Supplementary Materials:

Mixed Adsorption Mono- and Multilayers of ß-Lactoglobulin Fibrils and Sodium Polystyrene Sulfonate

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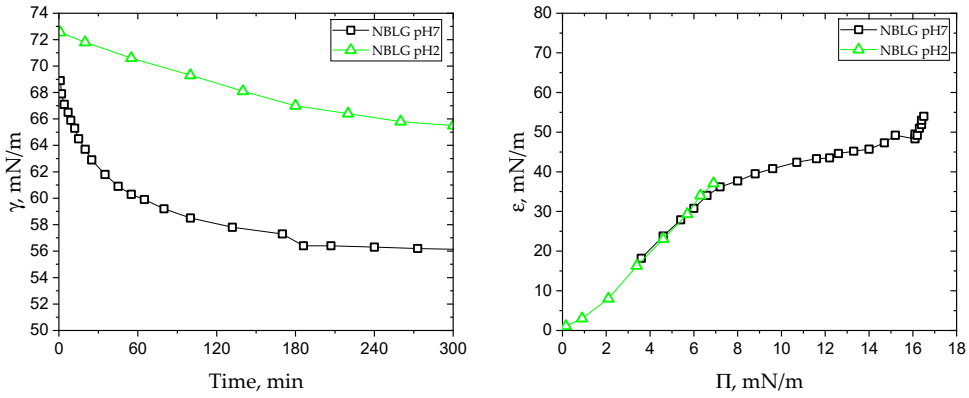


Figure S1. (**a**) Kinetic dependencies of the dynamic surface tension; (**b**) the dynamic surface elasticity as a function of the surface pressure for 0.0017 % mass NBLG solutions at pH 7 (empty black squares) and pH 2 (empty green triangles).

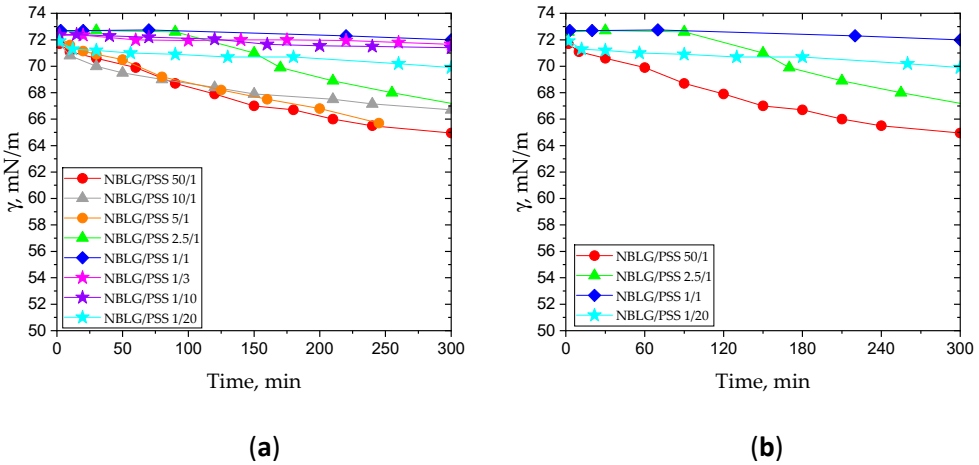


Figure S2. Kinetic dependencies of the dynamic surface tension for NBLG/PSS dispersions at pH 2, a fixed NBLG concentration of 0.0017 mass % and at NBLG/PSS mass ratios 50/1 (red circles), 10/1 (gray triangles), 5/1 (orange circles), 2.5/1 (green triangles), 1/1 (blue diamonds), 1/3 (magenta stars), 1/10 (violet stars) and 1/20 (cyan stars).

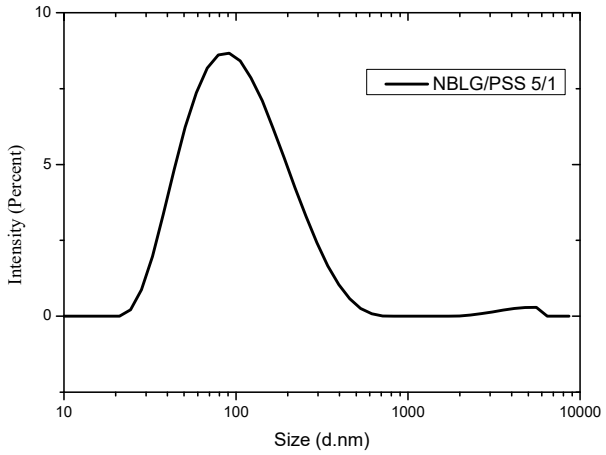


Figure S3. DLS of NBLG/PSS dispersion with weight ratio 5/1.

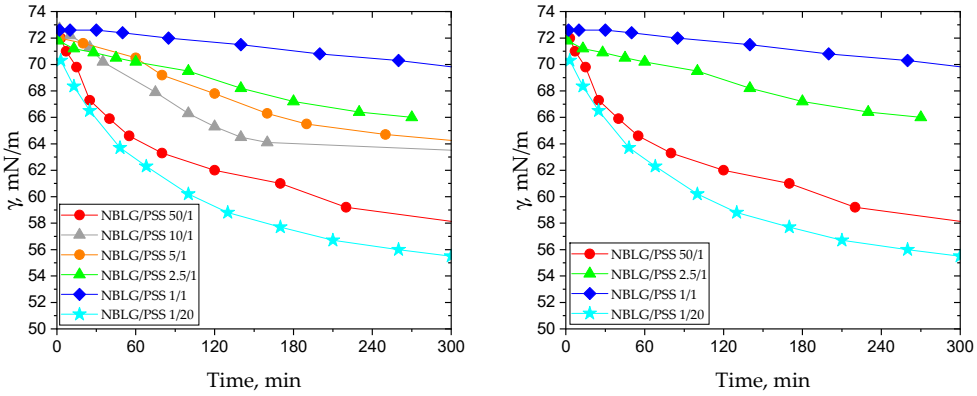


Figure S4. Kinetic dependencies of the dynamic surface tension for NBLG/PSS solutions at pH 2 and a fixed NBLG mass percentage of 0.017%. Weight ratios of NBLG/PSS are 50/1 (red circles), 10/1 (gray triangles), 5/1 (orange circles), 2.5/1 (green triangles), 1/1 (blue diamonds) and 1/20 (cyan stars).

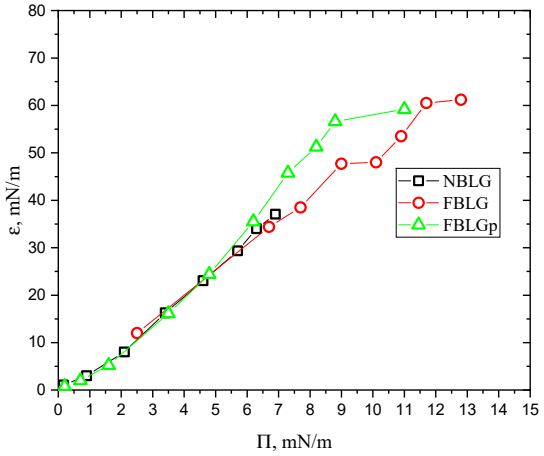
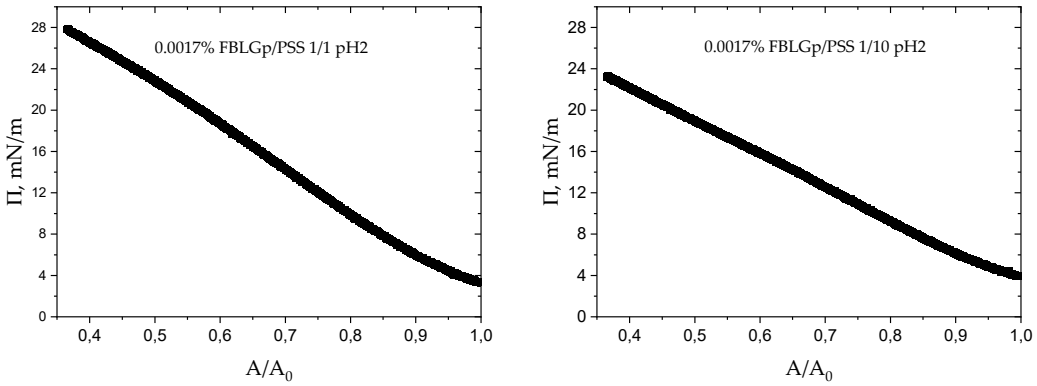


Figure S5. Dynamic surface elasticity as a function of dynamic surface pressure for NBLG solutions (empty black squares), FBLG (empty red circles) and FBLGp (empty green triangles) dispersions at pH 2 with a total BLG concentration of 0.0017%.



(a) **(b)**

Figure S6. Compression isotherms of FBLG/PSS solutions at pH 2 and fixed FBLG mass percentage of 0.0017%. Weight ratios of FBLG/PSS are: (a) 1/1; (b) 1/10.

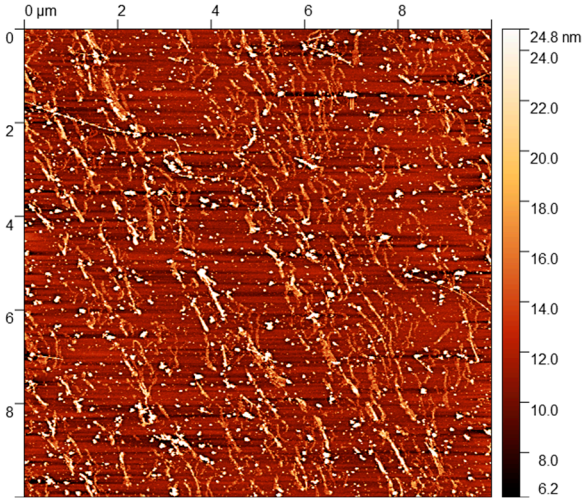


Figure S7. The AFM image of FBLG/PSS adsorption film with a weight ratio 2.5/1.

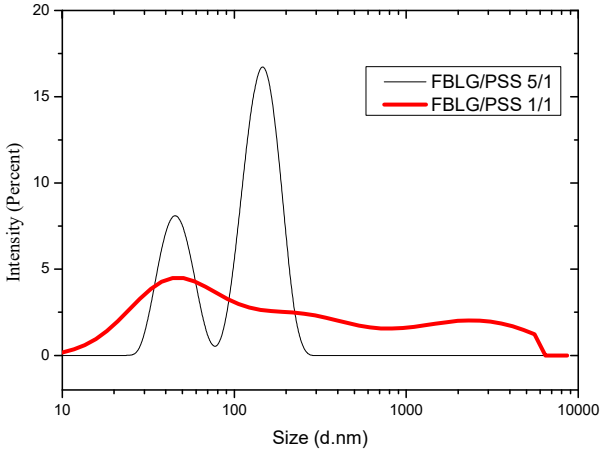


Figure S8. DLS of FBLG/PSS dispersions with the mass ratios of the components 5/1 (thin black line) and 1/1 (thick red line).

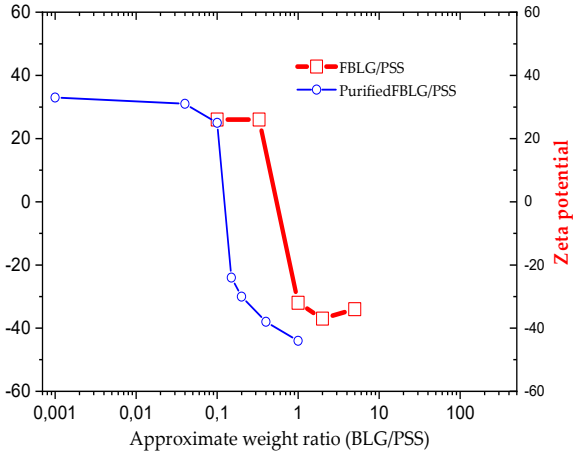


Figure S9. Zeta potential as a function of approximate mass ratio (BLG/PSS) of FBLG/PSS (empty red squares) and purified FBLG/PSS dispersions (empty blue circles).

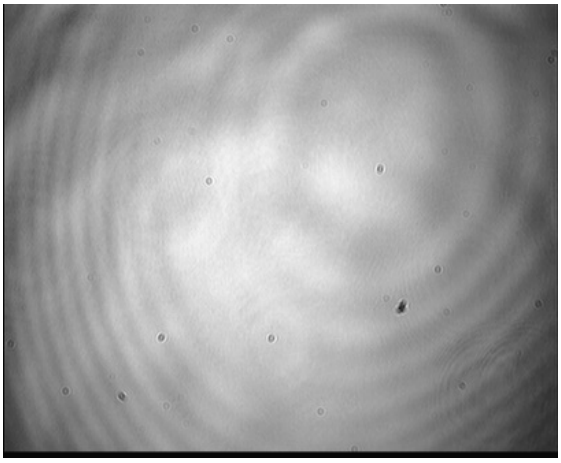


Figure S10. BAM image of FBLG/PSS with a weight ratio 2.5/1.

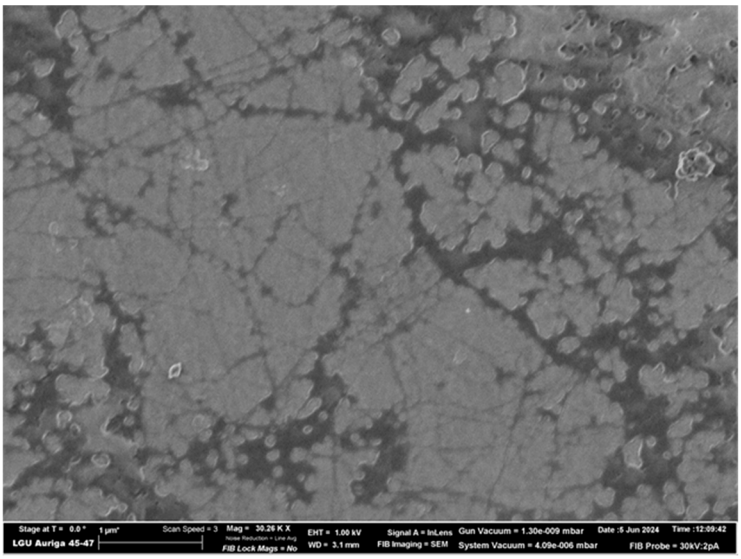


Figure S11. SEM image of FBLG/PSS multilayers.

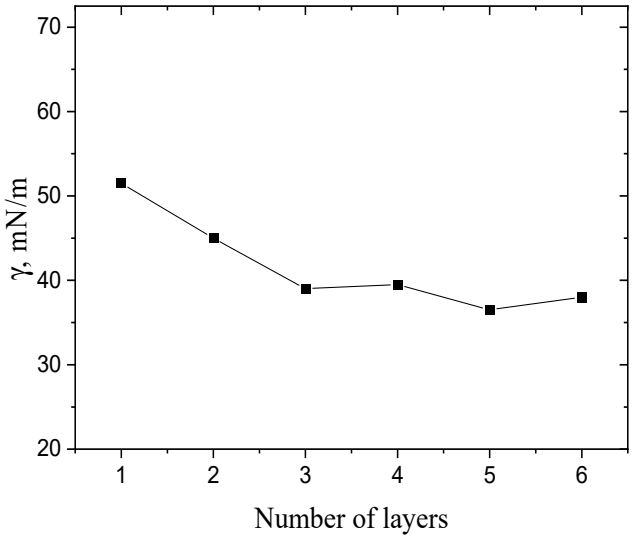


Figure S12. Surface tension as a function of the number of layers in FBLG/PSS adsorption multilayers.

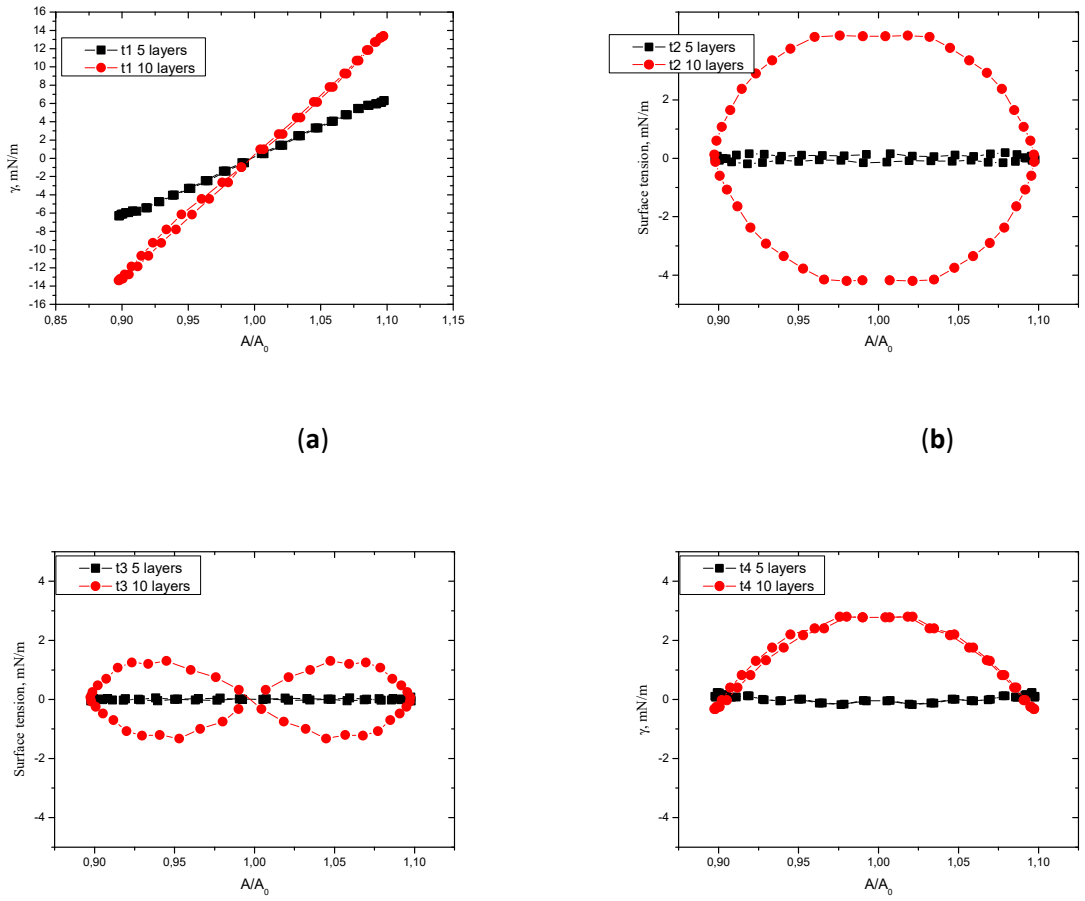


Figure S13. The decomposed Lissajous plots of surface tension oscillation for five (blacks squares) and ten (red circles) FBLG/PSS adsorption multilayers with oscillation amplitudes 10 %. (a) – for τ_1, (b) – for τ_2, (c) – for τ_3 and (d) – for τ_4.

$$\gamma(t) = \tau_1 + \tau_2 + \tau_3 + \tau_4,$$

where γ is the surface tension, t – is the time

$$\tau_1 = \sum_{k=0}^{\infty} b'_{2k+1} \sin((2k+1)\omega t)$$

$$\tau_2 = \sum_{k=0}^{\infty} a'_{2k+1} \cos((2k+1)\omega t)$$

$$\tau_3 = \sin(\omega t)\cos(\omega t) \sum_{k=0}^{\infty} c'_{2k} \sin(2k\omega t)$$

$$\tau_4 = \sum_{k=0}^{\infty} d'_{2k} \cos(2k\omega t)$$

where ω – is the angular frequency, a, b, c and d – are the constants