

Supporting Information

An ambient process for hole transport layer free highly stable MAPbI₃ by addition of MACl for efficient perovskite solar cells

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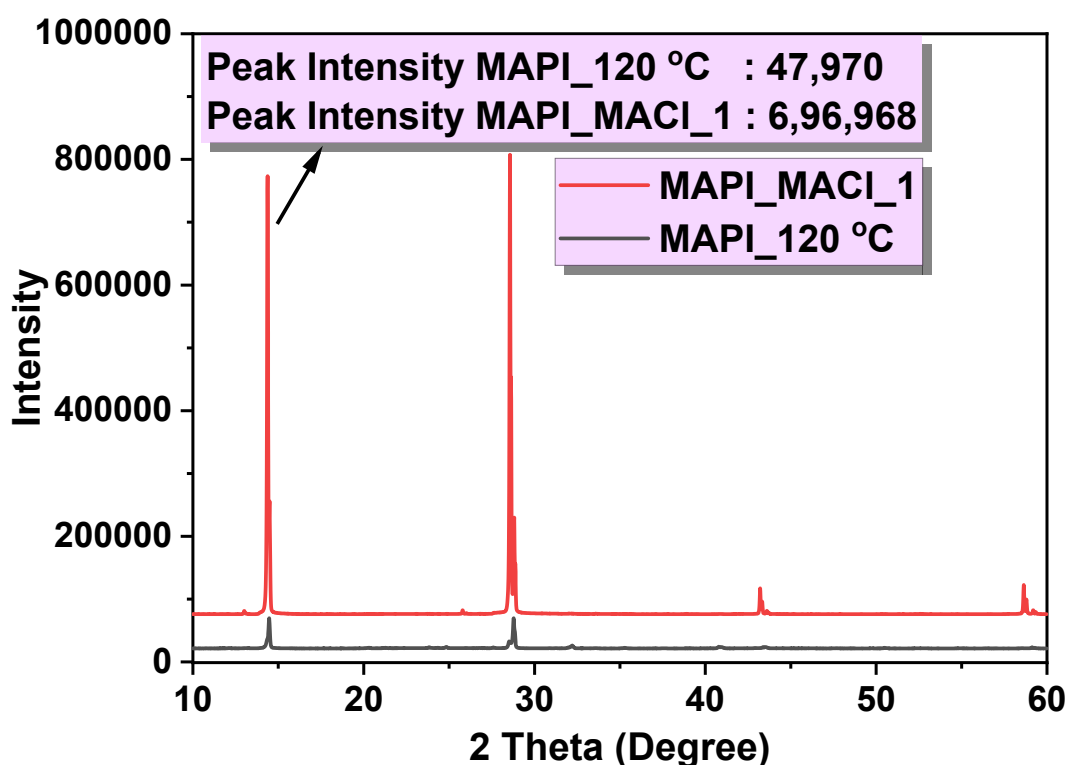


Figure S1. XRD spectra of MAPI_MACI_1 and MAPI_120°C, diffraction peak (110) intensity comparison between both the samples.

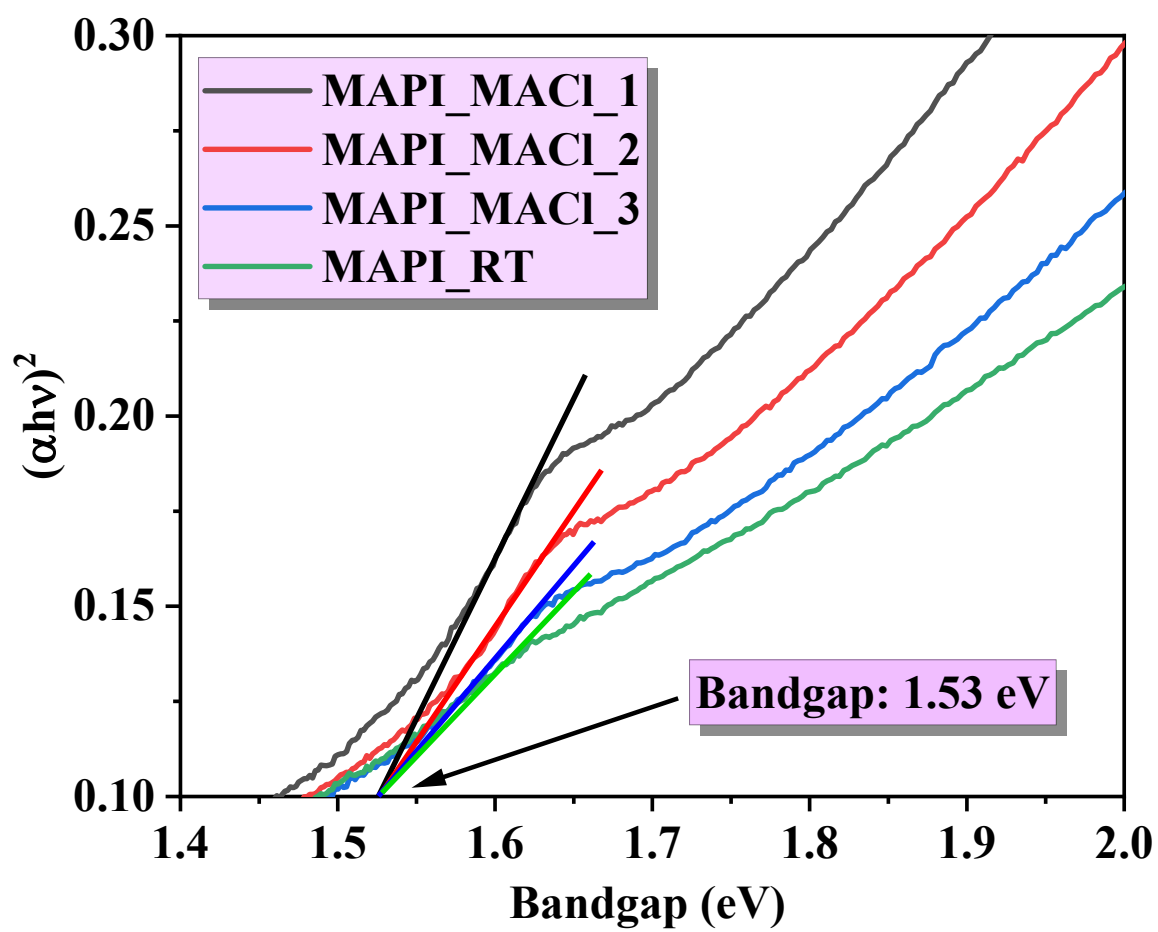


Figure S2. Tauc plot of all the prepared perovskite thin-films calculated using absorbance data.

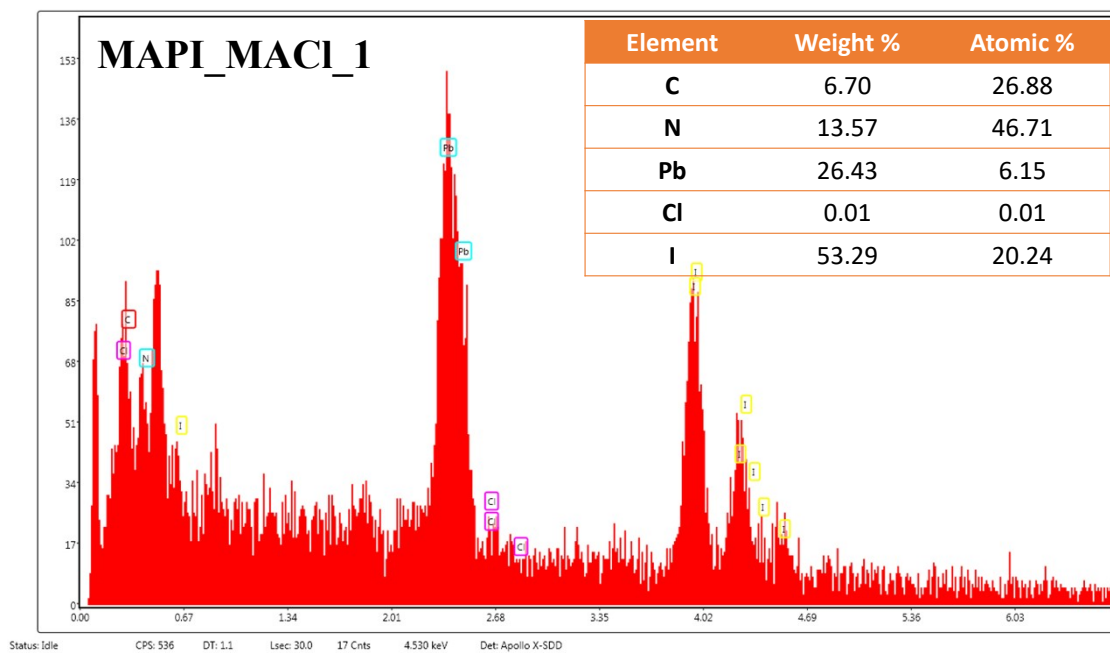


Figure S3. EDAX spectra of MAPI_MaCl_1.

Table S1. Calculated lifetime data of all the prepared perovskite thin-films.

Sample Name	τ_1 (ns)	τ_2 (ns)
MAPI_120 °C	5.4	139.9
MAPI_MACI_1	9.6	222.6
MAPI_MACI_2	6.5	152.6
MAPI_MACI_3	6.0	140.8

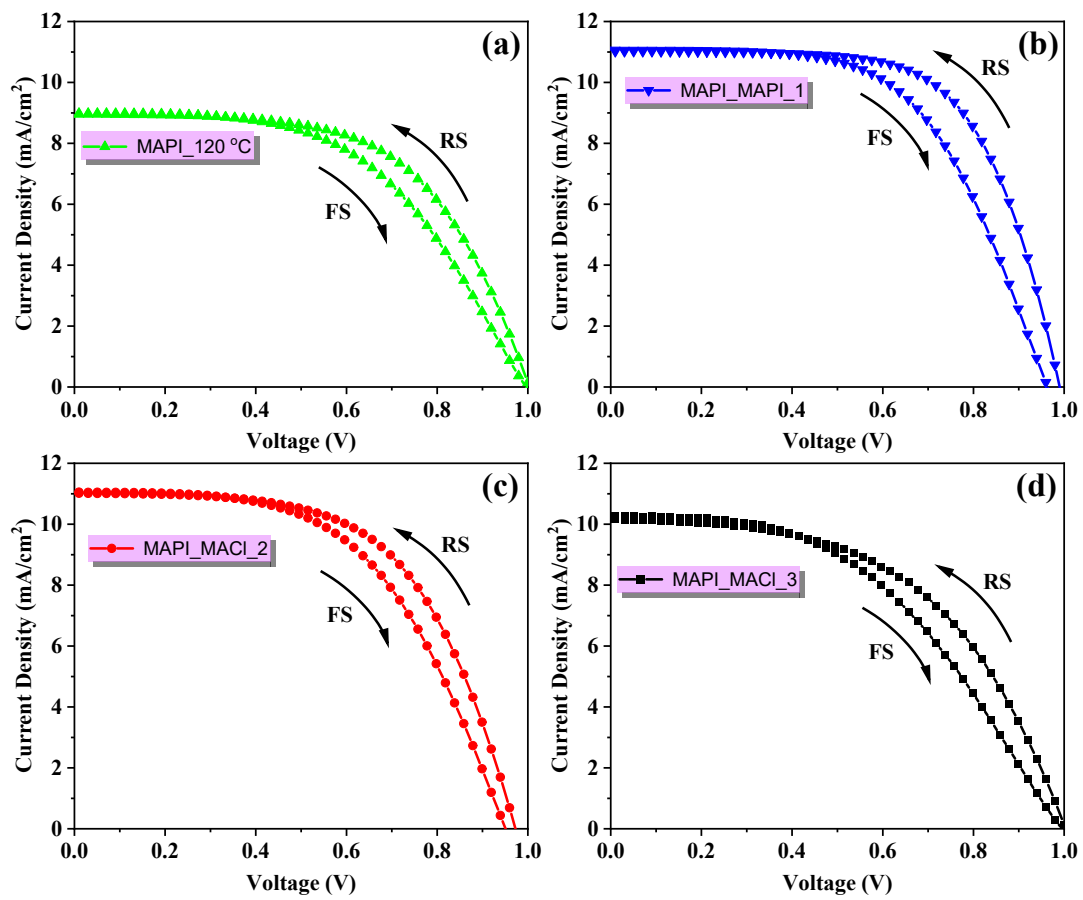


Figure S4. J-V spectra of all the devices with forward scan and reverse scan conditions.

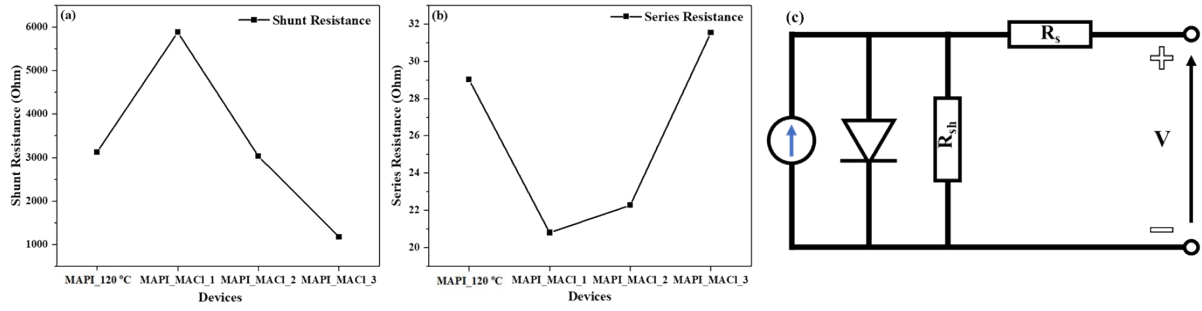


Figure S5. (a) Shunt resistance (b) series resistance of all the fabricated devices and (c) equivalent circuit diagram of perovskite solar cell device.

Table S2. Calculated values of series and shunt resistance for all the solar cell devices.

Device	Series Resistance (R_s) (Ω)	Shunt Resistance (R_{sh}) (Ω)
MAPI_120 oC	29.02	3125.00
MAPI_MACI_1	20.80	5882.30
MAPI_MACI_2	22.27	3030.00
MAPI_MACI_3	31.54	1176.47