## **Supplementary Information**

## Transparent and Flexible Thin Films of ZnO-Polystyrene Nanocomposite for UV-Shielding Applications

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## **Experimental details**

The UV-Vis spectra of the colloidal ZnO nanocrystals, neat polystyrene, and ZnO-PS nanocomposites were recorded on a UNICO UV2100 UV-Vis spectrometer under absorbance and transmittance modes. Transmission electron microscopy (TEM) observations on the colloidal ZnO nanocrystals were carried out using JEOL JEM-1230 operated at 80 k eV. High-resolution TEM (HRTEM) was performed on a TECNAI G2 F20 transmission electron microscope operated at 200 k eV. Thin sections, *ca.* 80 nm in thickness, from the composite films were prepared by a Reichert-Jung microtome and examined by a TEM (CM200) operated at 160 k eV. X-ray diffraction (XRD) measurement was performed on a Bede D1 system with a CuK $\alpha$  radiation ( $\lambda = 1.5406$  Å). The thermal stability of PS and ZnO-PS nanocomposite films was analyzed with Pyris 1 TGA (Perkin-Elmer) apparatus. The analyses were performed by heating at 10 °C/min from room temperature to 600 °C in a N<sub>2</sub> ambience. PL spectra were recorded by a FLS-920 fluorescence spectrometer (Edinburgh Instruments), with a 300 nm line of a Xenon lamp.

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**Fig. S1.** Typical (a) UV-Vis absorption spectrum, (b) PL spectrum and (c) XRD pattern of the PS composite films.