Electronic Supplementary Material (ESI) for Soft Matter.

Correlation of Hierarchical Structure and Rheological Behavior of Polypseudorotaxane Gel Composed of Pluronic and β-cyclodextrin

Kuo-Chih Shih[1], Chien-You Su[2], Shing-Yun Chang[1], Grethe Jensen[3, 4], Chi-Chung Hua[2], Mu-Ping Nieh[5, 6, 7] and Hsi-Mei Lai[1*]*

Supplementary Information

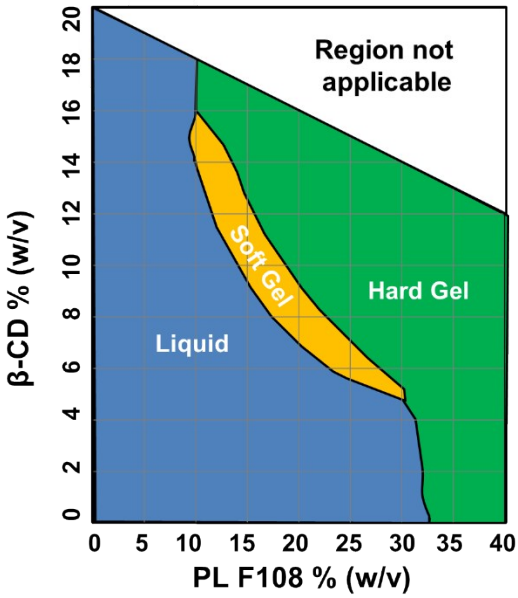
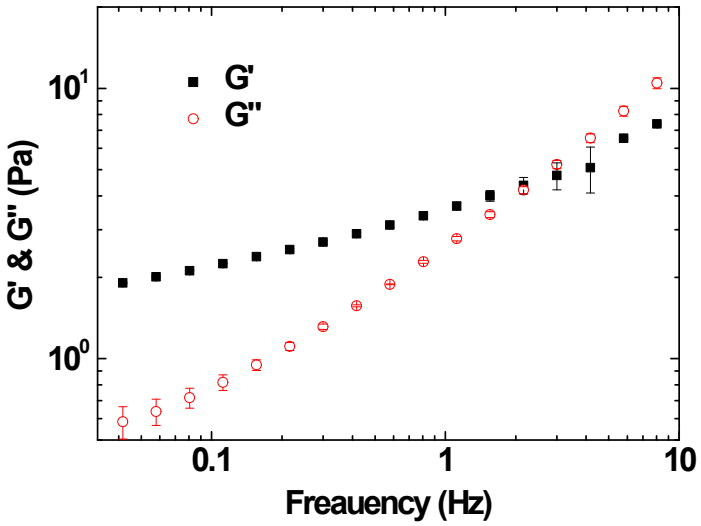


Figure S1. The rheological properties of the β-CD/PL F108 mixtures as functions of F108 and β-CD concentration.



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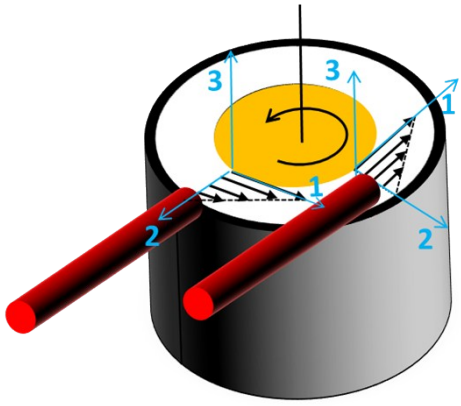
2 **Figure S2.** Viscoelastic properties of the PPR gel



Scheme S1. Schematic of the Couette shear unit with axes 1, 2, and 3 representing the flow, velocity gradient and vorticity direction, respectively. The applied neutron beam positions are shown in red.

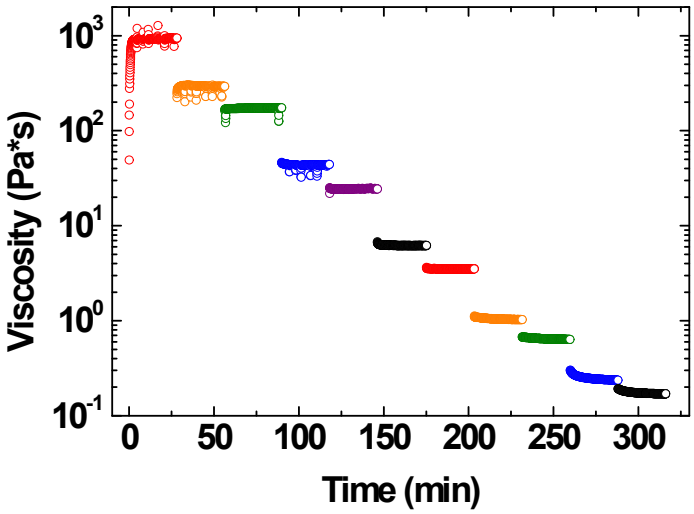


Figure S3. Shear profile and its corresponding viscosity in the Rheo-SANS experiment.

Figure S4. The marco appearance of the PPR gel (a) before and (b) after the reversibility of the viscosity measurement.

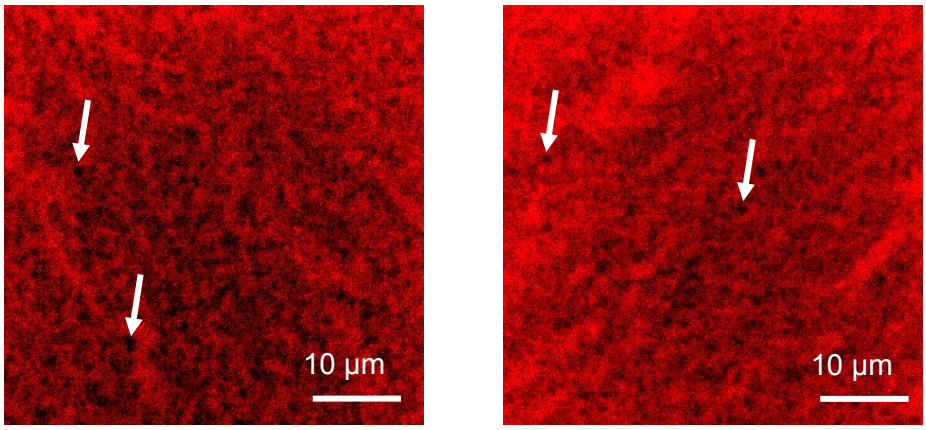


Figure S5. Confocal laser scanning microscope (CLSM) images. The white arrows represent the lamellae rich region which is difficult to be stained by Nile red. The red matrix is presumably the F108 micelle rich domain. These two images were obtained by the same sample in different view with the same magnification.

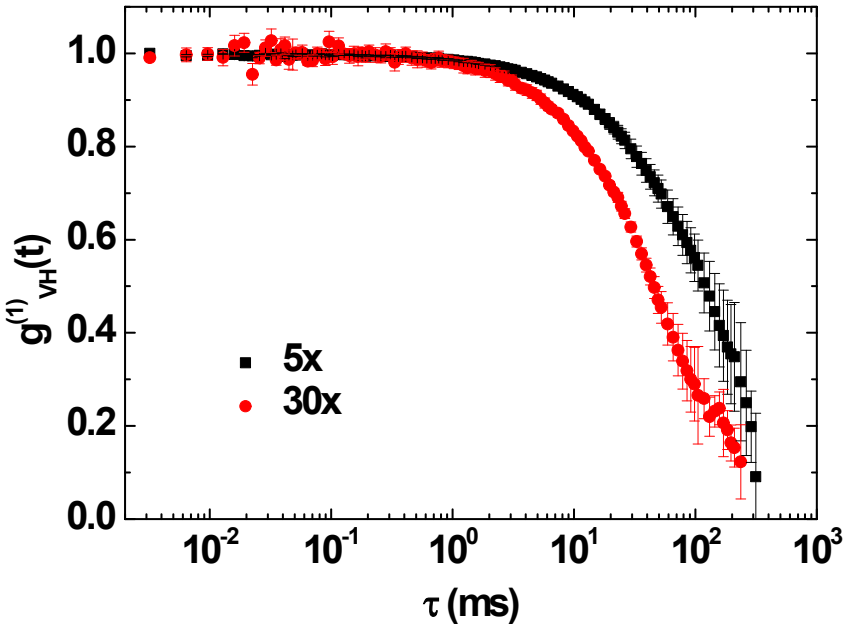


Figure S6. Depolarized Dynamic Light Scattering relaxation curves for the PPR gel diluted by a factor of 5 (black squares) and 30 (red circles).

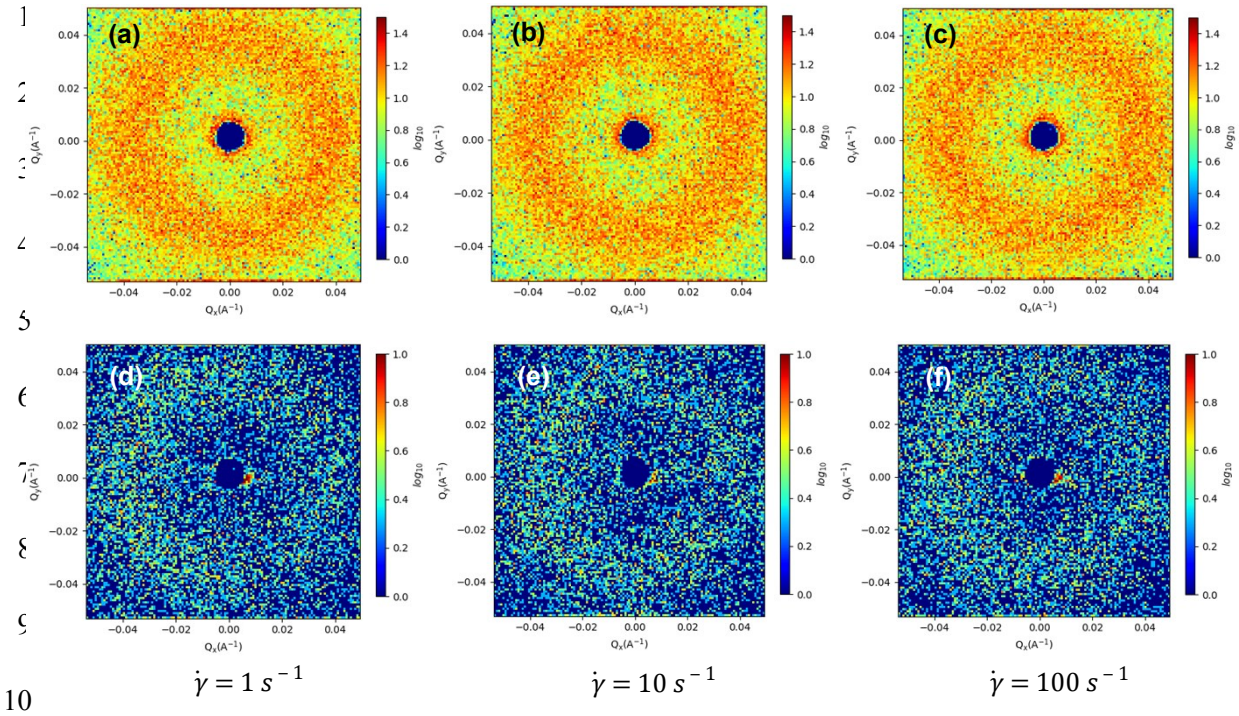


Figure S7. 2-D Rheo-SANS scattering patterns for the F108 micelles. Scattering patterns for the 1-3 and 2-3 planes are labeled with (a)-(c) and (d)-(f). respectively. Shear rate for (a) & (d), (b) & (e) and (c) & (f) are 1, 10 and 100 s^{-1}, respectively.

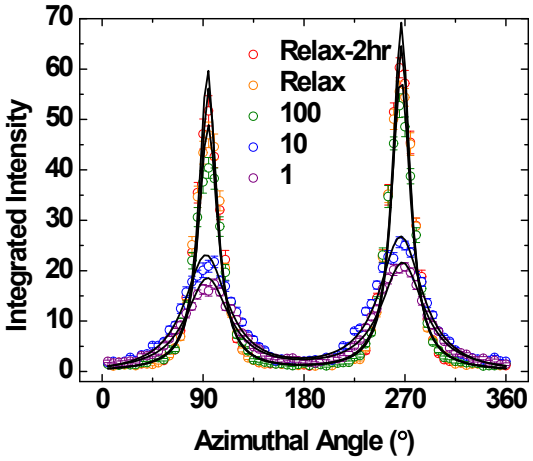


Figure S8. Experimental (open symbols) and best fitted (solid lines) azimuthal scattering intensity at q = 0.024 Å^{-1}. Red and orange circles represent the results 2 hr and right after flow cessation. Green, blue and purple circles stand for the shear rates of 100, 10 and 1 s^{-1}, respectively.