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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, 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.

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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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:
11 April 2013

(54) Title: IONIZING RADIATION DETECTION.

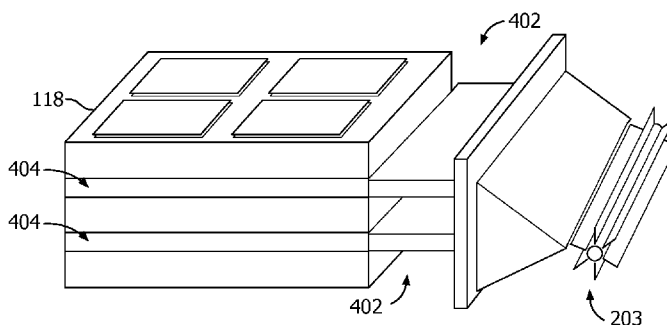


FIG. 4

(57) Abstract: A detector array (110) includes a detector (112) configured to detect ionizing radiation and output a signal indicative of the detected radiation, wherein the detector at least includes a semiconductor element (118) and an illumination subsystem (120) configured to generate and transfer sub-band-gap illuminating radiation to selectively illuminate only a sub-portion of the semiconductor element in order to produce a spatially patterned illumination distribution inside the element.



INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2012/051717

A. CLASSIFICATION OF SUBJECT MATTER

INV. G01T1/24

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)

G01T H01L H04N

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.
X	US 2010/078559 A1 (SZELES CSABA [US] ET AL) 1 April 2010 (2010-04-01) cited in the application paragraphs [0035], [0038]; figures 6, 9a, 9b -----	1,3-8, 13,16,22
A	US 7 652 258 B2 (SHAHAR ARIE [IL] ET AL) 26 January 2010 (2010-01-26) cited in the application column 7, line 29 - line 41; figure 4a column 8, line 20 - line 38; figure 4e -----	12
A	US 5 248 885 A (SATO KENJI [JP] ET AL) 28 September 1993 (1993-09-28) cited in the application column 5, line 47 - column 6, line 57; figure 8 -----	1,16

☐ 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 November 2012

Date of mailing of the international search report

05/02/2013

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2012/051717

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.:

1-22

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: 1-22

How to provide a more homogeneous electric field distribution across a semiconductor element using patterned illumination

2. claim: 23

How to control an electric field distribution across a semiconductor using either optical or electrical means, dependent on the flux of incident ionising radiation

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2012/051717

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2010078559	A1	01-04-2010	NONE

US 7652258	B2	26-01-2010	US 2008164418 A1 10-07-2008
			US 2010086098 A1 08-04-2010

US 5248885	A	28-09-1993	DE 69116770 D1 14-03-1996
			DE 69116770 T2 04-07-1996
			EP 0473125 A2 04-03-1992
			US 5248885 A 28-09-1993
