

Title (en)

VISIBLY TRANSPARENT, NEAR-INFRARED-ABSORBING AND ULTRAVIOLET-ABSORBING PHOTOVOLTAIC DEVICES

Title (de)

SICHTBAR TRANSPARENTE, NAHINFRAROT- UND ULTRAVIOLETTABSORBIERENDE PHOTOVOLTAISCHE VORRICHTUNGEN

Title (fr)

DISPOSITIFS PHOTOVOLTAÏQUES VISIBLEMENT TRANSPARENTS, ABSORBANT LE PROCHE INFRAROUGE ET ABSORBANT LES ULTRAVIOLETS

Publication

EP 3638656 A4 20210317 (EN)

Application

EP 18818288 A 20180615

Priority

- US 201762521154 P 20170616
- US 201762521158 P 20170616
- US 201762521160 P 20170616
- US 201762521211 P 20170616
- US 201762521214 P 20170616
- US 201762521224 P 20170616
- US 2018037923 W 20180615

Abstract (en)

[origin: WO2018232358A1] Visibly transparent photovoltaic devices are disclosed, such as those are transparent to visible light but absorb near-infrared light and/or ultraviolet light. The photovoltaic devices make use of transparent electrodes and near-infrared or ultraviolet absorbing visibly transparent photoactive compounds, optical materials, and/or buffer materials.

IPC 8 full level

C07D 333/52 (2006.01); **C07D 333/60** (2006.01); **C09K 11/06** (2006.01); **H01G 9/20** (2006.01); **H01L 51/44** (2006.01); **H01L 51/46** (2006.01)

CPC (source: EP KR)

H10K 30/80 (2023.02 - EP); **H10K 85/324** (2023.02 - KR); **H10K 85/331** (2023.02 - KR); **H10K 85/381** (2023.02 - KR); **H10K 85/40** (2023.02 - KR); **H10K 85/631** (2023.02 - KR); **H10K 85/655** (2023.02 - KR); **H10K 85/657** (2023.02 - KR); **H10K 85/6572** (2023.02 - KR); **H10K 85/6576** (2023.02 - KR); **H10K 30/30** (2023.02 - EP KR); **H10K 30/82** (2023.02 - EP); **H10K 30/85** (2023.02 - EP KR); **H10K 85/311** (2023.02 - EP); **H10K 85/322** (2023.02 - EP KR); **H10K 85/621** (2023.02 - EP); **H10K 85/636** (2023.02 - EP); **H10K 85/6572** (2023.02 - EP); **H10K 85/6576** (2023.02 - EP); **Y02E 10/549** (2013.01 - EP KR)

Citation (search report)

- [Y] EP 2838095 A1 20150218 - SUISSE ELECTRONIQUE MICROTECH [CH], et al
- [Y] US 2016248021 A1 20160825 - SUNDARRAJ SUDHAKAR [SE], et al
- [Y] JP 2016146408 A 20160812 - TOYO INK SC HOLDINGS CO LTD
- [XY] LIU FENG ET AL: "Efficient Semitransparent Solar Cells with High NIR Responsiveness Enabled by a Small-Bandgap Electron Acceptor", ADVANCED MATERIALS, vol. 29, no. 21, 21 March 2017 (2017-03-21), pages 1606574, XP055772247, ISSN: 0935-9648, Retrieved from the Internet <URL:https://api.wiley.com/onlinelibrary/tdm/v1/articles/10.1002%2Fadma.201606574> DOI: 10.1002/adma.201606574 & LIU FENG ET AL: "Supporting Information: Efficient Semitransparent Solar Cells with High NIR Responsiveness Enabled by a Small-Bandgap Electron Acceptor", ADVANCED MATERIALS, vol. 29, no. 21, 21 March 2017 (2017-03-21), pages 1606574, XP055772255, ISSN: 0935-9648, Retrieved from the Internet <URL:https://api.wiley.com/onlinelibrary/tdm/v1/articles/10.1002%2Fadma.201606574> DOI: 10.1002/adma.201606574
- [Y] HUIFENG YAO ET AL: "Achieving Highly Efficient Nonfullerene Organic Solar Cells with Improved Intermolecular Interaction and Open-Circuit Voltage", ADVANCED MATERIALS, vol. 29, no. 21, 29 March 2017 (2017-03-29), XP055536507, ISSN: 0935-9648, DOI: 10.1002/adma.201700254
- [Y] LIU DEYU ET AL: "Naphthalene substituents bonded via the [beta]-position: an extended conjugated moiety can achieve a decent trade-off between optical band gap and open circuit voltage in symmetry-breaking benzodithiophene-based polymer solar cells", JOURNAL OF MATERIALS CHEMISTRY A, vol. 5, no. 19, 12 April 2017 (2017-04-12), GB, pages 9141 - 9147, XP055772337, ISSN: 2050-7488, Retrieved from the Internet <URL:https://pubs.rsc.org/en/content/articlepdf/2017/ta/c7ta01905j> DOI: 10.1039/C7TA01905J
- See also references of WO 2018232358A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

WO 2018232358 A1 20181220; AU 2018283407 A1 20191219; AU 2018283407 B2 20210304; AU 2021203483 A1 20210624; AU 2021203483 B2 20230907; CA 3066092 A1 20181220; CN 110944986 A 20200331; EP 3638656 A1 20200422; EP 3638656 A4 20210317; JP 2020524404 A 20200813; JP 2023113595 A 20230816; KR 102263356 B1 20210610; KR 102427886 B1 20220729; KR 102655233 B1 20240405; KR 20200015751 A 20200212; KR 20210069130 A 20210610; KR 20220110866 A 20220809

DOCDB simple family (application)

US 2018037923 W 20180615; AU 2018283407 A 20180615; AU 2021203483 A 20210528; CA 3066092 A 20180615; CN 201880049706 A 20180615; EP 18818288 A 20180615; JP 2019569755 A 20180615; JP 2023061212 A 20230405; KR 20207000947 A 20180615; KR 20217017129 A 20180615; KR 20227026207 A 20180615