Support information

Potassium-intercalated Rubrene as Efficient Defects Passivation Agent in High Efficiency Perovskite Solar Cells

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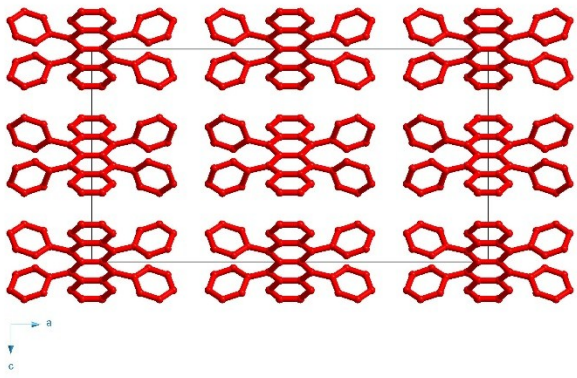

Fig. S1. Crystal structure of rubrene.

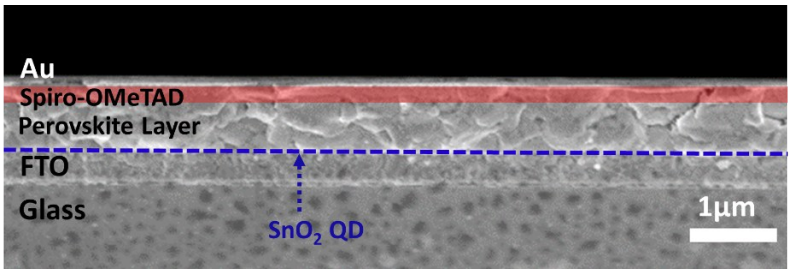

Fig. S2. Cross-sectional SEM image of PSC.

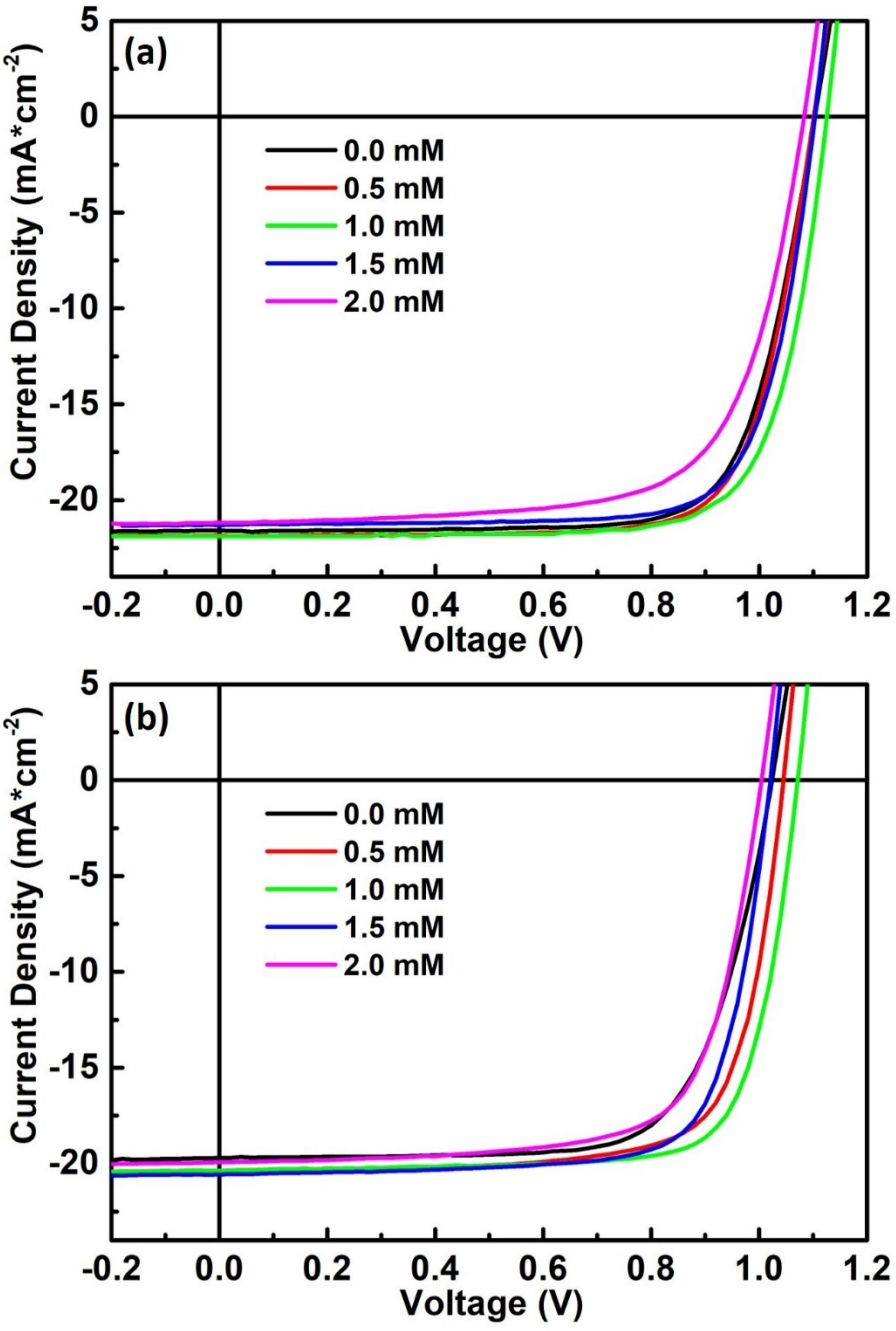

Fig. S3. J-V curve of (a)the mixed ternary cation perovskite $(CsI)_{0.04}(FAI)_{0.82}(PbI_2)_{0.86}(MAPbBr_3)_{0.14}$ and (b) $MAPbI_3$ devices with different K_2Rubrene concentrations dissolved in anti-solvent CB.

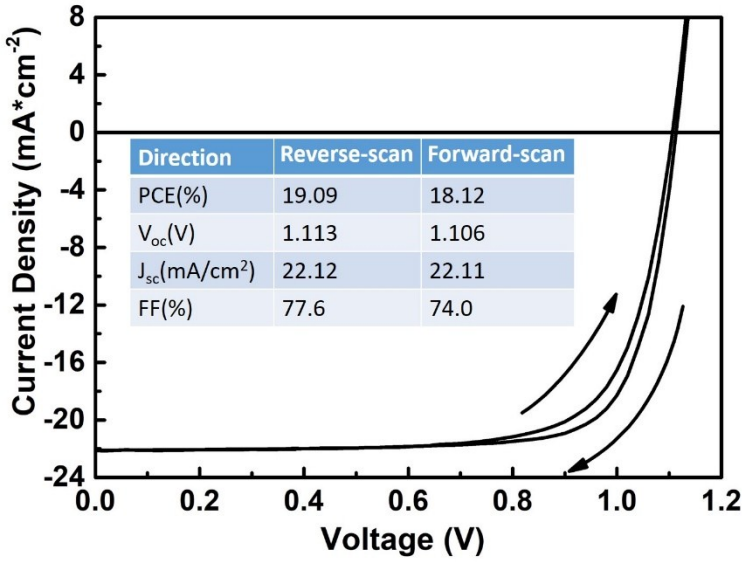

Fig. S4. J-V curve and parameter statistic of the champion device with K_2Rubrene treated.

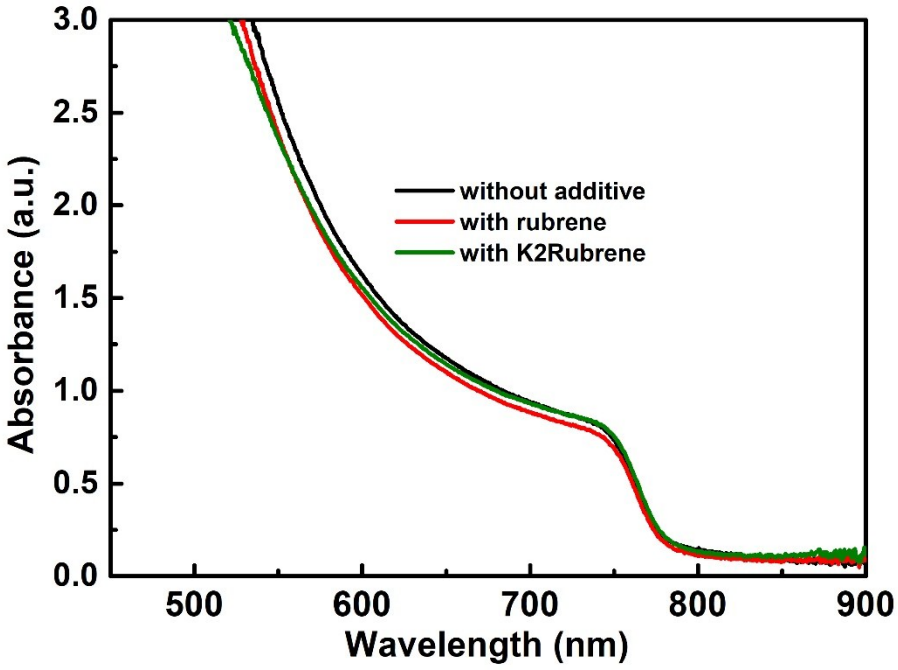

Fig. S5. Absorption spectra of the mixed ternary cation perovskite films without and with rubrene and K_2Rubrene additives in anti-solvent CB.

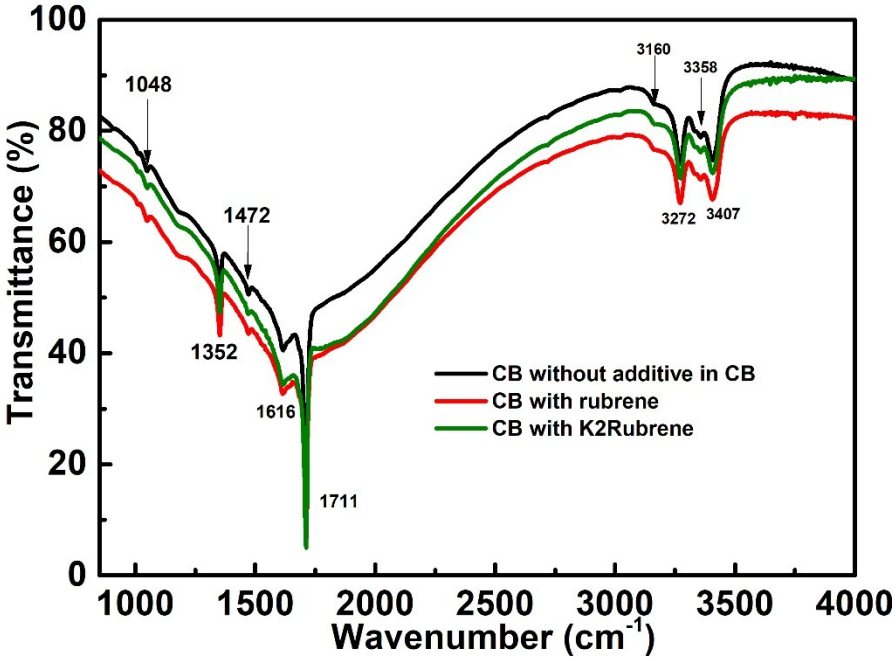

Fig. S6. FTIR spectra of the mixed ternary cation perovskite films without and with rubrene and K_2Rubrene additives in anti-solvent CB.

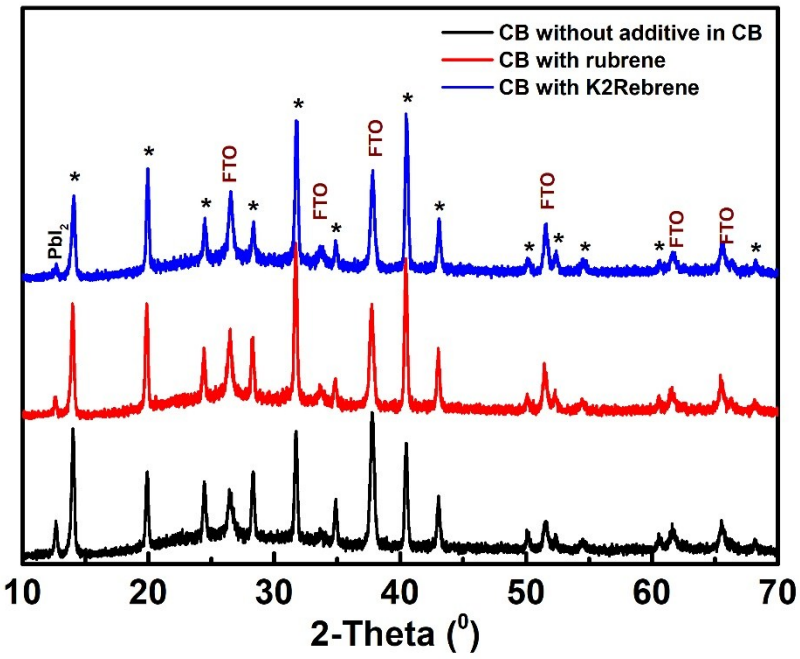

Fig. S7. XRD spectra of the mixed ternary cation perovskite films without and with rubrene and K_2Rubrene additives in anti-solvent CB.