

# Physical Chemistry Study of Collagen-Based Multilayer Films

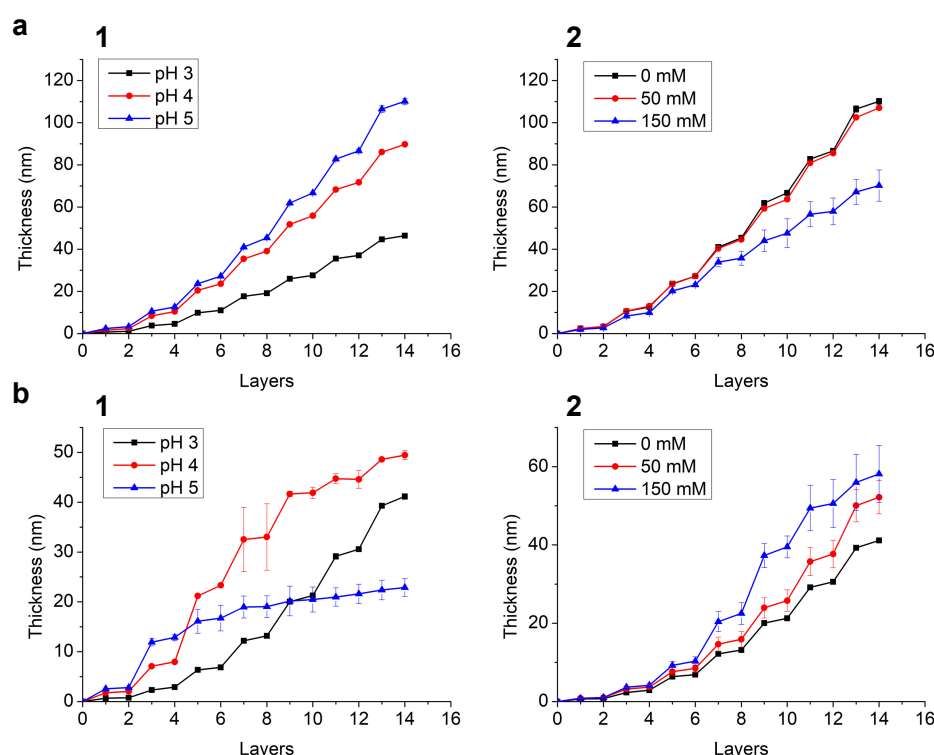
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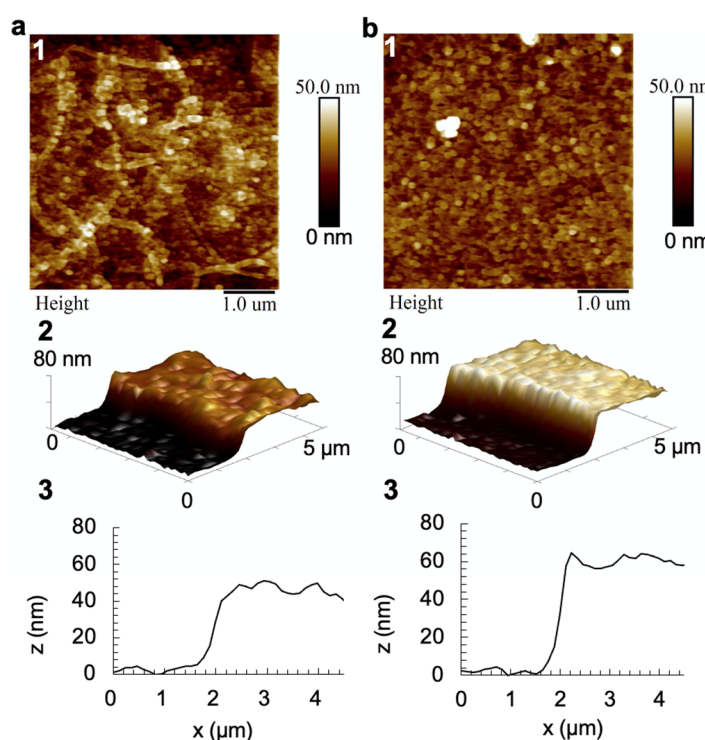
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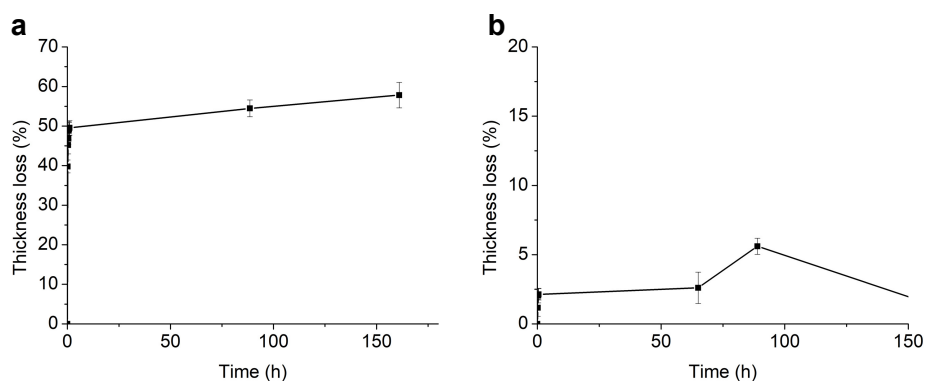
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**Figure S1:** Buildup of COL/PSS films and COL/HEP films. Evolution of (a) (COL/PSS)<sub>7</sub> and (b) (COL/HEP)<sub>7</sub> films thickness measured by ellipsometry in triplicate in dry state built at (1) different pH and (2) different NaCl concentrations for (COL/PSS)<sub>7</sub> at pH 5 and (COL/HEP)<sub>7</sub> at pH 3 respectively with 20 min of dipping.



**Figure S2:** (a) (COL/PSS)<sub>4</sub> and (b) (COL/HEP)<sub>7</sub> films imaged by AFM in contact mode and dry state with their (1) surface topography, (2) AFM 3D images and (3) cross-section profile of scratched film in their respective pH buffer.



**Figure S3:** Thickness loss of dried (a) (COL/HEP)<sub>7</sub> and (b) (COL/PSS)<sub>7</sub> films on silicon in physiological solution measured by ellipsometry in the dry state.

**Table S1:** Films thickness of (COL/PSS)<sub>4</sub> and (COL/HEP)<sub>7</sub> measured by AFM and ellipsometry.

Films	Thickness by ellipsometry (nm) <sup>a</sup>	Thickness by AFM (nm) <sup>b</sup>
Dried (COL/PSS) <sub>4</sub>	45.4 ± 0.3	47.3 ± 5.5
Dried (COL/HEP) <sub>7</sub>	52.2 ± 4.2	66.9 ± 2.3

<sup>a</sup>average value of at least three different samples. <sup>b</sup>average value over one area in one sample.