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Novel Aspects in the Chemistry of the Fluorolytic Sol-Gel Synthesis of Nanoscaled Homodisperse MgF_2 Sols for Antireflective Coatings

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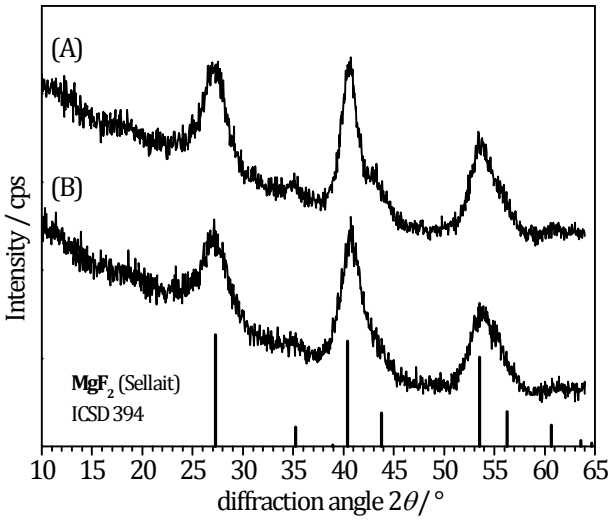

Figure S1. XRD of the precipitate prepared from the reaction of $Mg(OEt)_2$ in methanol with 2 eq HF without any further additives. (A) methanolic HF, (B) aqueous HF.

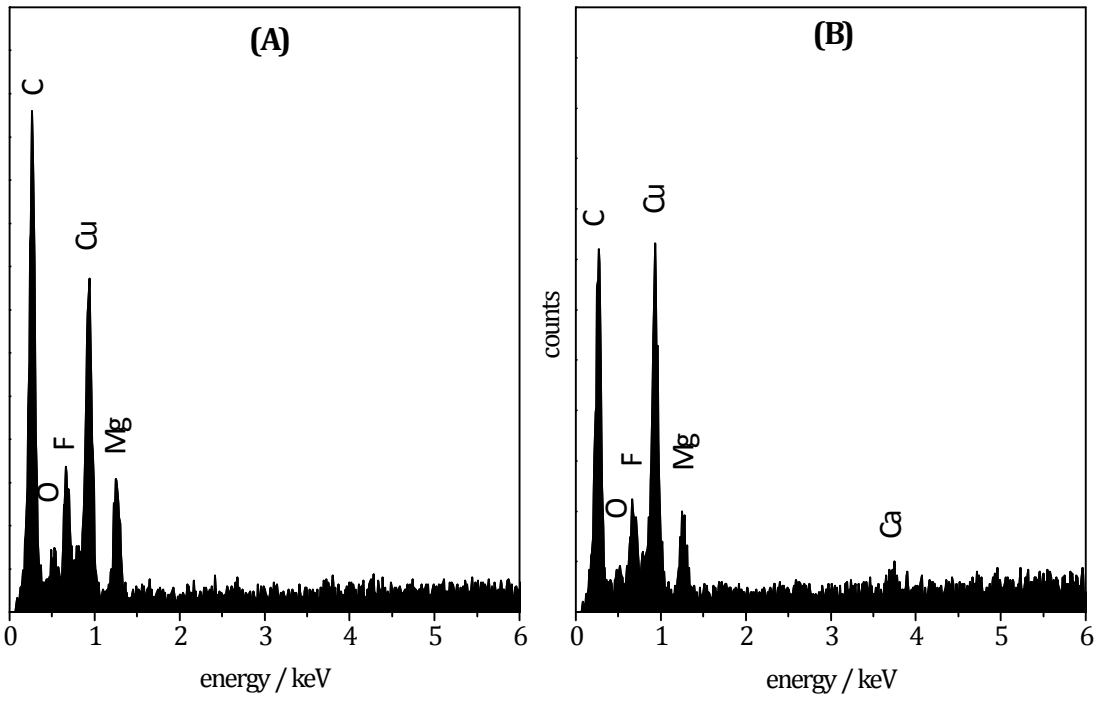

Figure S2. EDX data of the particles from different sols. (A) Sol-L02, MgF_2; (B) Sol-L04, MgF_2-CaF_2 composite. Signals of carbon and copper derive from the sample holder.

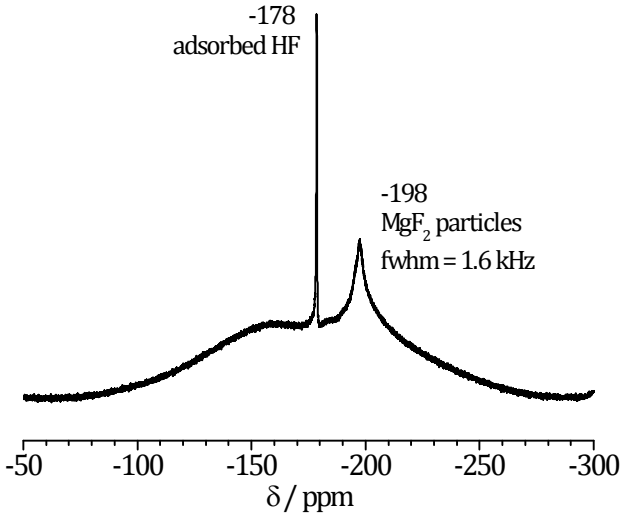

Figure S3. ^{19}F NMR spectrum of Sol-L02 (*nano*-MgF_2 in ethanol).

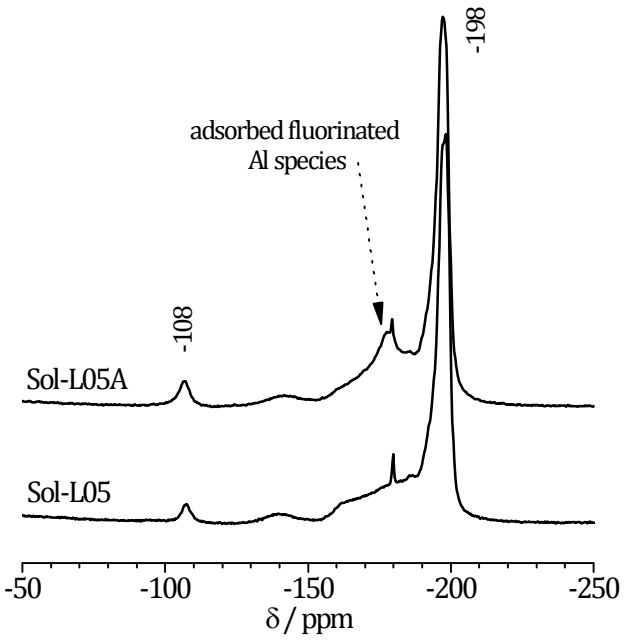

Figure S4. Comparison of ^{19}F NMR spectra of Sol-L05 and Sol-L05A (= Sol-L05 + 3% $Al(O^iPr)_3$).

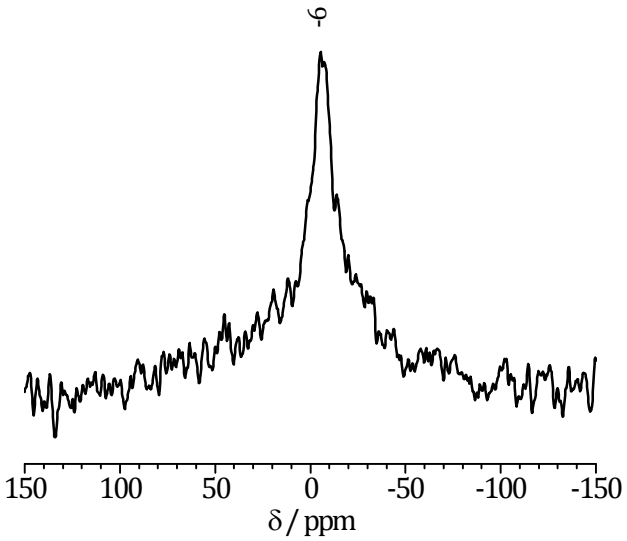

Figure S5. ^{27}Al NMR spectrum of Sol-L05A (= Sol-L05 + 3% Al(O^iPr)$_3$). The linewidth (fwhm) is 1.9 kHz.

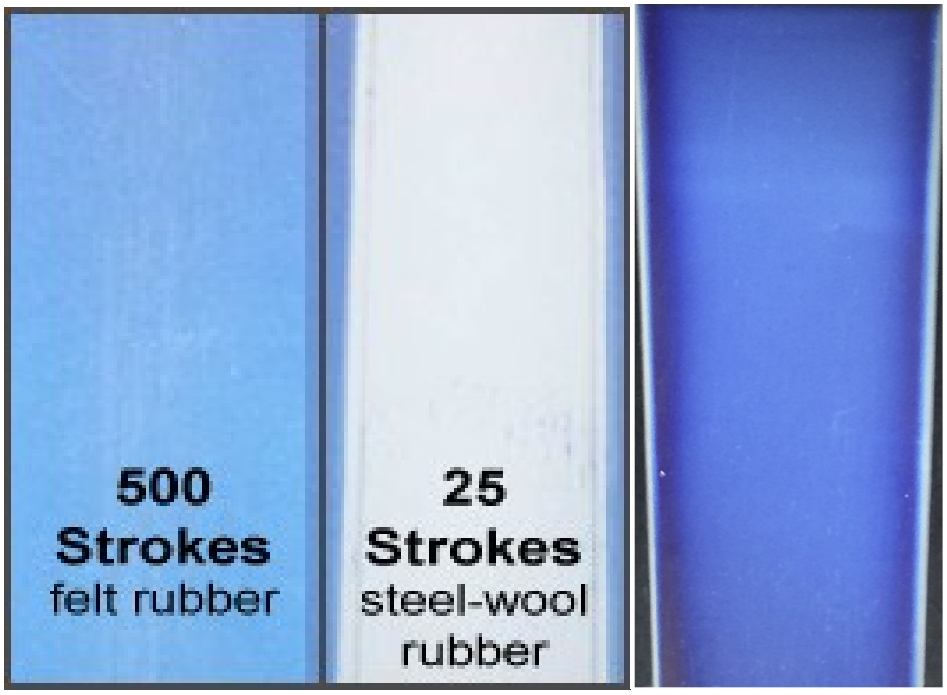

Figure S6. Photographs of a MgF_2-film on borosilicate glass substrate (20 _ 4 cm2) after abrasion with A) 500 cycles of felt rubber, B) 25 cycles with steel-wool rubber and C) 100 cycles with steel wool rubber by Crockmeter test. A and B) MgF_2 synthesized from magnesium acetate and C) MgF_2 synthesized from magnesium ethoxide as precursor.