

Bioinspired Synthesis of New Silica Structures

Supplemental Information

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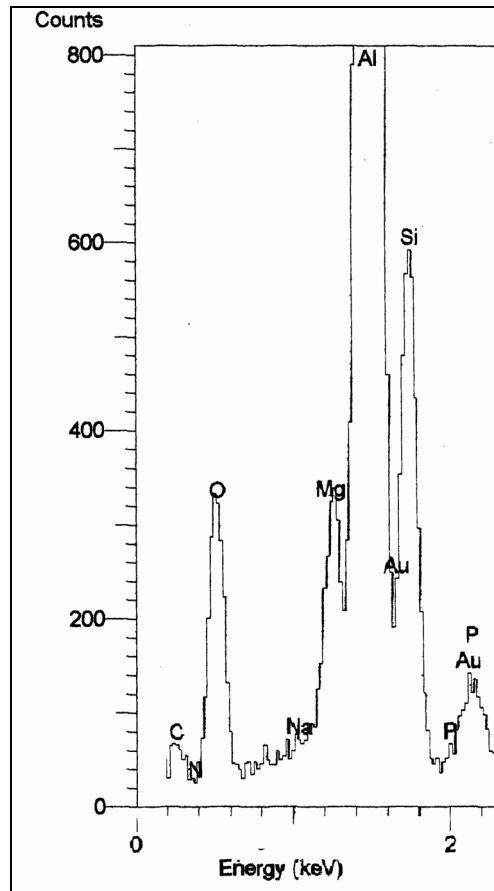
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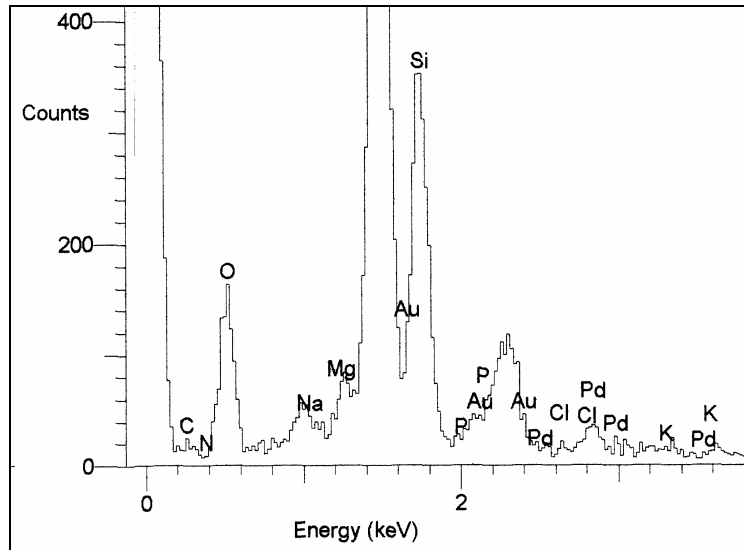
Methods:

In a typical experiment, a solution of PLL was added to a potassium phosphate buffer (pH 7) followed by the addition of a pre-hydrolyzed tetramethoxysilane (TMOS) solution. The volume ratio of the buffer, PLL solution and TMOS solution was 8:2:1. After a reaction time of 5-120 minutes, the mixture was centrifuged and the precipitate was washed with deionized ultra filtered water and then characterized using Scanning Electron Microscope (SEM) and Transmission Electron Microscope (TEM) for morphological details, EDS and FTIR for composition and the selected area diffraction (SAD) for crystallinity. In the absence of the PLL this system formed a gel in 24 hours.

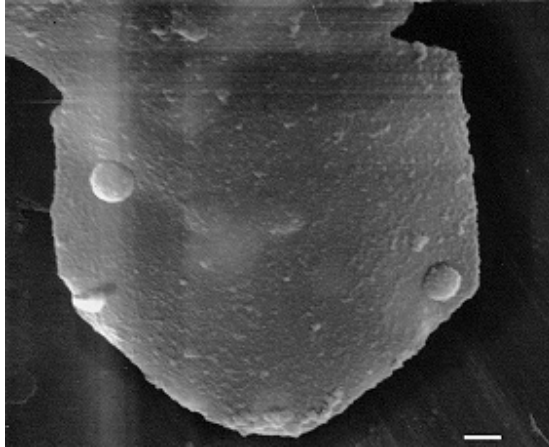
Supplemental Figure 1. Energy Dispersive Spectrum of the specimen in Figure 1c.



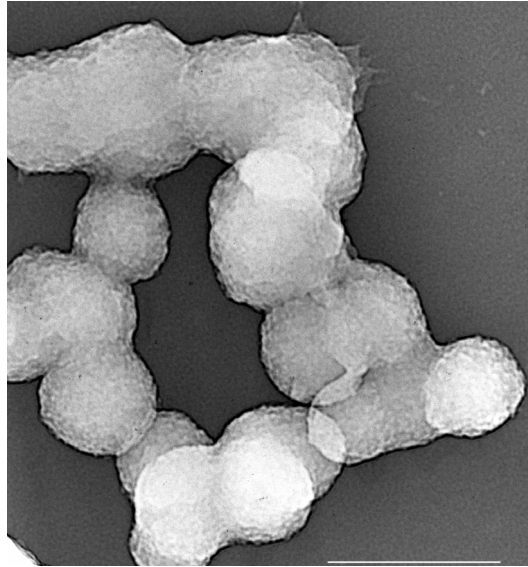
Supplemental Figure 2. Representative Energy Dispersive Spectrum of silica synthesised by PLL.



Supplemental Figure 3. A representative Scanning Electron Micrograph of hexagonal silica structure synthesised with 1 M TMOS and 50 mg/ml PLL, reaction time 5 minutes without stirring.



Supplemental Figure 4. Representative TEM micrograph of silica synthesized with 0.1 M TMOS, reaction time 5 minutes and using 5 mg/ml PLL with stirring. Bar = 500nm.



Supplemental Figure 5. Representative Scanning Electron Micrograph of elongated silica structure synthesized at reaction time = 5 minutes with stirring and using 0.1 M TMOS, 50 mg/ml PLL. Bar = 500nm. (As the silica-containing solutions were dried on SEM sample holders, sometimes the formation of a thin gel-like film can be seen on the substrates in the background of the SEM micrographs)

