# Supporting Information

## Synthesis and Supramolecular Self-Assembly of Stimuli-Responsive Water-Soluble Janus-Type Heteroarm Star Copolymers

**Jian Xu, Jinming Hu, Zhishen Ge, Yanfeng Zhang, and Shiyong Liu***

*CAS Key Laboratory of Soft Matter Chemistry, Department of Polymer Science and Engineering, Hefei National Laboratory for Physical Sciences at the Microscale, University of Science and Technology of China, Hefei, Anhui 230026, China*

***** To whom correspondence should be addressed. E-mail: sliu@ustc.edu.cn

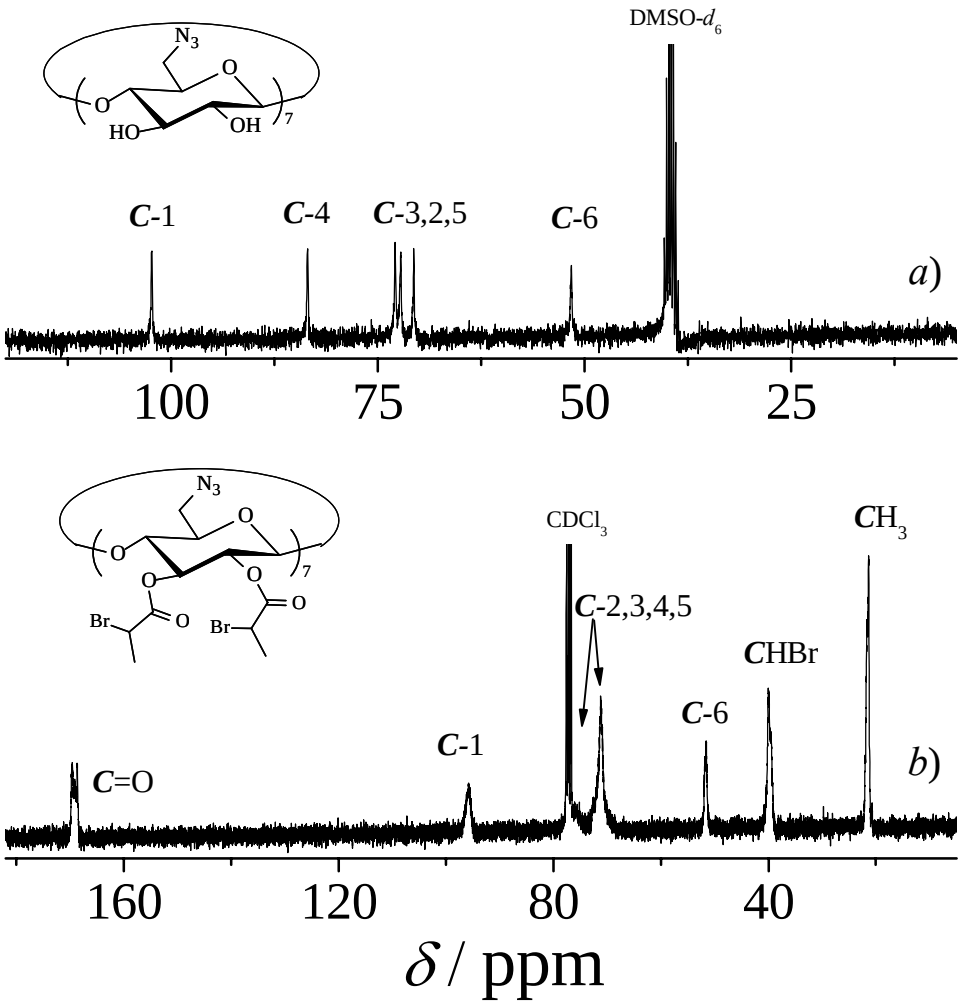
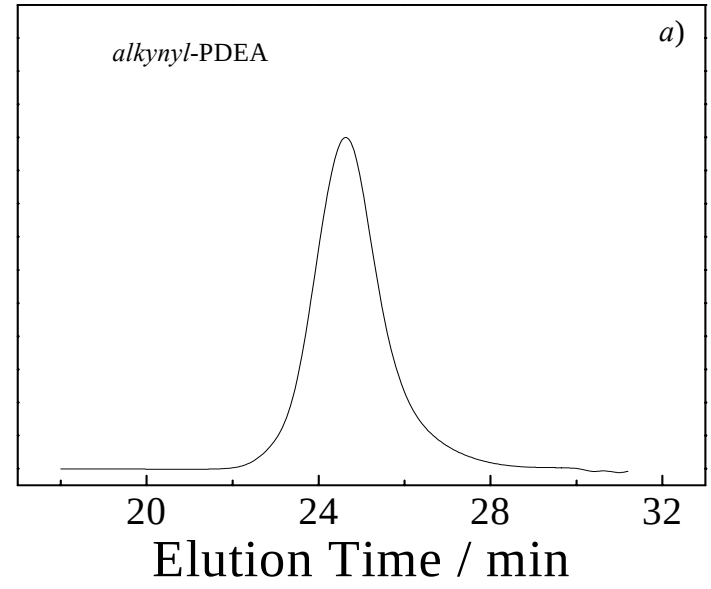



**Figure S1.** $^{13}$C NMR spectra recorded for (a) *β-CD*-$(N_3)_7$ precursor in DMSO-$d_6$ and (b) $(N_3)_7$-*CD*-$(Br)_{14}$ precursor in $CDCl_3$.



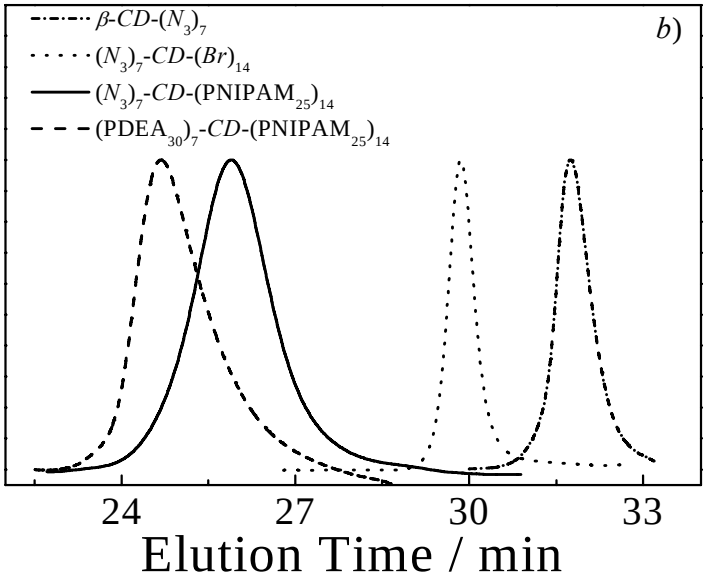




**Figure S2.** (a) THF GPC trace of *alkynyl*-$PDEA_{30}$ precursor and (b) DMF GPC traces of *β-CD*-$(N_3)_7$, $(N_3)_7$-*CD*-$(Br)_{14}$ precursor, $(N_3)_7$-*CD*-$(PNIPAM_{25})_{14}$, and double hydrophilic Janus-type $A_7B_{14}$ star polymer, $(PDEA_{30})_7$-*CD*-$(PNIPAM_{25})_{14}$.

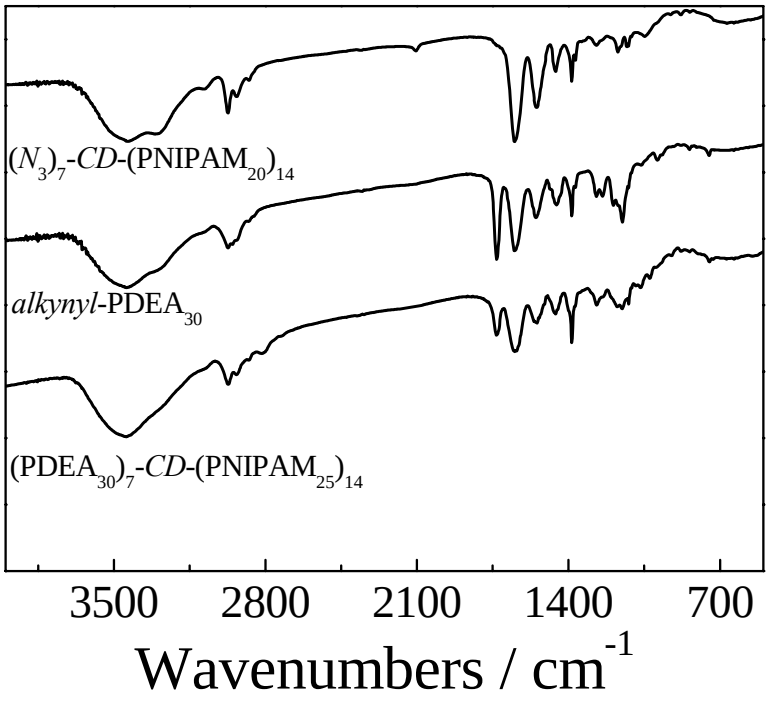



**Figure S3.** FT-IR spectra obtained for $(N_3)_7$-*CD*-$(PNIPAM_{25})_{14}$, *alkynyl*-$PDEA_{30}$, and $(PDEA_{30})_7$-*CD*-$(PNIPAM_{25})_{14}$.

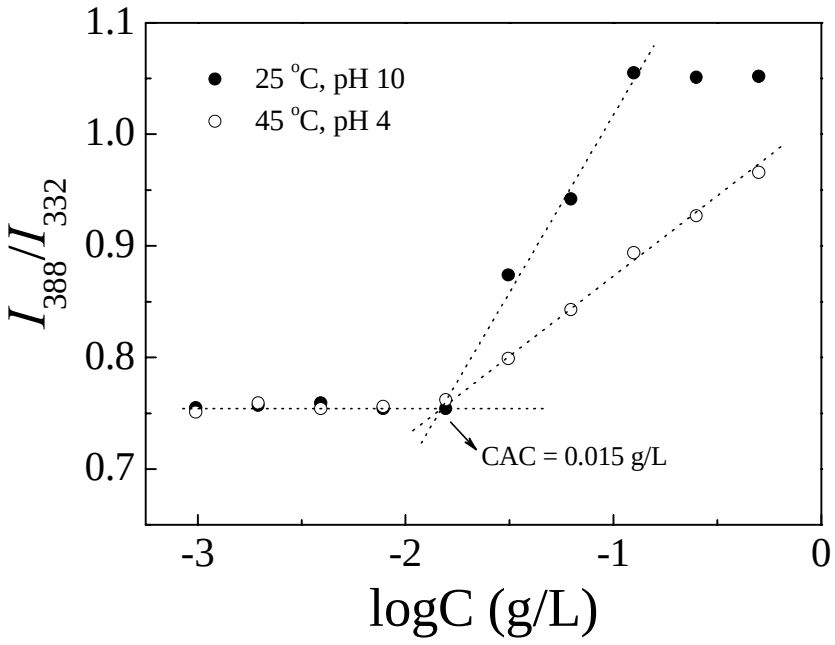



**Figure S4.** Plot of the intensity ratios, $I_{338}/I_{332}$, from pyrene excitation spectra as a function of the concentrations of $(PDEA_{30})_7$-*CD*-$(PNIPAM_{25})_{14}$ in aqueous solution at different conditions: 25 °C and pH 10; 45 °C and pH 4. Pyrene concentration was fixed at $5 \times 10^{-7}$ M.

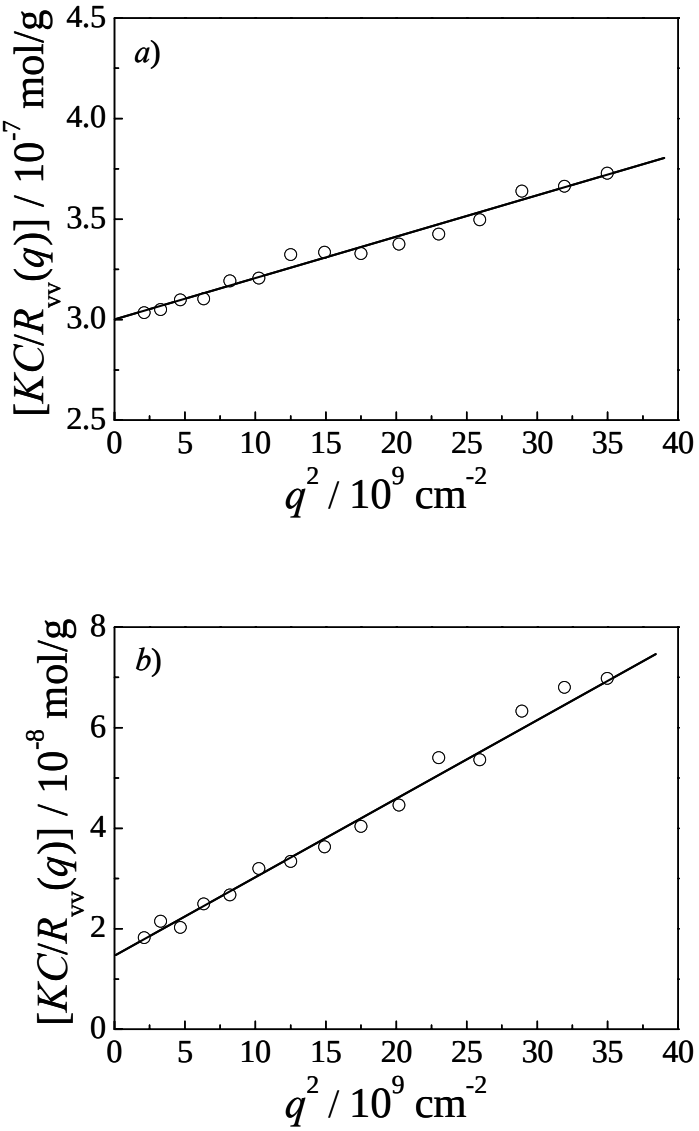



**Figure S5.** Angular dependence (over a scattering angle range of 20-90$^o$) of the Raylaigh ratio, $R_{vv}(q)$, obtained for the aqueous dispersion of $(PDEA_{30})_7$-*CD*-$(PNIPAM_{25})_{14}$ at different conditions: (a) 25 $^o$C and pH 10; (b) pH 4 and 45 $^o$C.