

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP2018/072332

**A. CLASSIFICATION OF SUBJECT MATTER****H01L 21/02**(2006.01)i; **H01L 33/00**(2010.01)i; **H01L 33/14**(2010.01)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

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	RU 172195 U1 (CONNECTOR OPTICS LLC) 30 June 2017 (2017-06-30) paragraphs [0001] - [0017]; figure 1	1-8,11,12,15,16 13,14
X	US 2011318857 A1 (LEE SUK HUN [KR]) 29 December 2011 (2011-12-29) paragraph [0032]; figure 2	1-5,9,10
A	WO 2006009372 A1 (EPIVALLEY CO LTD [KR]; YOO TAE KYUNG [KR]; JEON SOO KUN [KR]) 26 January 2006 (2006-01-26) paragraphs [0001], [0005], [0030]; claims 1, 3, 4, 12	1-5
Y	HARRIS J J ED - MATHEW XAVIER ET AL. "DELTA-DOPING OF SEMICONDUCTORS" <i>JOURNAL OF MATERIALS SCIENCE. MATERIALS IN ELECTRONICS, CHAPMAN AND HALL, LONDON, GB</i> , Vol. 4, No. 2, 01 June 1993 (1993-06-01), pages 93-105 DOI: 10.1007/BF00180462 ISSN: 0957-4522, XP000381536 pages 94, 95; figure 1	13,14
A	US 5656076 A (KIKKAWA TOSHIHIDE [JP]) 12 August 1997 (1997-08-12) the whole document	15

 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

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"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

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"&" document member of the same patent family

Date of the actual completion of the international search

19 November 2018

Date of mailing of the international search report

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**INTERNATIONAL SEARCH REPORT**  
**Information on patent family members**

International application No.

**PCT/EP2018/072332**

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
RU	172195	U1	30 June 2017	NONE			
US	2011318857	A1	29 December 2011	CN	101073161	A	14 November 2007
				EP	1829122	A1	05 September 2007
				JP	2008526012	A	17 July 2008
				KR	20060072444	A	28 June 2006
				US	2008142781	A1	19 June 2008
				US	2011318857	A1	29 December 2011
				WO	2006068374	A1	29 June 2006
WO	2006009372	A1	26 January 2006	KR	20060007123	A	24 January 2006
				WO	2006009372	A1	26 January 2006
US	5656076	A	12 August 1997	JP	3230029	B2	19 November 2001
				JP	H07321041	A	08 December 1995
				US	5656076	A	12 August 1997
				US	5837056	A	17 November 1998