Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Unique Lamellar Lyotropic Liquid Crystal Phases of Nonionic Phytosterol Ethoxylates in Glycerol

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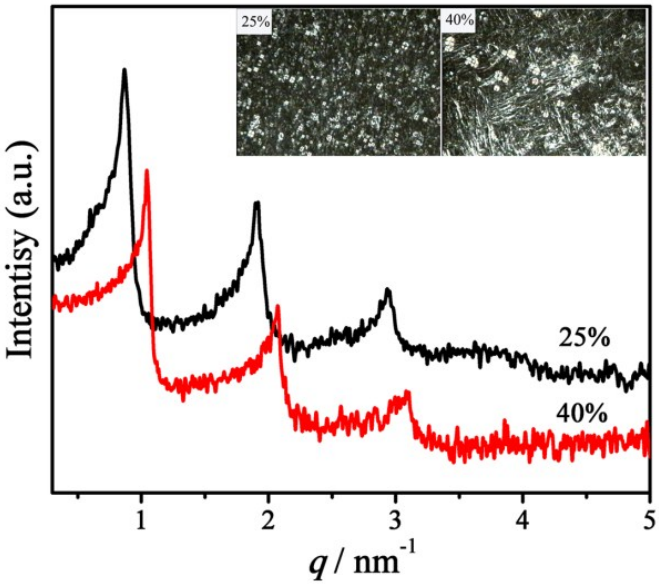

Figure S1: Polarized optical micrographs and SAXS patterns from up phase of BPS-5 in glycerol samples at relatively low concentrations and 25 °C.

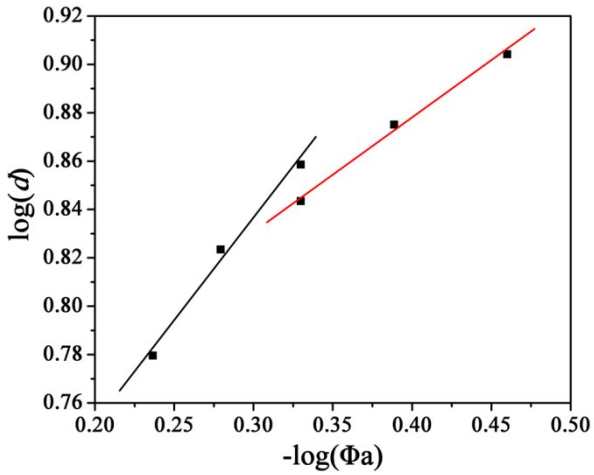

Figure S2: Plots of log(d) vs −log(Φa) for the lamellar phase formed in the BPS-5/glycerol binary system. d is the lamellae repeat distance, Φa is the volume fraction of solvophobic components.

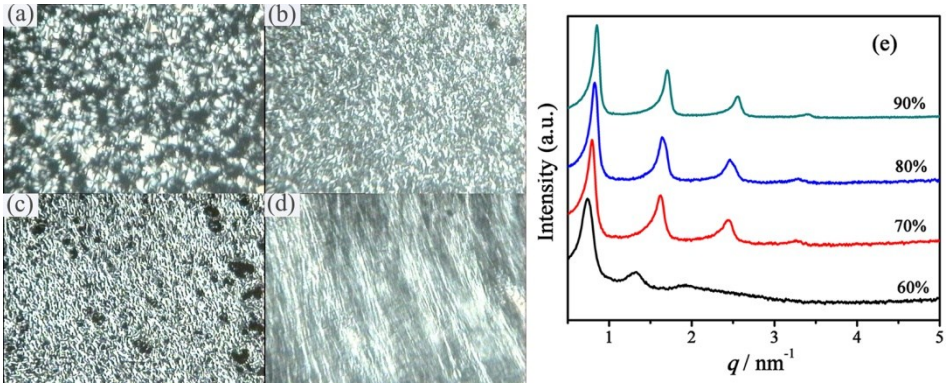

Figure S3: (a-d) Polarized optical micrographs and (e) SAXS patterns for BPS-10 in glycerol at different concentrations and 25°C, $C_{\text{BPS-10}}$ (wt %) = 60, 70, 80, and 90, respectively.

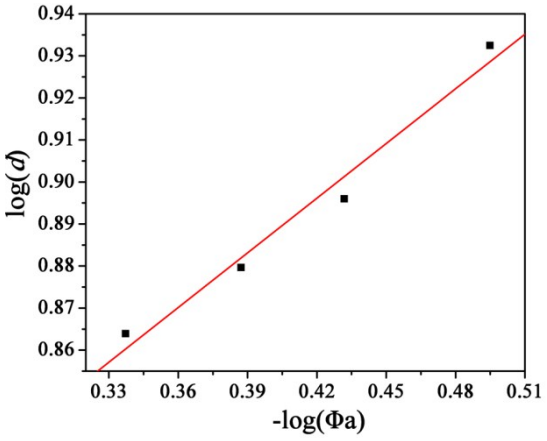

Figure S4: Plot of log(d) vs −log(Φa) for the lamellar phase formed in the BPS-10/glycerol binary system.

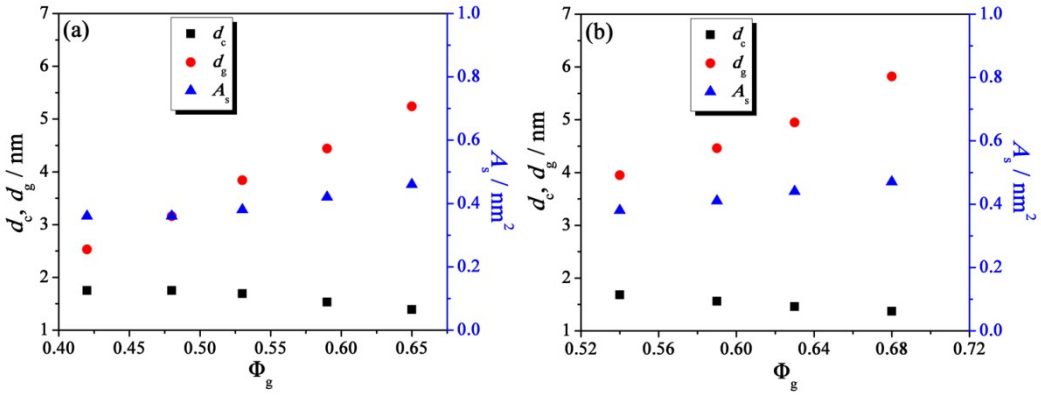

Figure S5: Dependence of the solvophobic domain thickness (d_c), the solvophilic part thickness (dg), and the effective cross-sectional area per surfactant molecule (A_S) on the volume fraction of glycerol (Φg) for the formed lamellar phase in BPS-5 (a) and BPS-10 (b) systems.

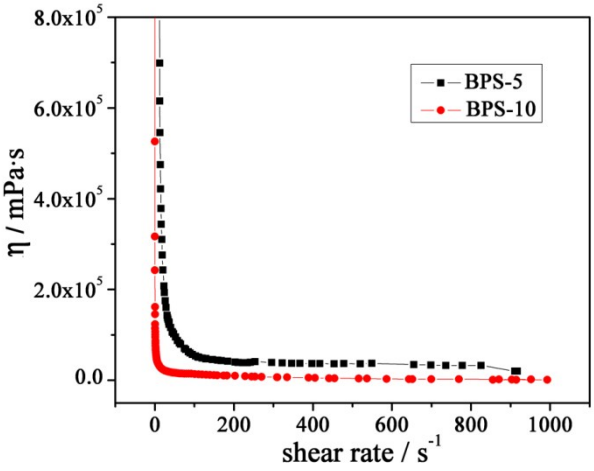

Figure S6: Shear rate dependence of the shear viscosities for two samples at C_{BPS} = 90% and 25°C.

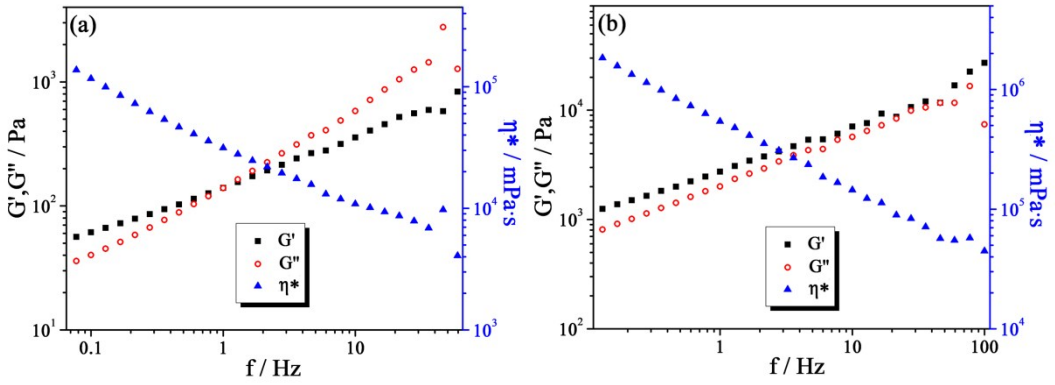

Figure S7: Variation of storage and loss moduli and the complex viscosity as a function of shear frequency respectively at different concentrations of BPS-10 in glycerol: (a) 60% and (b) 90%.

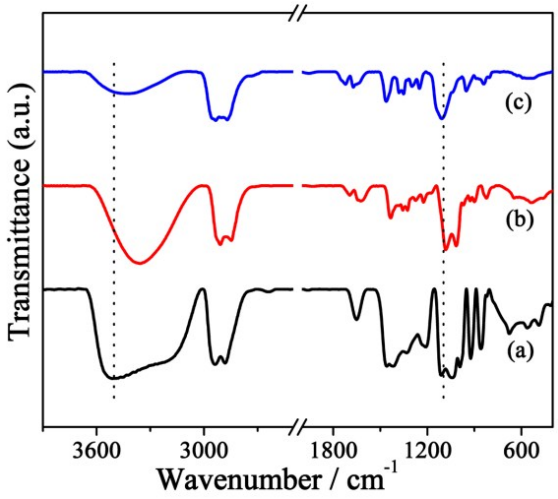

Figure S8: FTIR spectra for glycerol (a), *L*α phase (C_{BPS-10} = 80%) (b) and BPS-10 (c), respectively.

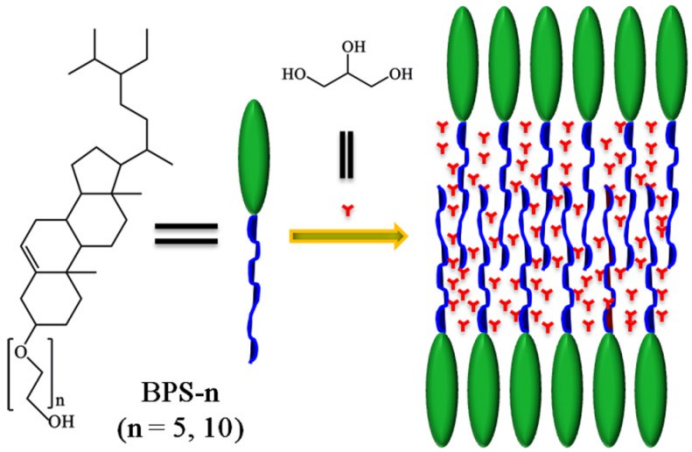

Figure S9: The possible packing model for the BPS-n/glycerol binary systems in the lamellar phase.