



Figure S1. Picture of sample addressed on a PMMA plate.

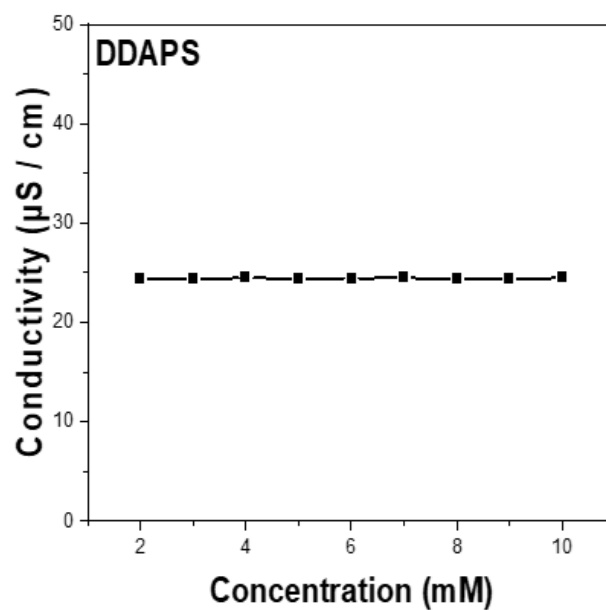


Figure S2. Determination of critical micelle concentration of DDAPS by conductivity measurement.

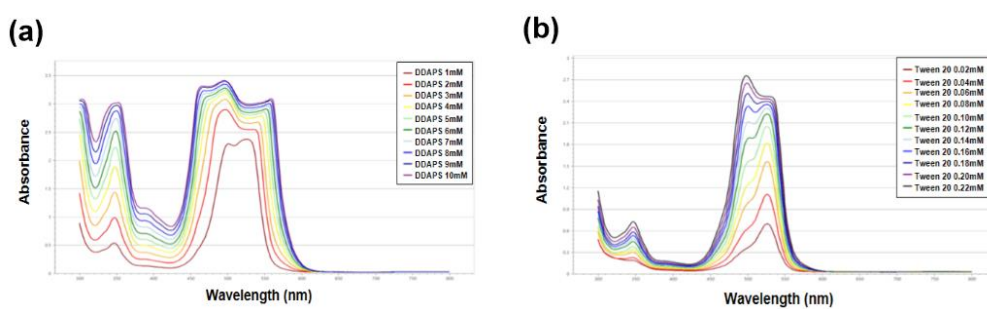


Figure S3. UV-Vis absorption spectra at varying concentrations of (a) DDAPS and (b) Tween 20 aqueous solutions mixed with R6G.

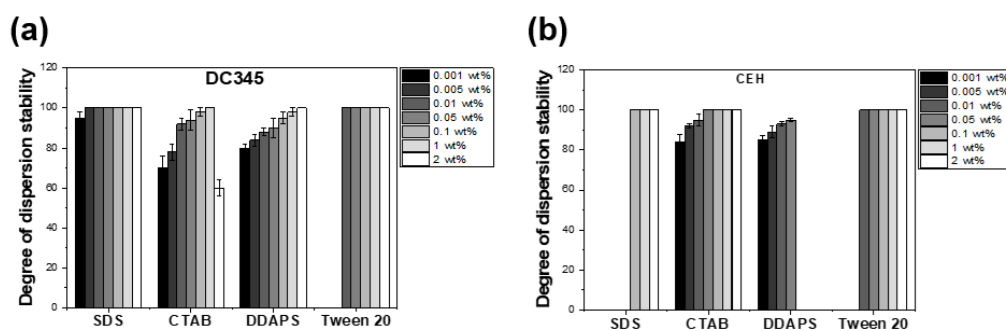


Figure S4. Degree of TiO₂ dispersion stability in oil (DC345 and CEH) using various concentrations of different surfactants.

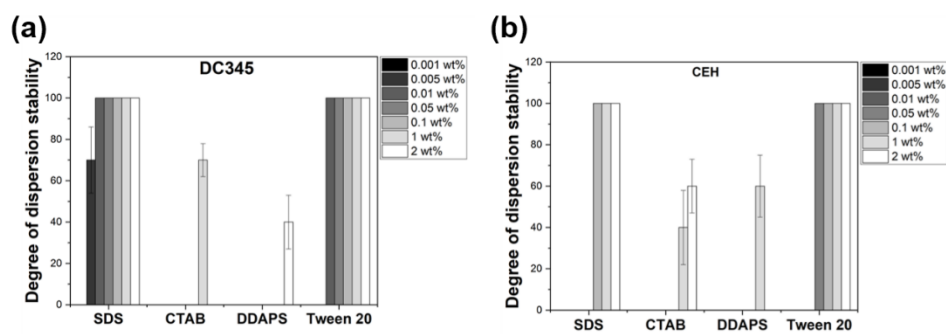


Figure S5. Degree of TiO₂ dispersion stability in oil (DC345 and CEH) using various concentrations of surfactants after one month storage.

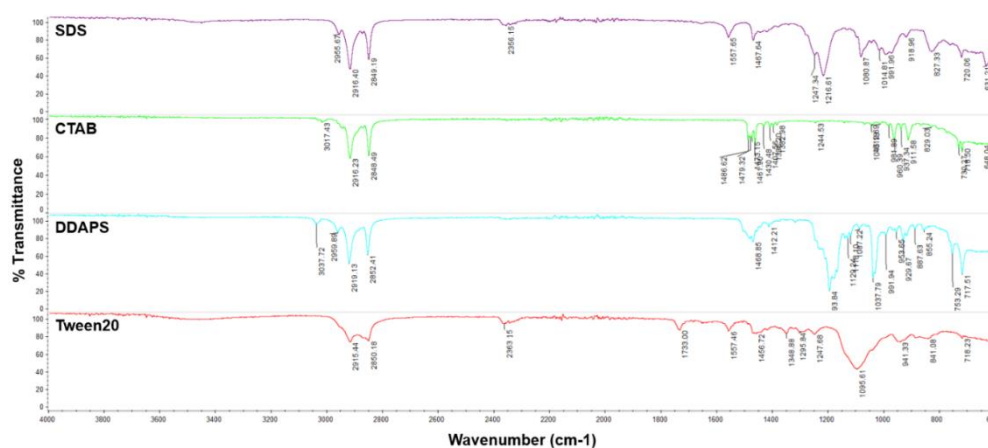


Figure S6. FT-IR spectra of TiO₂ dispersion by 1 wt% surfactants (SDS, CTAB, DDAPS, and Tween 20).

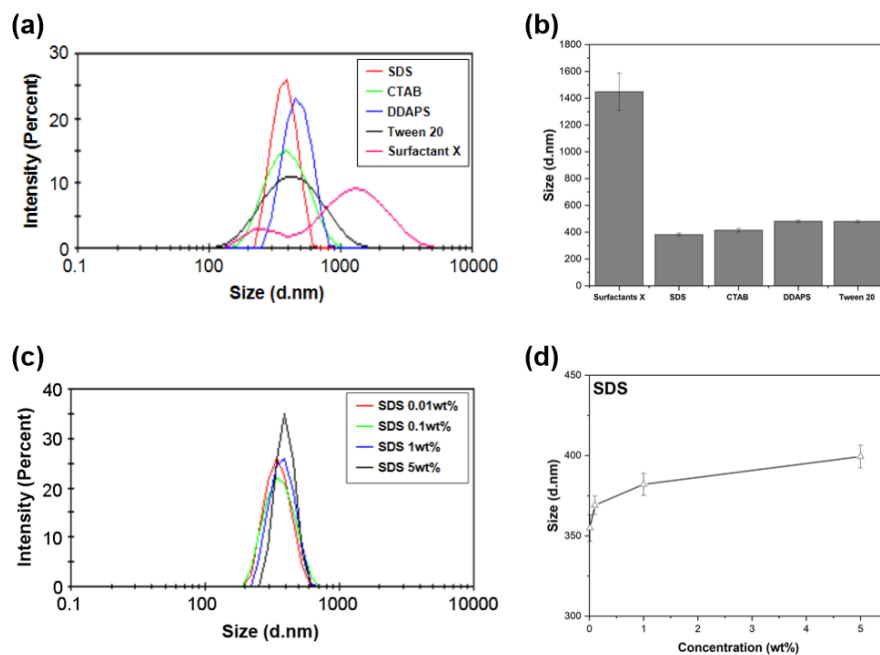


Figure S7. (a) Size distribution and (b) average size of TiO₂ dispersion by adding surfactants. (c) Size distribution and (b) average size of TiO₂ dispersion by adding SDS concentration (0.01, 0.1, 1, 5 wt%).

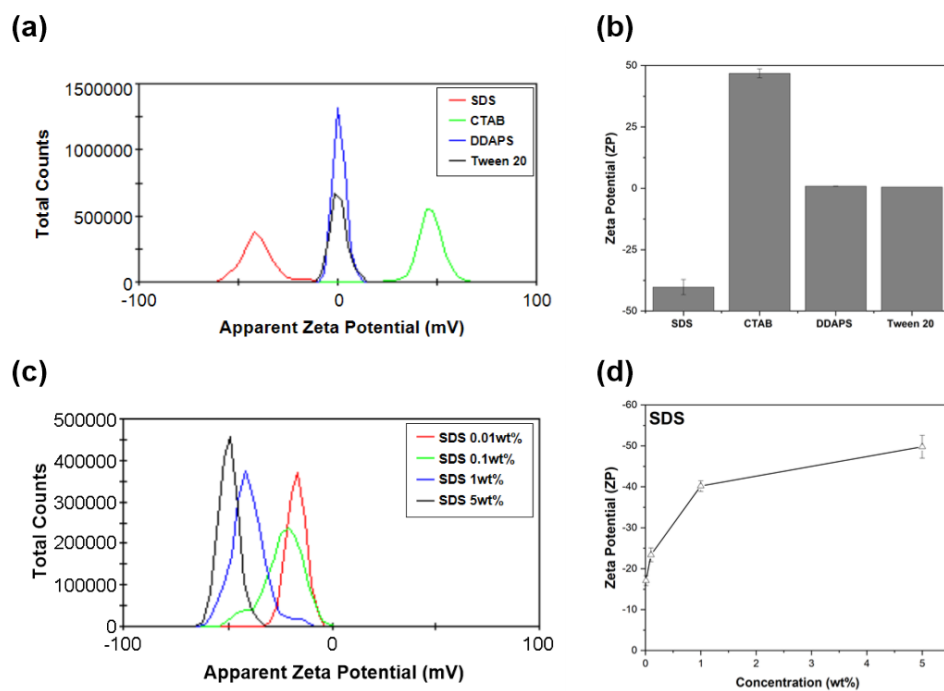


Figure S8. (a) Zeta potential distribution and (b) average zeta potential of TiO₂ dispersion by adding surfactants. (c) Zeta potential distribution and (d) average zeta potential of TiO₂ dispersion according to SDS concentration (0.01, 0.1, 1, 5 wt%).

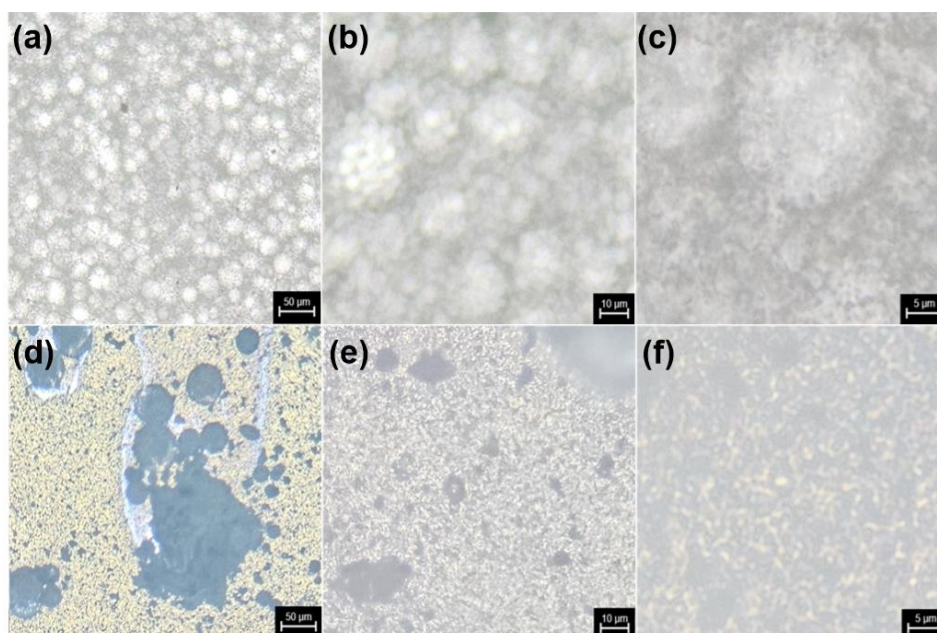


Figure S9. Optical microscopic images of TiO_2 dispersion by adding 1 wt% SDS under (a) 100 $\times$, (b) 400 $\times$, (c) 1,000 $\times$ magnification, and by adding 0.001 wt% SDS under (d) 100 $\times$, (e) 400 $\times$, (f) 1,000 $\times$ magnification.

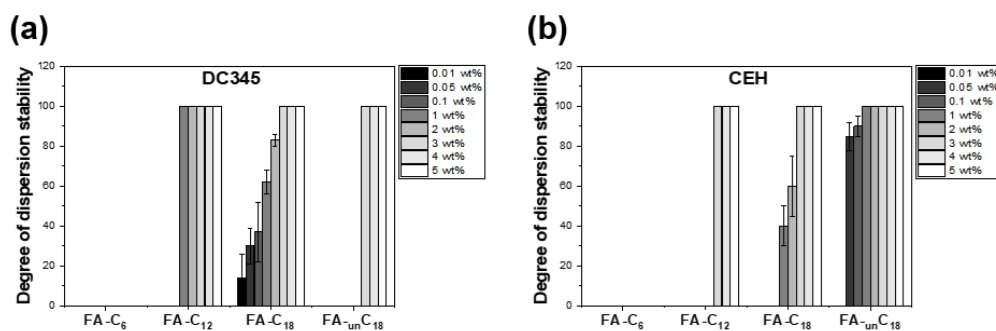


Figure S10. Degree of TiO₂ dispersion stability in oil (DC345 and CEH) using various concentrations of fatty acid as a surfactant.

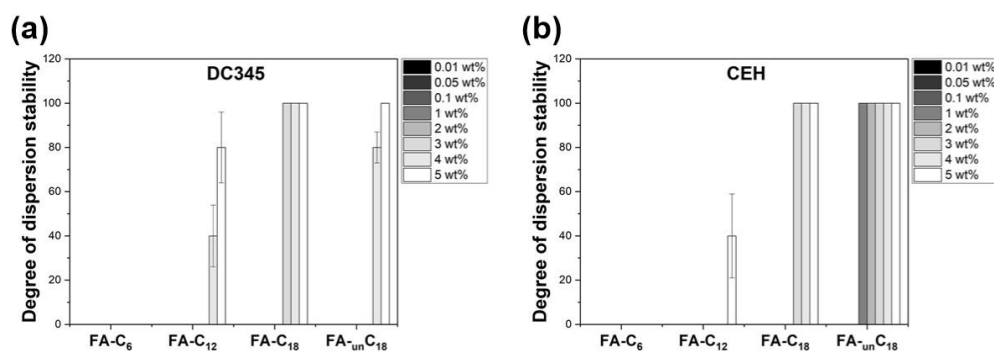


Figure S11. Degree of dispersion stability of oil (DC345 and CEH) TiO₂ dispersion with various concentrations of surfactants (FA-C₆, FA-C₁₂, FA-C₁₈, FA-unC₁₈) after one month of dispersion.

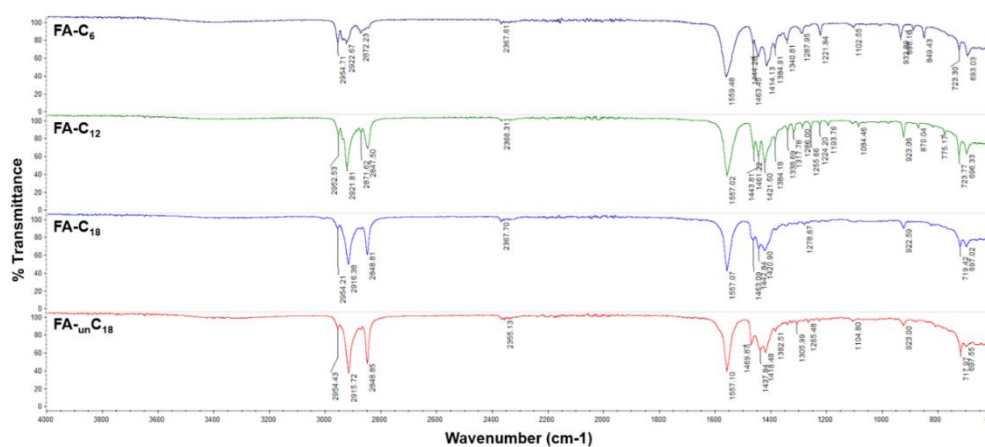


Figure S12. FT-IR spectra of TiO₂ dispersion with 1 wt% surfactants (FA-C₆, FA-C₁₂, FA-C₁₈, and FA-unC₁₈).

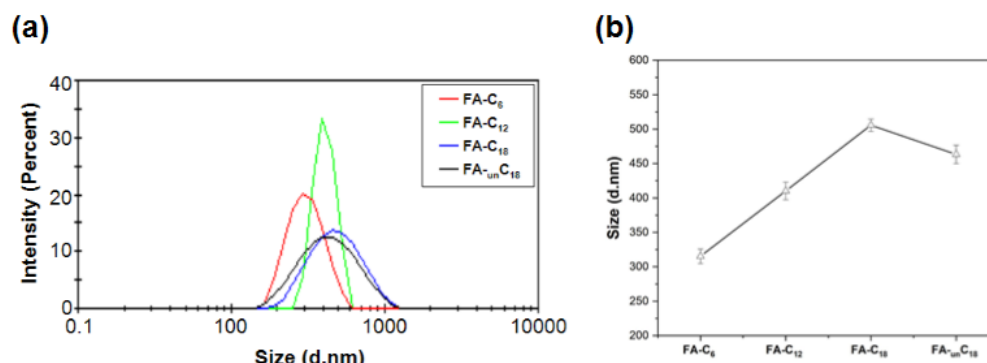


Figure S13. (a) Size distribution and (b) average size of TiO₂ dispersion by adding FA-C₆, FA-C₁₂, FA-C₁₈, and FA-unC₁₈).

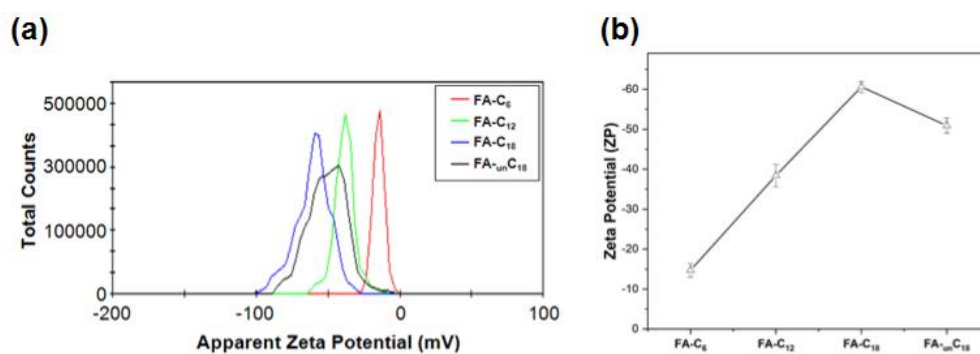


Figure S14. (a) Zeta potential distribution and (b) average zeta potential of TiO₂ dispersion by adding FA-C₆, FA-C₁₂, FA-C₁₈, and FA-unC₁₈.

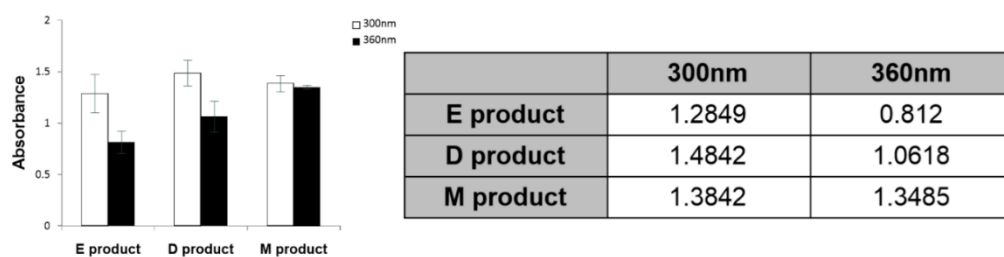


Figure S15. UV-Vis absorption intensities ($\lambda_{\text{abs}} = 300, 360 \text{ nm}$) of commercial products (randomly named with a letter).