Supplementary Material for PCCP


# Supporting Information

## Facile Fabrication of Narrow Distribution Polymeric Micelles via Host-Guest Inclusion Complexation of Hyperbranched polymers and Cyclodextrin and its Two-Dimensional self-assembly

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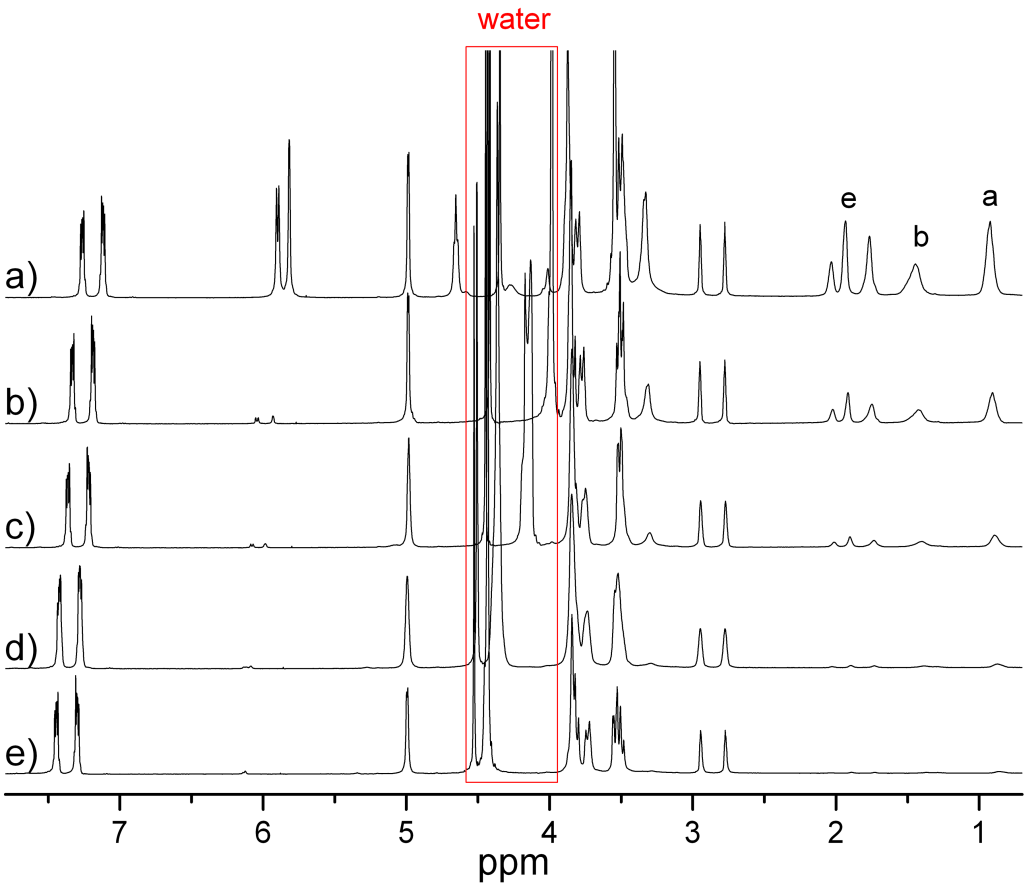


Fig. S1 $^{1}$H NMR spectra of HBPO-AD/β-CD micelles in DMF-$d_7$ and $D_2O$ mixture (the molar ratio of AD/β-CD is 1:1). $D_2O$ contents (vol %): (a) 0, (b) 9, (c) 16.7, (d) 28.6, and (e) 37.5. The frame represents the water signals. There are two kinds of water signals in the spectra. One is from the added $D_2O$; the other is from the potassium hydrogen phthalate/$D_2O$ solution in the sealed inner tube as an external standard.

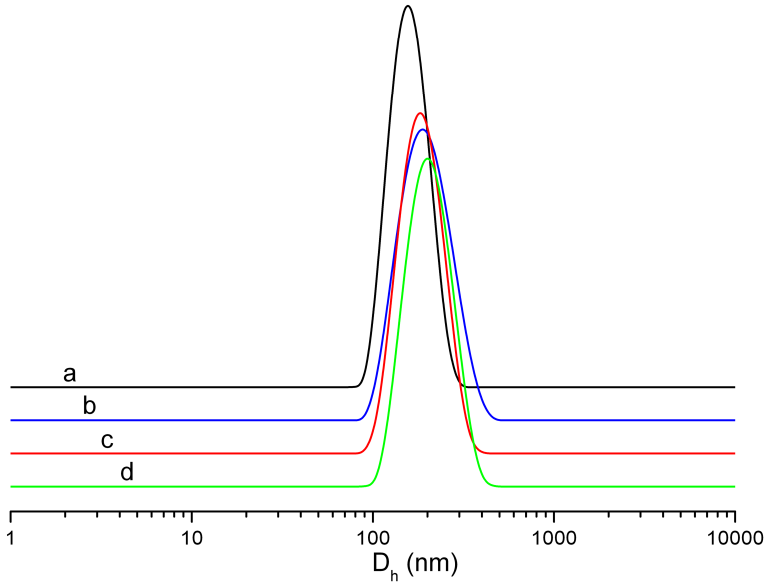


Fig. S2 Typical intensity-weighted size distribution of HBPO-AD/β-CD micellar solutions at AD/β-CD molar ratio (a) 1:0.25, (b) 1:0.5, (c) 1:1 and (d) 1:2. The intensity-weighted size distribution is obtained from Malvern Zetasizer software using non-negative least squares (NNLS) method.

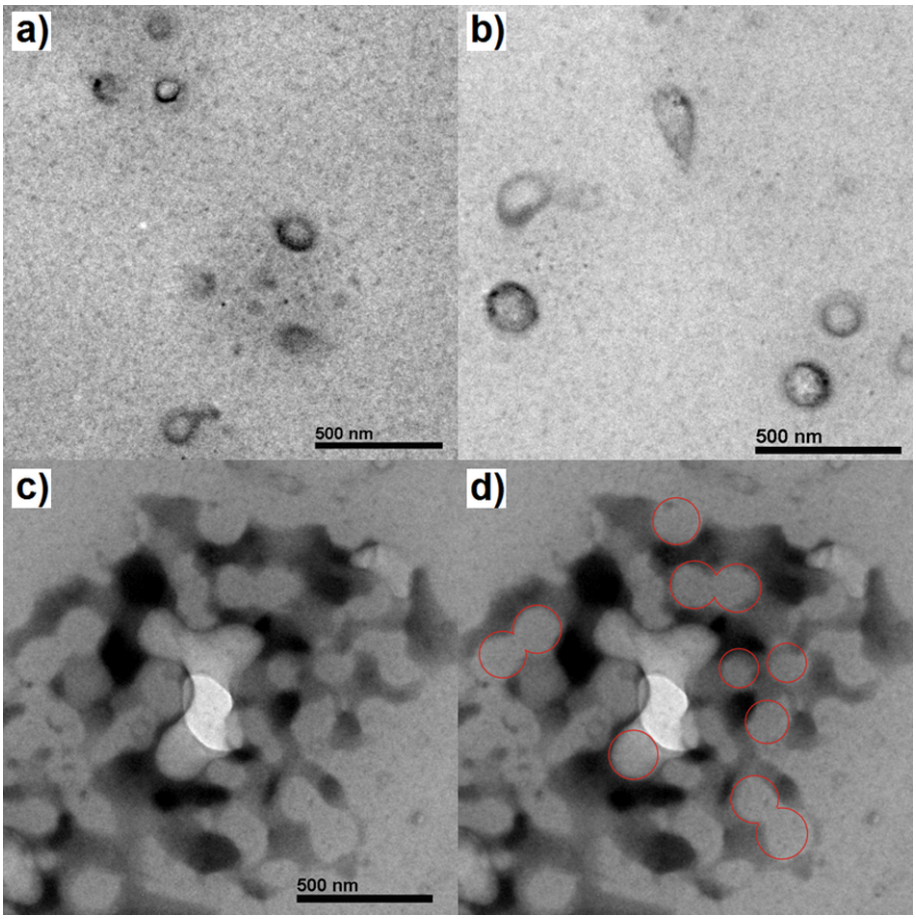


Fig. S3 TEM images (a-c) of HBPO-AD/β-CD micellar solution after staining in iodine vapor. The molar ratio of AD/β-CD is 1:1. The circles in Fig. S3d show the profile of the micelles in Fig. S3c

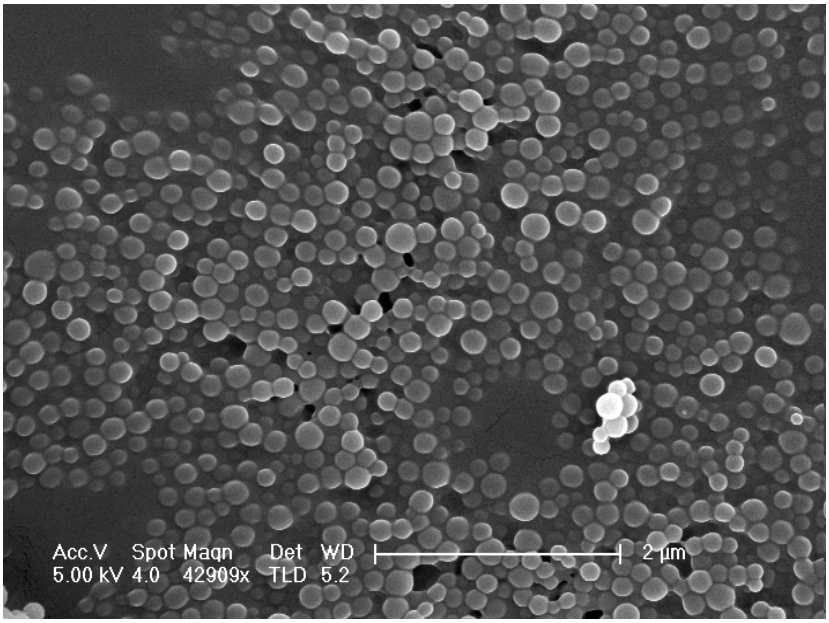


Fig. S4 SEM images of HBPO-AD/β-CD micelles prepared under freeze-drying condition. The molar ratio of AD/β-CD is 1:1, and the concentration is 1.0 mg $mL^{-1}$.

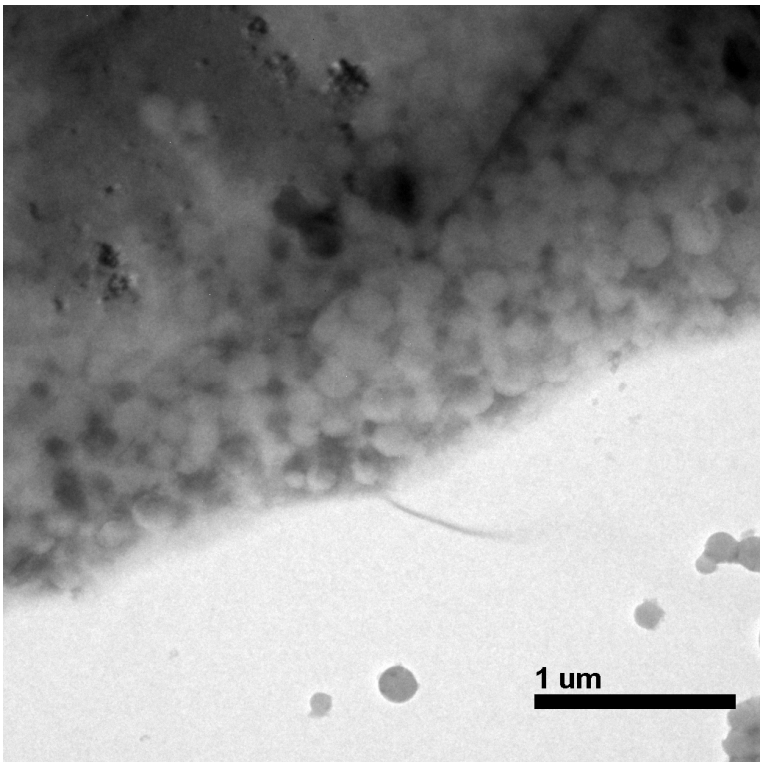


Fig. S5 TEM images of 2D sheets obtained by annealing the HBPO-AD/β-CD micellar solution at 75 °C for 48 h. The molar ratio of AD/β-CD is 1:1, and the concentration is 1.0 mg $mL^{-1}$.

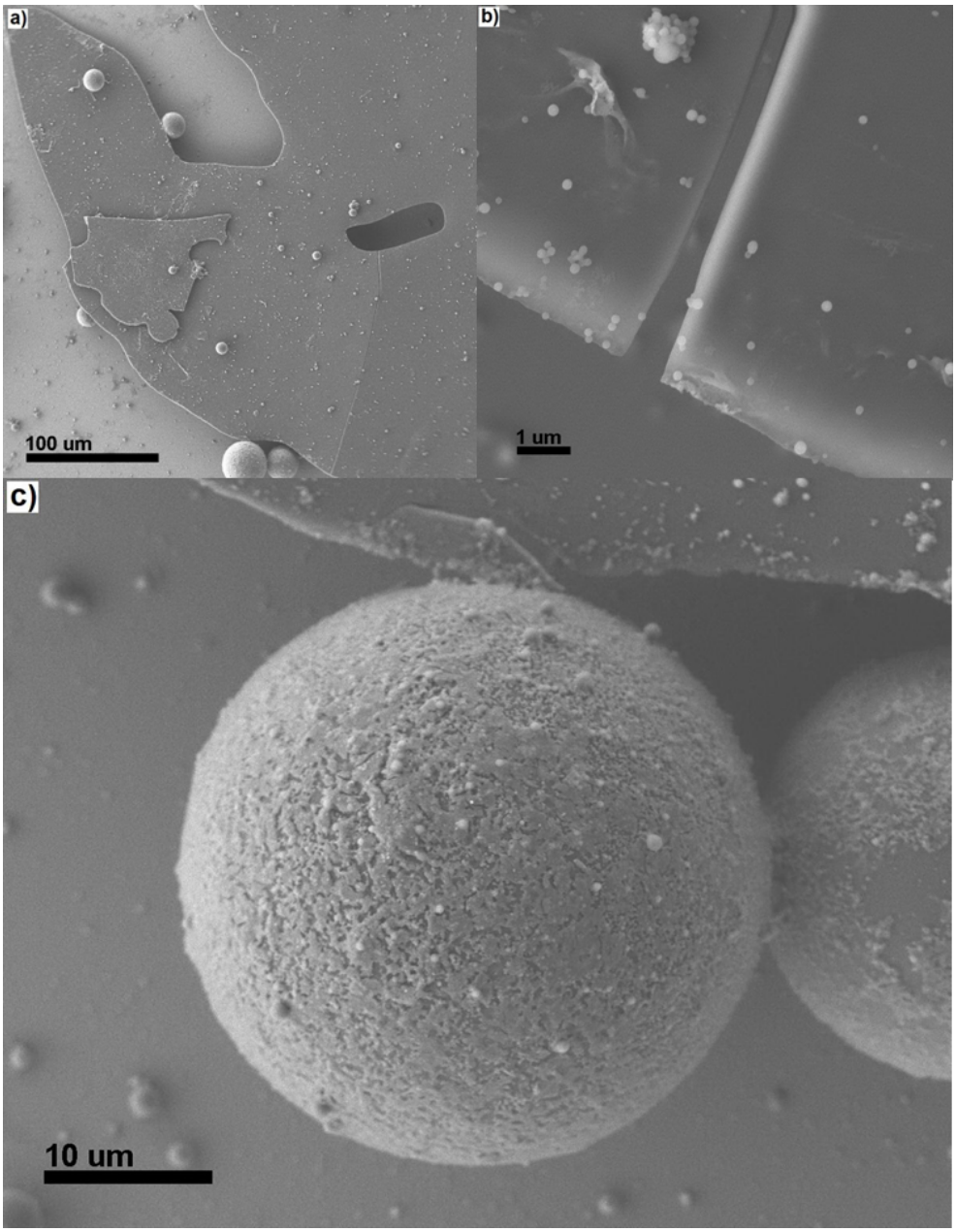


Fig. S6 SEM images of 2D sheets with smooth surface obtained by annealing the HBPO-AD/β-CD micellar solution at 75 °C for 48 h. The molar ratio of AD/β-CD is 1:1, and the concentration is 1.0 mg $mL^{-1}$.

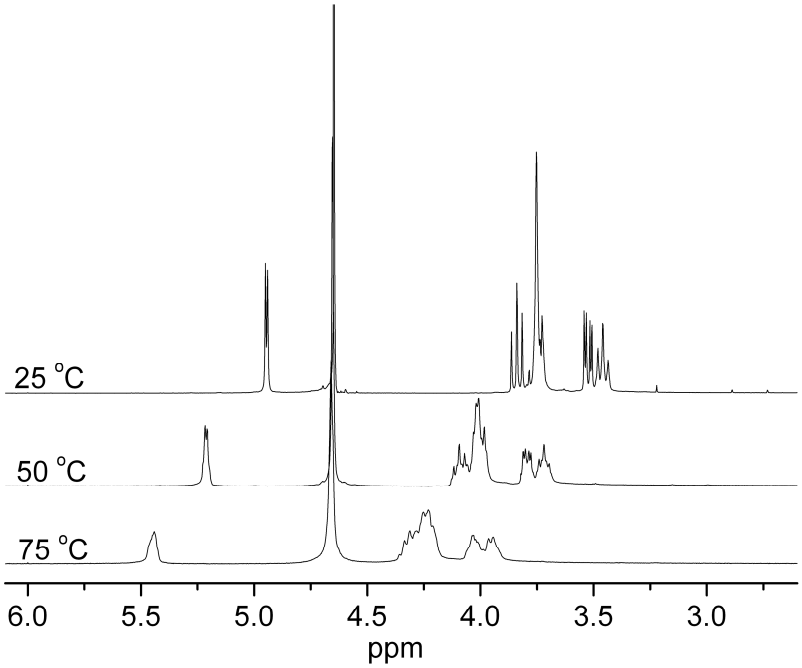


Fig. S7 $^{1}$H NMR spectra of HBPO-AD/β-CD micelles in $D_2O$ solution at different temperature. The molar ratio of AD/β-CD is 1:1.

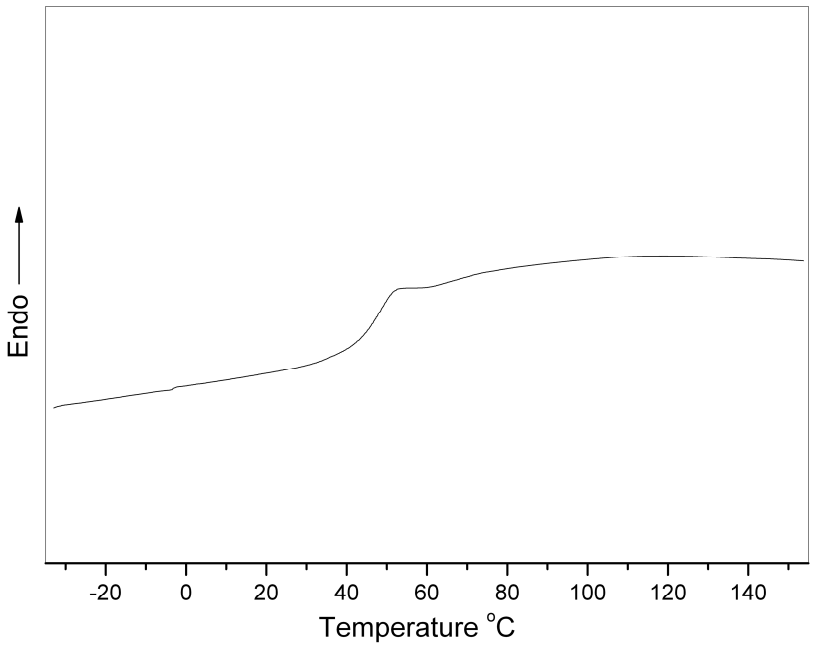


Fig. S8 DSC curve in the second heating scan for HBPO-AD. $T_g$ was determined using a TA instruments Q2000 differential scanning calorimeter in a dry nitrogen atmosphere. The sample was heated from -30 to 150 °C at a rate of 20 °C /min. The second heating curve was recorded and $T_g$ was measured using TA software.