Electronic Supplementary Information

Bi-layer hole-injecting layer composed of molybdenum oxide and polyelectrolyte for solution-processed OLEDs with prolonged stability

Jinghong Peng, Xinjun Xu,* Chuang Yao and Lidong Li*

State Key Lab for Advanced Metals and Materials, School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, China

E-mail: xuxj@mater.ustb.edu.cn; lidong@mater.ustb.edu.cn

Work function measurements

PF-KPFM images (5 μm × 5 μm scale) of the bare ITO, ITO/PEDOT:PSS, single MoO_3 layer, MoO_3/PSS-Na bi-layer, and Au reference film are shown in Fig. S1. The average relative CPD of them were 454, 738, 928, 1220, and 767 mV, respectively. Thus the work function of the ITO, PEDOT:PSS, single MoO_3 layer, and MoO_3/PSS-Na bi-layer were calculated to be about 4.8, 5.1, 5.3, and 5.6 eV, respectively.

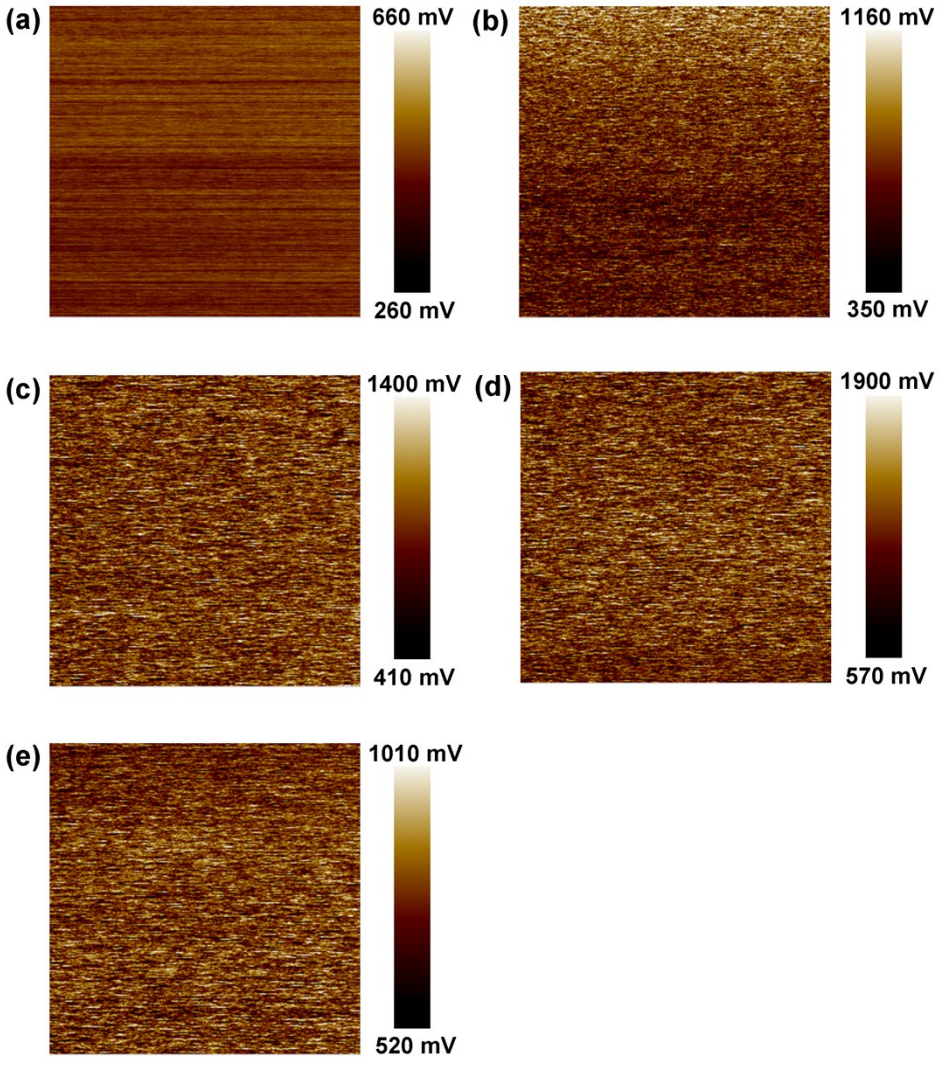

Fig. S1 PF-KPFM images (5 μm × 5 μm scale) of the (a) bare ITO, (b) ITO/PEDOT:PSS, (c) single MoO_3 layer, (d) MoO_3/PSS-Na bi-layer, and (e) Au reference film.

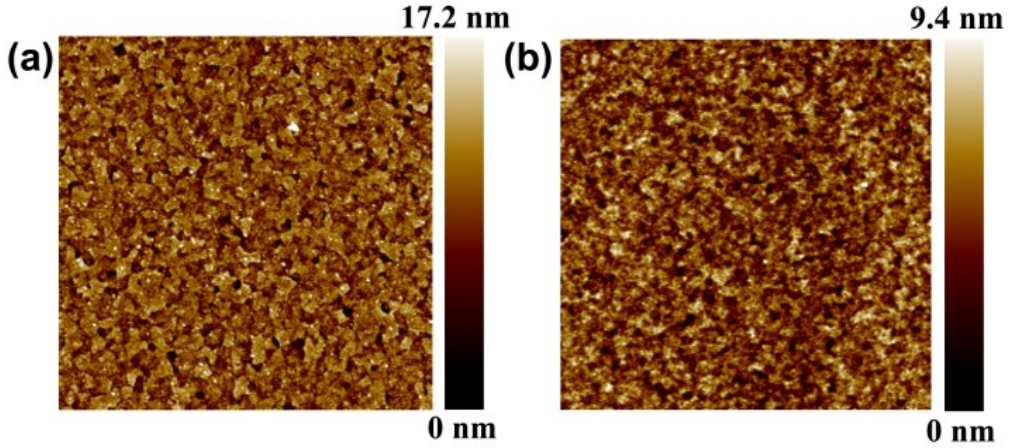

Fig. S2 AFM images (5 μm × 5 μm scale) of the (a) bare ITO and (b) ITO/PEDOT:PSS substrates.

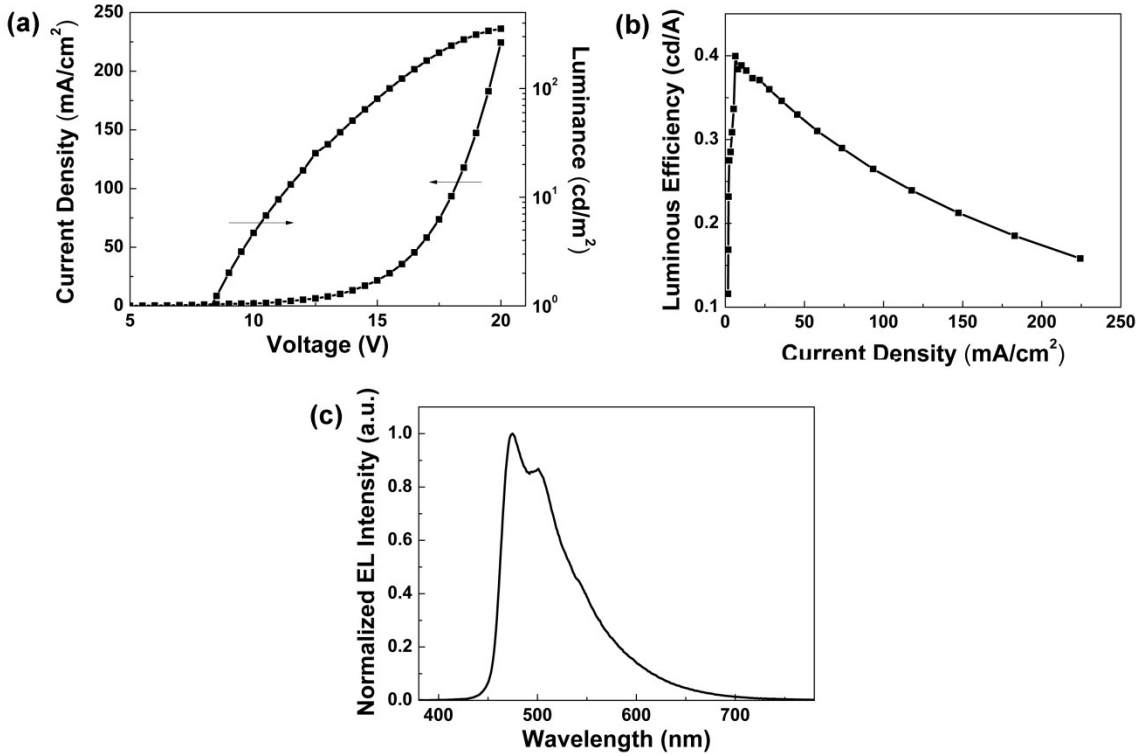

Fig. S3 (a) *J–L–V* characteristic, (b) η–*J* characteristic and (c) normalized EL spectrum of device based on single MoO_3 HIL.

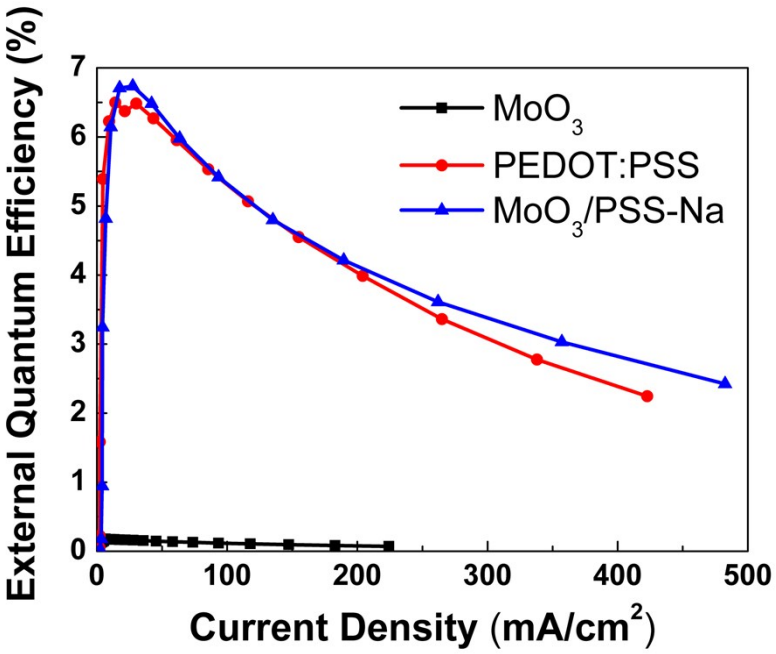

Fig. S4 EQE–*J* characteristics of devices with different HIL.

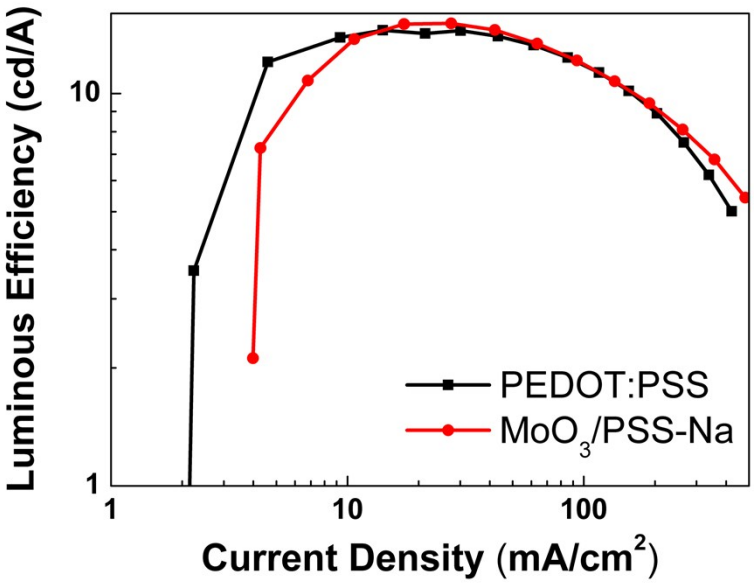

Fig. S5 η–J characteristics in double-logarithmic scale of devices based on BHIL with different thickness of PSS-Na.

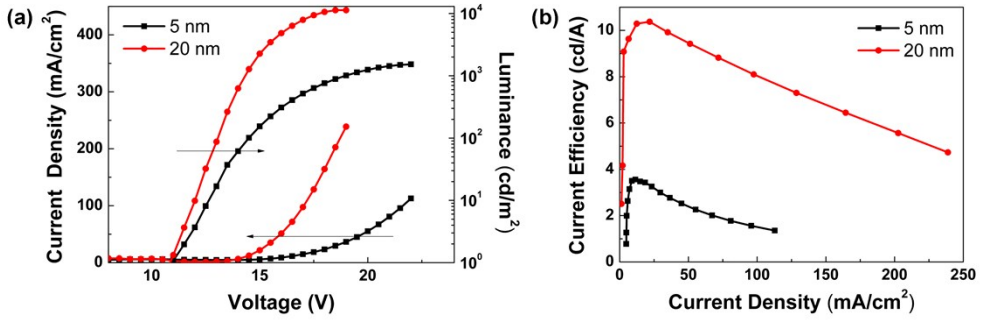

Fig. S6 (a) *J*–*L*–*V* and (b) η–*J* characteristics of devices based on BHIL with different thickness of PSS-Na.