

## Supporting Information

### Self-assembly of polymer tethered molecular nanoparticle shape amphiphiles in selective solvents

Shiying Ma<sup>a,b</sup>, Yi Hu<sup>a</sup>, Rong Wang<sup>\*,a</sup>

<sup>a</sup> Key Laboratory of High Performance Polymer Materials and Technology of Ministry of Education, Department of Polymer Science and Engineering, State Key Laboratory of Coordination Chemistry, School of Chemistry and Chemical Engineering, Nanjing National Laboratory of Microstructures, Nanjing University, Nanjing 210093, China

<sup>b</sup> College of Chemistry and Chemical Engineering, Taishan University, Taian 271021, China

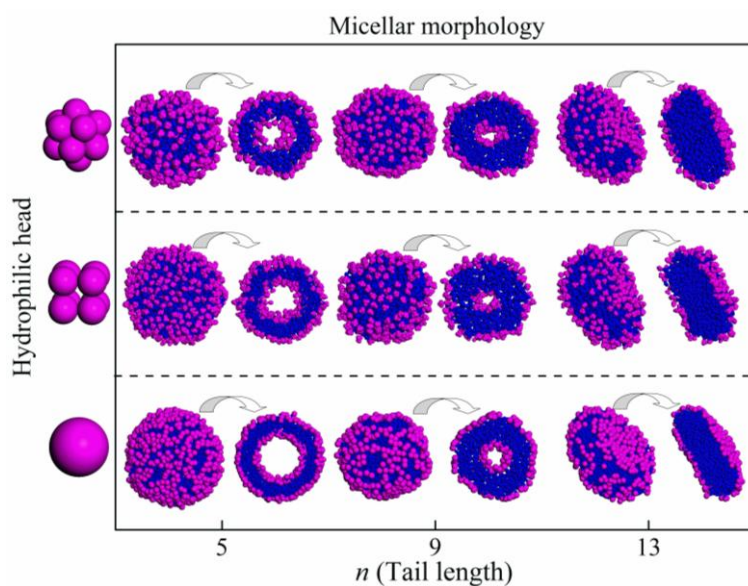


Figure S1 Characteristic morphological snapshots of aggregates formed by model polymer  $T_n$ -H as a function of hydrophobic tail length and number of hydrophilic head beads.

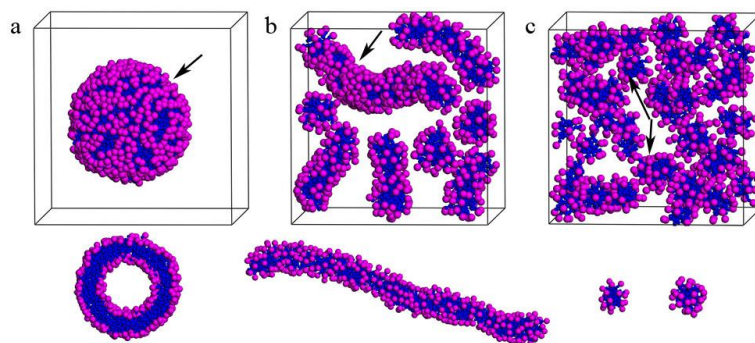


Figure S2 Snapshots of model surfactant analogue  $T_5$ -H in selective solvent with a concentration of 0.15 for the following  $a_{HS}$ : (a)  $a_{HS} = 25$ , vesicles; (b)  $a_{HS} = 20$ , wormlike cylinders; (c)  $a_{HS} = 15$ , spheres.

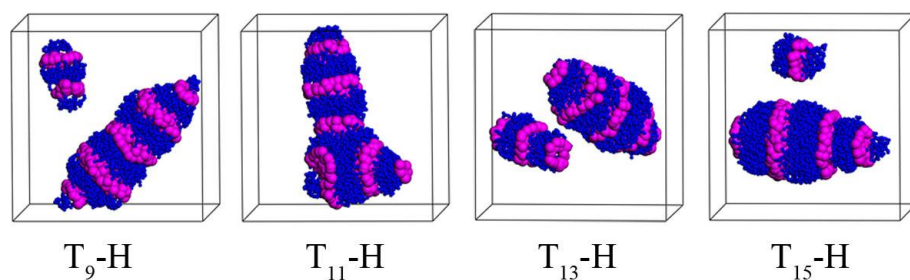
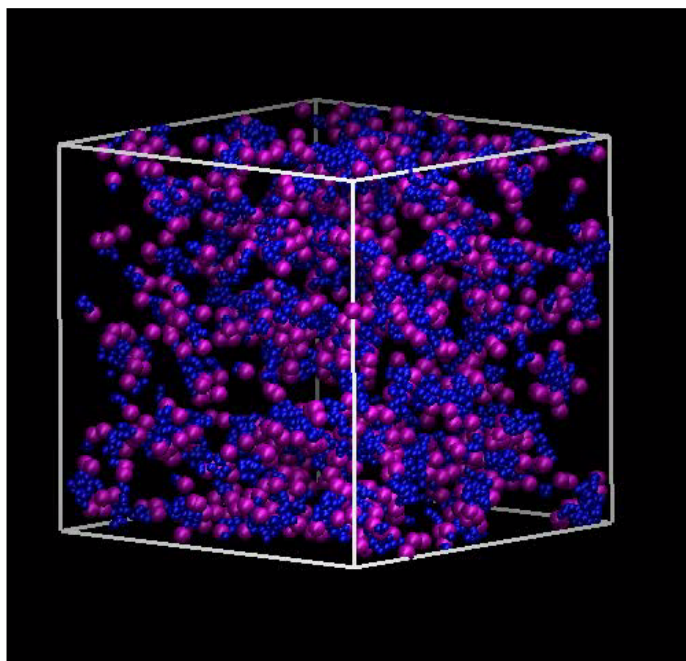


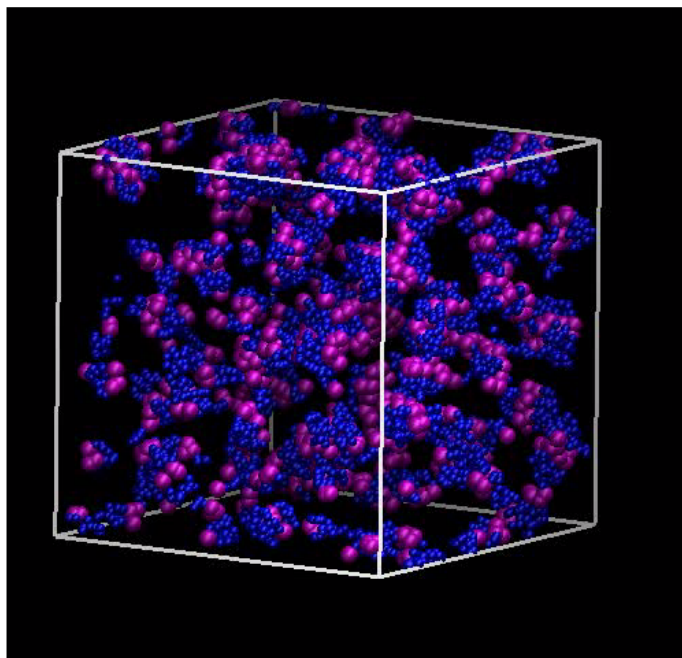
Figure S3 Snapshots of model polymer  $T_n$ -H with  $a_{HS} = 45$ . The diameter of hydrophilic head is  $3.0r_C$ .



Video S1 Formation of the vesicles formed by T<sub>5</sub>-H with the interaction parameter  $a_{\text{HS}}=25$ . The size of the hydrophilic head is  $2.0r_{\text{C}}$ .



Video S2 Formation of the pupa-like micelles formed by T<sub>5</sub>-H with the interaction parameter  $a_{\text{HS}}=40$ . The size of the hydrophilic head is  $2.0r_{\text{C}}$ .



Video S3 Formation of the segmented rod-like micelles formed by T<sub>11</sub>-H with the interaction parameter  $a_{\text{HS}} = 25$ .

The size of the hydrophilic head is  $2.5r_C$ .

