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A metal chelation strategy suppressing chemical reduction between PEDOT and polyethyelenimine for a printable low-work function electrode in organic solar cells

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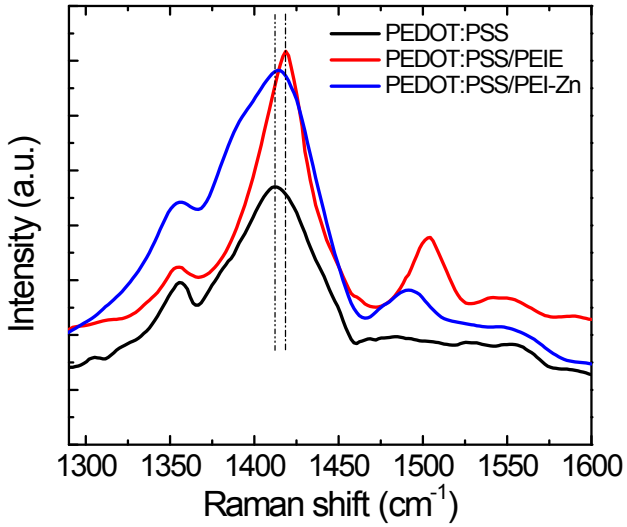

Figure S1 Raman spectra of PEDOT:PSS, PEDOT:PSS/PEIE and PEDOT:PSS/PEI-Zn films.

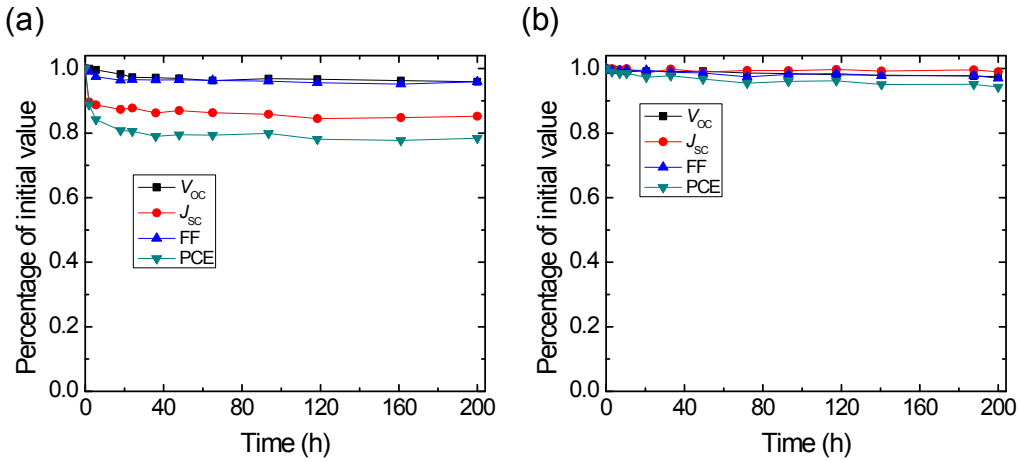

Figure S2 Evolution of photovoltaic parameters of devices with the structure of Glass/PEDOT:PSS/PEI-Zn/PM6:Y6:$PC_{71}BM$/MoO_3/Ag for long term stability. (a) thermal stability of devices with continuous 85˚C annealed in a N_2-filled glove box; (b) Photo-stability of devices under continuous white light LED illumination (100 mW/cm^2) in a N_2-filled glove box.

Table S1 Photovoltaic performance of blade-coated devices with different substrate temperature with device structure of glass/PEDOT:PSS/PEI-Zn 15:1(blade-coating)/PM6:IT-4F/MoO_3/Ag under AM 1.5G illumination. Photovoltaic parameters were averaged over 15 devices.

Temperature(˚C)	V_{OC} (V)	J_{SC} (mA cm^{-2})	FF (%)	PCE (%)
30	0.80 ± 0.01	17.2 ± 0.1	65.9 ± 0.3	9.1 ± 0.3
40	0.81 ± 0.01	17.3 ± 0.2	68.0 ± 1.3	9.5 ± 0.3
50	0.81 ± 0.01	17.3 ± 0.2	68.1 ± 2.2	9.6 ± 0.5
60	0.81 ± 0.01	17.4 ± 0.3	69.0 ± 0.5	9.7 ± 0.2
70	0.81 ± 0.01	17.5 ± 0.2	69.9 ± 0.5	9.9 ± 0.2
80	0.81 ± 0.01	17.4 ± 0.1	70.3 ± 0.4	9.9 ± 0.3