Supplementary Information

In-situ preparation of compounds using silanized mPEG inspired by talc-like structures

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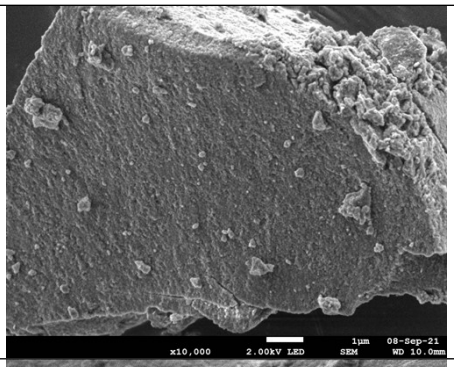
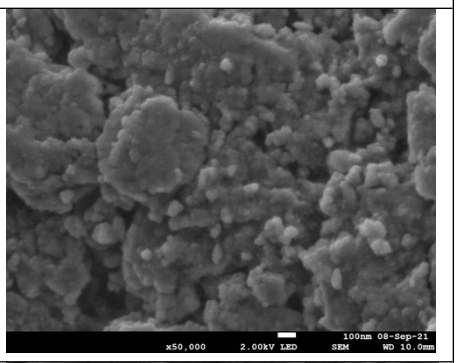
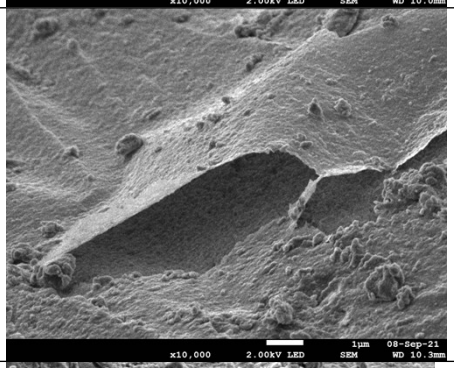
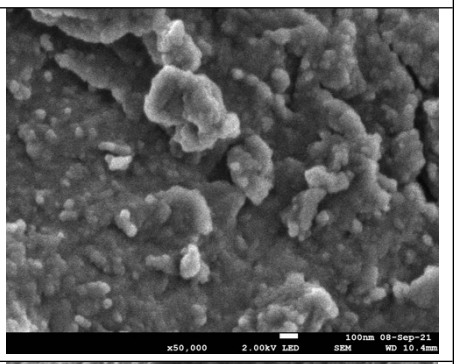
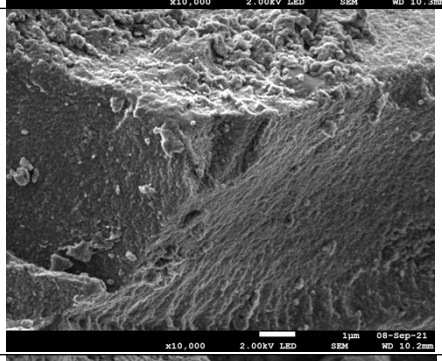
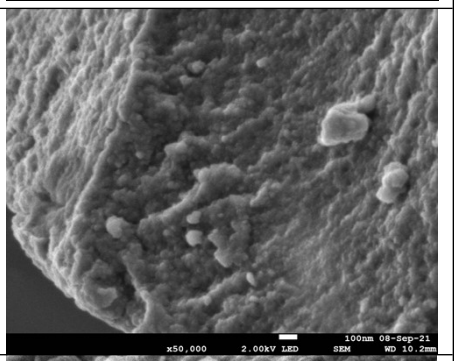
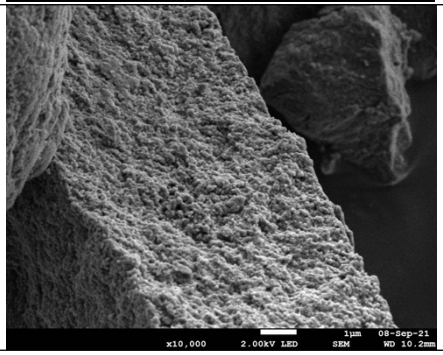
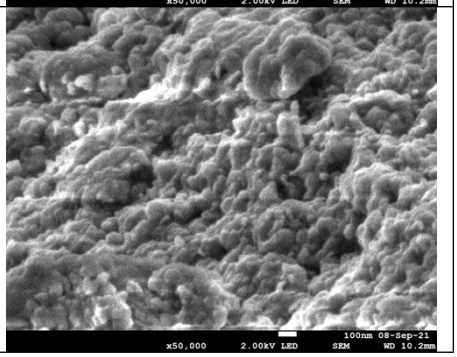
Table S1. Quantities of reactants used in the synthesis.

Sample label	Source of Si	m of source of Si, g	m of source of Mg, g	Volume ethanol, mL	Volume 1M NaOH, mL
FTI-01	TEOS	4.999	4.658	125	36
FTI-05	PEG750-IPTES	2.180	0.446	125	20
FTI-06	PEG1900-IPTES	2.078	0.187	125	20
FTI-09	PEG500-IPTES	4.478	1.145	125	20
FTI-14	PEG350-IPTES	2.410	0.740	125	15

Table S2. SEM images of compounds prepared using TEOS, PEG350-IPTES, PEG500-IPTES and PEG750-IPTES as silicon sources.

Magnification / Silicon source	x10,000	x50,000
TEOS		
PEG350-IPTES		
PEG500-IPTES		
PEG750-IPTES		

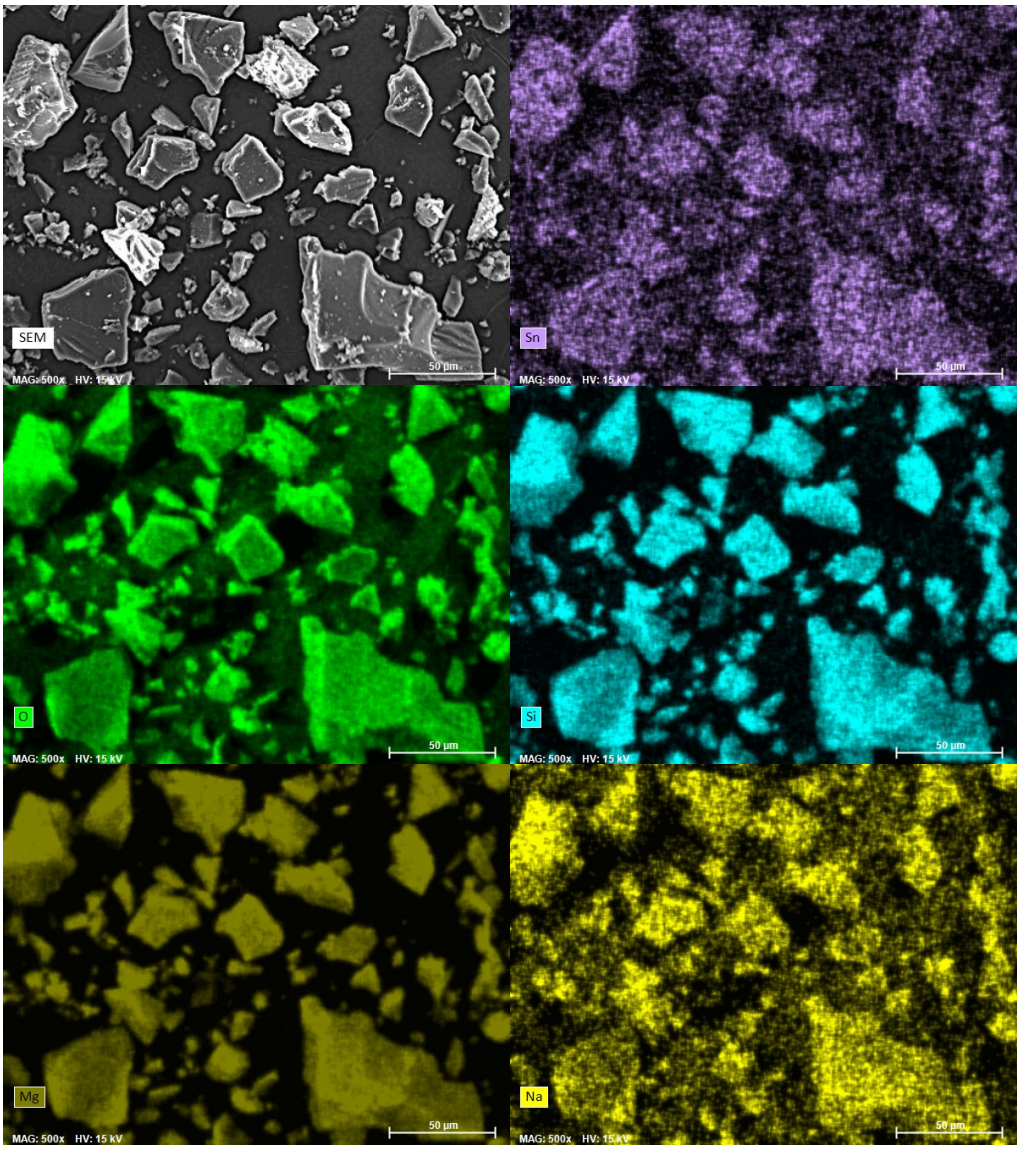


Figure S1. Element distribution (Sn, Mg, Si, O, Na) observed by EDX for sample prepared with PEG350-IPTES as silicon source.

Table S3. Chemical composition (atomic %) determined by EDX analysis, average of 9 measurements.

Source of silicon	O	Na	Mg	Al	Si	Sn
TEOS	67.88	0.35	20.44	0.04	11.29	0.00
PEG350-IPTES	69.09	1.39	21.86	0.08	7.03	0.54
PEG500-IPTES	66.10	1.35	23.10	0.10	9.19	0.16
PEG750-IPTES	65.28	1.21	22.27	0.09	11.04	0.11

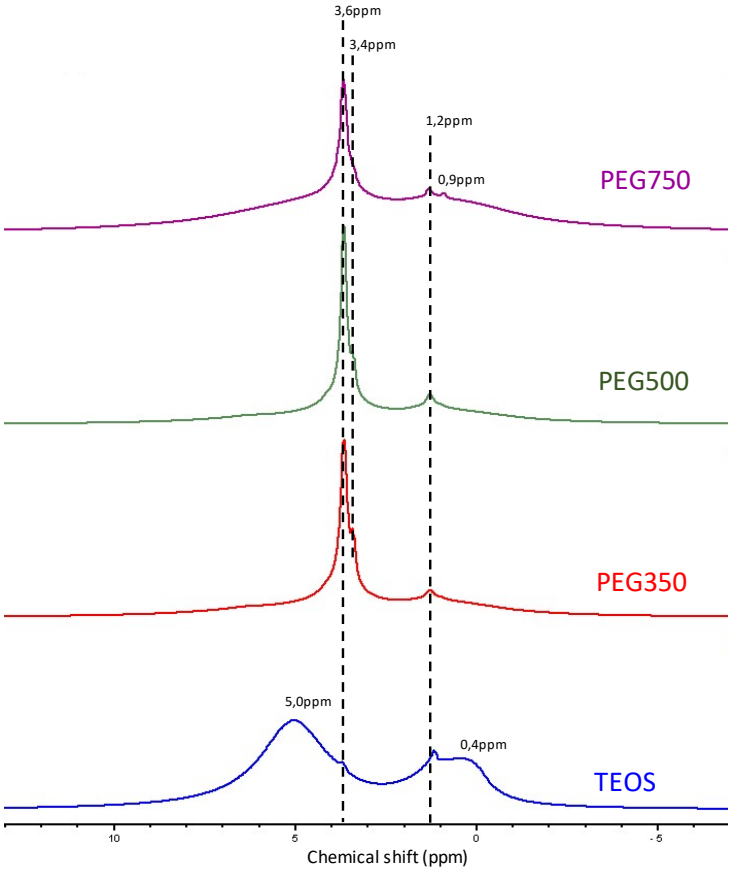


Figure S2. Solid state ^{1}H MAS NMR spectra of talc-like compounds using TEOS (blue), PEG350-IPTES (red), PEG500-IPTES (green) and PEG750-IPTES (violet) as silicon sources.

The chemical shift of 3.6 ppm corresponds to PEG and "g" protons (see Figure 3 for identification). The chemical shift of 3.4 ppm corresponds to protons "a". The chemical shift of 1.2 ppm corresponds to protons "h". The peak around 3.6 ppm is large and there is an overlap of protons related to the PEG structure and $–CH_2-$ group from the ethoxy group. The chemical shift at 1.2 ppm allows clearly to distinguish the presence of protons $–CH_3$ from the ethoxy group. A peak with chemical shift of 0.9 ppm is visible for the sample with PEG750-IPTES. This chemical shift has been attributed to protons belonging to –OH group.