Supplementary Information

Association of Pluronics at the Silica surface and accompanying evolutions of inter particle interaction in the conjugate nano-suspensions

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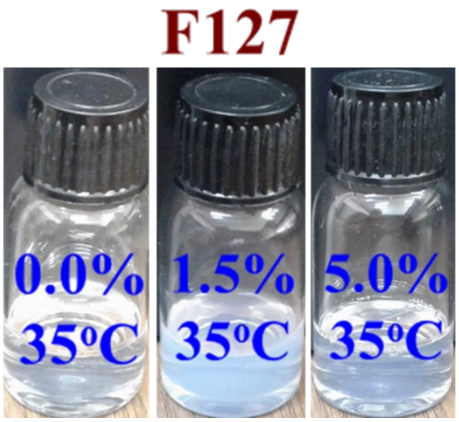

Figure S1. Photographic images of 5 wt. % LS-F127 solutions with increasing F127 concentration at 35°C.

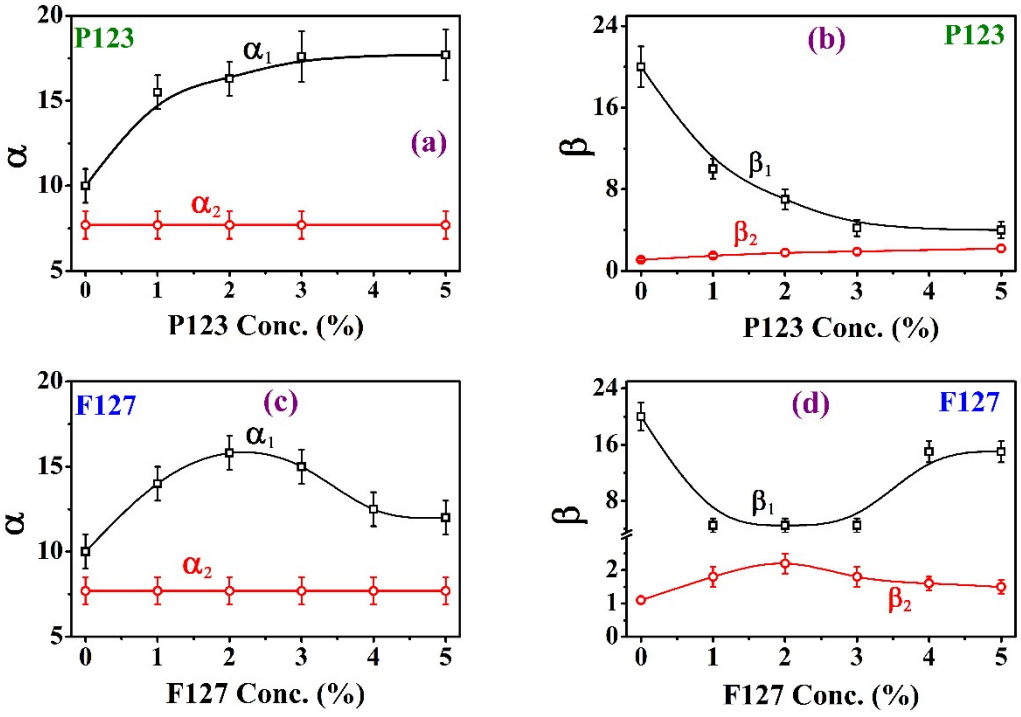

Figure S2. Strengths (a & c) of attractive (α_1 in units of k_BT) and repulsive (α_2 in units of k_BT) interactions and inverse of their ranges (b & d) as a function of Pluronic concentrations. β is actually inversely proportional to the range (σ/β) of interaction.

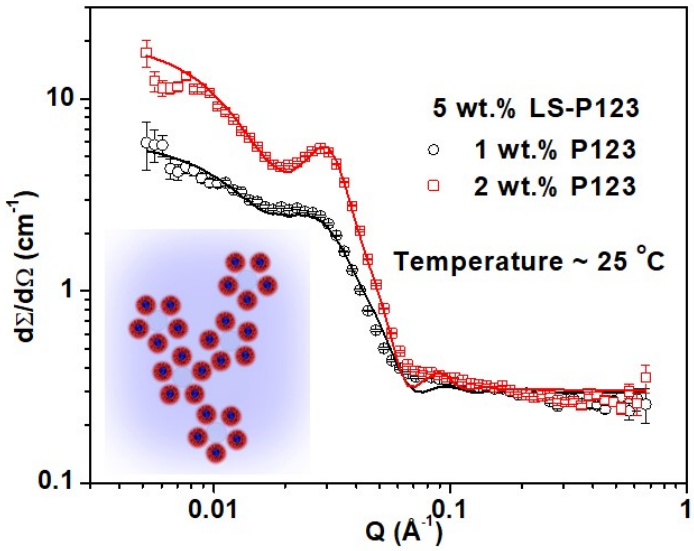

Figure S3. Silica contrast matched SANS plots of 5 wt. % LS-P123 system as a function of P123 concentration. The data here are fitted by summing the scattering contributions from intra-particle micelle–micelle correlations (as per Oberdisse model) with inter-particle micelle–micelle correlations (as accounted by hard-sphere potential). A schematic representing different possible micelle-micelle correlations is shown in inset.

Table S1. Fitted parameters of SANS plots shown in Figure S6. The data here are fitted by summing the scattering contributions from intra-particle micelle–micelle correlations (as per Oberdisse model) with inter-particle micelle–micelle correlations (as accounted by hard-sphere potential).

P123 conc. (wt%)	**Intra-particle correlations**		**Inter-particle correlations**	
	Number of micelles adsorbed per particle	**Micellar core radius (nm)**	**Hard-sphere radius (nm)**	**Volume fraction**
1 wt. %	2	5.5	10.5	0.15
2 wt. %	5	6.5	10.0	0.3

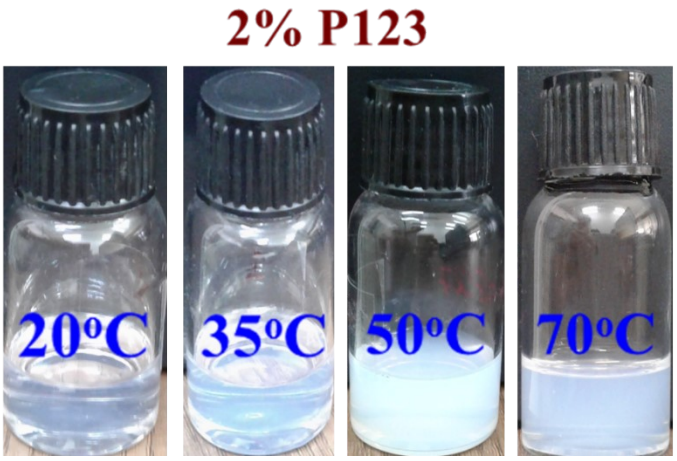

Figure S4. Photographic images of 5% LS-2.0% P123 solution at different temperatures.

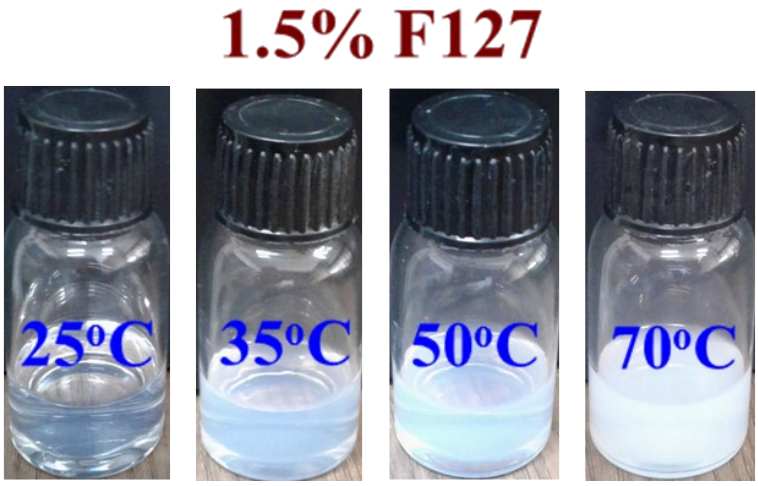

Figure S5. Photographic images of 5% LS-1.5% F127 solution at different temperatures.

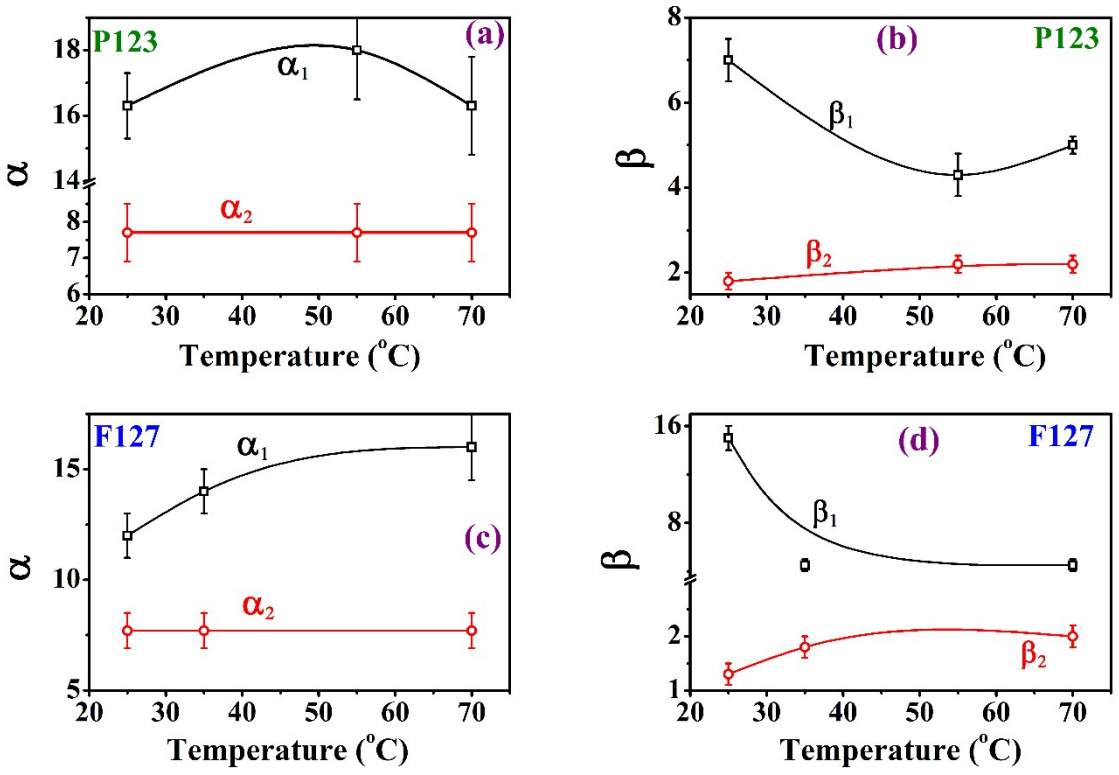

Figure S6. Strengths (a & c) of attractive (α_1 in units of k_BT) and repulsive (α_2 in units of k_BT) interactions and their inverse of ranges (b & d) as a function of temperature. β is actually inversely proportional to the range (σ/β) of interaction.

Table S2. Fitted parameters of 5 wt.% LS (contrast-matched) + 2 wt. % P123 sample measured at 70°C and 2 wt.% P123 (in silica contrast-matched solvent) system, measured at 25°C. SANS data are shown in Figure 5(a) of manuscript.

System	Length of rod-like micelle L (nm)	Radius of rod-like micelle R (nm)	Polydispersity	Model
5 wt.% LS (CM) + 2 wt. % P123 @ 70°C	25.0 ± 1.0	5.9 ± 0.5	0.2 ± 0.02	Cylindrical micelles
2 wt.% P123	Micellar core radius = 6.6 nm		0.15	Spherical micelles