Supporting Information

Hierarchical nanofibrous silicon as replica of natural cellulose substance

Yanhua Zhang and Jianguo Huang*

Department of Chemistry, Zhejiang University, Hangzhou, Zhejiang 310027, China
E-mail: jghuang@zju.edu.cn

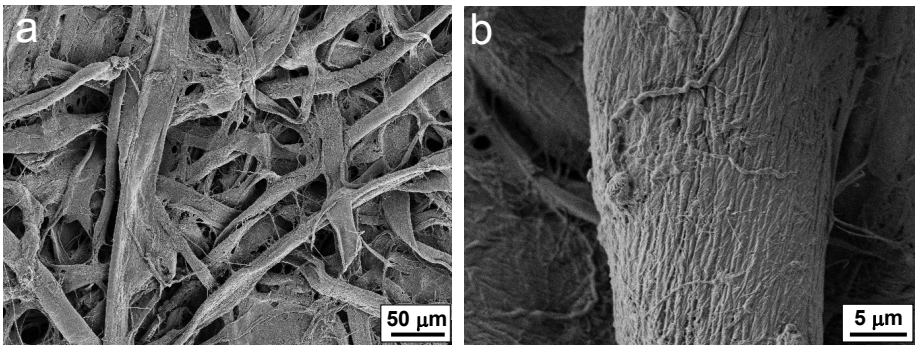

Fig. S1 FE-SEM images of virginal filter paper at various magnifications, showing the cellulose microfibre network and each microfibre is composed of fine fibre assemblies.

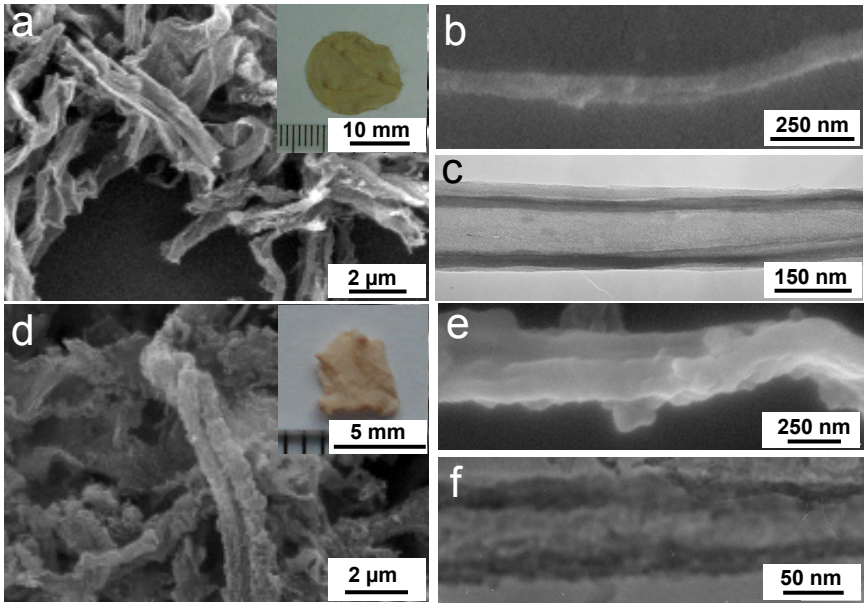

Fig. S2 Silica thin film (thickness *ca.* 7.5 nm) pre-coated filter paper further modified with N-[3-(trimethoxysilyl)propyl)]-ethylendiamine or (3-mercaptopropyl)trimethoxy-silane monolayers were found to selectively adsorb Cu^{2+} or Hg^{2+} ions respectively from diluted aqueous solutions. Calcination of the copper or mercury ion adsorbed filter paper resulted in nanotubular structured or SiO_2/CuO or SiO_2/HgO hybrid sheets (photographs shown in the insets of panels a and d). (a) and (b), Field emission scanning electron micrographs (FE-SEM) of the silica/copperoxide hybrid sheet; (d) and (e), FE-SEM images of the silica/mercuryoxide hybrid sheet. (c) and (f), Transmission electron micrographs (TEM) of the corresponding individual nanotubes, where the hollow tube structures are clearly visualized. (for reference, see: X. Zhang and J. Huang, *Chem. Commun.*, 2010, **46**, 6042.)