Supporting Information

A general nonaqueous route to crystalline alkaline earth aluminate nanostructures

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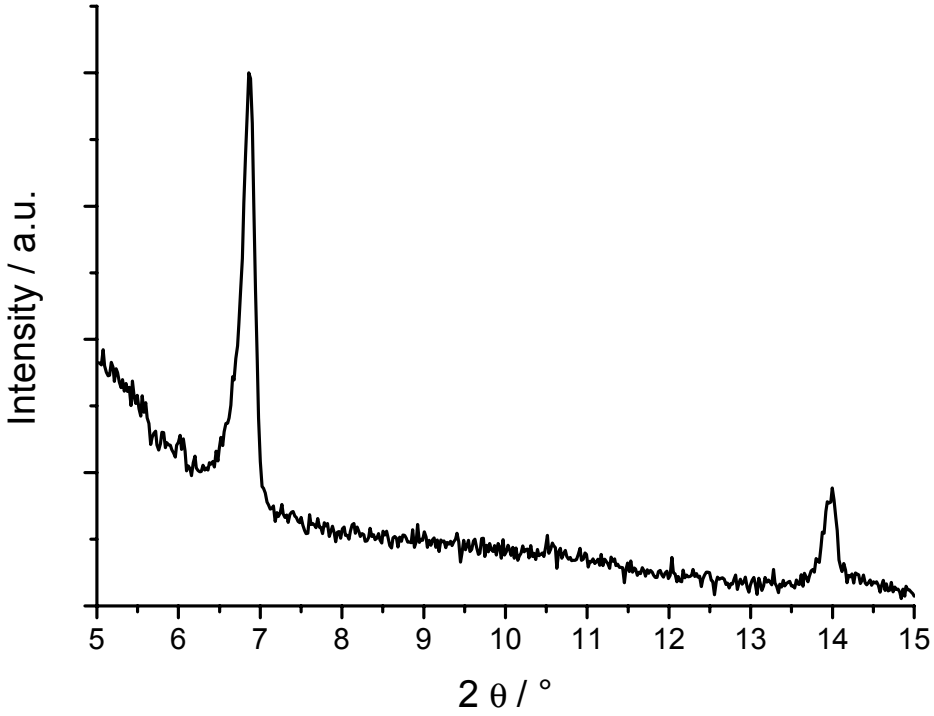

Figure SI-1. Low angle region of the XRD powder $CaAl_4O_7$

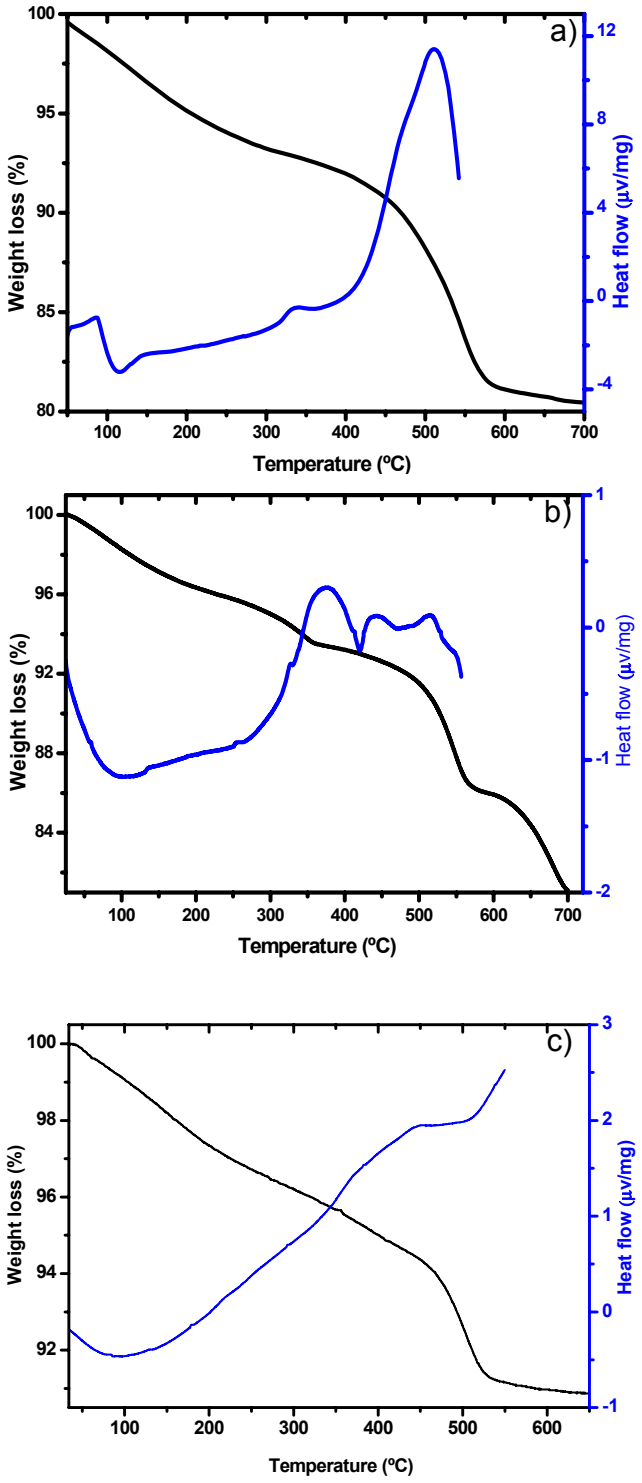

Figure SI-2. Thermogravimetric (TGA) and differential scattering calorimetric analysis (DSC) of the aluminate nanostructures: a) $SrAl_4O_7$, b) $CaAl_4O_7$, c) $BaAl_2O_4$

Elemental Analysis (CHN)

Aluminate	Carbon (weight %)	Hydrogen (weight %)
$SrAl_4O_7$	8.90	1.34
$CaAl_4O_7$	15.85	1.94
$BaAl_2O_4$	9.23	1.36

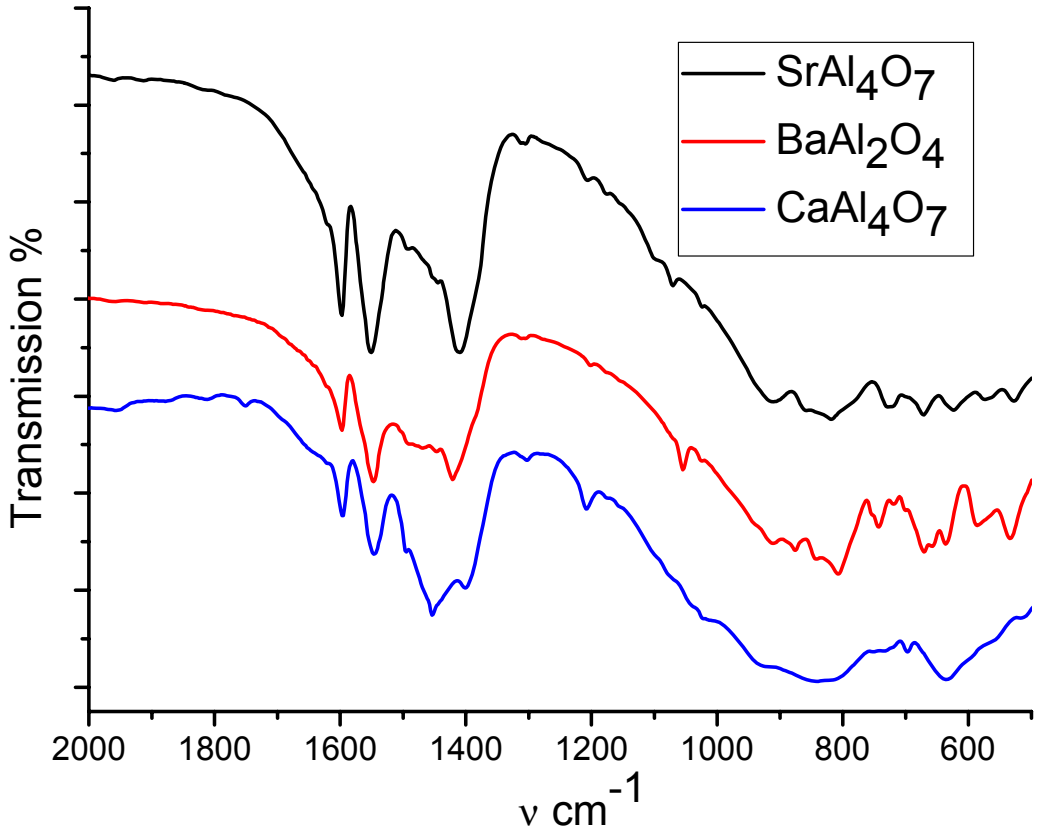

Figure SI-3. FT-IR speactra of the as synthesized alkaline earth aluminates $SrAl_4O_7$ (black), $CaAl_4O_7$ (blue) and $BaAl_2O_4$ (red).

NMR:
In addition to the solvent benzyl alcohol, benzyl ether, toluene and benzaldehyde were found in significant quantities.

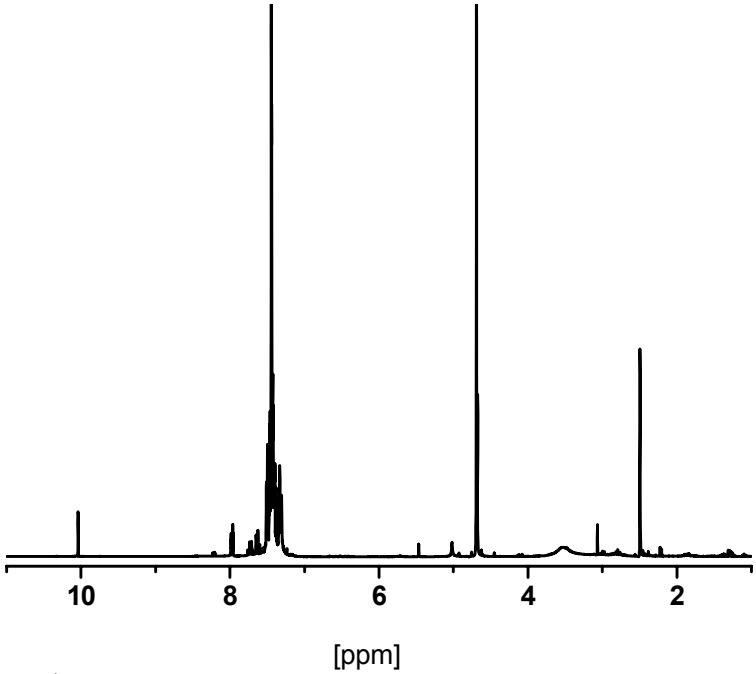

Figure SI-4. ^{1}H- NMR spectrum of the reaction solution measured in $CDCl_3$.

From the ^{1}H spectrum:
Benzaldehyde: ^{1}H NMR δ = 10.04 ppm (1H, -CHO), toluene: ^{1}H NMR δ = 2.49 ppm (3H, $-CH_3$), Benzyl ether ^{1}H NMR δ = 4.68 ppm (2H, $-CH_2-$). Resonances in the range of 7.50-7.00 ppm are due to aromatic protons (superimposed)

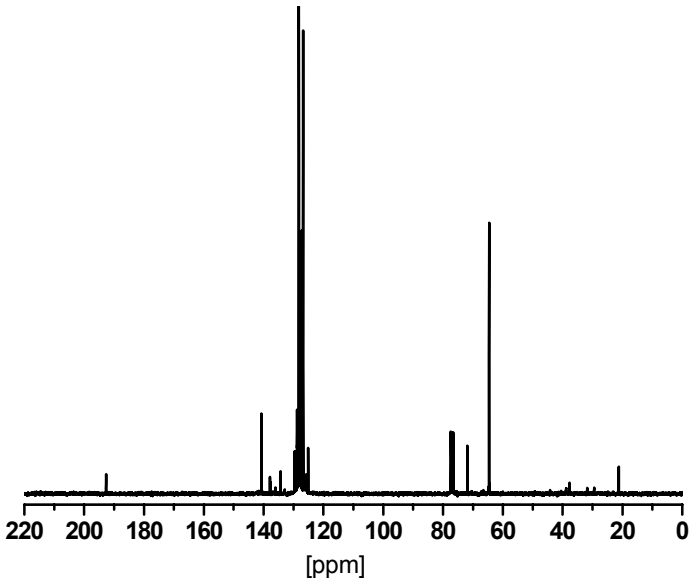

Figure SI-5. ^{13}C- NMR spectrum of the reaction solution measured in $CDCl_3$.

From the ^{13}C spectrum:
Benzaldehyde: ^{13}C NMR δ = 192.5 ppm (-CHO), 128.0, 128.83 ppm (C_{ph}, other aromatic carbon signal superimposed), toluene: ^{13}C NMR δ = 21.26 ppm (-CH_3) (C_{ph}, other aromatic carbon signal superimposed), benzyl ether: ^{13}C NMR δ = 71.80 ppm (-CH_2-), 128.19 ppm (C_{ph}, other aromatic carbon signal superimposed).

Solid State NMR of the aluminum oxide hybrid

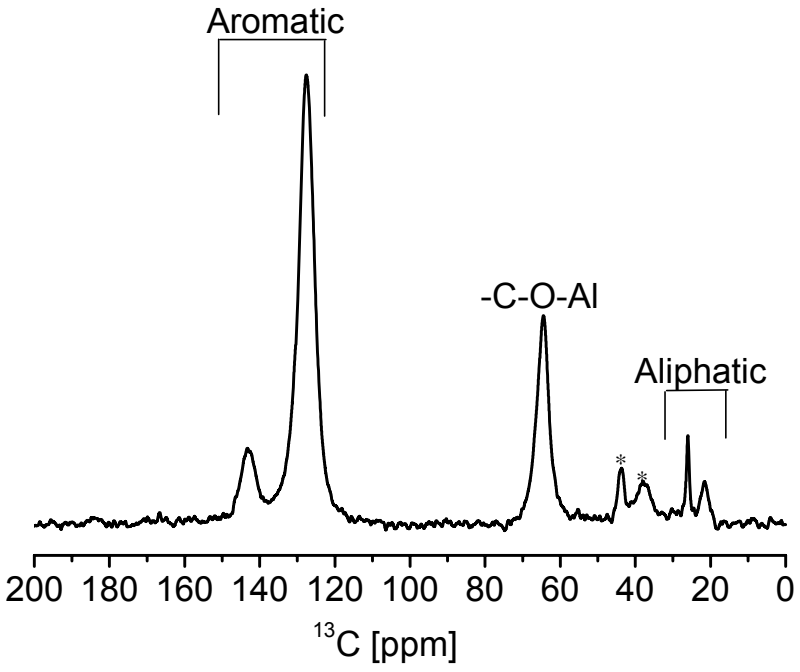

Figure SI-6. ^{13}C CPMAS spectrum of the aluminium oxide lamellar hybrid. Asterisks depict spinning sidebands.

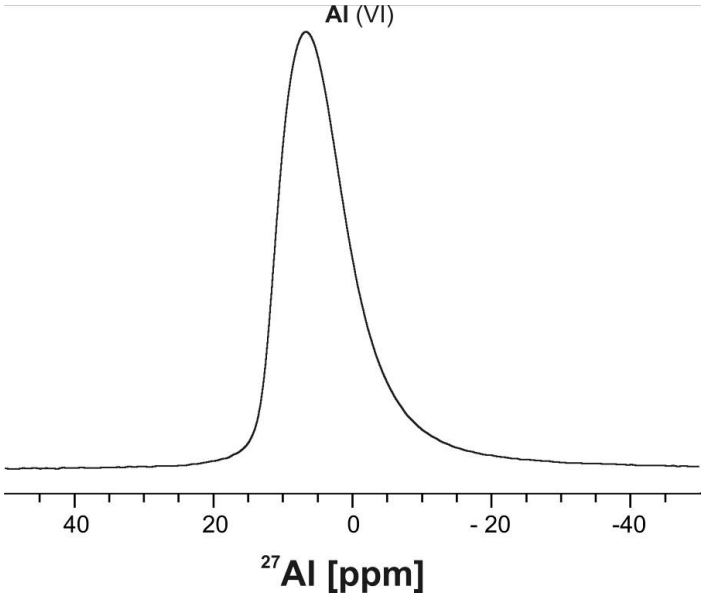

Figure SI-7. ^{27}Al MAS spectrum of the aluminum oxide lamellar hybrid.