

Supplementary Information

UV Aerosol Synthesis: a One-Step Route to Silica, Organic-Silica and Surfactant/Silica Nanostructured Materials

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Formulation	UV irradiation	Result
PDMOS/Acetone (technical) (1/1 wt%)	Yes	No outcome
PDMOS/PAG/Acetone/Water (1/0.06/1/0.025 wt%)	No	No outcome

Table 1: Blank experiments performed during the scouting experiments

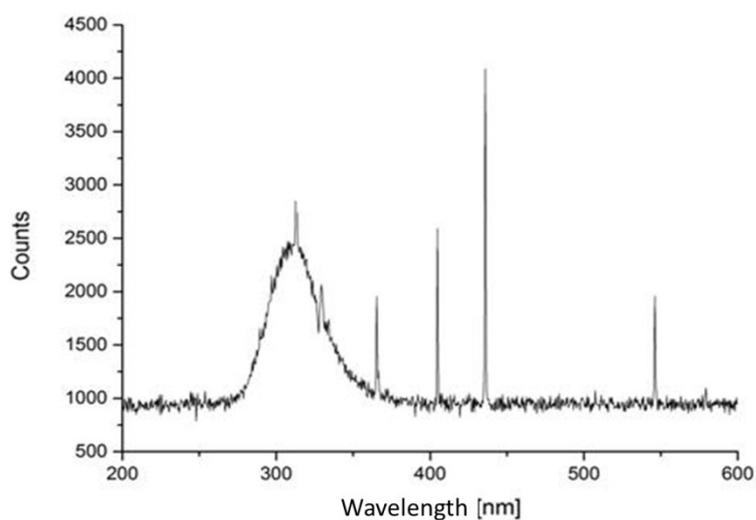


Figure S1. Emission spectra of the UV Fluorescent lamps

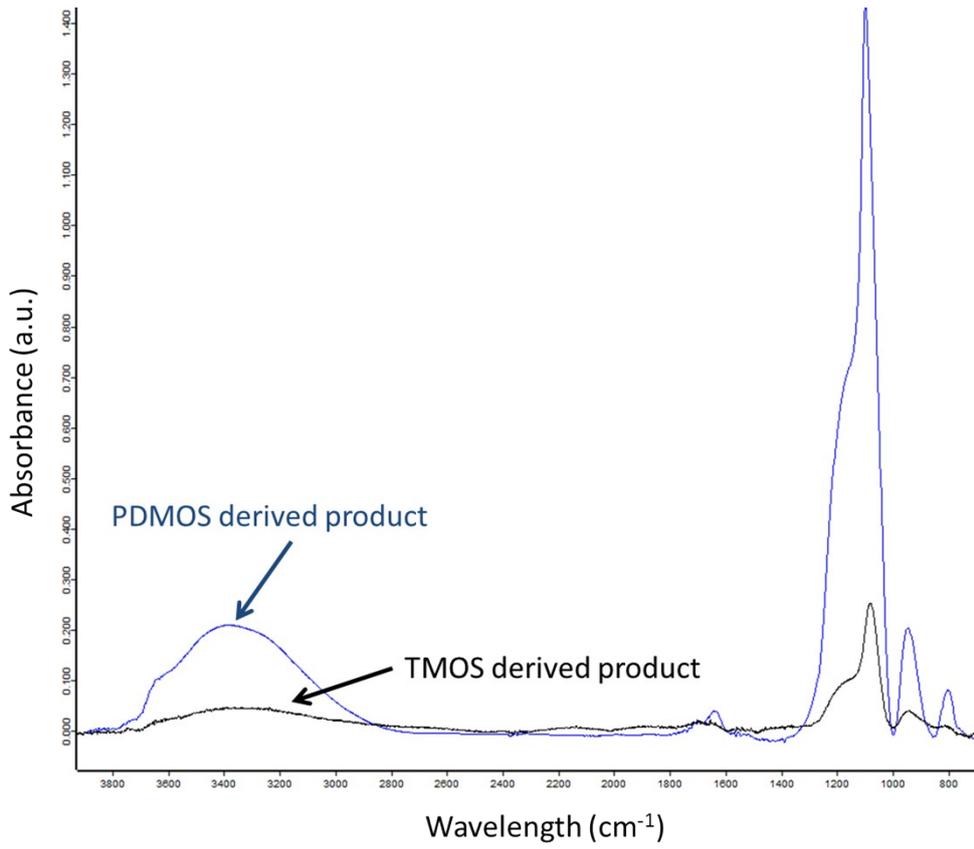


Figure S2. FTIR spectra of the PDMOS derived product (run g) versus FTIR spectra of the TMOS derived product (run h).

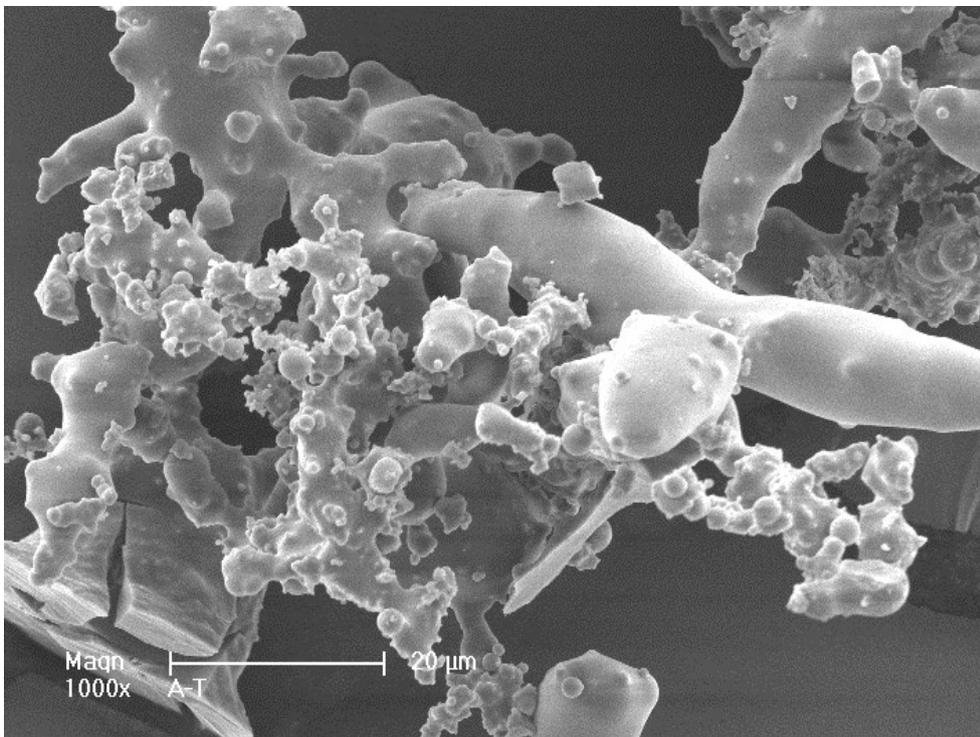


Figure S3 : SEM images of SiO_2 nano- and microparticles formed by aerosol sol-gel photopolymerization of TMOS with technical acetone (run h)

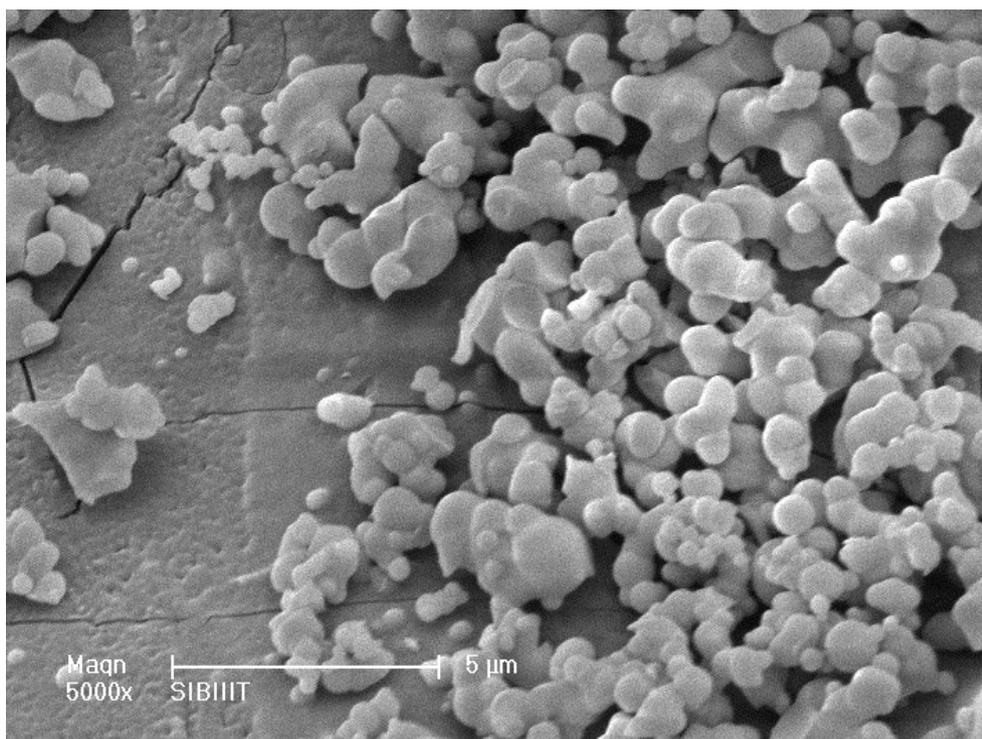


Figure S4. SEM images of SiO₂ nano- and microparticles formed by aerosol sol-gel photopolymerization of PDMOS with technical acetone (run g)

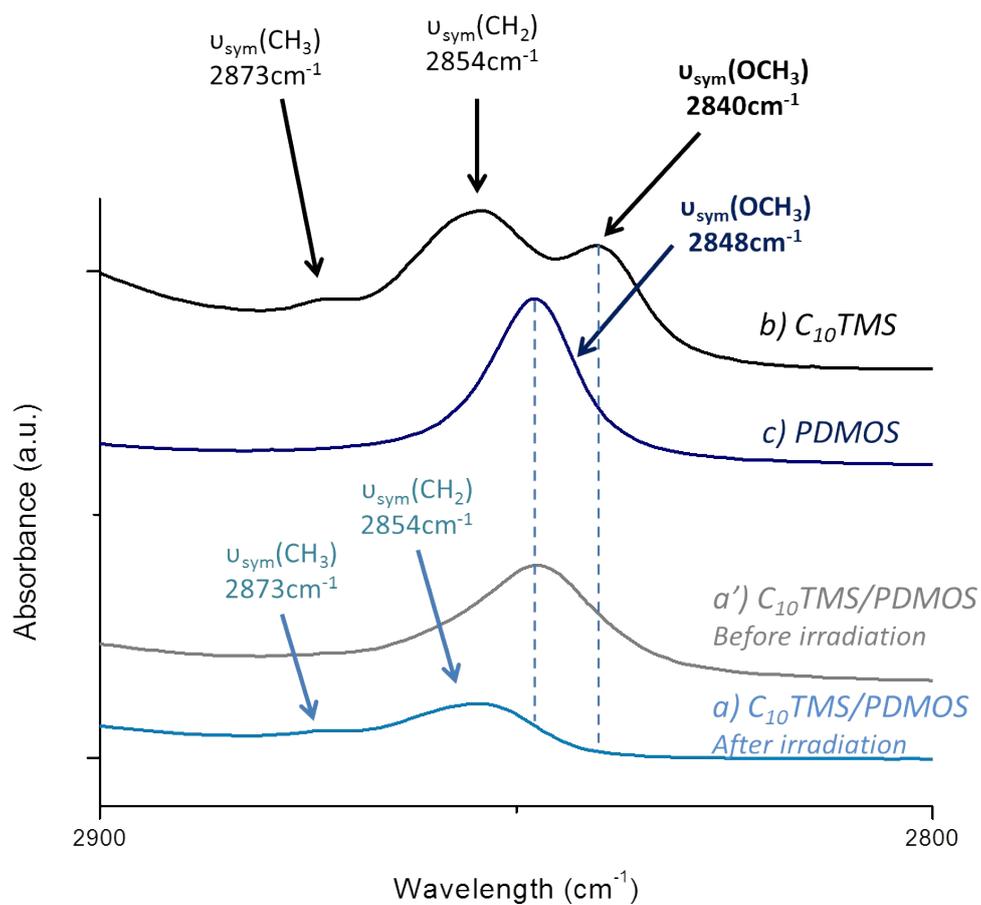


Figure S5. FTIR spectra of resulting n-decylpolysilsequioxane (trace a) derived from photopolymerization of precursors PDMOS/C10TMS (trace a'). C₁₀TMS (trace b) and PDMOS (trace c) spectra are pictured for comparison.

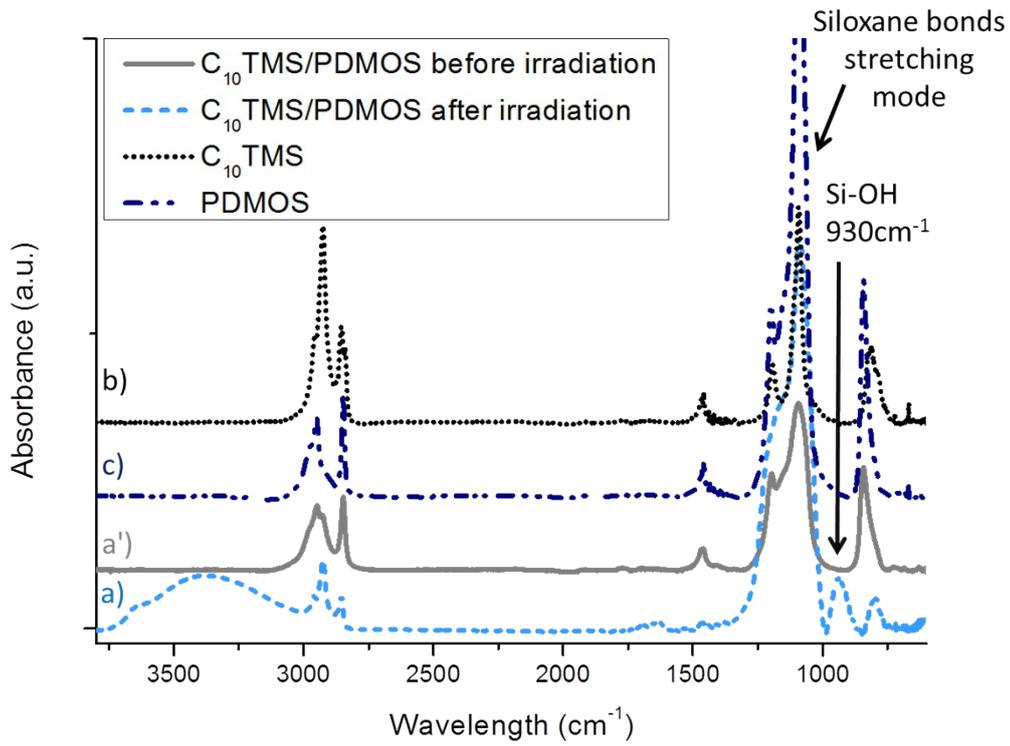


Figure S6. FTIR spectra of resulting n-decylpolysilsequioxane (trace a) derived from photopolymerization of precursors PDMOS/ C_{10}TMS (trace a'). C_{10}TMS (trace b) and PDMOS (trace c) spectra are pictured for comparison.

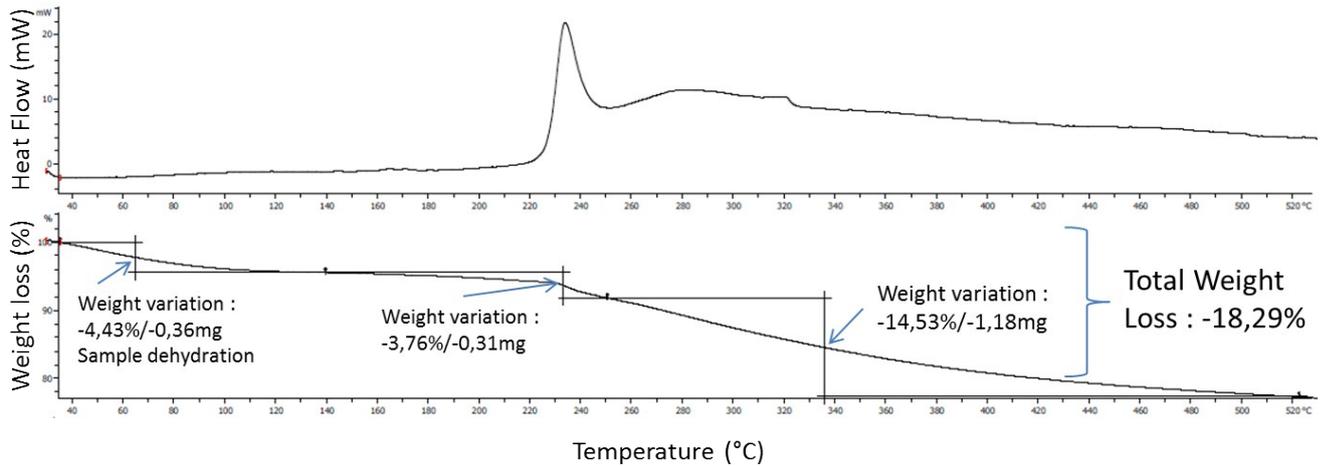


Figure S7. TGA data of the n-decylpolysilsequioxane derived from photopolymerization of PDMOS/ C_{10}TMS (10 %mol)

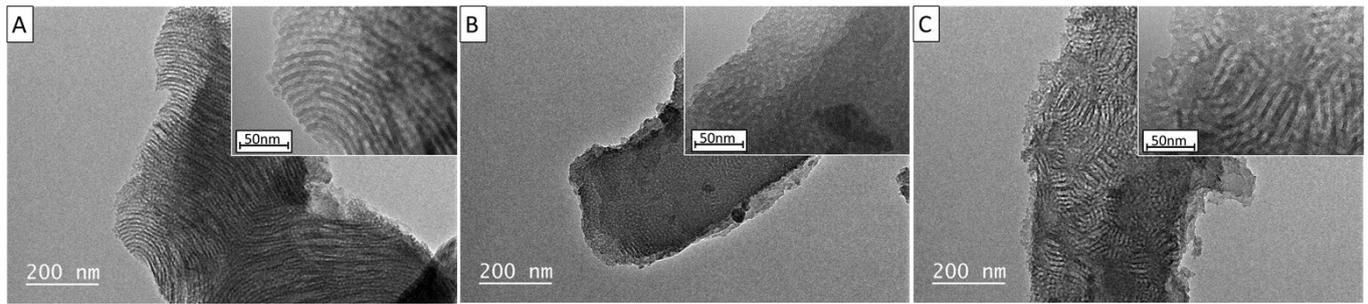


Figure S8. TEM pictures of 25wt% (A), 45wt% (B) and 70wt% (C) P123 calcined films

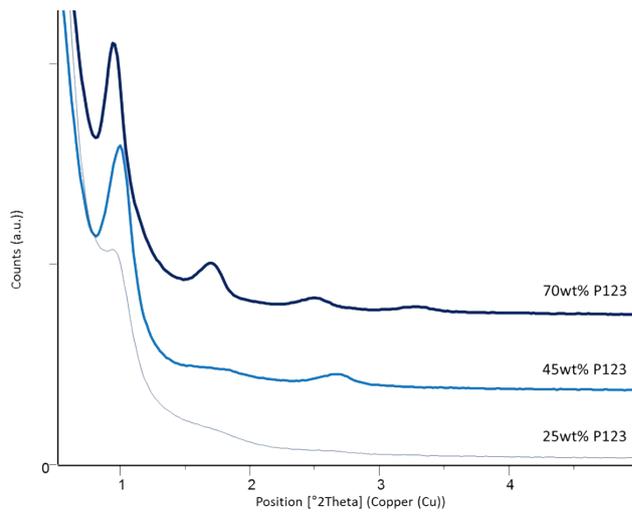


Figure S9. XRD pattern at low angles of as synthesized mesoporous films prepared at different P123 concentrations : 25wt%, 45wt% and 70wt%.