

Title (en)

METHOD FOR LASER-STRUCTURING THIN LAYERS ON A SUBSTRATE IN ORDER TO PRODUCE MONOLITHICALLY CONNECTED THIN-LAYER SOLAR CELLS, AND METHOD FOR PRODUCING A THIN-LAYER SOLAR MODULE

Title (de)

VERFAHREN ZUR LASER-STRUKTURIERUNG VON DÜNNSCHICHTEN AUF EINEM SUBSTRAT FÜR DIE HERSTELLUNG MONOLITHISCH VERSCHALTETER DÜNNSCHICHTSOLARZELLEN UND HERSTELLUNGSVERFAHREN FÜR EIN DÜNNSCHICHTSOLARMODUL

Title (fr)

PROCÉDÉ DE STRUCTURATION LASER DE COUCHES MINCES SUR UN SUBSTRAT AFIN DE FABRIQUER DES CELLULES SOLAIRES À COUCHES MINCES À INTERCONNEXION MONOLITHIQUE ET PROCÉDÉ DE FABRICATION D'UN MODULE SOLAIRE À COUCHES MINCES

Publication

EP 3039726 A1 20160706 (DE)

Application

EP 14789778 A 20140828

Priority

- DE 102013109480 A 20130830
- DE 2014100309 W 20140828

Abstract (en)

[origin: WO2015027997A1] The invention relates to a method for laser-structuring thin layers on a substrate in order to produce monolithically connected thin-layer solar cells, having the following steps: - providing a laser with a laser wavelength, - providing a substrate (1) which comprises a first side and a second side and which is transparent for the laser wavelength, said first side of the substrate having a metal rear electrode thin layer (2), on which an absorber thin layer (3) for thin layer solar cells is arranged, - emitting a laser beam (L) onto the substrate, and - moving the laser beam (L) over the substrate (1) along a writing line and/or moving the substrate (1) relative to the laser beam (L) along a writing line. According to the invention, the laser beam (L) is emitted onto the second side of the substrate (1) and is incident on the metal rear electrode thin layer (2) through the substrate (1), and laser pulses of the laser beam are adjusted in the nano-, pico-, or femtosecond range and the laser beam is moved such that the absorber thin layer (3) arranged over the metal rear electrode thin layer (2) is detached along the writing line, and a laser-influenced metal rear electrode thin layer (2) remains on the substrate.

IPC 8 full level

H01L 31/0463 (2014.01)

CPC (source: CN EP KR US)

H01L 21/268 (2013.01 - KR); **H01L 21/76205** (2013.01 - KR); **H01L 31/022425** (2013.01 - KR); **H01L 31/022441** (2013.01 - KR US); **H01L 31/0392** (2013.01 - KR); **H01L 31/0445** (2014.12 - KR); **H01L 31/0463** (2014.12 - CN EP US); **H01L 31/048** (2013.01 - US); **H01L 31/18** (2013.01 - KR); **H01L 31/186** (2013.01 - US); **Y02E 10/50** (2013.01 - KR US); **Y02E 10/541** (2013.01 - EP); **Y02P 70/50** (2015.11 - EP)

Citation (search report)

See references of WO 2015027997A1

Citation (examination)

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- ANDREAS BURN ET AL: "Selective ablation of thin films in latest generation CIGS solar cells with picosecond pulses", PROCEEDINGS OF SPIE, vol. 8243, 9 February 2012 (2012-02-09), 1000 20th St. Bellingham WA 98225-6705 USA, pages 824318, XP055659501, ISSN: 0277-786X, ISBN: 978-1-5106-2687-4, DOI: 10.1117/12.906919

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

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2015027997 A1 20150305; CN 106030827 A 20161012; CN 106030827 B 20180323; DE 102013109480 A1 20150305; EP 3039726 A1 20160706; JP 2016529724 A 20160923; KR 101790457 B1 20171120; KR 20160048102 A 20160503; US 2016211395 A1 20160721

DOCDB simple family (application)

DE 2014100309 W 20140828; CN 201480048072 A 20140828; DE 102013109480 A 20130830; EP 14789778 A 20140828; JP 2016537133 A 20140828; KR 20167006453 A 20140828; US 201414914770 A 20140828