

**Supporting information**

for

**Responsive organogels formed by supramolecular self  
assembly of PEG-*block*-allyl-functionalized racemic  
polypeptides into  $\beta$ -sheet-driven polymeric ribbons**

Jiong Zou,<sup>a</sup> Fuwu Zhang,<sup>a</sup> Yingchao Chen,<sup>b</sup> Jeffery E. Raymond,<sup>a</sup> Shiyi Zhang,<sup>ac</sup>  
Jingwei Fan,<sup>a</sup> Jiahua Zhu,<sup>b</sup> Ang Li,<sup>ad</sup> Kellie Seetho,<sup>a</sup> Xun He,<sup>a</sup> Darrin J. Pochan,<sup>b</sup> and  
Karen L. Wooley<sup>a\*</sup>

<sup>a</sup> *Department of Chemistry and Chemical Engineering, Texas A&M University, P.O.  
BOX 30012, 3255 TAMU, College Station, TX 77842 (USA). E-mail:  
wooley@tamu.chem.edu*

<sup>b</sup> *Department of Materials Science and Engineering, University of Delaware, Newark,  
DE 19716 (USA)*

<sup>c</sup> *Department of Chemistry, Washington University in St. Louis, St. Louis, Missouri,  
63130 (USA)*

<sup>d</sup> *Current address: Al-Deera Holding USA, Inc., 75 Rockefeller Plaza, 14<sup>th</sup> Floor,  
New York, NY 10019 (USA)*

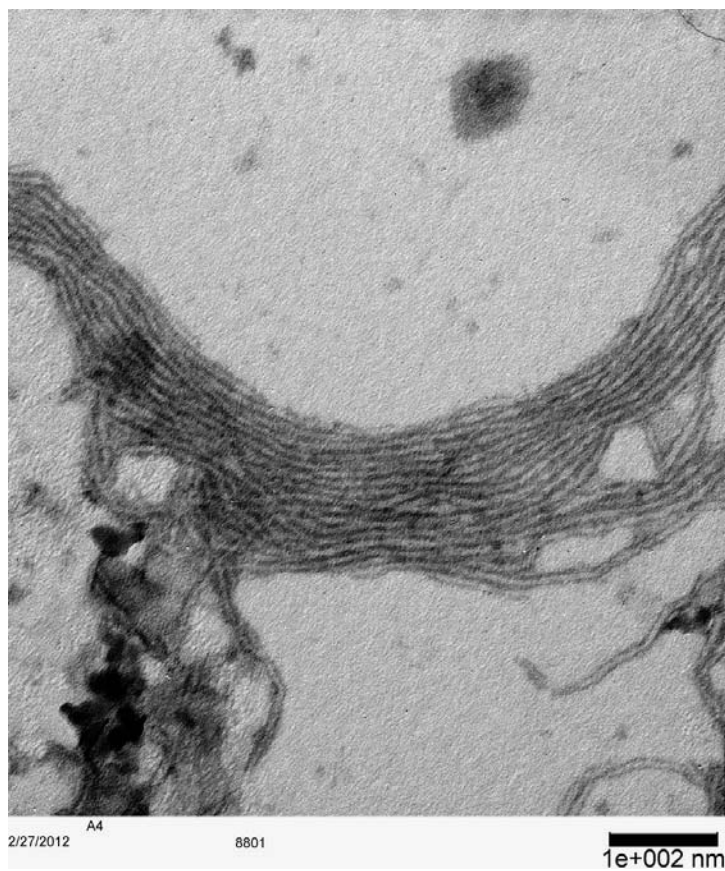


Figure S1. TEM image of the DMF gel of mPEG<sub>112</sub>-*b*-PDLA<sub>12</sub>, negatively stained by 1 wt% PTA aqueous solution.

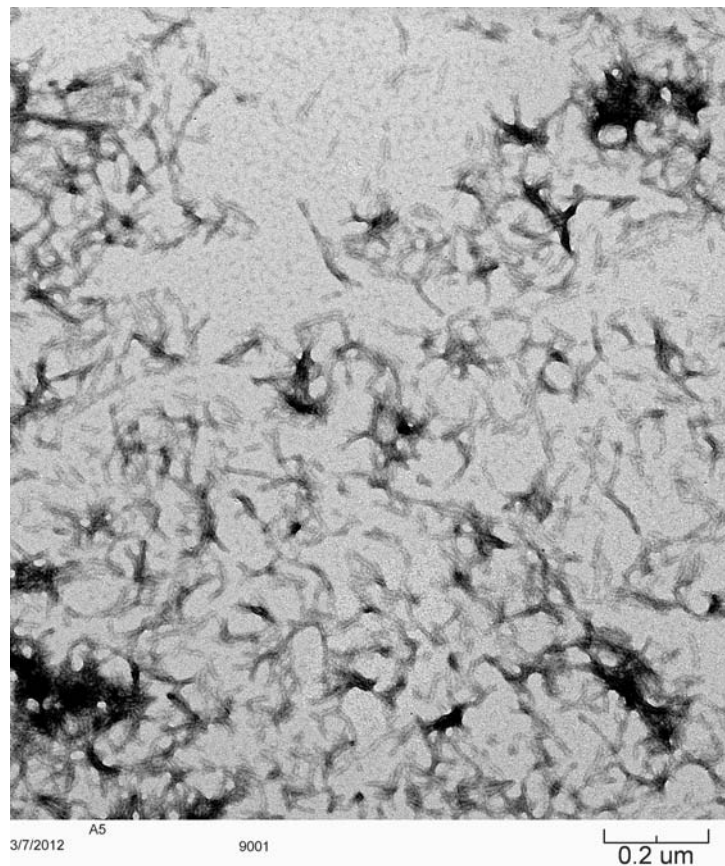


Figure S2. TEM image of the DMF gel of  $m\text{PEG}_{45}\text{-}b\text{-PDLA}_{12}$ , negatively stained by 1 wt% PTA aqueous solution.

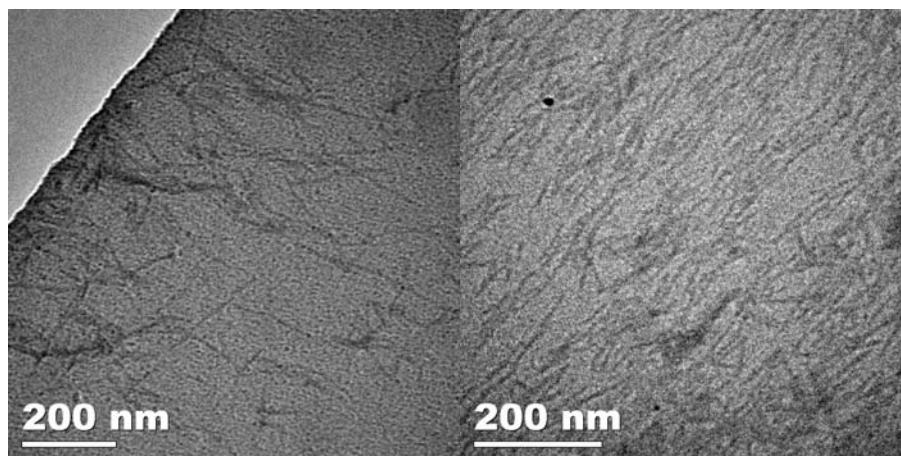
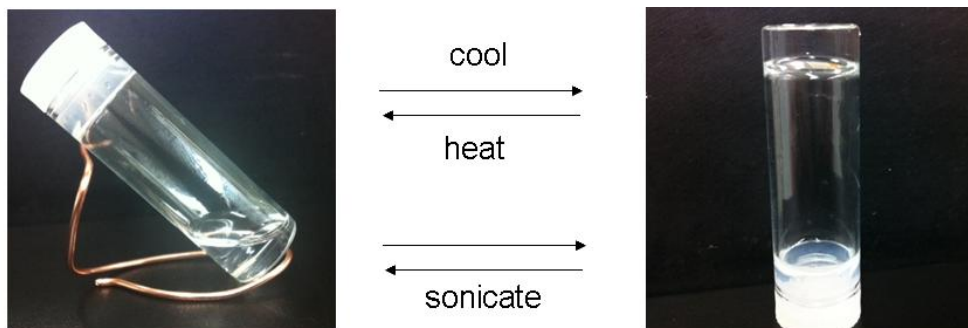


Figure S3. Cryo-TEM images of the DMF gel of (a)  $m\text{PEG}_{112}\text{-}b\text{-PDLA}_{12}$ , (b)  $m\text{PEG}_{45}\text{-}b\text{-PDLA}_{12}$ .



mPEG<sub>112</sub>-b-Poly(DL-allylglycine)<sub>12</sub> **Concentration = 1 mg/mL (0.1 wt %)**

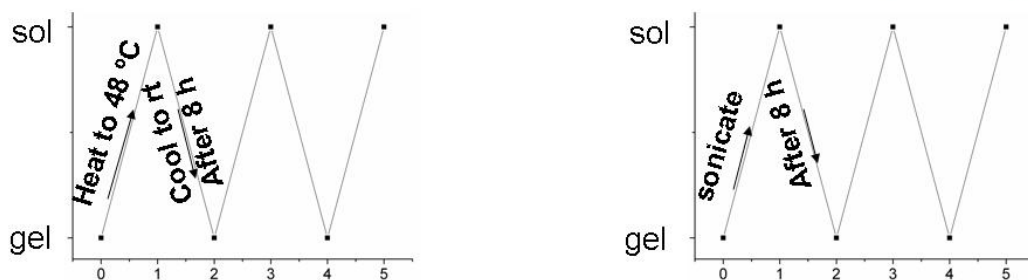


Figure S4. The thermo-responsive sol-gel transition of mPEG<sub>112</sub>-b-PDLA<sub>12</sub> organogel. The lowest gelation concentration was 0.1 wt% using DMF as solvent. The 0.1 wt% DMF gel can reversibly transform to sol when the temperature is raised to 48 °C. Sonication is also capable of breaking the gel to form sol. The sol-gel transitions were reversible for a minimum of 3 times.

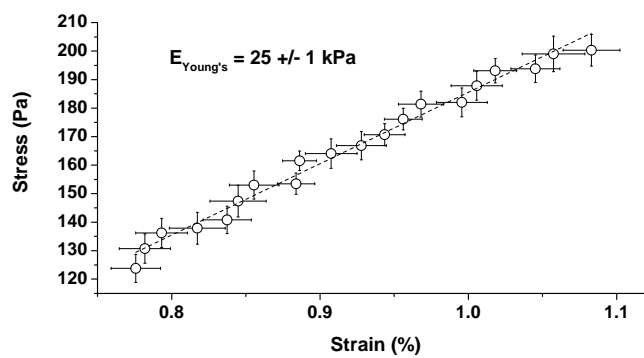


Figure S5. Stress-strain relationship for low deformations in 2 wt% sample gel.