



SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 20 83 60 13

Classification of the application (IPC):

C21D 9/46, C22C 38/38, C23C 2/02, C23C 2/06, C23C 2/28, C22C 38/02,
C22C 38/34, C23C 2/26, C23C 2/40, C22C 38/28, C21D 9/56

Technical fields searched (IPC):

C21D, C22C, C23C

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X	US 9109275 B2 (MORIMOTO YASUhide [JP]; FUJITA NOBUHIRO [JP] ET AL.) 18 August 2015 (2015-08-18) * columns 29-30; tables 6, 7 *	1-3
A	US 2014234657 A1 (AZUMA MASAFUMI [JP] ET AL) 21 August 2014 (2014-08-21) * the whole document *	1-3
A	US 2018105916 A1 (TAKAHASHI HIDEYUKI [JP]) 19 April 2018 (2018-04-19) * the whole document *	1-3

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search The Hague	Date of completion of the search 31 March 2022	Examiner Martinavicius, A
------------------------------	---	------------------------------

CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone	P: intermediate document
Y: particularly relevant if combined with another document of the same category	T: theory or principle underlying the invention
A: technological background	E: earlier patent document, but published on, or after the filing date
O: non-written disclosure	D: document cited in the application
& : member of the same patent family, corresponding document	L: document cited for other reasons

Disclaimer: this document has been automatically generated using data structured in accordance with WIPO standard ST.36 from the database of search reports of the European Patent Office. For technical reasons, its content and layout may differ from that of the original publication. Only the original published information is legally binding.



ANNEX TO SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 20 83 60 13

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on 31-03-2022
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date				
US 9109275	B2	18-08-2015	BR 112012004303 A2	15-03-2016			
			CA 2772026 A1	03-03-2011			
			CN 102482753 A	30-05-2012			
			EP 2474639 A1	11-07-2012			
			ES 2730891 T3	13-11-2019			
			JP 4943558 B2	30-05-2012			
			JP WO2011025042 A1	31-01-2013			
			KR 20120049295 A	16-05-2012			
			MY 160065 A	15-02-2017			
			PL 2474639 T3	30-09-2019			
			RU 2012107854 A	10-10-2013			
			US 2012152411 A1	21-06-2012			
			WO 2011025042 A1	03-03-2011			
			US 2014234657	A1	21-08-2014	BR 112014007500 A2	04-04-2017
						CA 2850044 A1	04-04-2013
CN 103827341 A	28-05-2014						
EP 2762600 A1	06-08-2014						
ES 2732799 T3	26-11-2019						
JP 5569647 B2	13-08-2014						
JP WO2013047820 A1	30-03-2015						
KR 20140068122 A	05-06-2014						
KR 20160075849 A	29-06-2016						
KR 20160075850 A	29-06-2016						
PL 2762600 T3	30-09-2019						
RU 2566131 C1	20-10-2015						
TW 201319268 A	16-05-2013						
US 2014234657 A1	21-08-2014						
WO 2013047820 A1	04-04-2013						
ZA 201402259 B	29-04-2015						
US 2018105916	A1	19-04-2018	AU 2016252162 A1	02-11-2017			
			CN 107532269 A	02-01-2018			
			JP 6361606 B2	25-07-2018			
			JP 2016204744 A	08-12-2016			
			KR 20170129913 A	27-11-2017			
			TW 201638361 A	01-11-2016			
			US 2018105916 A1	19-04-2018			