

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP2019/081913

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
<i>H01S 5/14</i> (2006.01); <i>H01S 3/109</i> (2006.01)n; <i>H01S 5/028</i> (2006.01)n		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) H01S		
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		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	QING-YANG XU ET AL. "Theoretical Analysis of Intra-Cavity Second-Harmonic Generation of Semiconductor Lasers by a Periodically Poled Nonlinear Crystal Waveguide" <i>IEEE JOURNAL OF QUANTUM ELECTRONICS, IEEE SERVICE CENTER, PISCATAWAY, NJ, USA</i> , Vol. 47, No. 4, 01 April 2011 (2011-04-01), pages 462-470 DOI: 10.1109/JQE.2010.2091625 ISSN: 0018-9197, XP011478511 page 463, left column, last paragraph - right column, paragraph 1; figure 1b page 466, right column, paragraph 2 - page 468, left column, paragraph 1	1-10,12,13
X	E. U. RAFAILOV ET AL. "Efficient frequency doubling of a pulsed laser diode by use of a periodically poled KTP waveguide crystal with Bragg gratings" <i>OPTICS LETTERS, US</i> , Vol. 26, No. 24, 15 December 2001 (2001-12-15), page 1961 DOI: 10.1364/OL.26.001961 ISSN: 0146-9592, XP055664065 page 1961, left column, last paragraph - page 1962, right column, paragraph 1; figure 2	1,2,6-10,12,13
X	US 2008317072 A1 (ESSAIAN STEPAN [US] ET AL.) 25 December 2008 (2008-12-25) paragraphs [0018] - [0026], [0033] - [0036]; figures 1,3,4	1,8-13
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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 <b>04 February 2020</b>		Date of mailing of the international search report <b>13 February 2020</b>
Name and mailing address of the ISA/EP <b>European Patent Office p.b. 5818, Patentlaan 2, 2280 HV Rijswijk Netherlands</b> Telephone No. (+31-70)340-2040 Facsimile No. (+31-70)340-3016		Authorized officer <b>Riechel, Stefan</b> Telephone No.

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Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1586940 A1 (MATSUSHITA ELECTRIC IND CO LTD [JP]; NGK INSULATORS LTD [JP]) 19 October 2005 (2005-10-19) paragraphs [0031] - [0071]; figure 1	1-9,11-13
X	SHINOZAKI K ET AL. "SELF-QUASI-PHASE-MATCHED SECOND-HARMONIC GENERATION IN THE PROTON-EXCHANGED LINBO3 OPTICAL WAVEGUIDE WITH PERIODICALLY DOMAIN-INVERTED REGIONS" <i>APPLIED PHYSICS LETTERS, A I P PUBLISHING LLC, US,</i> Vol. 59, No. 5, 29 July 1991 (1991-07-29), pages 510-512 DOI: 10.1063/1.105422 ISSN: 0003-6951, XP000233660 page 510, left column, last paragraph - page 512, right column; figure 1	1-9,11-13
A	EP 2738600 A1 (NGK INSULATORS LTD [JP]) 04 June 2014 (2014-06-04) paragraph [0027]; figures 1a,1b	10

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

International application No.

**PCT/EP2019/081913**

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
US	2008317072	A1	25 December 2008	NONE			
EP	1586940	A1	19 October 2005	AT	398850	T	15 July 2008
				AU	2003289498	A1	10 August 2004
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				KR	20140053021	A	07 May 2014
				TW	201411265	A	16 March 2014
				US	2014177035	A1	26 June 2014
				WO	2014030404	A1	27 February 2014