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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
3 January 2003 (03.01.2003)

PCT

(10) International Publication Number
WO 03/000019 A3

(51) International Patent Classification[7]: H01L 29/78, G01T 1/24

(21) International Application Number: PCT/US02/20246

(22) International Filing Date: 24 June 2002 (24.06.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/300,129 22 June 2001 (22.06.2001) US

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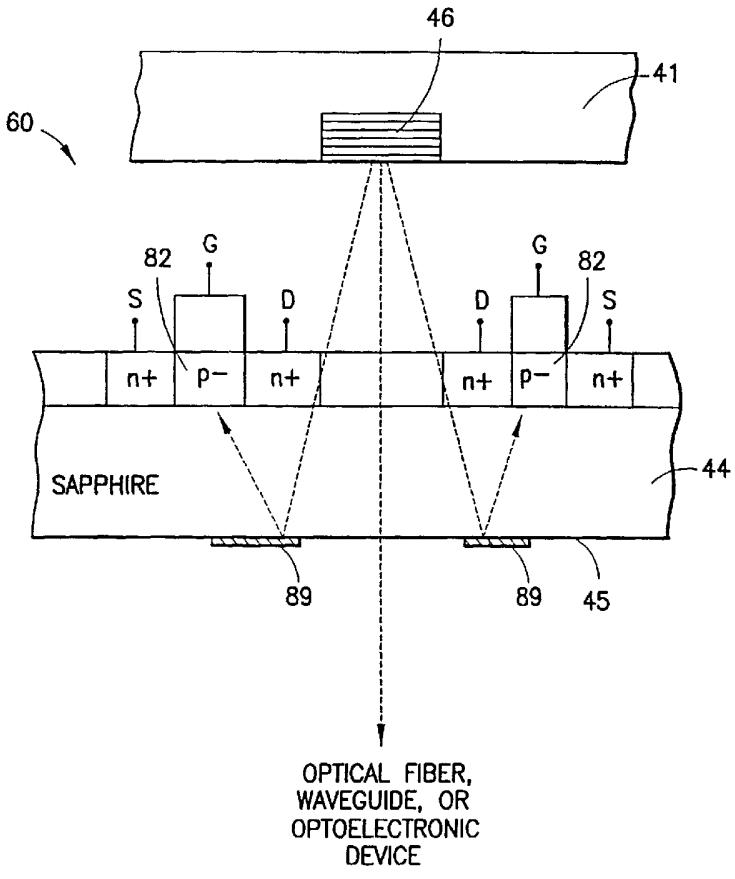
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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: INTEGRATED PHOTODETECTOR FOR VCSEL FEEDBACK CONTROL



(57) Abstract: An integrated photodetector means for controlling the output of a light source, where the control means is a photodetector formed on a silicon-on-insulator substrate, The integrated photodetector senses the optical power from the light source and provides an electrical feedback signal which can be used to adjust the DC bias levels of the light source control driver circuit. The approach readily lends itself to large arrays of light sources bonded to silicon-on-sapphire driver circuits and is especially suitable for controlling light sources such as VCSELs in arrays such as are found in communications systems.

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Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report*

(88) Date of publication of the international search report:
1 May 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US02/20246

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H01L 29/78; G01T 1/24
US CL : 250/338.4

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)
U.S. : 250/338.4, 338.1, 332, 339.02, 339.14, 342, 370.01, 370.08; 257/258, 275, 442, 448; 343/721

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)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,886,353 A (SPIVEY et al.) 23 MARCH 1999 (23.03.99), see Col.3, lines 55-68, Cols.4-13, Col.23, lines 30-45, Fig.27.	1, 5, 8, 9, 10, 16, 19, 20, 24, 27, 28, 29, 33, 36, 37, 38, 39, 40, 44, 47, 48, 51-55, 59, 62-66, 69-76 --- 2-4, 6, 7, 11-15, 17, 18, 21-23, 25, 26, 30-32, 34, 35, 41-43, 45, 46, 49, 50, 56-58, 60, 61, 67, 68
Y	US 6,198,100 B1 (EDEN et al.) 06 MARCH 2001 (06.03.01), see Col.2, lines 50-68, Col.3, Fig.1.	2-4, 6, 7, 11-15, 17, 18, 21-23, 25, 26, 30-32, 34, 35, 41-43, 45, 46, 49, 50, 56-58, 60, 61, 67, 68

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

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Date of the actual completion of the international search	Date of mailing of the international search report
15 October 2002 (15.10.2002)	03 JAN 2003
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer David Porta Telephone No. 703-308-0956

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Form PCT/ISA/210 (second sheet) (July 1998)

PCT/US02/20246

INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y --- A	US 5,264,699 A (BARTON et al.) 23 NOVEMBER 1993 (23.11.93), see claim 1 and Fig.3.	1, 20, 39, 55 --- 2-19, 21-38, 40-54, 56-76
Y --- A	US 5,308,980 A (BARTON) 03 MAY 1994 (03.05.94), see abstract.	1, 20, 39, 55 --- 2-19, 21-38, 40-54, 56-76
X -- Y	US 6,333,522 B1 (INOUE et al.) 25 DECEMBER 2001 (25.12.01), see claims.	5,8-10,16,19,24,27-29,33,36-38,40,44,47-48,51-54,59,62-66 1-4,6-7,11-15,17-18,20-23,25-26,30-32,34-35,39,41-43,45-46,49-50,55-58,60-61,67-76
Y	US 4,675,525 A (AMINGUAL et al.) 23 JUNE 1987 (23.06.87), see abstract.	1, 20, 39, 55
A	US 4,779,004 A (TEW et al.) 18 OCTOBER 1988 (18.10.88), see entire document.	1-76
A	US 5,438,200 A (THORNTON) 01 AUGUST 1995 (01.08.95), see entire document.	1-76
A	US 5,120,960 A (HALVIS) 09 JUNE 1992 (09.06.92), see entire document.	1-76

Continuation of B. FIELDS SEARCHED Item 3:
USPTO WEST 2.0
Search terms: sensor, detector, photodetector, photosensor, sapphire, silicon substrate, layer, transparent, optical device, VCSEL, NMOS, transistor, diode.