Unravelling the Formation Mechanism of Dendritic Fibrous Nanosilica

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Contents:

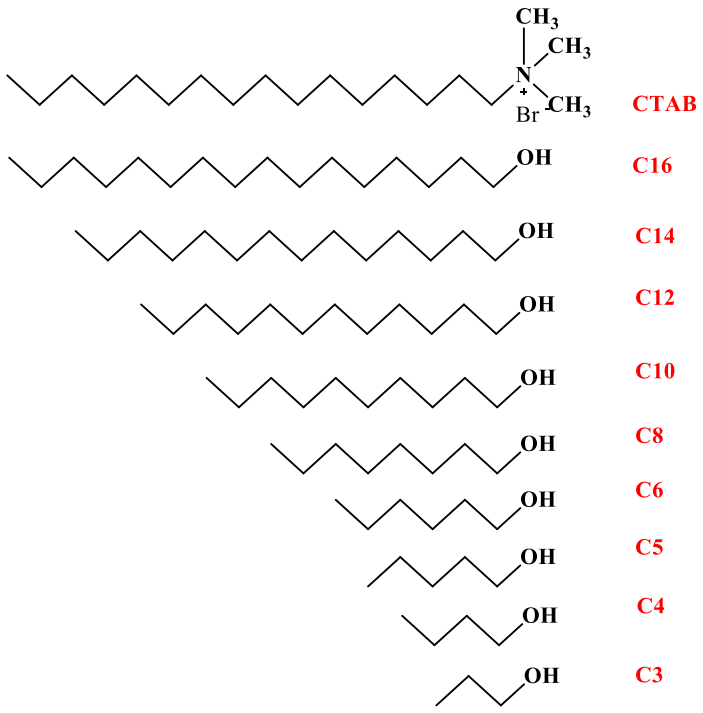


Fig. S1. Structural-similarity between CTAB (having C16 carbon chain) and alcohols carbon chain

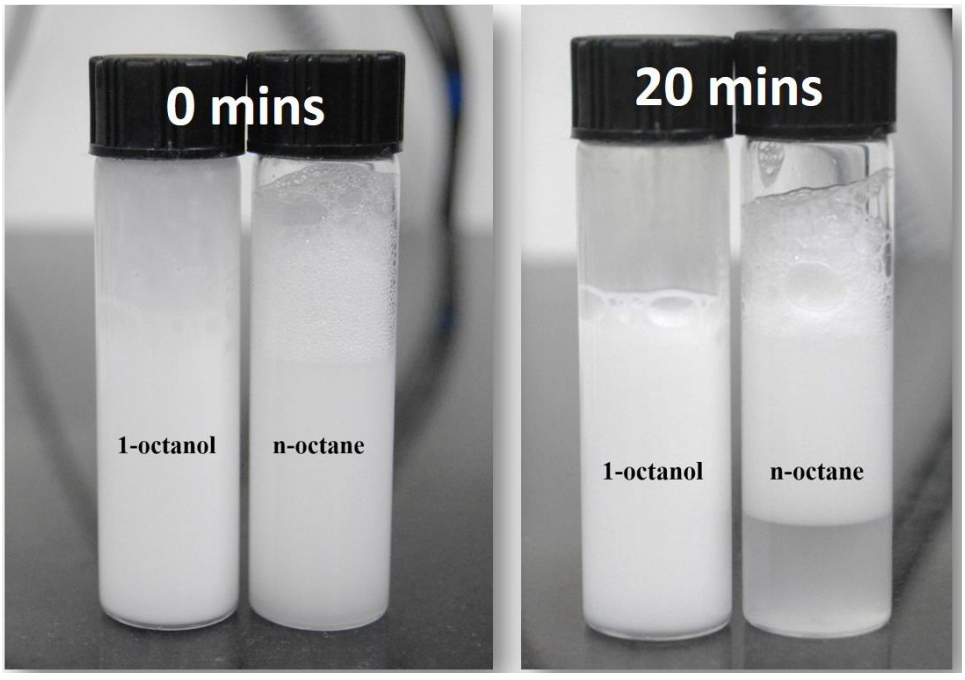


Fig. S2. Bulk emulsion stability using 1-octanol and n-octane as co-surfactant.

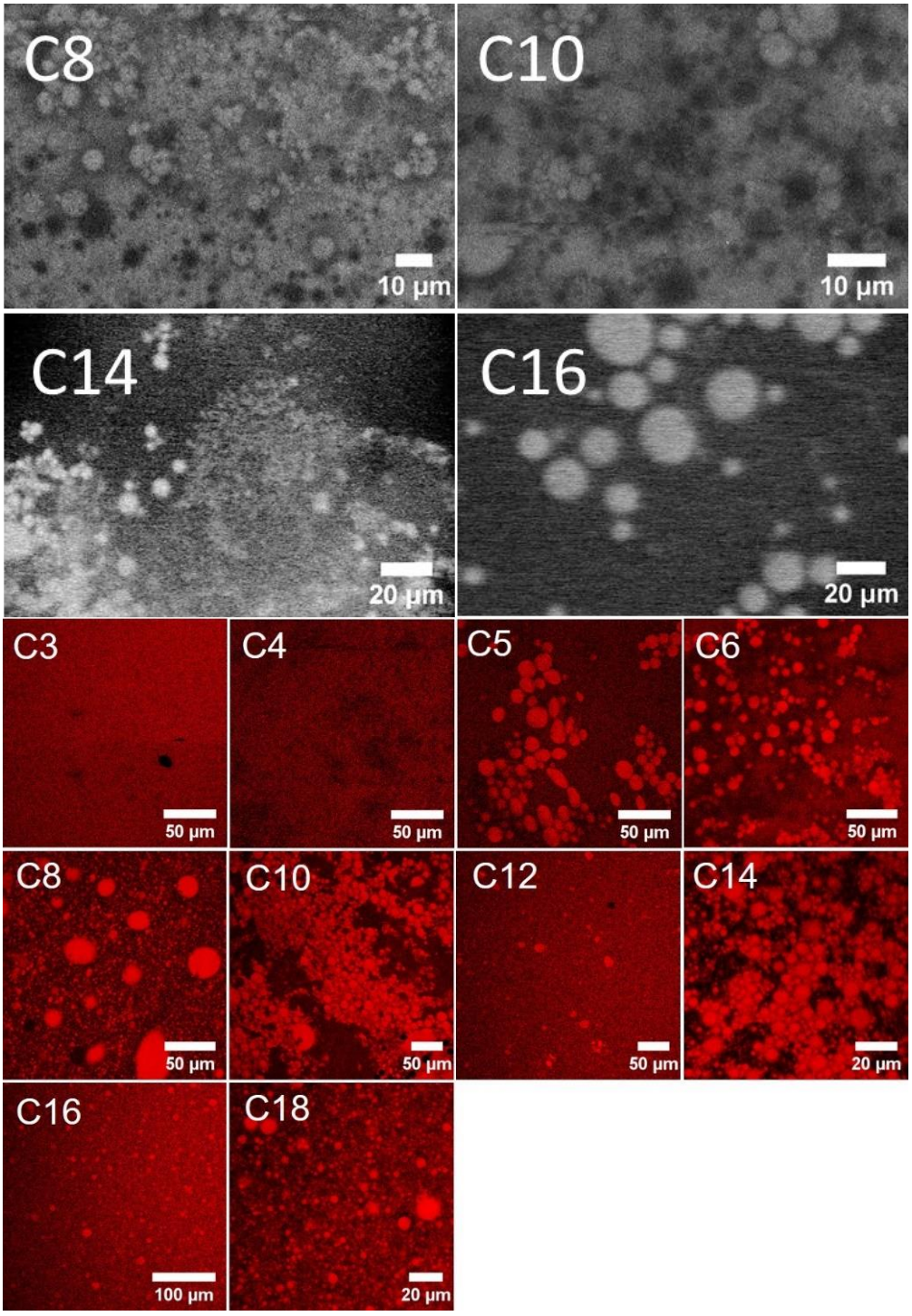
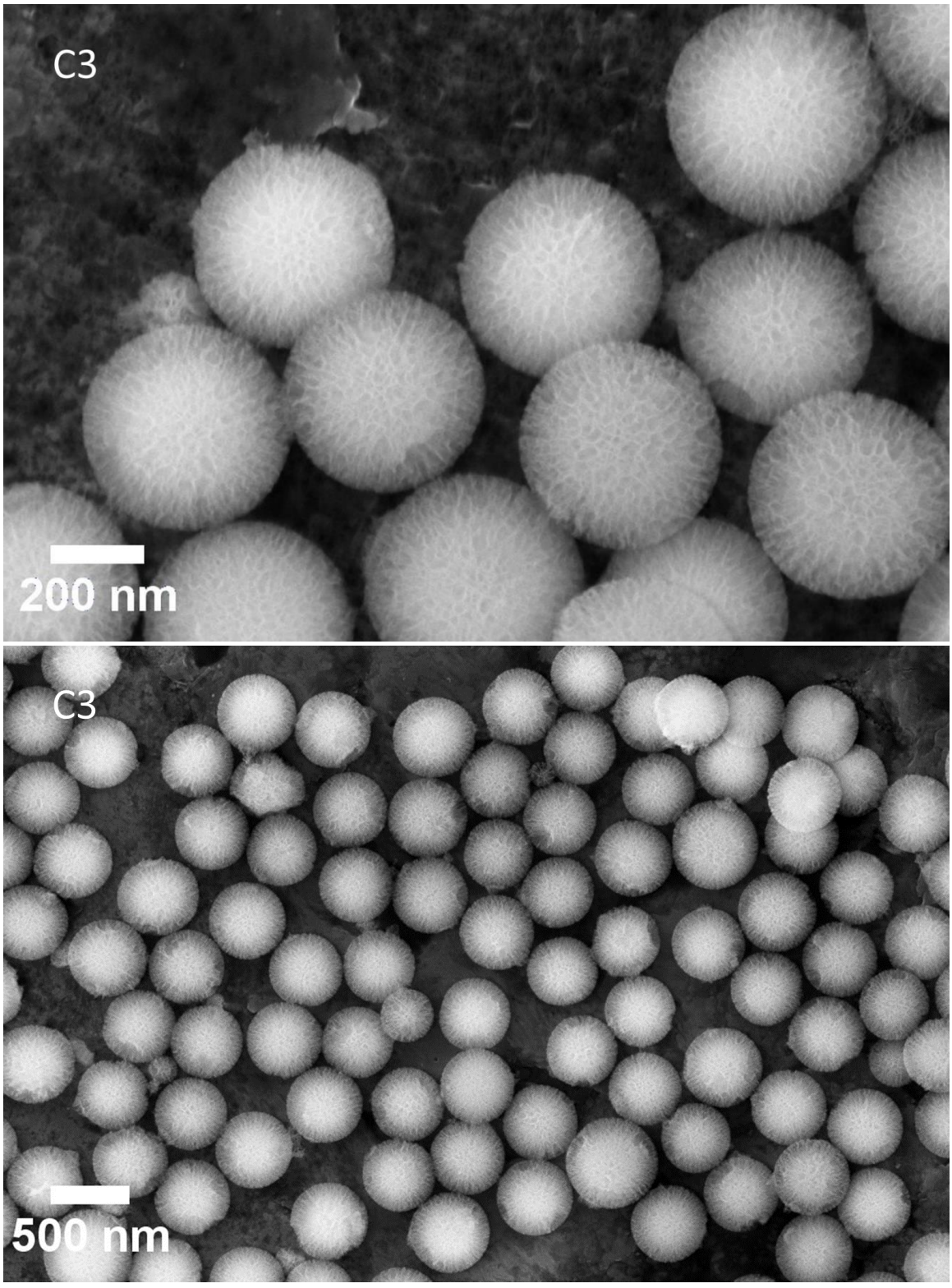
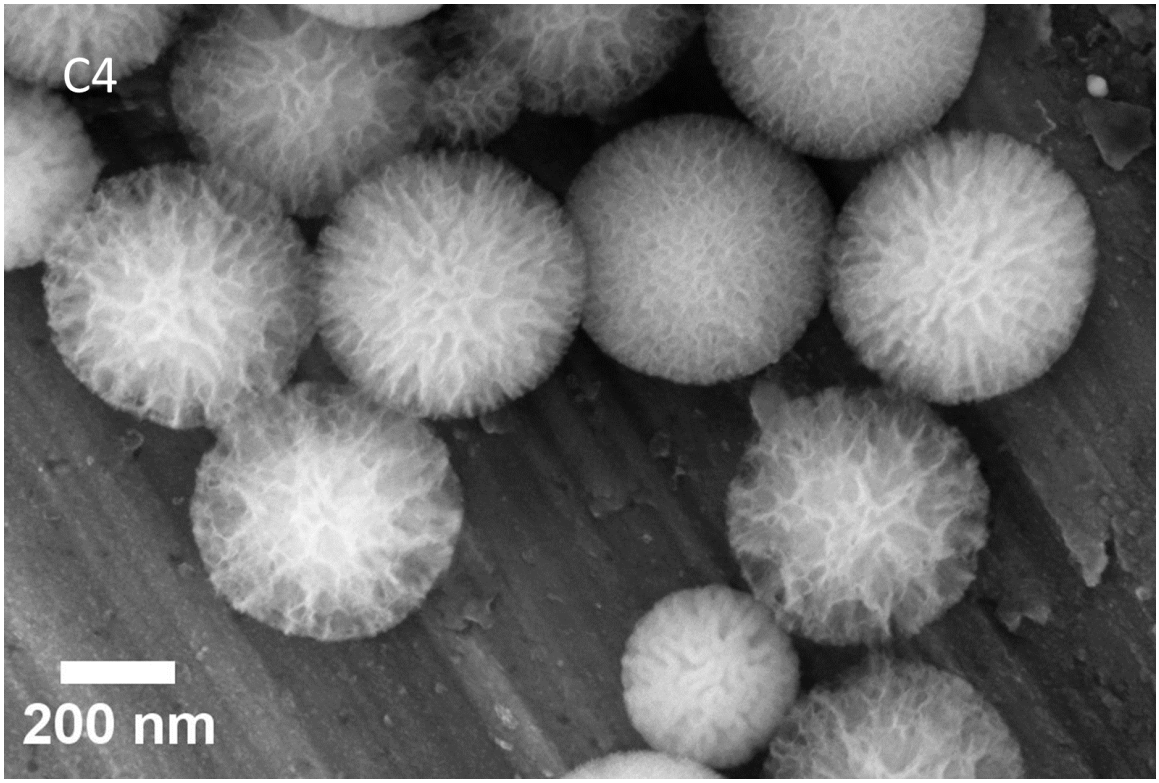


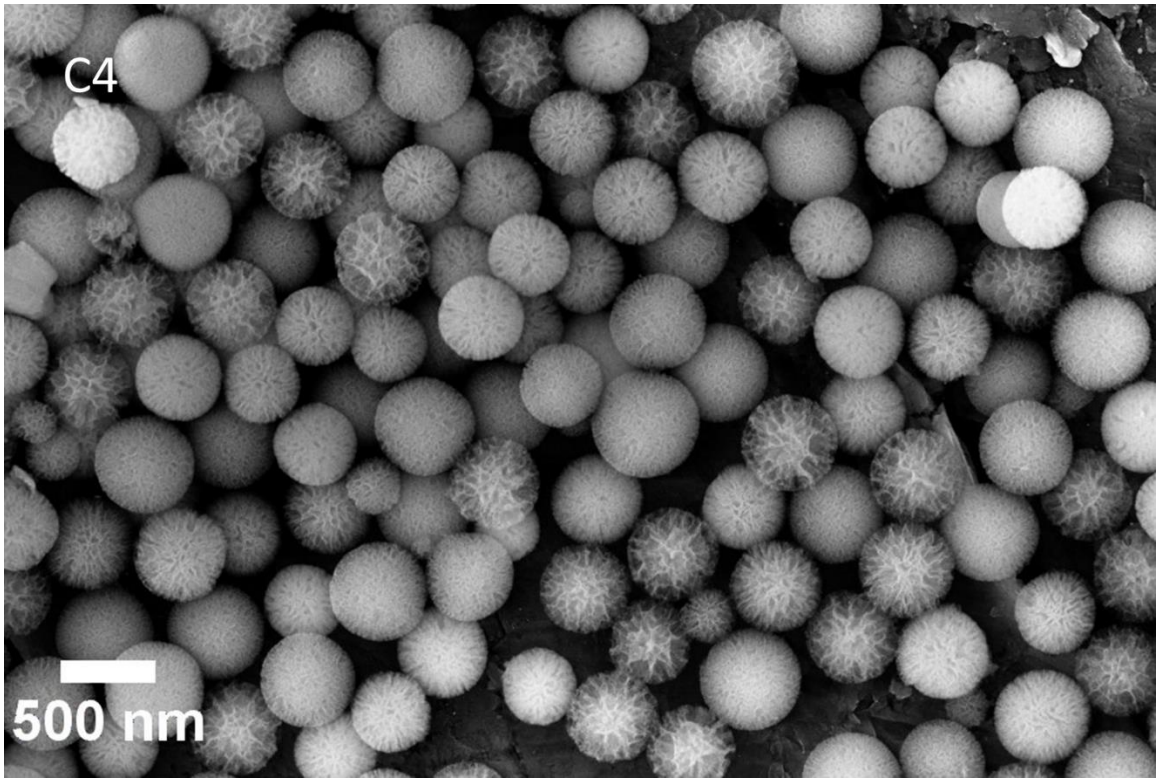
Fig. S3. (top) SEM (bottom) confocal images of emulsion using various alcohol as co-surfactant. For confocal imaging, Nile red dye as contrast agent and 543nm continuous-wave laser was used.

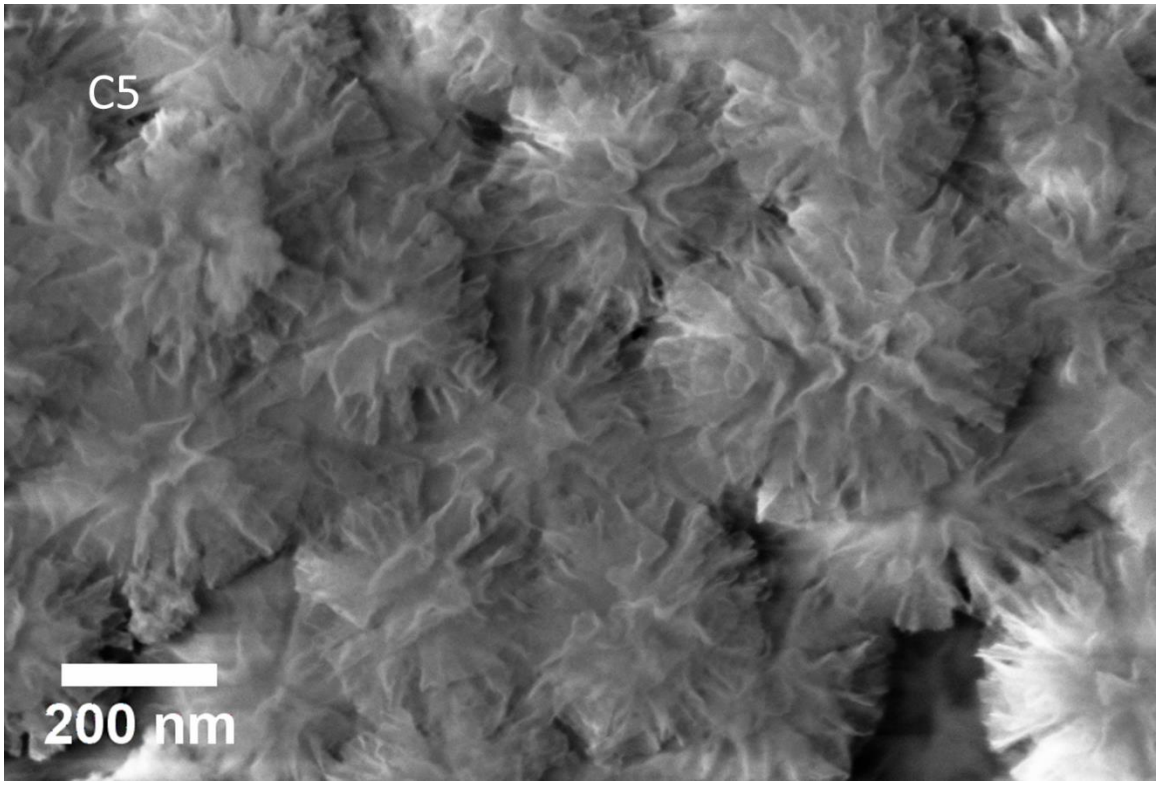
Fig. S4. Excess solvent addition test to know the dispersion phase of the emulsion.

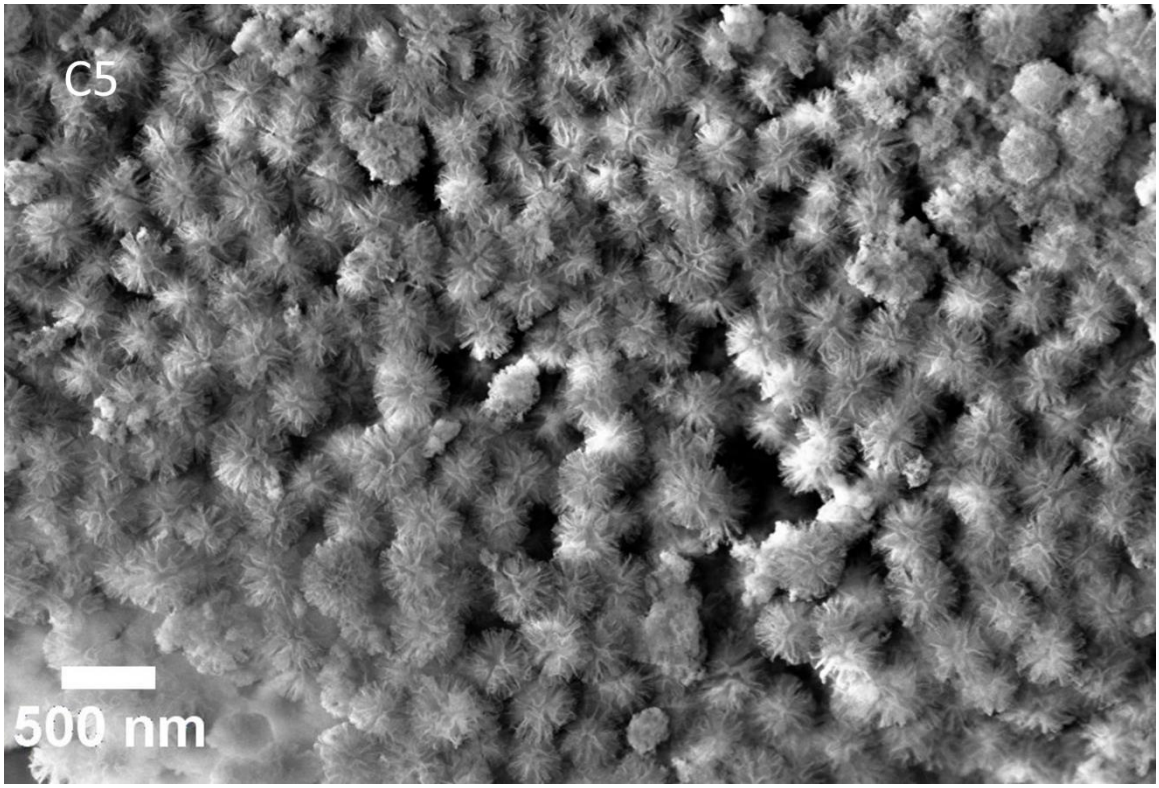
Fig. S5. Additional SEM images of DFNS formed using various alcohols**.** DFNS are non-conducting materials and when their sizes are small, their imaging is out of the SEM instrument resolution limit and hence moderate quality images were obtained. For smaller DFNS, please see TEM images given figure 2

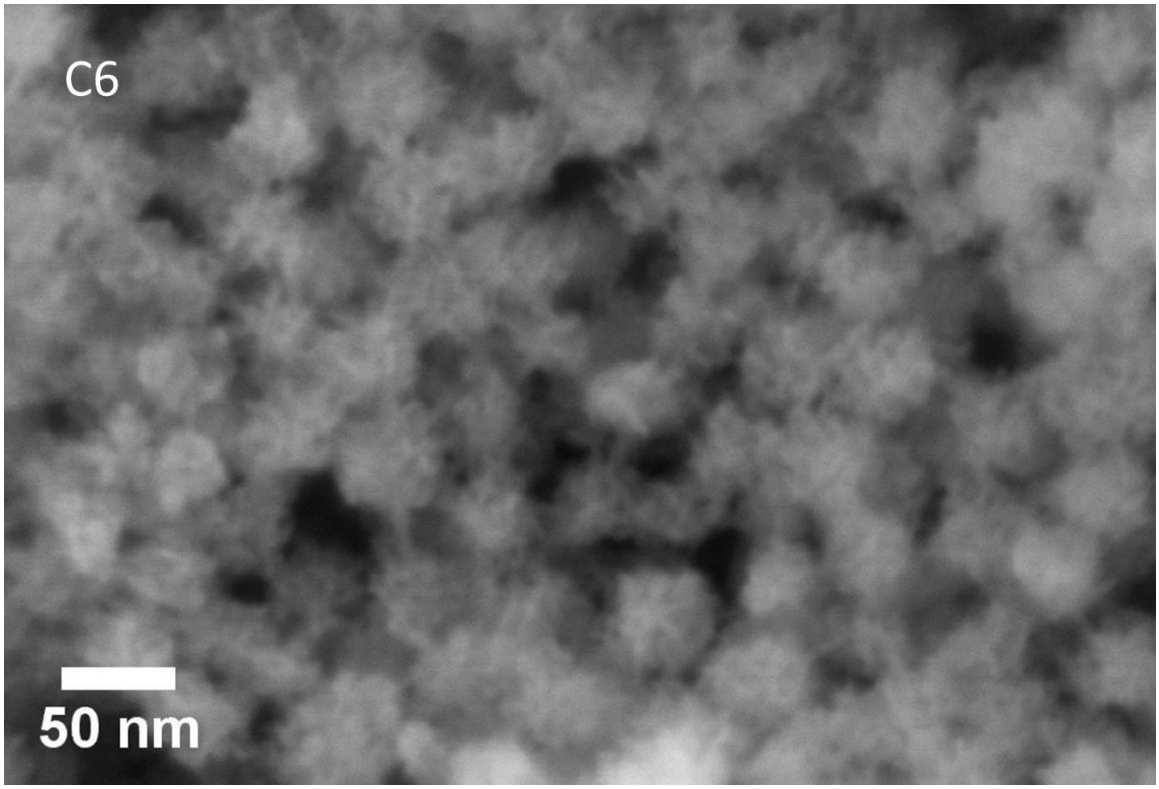


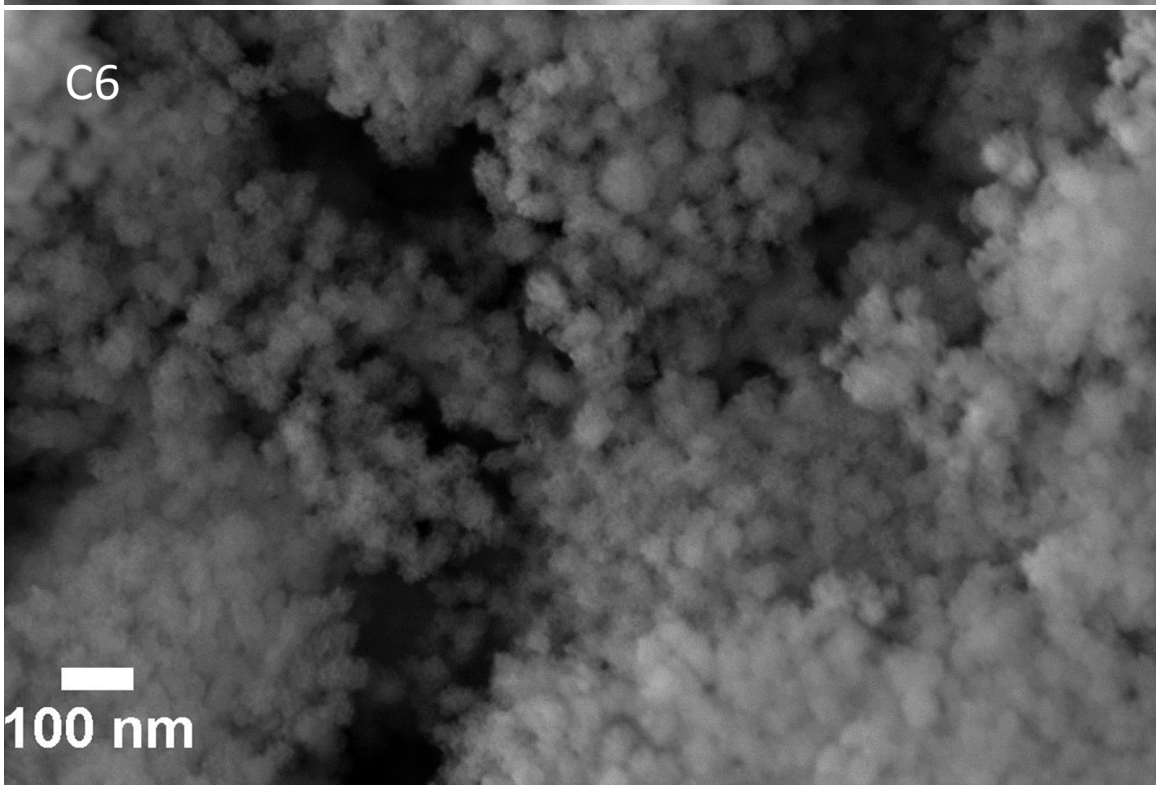

C4
200 nm

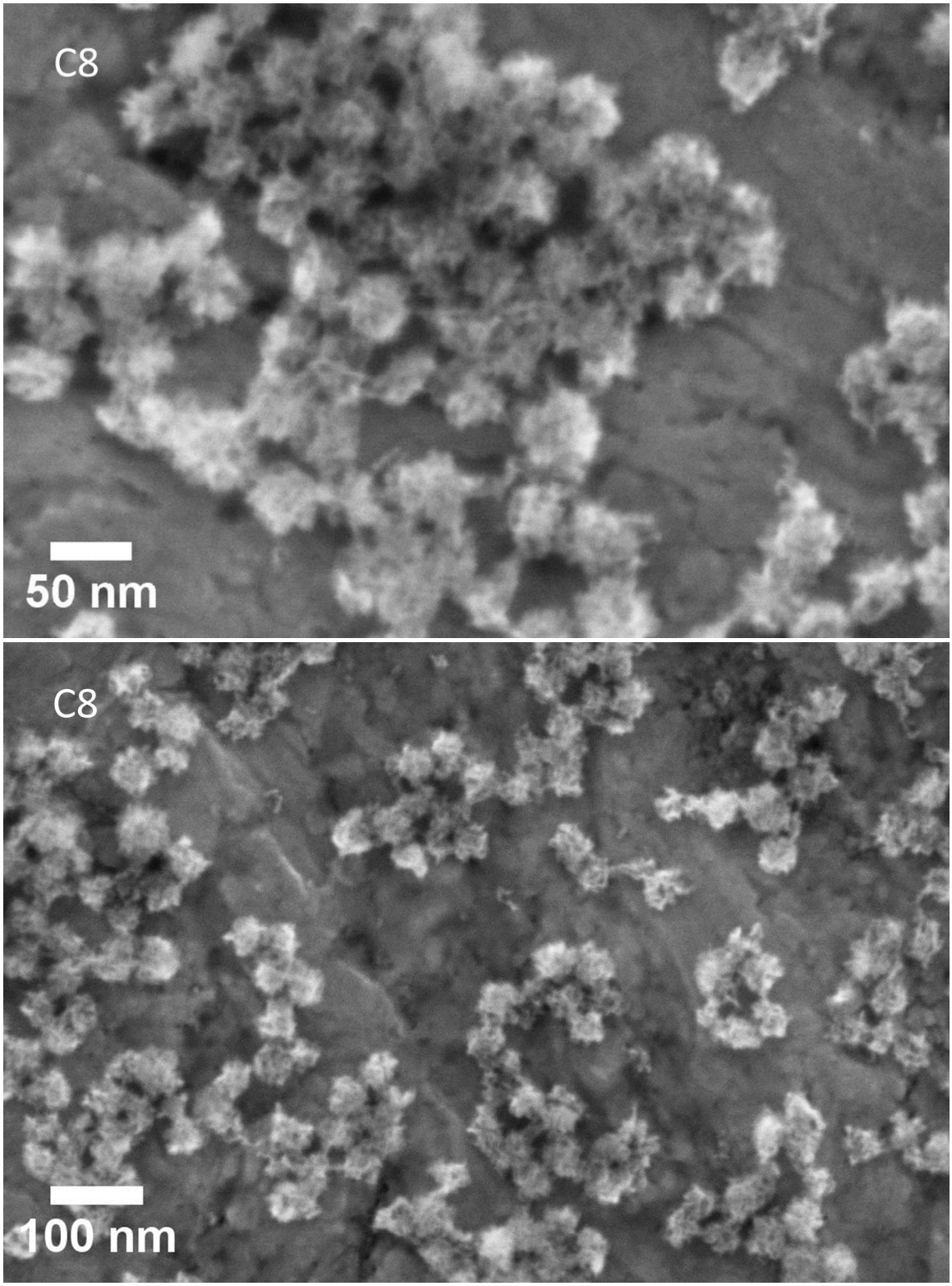

C4
500 nm

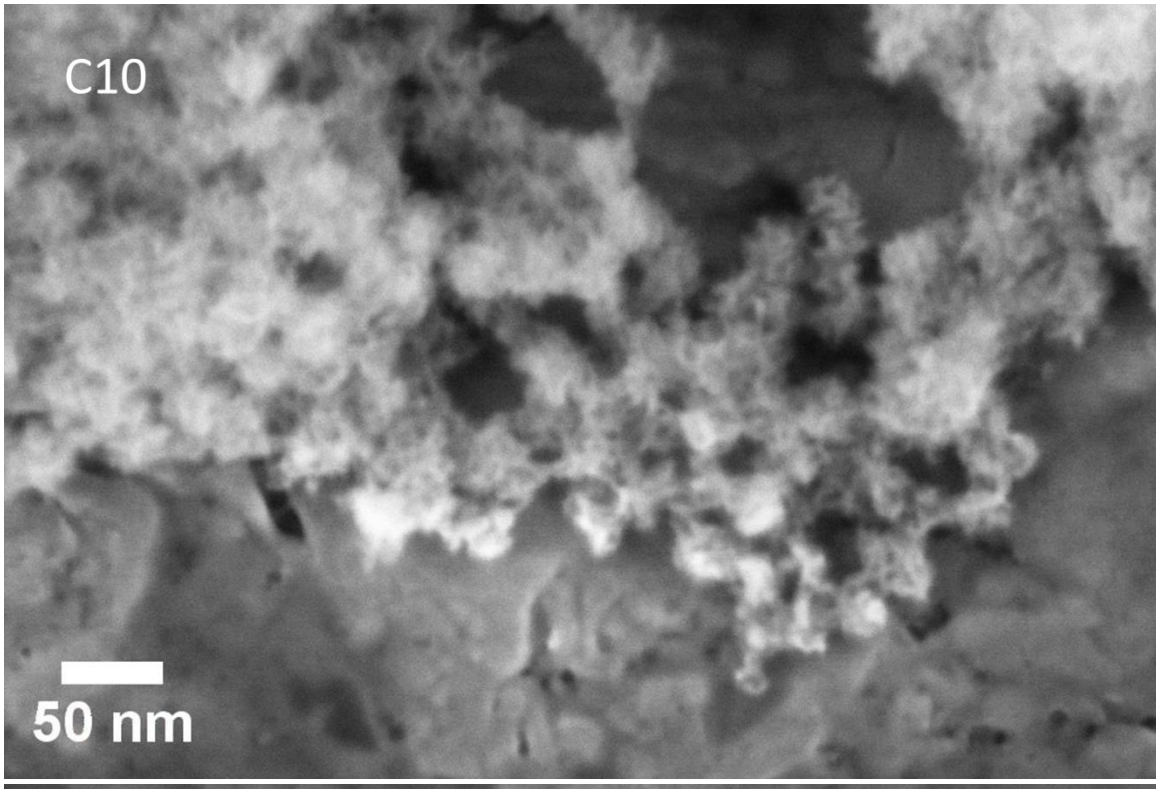

C5
200 nm

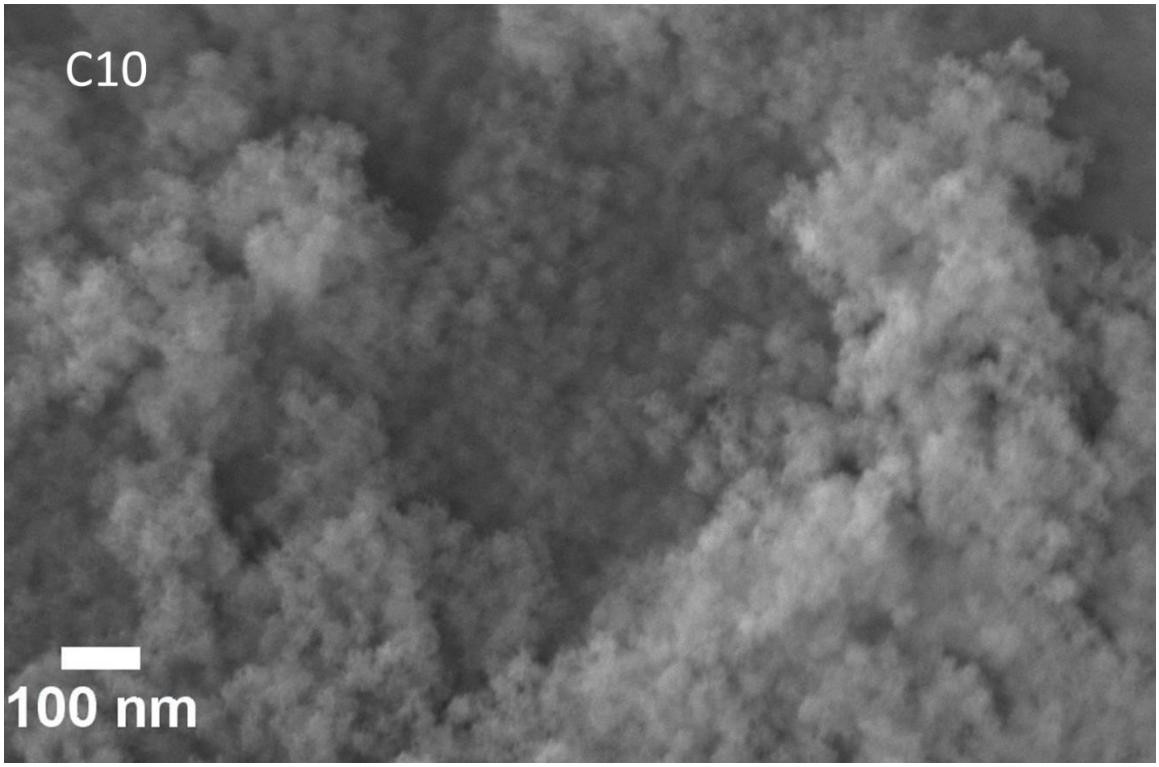

C5
500 nm


C6
50 nm


C6
100 nm


C8
50 nm
C8
100 nm


C10
50 nm


C10
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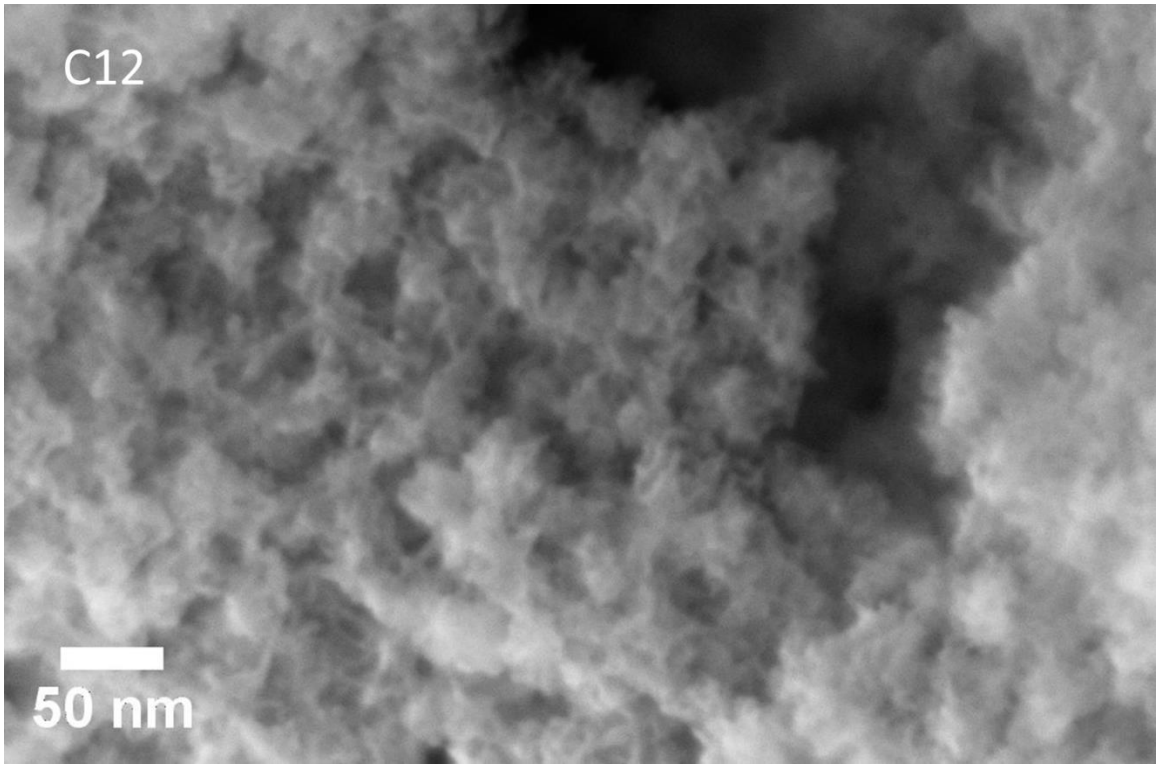
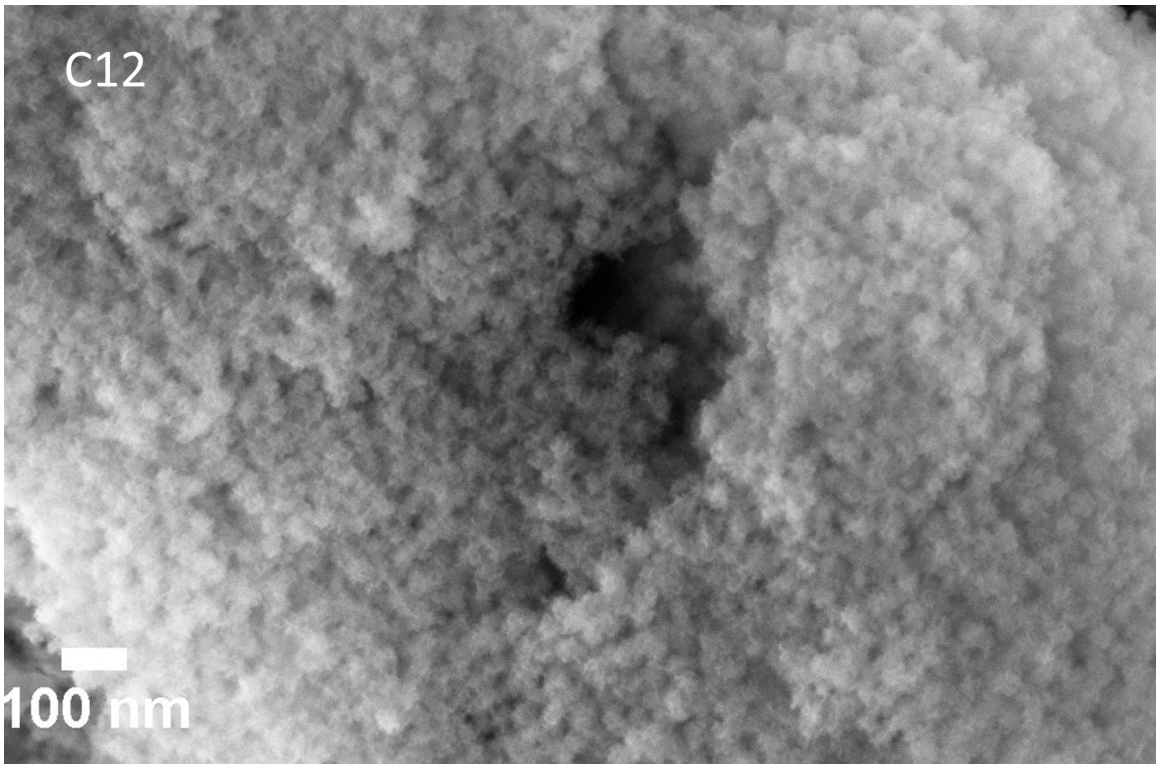
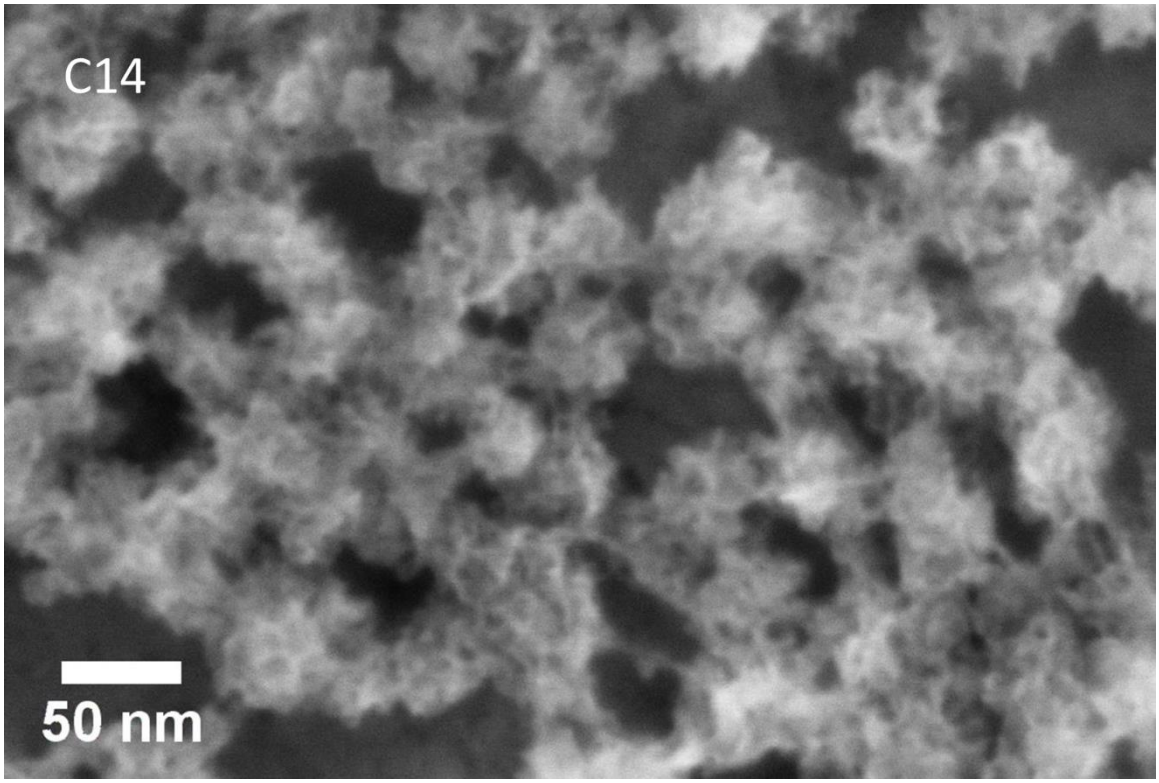
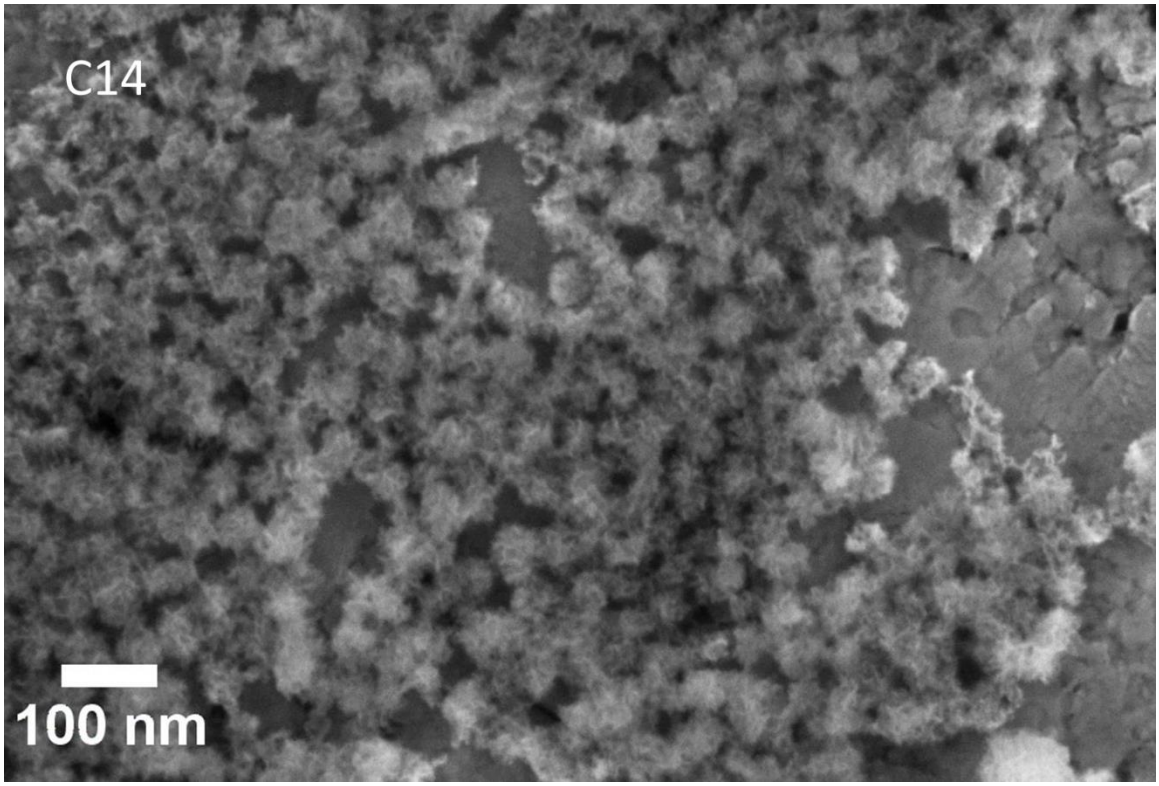
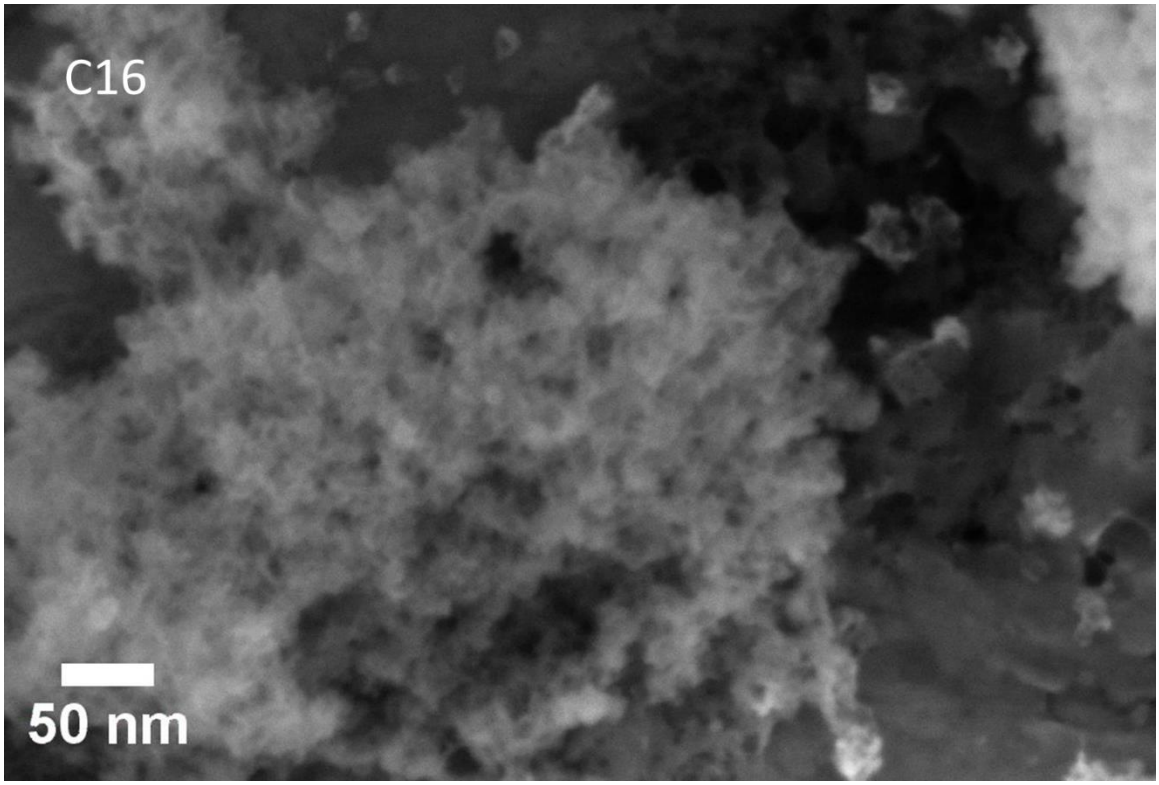
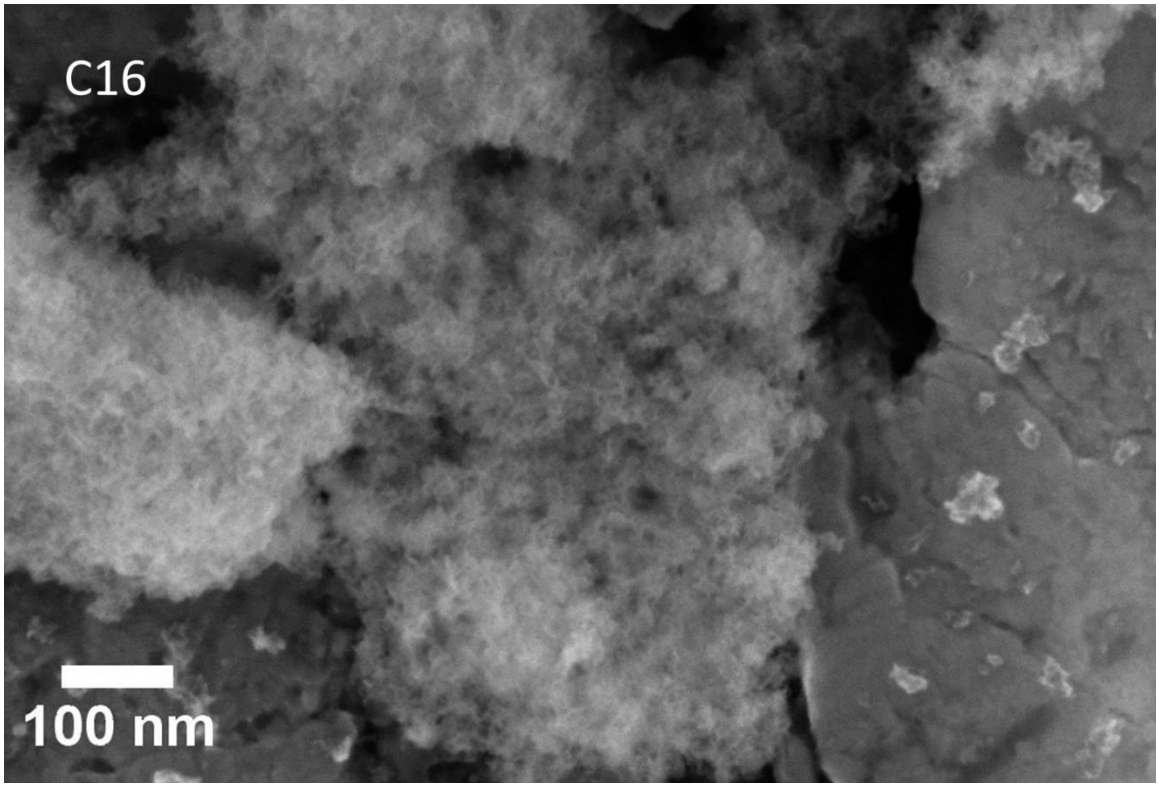

C12
50 nm


C12
100 nm


C14
50 nm


C14
100 nm


C16
50 nm


C16
100 nm

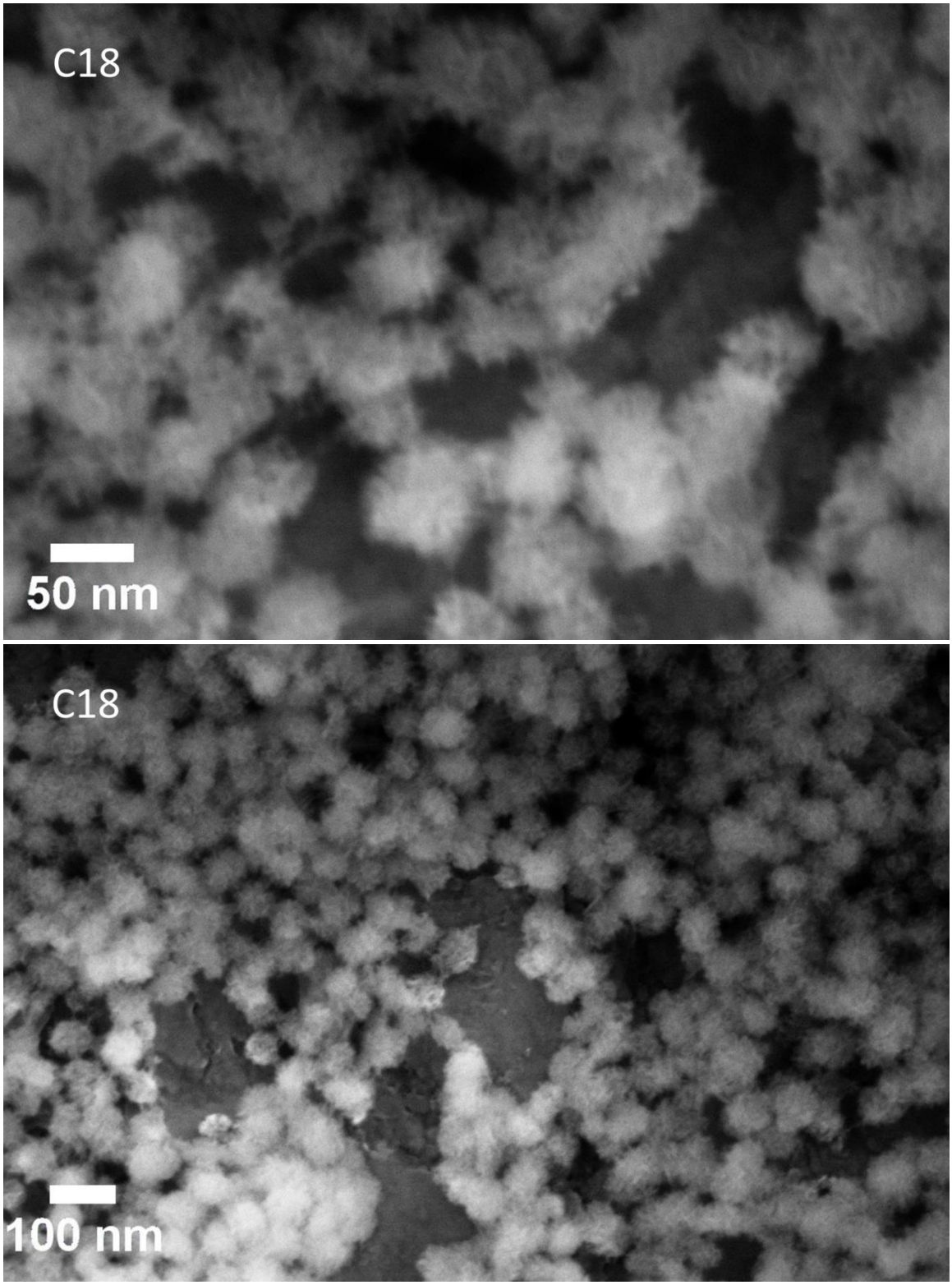
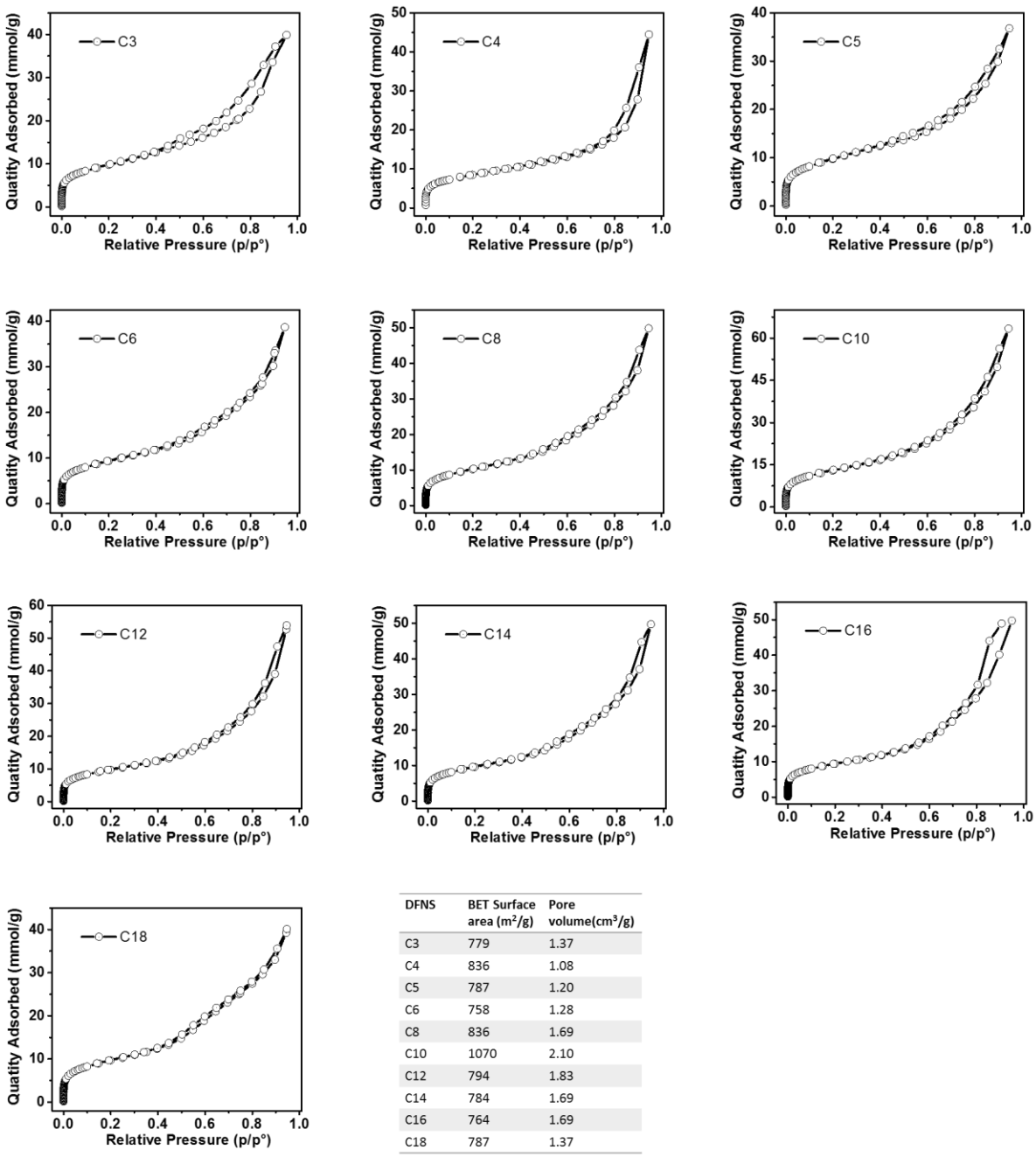

C18
50 nm
C18
100 nm

Fig. S6. N_2 Sorption Data of DFNS Synthesized using various Alcohols



DFNS	BET Surface area (m^2/g)	Pore volume(cm^3/g)
C3	779	1.37
C4	836	1.08
C5	787	1.20
C6	758	1.28
C8	836	1.69
C10	1070	2.10
C12	794	1.83
C14	784	1.69
C16	764	1.69
C18	787	1.37

Standard error in measurements: BET surface area- 4%, Pore volume - 0.01

Fig. S7. SEM Images of Aggregated DFNS