

## Supporting Information

### ***In situ* and on-line Monitoring Polymerization-Induced Micellization**

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#### **AFM measurement on the morphology of the micelles after polymerization**

A small portion (~0.5 mL) of the micelle solution was taken out from the LLS vial at the ending stage of the polymerization, and was dropped on the fresh mica surface. Most of the solution was wiped off using a filter paper and the sample was dried in vacuum overnight. The AFM images were obtained by scanning the sample under tapping mode (DI 3A, USA).

Figure S1 and Figure S2 show the morphologies of micelles formed in the system where the PEO-CTAs concentrations are 5.00 mg/mL and 1.38 mg/mL, respectively. In Figure S1, spheres with a diameter ranging from 50 to 70 nm are observed; while in Figure S2, the aggregates are crowded and the spherical shapes are slightly compressed (probably due to drying). The distortion of the sphere at 1.38 mg/mL PEO-CTAs also indicates that the micelles are soft (or loosely packed) compared with the solid spheres at 5.0 mg/mL PEO-CTAs, which agrees with the LLS results. The diameters of the micelles determined by AFM are larger than those by LLS, probably because of the spreading or flattening of the micelles on the surface, as well as the tip broadening effect in AFM.

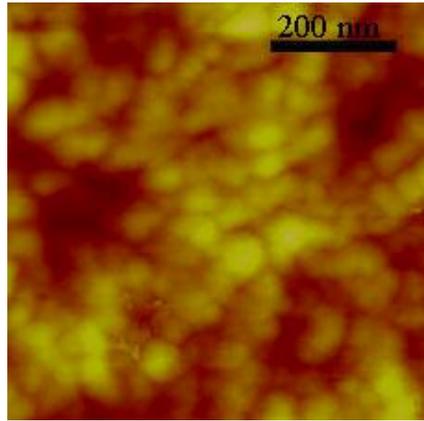


Figure S1. Morphology of micelles at 5.00 mg/mL PEO-CTAs.

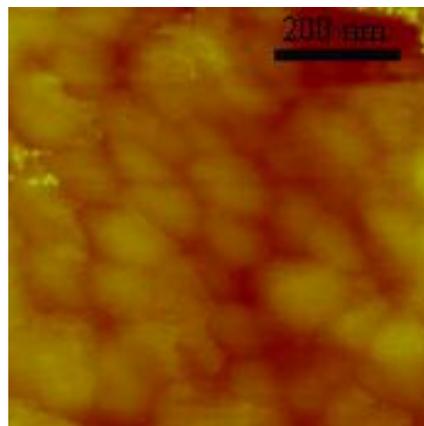


Figure S2. Morphology of micelles at 1.38 mg/mL PEO-CTAs.