

INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP2019/086644

A. CLASSIFICATION OF SUBJECT MATTER**H01L 21/56**(2006.01)i; **H01L 23/16**(2006.01)i; **H01L 23/31**(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

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	EP 2954550 B1 (BOSCHMAN TECH B V [NL]) 28 June 2017 (2017-06-28) cited in the application	1,3-6,8-10,13-15
Y	paragraphs [0029] - [0032]; figures 1, 6c	12
X	US 6420201 B1 (WEBSTER STEVEN [US]) 16 July 2002 (2002-07-16)	1-3,5-10,13-15
A	column 8, line 31 - column 9, line 29; figures 3C-3K	12
X	DE 112016006381 T5 (MITSUBISHI ELECTRIC CORP [JP]) 18 October 2018 (2018-10-18)	1-11,13-15
A	paragraphs [0022] - [0032]; figures 6, 7, 8, 9	12
Y	US 2013043593 A1 (DOMES DANIEL [DE]) 21 February 2013 (2013-02-21)	12
	paragraphs [0041] - [0048]; figures 4, 5	

 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

11 March 2020

Date of mailing of the international search report

23 March 2020

Name and mailing address of the ISA/EP

European Patent Office
p.b. 5818, Patentlaan 2, 2280 HV Rijswijk
Netherlands

Telephone No. (+31-70)340-2040

Facsimile No. (+31-70)340-3016

Authorized officer

Ronnås, Katharina

Telephone No.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

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Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
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				EP	2954550	A1	16 December 2015
				JP	6420259	B2	07 November 2018
				JP	2016507164	A	07 March 2016
				KR	20150136476	A	07 December 2015
				NL	2010252	C2	07 August 2014
				TW	201438117	A	01 October 2014
				US	2015371880	A1	24 December 2015
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				DE	112016006381	T5	18 October 2018
				JP	WO2017138092	A1	21 June 2018
				US	2019057928	A1	21 February 2019
				WO	2017138092	A1	17 August 2017
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				DE	102012213407	A1	21 February 2013
				US	2013043593	A1	21 February 2013