

## Supporting Information

### Fluorine-containing Block Copolymer Particles with Surface and Inner Hierarchical Microphase Separation Structures

Shan Qin, Hong Li, \* Wang Zhang Yuan, and Yongming Zhang\*

School of Chemistry and Chemical Engineering, Shanghai Jiao Tong University, Shanghai 200240, China

#### DLS studies of the particles solutions

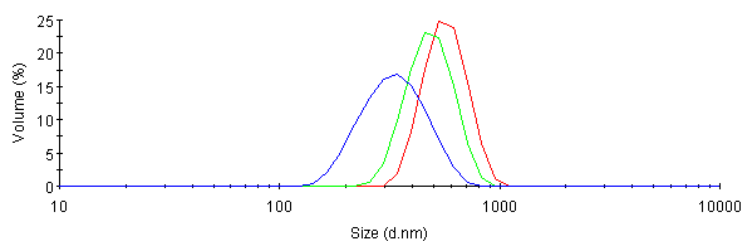


Figure S1. DLS results of the particles solutions prepared at 30 °C with water contents of : (blue) 50 vol%, (green) 67 vol%, (red) 80 vol%.

The statistical determination of the particle size at 30 °C by TEM were  $704 \pm 205$  nm,  $621 \pm 155$  nm and  $455 \pm 167$  nm as the water contents increasing from 50 vol% to 67 vol% and 80 vol%. The particle sizes were also decreased as the increase of water content. And the increase of water content also diluted the polymer concentration, which might resulted the decrease of the particle size. The same phenomenon were also observserd in some other experiments by SORP.<sup>1</sup>

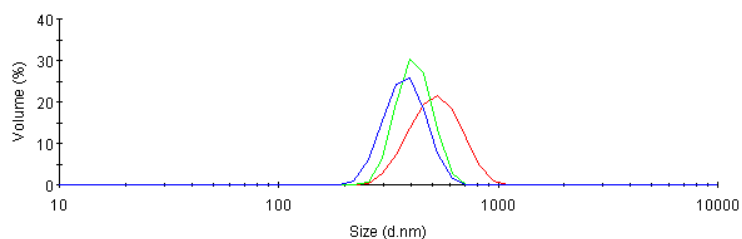


Figure S2. DLS results of the particles solutions prepared at 10 °C with water contents of :

(blue) 50 vol%, (green) 67 vol%, (red) 80 vol%.

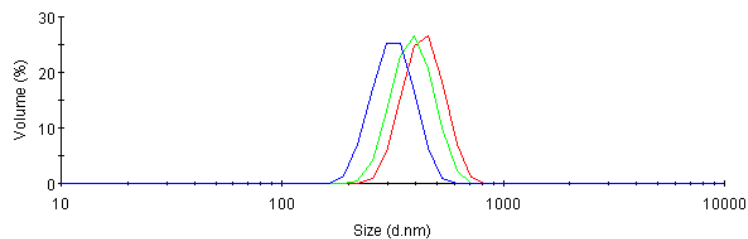


Figure S3. DLS results of the particles solutions prepared at 20 °C with water contents of :

(blue) 50 vol%, (green) 67 vol%, (red) 80 vol%.

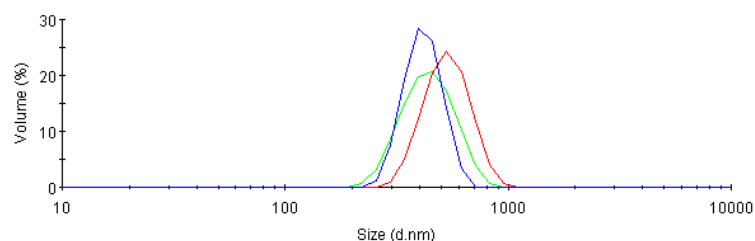


Figure S4. DLS results of the particles solutions prepared at 40 °C with water contents of :

(blue) 50 vol%, (green) 67 vol%, (red) 80 vol%.

DLS studies indicated that particle sizes of the particles prepared at 10 °C were 473 nm (polydispersity = 0.06), 408 nm (polydispersity = 0.25) and 360 nm (polydispersity = 0.02) as the water contents increase from 50 vol% to 67 vol% and 80 vol% (Figure S2). Particle sizes of the particles prepared at 20 °C were 424 nm (polydispersity = 0.14), 359 nm (polydispersity = 0.11) and 315 nm (polydispersity = 0.16) as the water contents increase from 50 vol% to 67 vol% and 80 vol% (Figure S3). Particle sizes of the particles prepared at 40 °C were 502 nm (polydispersity = 0.02), 459 nm (polydispersity = 0.36) and 423 nm (polydispersity = 0.19) as the water contents increase from 50 vol% to 67 vol% and 80 vol% (Figure S4).

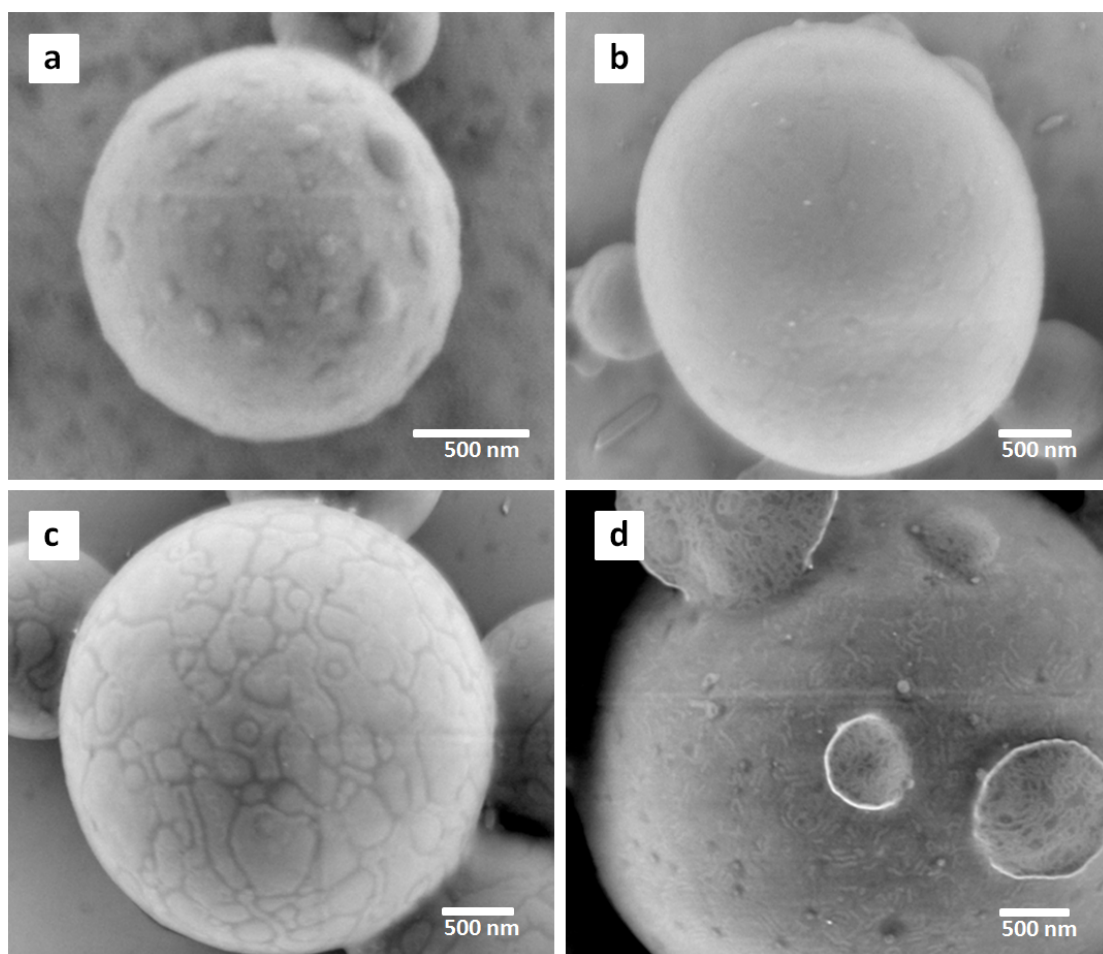


Figure S5. SEM images of the particles prepared with a water content of 50 vol% at: (a) 10 °C, (b) 20 °C, (c) 40 °C and a water content of 67 vol% at 40 °C.

### References

1. H. Yabu, T. Higuchi and M. Shimomura, *Adv. Mater.*, 2005, **17**, 2062-2065.