

Supporting Information for

Solvent-Induced Hierarchical Self-Assembly of Amphiphilic PEG(G_m)-*b*-PS Dendritic-Linear Block Copolymers

Huanhuan Cai, Guoliang Jiang, Zhihao Shen,* Xinghe Fan*

Beijing National Laboratory for Molecular Sciences, Key Laboratory of Polymer Chemistry and Physics of Ministry of Education, College of Chemistry and Molecular Engineering, Peking University, Beijing 100871, China

* To whom the correspondence should be addressed. E-mail: zshen@pku.edu.cn; fanxh@pku.edu.cn.

Contents

Table S1. Molecular characteristics and CAC value of the reference polymer	S2
Figure S1. GPC profiles of the reference DLBCP and its corresponding linear PS block after hydrolysis	S2
Figure S2. Fluorescence spectra of pyrene (8×10^{-7} M) in water at different concentrations and the plot of I_{373}/I_{384} in the emission spectra of pyrene in aqueous solutions with respect to the concentration of PEG(G_1)- <i>b</i> -PS	S3
Figure S3. Fluorescence intensity ratios (I_{373}/I_{384}) of pyrene excitation bands (373 and 384 nm) as a function of the concentration of PEG(G_2)- <i>b</i> -PS and PEG(G_3)- <i>b</i> -PS aqueous solutions	S4
Figure S4. SEM micrographs of PEG(G_1)- <i>b</i> -PS at a water content of 23.4 %	S4
Figure S5. Turbidity measurements for 0.1 wt % of PEG(G_1)- <i>b</i> -PS in THF on addition of water and subsequent addition of THF	S5
Figure S6. TEM micrographs of PEG(G_1)- <i>b</i> -PS at corresponding water contents as indicated in Figure S4 during the addition of THF	S5
Figure S7. TEM micrographs of PEG(G_1)- <i>b</i> -PS at a water content of 23.4 % from freeze-fracture-etching-replica technique	S6
Figure S8. SEM micrographs of PEG(G_3)- <i>b</i> -PS at a water content of 18.5 %	S6

Table S1. Molecular Characteristics and CAC Value of the Reference Polymer

sample	M_n^a ($\times 10^4$ g/mol)	PDI	$M_{n, PS}^a$ ($\times 10^4$ g/mol)	PDI_{PS}	w_{PEG}^b	CMC (10^{-5} mg/mL)
PEG(G_1)- <i>b</i> -PS-Ref	0.52	1.09	0.37	1.08	0.21	1.76

^a Apparent number-average molecular weight (M_n) and polydispersity index (PDI) were measured by gel permeation chromatography using PS standards. ^b Weight fraction of the hydrophilic PEG part.

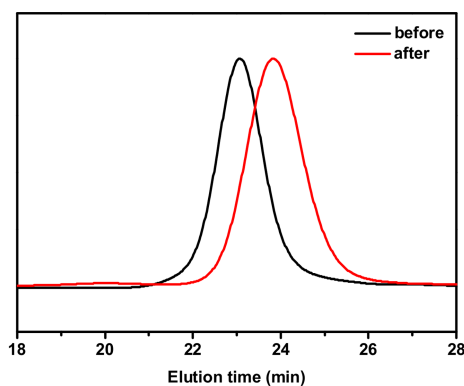


Figure S1. GPC profiles of the reference DLBCP and its corresponding linear PS block after hydrolysis.

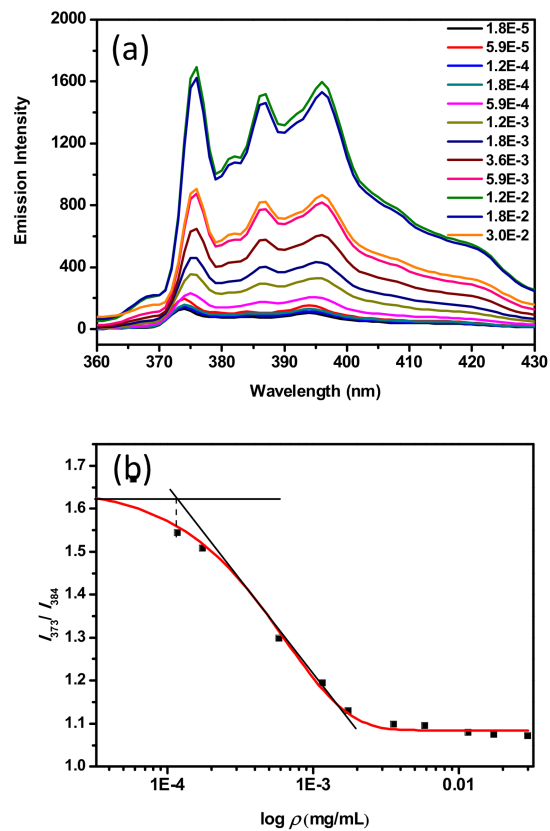


Figure S2. Fluorescence spectra of pyrene (8×10^{-7} M) in water at different concentrations (a) and the plot of I_{373}/I_{384} in the emission spectra of pyrene in aqueous solutions with respect to the concentration of PEG(G_1)-*b*-PS (b).

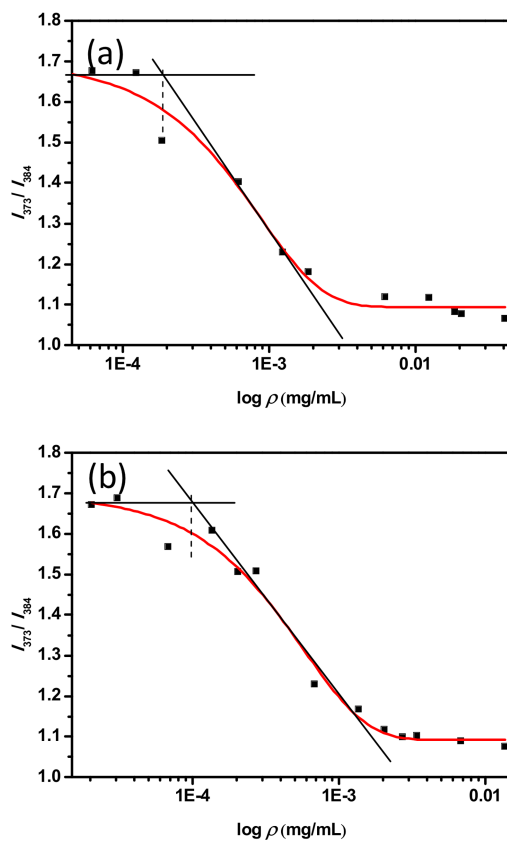


Figure S3. Fluorescence intensity ratios (I_{373}/I_{384}) of pyrene excitation bands (373 and 384 nm) as a function of the concentration of PEG(G₂)-*b*-PS and PEG(G₃)-*b*-PS aqueous solutions.

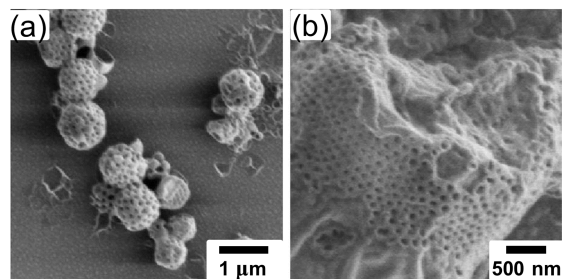


Figure S4. SEM micrographs of PEG(G₁)-*b*-PS at a water content of 23.4 %.

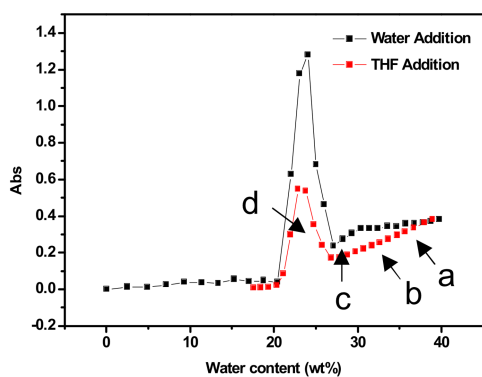


Figure S5. Turbidity measurements for 0.1 wt % of PEG(G_1)-*b*-PS in THF on addition of water and subsequent addition of THF.

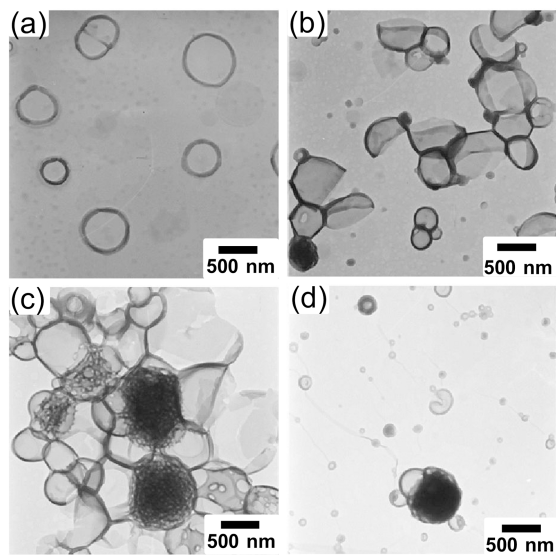


Figure S6. TEM micrographs of PEG(G_1)-*b*-PS at corresponding water contents as indicated in Figure S4 during the addition of THF.

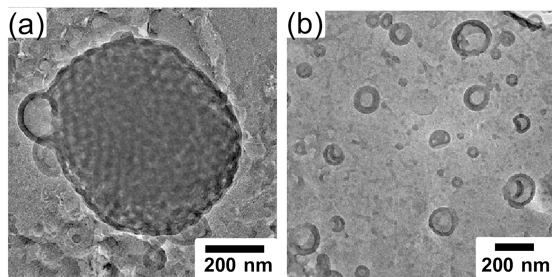


Figure S7. TEM micrographs of PEG(G_1)-*b*-PS at a water content of 23.4 % from the freeze-fracture-etching-replica technique.

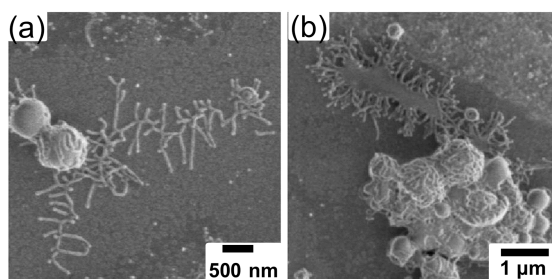


Figure S8. SEM micrographs of PEG(G_3)-*b*-PS at a water content of 18.5 %.