Additional Supporting Information:

Title (please update all the red text/data)

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Photovoltaic technology or solar cell type: perovskite/organic/dye-sensitized…

# Current density-voltage characterization (before the stability test, if it is the case)

**Table S1.** Performance parameters: power conversion efficiency, *PCE*; open-circuit voltage, *Voc*; short-circuit current density, *Jsc*; fill factor, *FF*. The bandgap energy, *Eg*, is taken from the external quantum efficiency, *EQE*, as described by Almora et al.[1] (see **Figure S2**).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| *Eg* [eV] | *PCE* [%] | *Voc* [mV] | *Jsc* [mA cm-2] | *FF*[%] | Statistic type of report | *PCE* after 24 h [%] |
| XXX | XXX | XXX | XXX | XXX | Maximum/average over X… | XXX |

**Table S2.** Device materials: absorber material; electron transport material, ETM; Hole transport material, HTM, bottom electrode, top electrode

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Absorber | ETM | HTM | Bottom electrode | Top Electrode | DOI link of article including the original recipe (if it is a reproduction) |
| XXX | XXX | XXX | XXX | XXX | XXX |

**Table S3.** Current density-voltage (*J-V*) measurement conditions. The designated area is as defined by Green et al.[2].

|  |  |
| --- | --- |
| **Parameter** | **Value/description** |
| Incident light intensity[mW cm-2] | XXX |
| Incident spectrum | AM1.5G/While LED… |
| Mask aperture area [cm²] | XXX |
| Total device active area[cm²] | XXX |
| Designated Area[cm²] | XXX |
| Initial J-V measurement graph/data list | **Figure S1**  |
| Maximum power point (MPP) tracking data during 5 minutes | No/Yes, **Figure S1**  |
| *J-V* measurement data file link/graph after 24h: | No/**Figure S1** |
| *J-V* Solar simulator (type, standard, brand, model) | XXX |
| Atmosphere composition | Air/N2/Ar… |
| Temperature [°C] | XXX |
| Use of black matte background | Yes/No |

|  |
| --- |
| substitute this with yours |
| **Figure S1.** Current density-voltage measurement. Add a,b,c plots here for J-V after 24 h and MPP tracking, if it is the case.  |

# External quantum efficiency (EQE)

**Table S4.** External quantum efficiency, EQE, measurement conditions.

|  |  |
| --- | --- |
| **Parameter** | **Value/description** |
| EQE data/graph | **Figure S2** |
| Background illumination intensity [mW/cm²] | XXX |
| EQE measurement instrument (model and brand | XXX |
| Atmosphere composition | Air/N2/Ar |
| Temperature [°C] | XXX |
| Use of black matte background | Yes/No |

|  |
| --- |
|  substitute this with yours |
| **Figure S2.** External quantum efficiency measurement and sigmoid fit of the absorption threshold, for the calculation of the bandgap energy, following the method by Almora et al.[1].  |

# Operational stability test

**Table S5.** Degradation test measurement results and conditions. The stability test energy yields at 200 and 1000 hours are as defined by Almora et al.[3]

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Value/description** | **Comment** |
| In-situ stability test data/graph | **Figure S3** |  |
| Stability test PCE after 200 h [%] | XXX |  |
| Stability test PCE after 1000h [%] | XXX | Extrapolated (see **Figure S3**) |
| Stability test integrated energy output after 200h [Wh/cm²] | XXX |  |
| Stability test integrated energy output after 1000h [Wh/cm²] | XXX | Extrapolated (see **Figure S3**) |
| Incident light intensity [mW/cm²] | XXX |  |
| Incident illumination spectrum | AM1.5G/White LED… |  |
| UV filter | Yes/No |  |
| UV filter description | Wavelength range, model and brand |  |
| Temperature[°C] | XX |  |
| Encapsulation | Yes/No |  |
| Atmosphere composition | Air/N2/Ar |  |
| Relative humidity[%] | XXX |  |
| Degradation condition | MPP/open circuit/short-circuit/constant load… |  |
| Stability test degradation instrument info | Home-made/model and brand… |  |
| Use of black matte background | Yes/No |  |

|  |
| --- |
|  |
| **Figure S3.** Stability test maximum power point tracking and energy yield, STEY, as defined by Almora et al.[3]. |

# References

[1] O. Almora, C.I. Cabrera, J. Garcia-Cerrillo, T. Kirchartz, U. Rau and C.J. Brabec, Quantifying the Absorption Onset in the Quantum Efficiency of Emerging Photovoltaic Devices, *Adv. Energy Mater.* **2021**, *11*, 2100022. <https://doi.org/10.1002/aenm.202100022>

[2] M.A. Green, K. Emery, Y. Hishikawa, W. Warta and E.D. Dunlop, Solar Cell Efficiency Tables (Version 39), *Prog. Photovoltaics* **2012**, *20*, 12-20. <https://doi.org/10.1002/pip.2163>

[3] O. Almora, D. Baran, G.C. Bazan, C. Berger, C.I. Cabrera, K.R. Catchpole, S. Erten-Ela, F. Guo, J. Hauch, A.W.Y. Ho-Baillie, T.J. Jacobsson, R.A.J. Janssen, T. Kirchartz, Y. Li, M.A. Loi, R.R. Lunt, X. Mathew, M.D. McGehee, J. Min, D.B. Mitzi, M.K. Nazeeruddin, J. Nelson, A.F. Nogueira, U.W. Paetzold, N.-G. Park, B.P. Rand, U. Rau, H.J. Snaith, E. Unger, L. Vaillant-Roca, H.-L. Yip and C.J. Brabec, Device Performance of Emerging Photovoltaic Materials (Version 1), *Adv. Energy Mater.* **2021**, *11*, 2002774. <https://doi.org/10.1002/aenm.202002774>