

Supporting Information

Enhanced Charge Collection and Stability in Planar Perovskite Solar Cells based on Cobalt(III)-complex Additive

Yunping Ma,^a || Jiandong Fan,^{a,b} || Cuiling Zhang,^a Hongliang Li,^a Wenzhe Li^{b*} and Yaohua Mai^{a,b*}

^aInstitute of Photovoltaics, College of Physics Science and Technology, Hebei School, Baoding, 071002, China. Email: yaohuamai@jnu.edu.cn

^bInstitute of New Energy Technology, College of Information Science and Technology, Jinan University, Guangzhou, 510632, China Email: li_wz16@jnu.edu.cn

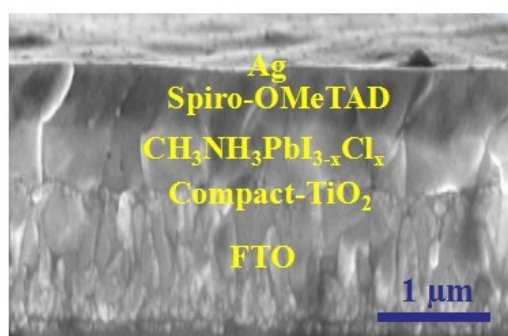


Fig. S1. Cross-sectional SEM image of a PH PVKSC device based on FLS HTL.

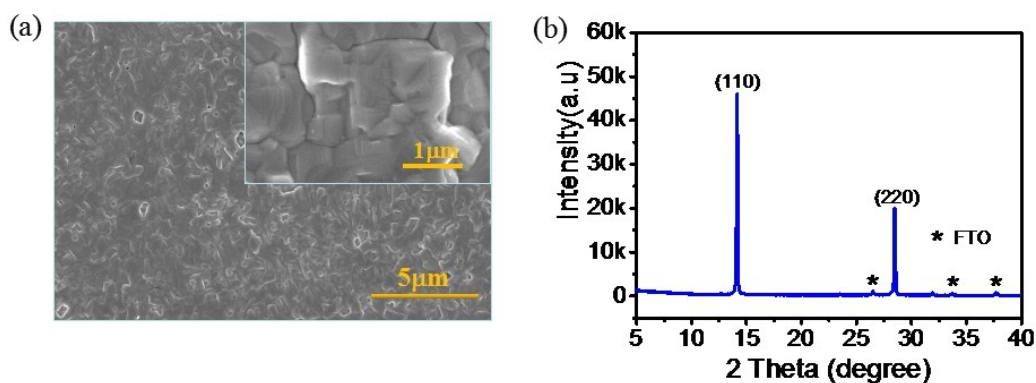


Fig. S2. (a) top-down view SEM image of the perovskite layer, (b) X-ray diffraction pattern of the perovskite film.

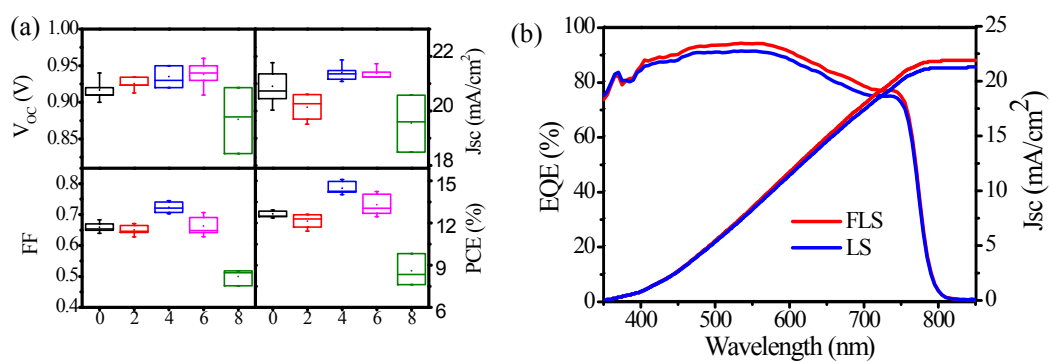


Fig. S3. (a) Device performances with different Co-complex concentration, (b) corresponding external quantum efficiency (EQE)

spectrum.

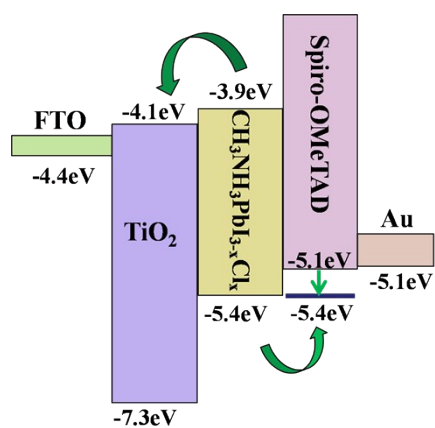


Fig. S4. Energy levels diagram for each components of the device.

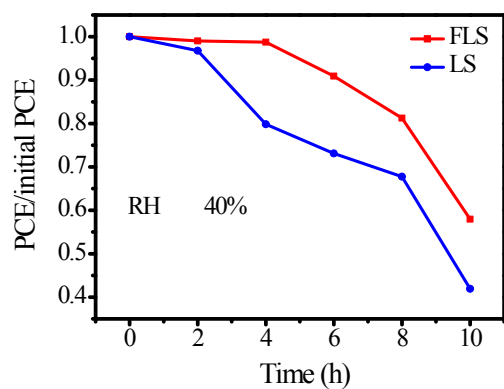


Fig. S5. Normalized PCE evolution of devices with 10 hours in conditions of humidity with 40%.