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DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
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MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
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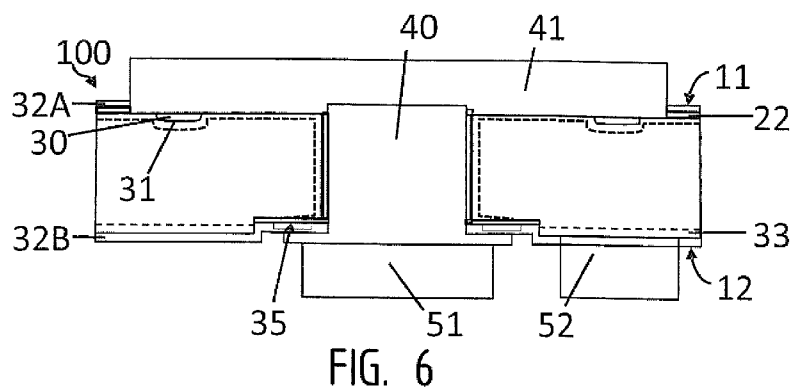
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(54) Title: A METHOD OF MANUFACTURING A SOLAR CELL AND A SOLAR CELL

(57) **Abstract:** In the solar cell manufacture a diffusion resistance layer (22A) of electrically insulating material is provided onto the first side (11) of a semiconductor substrate (10), and patterned in accordance with a predefined pattern of selective emitter regions (30) to be applied into the semiconductor substrate; dopant species are provided into the semiconductor substrate (10) to form the selective emitter regions (30) comprising p-type charge carriers. Subsequently, selective dopant diffusion regions (31) are created through controlled diffusion of further dopant species through the diffusion resistance layer (22a), the selective emitter regions (30) and the diffusion regions (31) jointly operating as emitter. The diffusion resistance layer (22) will also extend into any through-hole (20) in the substrate (10).



INTERNATIONAL SEARCH REPORT

International application No
PCT/NL2012/050067

A. CLASSIFICATION OF SUBJECT MATTER
INV. H01L31/0224 H01L31/18
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2010/052565 A2 (CT THERM PHOTOVOLTAICS TECHNOL [DE]; ESTURO-BRETON AINHOA [DE]; GEIGER) 14 May 2010 (2010-05-14) the whole document	1,3-9, 11-15
Y	DE 10 2007 036921 A1 (CT THERM PHOTOVOLTAICS TECHNOL [DE]) 4 September 2008 (2008-09-04) paragraph [0033] - paragraph [0038]; figures 2a-2b	1,3-9, 11-15
Y	DE 10 2006 003283 A1 (GP SOLAR GMBH [DE]) 26 July 2007 (2007-07-26) figures 2a-2b	1,3-9, 11-15
Y	US 2006/060238 A1 (HACKE PETER [US] ET AL) 23 March 2006 (2006-03-23) figures 2-5	1,3-9, 11-15



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

13 March 2012

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/NL2012/050067

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1, 3-9, 11-15

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1, 3-9, 11-15

EWT solar cell selective emitter manufacturing method w/
diffusion resistance layer

2. claims: 10, 16-23, 30

EWT solar cell manufacturing method w/ electroplating

3. claims: 2, 24-29, 31-33

EWT solar cell manufacturing method w/ barrier layer against
acid-catalysed diffusion of metal

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/NL2012/050067

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2010052565 A2	14-05-2010	DE 102008056456 A1 EP 2371007 A2 JP 2012514849 A KR 20110101141 A TW 201027778 A US 2011214727 A1 WO 2010052565 A2	17-06-2010 05-10-2011 28-06-2012 15-09-2011 16-07-2010 08-09-2011 14-05-2010
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US 2006060238 A1	23-03-2006	AU 2005282372 A1 EP 1834346 A2 JP 2008512858 A KR 20070107660 A US 2006060238 A1 WO 2006029250 A2	16-03-2006 19-09-2007 24-04-2008 07-11-2007 23-03-2006 16-03-2006