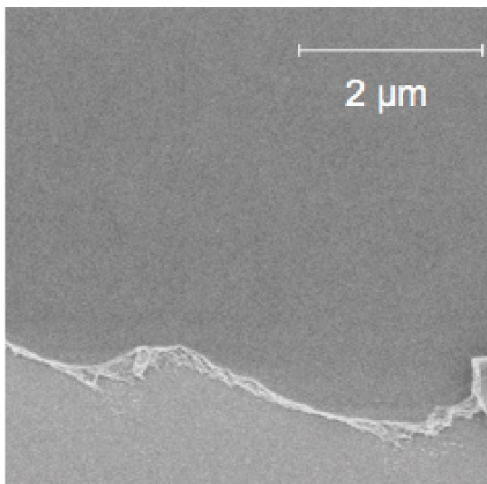


## Supporting Information

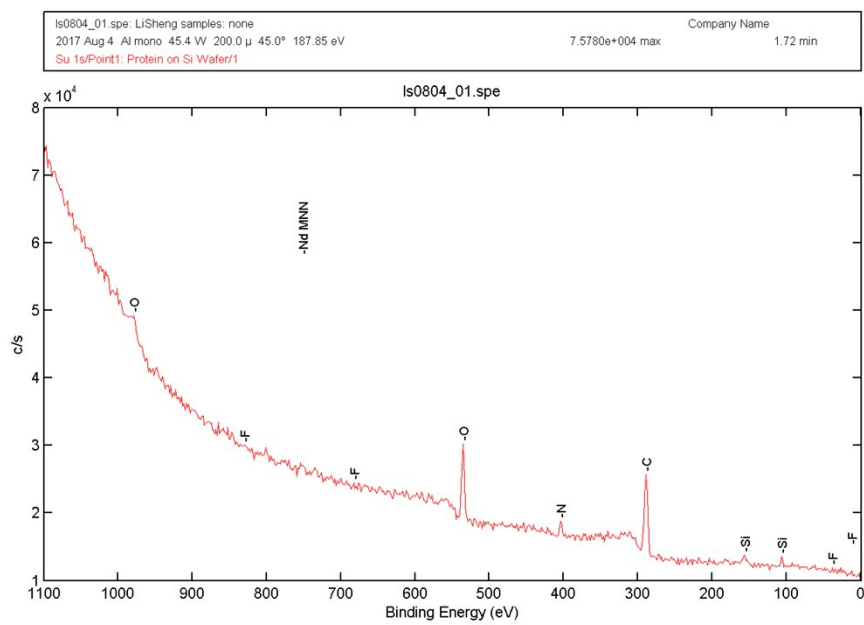
### **Translation of Protein Charge and Hydrophilicity to Materials Surface Properties using Thermal Treatment in Fluorous Media**

*Li-Sheng Wang, Sanjana Gopalakrishnan, Yi-Wei Lee, Jiaxin Zhu, Stephen Nonnenmann and Vincent M. Rotello\**

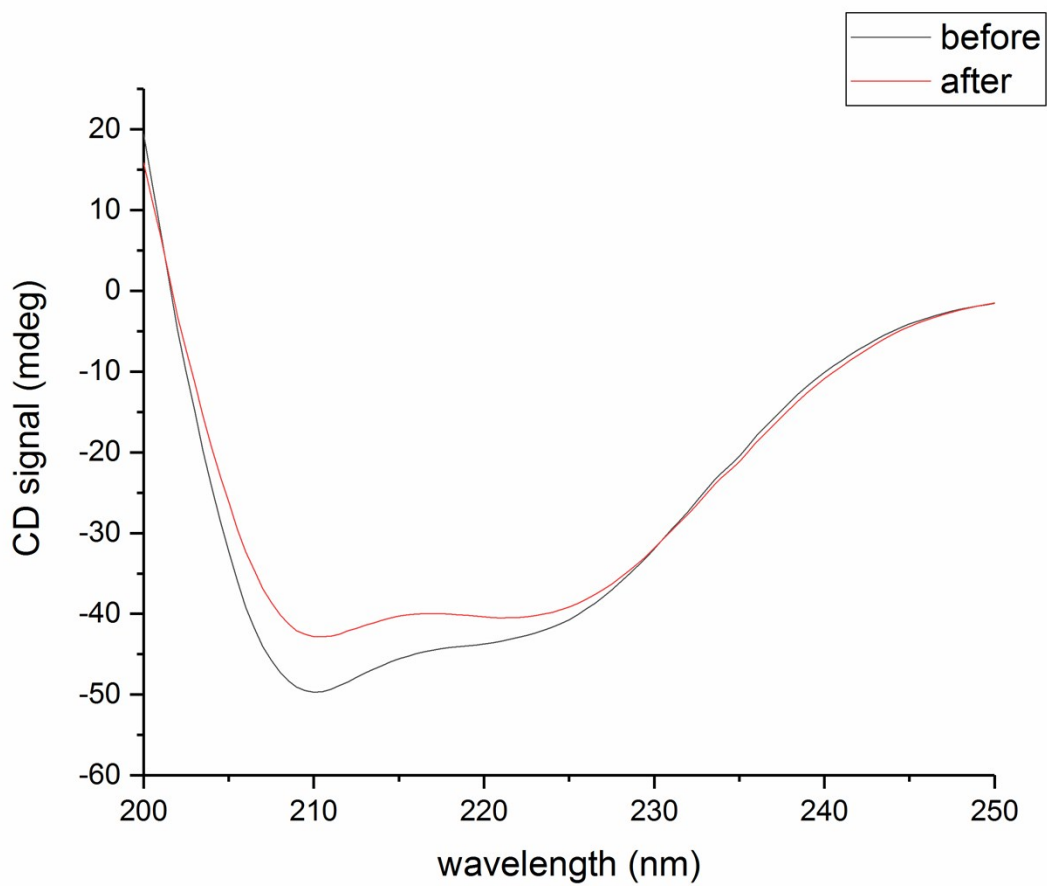
L.-S. Wang, S. Gopalakrishnan, Y.-W. Lee, Prof. V. M. Rotello  
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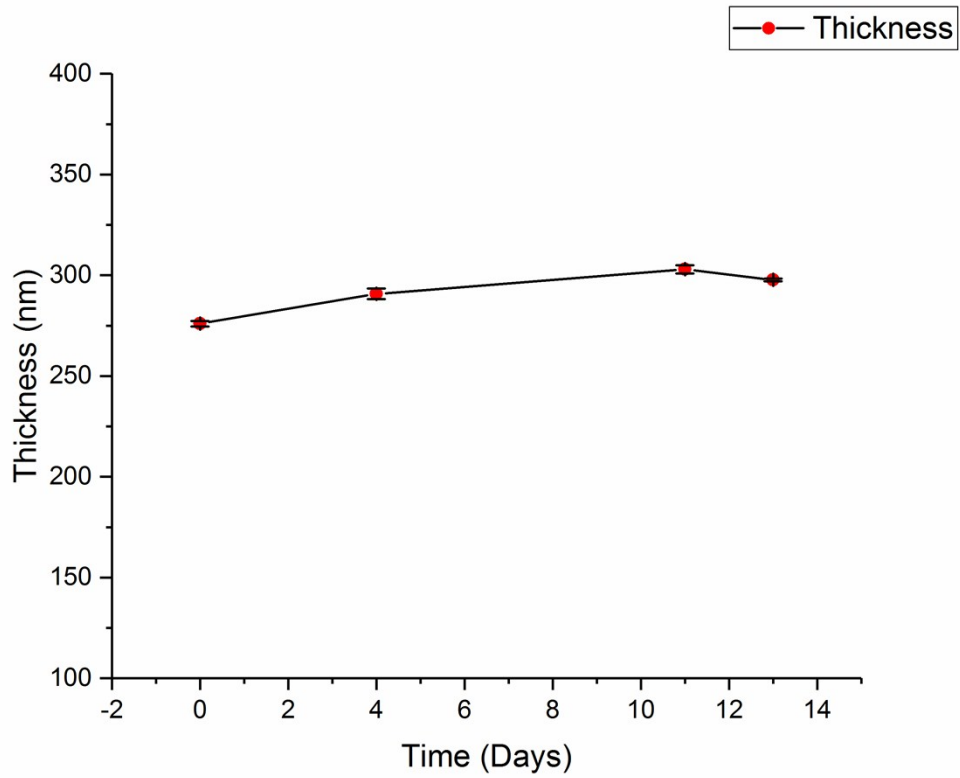
**Figure S1.** Scanning electron microscopy image of scratched protein film on Si wafer.



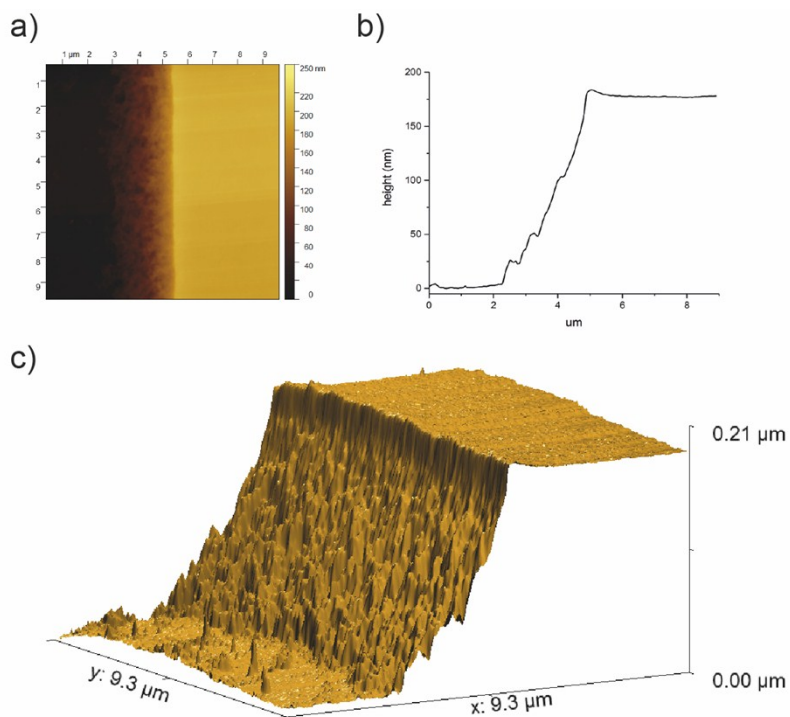
**Figure S2.** X-ray photoelectron spectroscopy of PFHP stabilized BSA film.



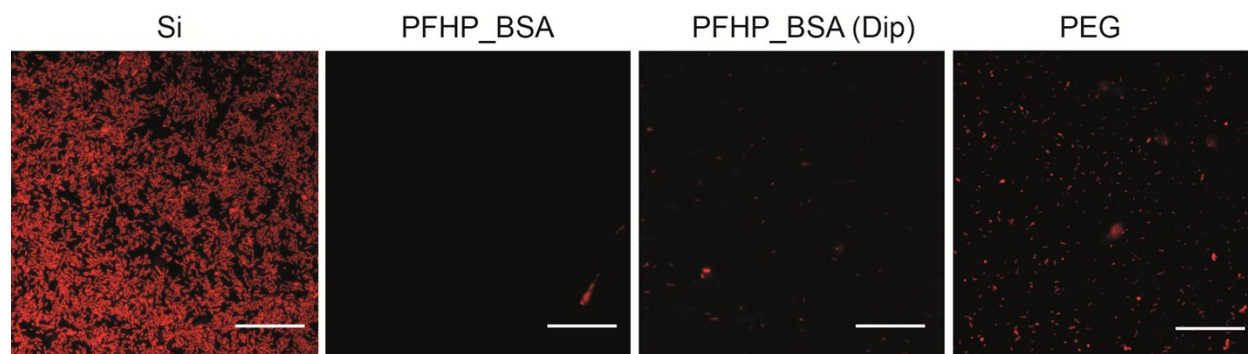
**Figure S3.** CD spectra of dip-coated BSA films before and after PFHP stabilization. Slightly decrease in secondary structure was observed. The minor denaturation was also observed when we prepared films using spin-coating and stabilized by NIL.



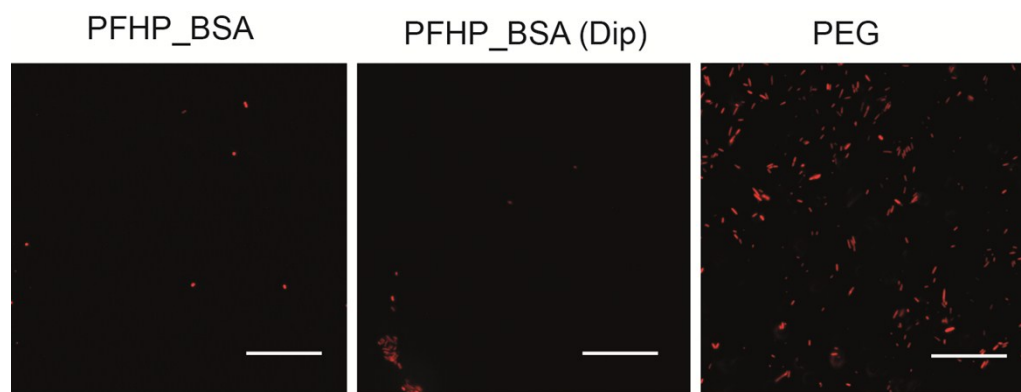
**Figure S4.** Thickness changes of BSA films in PBS. The films were first stabilized using PFHP method at 180 °C for 15 mins, then incubated in PBS solution for 13 days. The slightly increase of thickness was presumably due to the swelling effect.



**Figure S5. AFM images of PFHP film treated with protease.** a) Topographic image b) cross-section and c) 3D reconstruction of PFHP film, in which the left-half of the film was incubated in 0.05% trypsin solution for 24 hours.



**Figure S6.** Fluorescent microscopy images for *E. coli* cells adhered on Si wafer, PFHP\_BSA, PFHP\_BSA prepared by dip coating, and polyethylene glycol (PEG) coated surfaces after one day of incubation. Scale bars are 60  $\mu\text{m}$ . The PEG coated surface was prepared following Liying's procedure.<sup>i</sup> Plasma cleaned silicon wafers were immersed in a 95% ethanol solution containing 3% 2-[methoxy(polyethyleneoxy)<sub>6-9</sub>propyl]trimethoxysilane (Gelest) at 37 °C for 3 hours, following by washing with deionized water and dried with N<sub>2</sub> gas.



**Figure S7.** Fluorescent microscopy images for *E. coli* cells incubated with PFHP\_BSA, PFHP\_BSA prepared by dip coating, and PEG coated surfaces for 3 days. Scale bars are 60  $\mu\text{m}$ .

<sup>i</sup> L. Peng, L. Chang, X. Liu, J. Lin, H. Liu, B. Han, S. Wang, *ACS Appl. Mater. Interfaces*, 2017,

