Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics

Supporting Information

Optical properties of free-standing gelatin/Si nanoparticles composite films and gelatin/Si-Au nanoparticles composite films

Li Shi,[a] Ting Yu,[a] LuweiSun,[a] Xiaodong Pi,[a] XinshengPeng[a, b*]

[a]*State Key Laboratory of Silicon Materials, Department of Materials Science and Enginnering,* [b]*Cyrus Tang Center for Sensor Materials and Applications, Zhejiang University, Hangzhou, 310027, China*

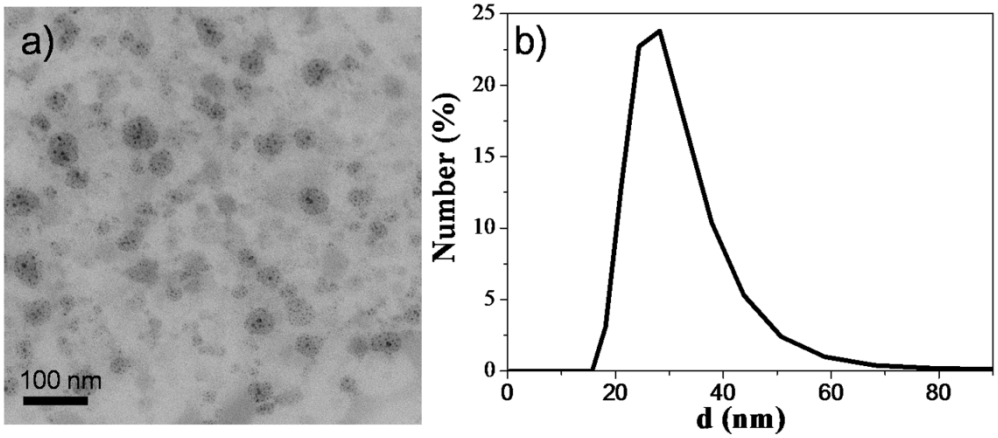

Figure S1 (a) TEM image of water- dispersible Si NPs assembles; (b) the corresponding DLS histogram of these Si NPs assembles.

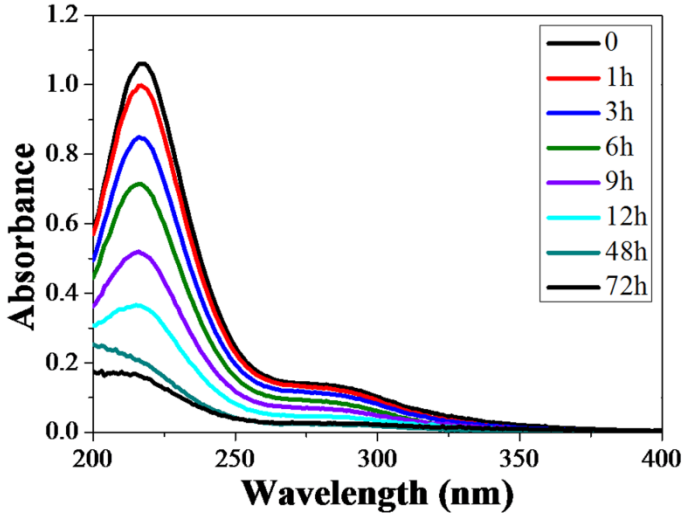

Figure S2 The UV-vis absroption spectra of the $HAuCl_4$ aqueous solution in the presence of gelatin/Si NPs composite film at pH 3 for different time.

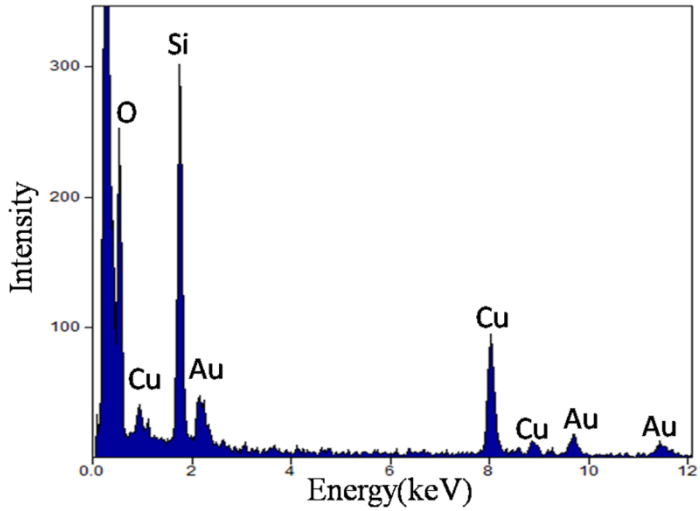

Figure S3 The energy dispersive X-ray analysis spectrum of the gelatin/Si -Au NPs composite film prepared for 1 hour.

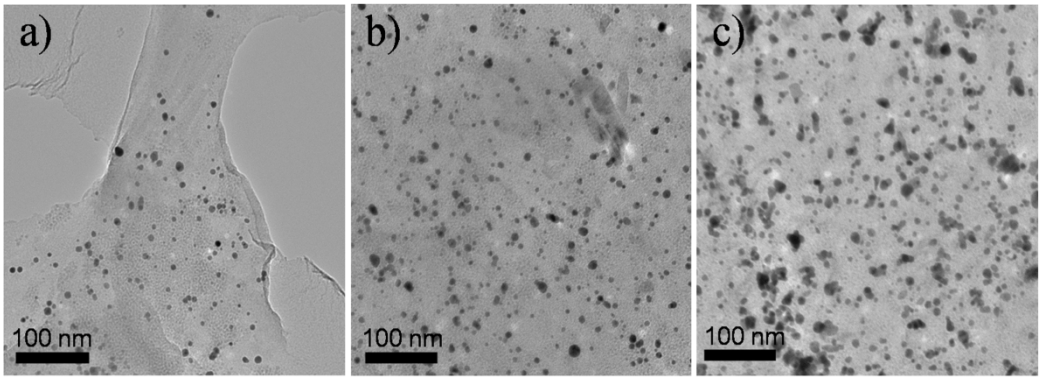

Figure S4 TEM images of the gelatin/Si -Au NPs composite films prepared after immersing for (a) 3 hours; (b) 6 hours and (c) 72 hours, respectively.

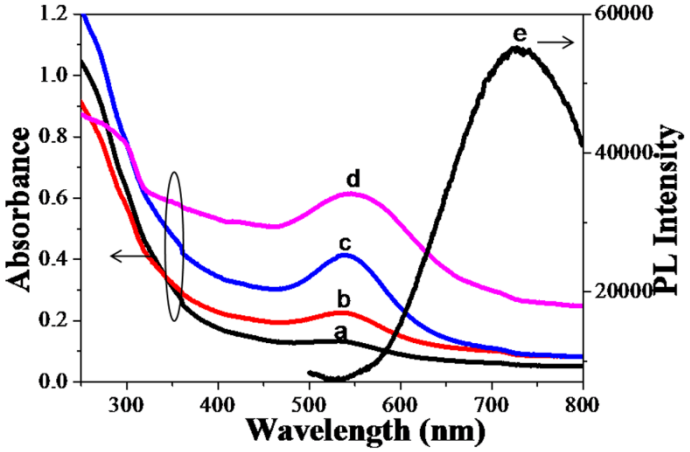

Figure S5 The Uv-vis absorption spectra of gelatin/Si-Au NPs composite films prepared for (a) 1 hour, (b) 3 hours, (c) 6 hours, and (d) 72 hours; (e) PL spectra of gelatin/Si NPs composite film. The excited wavelength is 325 nm.