Supporting Information:

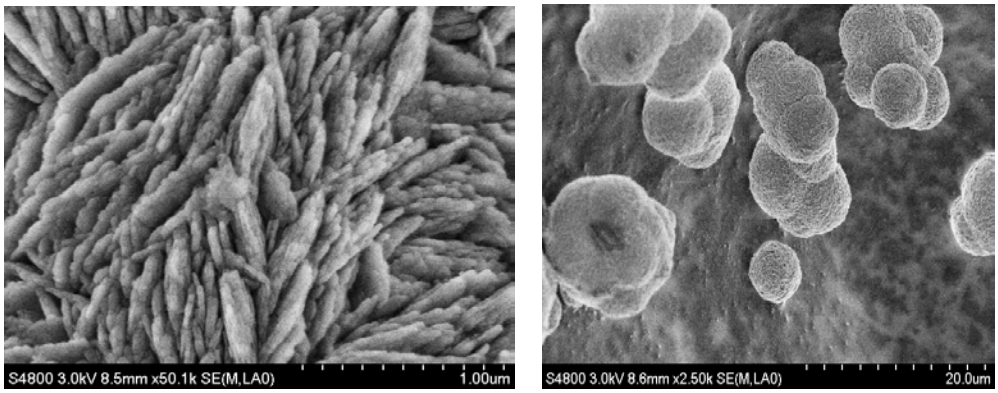

Fig. S1. SEM images of the bayerite precursor before conversion.

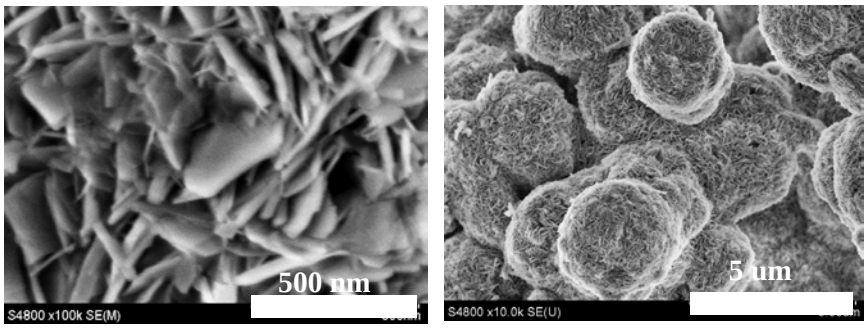

Fig. S2. SEM images of the obtained sample Al-NH_4Ac.

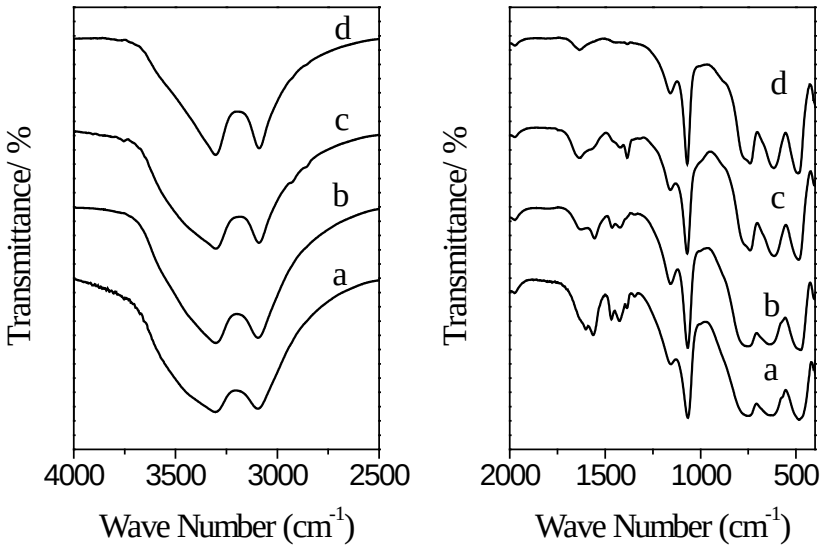

Fig. S3. FT-IR spectra of the obtained samples Al-HAc (a and b) and Al-NH_4Ac (c and d) before (a and c) and after (b and d) washing.

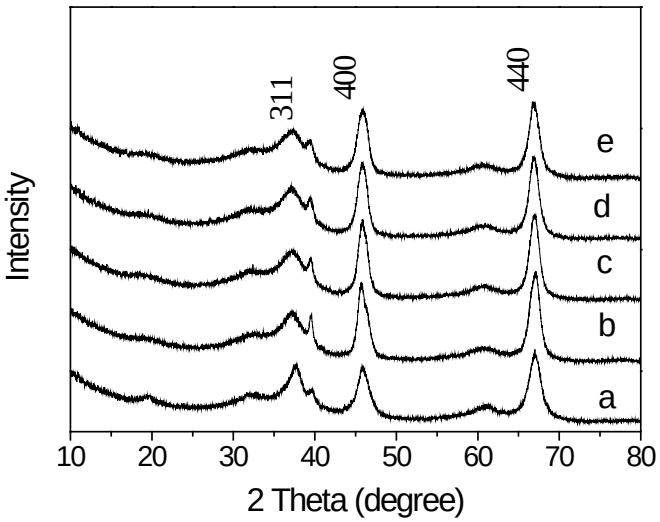

Fig. S4. XRD patterns of the calcined samples a) η-Al_2O_3 calcined by bayerite precursor, b) Al_2O_3-0HAc, c) Al_2O_3-10HAc, d) Al_2O_3-20HAc and e) Al_2O_3-40HAc.

Table S1. Textural properties of the alumina samples.

	Precursor Structure	S_{BET} m^2/g	Pore Volume cm^3/g	PSD (nm) Ad
η-Al_2O_3	Bay [α]	305	0.34	4.3
Al_2O_3-0HAc	Boe [β]	96	0.13	--
Al_2O_3-10HAc	Boe	206	0.30	2.3, 45
Al_2O_3-20HAc	Boe	212	0.45	2.4, 26
Al_2O_3-40HAc	Boe+AA [γ]	232	0.51	2.3, 20

[α]: Bay represents bayerite crystalline phase.

[β]: Boe represents boehmite crystalline phase.

[γ]: AA represents aluminum di-acetate crystalline phase.