Functional Polymeric Nanoobjects by Crosslinking Bulk Self-Assemblies of Poly(tert-butyl acrylate)-block-Poly(glycidyl methacrylate)

Jianglei Qin, Xiubo Jiang, Lei Gao, Yongming Chen* and Fu Xi.
Laboratory of Polymer Physics and Chemistry, Institute of Chemistry, The Chinese Academy of Sciences, Beijing 100190, China.

Supporting Information

Figure S1. The SEC evolution of PrBAs and their PrBA-b-PGMA copolymers with THF as eluent. (A) PrBA_{86}-b-PGMA_{82}; (B) PrBA_{86}-b-PGMA_{40}; (C) PrBA_{127}-b-PGMA_{53}. Curve (a) is the macroinitiator and (b) is the block copolymers.

Figure S2. $^1$H NMR spectrum of PrBA_{86}-b-PGMA_{40} diblock copolymer in CDCl$_3$. 
Figure S3. TEM images of methanol dispersed nanoobjects with PA crosslinking from (A) PtBA$_{86}$-$b$-PGMA$_{82}$; (B) PtBA$_{86}$-$b$-PGMA$_{40}$; (C) PtBA$_{127}$-$b$-PGMA$_{53}$.

Scheme S1. Reaction between epoxy residues and NaN$_3$.

Figure S4. FT-IR spectra of EDA crosslinked nanoplates (A) before and (B) after treatment with NaN$_3$. (a) absorbance of epoxy group at $907$ cm$^{-1}$ and (b) absorbance of azide group at $2100$ cm$^{-1}$.
Figure S5. Optical photograph of water dispersed nanofibers at different pH. (A) After the dispersion was dialyzed to pH = 7; (B) The pH of dispersion was changed to 3; (C) The pH was increased to 10.

Figure S6. Optical photograph of water dispersed nanospheres at different pH. (A) After the dispersion was dialyzed to pH = 7; (B) The pH of dispersion was changed to 3; (C) The pH was increased to 10.

Figure S7. TEM image of the water dispersed nanoplates after one pH cycle.
Characteristics of PrBA$_{100}$-b-PGMA$_{95}$

The PrBA$_{100}$-b-PGMA$_{95}$ with the lamellar morphology was applied for post-modification of EDA crosslinked nanoplates. The weight fraction of this sample is 51.3% and the $d$-spacing is 35.3. The morphology characterizations of this sample were shown bellow.

Figure S8. TEM image of water dispersed nanospheres after one pH cycle.

Figure S8. The SAXS curve of PrBA$_{100}$-b-PGMA$_{95}$.

Figure S9. The TEM images of EDA crosslinked PrBA$_{100}$-b-PGMA$_{95}$ in DCM dispersion.