Title (en)

PHOTOVOLTAIC CELLS WITH PROCESSED SURFACES AND RELATED APPLICATIONS

Title (de)

PV-ZELLEN MIT BERARBEITETEN OBERFLÄCHEN UND ENTSPRECHENDEN ANWENDUNGEN

Title (fr)

CELLULES PHOTOVOLTAÏQUES AVEC SURFACES TRAITÉES ET APPLICATIONS APPARENTÉESUS2009053576

Publication

EP 2327107 A1 20110601 (EN)

Application

EP 09807234 A 20090812

Priority

- US 2009053576 W 20090812
- US 8892108 P 20080814
- US 8893608 P 20080814
- US 8938908 P 20080815
- US 9253108 P 20080828
- US 53595209 A 20090805
- US 53698709 A 20090806
- US 53699209 A 20090806
- US 53698209 A 20090806

Abstract (en)

[origin: WO2010019685A1] Photovoltaic cells and processes that mitigate recombination losses of photogenerated carriers are provided. To reduce recombination losses, diffuse doping layers in active photovoltaic (PV) elements are coated with patterns of dielectric material(s) that reduce contact between metal contacts and the active PV element. Various patterns can be utilized, and one or more surfaces of the PV element can be coated with one or more dielectrics. Vertical Multi-Junction photovoltaic cells can be produced with patterned PV elements, or unit cells. While patterned PV elements can increase series resistance of VMJ photovoltaic cells, and patterning one or more surfaces in the PV element can add complexity to a process utilized to produce VMJ photovoltaic cells, reduction of carrier losses at diffuse doping layers in a PV element increases efficiency of photovoltaic cells, and thus provide with PV operational advantages that outweigh increased manufacturing complexity. System to fabricate the photovoltaic cells is provided.

IPC 8 full level

H01L 31/05 (2006.01)

CPC (source: EP)

H01L 31/047 (2014.12); **H01L 31/0687** (2013.01); Y02E 10/544 (2013.01); Y02E 60/36 (2013.01); Y02P 70/50 (2015.11)

Citation (search report)

See references of WO 2010019685A1

Designated contracting state (EPC)

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 SE SI SK SM TR

Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

WO 2010019685 A1 20100218; **WO 2010019685 A4 20100506**; AU 2009281960 A1 20100218; BR PI0917838 A2 20170214; CA 2733976 A1 20100218; CA 2733976 C 20151222; CA 2820184 A1 20100218; CN 102171840 A 20110831; CN 103337546 A 20131002; CN 103337546 B 20170301; CN 103337547 A 20131002; CN 103354247 A 20131016; CN 103354247 B 20161005; EP 2327107 A1 20110601; IL 211205 A0 20110428; JP 2012500474 A 20120105; MX 2011001738 A 20110812; RU 2011109164 A 20120920; RU 2012141985 A 20140510; RU 2472251 C2 20130110; TW 201013951 A 20100401; TW I535042 B 20160521

DOCDB simple family (application)

US 2009053576 W 20090812; AU 2009281960 A 20090812; BR PI0917838 A 20090812; CA 2733976 A 20090812; CA 2820184 A 20090812; CN 200980139221 A 20090812; CN 201310219215 A 20090812; CN 201310219468 A 20090812; CN 201310219470 A 20090812; EP 09807234 A 20090812; IL 21120511 A 20110213; JP 2011523143 A 20090812; MX 2011001738 A 20090812; RU 2011109164 A 20090812; RU 2012141985 A 20121002; TW 98127486 A 20090814