A substrate defines a thermal conductivity to dissipate a requisite amount of power from the base functional layer.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

INV. H05B1/Q2 H01L21/67 H05B3/26 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)

H05B H01L G05D

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, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
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<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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</table>

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 published on or after the international filing date

**L** document in which the inventor 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

**8** document member of the same patent family

Date of the actual completion of the international search: 7 December 2012

Date of mailing of the international search report: 16/04/2013

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

Chelbosu, Liviu
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).

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

- see additional sheet

1. **A**
   - As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. **A**
   - As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. **A**
   - As only some of the required additional search fees were timely paid by the applicant, this international search report covers specific claims Nos.:

4. **X**
   - 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.: 1-28

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

1. claims: 1-28

   The layered structure of a heater system / an apparatus,
   
2. claims: 29-37

   A control system of a heater system / an apparatus
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<td>US 2005145617 AI</td>
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<td>CA 2552559 AI</td>
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<td>CN 1918945 A</td>
<td>21-02-2007</td>
</tr>
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<td></td>
<td>EP 1702499 A2</td>
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</tr>
<tr>
<td></td>
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<td>EP 2134142 A2</td>
<td>16-12-2009</td>
</tr>
<tr>
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<td></td>
<td>TW 1301996 B</td>
<td>11-10-2008</td>
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<tr>
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<td></td>
<td>US 2005145617 AI</td>
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<td></td>
<td>US 2006113297 AI</td>
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<tr>
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<td></td>
<td>US 2003066826 AI</td>
<td>10-04-2003</td>
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