Supplementary information for:

Strong Lewis acidic catalysts for C–F bond activation by fluorination of activated γ-Al_2O_3

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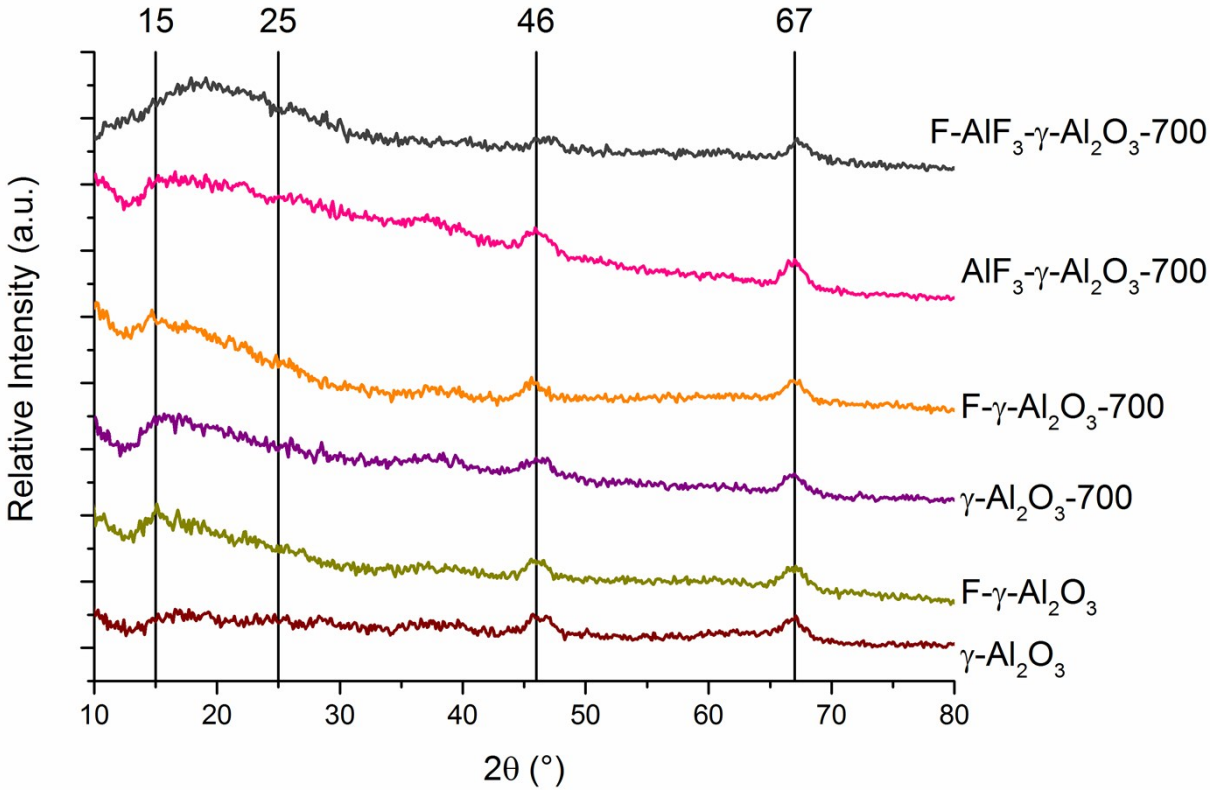

Figure S1. Powder X-ray diffractogram of catalysts **1** to **6**. The main reflections of β-AlF_3 (PDF No. 43-435, 2θ=15 and 25°) and γ-Al_2O_3 (PDF No. 10-425, 2θ=46 and 67°) are depicted as straight lines

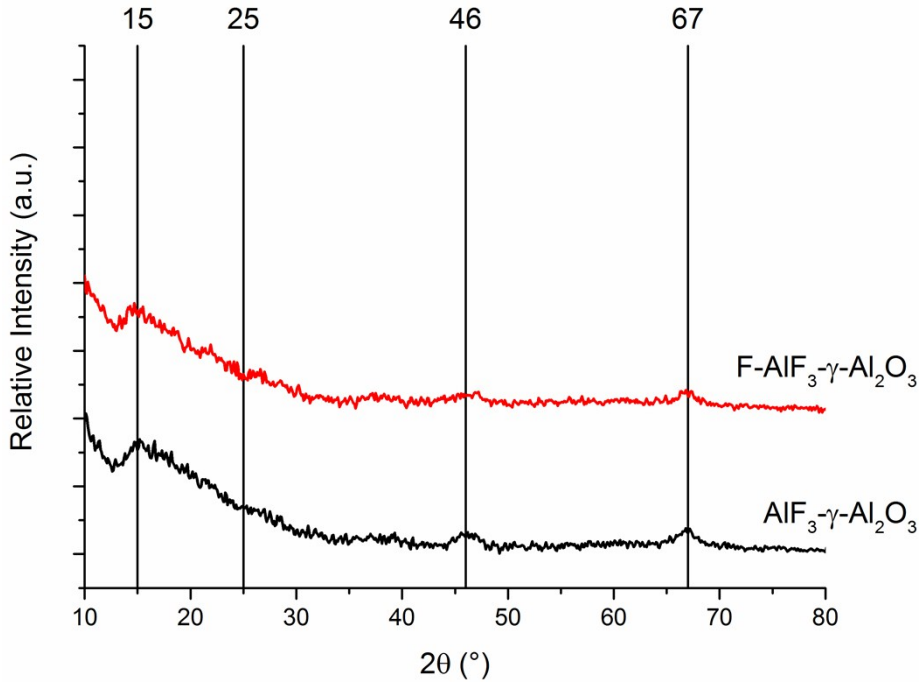

Figure S2. Powder X-ray diffractogram of catalysts **7** and **8**. The main reflections of β-AlF_3 (PDF No. 43-435, 2θ=15 and 25°) and γ-Al_2O_3 (PDF No. 10-425, 2θ=46 and 67°) are depicted as straight lines

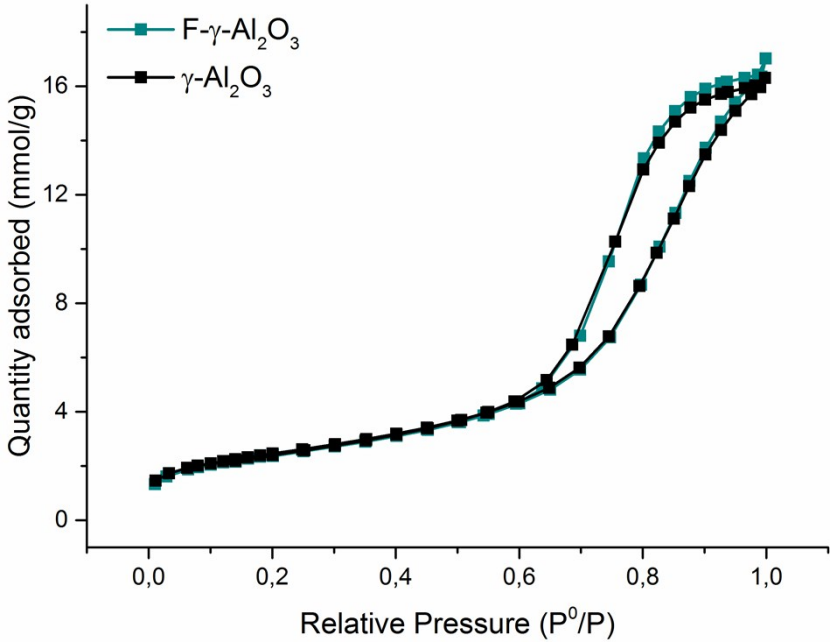

Figure S3. N_2 sorption isotherm of catalysts **1** (black) and **2** (blue)

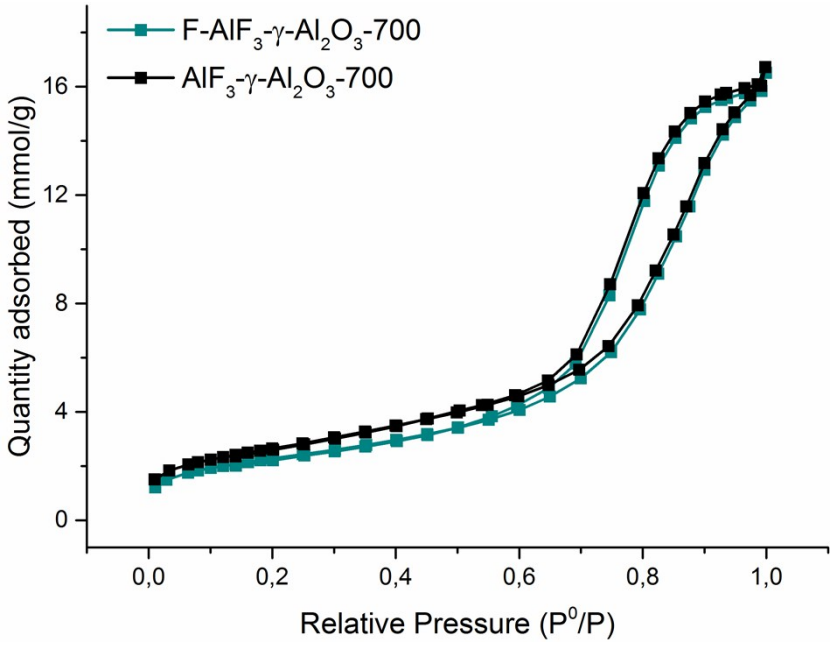

Figure S4. N_2 sorption isotherm of catalysts **5** (black) and **6** (blue)

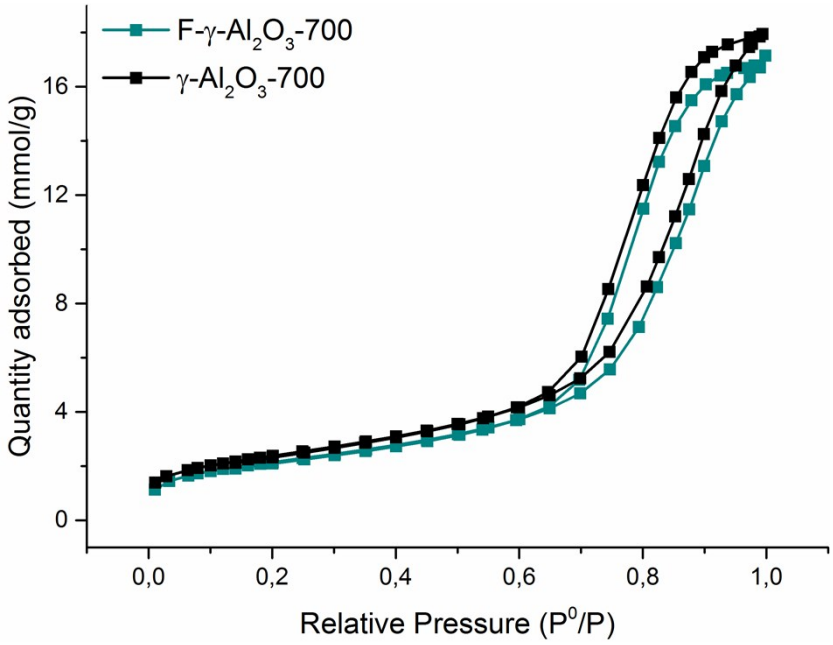

Figure S5. N_2 sorption isotherms of catalysts **3** (black) and **4** (blue)

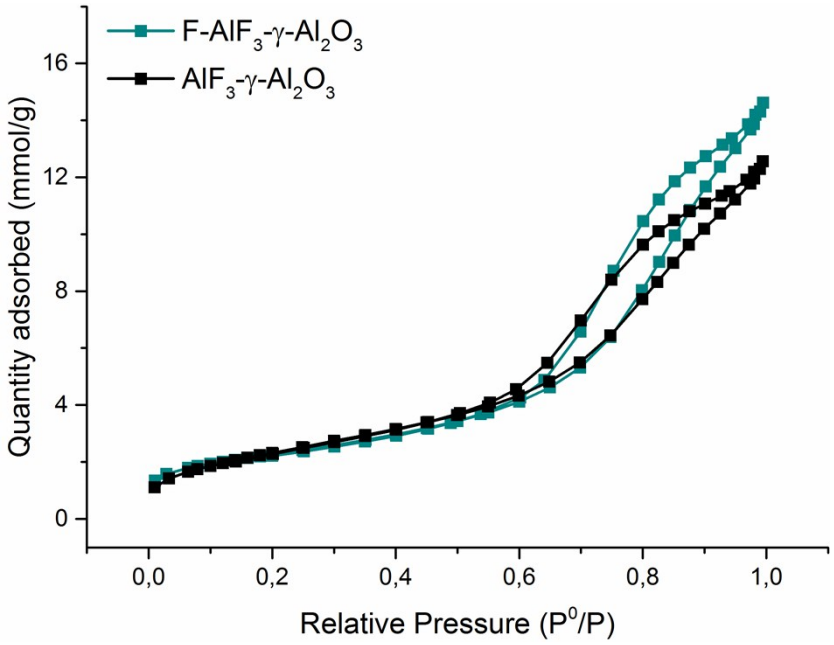

Figure S6. N_2 sorption isotherm of catalysts **7** (black) and **8** (blue)

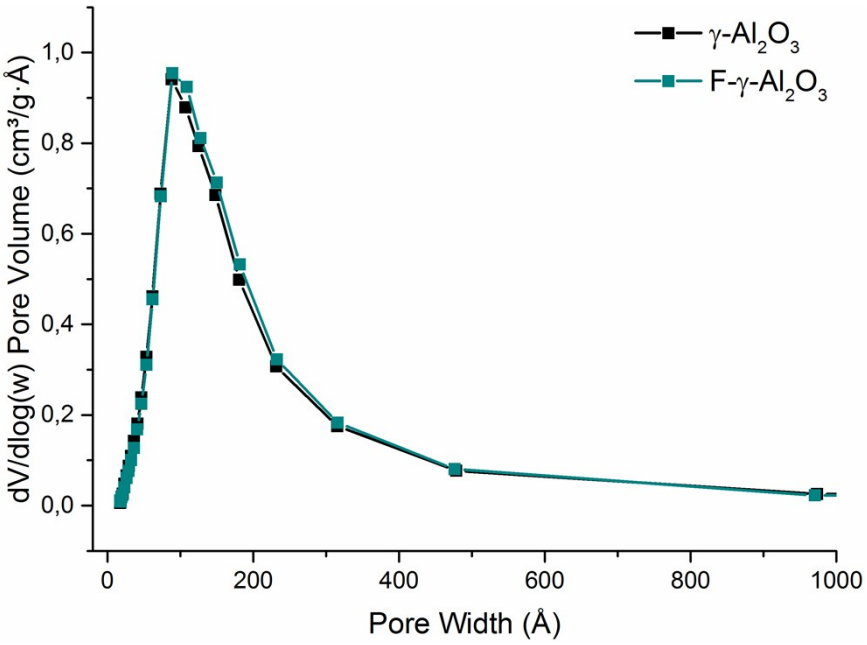

Figure S7. Pore width distribution (following BJH model, adsorption branch) of catalysts **1** (black) and **2** (blue)

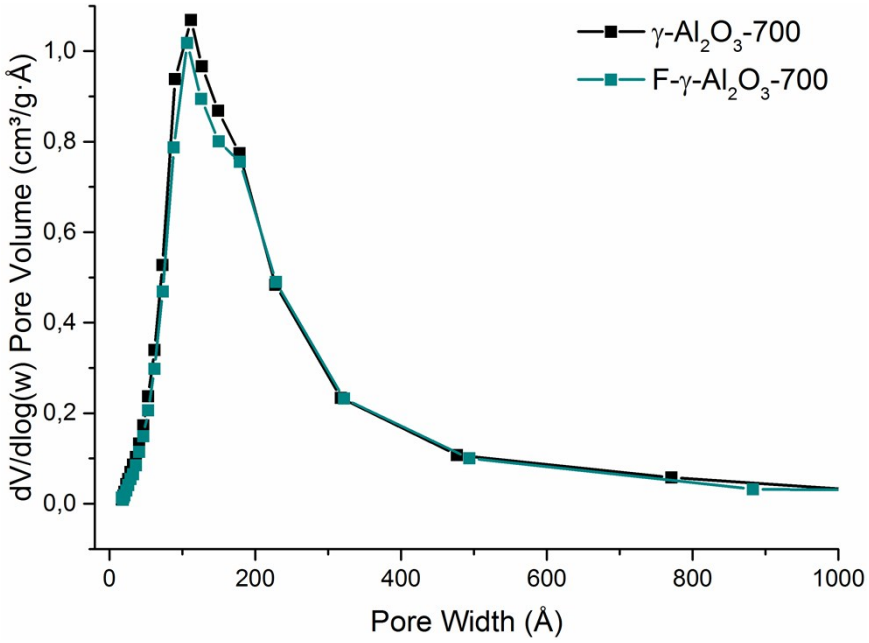

Figure S8. Pore width distribution (following BJH model, adsorption branch) of catalysts **3** (black) and **4** (blue)

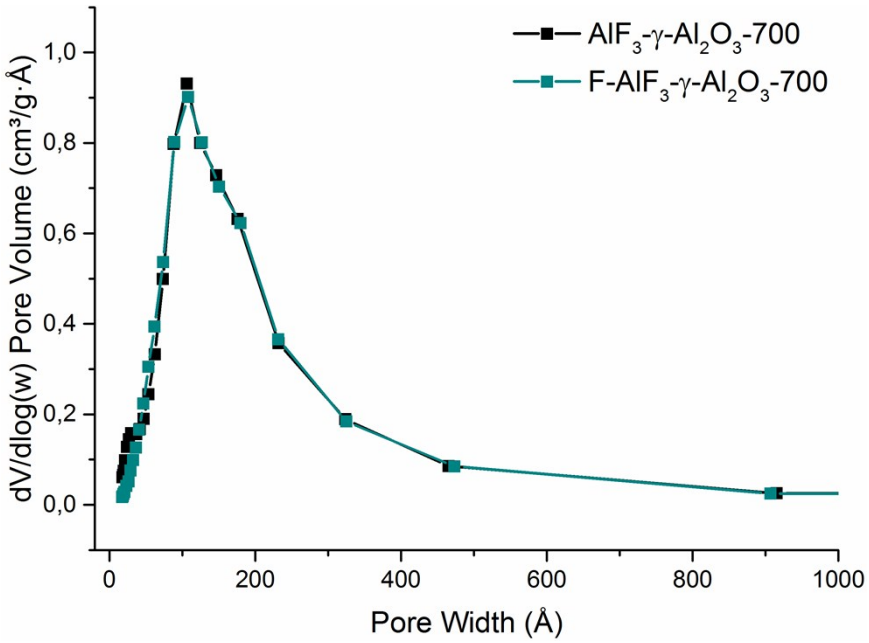

Figure S9. Pore width distribution (following BJH model, adsorption branch) of catalysts **5** (black) and **6** (blue)

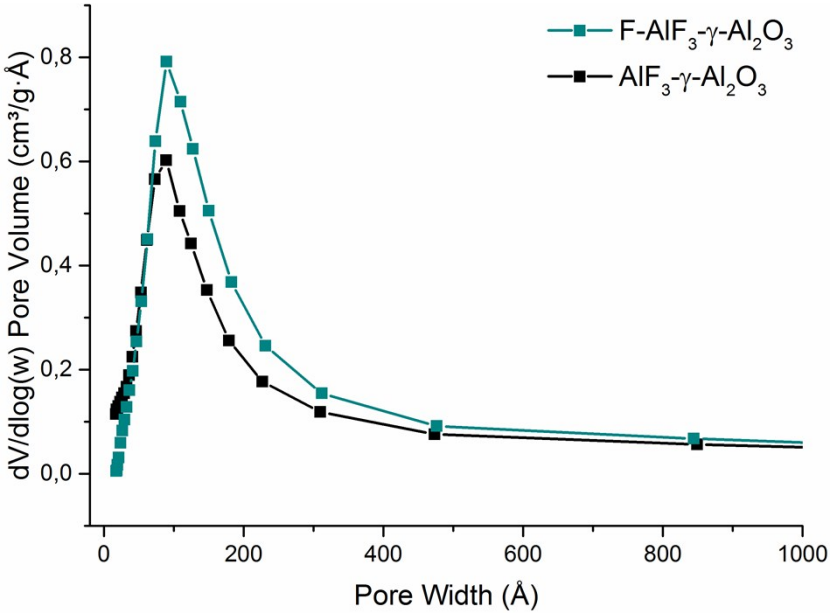

Figure S10. Pore width distribution (following BJH model, adsorption branch) of catalysts **7** (black) and **8** (blue)

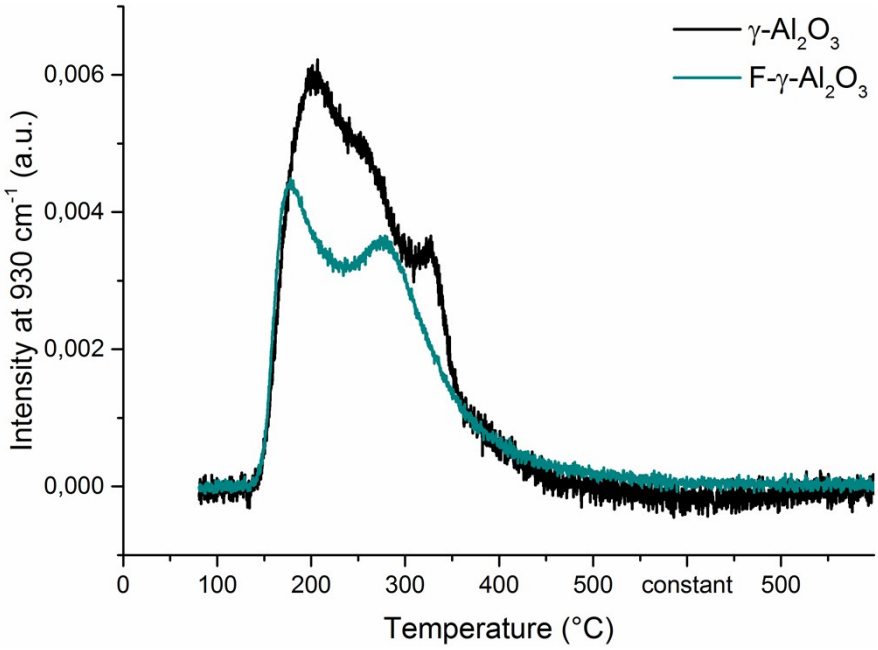

Figure S11. NH_3-TPD desorption profiles of catalysts **1** (black) and **2** (blue)

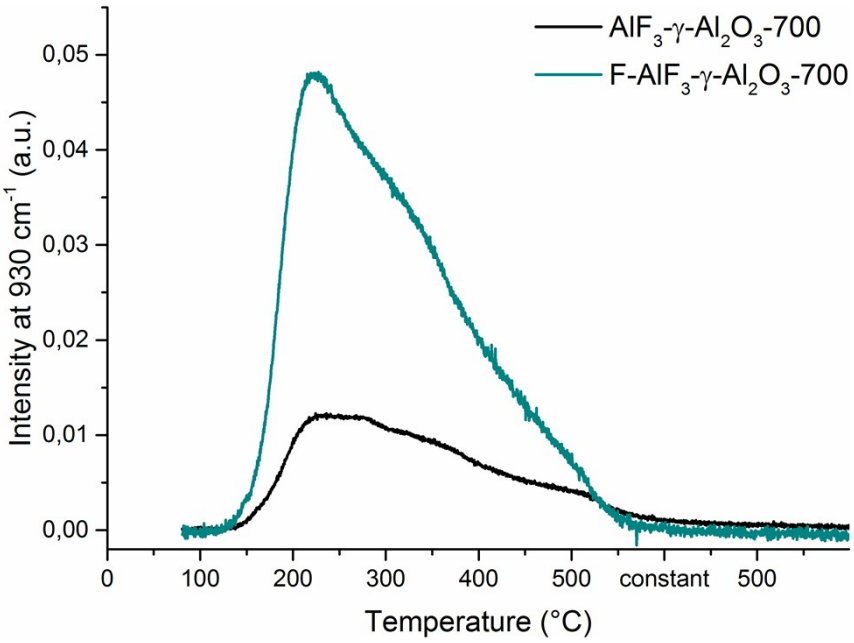

Figure S12. NH_3-TPD desorption profiles of catalysts **5** (black) and **6** (blue)

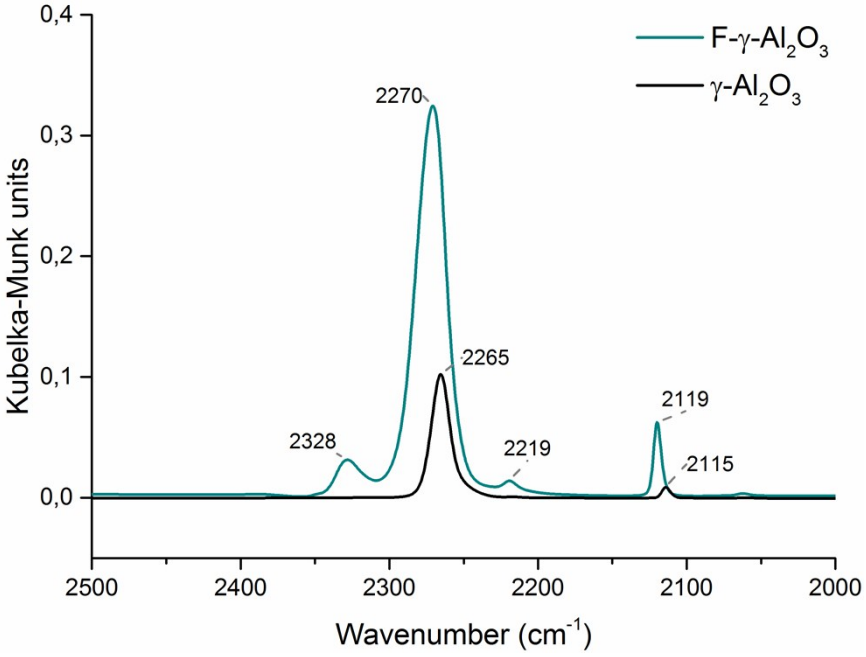

Figure S13. DRIFTS spectra of catalysts **1** and **2** after CD_3CN adsorption and 1 minute desorption under vacuum

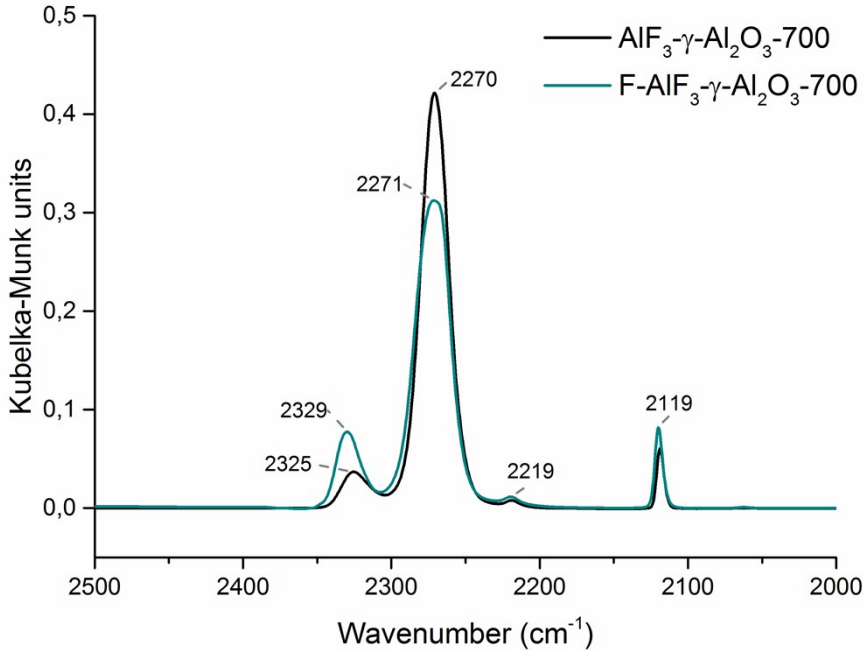

Figure S14. DRIFTS spectra of catalysts **5** and **6** after CD_3CN adsorption and 1 minute desorption under vacuum

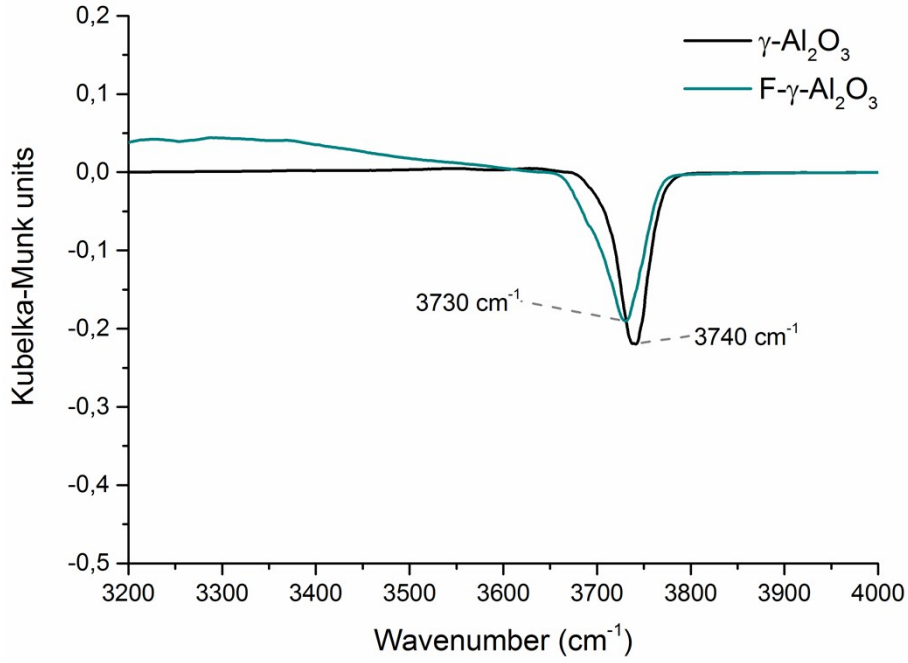

Figure S15. DRIFTS spectra of catalysts **1** and **2** after CD_3CN adsorption, in the region of the OH stretching modes

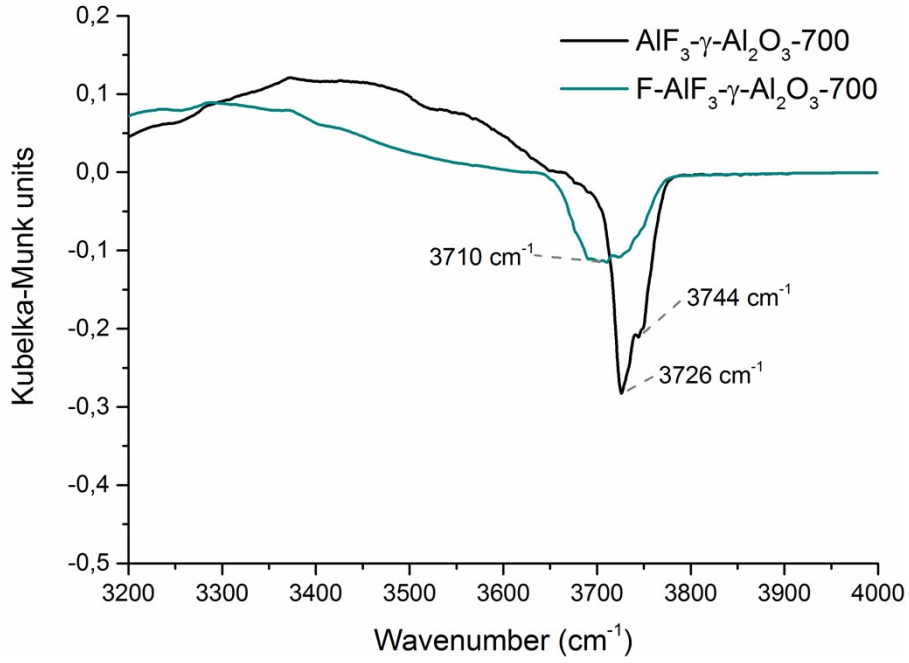

Figure S16. DRIFTS spectra of catalysts **5** and **6** after CD_3CN adsorption, in the region of the OH stretching modes

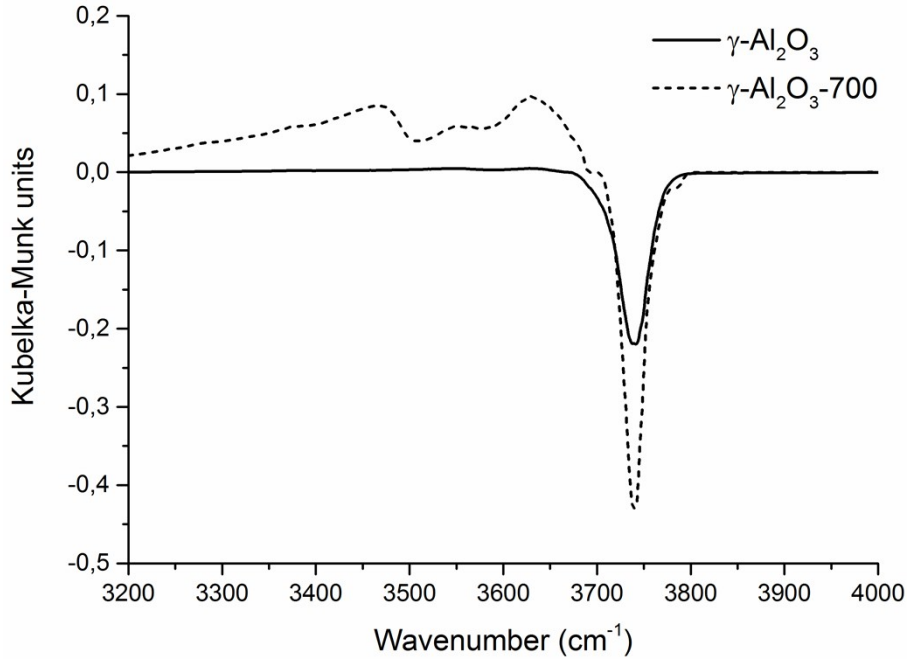

Figure S17. DRIFTS spectra of catalysts **1** and **3** after CD_3CN adsorption, in the region of the OH stretching modes

Table S1 Characterization done on the catalysts

Catalyst	Short name	Surface area by BET [m^2/g]	Pore size [Å][a]
7	AlF_3-γ-Al_2O_3	196	73
8	F-AlF_3-γ-Al_2O_3	181	93

[a] Determined by applying the BJH model on the adsorption branch, 4A/V