

Supporting Information

For the manuscript entitled:

Superhydrophobic Surfaces with Near-Zero Sliding Angles Realized from Solvent Relative Permittivity-Mediated Silica Nanoparticle Aggregation

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Supporting video files for Fig. 4

As discussed in the main text, aggregated size in solutions were estimated by in-situ optical microscope observation. Representative captured images are shown in Fig. 4. Video files containing all images with time interval of 2 sec are provided.

Supporting video files for Fig. 10

As discussed in the main text, superhydrophobicity with a near-zero sliding angle was observed. The original video file in Fig. 10 in the manuscript is provided. We also provide a camera-recorded video file showing this extreme water repellency is observed on most of sample area.

Supporting figure

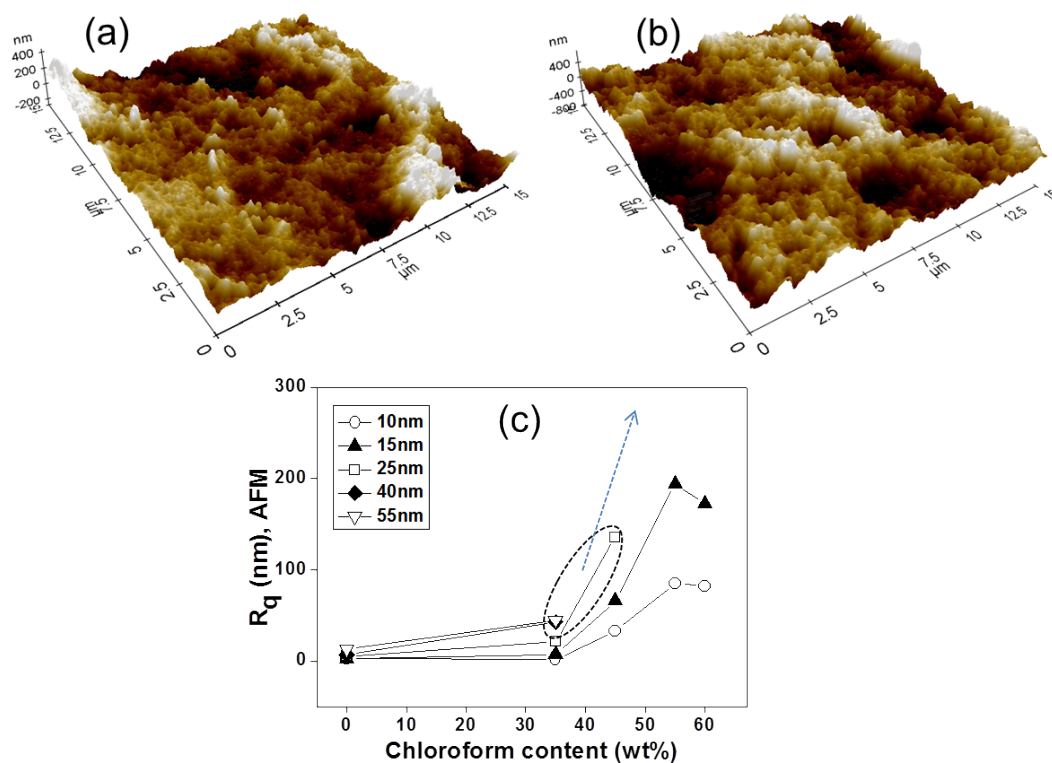


Fig. S1 AFM topographical images for selected samples of (a) ~10nm, 55 wt% and (b) ~15nm, 45 wt%. RMS (root-mean-square) roughness values, R_q , were obtained over $15 \times 15 \mu\text{m}^2$ area (c). Measurement for 25 ~ 50nm samples was limited to the chloroform content of 35 ~ 45 wt%, as indicated by dot circle. Highly aggregated surfaces with further increasing chloroform could not be properly scanned due to too much height variation of the sample surfaces and deterioration of AFM tip during scanning.

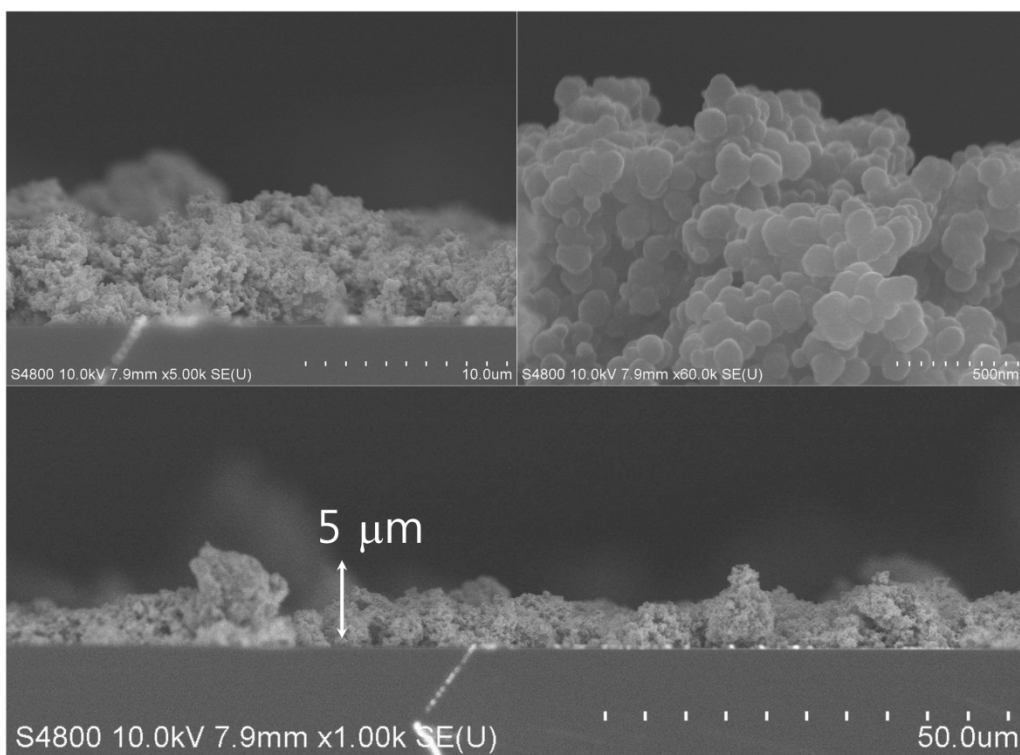


Fig. S2 Cross-sectional SEM images for the sample of ~ 55 nm size and 60 wt% chloroform.

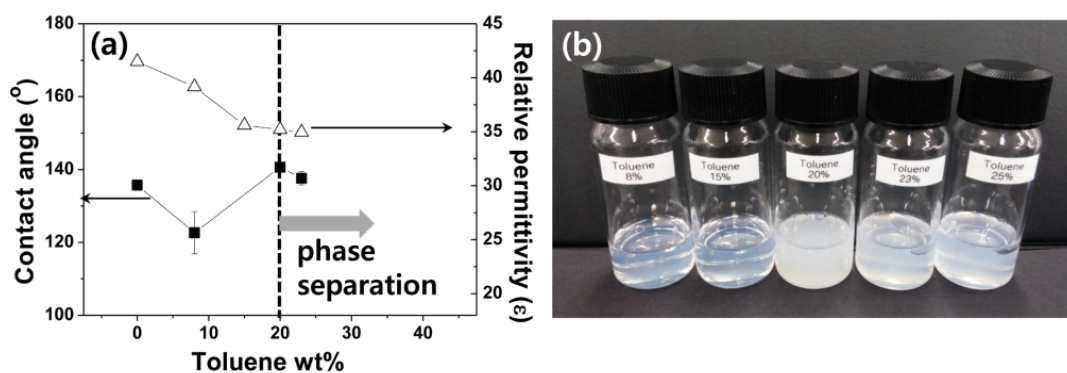


Fig. S3 WCA and ϵ values for the samples processed with toluene (a). Phase separation was observed from ~ 20 wt% toluene (b).