

Supporting Information

for

Hierarchical Multi-lamellar Silica Vesicle Clusters Synthesized through Self-assembly and Mineralization

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The Analysis of PSPE

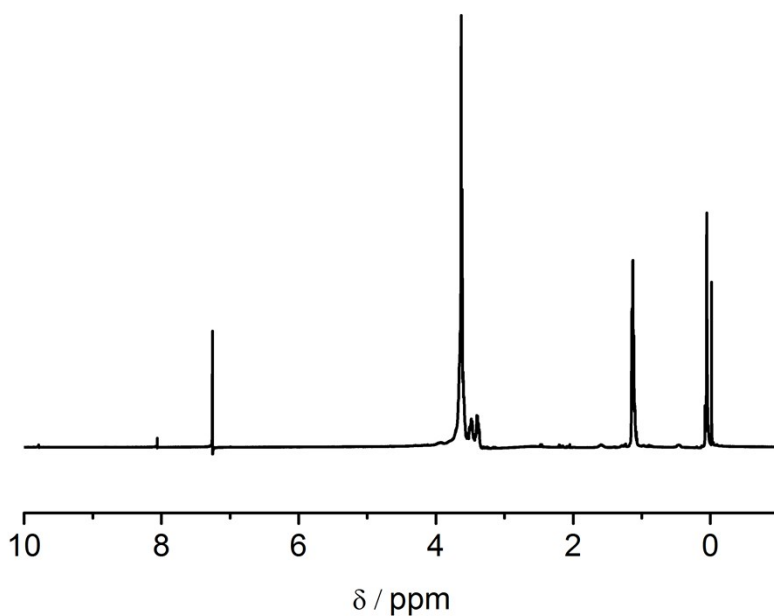


Figure S1. ¹H NMR data of the PSPE molecule.

GPC: PSPE molecular weight (Mn) = 15381 g/mol, polydispersity index (PDI) = 1.7

¹H NMR: (δH, 400 MHz, CDCl₃): 0.03-0.08 ppm, 0.58 eq (-Si(CH₃)₂-, -Si(CH₃)₃ in PDMS); 1.12-1.16 ppm, 1.00 eq (-CH(CH₃) in PPO segments); 3.35-2.58 ppm, 0.36 eq (-OCH(CH₃)- in PPO segments); 3.60-3.68 ppm, 1.96 eq (-O-CH₂- in PEO/PPO segments).

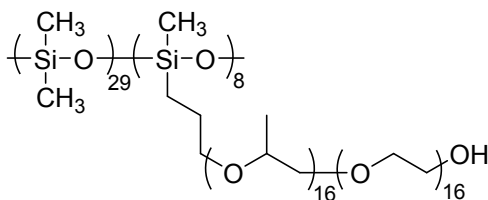


Figure S2. The formula of the PSPE molecule.

The unit parameters of the PSPE molecule were calculated based on the GPC and ¹H NMR data. The number of PO/EO block units in the side chain is 16/16, the number of grafted units is 8, and the number of PDMS units is 29. The PSPE molecule is shown in Figure S2 in detail.

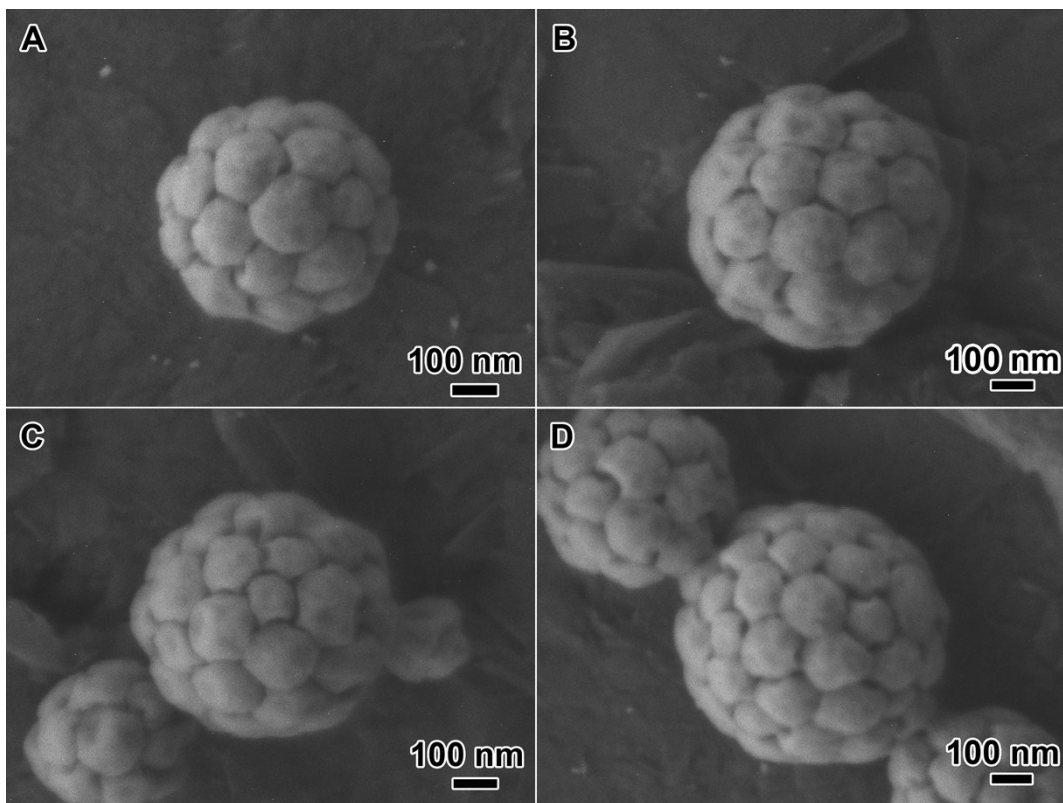


Figure S3. SEM image of MSVCs prepared under the same condition as the MSVCs shown in Figure 1. The synthesis was carried with the synthetic mass ratio of PSPE:P123:TEOS:H₂O = 1:0.24:2.08:208 at 65 °C.