Electronic Supplementary Material (ESI) for Soft Matter.

Supporting Information for

Microscale droplets covered by amphiphilic gold nanoparticles with various ligand ratios and concentrations

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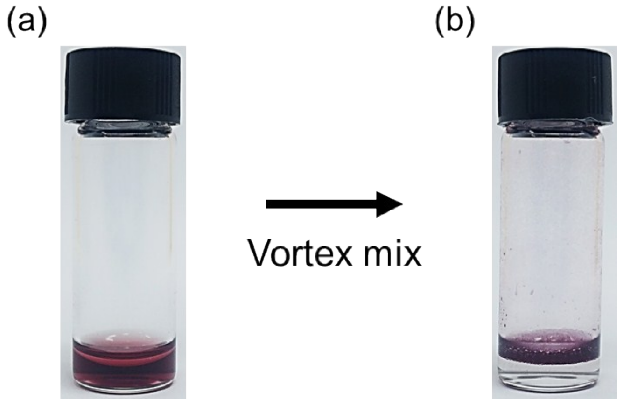

Figure S1. The hexane-water mixtures containing AuMUA/ODT NPs. (a) AuMUA/ODT NPs were initially dissolved in the water phase. (b) After gently vortex mixing for 15 min, the AuMUA/ODT NPs migrated to the hexane-water interface forming the hexane droplets covered with the AuMUA/ODT NPs.

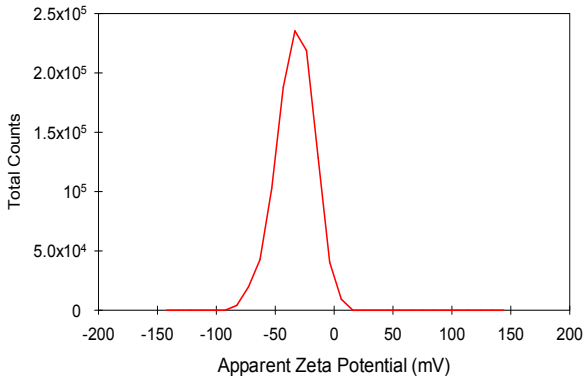

Figure S2. ζ potential distributions for 1 mM of amphiphilic AuNPs at $\chi^{ODT/MUA}_{surface} = 0.41$.

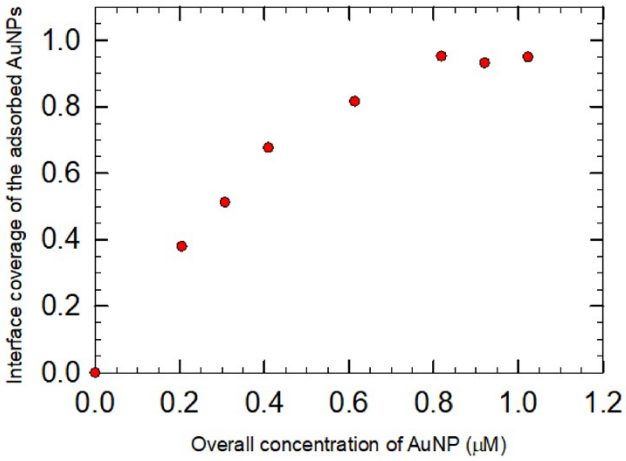

Figure S3. The estimated values of interface coverage of AuNPs as a function of overall concentration of AuNPs.

Table S1. Absorbance peaks of AuMUA/ODT NPs remaining in the water phase with varying $\chi^{ODT/MUA}_{surface}$ before and after vortex mixing. The extent of the AuNP adsorption at the hexane-water interface was calculated based on the absorbance peak.

$\chi^{ODT/MUA}_{surface}$	Absorbance peak of AuMUA/ODT NPs in the water phase		The extent of the AuNP adsorption at the hexane-water interface (%)
	Before vortex mixing	After vortex mixing	
0	0.31	0.31	0
0.09	0.31	0.16	48
0.22	0.31	0.12	61
0.41	0.31	0.050	84
0.59	0.31	0.031	90

Table S2. The summary of CIELAB analysis.

Figure number	a* for droplets	a* for solvent	Δa*
4a	2.0 ± 0.7	4.1 ± 0.4	-2.1
4b	1.3 ± 0.2	0.0 ± 0.1	1.3
4c	3.5 ± 0.6	-0.1 ± 0.3	3.6
4d	6.3 ± 0.7	2.3 ± 0.4	4.0
6a	3.6 ± 0.4	-0.1 ± 0.5	3.6
6b	6.4 ± 1.1	5.8 ± 0.3	0.6
9c	6.4 ± 0.7	2.6 ± 0.3	3.8

Table S3. The concentration (mM on an atom basis) of AuNPs that migrated to the hexane-water interface depending on the overall concentration (mM on an atom basis) of AuNPs.

Concentration of the overall AuNPs (mM)	Absorbance peak of AuMUA/ODT NPs in the water phase		The concentration of the migrated AuNPs to the hexane-water interface (mM on an atom basis)
	Before vortex mixing	After vortex mixing	
1	0.31	0.050	0.85
1.5	0.46	0.11	1.15
2	0.61	0.15	1.51
3	0.92	0.36	1.84
4	1.22	0.57	2.13
4.5	1.37	0.74	2.07
5	1.52	0.87	2.13