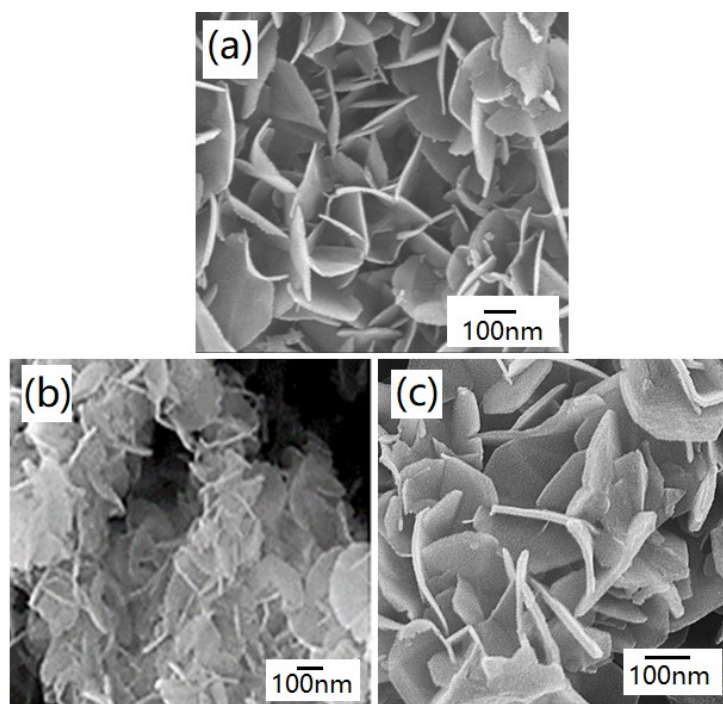
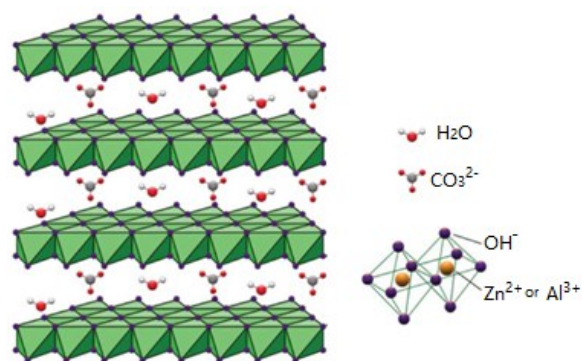


Figure S5. FE-SEM images of the samples obtained using different mole ratios of Zn^{2+} :Na-Dw: (a) 1:2, (b) 1:1 and (c) 2:1.



Scheme S1. Schematic diagram of hydrotalcite-like $\text{Zn}_6\text{Al}_2(\text{OH})_{16}(\text{CO}_3)\cdot 4\text{H}_2\text{O}$ crystal structure[✳].

✳ Pedro Ivo R. Moraes, Sergio R. Tavares, Viviane S. Vaiss, and Alexandre A. Leitao. Ab Initio Study of Layered Double Hydroxides Containing Iron and Its Potential Use as Fertilizer *J. Phys. Chem. C* 2016, **120**, 9965-9974.