

**Room temperature spin crossover properties in a series of mixed-anion
 $\text{Fe}(\text{NH}_2\text{trz})_3(\text{BF}_4)_{2-x}(\text{SiF}_6)_{x/2}$ complexes**

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Figure S1: ^{19}F MAS ssNMR spectrum for sample **1a-1g** (*: spinning sidebands)

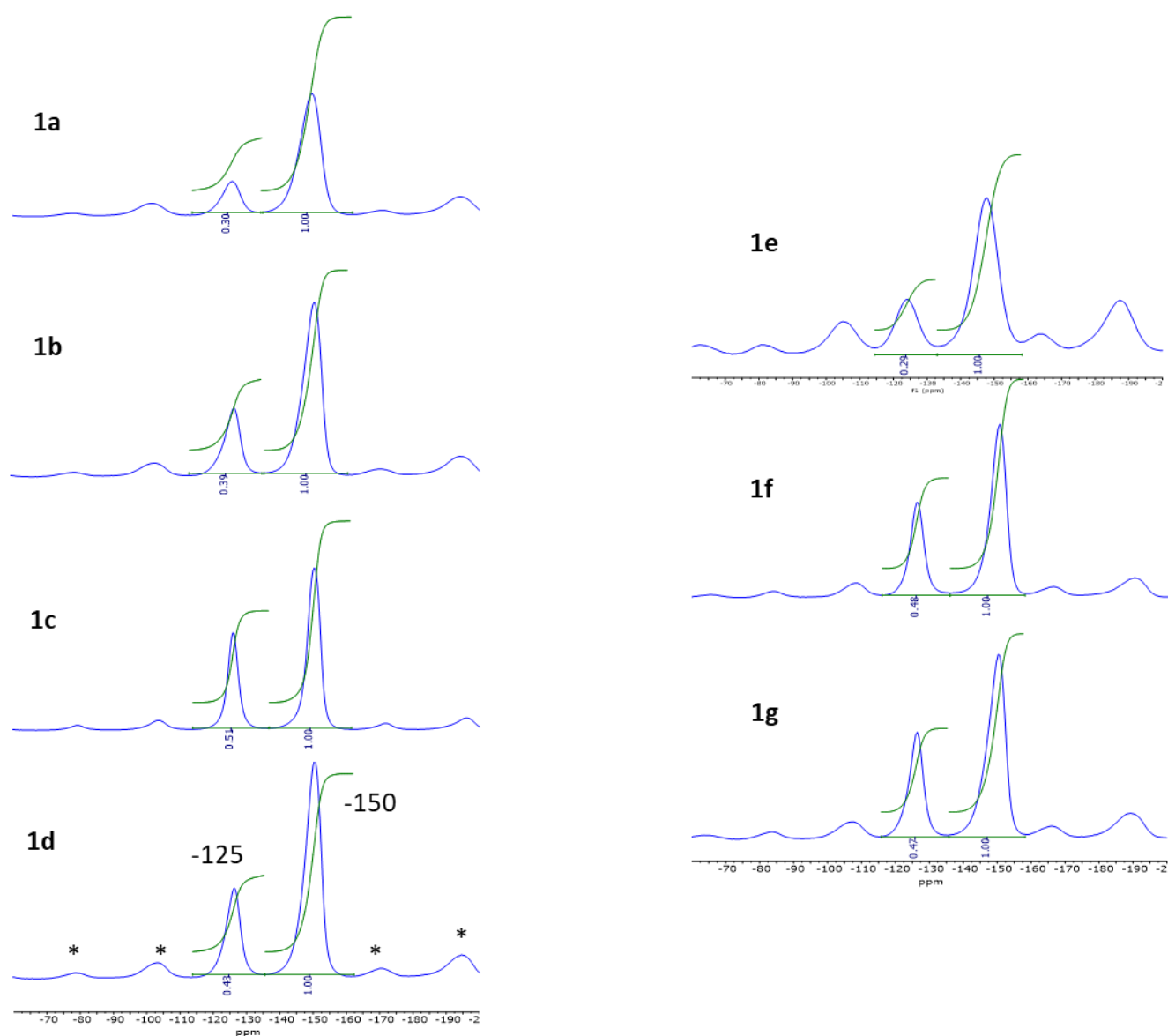


Figure S2: ^{19}F MAS ssNMR spectrum for sample **3d-3f** (*: spinning sidebands)

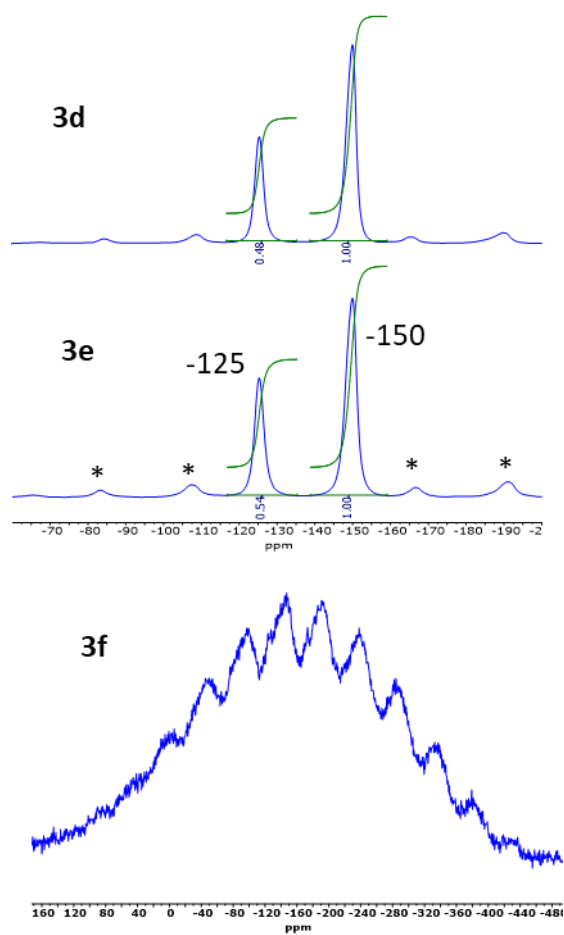


Figure S3: ^{29}Si MAS and CPMAS ssNMR spectrum for **1a-1d**

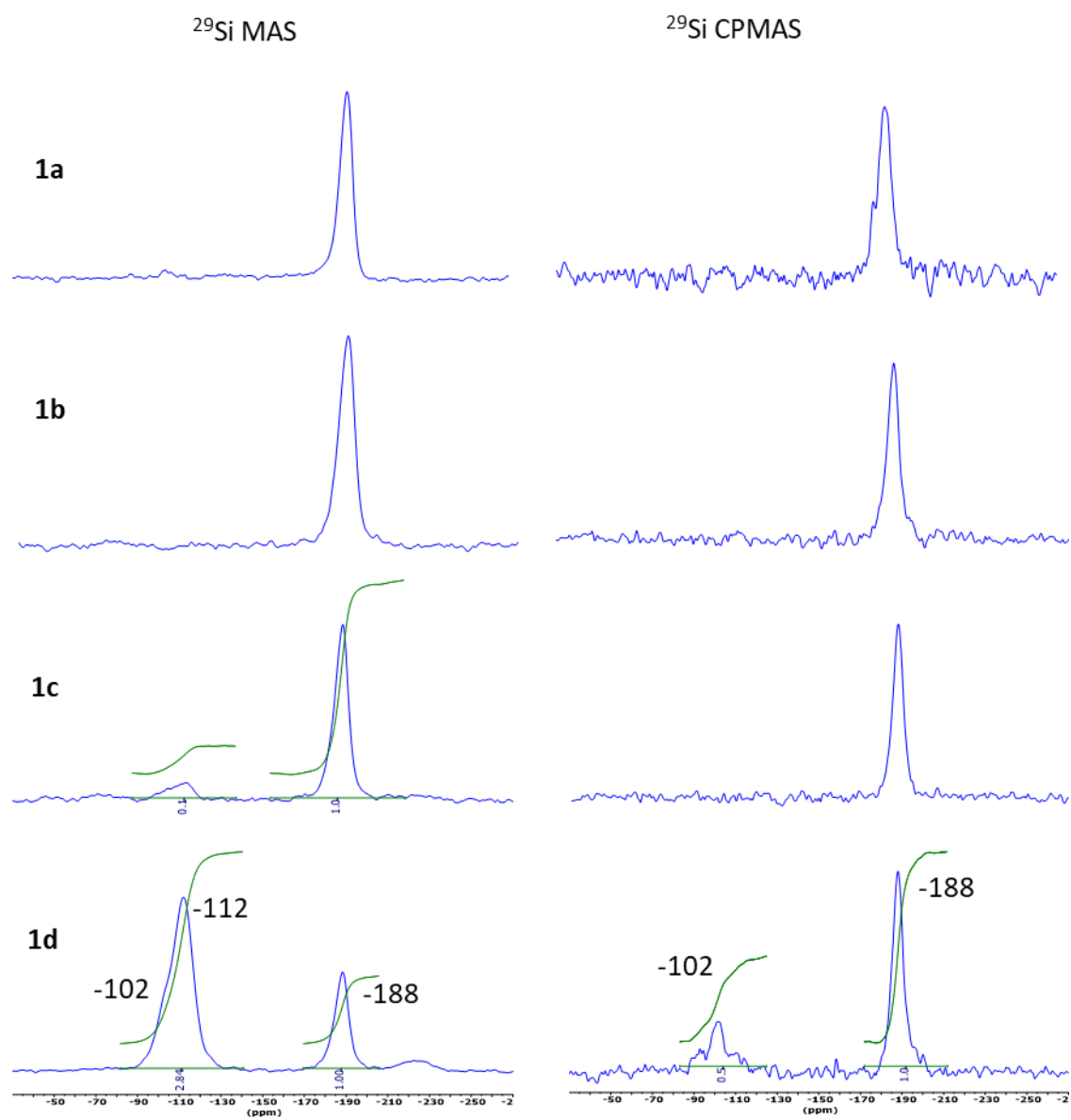


Figure S4: ^{29}Si MAS and CPMAS ssNMR spectrum for **1e-1g**

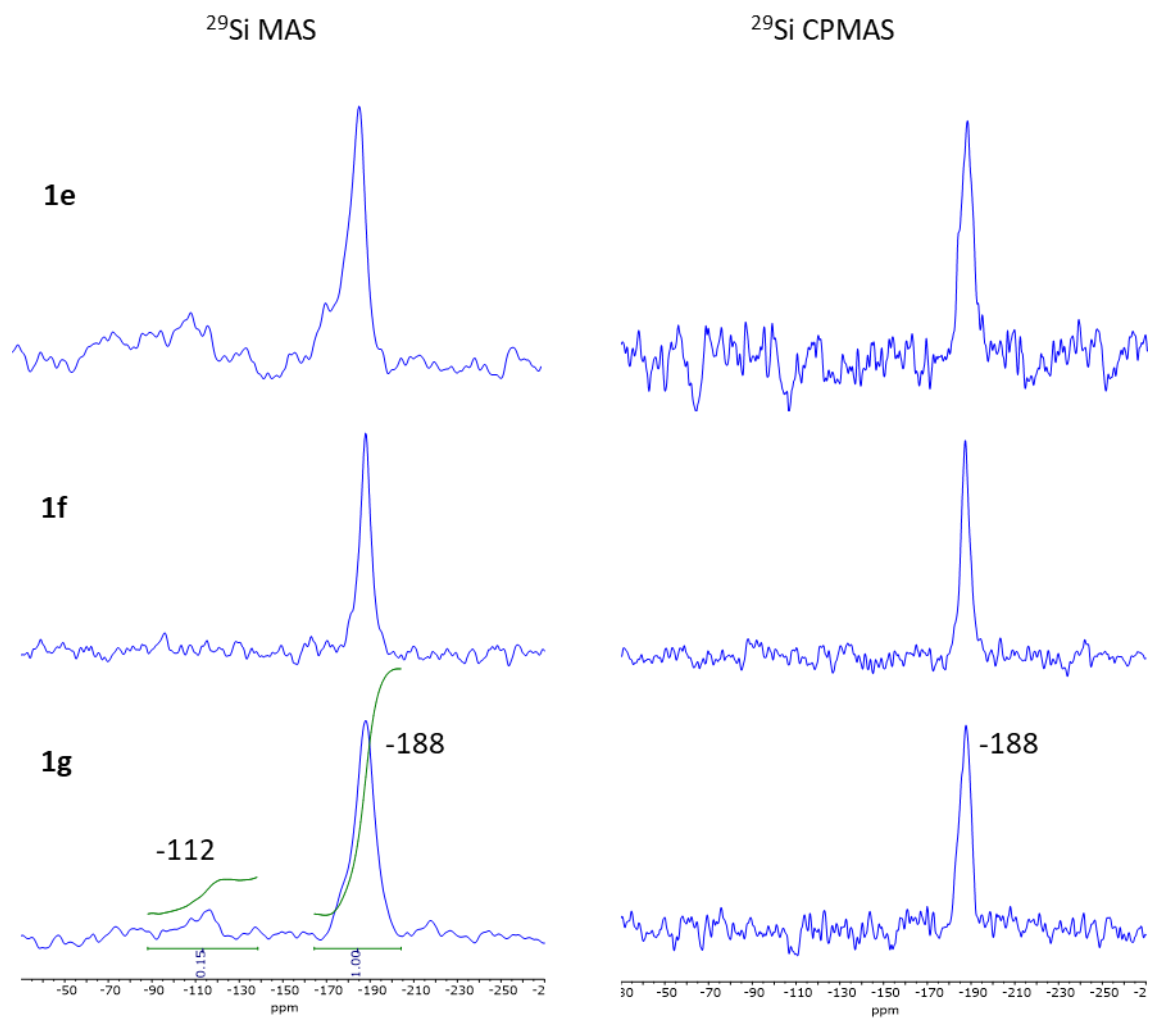


Figure S5: Thermal variation of the optical reflectivity (desolvated sample) for **1e-1g** (effect of the reaction time)

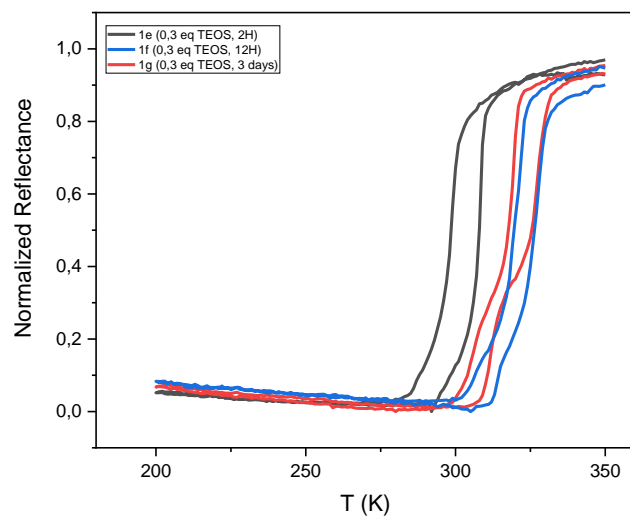


Figure S6: Thermal variation of the optical reflectivity upon 3 consecutive thermal cycles for **1f** (cycling stability after a first stabilizing cycle)

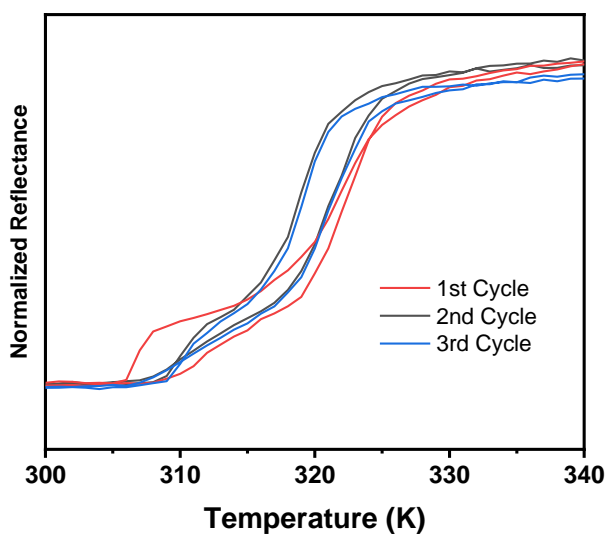


Figure S7: Thermal variation of the powder X-ray diffraction patterns for **3d**

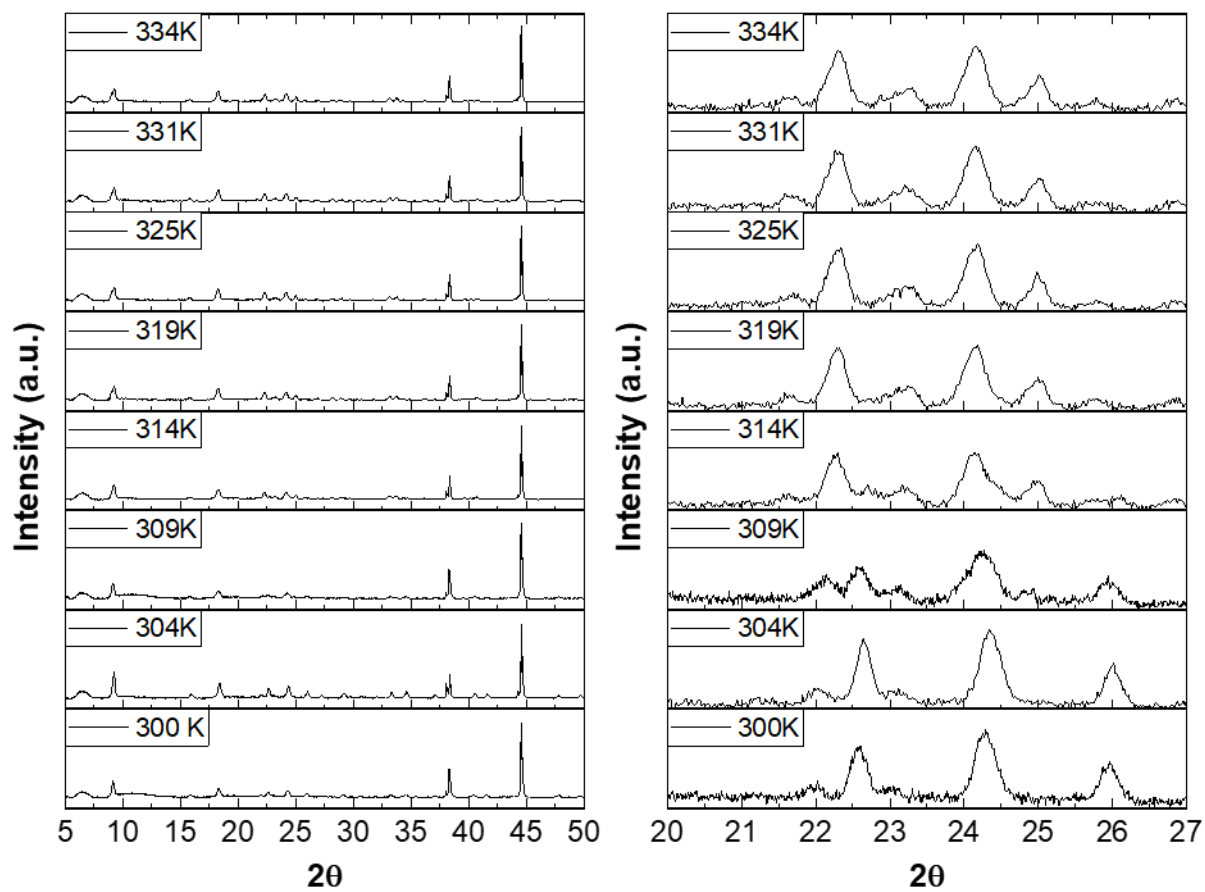


Figure S8: IR spectroscopy and thermal variation of the optical reflectivity for PSM reactions over time

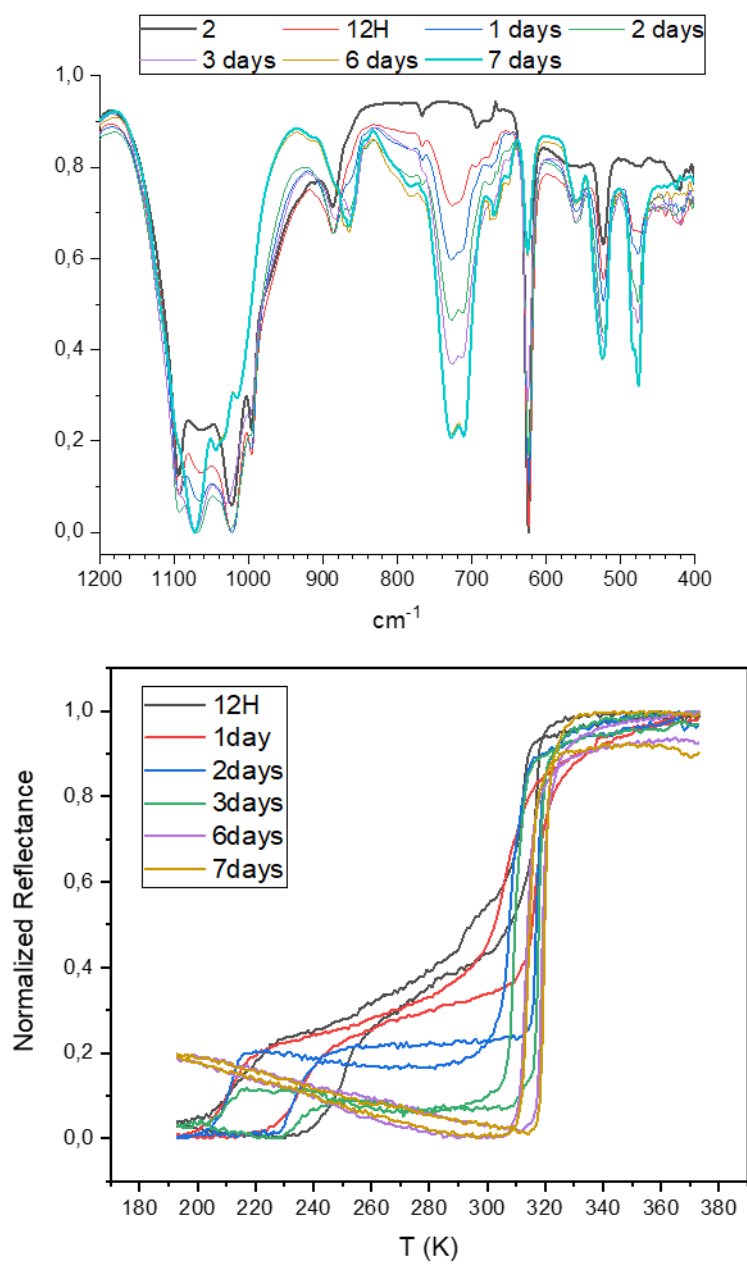


Figure S9: Thermal variation of the optical reflectivity upon 3 consecutive thermal cycles for the sample obtained after 7 days by PSM reaction showing the cycling stability after a first stabilizing cycle

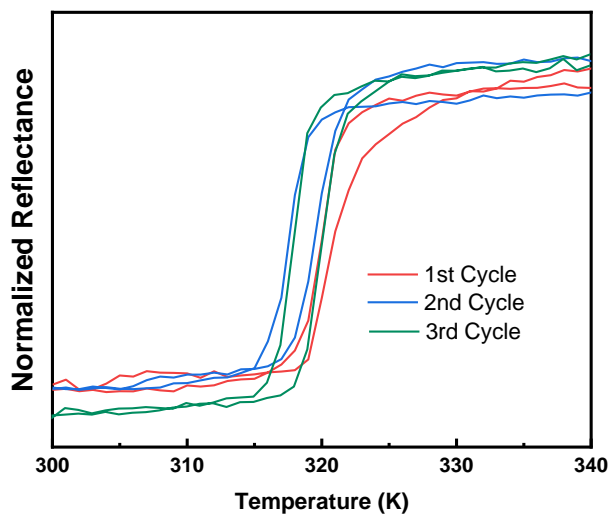


Figure S10: Thermal variation of the optical reflectivity for the desolvated sample obtained after 7 days by PSM reaction just after synthesis and after 1-month storage showing the stability in time

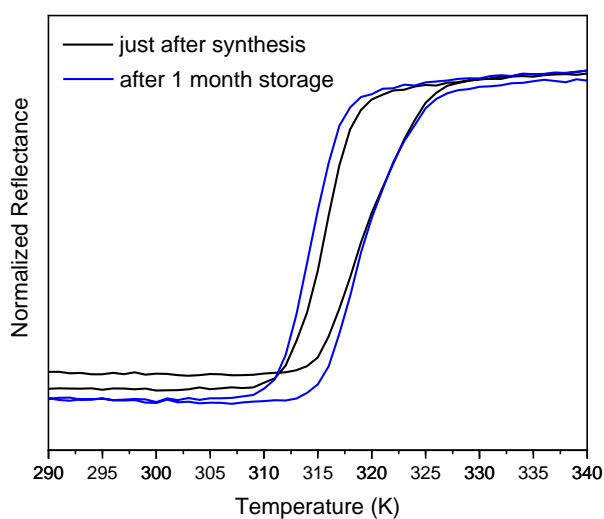
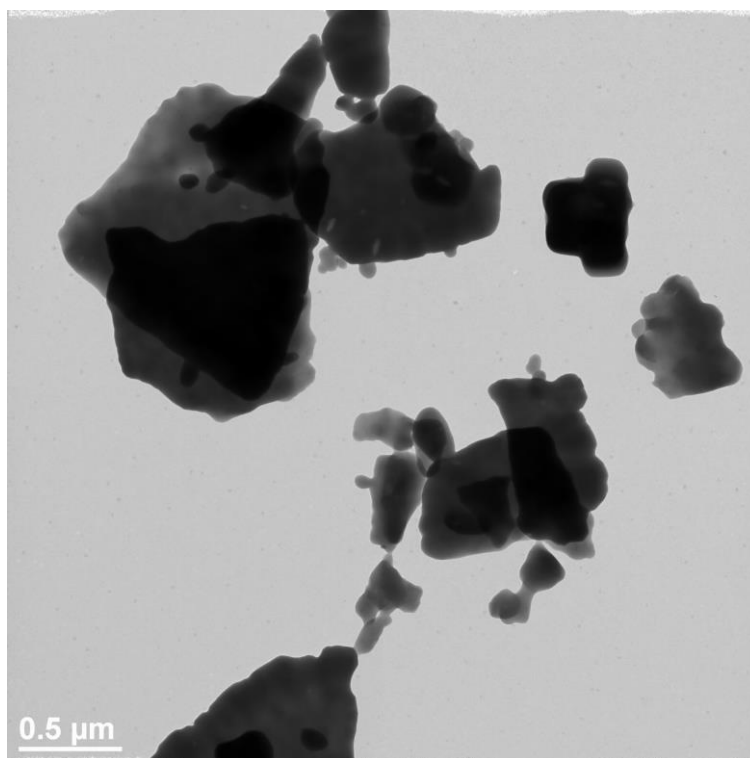
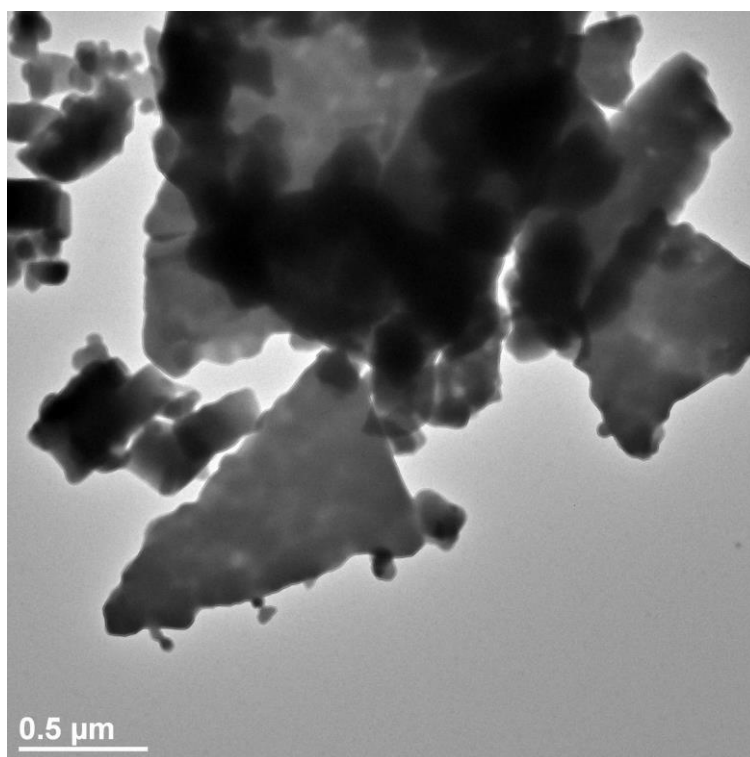


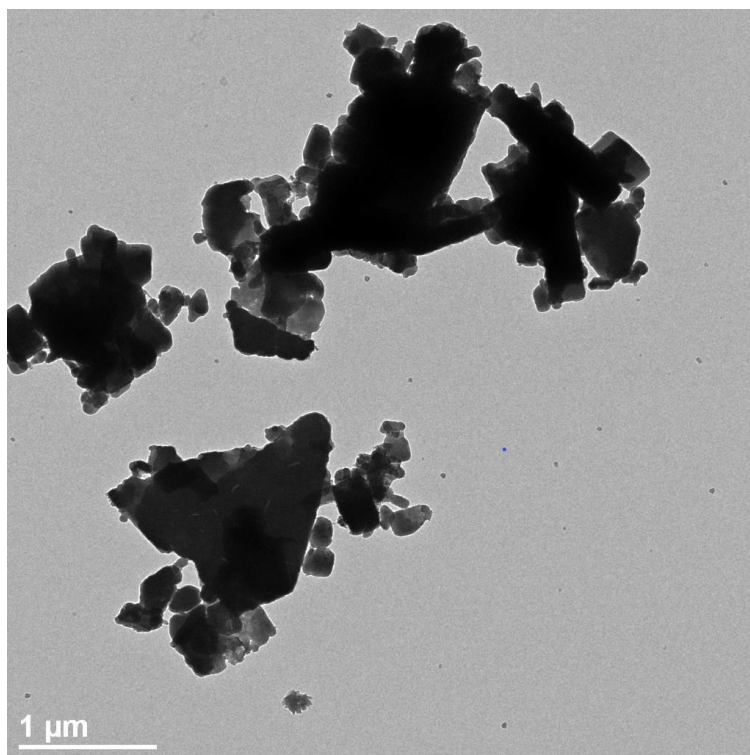
Figure S11: Selection of Transmission Electronic Microscopy images for sample **1a-1g**



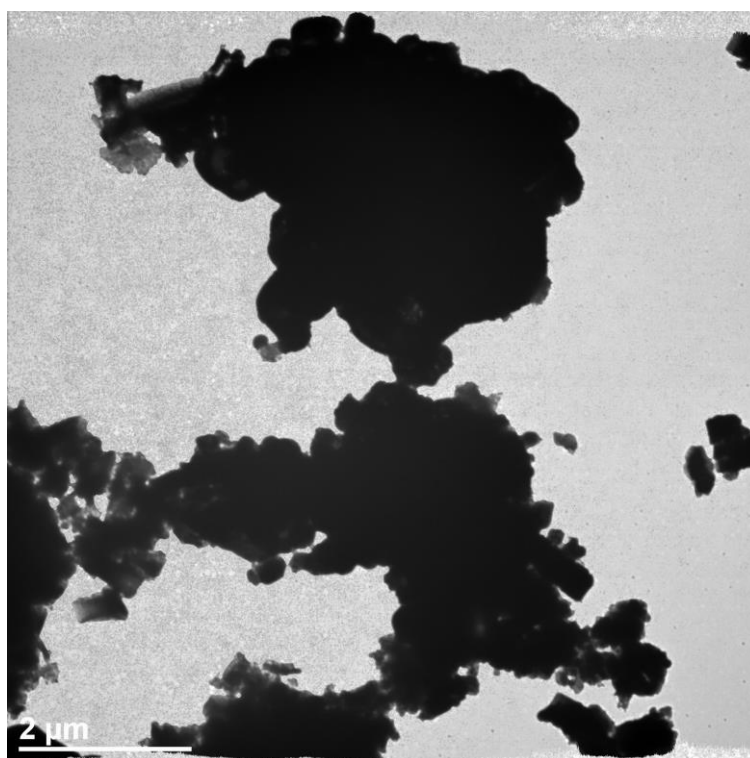
1a (0.125 eq TEOS)



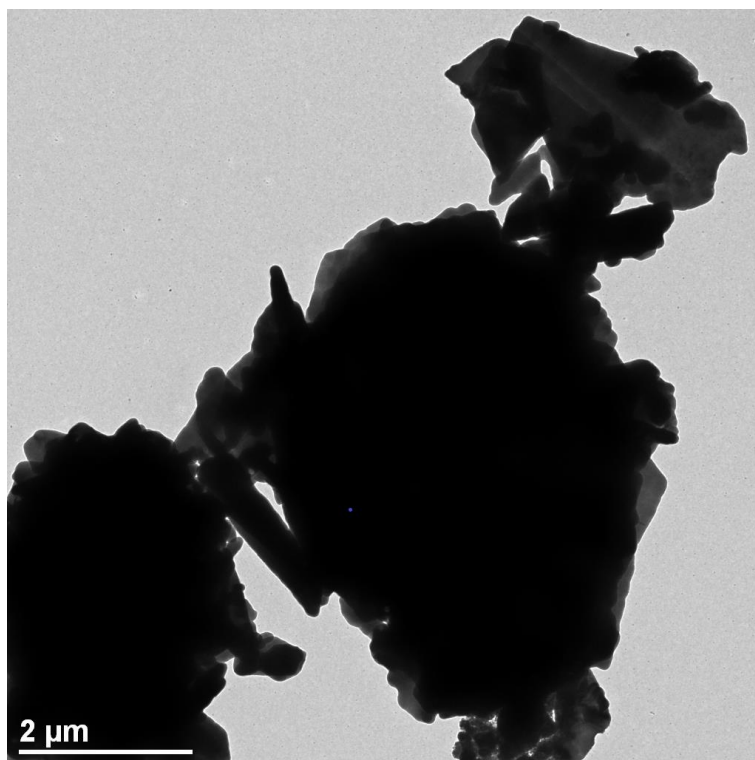
1b (0.25 eq TEOS)



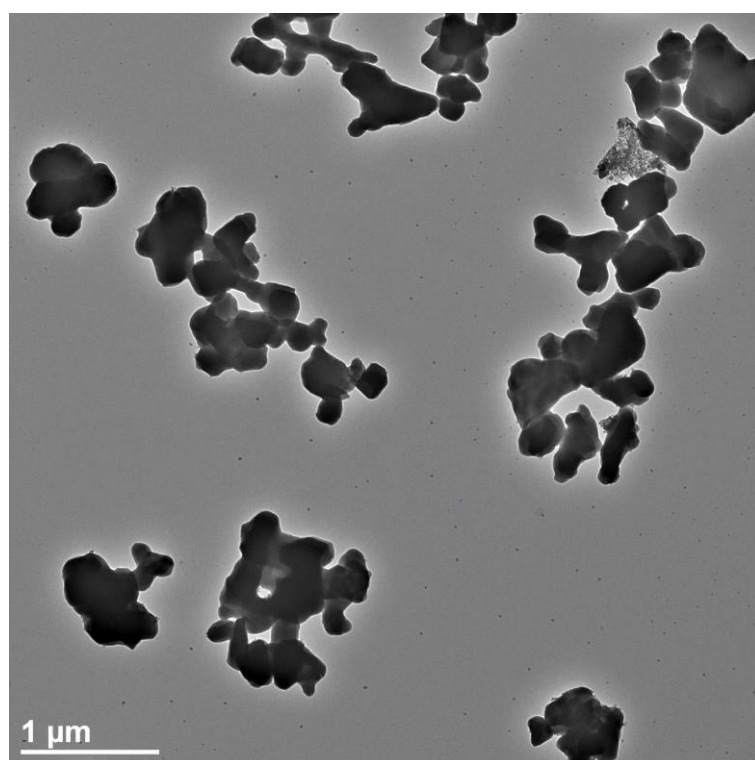
1c (0.5 eq TEOS)



1d (1 eq TEOS)



1e (0.3 eq TEOS, 2Hours)



1g (0.3 eq TEOS, 3 Days)

Figure S12: Selection of Transmission Electronic Microscopy images over time for PSM syntheses with 0.3 eq TEOS

