

Supporting Information for Manuscript Entitled

Highly Efficient Oil-Fouling and Foam Removal Achieved by Surfactant Mixed Systems

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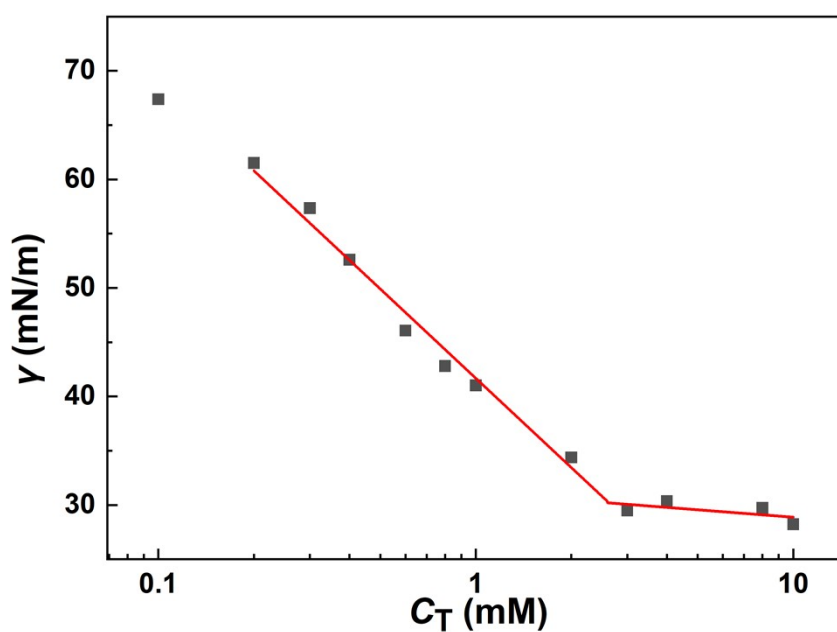


Fig. S1 Surface tension curve of dodecylamine at 25.00 ± 0.01 °C.

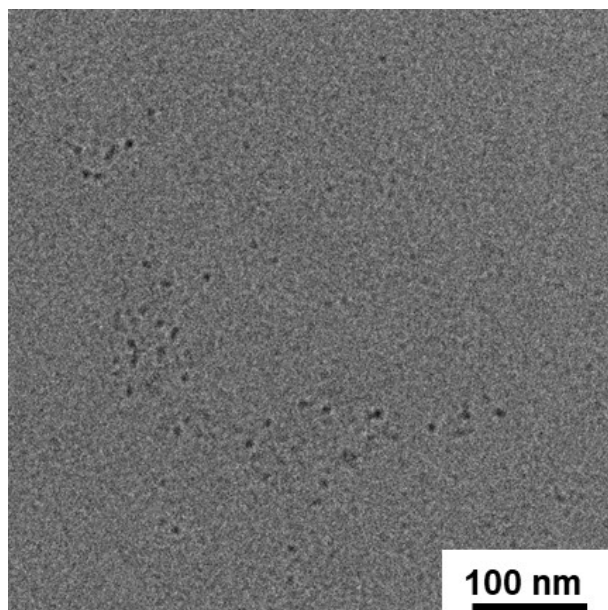


Fig. S2 Cryo-TEM images of C_6N/SDS aggregates at $C_T = 20$ mM and $X_{SDS} = 0.10$.

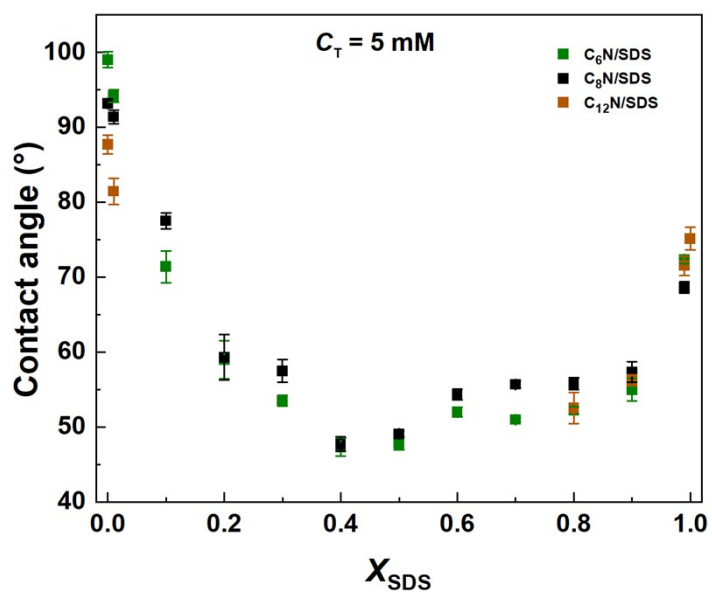


Fig. S3 Solid/liquid contact angles of C_nN/SDS ($n = 6, 8, 12$) solutions on the stainless-steel plates.

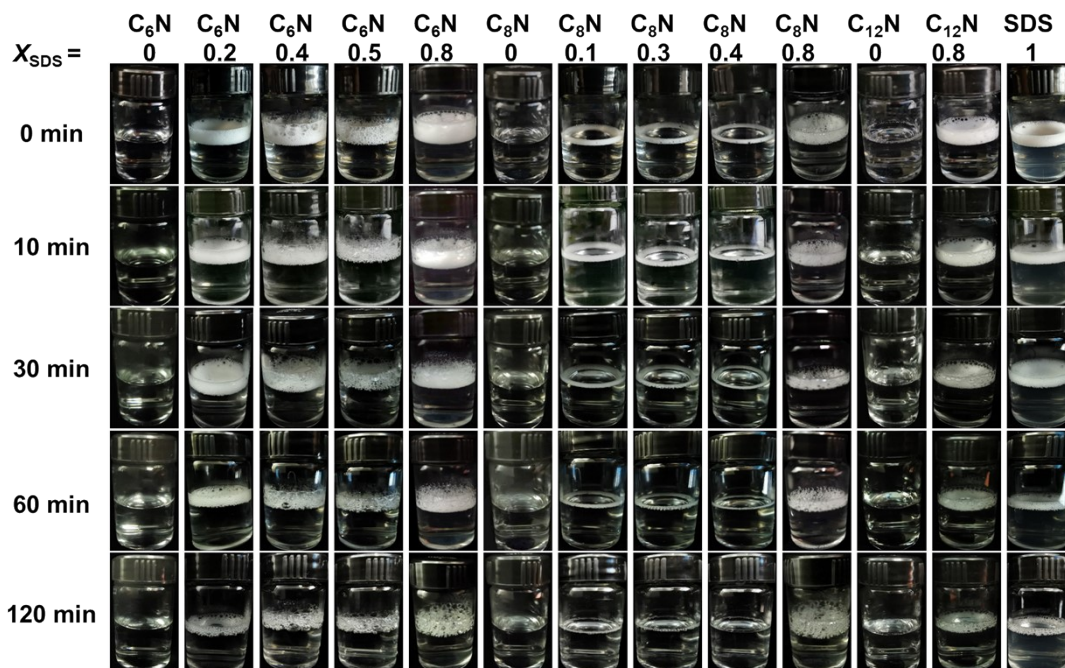


Fig. S4 Images of foam height change against aging for $C_n\text{N}/\text{SDS}$ at $C_T = 5$ mM at different X_{SDS} ($C_6\text{N}/\text{SDS}$ at $X_{\text{SDS}} = 0, 0.20, 0.40, 0.50, 0.80$, $C_8\text{N}/\text{SDS}$ at $X_{\text{SDS}} = 0, 0.10, 0.30, 0.40, 0.80$ and $C_{12}\text{N}/\text{SDS}$ at $X_{\text{SDS}} = 0, 0.80, 1.00$) after vortex for 30 s.

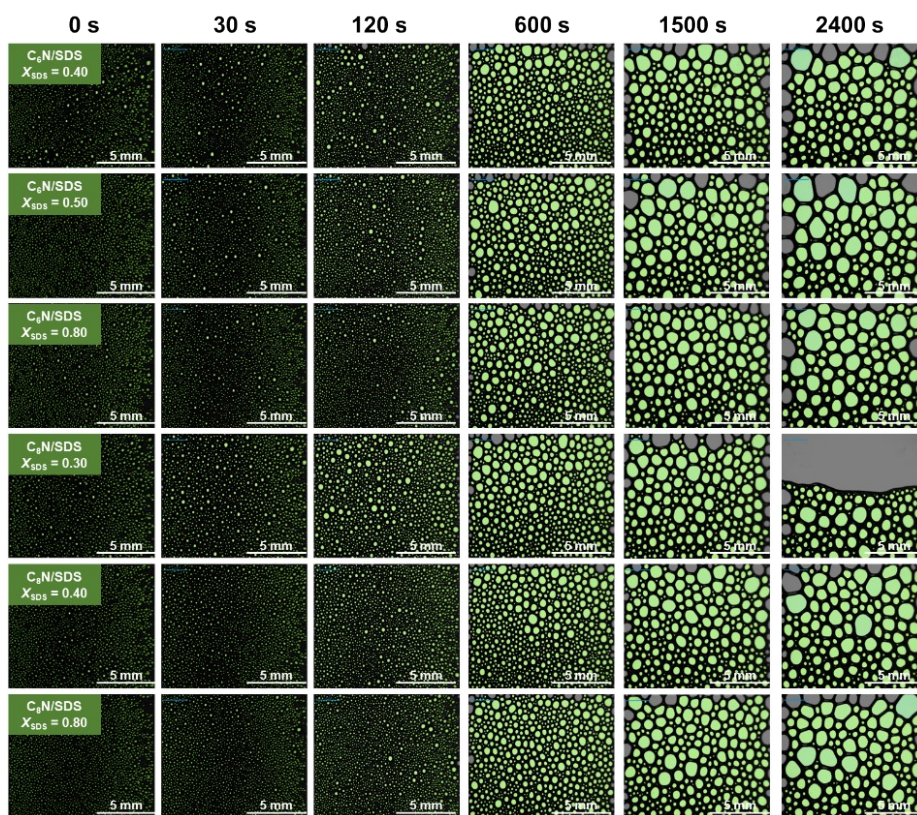


Fig. S5 Images of foam state with aging recorded by CCD camera for 5 mM $C_6\text{N}/\text{SDS}$ at $X_{\text{SDS}} = 0.40$, 5 mM $C_6\text{N}/\text{SDS}$ at $X_{\text{SDS}} = 0.50$, 5 mM $C_6\text{N}/\text{SDS}$ at $X_{\text{SDS}} = 0.80$, 5 mM $C_8\text{N}/\text{SDS}$ at $X_{\text{SDS}} = 0.30$, 5 mM $C_8\text{N}/\text{SDS}$ at $X_{\text{SDS}} = 0.40$, and 5 mM $C_8\text{N}/\text{SDS}$ at $X_{\text{SDS}} = 0.80$.

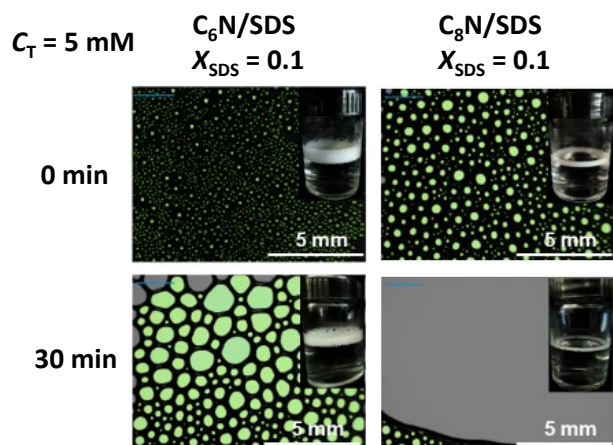


Fig. S6 Foam state against aging for the $C_6\text{N}/\text{SDS}$ and $C_8\text{N}/\text{SDS}$ mixtures at fixed $X_{\text{SDS}} = 0.10 \text{ mM}$ and $C_T = 5.0 \text{ mM}$ with visual inspection method (inset) and air blowing method using a dynamic foam analyzer. The upper two and bottom two images correspond to 0 and 30 min.

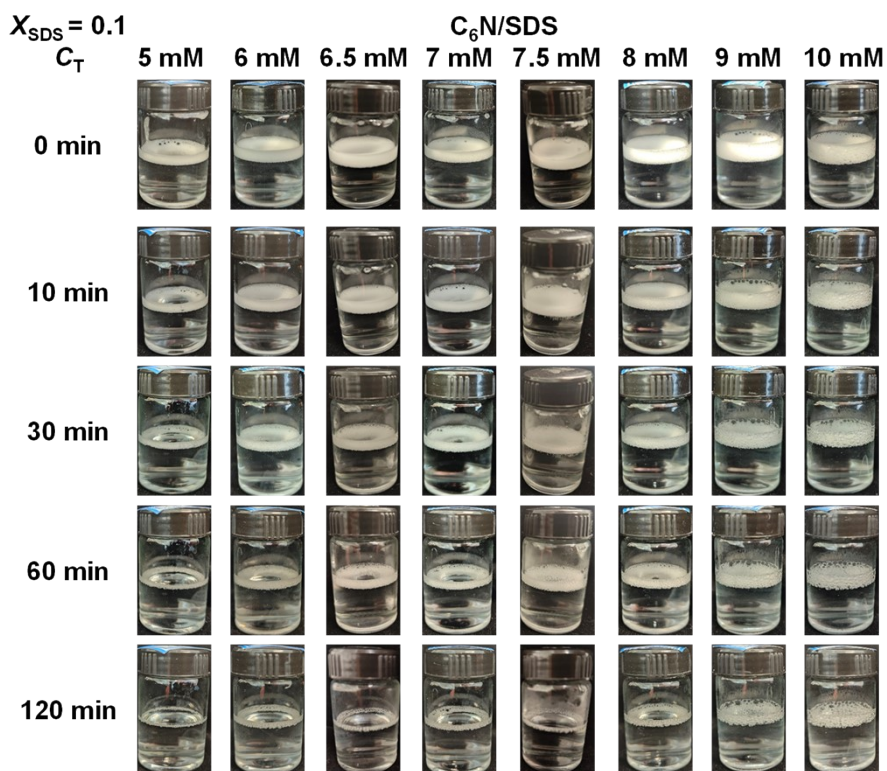


Fig. S7 Images of foam height change against aging for $C_6\text{N}/\text{SDS}$ at fixed $X_{\text{SDS}} = 0.10$ and different C_T ($C_T = 5.0, 6.0, 6.5, 7.0, 7.5, 8.0, 9.0$ and 10.0 mM) after vortex for 30 s.

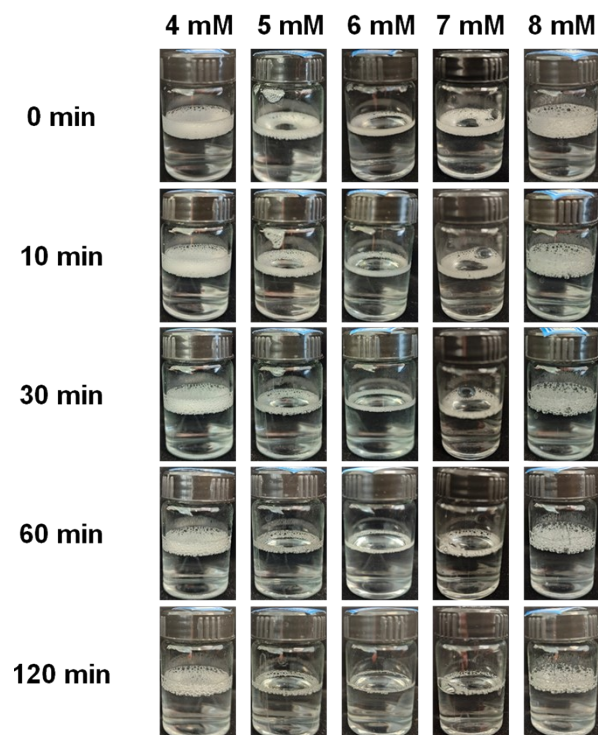


Fig. S8 Images of foam height change against aging for C_8N/SDS at fixed $X_{SDS} = 0.10$ and different C_T ($C_T = 4.0, 5.0, 6.0, 7.0$ and 8.0 mM) after vortex for 30 s.