Sn-Fe cyanogels noncovalently grafted by carbon nanotube in versatile biointerface design: an efficient matrix and a facile platform for glucose oxidase immobilization

Hailing Liu,‡ Baoping Chen,‡ Dongmei Sun,* Yiming Zhou, Yawen Tang, Yu Chen, and Tianhong Lu

Jiangsu Key Laboratory of New Power Batteries, Jiangsu Key Laboratory of Biofunctional Materials, Collaborative Innovation Center of Biomedical Functional Materials, College of Chemistry and Materials Science, Nanjing Normal University, Nanjing 210023, PR China.

E-mail: sundongmei@njnu.edu.cn
Fig. S1 SEM images of the Cyanogels-PB-MWCNTs/Au electrode in different magnification.
Fig. S2 Digital photographs of (A) the Sn-Fe cyanogels and (B) the silica gel, entrapped with the same amount of GOx after immersed in 48 mM sodium acetate buffer solution at pH 5.1 for various time under 4 °C.
Fig. S3 (A) Kinetic curves of GOx-bound Sn-Fe cyanogels film (a, b, c) and GOx-bound silica gel film (d, e, f) in 48 mM sodium acetate buffer solution at pH 5.1, containing 0.16 mM o-dianisidine, 1.61% (w/v) glucose, and 1.94 units/mL POD, determined by monitoring the corresponding absorbance spectra of oxidized o-Dianisidine at 500 nm at different reaction time by UV-visible spectrophotography. The enzyme-bound complex films were immersed in 48 mM sodium acetate buffer solution at pH 5.1 for (a, d) 0 h, (b, e) 5 h, (c, f) 7 days, before detection. (B) The activity profile of the immobilized enzyme normalized on the initial activity of GOx entrapped in Sn-Fe cyanogels film as shown in kinetic curve a.
Fig. S4 Effect of temperature on response current of the Cyanogels-PB-MWCNTs/Au electrode toward glucose biosensing at the concentration of $2.00 \times 10^{-1}$ M.