Electronic Supplementary Material (ESI) for Soft Matter.

Supporting Information for

In situ formation and dispersion of lanthanide complexes in worm-like micelles

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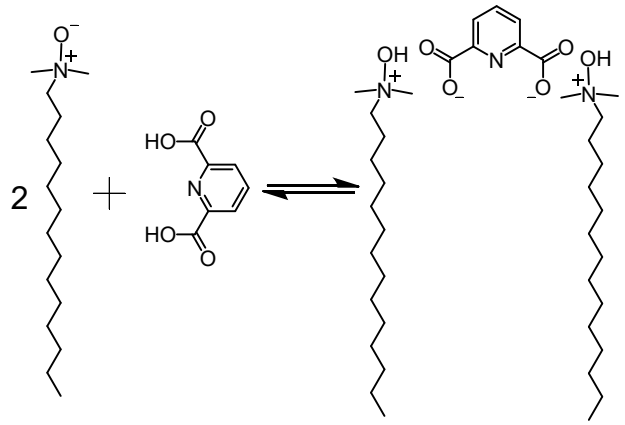

Scheme S1. Illustration of the formation of pseudogemini surfactant at a DPA-to-C_{14}DMAO ratio of 1:2.

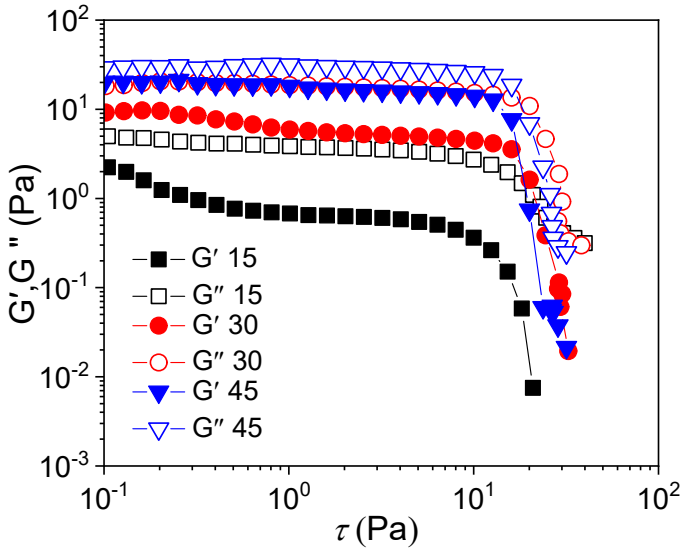

Fig. S1 Results of stress sweep in oscillatory shear measurements at 1 Hz for three typical wormlike micellar solutions where G″ is dominated within the investigated range of τ. The values of c_{DPA} (mmol·L^{-1}) are shown inset.

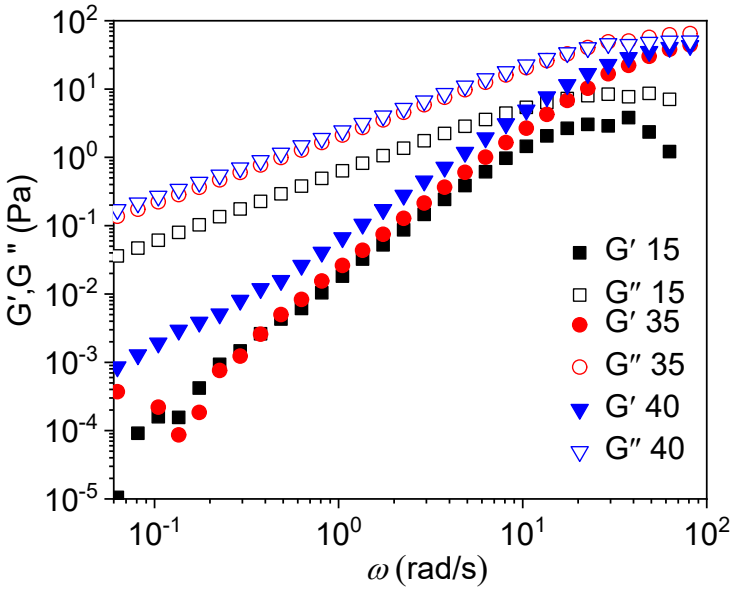

Fig. S2 Results of frequency sweep in oscillatory shear measurements at 4 Pa for three typical wormlike micellar solutions where G″ is dominated within the investigated range of ω. The values of cDPA (mmol·L^{-1}) are shown inset.

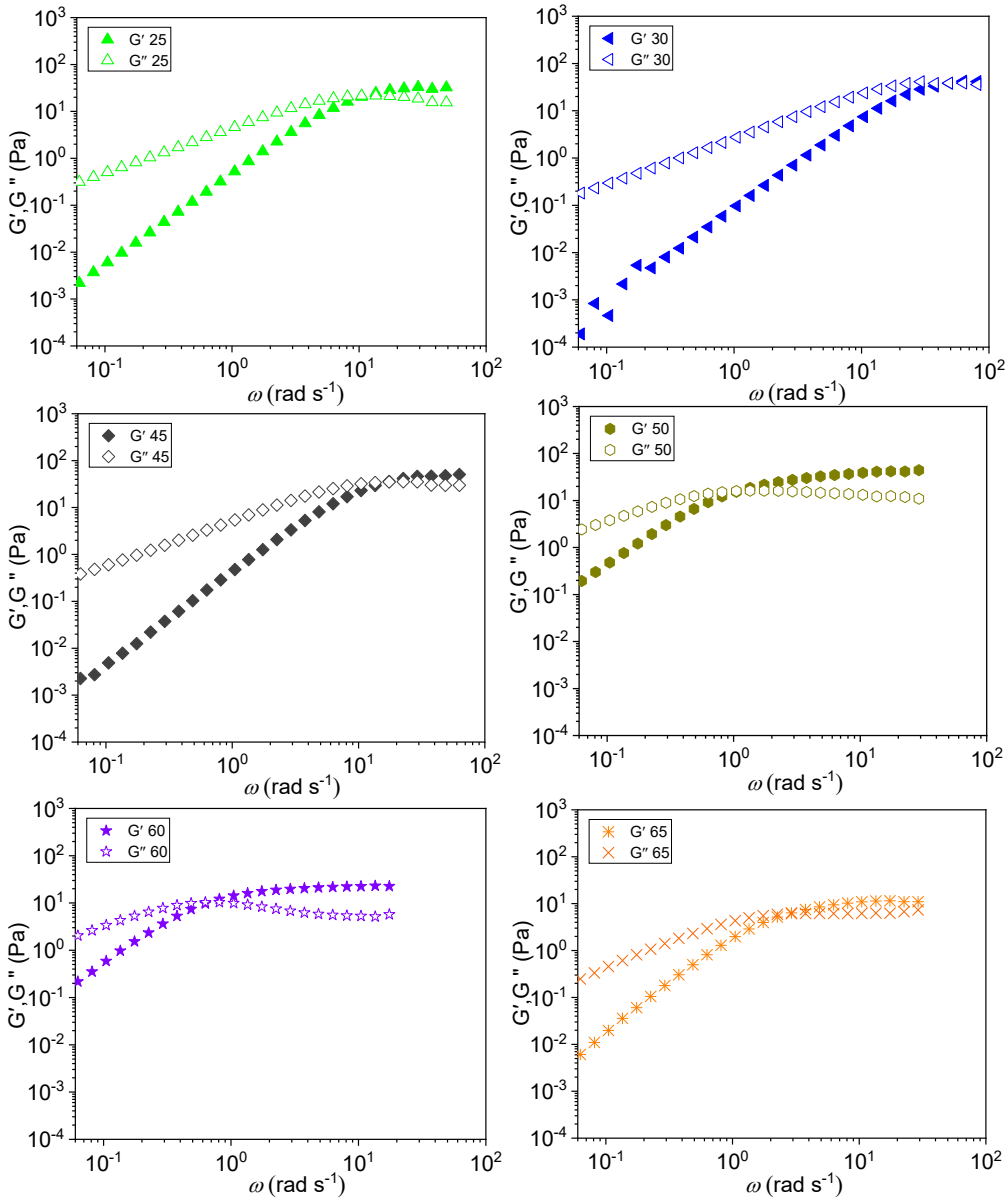

Fig. S3 Results of frequency sweep in oscillatory shear measurements at 4 Pa for wormlike micellar solutions with different c_{DPA} (mmol·L^{-1}) as indicated within each graph.

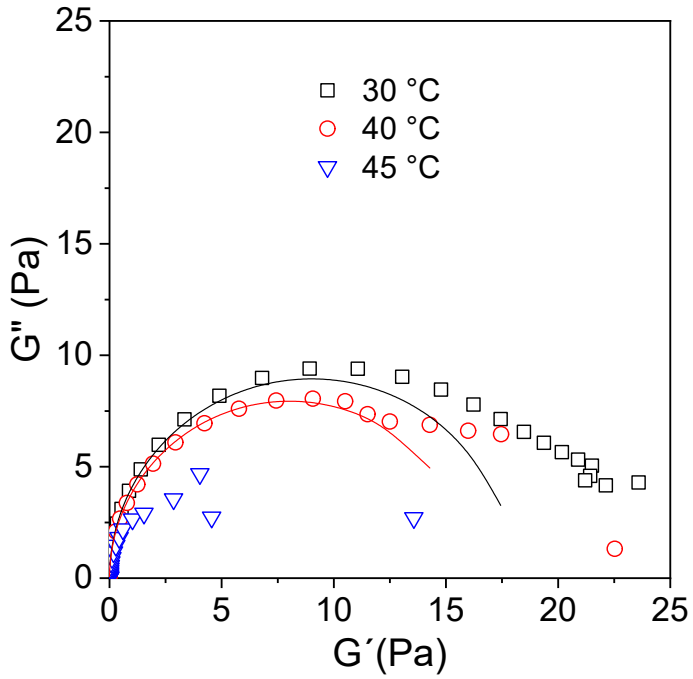

Fig. S4 Cole-Cole plots of the data obtained from frequency sweep in oscillatory shear measurements at 4 Pa for the wormlike micellar solution (100 mmol·L^{-1} C_{14}DMAO and 55 mmol·L^{-1} DPA) under three typical temperatures as indicated. Solid lines represent the fitting curves.

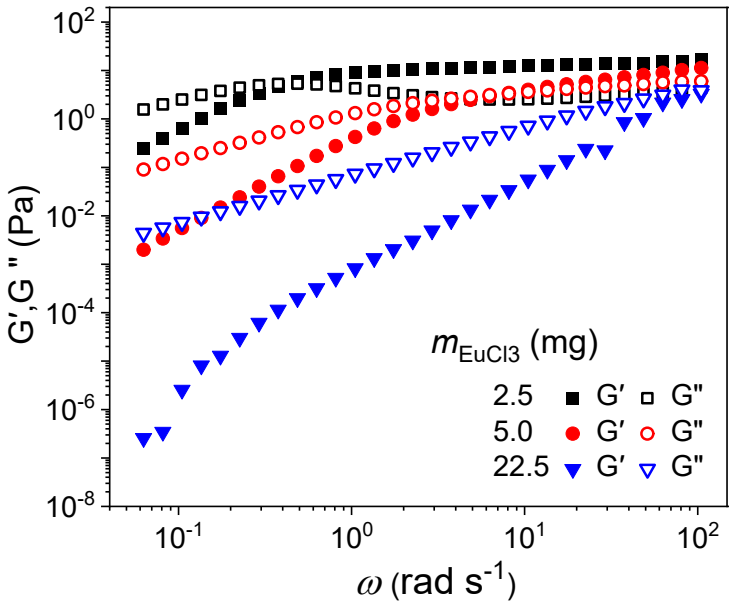

Fig. S5 Results of frequency sweep in oscillatory shear measurements at 4 Pa for the wormlike micellar solution (100 mmol·L^{-1} C_{14}DMAO and 55 mmol·L^{-1} DPA) containing different amount of $EuCl_3$ as indicated.

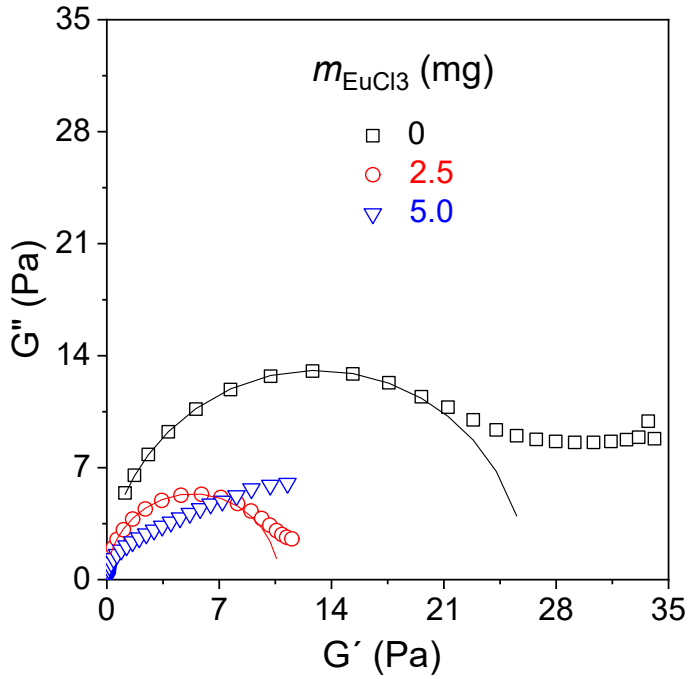

Fig. S6 Cole-Cole plots of the data obtained from frequency sweep in oscillatory shear measurements at 4 Pa for the wormlike micellar solution (100 mmol·L^{-1} C_{14}DMAO and 55 mmol·L^{-1} DPA) with 2.5 and 5.0 mg $EuCl_3$, respectively. The data of the micellar solution without $EuCl_3$ was also given for comparison. Solid lines represent the fitting curves.

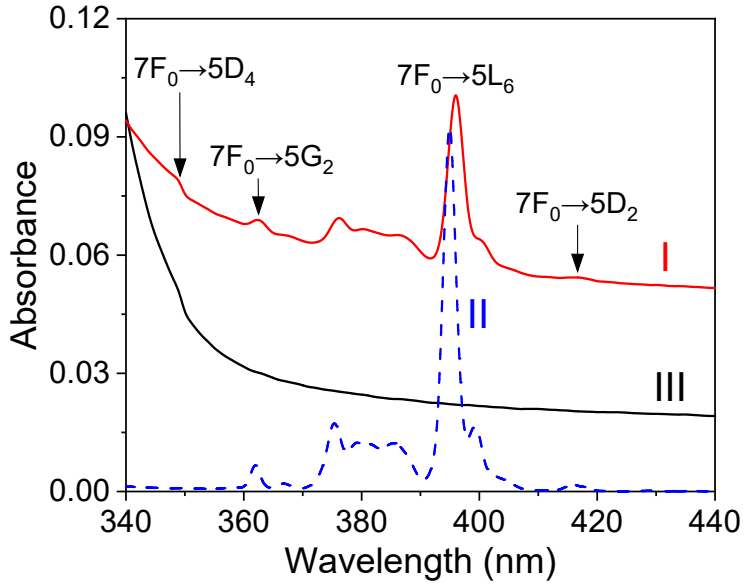

Fig. S7 UV-vis absorption of the sample (4 mL) with 100 mmol·L^{-1} C_{14}DMAO, 55 mmol·L^{-1} DPA and 22.5 mg $EuCl_3$ (curve I). The excitation curve at the maximum emission (curve II) and the absorption of the sample at the absence of $EuCl_3$ (curve III) are also given.

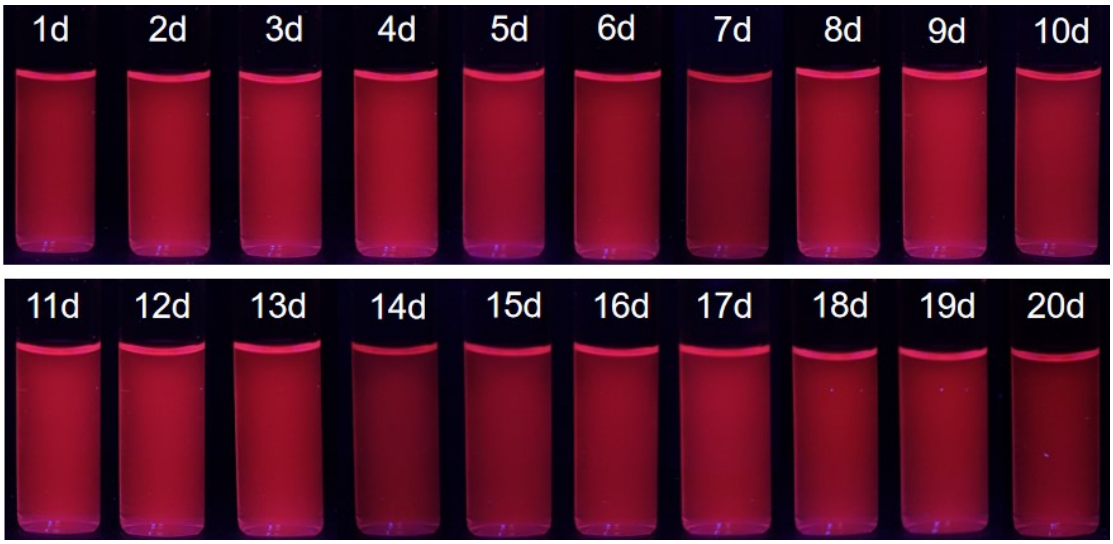

Fig. S8 Photos of the sample (4 mL) with 100 mmol·L^{-1} C_{14}DMAO, 55 mmol L^{-1} DPA and 22.5 mg $EuCl_3$, taken under 365 nm UV irradiation.

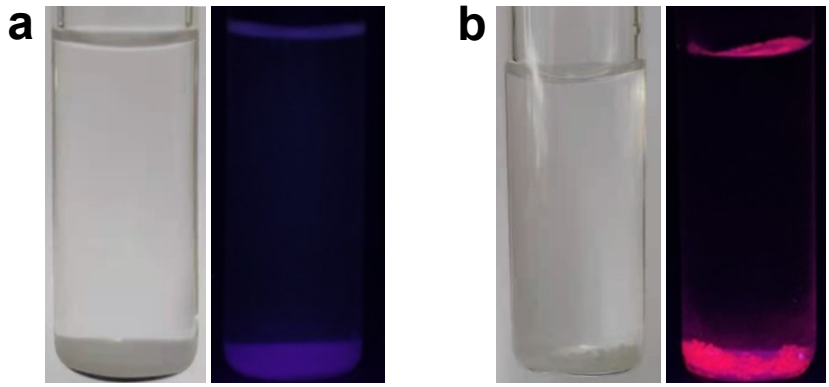

Fig. S9 a) Photos of aqueous solution of 55 mmol·L^{-1} DPA (4 mL) after addition of 22.5 mg $EuCl_3$, taken under roomlight (left) and 365 nm UV irradiation (right). b) Photos of aqueous solution of 100 mmol·L^{-1} C_{14}DMAO (4 mL) after addition of 22.5 mg $EuCl_3$. Taken under roomlight (left) and 365 nm UV irradiation (right).