

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/JP2019/046385

**A. CLASSIFICATION OF SUBJECT MATTER**

Int. Cl. H01L23/00 (2006.01) i, H01L21/301 (2006.01) i  
 FI: H01L21/78 M, H01L23/00 C

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. H01L23/00, H01L21/301

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	WO 2017/188216 A1 (LINTEC CORP.) 02 November 2017, paragraphs [0014], [0021], [0044]-[0047], [0054], [0056], [0207], [0264], [0265]	1-5, 7 6
Y A	JP 2012-214586 A (LINTEC CORP.) 08 November 2012, paragraphs [0003], [0004], [0046], [0073], [0074]	1-5, 7 6
Y A	WO 2018/21145 A1 (MITSUI CHEMICALS TOHCELLO, INC.) 01 February 2018, paragraphs [0002], [0003], [0021], [0025], [0059], [0096], [0098], [0104]	1-5, 7 6
Y A	JP 2008-280520 A (THE FURUKAWA ELECTRIC CO., LTD.) 20 November 2008, paragraph [0013]	4, 5 6

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
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- "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  
22.01.2020

Date of mailing of the international search report  
04.02.2020

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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	JP 2013-120839 A (LINTEC CORP.) 17 June 2013,	5
A	paragraph [0120]	6
A	WO 2017/150145 A1 (LINTEC CORP.) 08 September 2017, paragraph [0019]	6

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

PCT/JP2019/046385

Patent Documents referred to in the Report	Publication Date	Patent Family	Publication Date
WO 2017/188216 A1	02.11.2017	CN 108884244 A KR 10-2019-0003470 A TW 201808606 A	
JP 2012-214586 A	08.11.2012	(Family: none)	
WO 2018/21145 A1	01.02.2018	US 2019/0267273 A1 paragraphs [0002]- [0006], [0074]-[0076], [0085]-[0087], [0155], [0224], [0225], [0231]-[0233], [0253] KR 10-2019-0021410 A TW 201804531 A	
JP 2008-280520 A	20.11.2008	(Family: none)	
JP 2013-120839 A	17.06.2013	(Family: none)	
WO 2017/150145 A1	08.09.2017	CN 108778722 A KR 10-2018-0120173 A TW 201801916 A	