

## **Figures in Supplementary Information**

Figure S1. FT-IR of mesoporous silica film before and after CTAB surfactant removal.



**Figure S2.** AFM images of different substrates (A) ITO, (B) P-ITO, (C) heavily doped silicon wafer and (D) IZO.



**Figure S3.** (A) SEM image of the silica thin film on a silicon wafer substrate, (B) EDX elemental information of the silica thin film and (C) EDX of the silicon wafer substrate.



**Figure S4.** TEM of nanoporous silica film detached from P-ITO substrate by ultrasonication. (A) low magnification image showing a partial square of the TEM grid with a 'fished out' silica film that is folded over on itself and (B) high magnification image of nanoporous silica film shown in (A).