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Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

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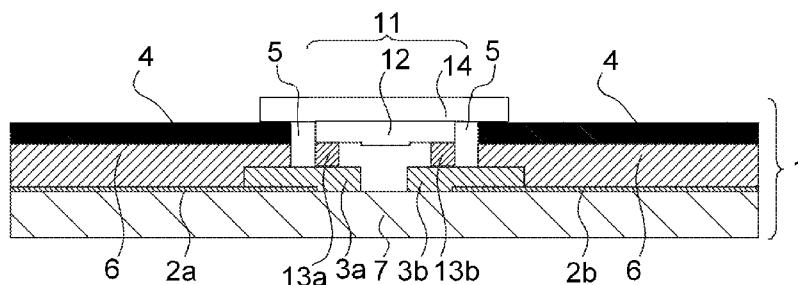
— with international search report (Art. 21(3))

— 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:

24 February 2011

(54) Title: LIGHTING ELECTRONIC STRUCTURE



**FIG. 1**

(57) Abstract: The invention relates to a lighting electronic structure, comprising ♦ a substrate (7) carrying at least an electrically conductive path (2a, 2b) on a first side, wherein at least a portion of said substrate is transparent or translucent, ♦ at least one module (11) comprising an electronic component (12), said electronic component being electrically connected to one of said electrical conductive path, wherein each of said module has its electronic component facing a transparent or translucent portion of said substrate, wherein at least one of said modules is a light emitting module, ♦ a thermally conductive cover layer for dissipating heat generated by said electronic component, said thermally conductive cover layer facing said first side of said substrate (7), said thermally conductive cover layer being in thermal contact with said electronic components (12) of said module, and ♦ an electrically insulating spacer separating said electrically conductive path from said thermally conductive cover layer; the invention further relates to the use of such an electronic structure, such a module (11), such a panel (1) and methods for producing such an electronic structure, panel (1) and module (11).



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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2009/065329

| <b>A. CLASSIFICATION OF SUBJECT MATTER</b>  |   |                          |
|---|---|--------------------------|
| INV.  | H05K1/02<br>H05K1/03  | H05K1/18<br>H01R13/62    |
|   | B32B17/06<br>H05K3/32   | F21V29/00<br>F21K99/00   |
| According to International Patent Classification (IPC) or to both national classification and IPC   |   |                          |
| <b>B. FIELDS SEARCHED</b>   |   |                          |
| Minimum documentation searched (classification system followed by classification symbols)<br>H05K B32B F21V F21K H01R   |   |                          |
| 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 practical, search terms used)<br>EPO-Internal                              |   |                          |
| <b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>   |   |                          |
| Category*   | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No.    |
| X   | WO 2007/074318 A1 (SAINT GOBAIN [FR];<br>JOUSSE DIDIER [FR]; NUGUE JEAN-CLEMENT<br>[FR]) 5 July 2007 (2007-07-05)<br>abstract; figures 4A, 4B   | 1-6,<br>10-12,<br>14, 15 |
| Y   |   | 7-9, 13,<br>16, 17       |
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| Y   | GB 1 299 541 A (WESTERN ELECTRIC CO [US])<br>13 December 1972 (1972-12-13)<br>abstract; figures 6, 7A, 7B<br>page 1, column 1, line 15 - line 20<br>page 5, column 2, line 91 - line 114<br><br>-----<br>-/--                                     | 7-9, 13,<br>16, 17       |
| <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.             |   |                          |
| * Special categories of cited documents :   |   |                          |
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| *O* document referring to an oral disclosure, use, exhibition or other means  | *&* document member of the same patent family   |                          |
| *P* document published prior to the international filing date but later than the priority date claimed  |   |                          |
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## INTERNATIONAL SEARCH REPORT

International application No

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| C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT |  |                       |
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| Category*  | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
| Y  | DE 195 28 062 A1 (KOHLER GERD DIPL ING TU<br>[DE] KOHLER GERD [DE])<br>6 February 1997 (1997-02-06)<br>abstract; figure 1<br>column 1  | 7-9, 16,<br>17        |
| Y  | US 3 612 955 A (BUTHERUS ALEXANDER D ET<br>AL) 12 October 1971 (1971-10-12)<br>column 1; claim 1; figures 1A, 1B   | 7-9, 13,<br>16, 17    |
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2009/065329

## 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.:

1-11, 15-19(completely); 12-14(partially)

### 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: 1-11, 15-19(completely); 12-14(partially)

How to detachably mount the LED module of a lighting electronic structure.

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2. claims: 12-14(partially)

How to control a lighting structure

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## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2009/065329

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |            |
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