

INTERNATIONAL SEARCH REPORT

International application No. PCT/JP2019/046216
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A. CLASSIFICATION OF SUBJECT MATTER
 Int. Cl. H05H1/46 (2006.01) i, H01L21/683 (2006.01) i
 FI: H05H1/46 B, H01L21/68 N

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)
 Int. Cl. H05H1/46, H01L21/683, C23C16/50

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Published examined utility model applications of Japan	1922-1996
Published unexamined utility model applications of Japan	1971-2020
Registered utility model specifications of Japan	1996-2020
Published registered utility model applications of Japan	1994-2020

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	JP 8-186094 A (SUMITOMO METAL INDUSTRIES, LTD.) 16 July 1996, paragraphs [0015], [0016], [0025], [0026], fig. 2	1-2, 4-6 3
Y A	JP 2011-519117 A (APPLIED MATERIALS INC.) 30 June 2011, paragraphs [0020]-[0023], fig. 2	1-2, 4-6 3
Y A	JP 2001-250815 A (HITACHI, LTD.) 14 September 2001, paragraphs [0015], [0028]-[0031], [0037], [0064], fig. 1, 2	1-2, 4-6 3
Y A	JP 2003-506889 A (UNAXIS TRADING AG) 18 February 2003, paragraphs [0006]-[0009], [0046], fig. 6	2, 4, 6 1, 3, 5

<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.	<input checked="" type="checkbox"/> See patent family annex.
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* Special categories of cited documents:	“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
“A” document defining the general state of the art which is not considered to be of particular relevance	“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
“E” earlier application or patent but published on or after the international filing date	“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
“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)	“&” document member of the same patent family
“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	

Date of the actual completion of the international search 20.01.2020	Date of mailing of the international search report 04.02.2020
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Name and mailing address of the ISA/ Japan Patent Office 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan	Authorized officer Telephone No.
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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	JP 9-503350 A (APPLIED MATERIALS INC.) 31 March 1997, description, page 12, line 9 to page 13, line 20, fig. 7, 8	1-2, 4-6 3

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/JP2019/046216

Patent Documents referred to in the Report	Publication Date	Patent Family	Publication Date
JP 8-186094 A	16.07.1996	(Family: none)	
JP 2011-519117 A	30.06.2011	US 2009/236214 A1	
JP 2001-250815 A	14.09.2001	paragraphs [0029]-[0032], fig. 2	
JP 2001-250815 A	14.09.2001	US 2001/018951 A1 paragraphs [0018], [0042]-[0045], [0052], [0084], fig. 1, 2	
JP 2003-506889 A	18.02.2003	US 2001/023742 A1 paragraphs [0005]-[0015], [0071], fig. 6	
JP 9-503350 A	31.03.1997	WO 95/32315 A1 description, page 3, line 6 to page 4, line 18, fig. 7, 8	