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Electronic Supporting Information

A Fluorescent Chitosan Hydrogel Detection Platform for Sensitive and Selective Determination of Trace Mercury (II) in Water

Zhigang Geng[a], Haimin Zhang*[a], Qizhong Xiong[a], Yunxia Zhang[a], Huijun Zhao[a,b], Guozhong Wang*[a]

[a] Key Laboratory of Materials Physics, Centre for Environmental and Energy Nanomaterials, Anhui Key Laboratory of Nanomaterials and Nanotechnology, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei 230031, P.R. China. Email: hmzhang@issp.ac.cn, gzhwang@issp.ac.cn.

[b] Center for Clean Environmental and Energy, Griffith University, Gold Coast Campus, Queensland 4222, Australia.

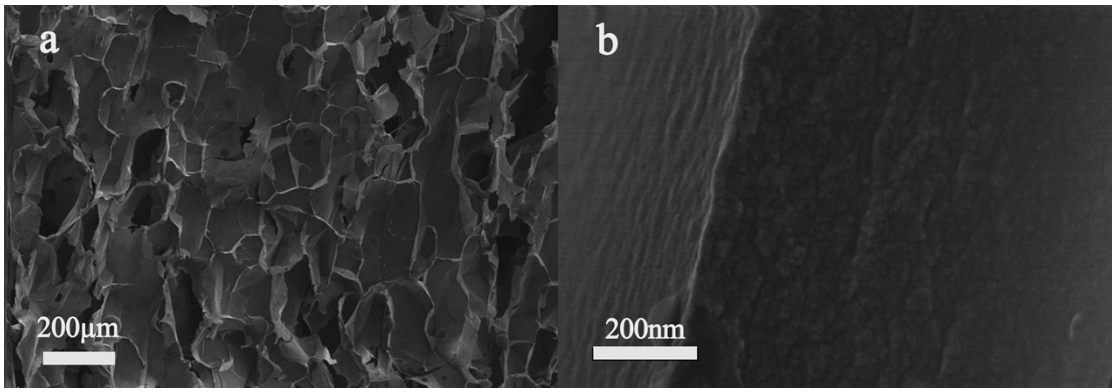

Figure S1. SEM of the chitosan aerogel (a) and HRSEM (b).

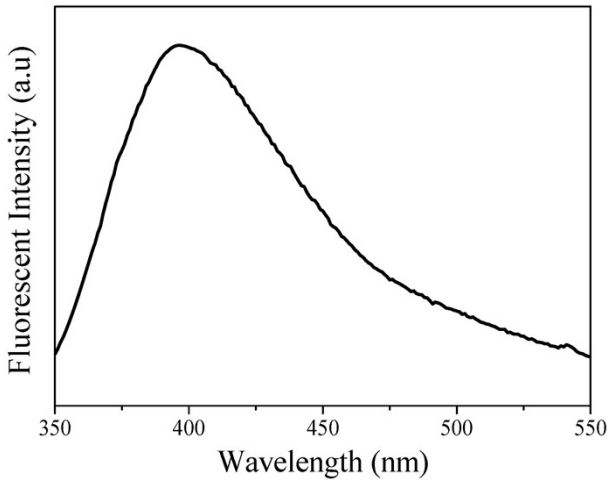

Figure S2. The fluorescent emission spectra (at 395 nm) of the 3D-FCH with the excitation light at 295 nm

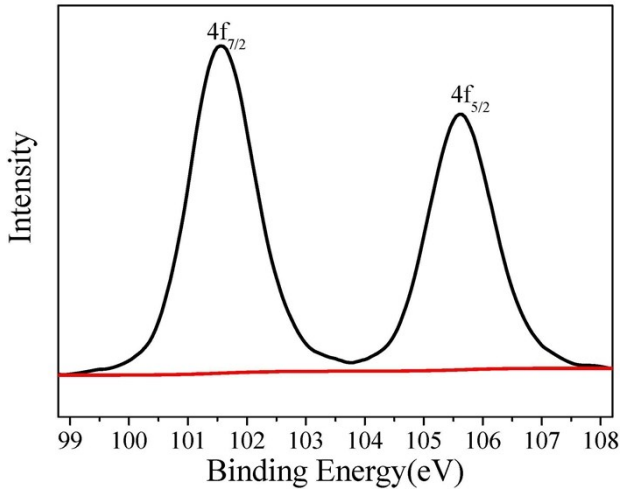

Figure S3. The XPS spectra of Hg^{2+}, the sample is the 3D-FCH was dipped in the Hg^{2+} solution with concenteration of 50 ppb for 0.5 h.

Fluorescent Quenching by different Concentration of Hg^{2+}

To make sure the size of the 3D-FCH is uniform, the 3D-FCH were cut into the same cube with the thickness of 0.1 cm. It was added into different concentration of the Hg^{2+} solution with 500 mL for 0.5h. The 3D-FCH was washed with DI water for further test.

Quantum Yield of the 3D-FCH

The fluorescence Quantum Yield of the 3D-FCH was calculated with the following equation.

$$Q = Q_R \, I \, A_R \, n^2 / I_R \, A \, n_R^2$$

quinine sulfate in 0.1 mol/L H_2SO_4 (literature quantum yield was 0.54 at 337 nm)was chose as a standard. Since Q is the quantum yield, I is the measured integrated emission intensity, n is the refractive index, and A is the absorbance (kept below 0.05). The subscript R refers to the reference fluorophore of known quantum yield.

Sample	Intergrated emission intensity (*I*)	Abs.at 337nm (*A*)	Refractive index of solvent(*n*)	Quantum yield at 337nm (*Q*)
Quinine sulfate	104086072	0.01	1.33	54%
3D-FCH	50668856	0.04	1.46	7.9%