Electronic Supporting Information

A new developed lithium cobalt oxide super hydrophilic film for large area,
thermally stable and highly-efficient inverted perovskite solar cell

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Figure S1: Photoelectron spectra of LiCoO$_2$ films prepared at various applied power.
Figure S2: Representative (a) absorption spectra of LCO-60 and LCO-100 films. (b) XRD pattern of the sputtering made LiCoO$_2$ films (the thickness of the films for absorption and XRD are 18 nm and 1 μm, respectively).
Figure S3: SEM images of the perovskite films deposited on LiCoO$_2$ prepared from various sputtering powers.
Figure S4: Absorption (a) and photo luminescence spectra of MAPbI$_3$ films deposited on LiCoO$_2$ prepared from various sputtering powers.
Figure S5: The histograms of the efficiency of the best performance inverted PSCs (total number of the cells: 32)

Figure S6: I-V curve of the ITO/PEDOT:PSS/LiCoO$_2$/Au hole only device.
Figure S7: Water contact angle of LiCoO$_2$ (LCO-100) films (a) before (b) after UV/ozone treatment.
Figure S8: The histograms of the efficiency of the best performance inverted perovskite sub-modules (total number of the sub-modules: 35)
Figure S9. The report of the efficiency verification of the inverted perovskite solar sub-module.
Figure S10. The pattern designed for the inverted perovskite solar sub-module.