

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 2017P00227WO	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/EP2018/070653	International filing date (<i>day/month/year</i>) 31 July 2018 (31-07-2018)	(Earliest) Priority Date (<i>day/month/year</i>) 28 August 2017 (28-08-2017)
Applicant ASML HOLDING N.V.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

- the international application in the language in which it was filed
 a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (See Box No. II)

3. **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- the text is approved as submitted by the applicant
 the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- the text is approved as submitted by the applicant
 the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 5

- as suggested by the applicant
 as selected by this Authority, because the applicant failed to suggest a figure
 as selected by this Authority, because this figure better characterizes the invention

b. none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/070653

A. CLASSIFICATION OF SUBJECT MATTER
INV. G03F7/20
ADD.
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)
G03F

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	US 2014/268074 A1 (CHIEN SHANG-CHIEH [TW] ET AL) 18 September 2014 (2014-09-18)	1-4,8,9, 11-16, 21-24
Y	paragraphs [0037] - [0049], [0067]; figures 5,7A-8B	5-7, 17-20,25
A	-----	10
X	EP 0 790 642 A2 (APPLIED MATERIALS INC [US]) 20 August 1997 (1997-08-20)	1,2,9, 11,12
A	columns 5,6; figure 2 columns 9-12	3-8,10, 13-25
Y	-----	5-7, 17-20
A	WO 2016/142370 A1 (ZEISS CARL SMT GMBH [DE]) 15 September 2016 (2016-09-15) pages 5,6,11; figures 1,2a,2b	2
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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 15 November 2018	Date of mailing of the international search report 23/11/2018
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Roesch, Guillaume
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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/070653

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2010/258144 A1 (BROZ JERRY J [US] ET AL) 14 October 2010 (2010-10-14)	25
A	paragraphs [0013] - [0024], [0065], [0077], [0078], [0086], [0090]; figures 15,18	10
A	----- US 2013/247935 A1 (PARK SEH-JIN [US]) 26 September 2013 (2013-09-26) paragraphs [0039] - [0050], [0081] -----	1-25

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/EP2018/070653

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2014268074	A1	18-09-2014	NONE

EP 0790642	A2	20-08-1997	EP 0790642 A2 20-08-1997
			JP H09330895 A 22-12-1997
			TW 424001 B 01-03-2001

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			TW 201640230 A 16-11-2016
			WO 2016142370 A1 15-09-2016

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			EP 2419929 A2 22-02-2012
			JP 5956637 B2 27-07-2016
			JP 2012523961 A 11-10-2012
			JP 2015148818 A 20-08-2015
			KR 20120014562 A 17-02-2012
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			SG 175129 A1 28-11-2011
			US 2010258144 A1 14-10-2010
			US 2013198982 A1 08-08-2013
			US 2013333128 A1 19-12-2013
			US 2017136500 A1 18-05-2017
			WO 2010120956 A2 21-10-2010

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			US 2013247935 A1 26-09-2013
			WO 2013066300 A1 10-05-2013
