# Supporting Information

One-step generation of multi-stimuli responsive microcapsules *via* multilevel interfacial assembly of polymeric complexes

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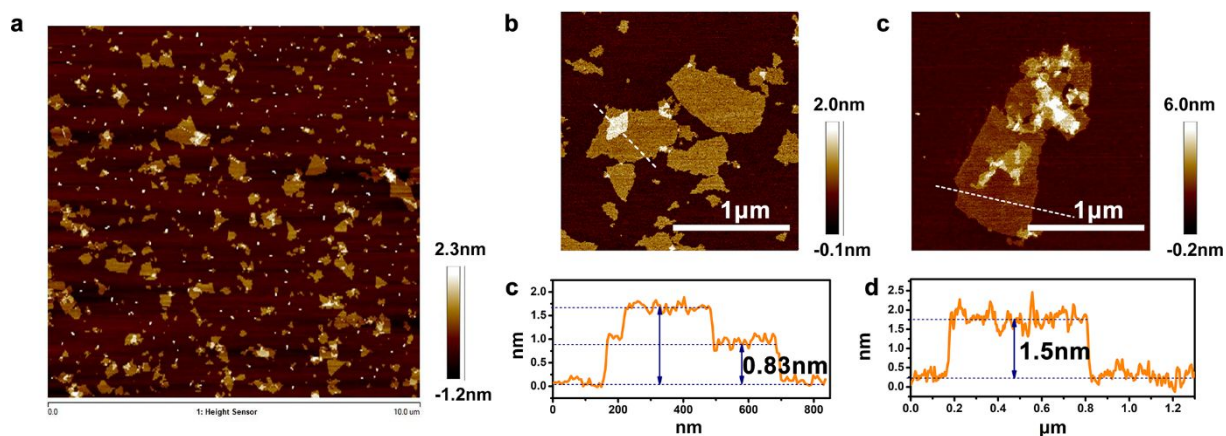
Figure S1. AFM images of (a) GO sheets and (b) $PDDA_{0.15}$-GO complexes. (c) and (d) the profiles alone the lines in Figure (a) and (b) respectively.
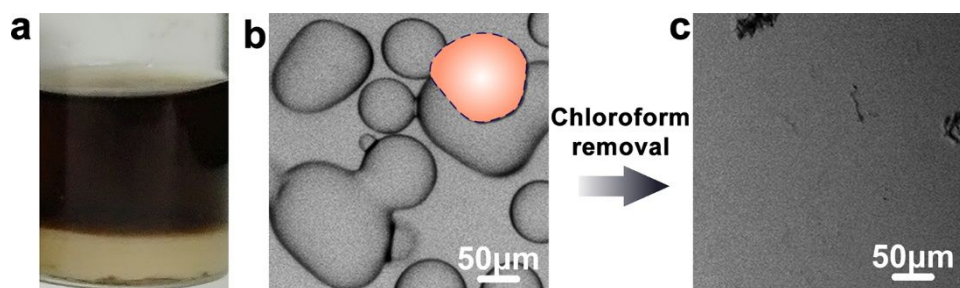
Figure S2. (a) Photograph of GO/Chl emulsions. (b, c) Microscope images of GO/Chl emulsions (b) before and (c) after removing chloroform.

The supernatant was diluted into 1/20, 1/10, 3/10 respectively and used to the characterization of UV-Vis spectra. Figure S1a shows the absorption of supernatant diluted into 1/10. Intercept of linear regression were obtained from Figure S1b. The concentration of PSS in chloroform were calculated according to formulas (1) and (2).
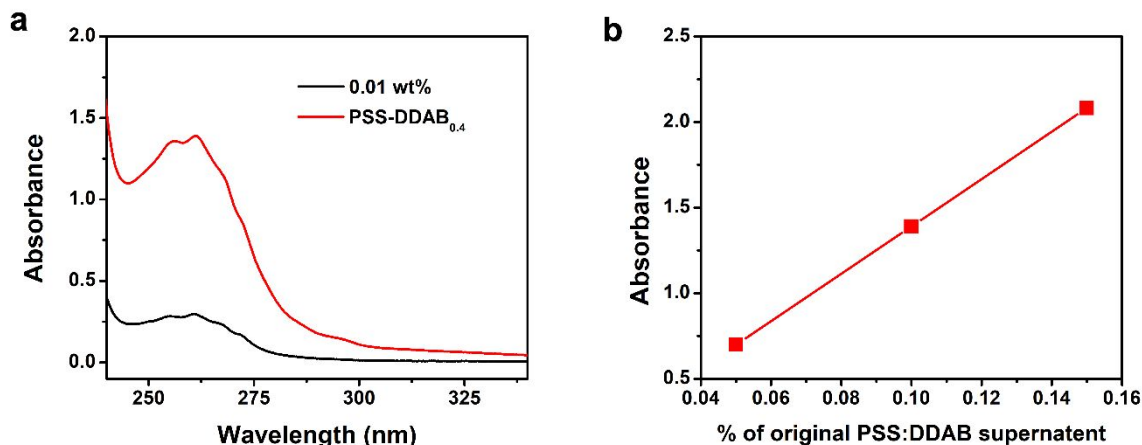
Figure S3. (a) UV-Vis spectra of aqueous PSS solution of 0.01 wt% and aqueous supernatant in the mixture with PSS-DDAB$_{0.4}$. (b) UV-Vis spectra absorbance of PSS aqueous supernatant as a function of supernatant dilution (1/20, 1/10, 3/10 of original concentration after extraction).

$$Cp \times Vo = Co \times Va - Cs - Va \tag{1}$$

$$Cs = 0.01 \times \frac{S + I}{A0.01wt\%} \tag{2}$$

Co: Original PSS concentration in aqueous phase before extraction.

Cp: PSS concentration in chloroform

Cs: PSS concentration in supernatant after centrifugation.

S : Slope of linear regression

I : Intercept of linear regression

Va : Volume of aqueous phase

Vo : Volume of chloroform.

A$_{0.01wt\%}$: Absorbance of PSS of 0.01 wt%

Characterization and calculation of PSS concentration in chloroform.

The supernatant of was diluted into 1/20, 1/10, 3/10 respectively and used to the characterization of UV-Vis spectra. Figure S3a shows the absorption of supernatant diluted into 1/10. Intercept of linear regression were obtained from Figure S3b. The concentration in

chloroform were calculated according to formulas (1) and (2).
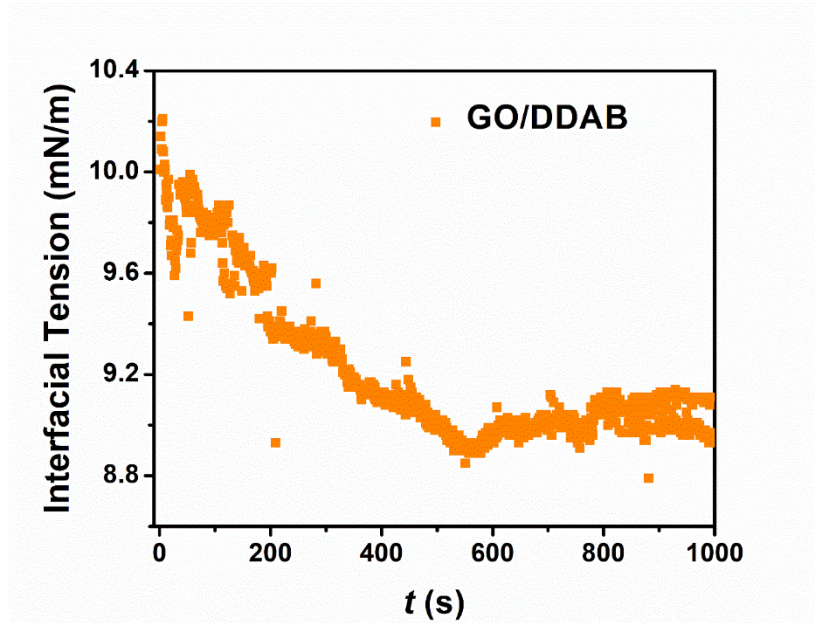
Figure S4. Dynamic interfacial tension of aqueous GO solution against chloroform DDAB solution.
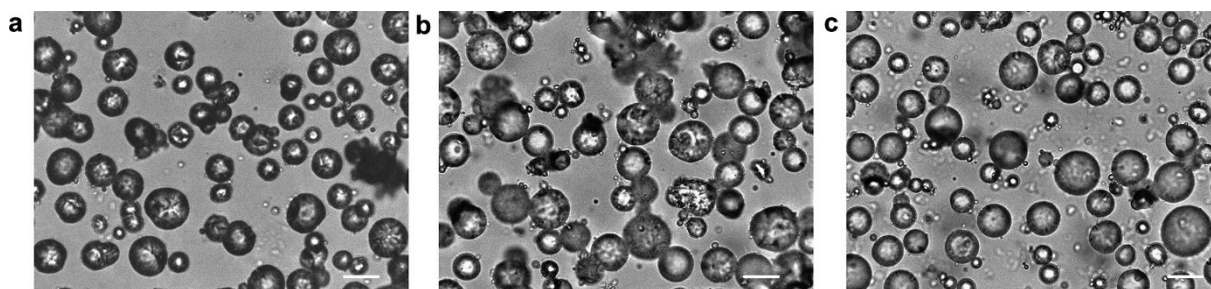
Figure S5. Microscope images of $P_{0.1}$-GO/S-D emulsions incubated in DI water, HCl (pH = 1.0), NaOH (pH = 14). Scale bar is 20 μm.