

Supporting Information

Improved stability and enhanced efficiency of dye sensitized solar cells by use of europium doped yttrium vanadate down-shifting nanophosphor

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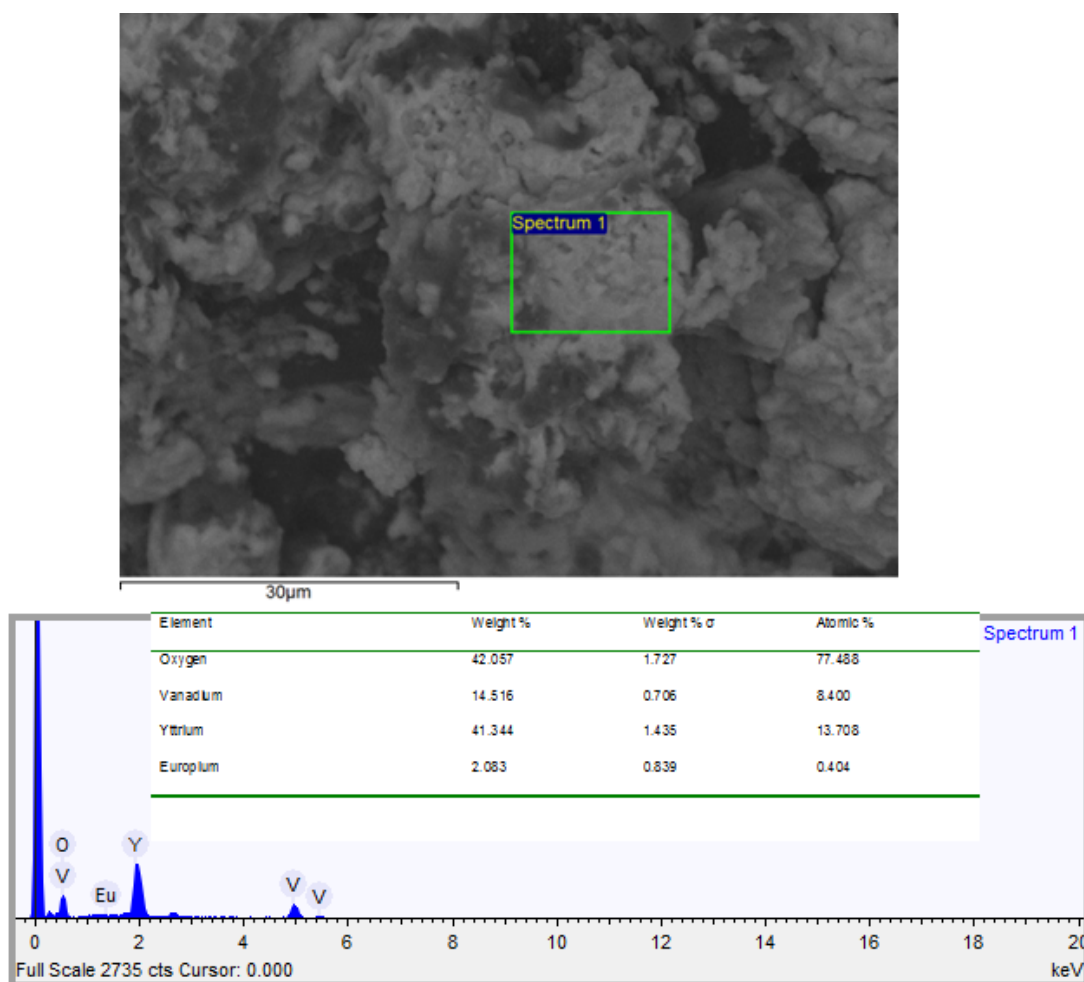


Fig. S1. Energy dispersive X-ray spectrum (EDS) of the synthesized $\text{YVO}_4:\text{Eu}^{3+}$ nanophosphor recorded using Hitachi TM3000 table-top scanning electron microscope equipped with SwiftED 3000 EDX detector.

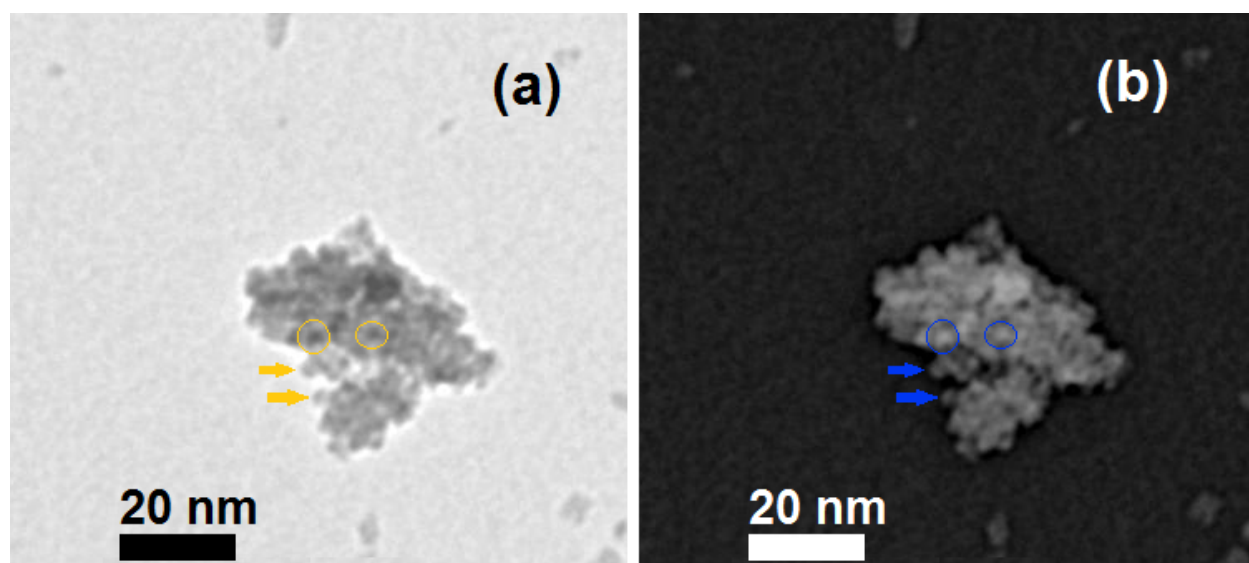


Fig. S2. (a) Transmission electron micrograph of $\text{YVO}_4:\text{Eu}^{3+}$ nanoparticles and (b) its inverted color image. The size of nanoparticles, as seen from the images, is less than 5 nm.

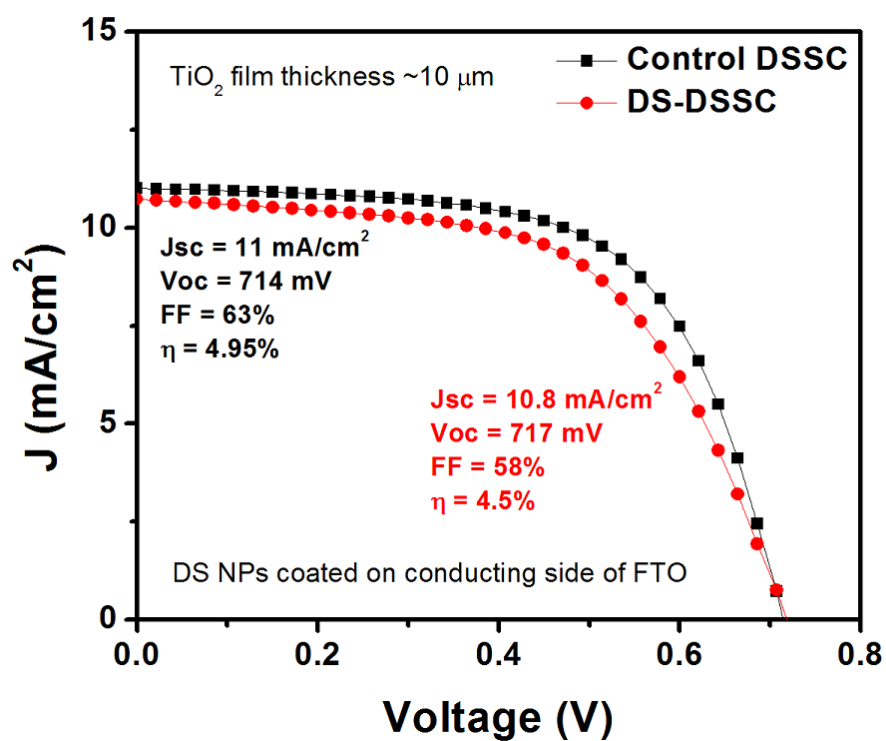


Fig. S3. Current density-voltage curve of control and DS-DSSCs. The phosphor nanoparticles are coated on the conducting side of FTO substrate.

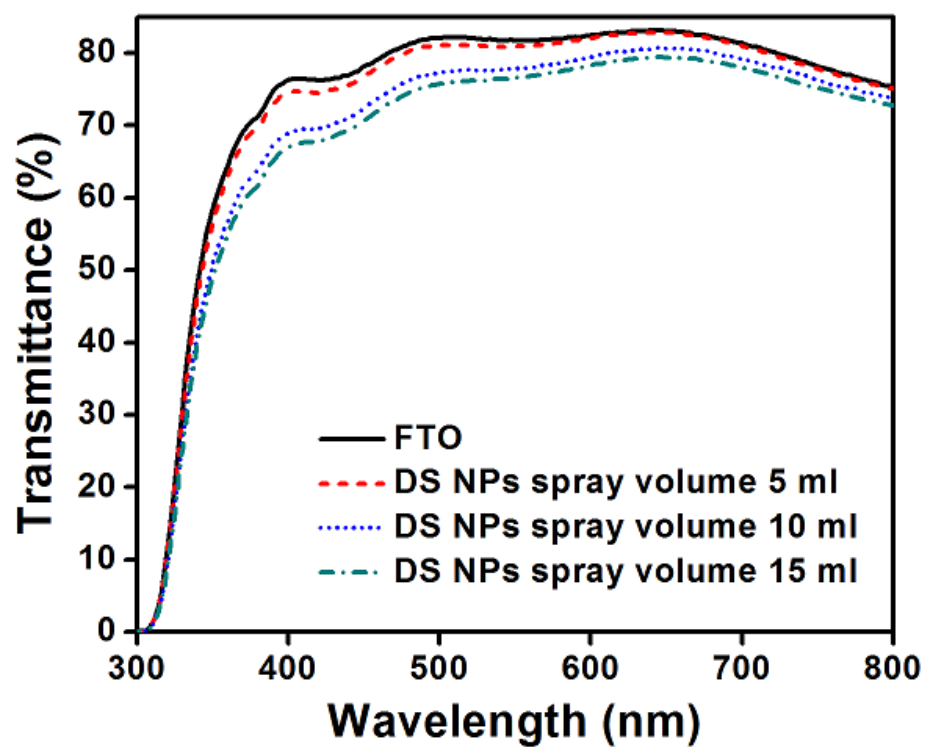


Fig. S4. Transmittance spectra of bare and phosphor coated FTO substrates.

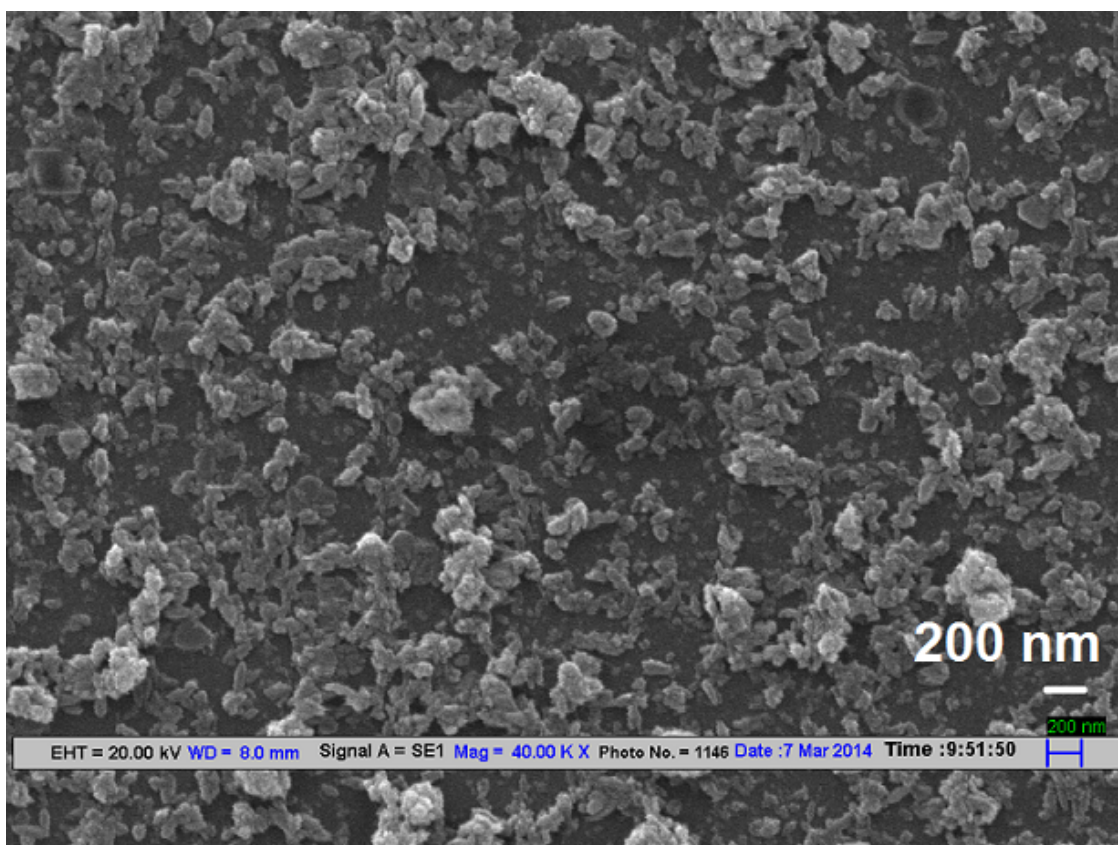


Fig. S5. Scanning electron micrograph of a spray deposited nanophosphor film on glass substrate.