(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 September 2013 (12.09.2013)

WIPO | PCT

(10) International Publication Number
WO 2013/132525 A3

(51) International Patent Classification:
H01G 9/20 (2006.01) *E04C 2/54* (2006.01)
E04C 1/42 (2006.01)

(21) International Application Number:
PCT/IT2013/000069

(22) International Filing Date:
5 March 2013 (05.03.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PA2012A000002 6 March 2012 (06.03.2012) IT
PA2012A000003 6 March 2012 (06.03.2012) IT

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

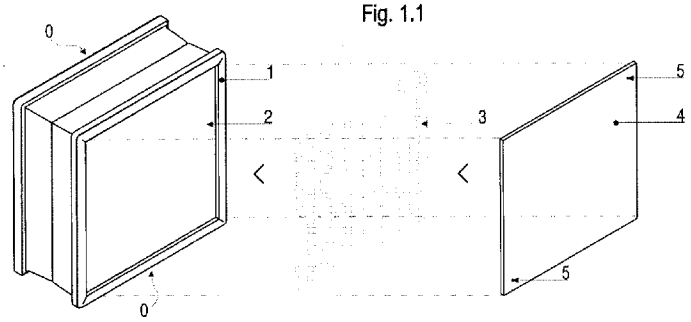
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report (Art. 21(3))*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:
13 March 2014

(54) Title: A HYBRID SOLAR CELLS INTEGRATED GLASSBLOCK AND PRESTRESSED PANEL MADE OF DRY-ASSEMBLED GLASSBLOCKS FOR THE CONSTRUCTION OF TRASLUCENT BUILDING ENVELOPES

Fig. 1.1



(57) Abstract: A hybrid solar cells integrated glassblock structure, comprising, at least one glass shell (0) having at least a light transparent surface (2, 9, 13) intended to be exposed to solar radiations, a Dye-Sensitized Solar Cell (DSC) device (3, 8) associated to said surface (2, 9, 13) so as to receive solar radiations passing through said surface, said device having electric contacts, at least one hole (7, 11, 15, 17) allowing passage to an external area of the glassblock of electrical connections leading to said device contacts; and a prestressed and dry assembled glassblock panel for the construction oftranslucent building envelope even in high-rise buildings, which may also provide high performance related to energy production and saving.

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INTERNATIONAL SEARCH REPORT

International application No
PCT/IT2013/000069

A. CLASSIFICATION OF SUBJECT MATTER
INV. H01G9/20 E04C1/42 E04C2/54
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)
H01G E04C

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)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 2 065 531 A1 (SAVE SRL [IT]) 3 June 2009 (2009-06-03) the whole document -----	1,4,6,7, 9-13
Y	ANDERS HAGFELDT ET AL: "Dye-Sensitized Solar Cells", CHEMICAL REVIEWS, vol. 110, no. 11, 10 November 2010 (2010-11-10), pages 6595-6663, XP055029250, ISSN: 0009-2665, DOI: 10.1021/cr900356p page 6648 - page 6651 -----	1,4,6,7, 9-13
A	US 5 010 704 A (THOMPSON EARL G [US]) 30 April 1991 (1991-04-30) cited in the application the whole document -----	12
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[X] Further documents are listed in the continuation of Box C.

[X] 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	Date of mailing of the international search report
20 June 2013	21/01/2014

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Wolfbauer, Georg

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Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/IT2013/000069

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006/010810 A1 (MUSZYNSKI ARKADIUSZ [PL]) 19 January 2006 (2006-01-19) the whole document	12
A	DE 103 06 529 A1 (BROSE URSULA [DE]) 17 June 2004 (2004-06-17) the whole document	1

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IT2013/000069

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.:

1-13

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: 1-13

A glassblock comprising a dye sensitized solar cell.

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2. claim: 14

A panel made out of glassblocks.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IT2013/000069

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2065531 A1	03-06-2009	NONE	
US 5010704 A	30-04-1991	NONE	
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		WO 2004055288 A1	01-07-2004
DE 10306529 A1	17-06-2004	NONE	