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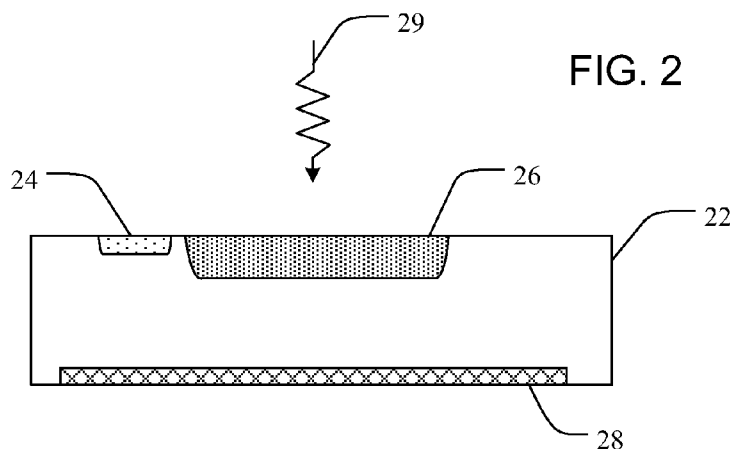
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(54) **Title:** HIGH SPEED PHOTSENSITIVE DEVICES AND ASSOCIATED METHODS



(57) **Abstract:** High speed optoelectronic devices and associated methods are provided. In one aspect, for example, a high speed optoelectronic device can include a silicon material having an incident light surface, a first doped region and a second doped region forming a semiconductive junction in the silicon material, and a textured region coupled to the silicon material and positioned to interact with electromagnetic radiation. The optoelectronic device has a response time of from about 1 picosecond to about 5 nanoseconds and a responsivity of greater than or equal to about 0.4 A/W for electromagnetic radiation having at least one wavelength from about 800 nm to about 1200 nm.



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A. CLASSIFICATION OF SUBJECT MATTER**H01L 31/10(2006.01)i, H01L 31/04(2006.01)i**

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 31/10; H01L 31/058; H01L 27/148; H01L 29/78; H01L 27/14; H01L 21/00; H01L 31/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: optoelectronic, photodiode, dope, silicon,electromagnetic, radiation.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7202102 B2 (JDS UNIPHASE CORPORATION) 10 April 2007 See abstract, column 5, line 9- column 6, line 44, figures 1, 2, claim 1.	1-25
A	US 04593303 A (DYCK; RUDOLPH H. et al.) 03 June 1986 See abstract, column 1, line 66- column 2, line 35, figures 1, 2, claim 1.	1-25
A	US 6667528 B2 (COHEN; GUY MOSHE et al.) 23 December 2003 See abstract, column 5, line 19- column 6, line 54, figure 3, claim 1.	1,15-17,25
A	US 6815685 B2 (WANY MARTIN) 09 November 2004 See abstract, column 4, line 4- column 4, line 53, figure 3, claim 1.	1,15-17,25

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 7202102 B2	10.04.2007	US 2003-0111675 A1 US 2005-0017317 A1 US 2007-0096240 A1	19.06.2003 27.01.2005 03.05.2007
US 04593303A A	03.06.1986	US 05118631A A	02.06.1992
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US 6815685 B2	09.11.2004	AT 239902 T AU 2001-35374 A1 CA 2393514 A1 CA 2393514 C DE 60002612 D1 DE 60002612 T2 EP 1240485 A1 EP 1240485 B1 GB 9930257 D0 JP 2003-518355 T US 2003-0136915 A1 WO 01-46655 A1	15.05.2003 03.07.2001 28.06.2001 07.07.2009 12.06.2003 09.10.2003 18.09.2002 07.05.2003 09.02.2000 03.06.2003 24.07.2003 28.06.2001