Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A

Supporting Information

High-efficiency hybrid solar cells by nanostructural modification in PEDOT:PSS with co-solvent addition

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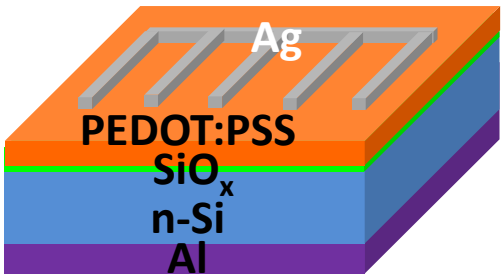

Scheme S1. Schematic diagram of the device structure of the hybrid solar cell used in the present work.

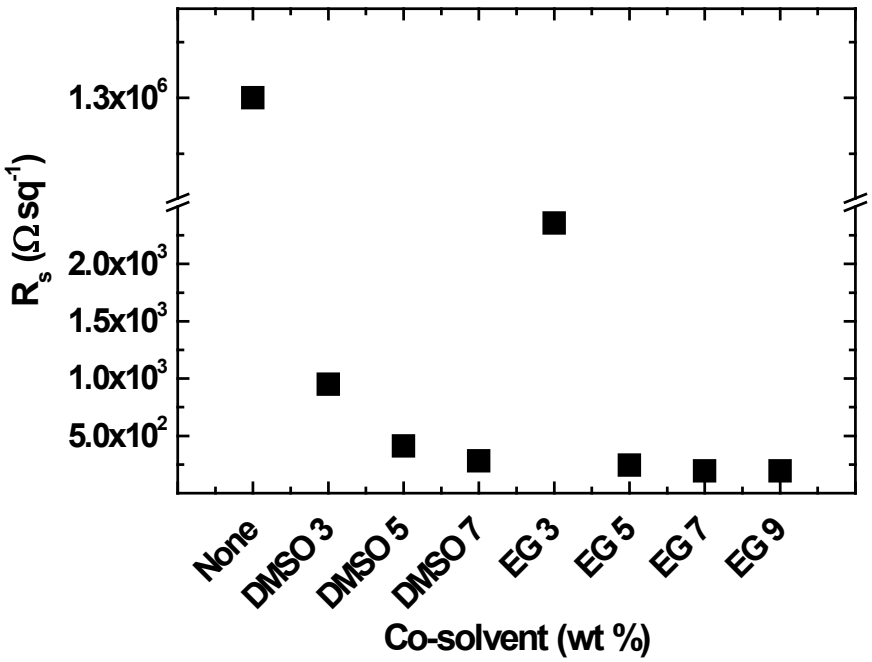

Figure S1. Sheet resistance (R_s) variation with and without the addition of co-solvents in PEDOT:PSS film spin-coated on glass substrates.

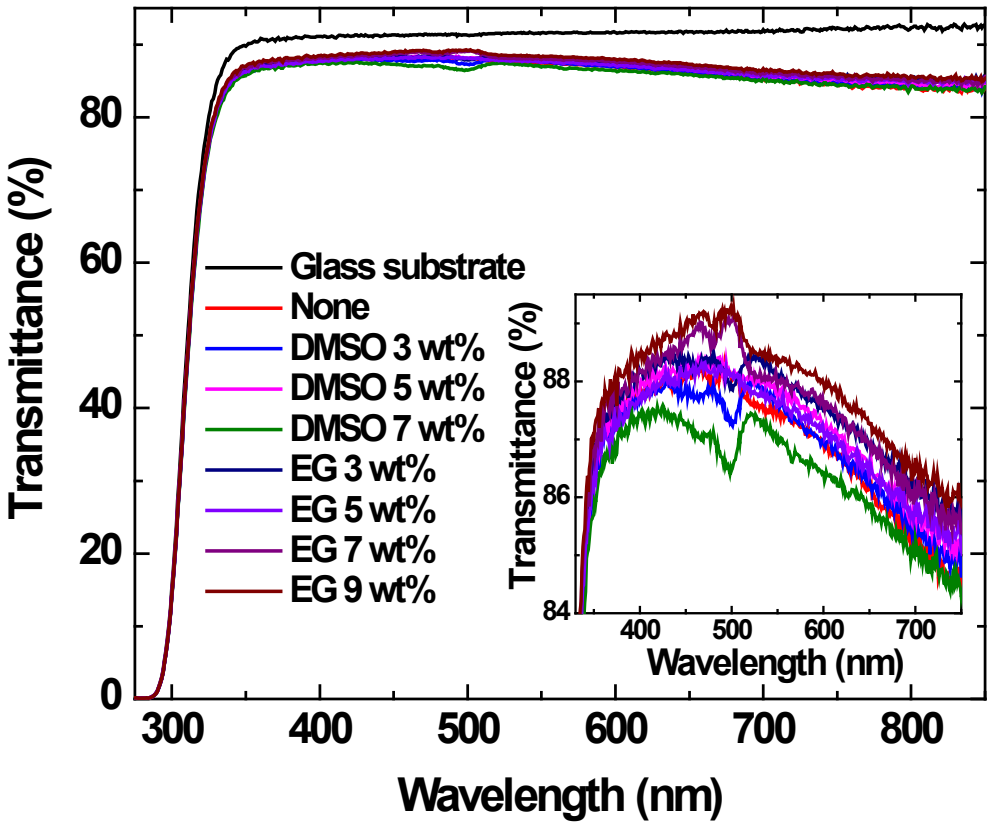

Figure S2. Transmittance spectra of PEDOT:PSS films on glass substrates in the UV-Vis range (Perkin Elmer 1050). The transmittance spectrum of a glass substrate is also shown in the figure for comparison. The inset shows an enlarged view of the transmittance spectra of PEDOT:PSS films.

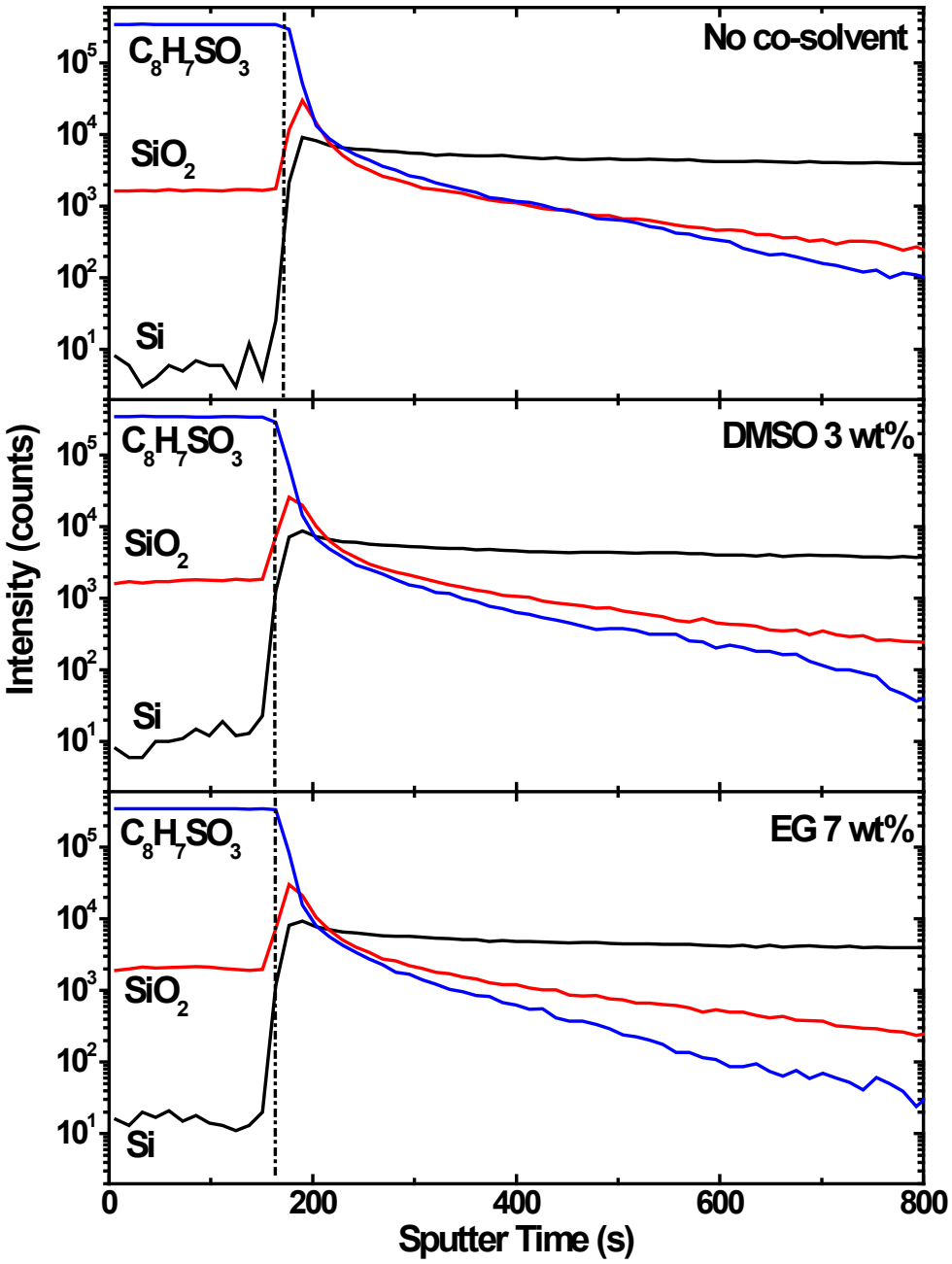

Figure S3. TOF-SIMS depth profiles (negative polarity mode) of PEDOT:PSS spin-coated on Si substrate before and after the addition of 3 wt% DMSO and 7 wt% EG. The dotted lines mark the interface between PEDOT:PSS and Si, which indicates a slight variation in the sputtering time to reach the interface due to the difference in film thickness after the addition of co-solvents.

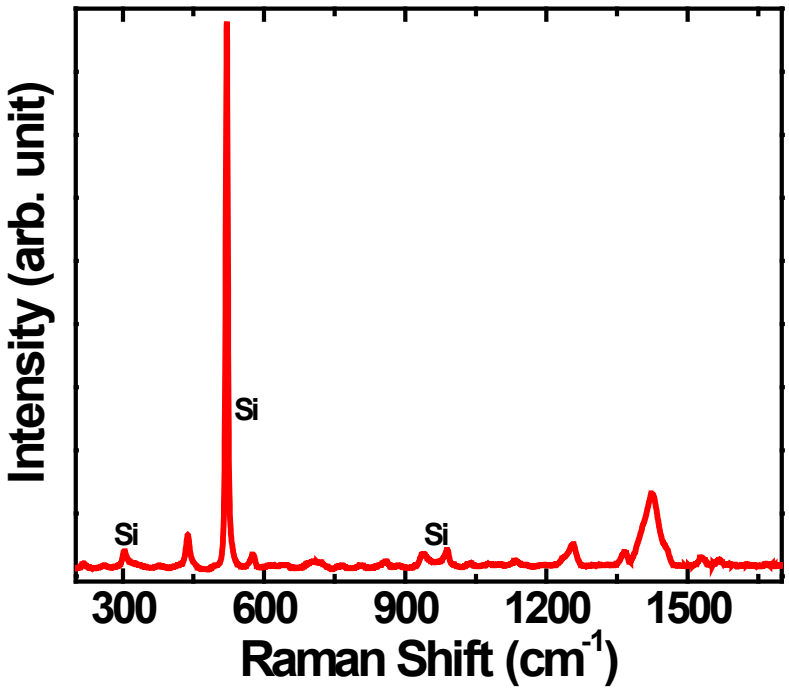

Figure S4. Raman spectra of PEDOT:PSS film spin-coated on Si substrate. The Si (substrate) features are marked.

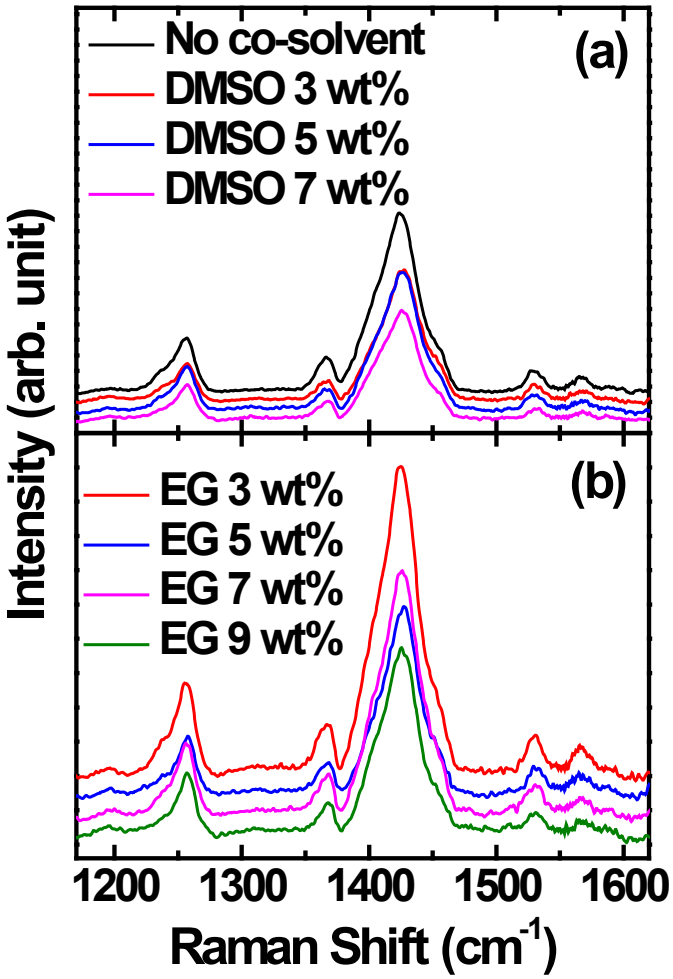

Figure S5. Raman spectra of PEDOT:PSS films spin-coated on Si substrates (a) before and after the addition of 3 to 7 wt% of DMSO and (b) of 3 to 9 wt% of EG in the range of 1170-1620 cm^{-1}.

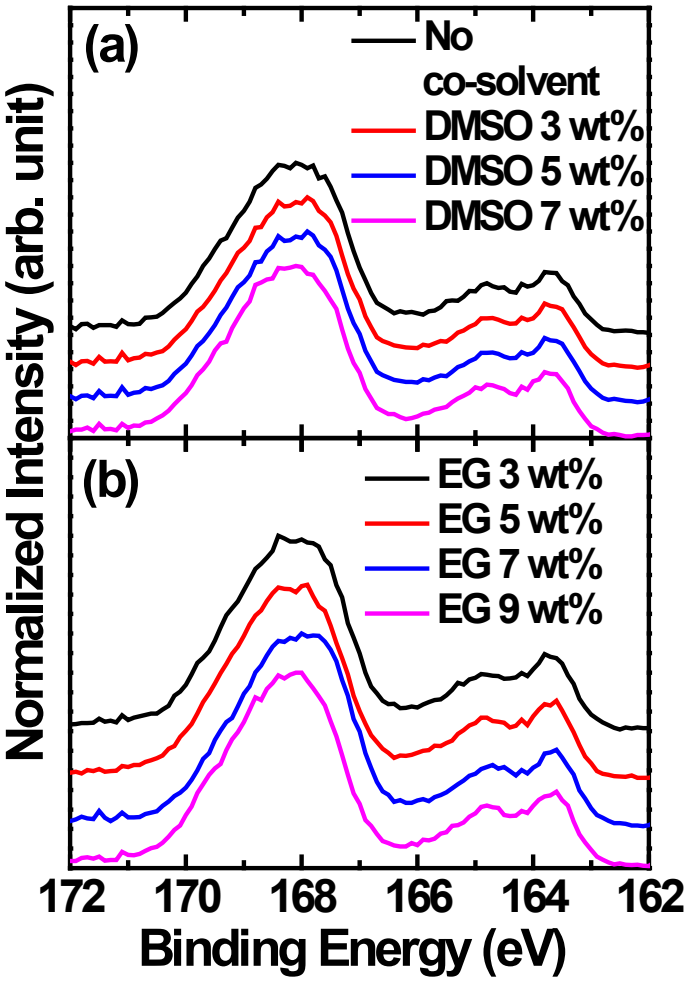

Figure S6. XPS spectra of the S 2p region of PEDOT:PSS films spin-coated on Si substrates (a) before and after the addition of 3 to 7 wt% of DMSO and (b) of 3 to 9 wt% of EG.