PATENTSCOPE – Exercise booklet November 2023 – Solutions

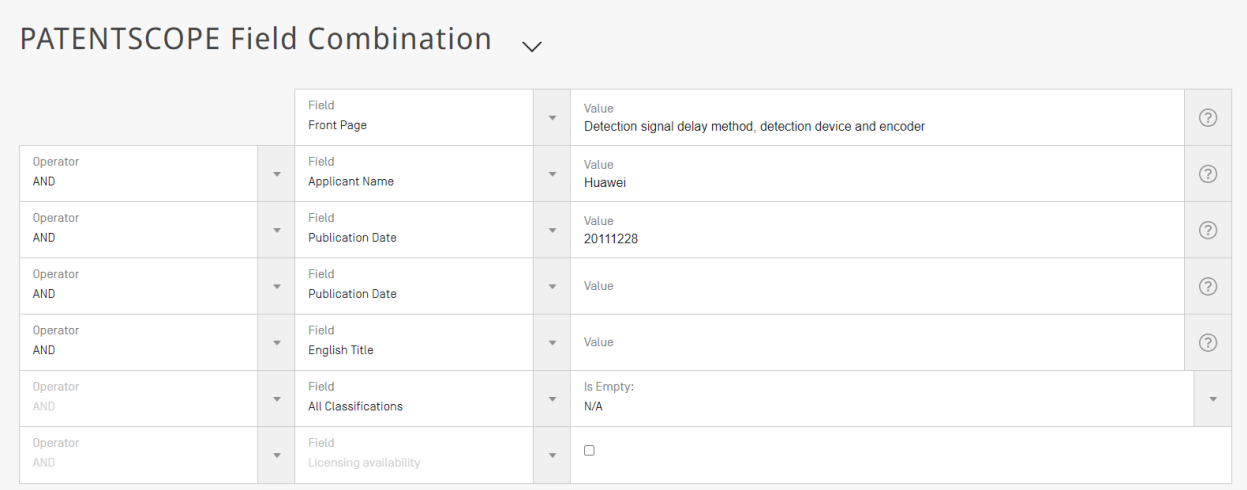
Disclaimer: kindly note that the results presented in the Solutions might be slightly different depending on when you do the exercises as the features of PATENTSCOPE may change and more documents become available every week. Should you have any questions, please contact patentscope@wipo.int.

1. CHINESE PATENT APPLICATION AND TRANSLATION

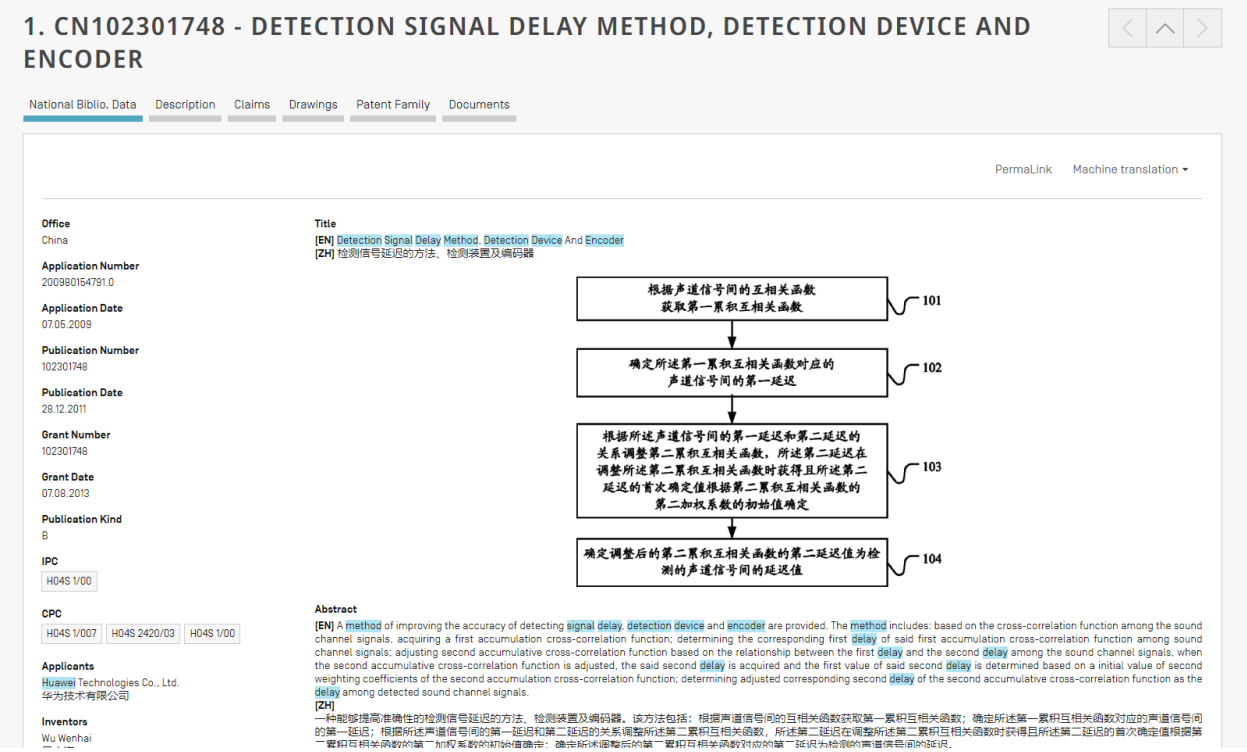
A. How could you obtain translations into the English and Korean languages without processing the original Chinese texts in a computer machine translation. How would you obtain other language versions?

i. Find the relevant document by searching for “Detection signal delay method, detection device and encoder” in Front Page, with “Huawei” as Applicant Name, and 28th December 2011 as Publication Date.

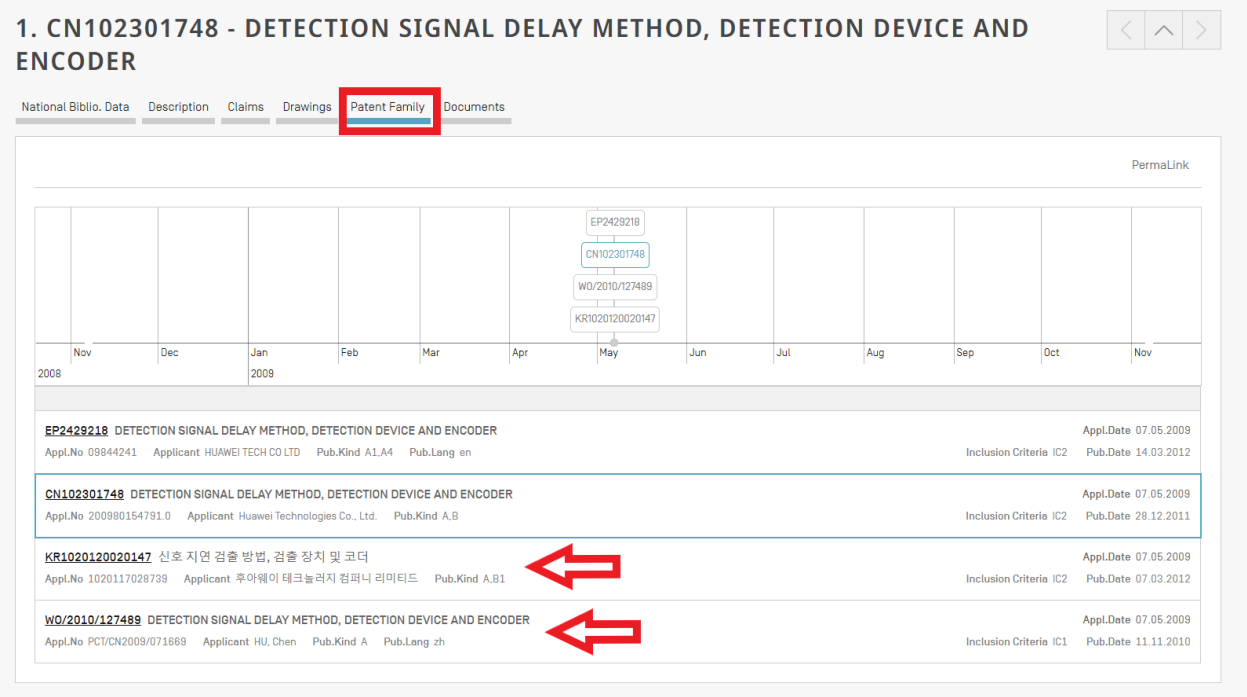
Tips: Be cautious when using the “Front Page” field to search for key words, as it includes the title, abstract, names and numbers, therefore sometimes it can retrieve irrelevant results, such as when the applicant names contain the key words but the patent is unrelated. Consider alternative fields such as “English Text” (EN_ALLTXT), “English Claims” (EN_CL), “English Description” (EN_DE) for more precise keyword searches.



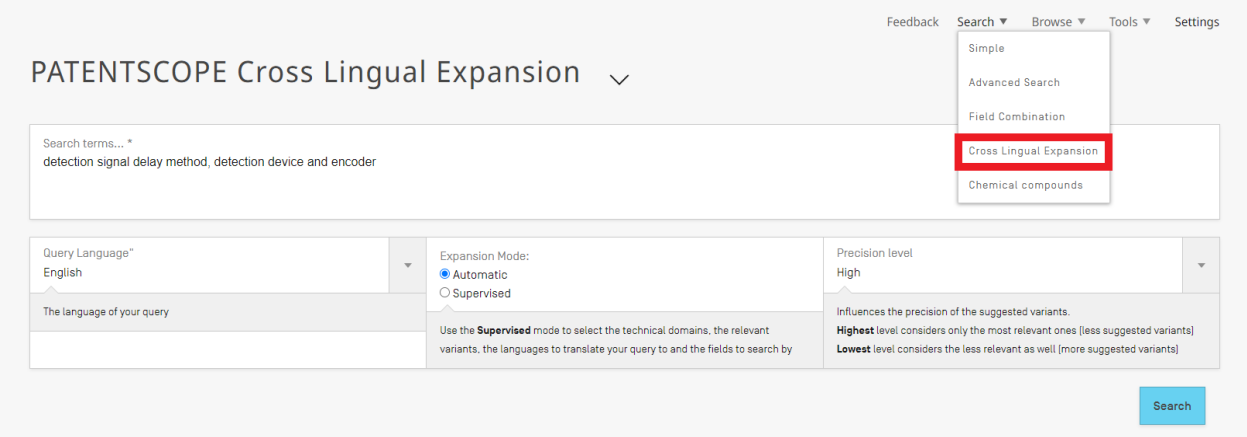
Then you will find this patent document **CN102301748**.



ii. Go to the “Patent Family” tab; then the translation into English can be obtained from the WO document, and the translation into Korean can be obtained from the KR document.



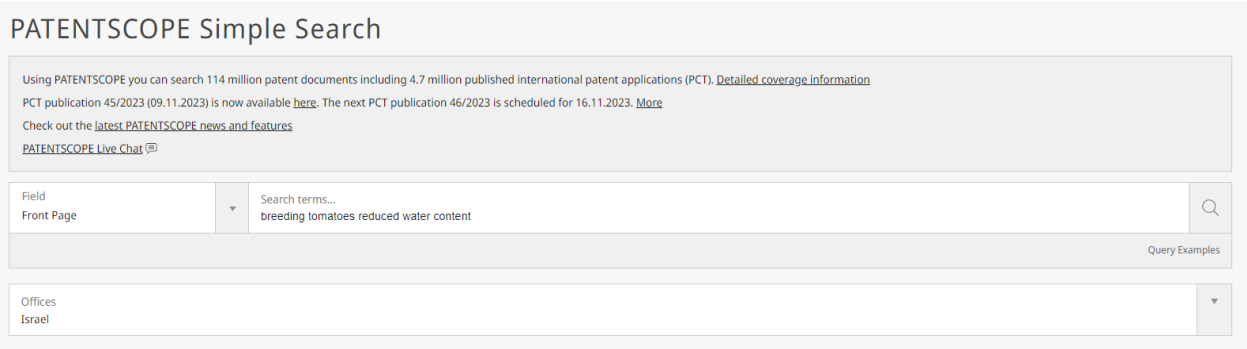
iii. Access translations in other languages through CLIR (Cross Lingual Expansion). Enter “Detection signal delay method, detection device and encoder” as search terms.



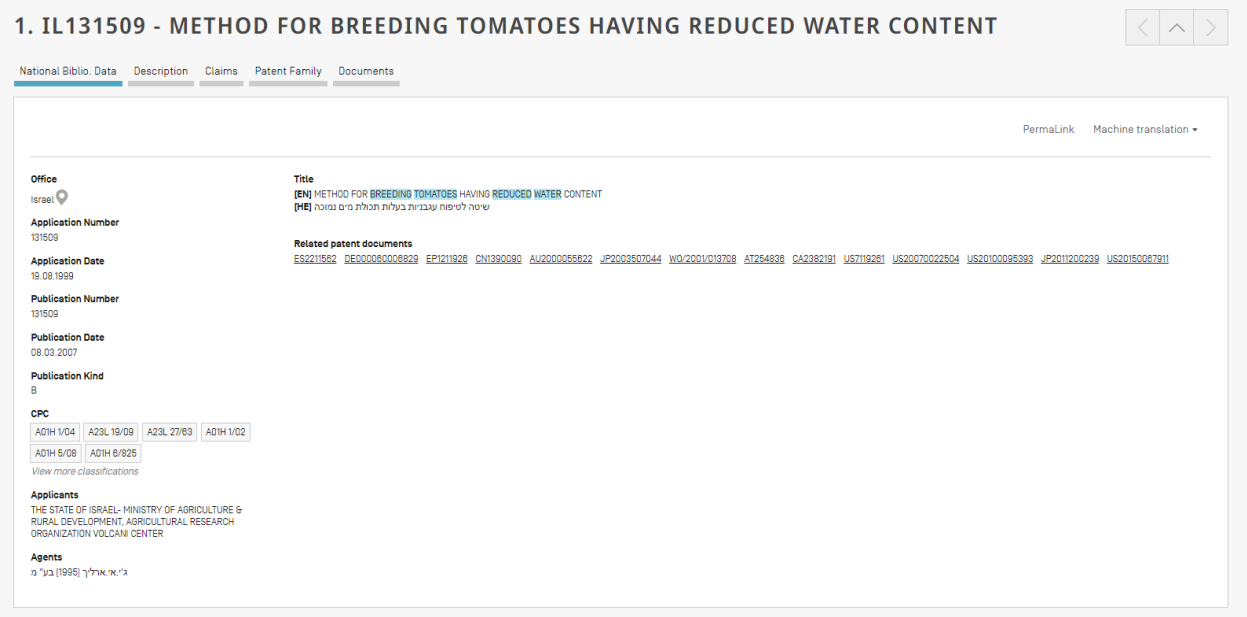
2. *BREEDING TOMATOES*

A. What was the PCT publication number?

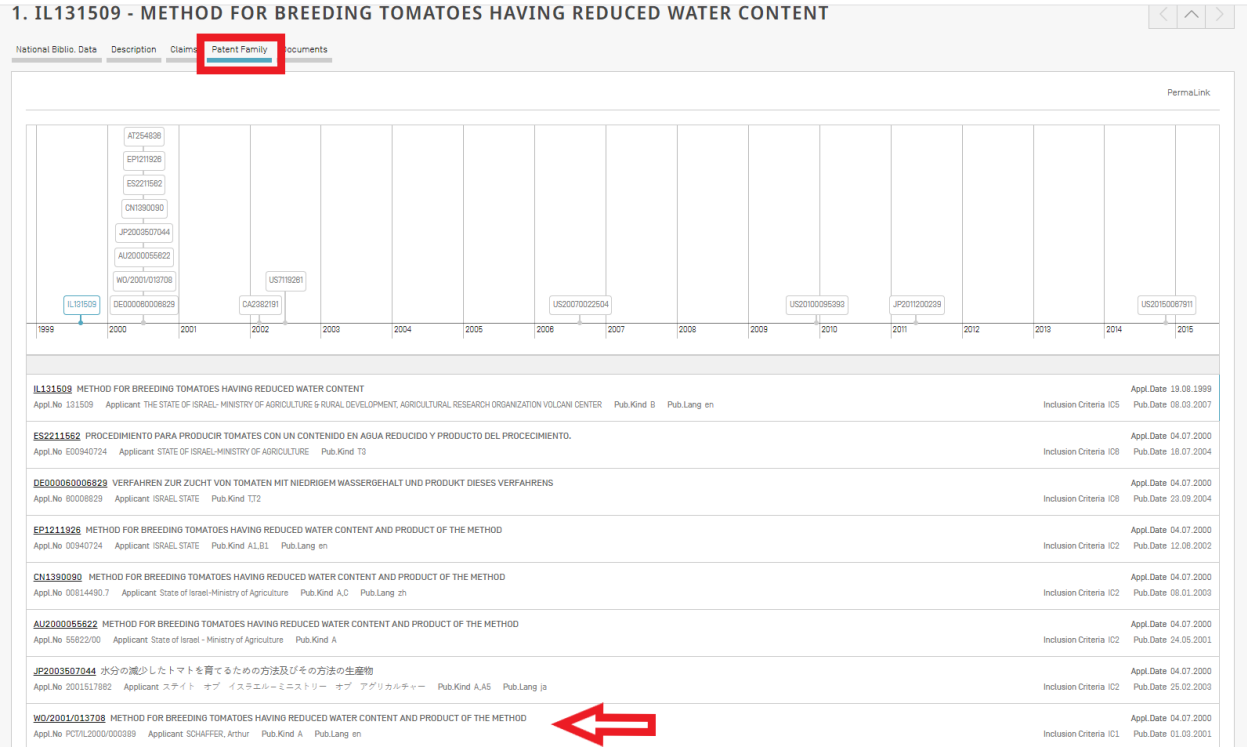
i. Use Simple search to search for "breeding tomatoes reduced water content" in Front Page field, choose Israel as the office (IP Portal login required), then you will find the relevant national patent document **IL131509**.



Tips: Logging into WIPO IP Portal allows users to (1) save their queries; (2) download the result lists up to 10,000 results records; (3) access to the chemical structure search; (4) select IP offices in Simple Search.

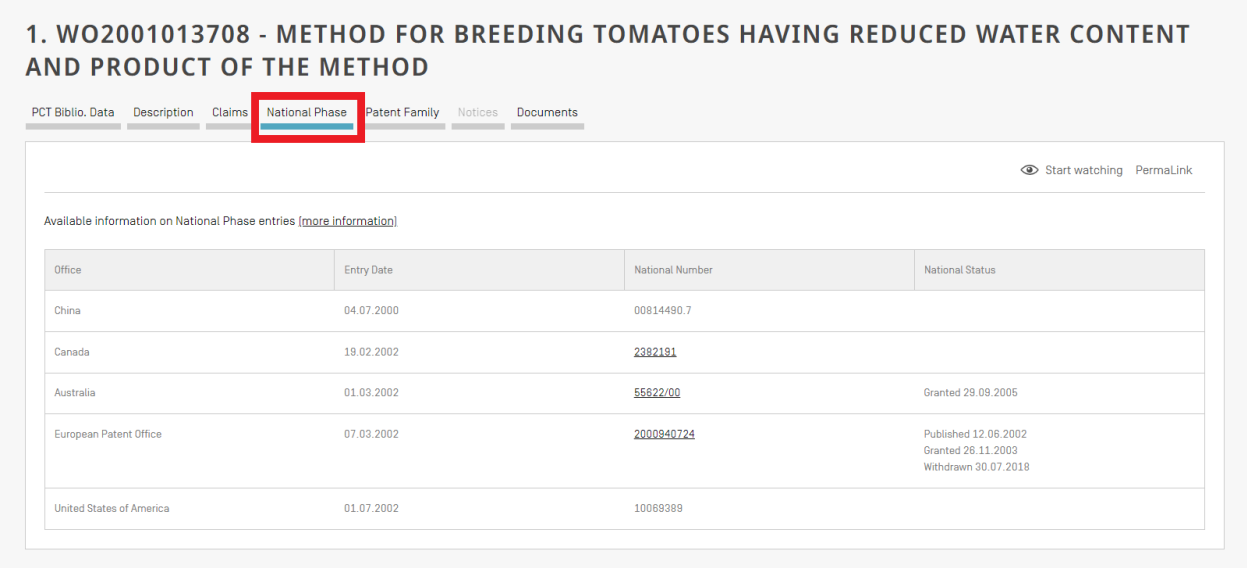


ii. Go to the "Patent Family" tab; then the PCT publication number can be obtained from the WO document: **WO/2001/013708**



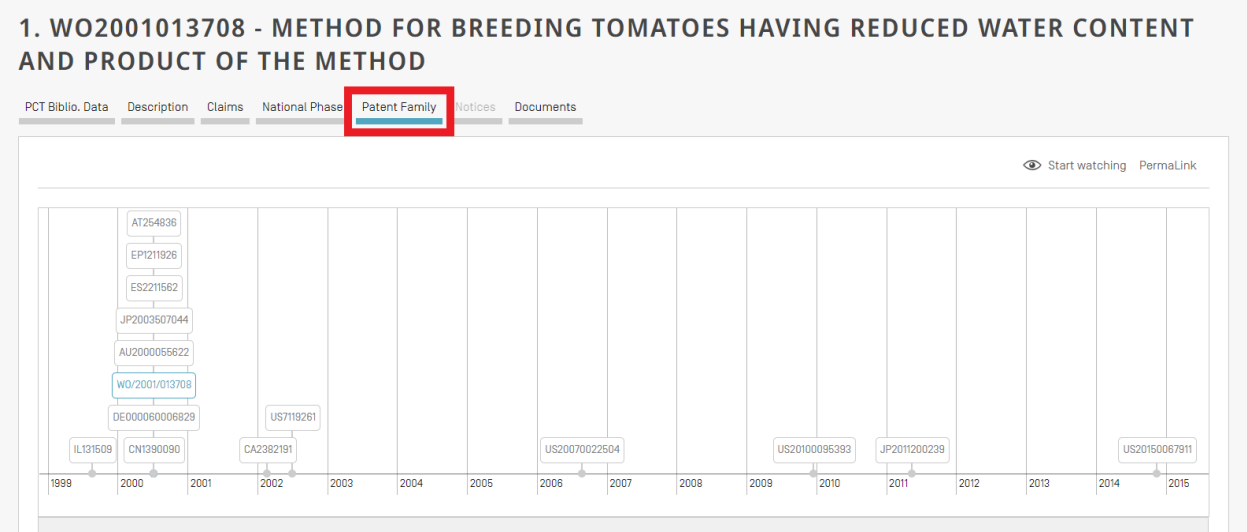
B. In which countries did the PCT application enter the national phase?

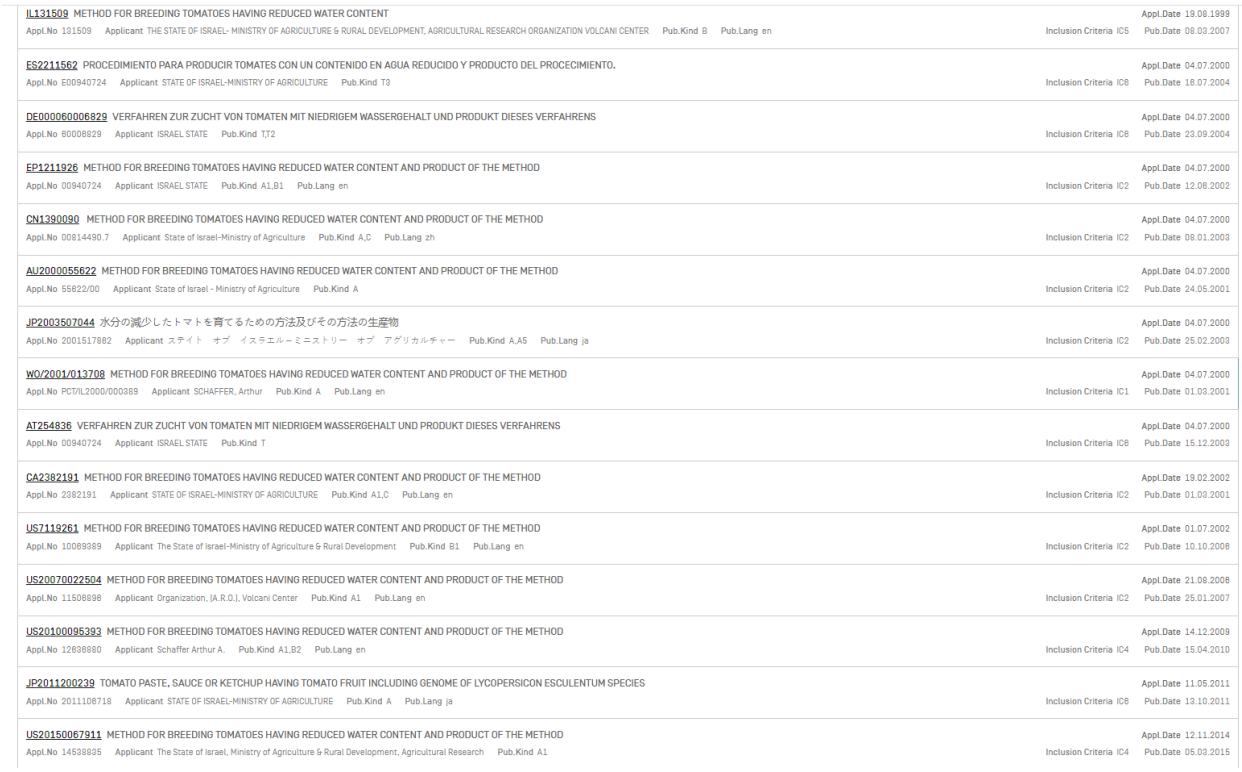
Open the WO number application, then go to the "National Phase" tab; you will see all the countries where this PCT application entered the national phase.



C. Which other family members are there?

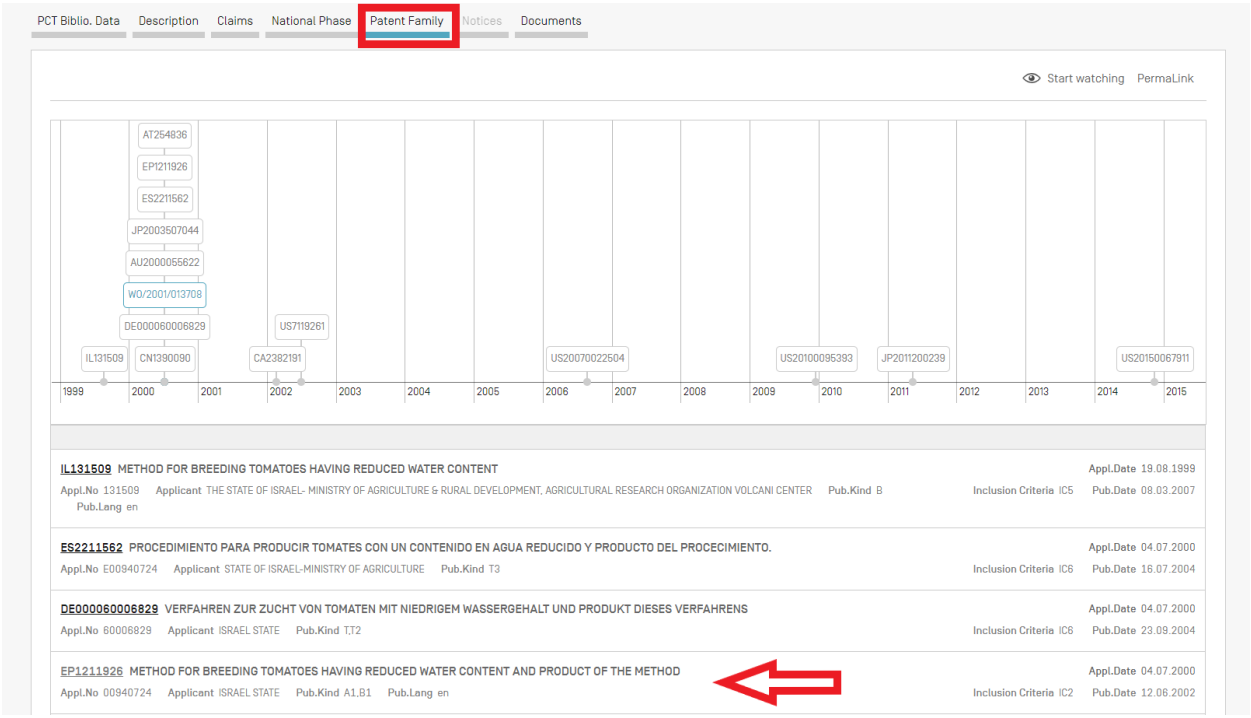
Go to the “Patent Family” tab, you will see the family members from the patent family picture.



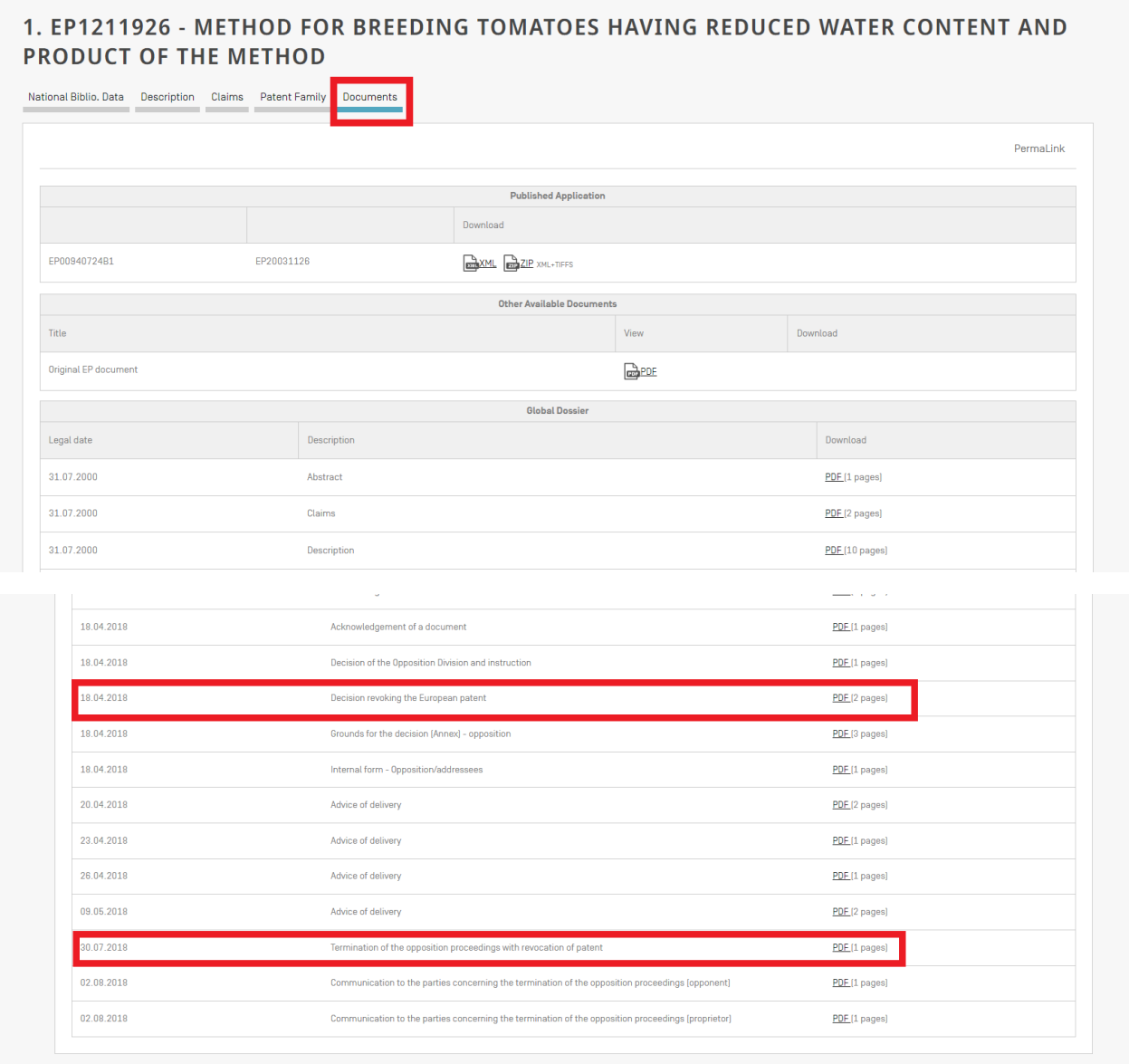


D. What was the fate of the European Patent family member?

Open the EP number application.

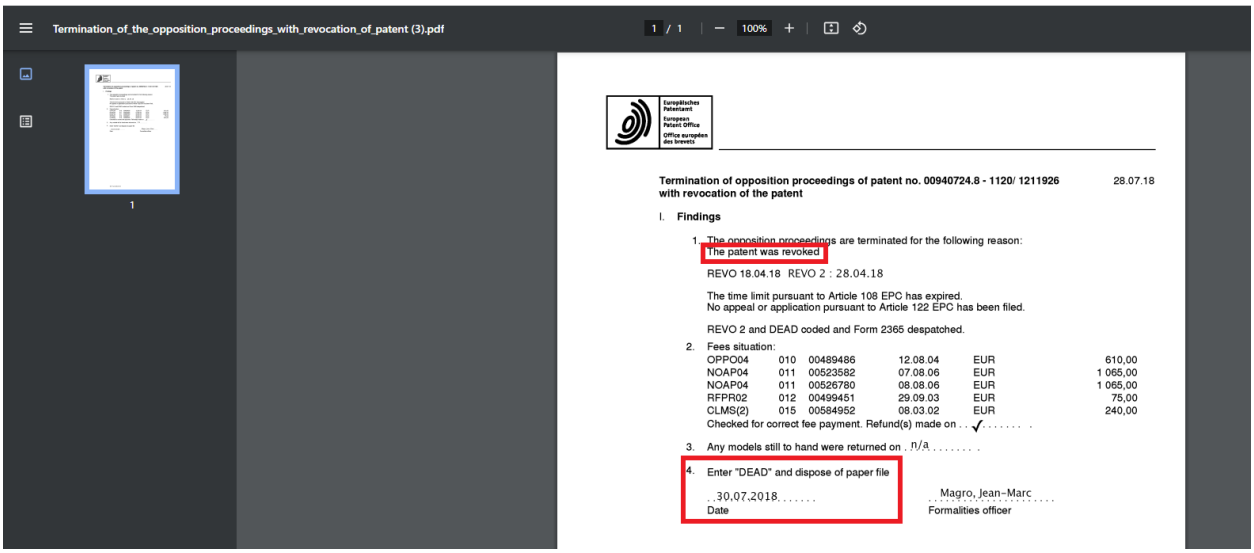


Go to the “Document” tab, then scroll down to the bottom, where you will notice two documents: one is titled “Decision revoking the European patent”, and one is “Termination of the opposition proceedings with revocation of patent”.



Open the PDF of the second file; you will find the fate of the European Patent family member is that the patent is revoked with effect from 30.7.2018[1].

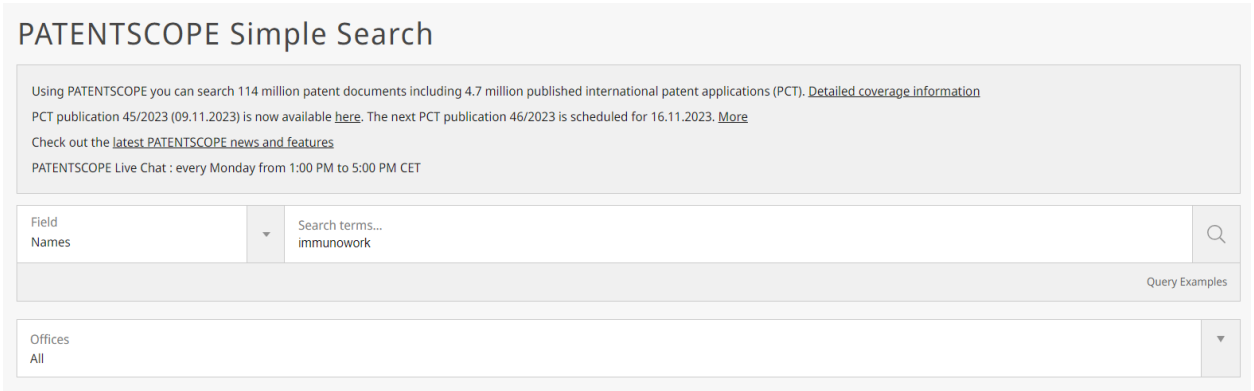
[1] EPC Art. 105b (3): The decision to limit or revoke the European patent shall apply to the European patent in all the Contracting States in respect of which it has been granted. **It shall take effect on the date on which the mention of the decision is published in the European Patent Bulletin.**

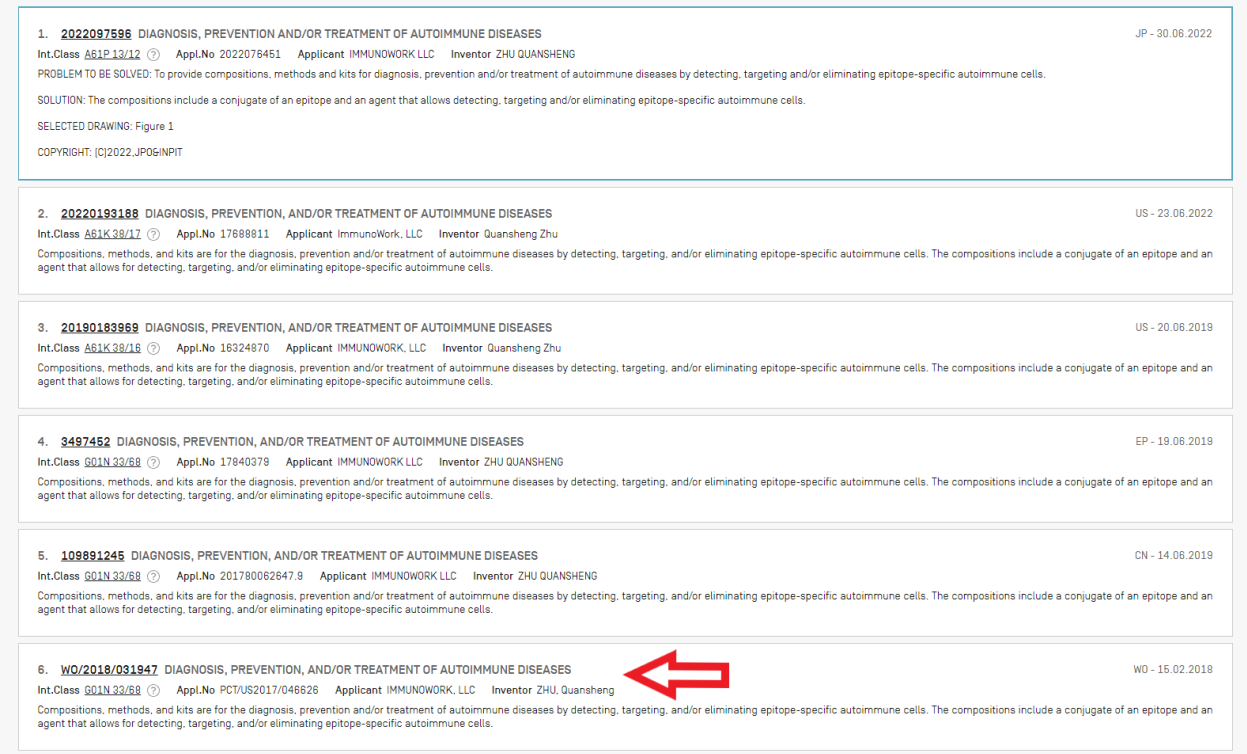


3. *IMMUNOWORKS*

A. Find the PCT family member.

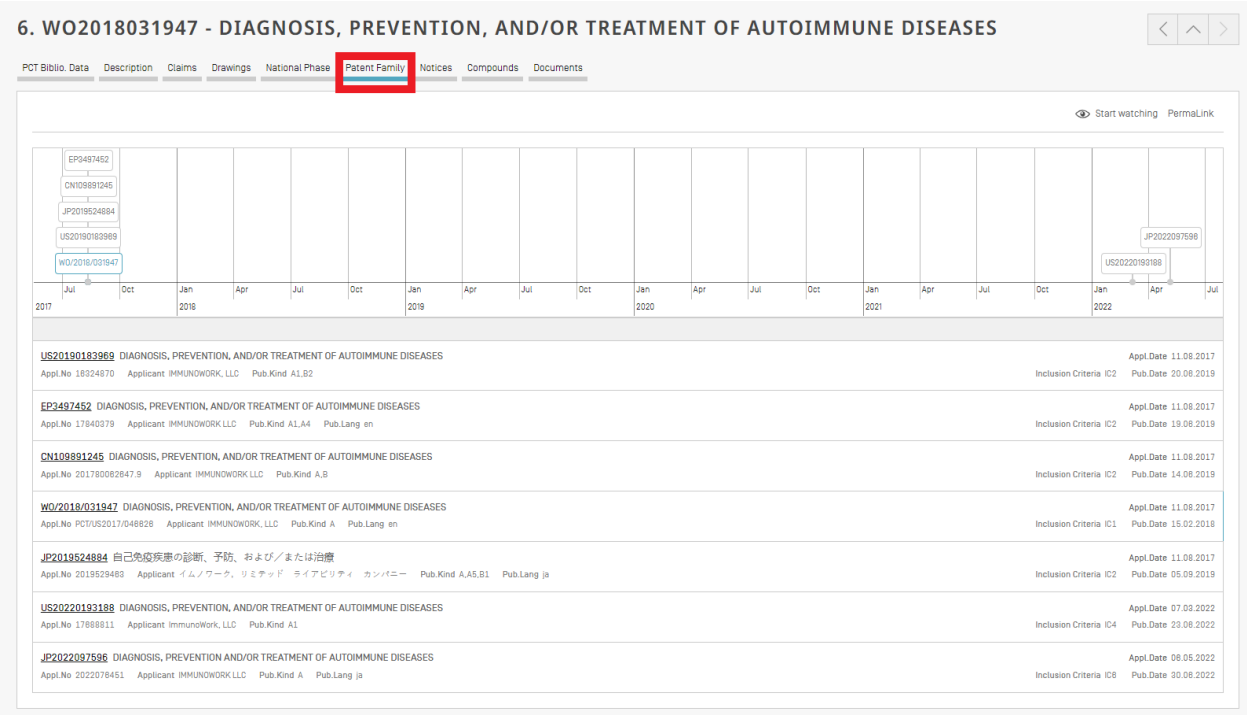
Search “immunowork” in the “Names” field, and then find the WO number application from the results list: **PCT/US2017/046626**.





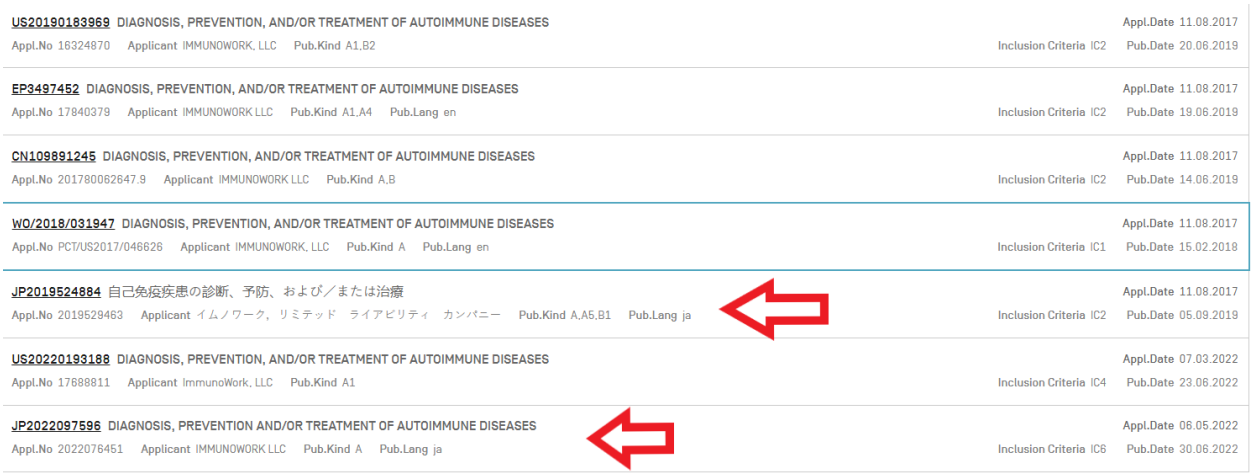
B. Find the other family members.

Open the WO number application, then go to the “Patent family” tab where all the patent family members are listed.



C. What is the easiest way of obtaining a Japanese language version of the English language description?

Select the JP document to obtain the Japanese version.



US20190183969 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES
Appl.No 16324870 Applicant IMMUNOWORK, LLC Pub.Kind A1,B2 Appl.Date 11.08.2017 Inclusion Criteria IC2 Pub.Date 20.06.2019

EP3497452 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES
Appl.No 17840379 Applicant IMMUNOWORK LLC Pub.Kind A1,A4 Pub.Lang en Appl.Date 11.08.2017 Inclusion Criteria IC2 Pub.Date 19.06.2019

CN109891245 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES
Appl.No 201780062647.9 Applicant IMMUNOWORK LLC Pub.Kind A,B Appl.Date 11.08.2017 Inclusion Criteria IC2 Pub.Date 14.06.2019

WO/2018/031947 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES
Appl.No PCT/US2017/046626 Applicant IMMUNOWORK, LLC Pub.Kind A Pub.Lang en Appl.Date 11.08.2017 Inclusion Criteria IC1 Pub.Date 15.02.2018

JP2019524884 自己免疫疾患の診断、予防、および／または治療
Appl.No 2019529463 Applicant イムノワーク，リミテッド ライアビリティ カンパニー Pub.Kind A,A5,B1 Pub.Lang ja Appl.Date 11.08.2017 Inclusion Criteria IC2 Pub.Date 05.09.2019

US20220193188 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES
Appl.No 17688811 Applicant ImmunoWork, LLC Pub.Kind A1 Appl.Date 07.03.2022 Inclusion Criteria IC4 Pub.Date 23.06.2022

JP2022097596 DIAGNOSIS, PREVENTION AND/OR TREATMENT OF AUTOIMMUNE DISEASES
Appl.No 2022076451 Applicant IMMUNOWORK LLC Pub.Kind A Pub.Lang ja Appl.Date 06.05.2022 Inclusion Criteria IC6 Pub.Date 30.06.2022

Technical Field

[0001] 関連出願への相互参照
本願は、２０１６年８月１２日に出願された米国特許仮出願第６２／３７４，３８２号の優先権を主張し、これは参照することにより本明細書に組み入れられるものとする。
[0002] 電子フォーマットの配列表
本願は、ＥＦＳウェブを介してＡＳＣＩＩテキストファイルとして電子的配列表と共に出願されている。電子的配列表は、７２，８１０バイトの容量を有し、２０１７年８月１１日に作成、最終保存されたＩＭＷＯ００１ＷＯＳＥＱＬＩＳＴ．ｔｘｔというファイル名で提出されている。電子的配列表の中の情報は、米国特許法第１．５２（ｅ）条に従って、その全文を参照することにより本明細書に組み入れられるものとする。
[0003] 本開示は、概して、エピトープ特異的自己免疫細胞の検出、標的化、および／または排除による自己免疫系疾患の診断、予防および／または治療のための組成物、方法、および／またはキットに関する。

Background Art

[0004] 自己免疫疾患は、Ｔ細胞媒介、Ｂ細胞媒介、またはその双方媒介であり得、臓器および／または組織傷害と関連し得る。

Summary of Invention

Technical Solution

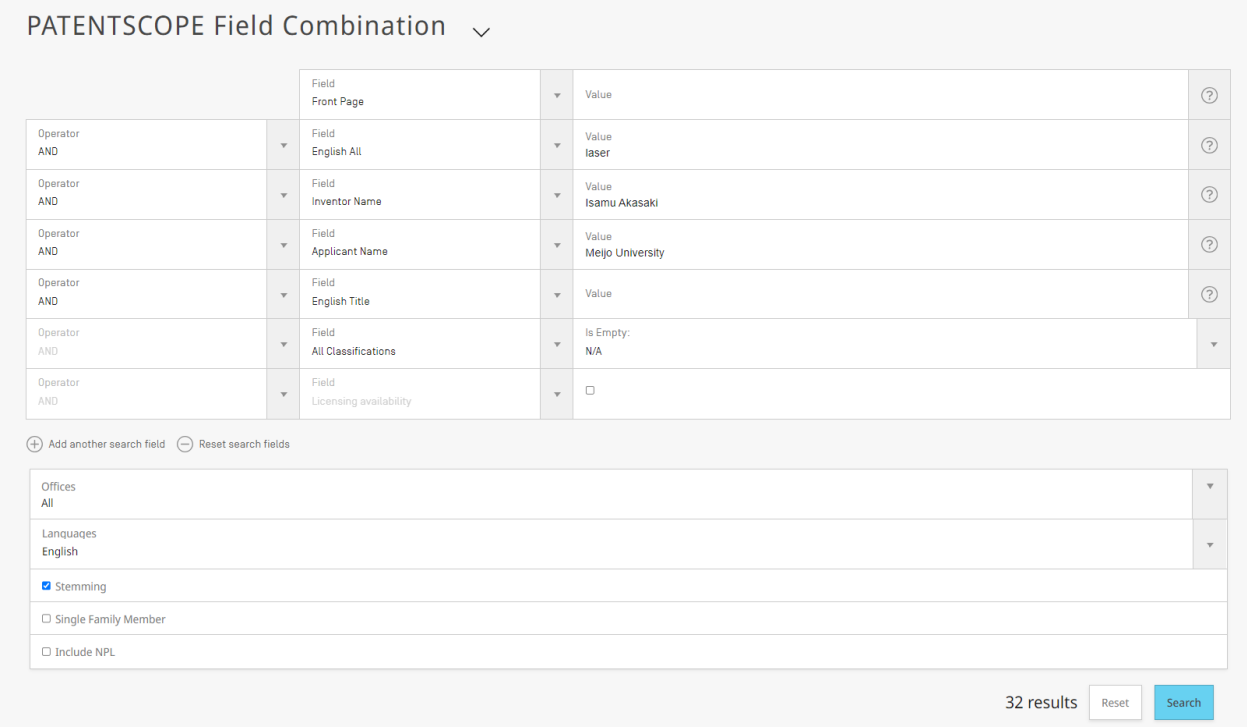
[0005] いくつかの実施形態では、膜性腎症（ＭＮ）患者の治療方法を提供する。いくつかの実施形態では、ＭＮ患者の治療方法は、ＭＮ患者を特定すること、およびＰＬＡ２Ｒエピトープおよび薬物を含む複合体を患者に投与することを含み、該エピトープはＰＬＡ２Ｒフラグメント内に含まれ、それにより患者の抗ＰＬＡ２Ｒ自己抗体産生Ｂ細胞集団を排除または低減する。
[0006] ＭＮ患者の治療方法のいくつかの実施形態では、ＰＬＡ２Ｒエピトープは、配列番号１３で定められた通りである。方法のいくつかの実施形態では、ＰＬＡ２Ｒフラグメントの配列は、配列番号１で定められた通りである。方法のいくつかの実施形態では、ＰＬＡ２Ｒフラグメントの配列は、配列番号２で定められた通りである。方法のいくつかの実施形態では、ＰＬＡ２Ｒフラグメントは配列番号２で定められた通りであり、配列番号３で定められた配列の少なくとも約５％である。方法のいくつかの実施形態では、ＰＬＡ２Ｒフラグメントは、配列番号４で定められた通りである。方法のいくつかの実施形態では、ＰＬＡ２Ｒフラグメントは、配列番号５で定められた通りである。方法のいくつかの実施形態では、ＰＬＡ２Ｒフラグメントは配列番号５で定められた通りであり、配列番号６で定められた配列の少なくとも約５％である。方法のいくつかの実施形態では、薬物は、アンチセンスＲＮＡ、ｍｉＲＮＡ、ｓｉＲＮＡもしくはＲＮＡｉに関するＲＮＡフラグメント、１つ以上のデュオカルマイシン類似体、またはアドゼレシン、ビゼレシン（bizelesin）、カルゼルシン、シクロホスファミド、メトトレキサート、５－フルオロウラシル、ドキソルビシン、シクロホスファミド、エピルビシン、シスプラチン、５－フルオロウラシルおよびカペシタビンなどの細胞傷害性薬物からなる群から選択される。方法のいくつかの実施形態では、抗ＰＬＡ２Ｒ自己抗体産生Ｂ細胞集団の排除効率は、約７０％～約１００％の範囲である。方法のいくつかの実施形態では、複合体は、Ｔ細胞集団も排除し、該Ｔ細胞集団は、抗ＰＬＡ２Ｒ自己抗体産生Ｂ細胞集団にＴ細胞ヘルプを提供する。
[0007] いくつかの実施形態では、ＰＬＡ２Ｒエピトープを含む複合体および薬物を提供する。複合体のいくつかの実施形態では、エピトープは、ＰＬＡ２Ｒフラグメント内に含まれる。複合体のいくつかの実施形態では、ＰＬＡ２Ｒエピトープは、配列番号１３で定められた通りである。複合体のいくつかの実施形態では、ＰＬＡ２Ｒフラグメントの配列は、配列番号１で定められた通りである。複合体のいくつかの実施形態では、ＰＬＡ２Ｒフラグメントの配列は、配列番号２で定められた通りである。複合体のいくつかの実施形態では、ＰＬＡ２Ｒフラグメントの配列は配列番号２で定められた通りであり、配列番号３で定められた配列の少なくとも約５％である。複合体のいくつかの実施形態では、ＰＬＡ２Ｒフラグメントの配列は、配列番号４で定められた通りである。複合体のいくつかの実施形態では、ＰＬＡ２Ｒフラグメントの配列は、配列番号５で定められた通りである。複合体のいくつかの実施形態では、ＰＬＡ２Ｒフラグメントの配列は配列番号５で定められた通りであり、配列番号６で定められた配列の少なくとも約５％である。複合体のいくつかの実施形態では、薬物は、アンチセンスＲＮＡ、ｍｉＲＮＡ、ｓｉＲＮＡもしくはＲＮＡｉに関するＲＮＡフラグメント、１つ以上のデュオカルマイシン類似体、またはアドゼレシン、ビゼレシン、カルゼルシン、シクロホスファミド、メトトレキサート、５－フルオロウラシル、ドキソルビシン、シクロホスファミド、エピルビシン、シスプラチン、５－フルオロウラシルおよびカペシタビンなどの細胞傷害性薬物からなる群から選択される。複合体のいくつかの実施形態では、薬物は、バリューシトルリンリンカーによりＰＬＡ２Ｒフラグメントと結合している。
[0008] 自己免疫Ｂ細胞またはＴ細胞を有する対象への薬物の送達方法を提供する。いくつかの実施形態では、薬物の送達方法は、リンカーにより薬物と結合されたエピトープを含むエピトープ－薬物複合体（ＥＤＣ）において薬物を提供

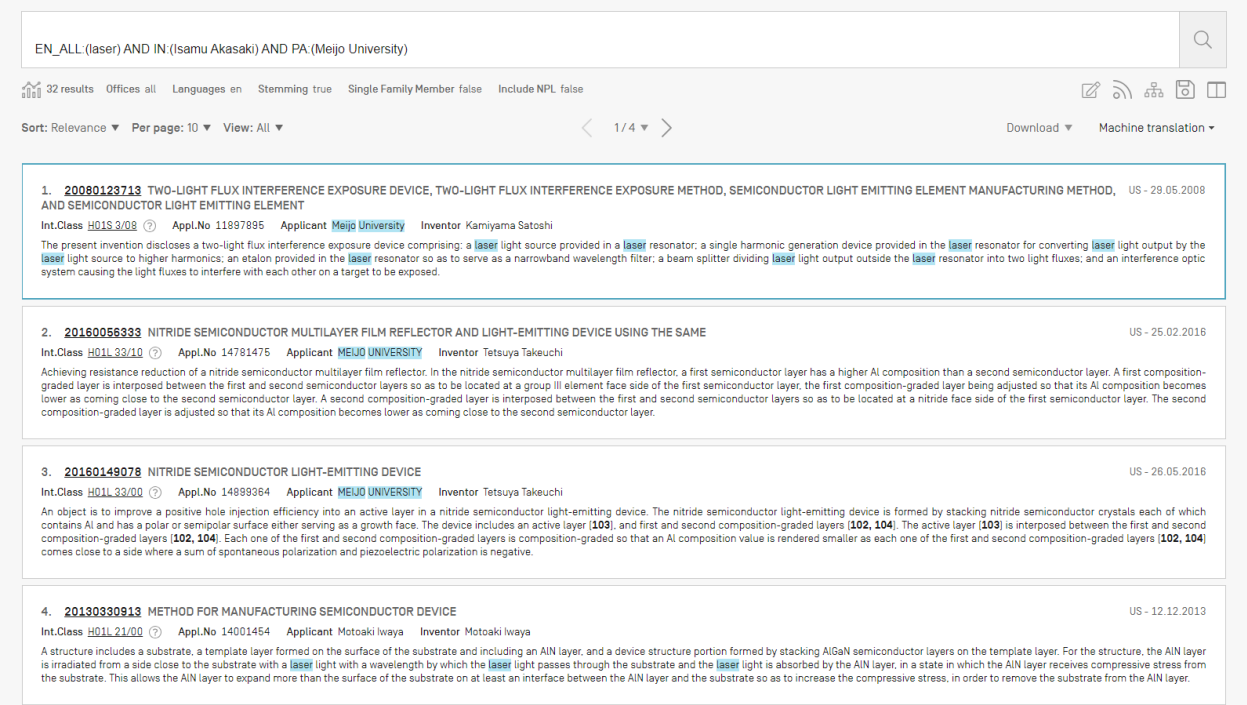
4. NOBEL PRIZE BLUE LASER

A. Find patent applications in the field of lasers for each of these Nobel Prize winners individually and together (co inventorship)

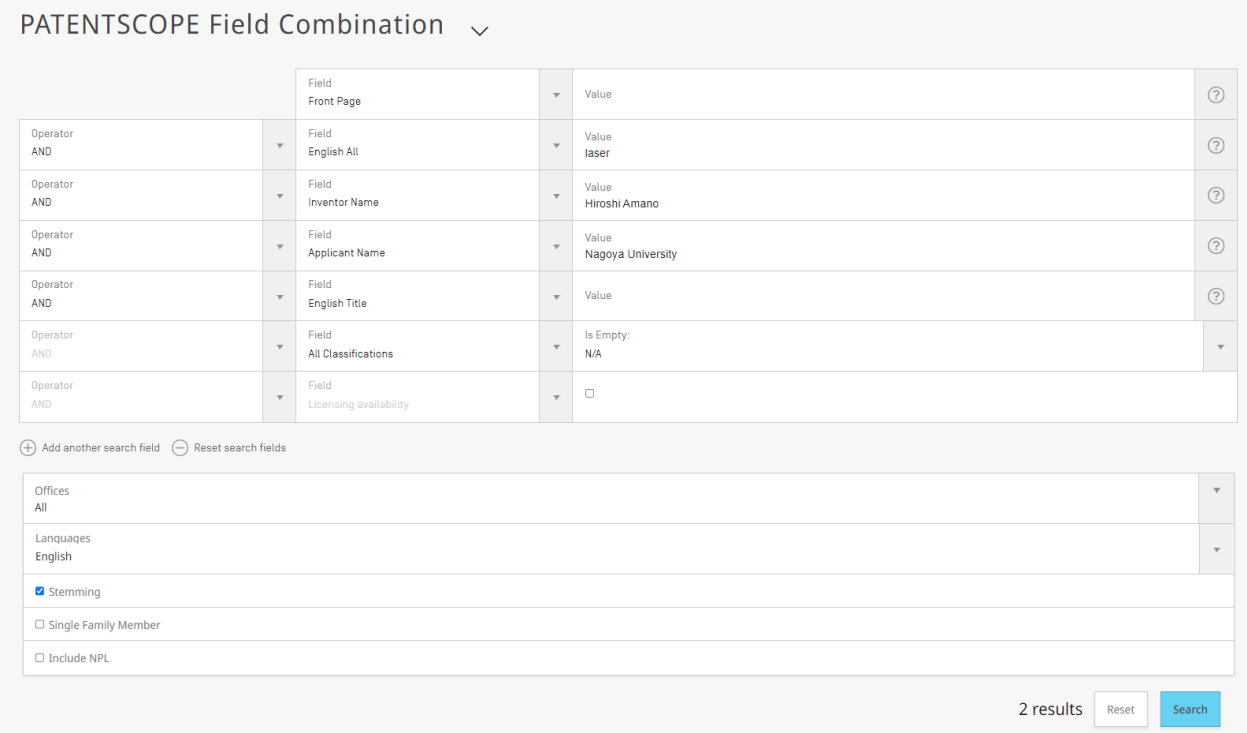
- Individually

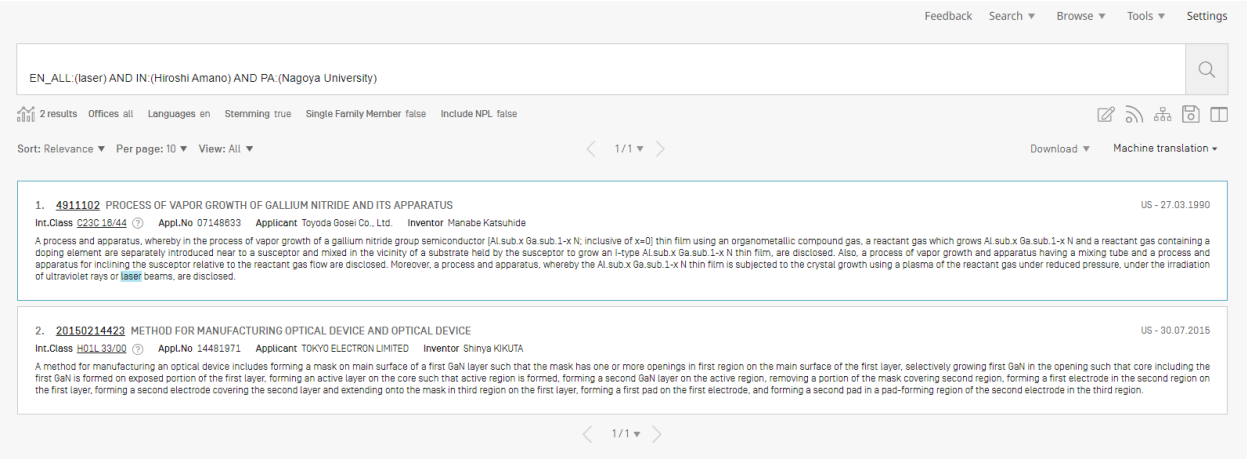
(i) For Isamu Akasaki, use Field Combination, enter “laser” in the field English Text, “Isamu Akasaki” or “Akasaki Isamu” in Inventor Name. To remove ambiguous results, also include Applicant Name as “Meijo University” or “Nagoya University”.



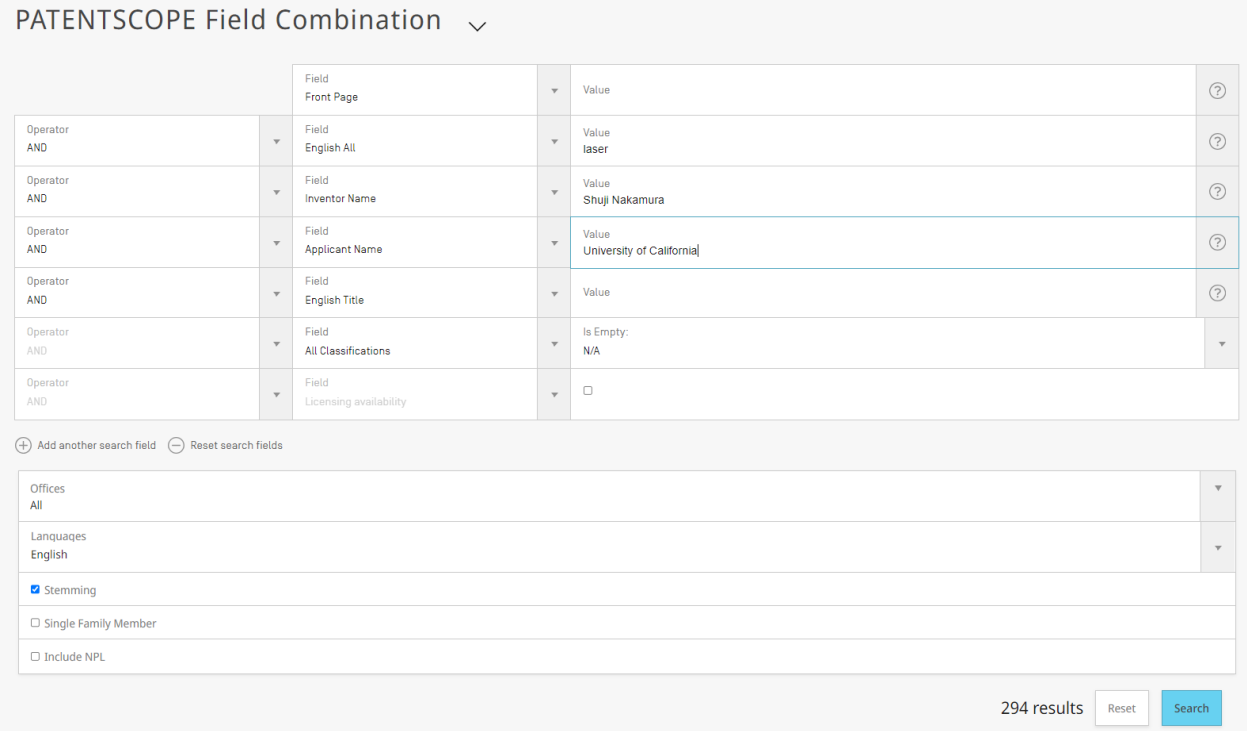


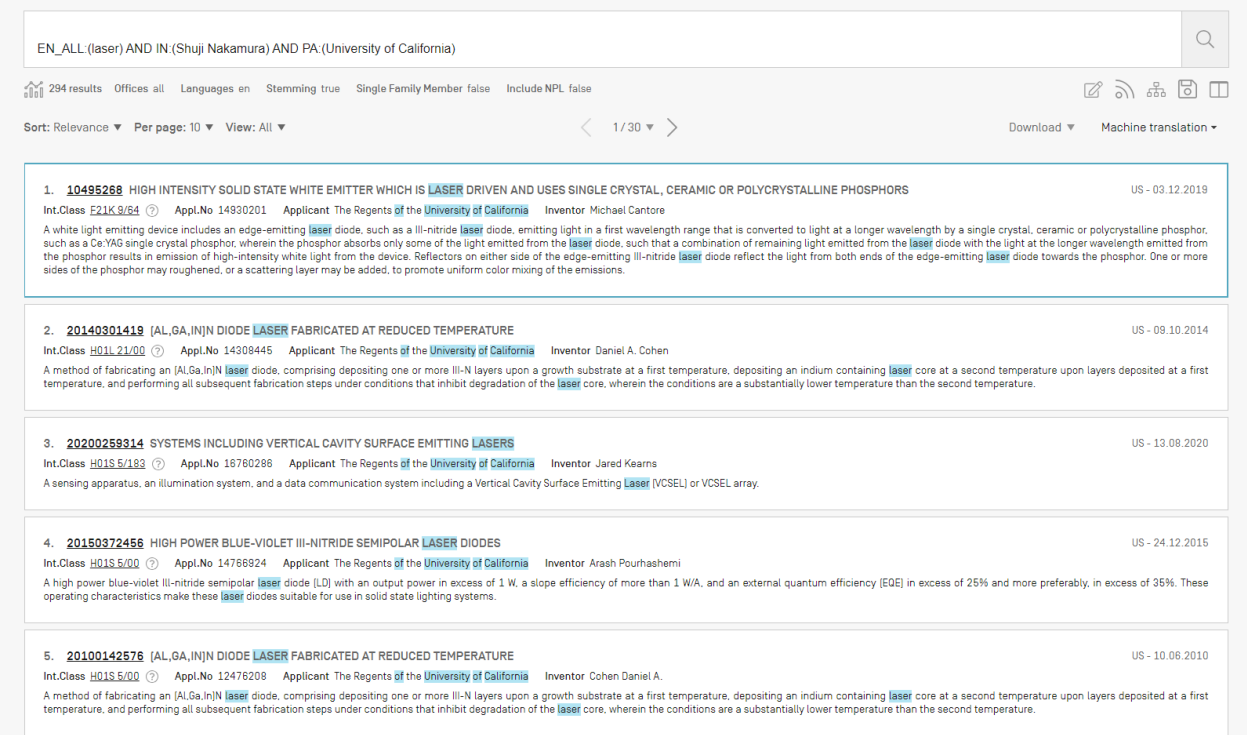
(ii) For Hiroshi Amano, repeat the steps above but change the inventor name to “Hiroshi Amano” or “Amano Hiroshi” and the applicant name as “Nagoya University”.





(iii) For Shuji Nakamura, repeat the same steps above but replace the relevant information.

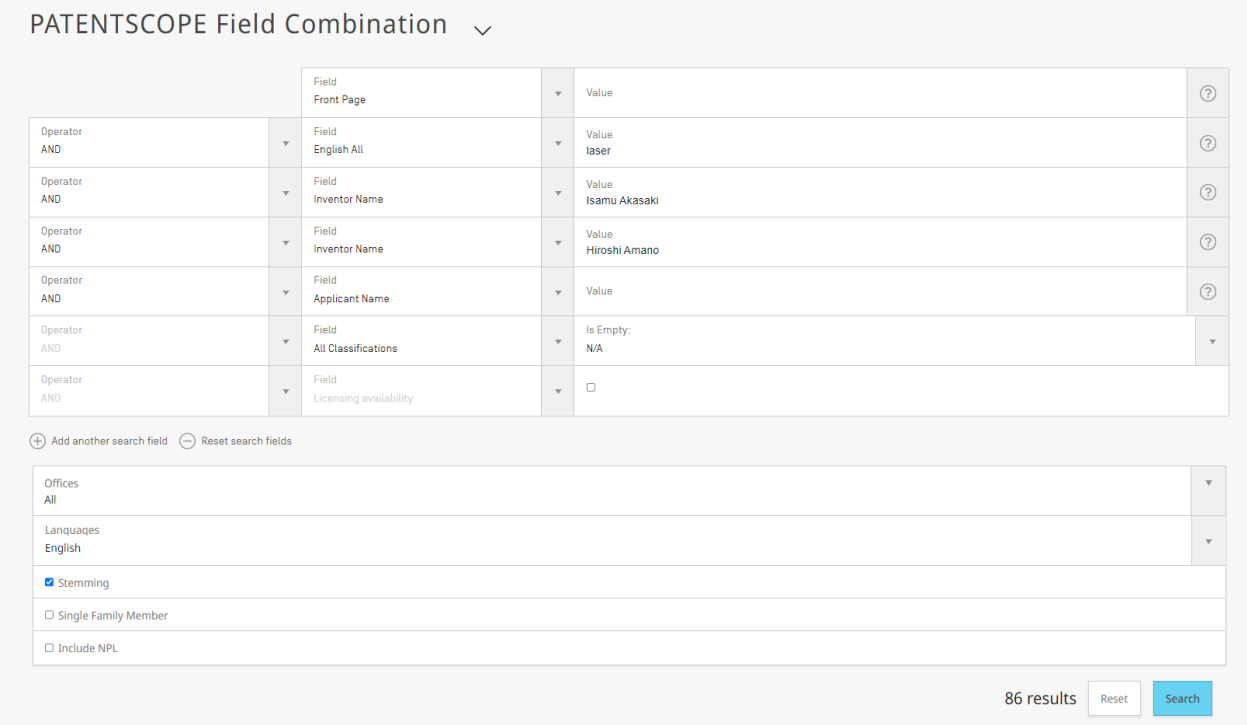


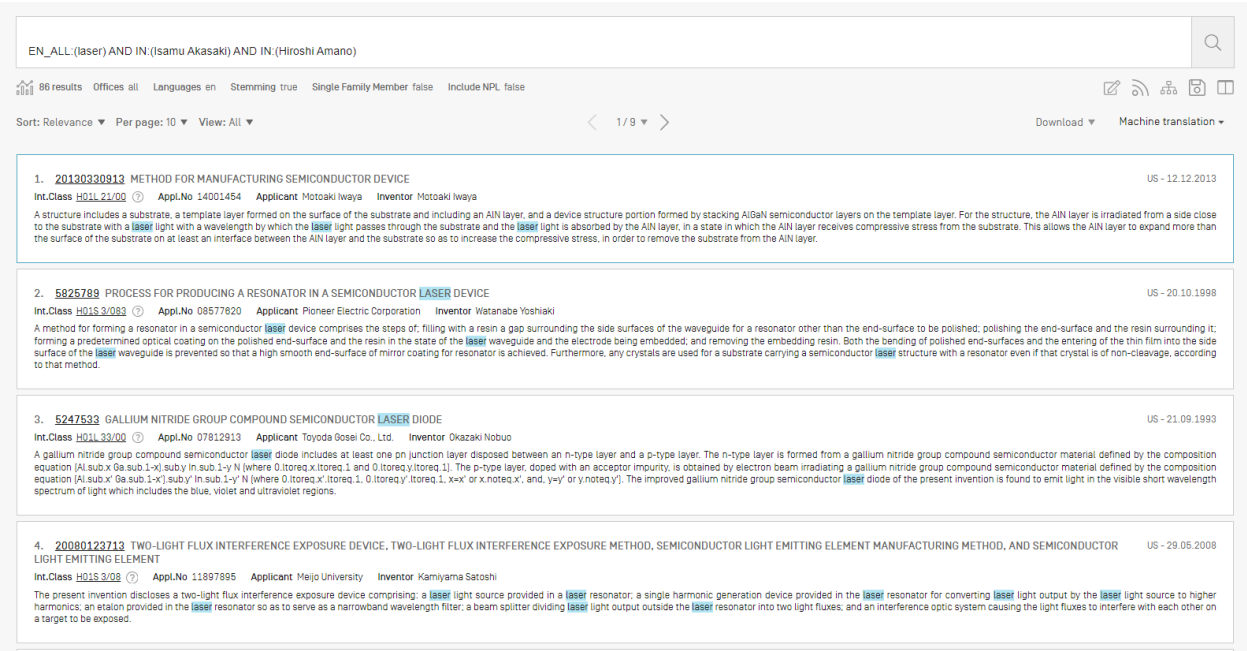


- Together

To find the pairs of co-inventorships combine the searches as follows:

- a(i) + a(ii)



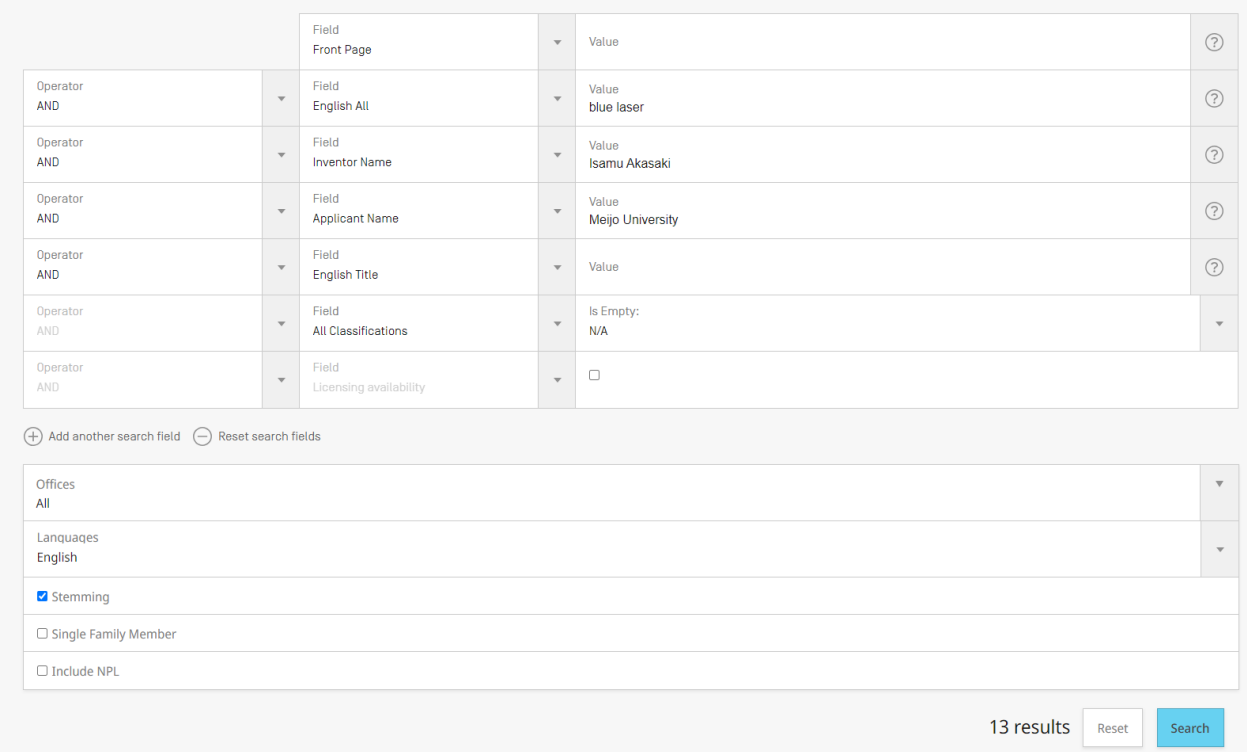


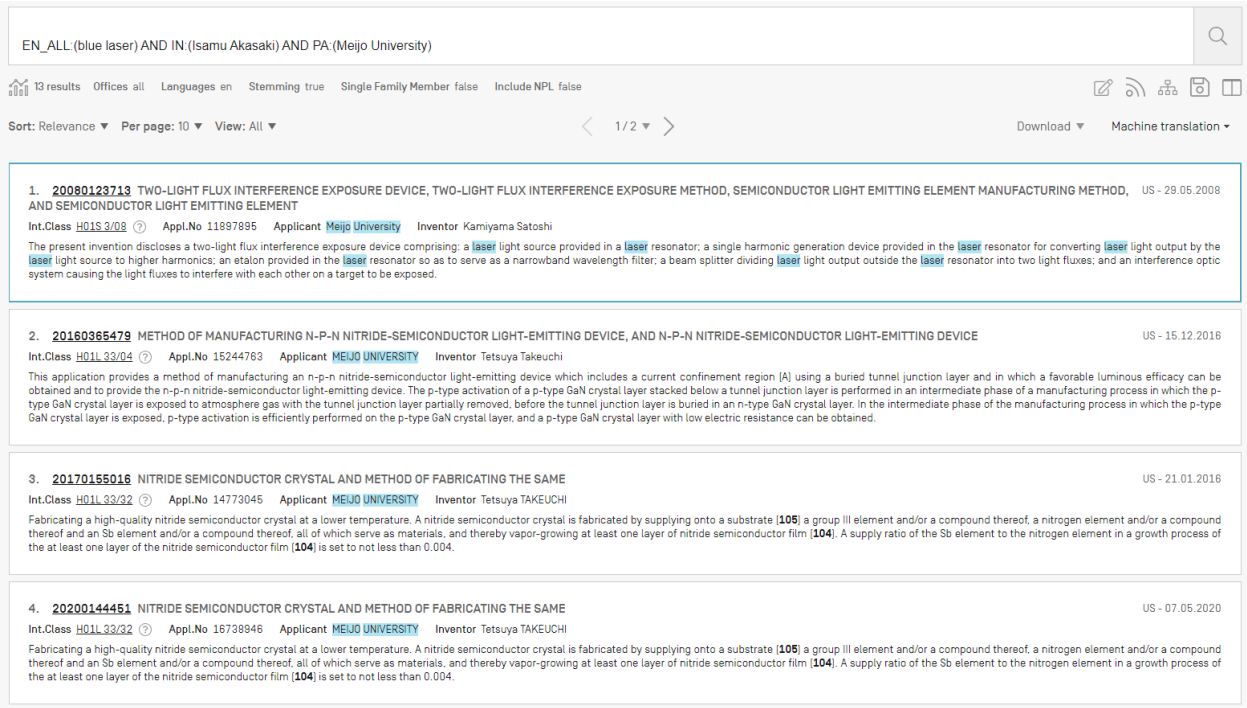
- a(i) + a(iii)
- a(ii) + a(iii)

Repeat the searches above but replace the relevant information.

B. Refine your search results to patent applications for blue lasers

To narrow the search results to blue lasers, repeat the above with changing the keyword to “blue laser”. For example:

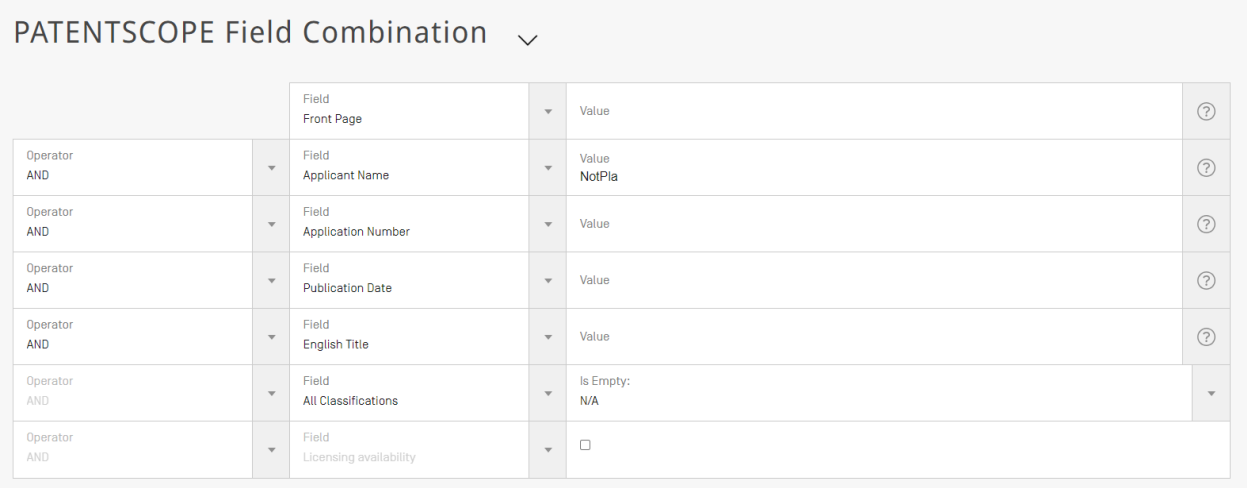


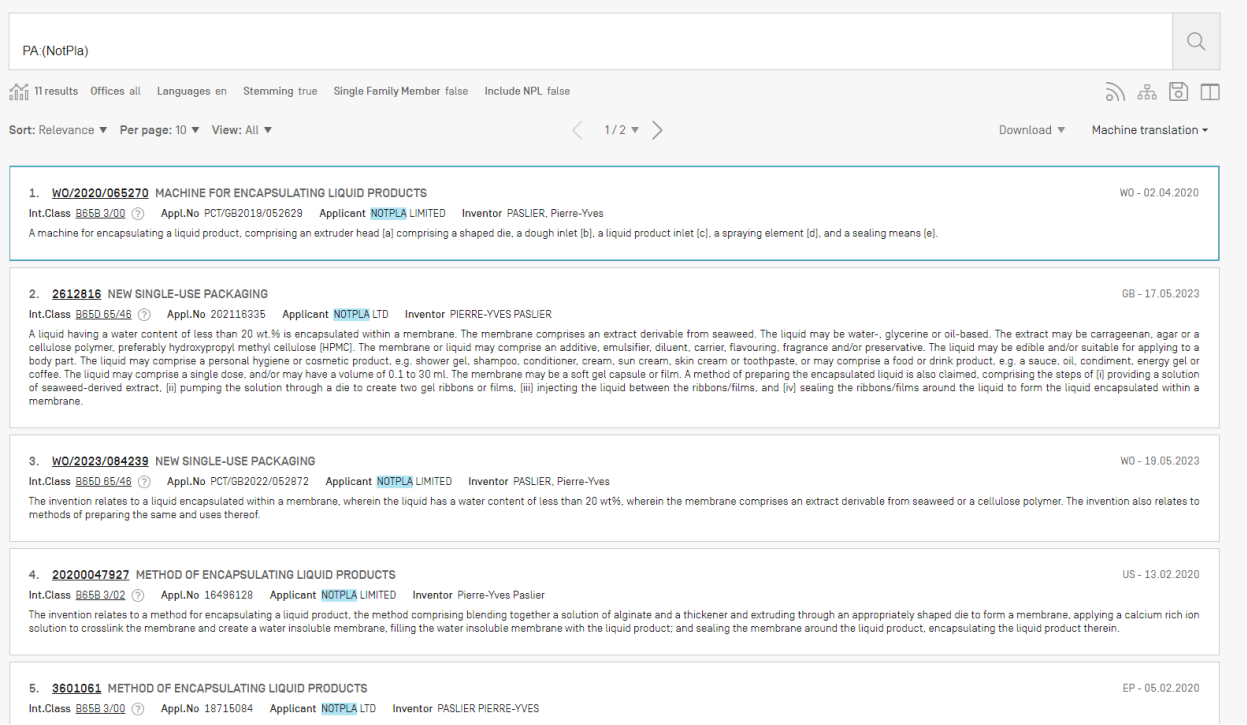


5. NOTPLA

A. Find patent applications filed in the name of NotPla (applicant)

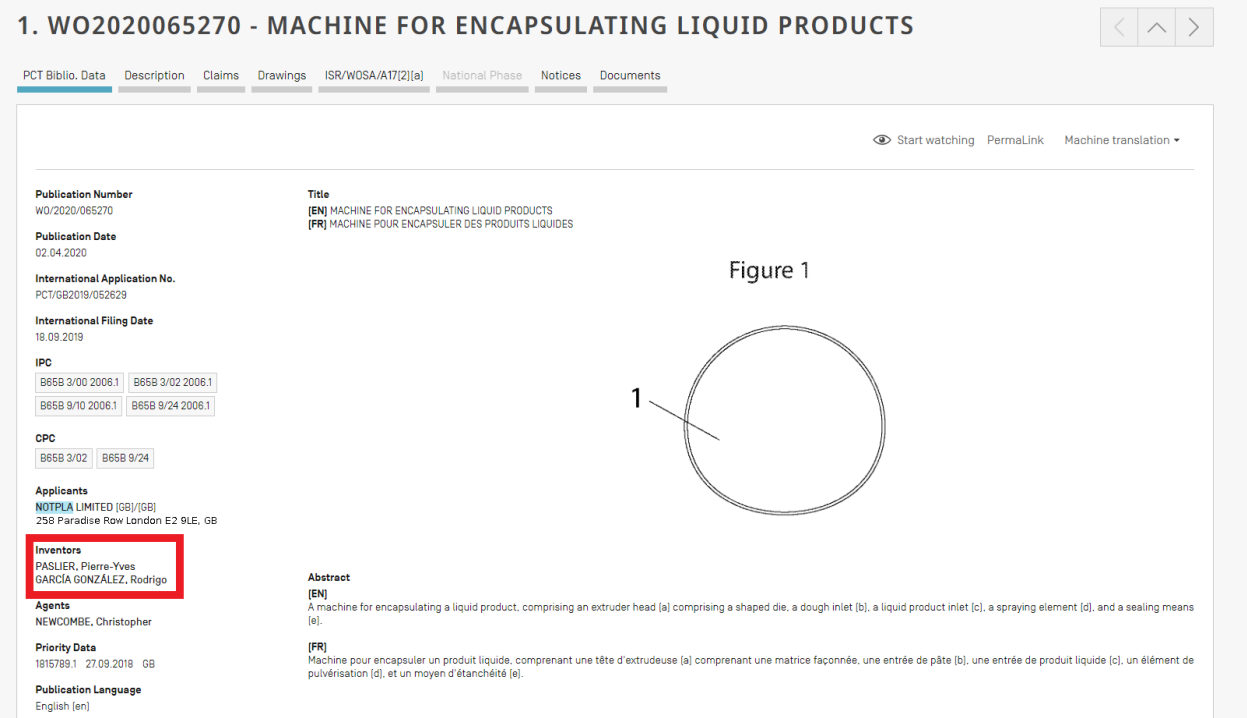
Search for “NotPla” as Applicant Name.





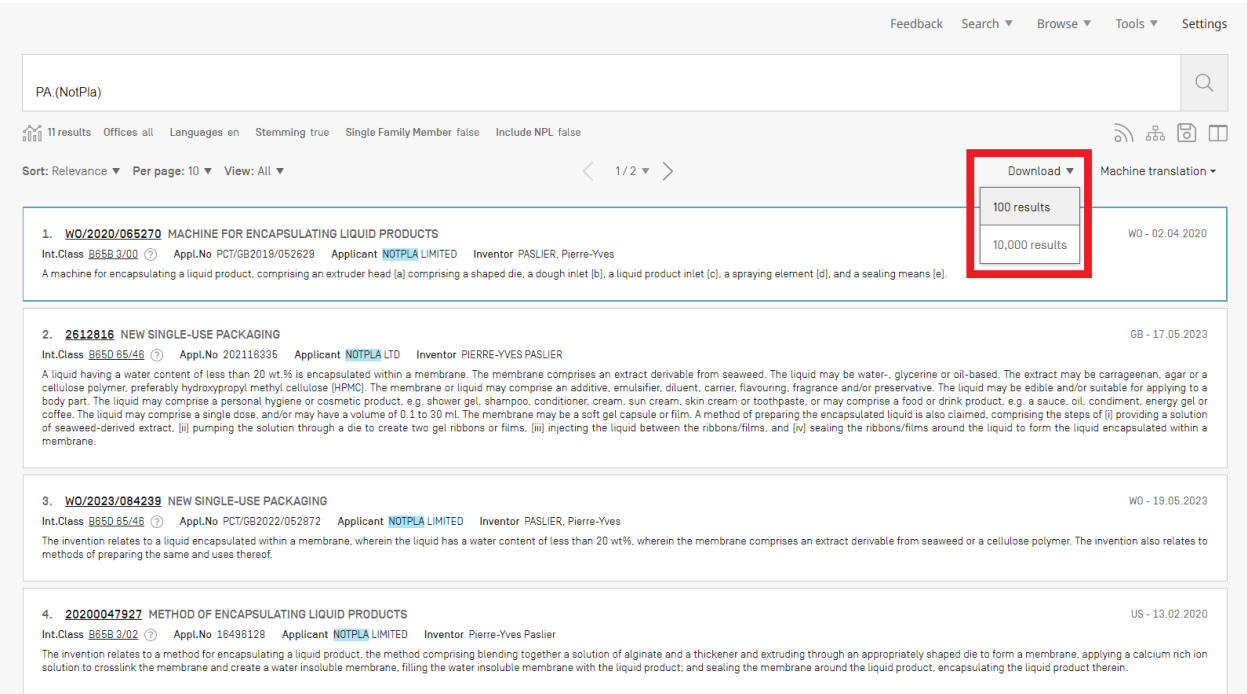
B. Who are the inventors named in these applications?

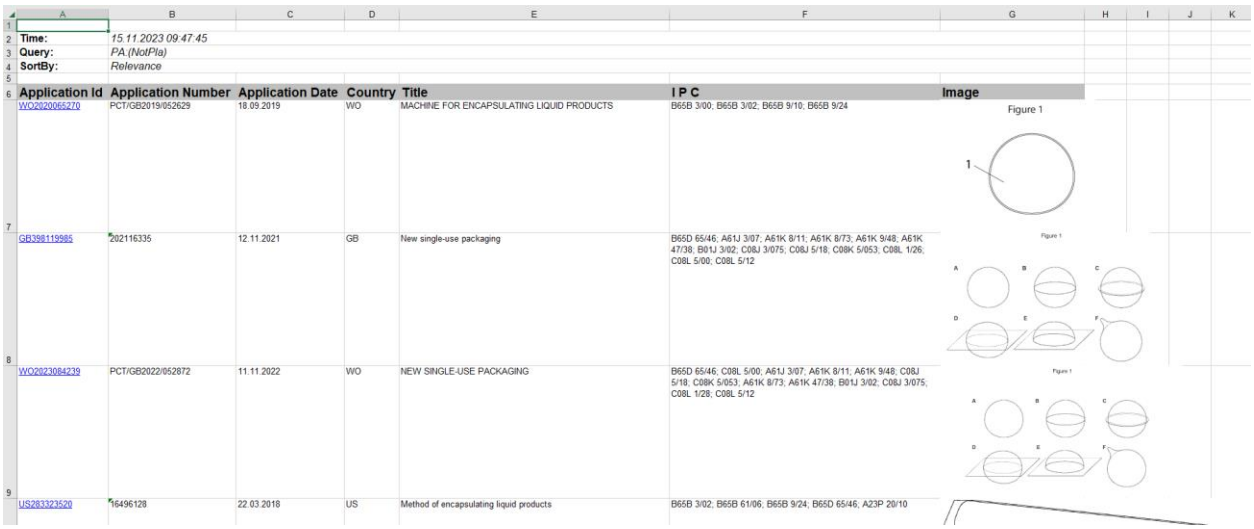
Click on one patent application from the results list above, you will find the inventors are PASLIER Pierre-Yves and GARCÍA GONZÁLEZ Rodrigo.



C. List the patent applications you found

Click the "Download" button in the results list page, the list of the patent applications can be obtained (IP Portal login required).

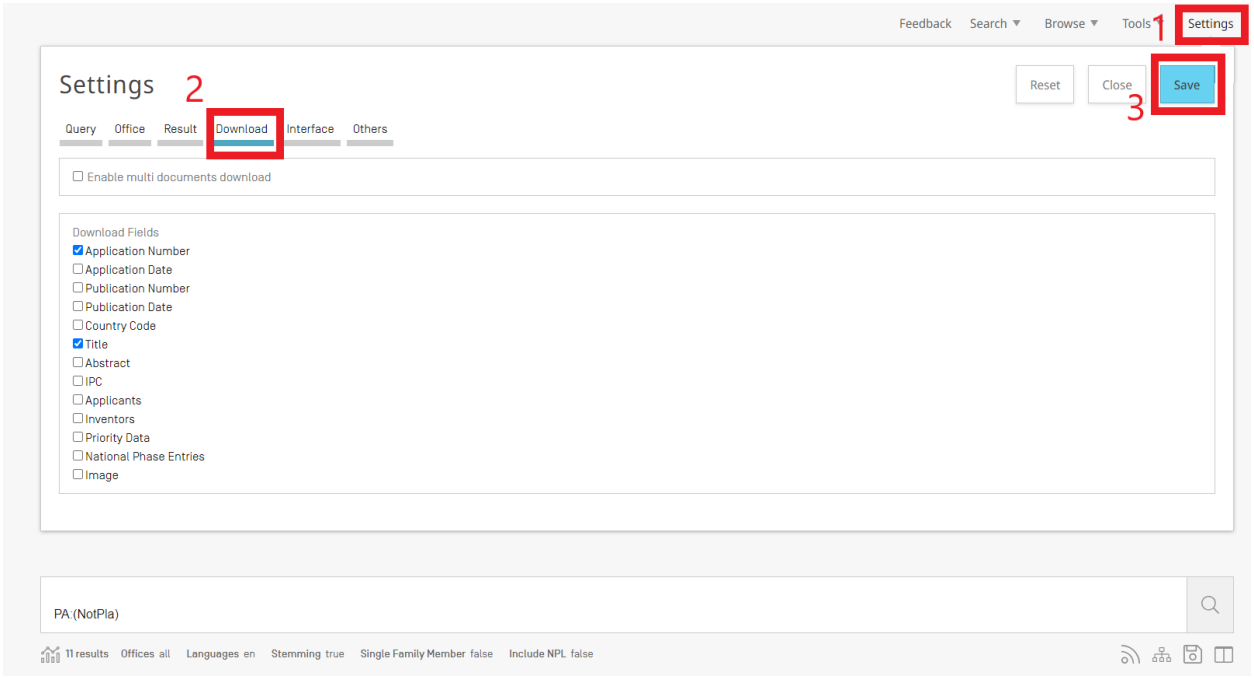




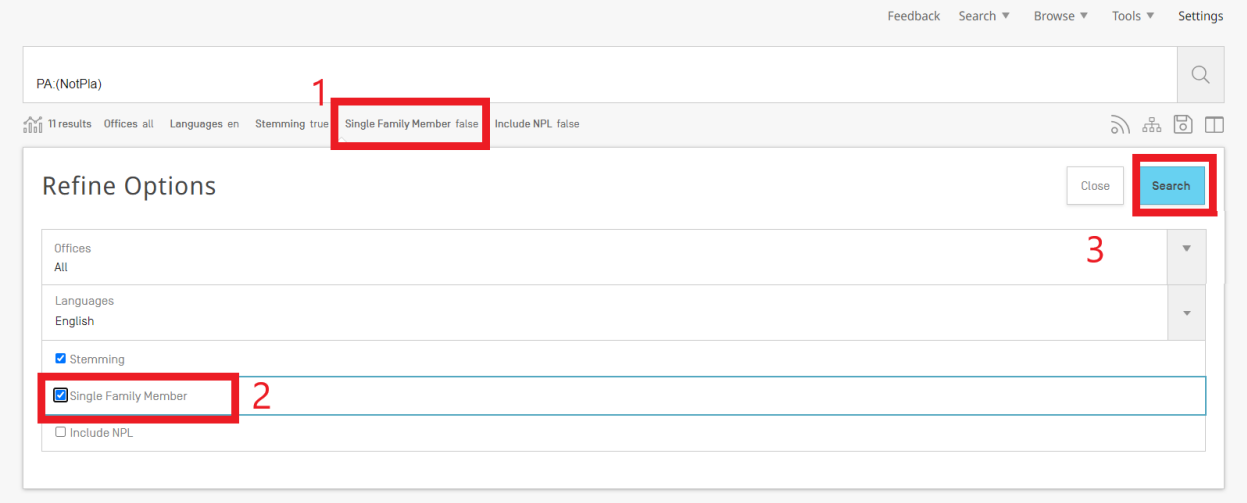
Time:	15.11.2023 09:47:45
Query:	PA:(NotPla)
SortBy:	Relevance

Application Id	Application Number	Application Date	Country	Title	I P C	Image
WO2020065270	PCT/GB2019/052629	18.09.2019	WO	MACHINE FOR ENCAPSULATING LIQUID PRODUCTS	B65B 3/00; B65B 3/02; B65B 9/10; B65B 9/24	Figure 1
GB398119985	202116335	12.11.2021	GB	New single-use packaging	B65D 65/46; A61J 3/07; A61K 8/11; A61K 8/73; A61K 9/48; A61K 47/38; B01J 3/02; C08J 3/075; C08J 5/18; C08K 5/053; C08L 1/26; C08L 5/00; C08L 5/12	
WO2023084239	PCT/GB2022/052872	11.11.2022	WO	NEW SINGLE-USE PACKAGING	B65D 65/46; C08L 5/00; A61J 3/07; A61K 8/11; A61K 9/48; C08J 5/18; C08K 5/053; A61K 8/73; A61K 47/38; B01J 3/02; C08J 3/075; C08L 1/28; C08L 5/12	
US283323520	16496128	22.03.2018	US	Method of encapsulating liquid products	B65B 3/02; B65B 61/06; B65B 9/24; B65D 65/46; A23P 20/10	

Tips: Click the “Settings” button, you can also change the setting of download to determine what to display in the list.



Or click the “Single Family Member” checkbox under the search query to return only one member of a family of patent.

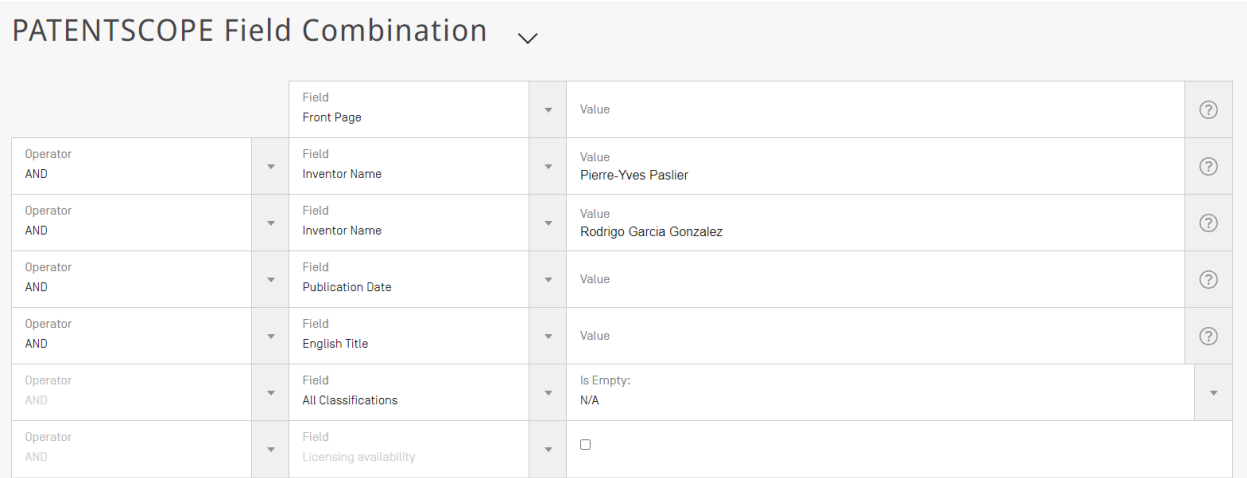


Then the list of patent applications will be:

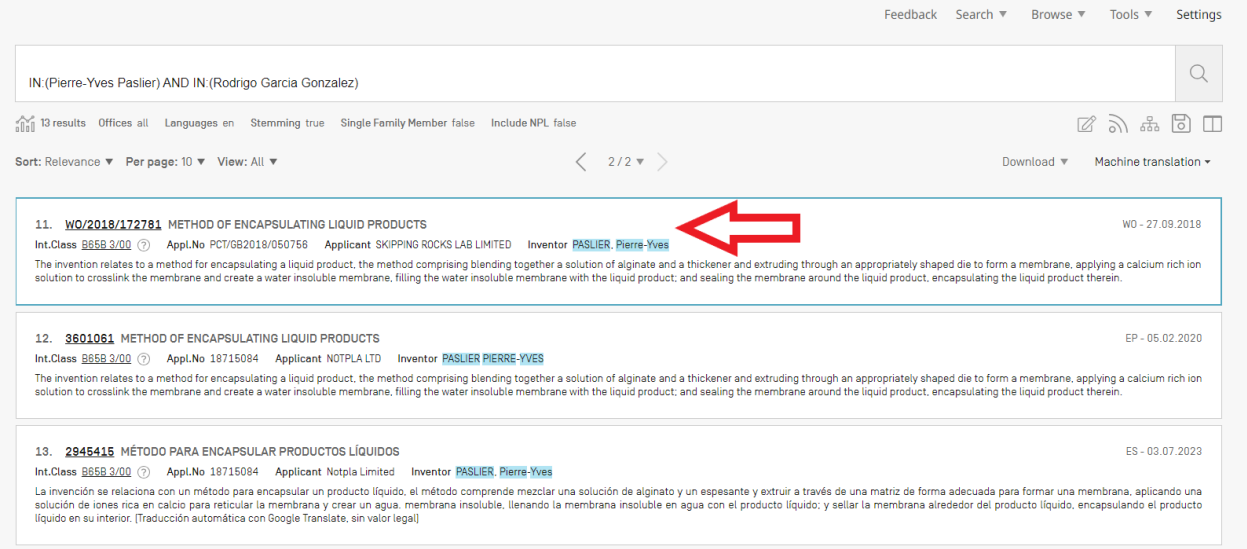
Time:	*15.11.2023 09:50:27*	
Query:	*PA:(NotPla)*	
SortBy:	*Relevance*	
Application Id	**Application Number**	**Title**
WO2020065270	PCT/GB2019/052629	MACHINE FOR ENCAPSULATING LIQUID PRODUCTS
WO2023084239	PCT/GB2022/052872	NEW SINGLE-USE PACKAGING
US283323520	16496128	Method of encapsulating liquid products
WO2021171016	PCT/GB2021/050474	A PACKAGING ITEM
WO2023084233	PCT/GB2022/052864	SINGLE-USE PACKAGING

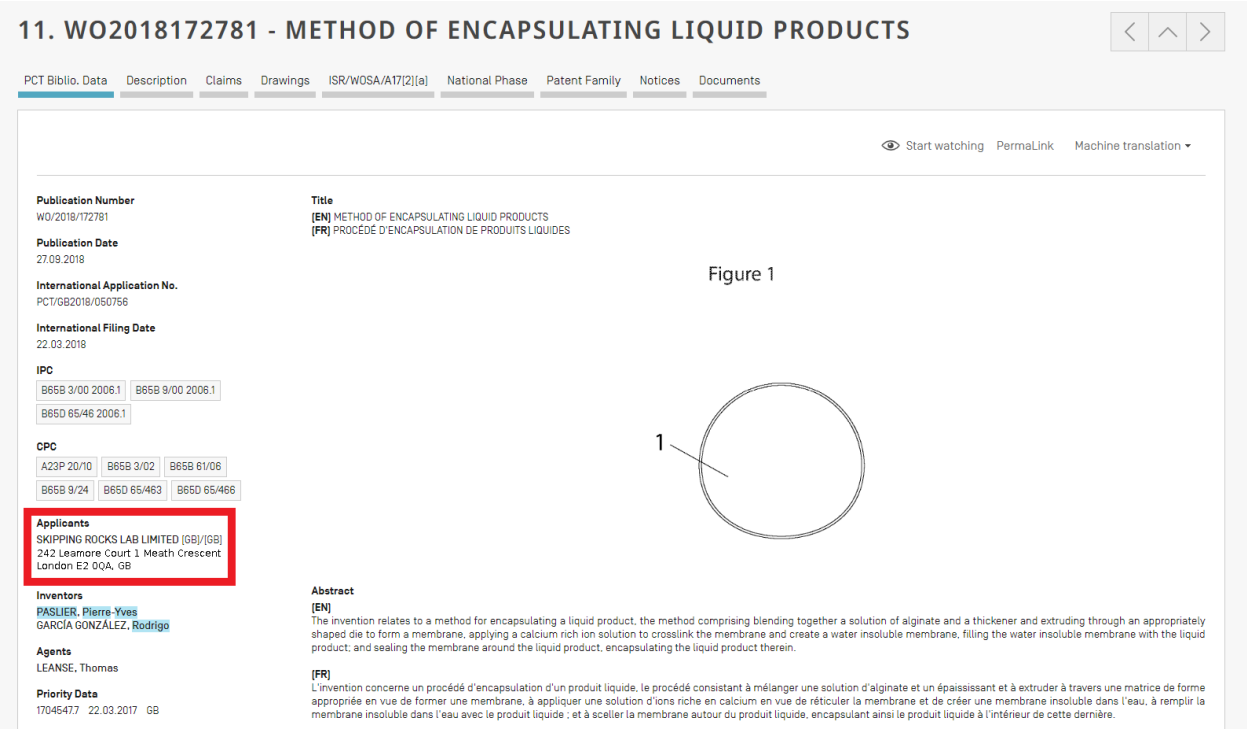
D. What is the name of that earlier company?

Search for inventor names “Pierre-Yves Paslier” AND “Rodrigo Garcia Gonzalez”.



From the results list, you will notice an applicant different from NotPla, which is SKIPPING ROCKS LAB LIMITED.





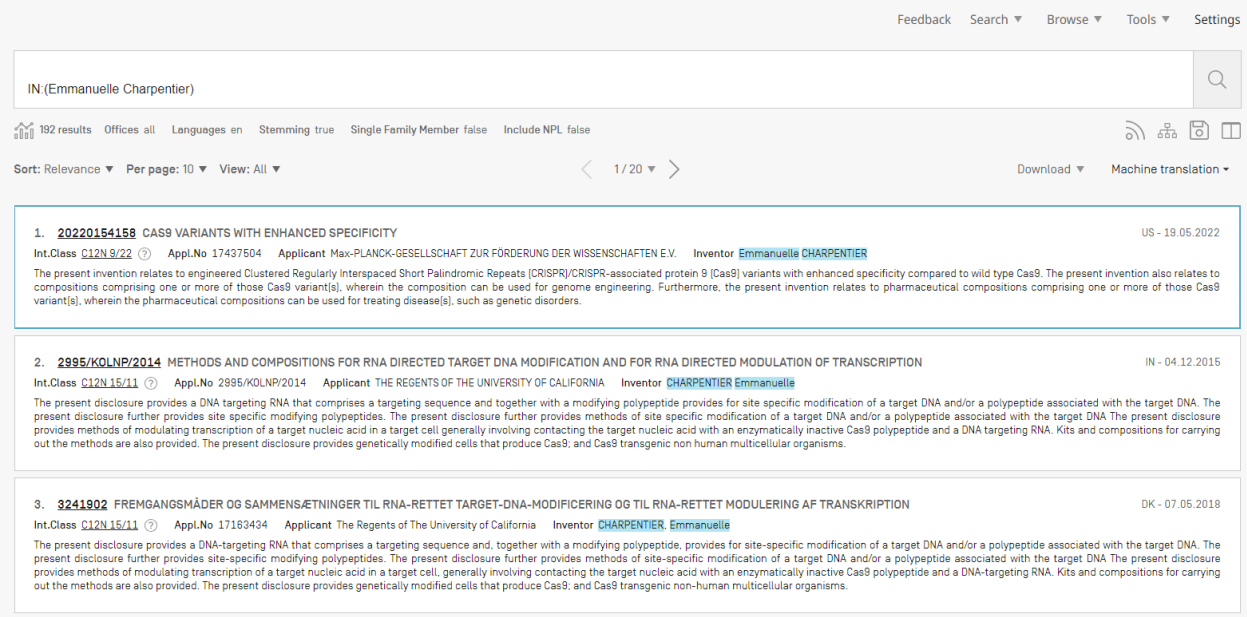
E. This company filed a PCT Application – what is the publication number?

From the page above, we can see the publication number is WO2018172781.

6. NOBEL PRIZE CRISPr

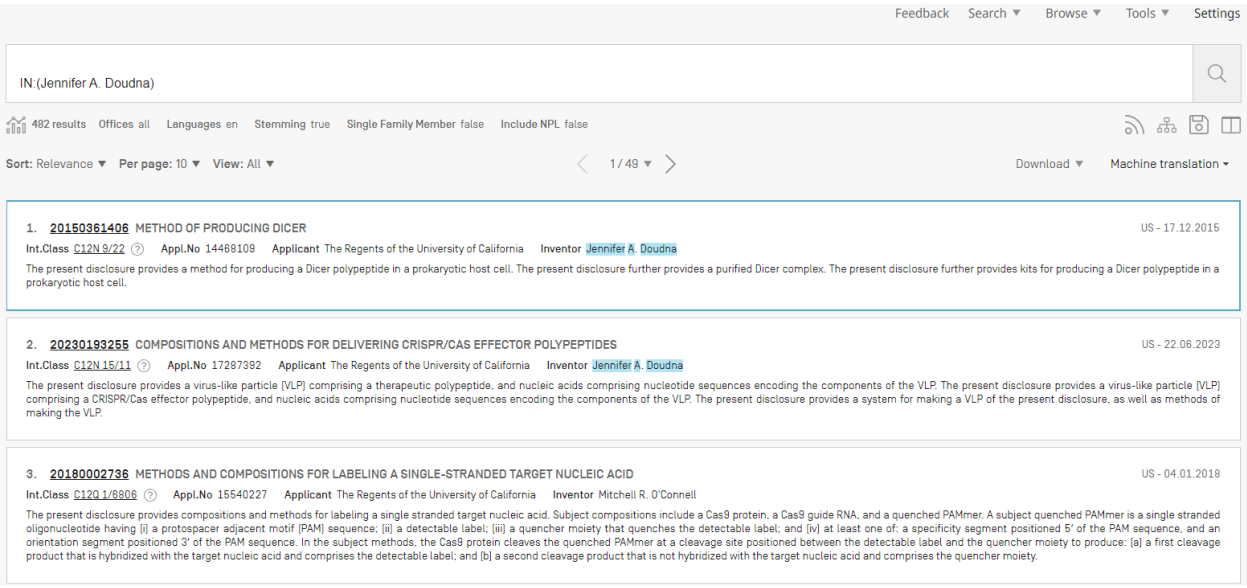
A. Find patents where Emmanuelle Charpentier is cited as inventor

Search “Emmanuelle Charpentier” as Inventor Name.



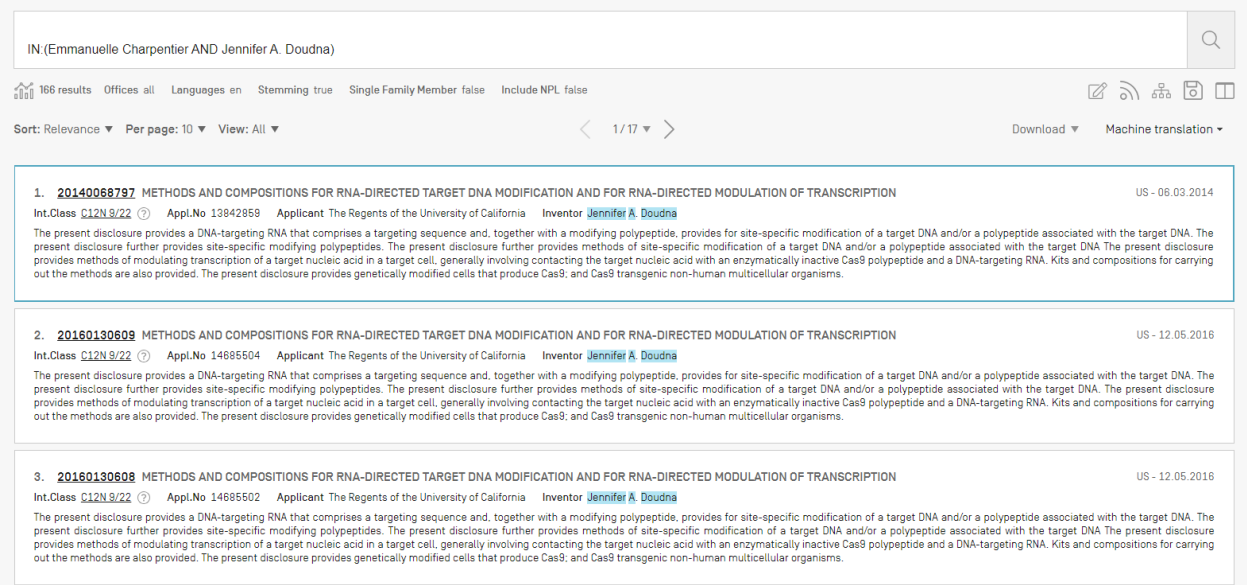
B. Find patents where Jennifer A. Doudna is cited as inventor

Search “Jennifer A. Doudna” as Inventor Name.



C. Are there any patents with them both cited as co-inventors?

Use “AND” to include both names in Inventor Name.



D. Which patents do you think are related to their Nobel Prize?

Inspect the titles and abstracts of the patents among the results list and find the patent **WO2013176772**.

7. HOVERBOARD

A. Find the Canadian patent application filed in 1996 by Michele Palladino for a hoverboard.

Search “Michele Palladino” as Inventor Name, “1996” as Application Date, CA as Country code, then the patent CA2187678 will be found.

PATENTSCOPE Field Combination

	Field	Value
	Front Page	
Operator: AND	Inventor Name	Michele Palladino
Operator: AND	Application Date	1996
Operator: AND	Country	CA
Operator: AND	English Title	
Operator: AND	All Classifications	Is Empty: N/A
Operator: AND	Licensing availability	☐

IN:(Michele Palladino) AND AD:(1996) AND CTR:(CA)

2 results | Offices all | Languages en | Stemming true | Single Family Member false | Include NPL false

Sort: Relevance | Per page: 10 | View: All | 1 / 1 | Download | Machine translation

1. **2187679** IN-LINE SKATE BRAKING SYSTEM — CA - 11.04.1998

Int.Class A63C 17/14 | Appl.No 2187679 | Applicant PALLADINO, MICHELE | Inventor PALLADINO, MICHELE

An improvement to the sporting equipment of in-line skates. The braking system is designed so that all the wheels of the skate are in contact with the ground and that the braking action is manually applied to the wheels. The generic in-line skate has several elements such as a boot and a lower chassis that mount the wheels in series. The standard brake is a friction pad on the lower chassis extension. The structure of this improvement includes three distinct elements, the manual brake actuator, the braking mechanism and a modified lower chassis that accommodates the braking mechanism. The manual brake actuator operates similarly to a bicycle braking system; utilizing levers and cables. As the levers of the manual brake actuator are closed, the wire insert of the cable is moved resulting in engagement of the braking mechanism. This braking mechanism is configured for the two most popular types of braking configurations: the disc pincer type and the drum and shoe type.

2. **2187678** HOVERBOARD — CA - 11.04.1998

Int.Class A63C 17/01 | Appl.No 2187678 | Applicant PALLADINO, MICHELE | Inventor PALLADINO, MICHELE

An improvement to the sporting apparatus known as the snowboard. The hoverboard applies air cushioned technology to snowboards. The Hoverboard contains a powersourse, an airblower and a sport board platform modified to maintain an air cushion. The structure of the board is designed so that the board glides on a cushion of air. As a result the speed and maneuverability of the snowboarder is significantly increased.

2. CA2187678 - HOVERBOARD

National Biblio. Data | Description | Claims | Drawings | Documents

PermaLink | Machine translation

Office
Canada

Application Number
2187678

Application Date
11.10.1996

Publication Number
2187678

Publication Date
11.04.1998

Grant Number

Grant Date
19.09.2000

Publication Kind
C

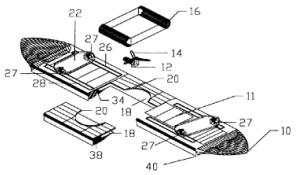
IPC
A63C 17/01 | B60V 3/02

CPC
B60V 3/02

Applicants
PALLADINO, MICHELE

Inventors
PALLADINO, MICHELE

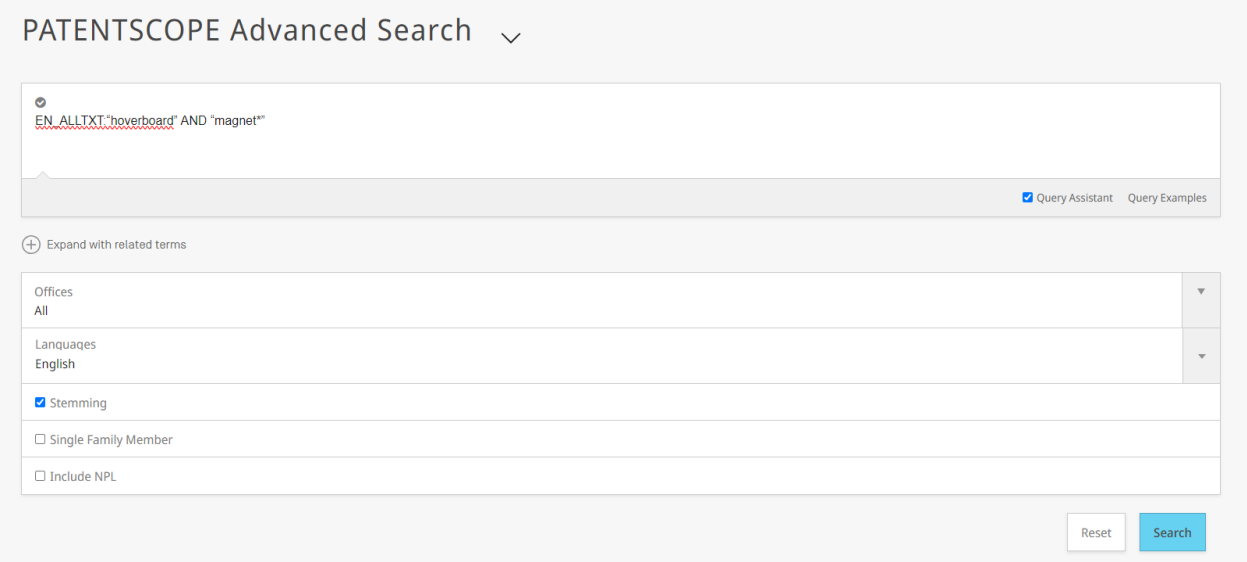
Title
[EN] HOVERBOARD
[FR] MONOSKI A COUSSIN D'AIR

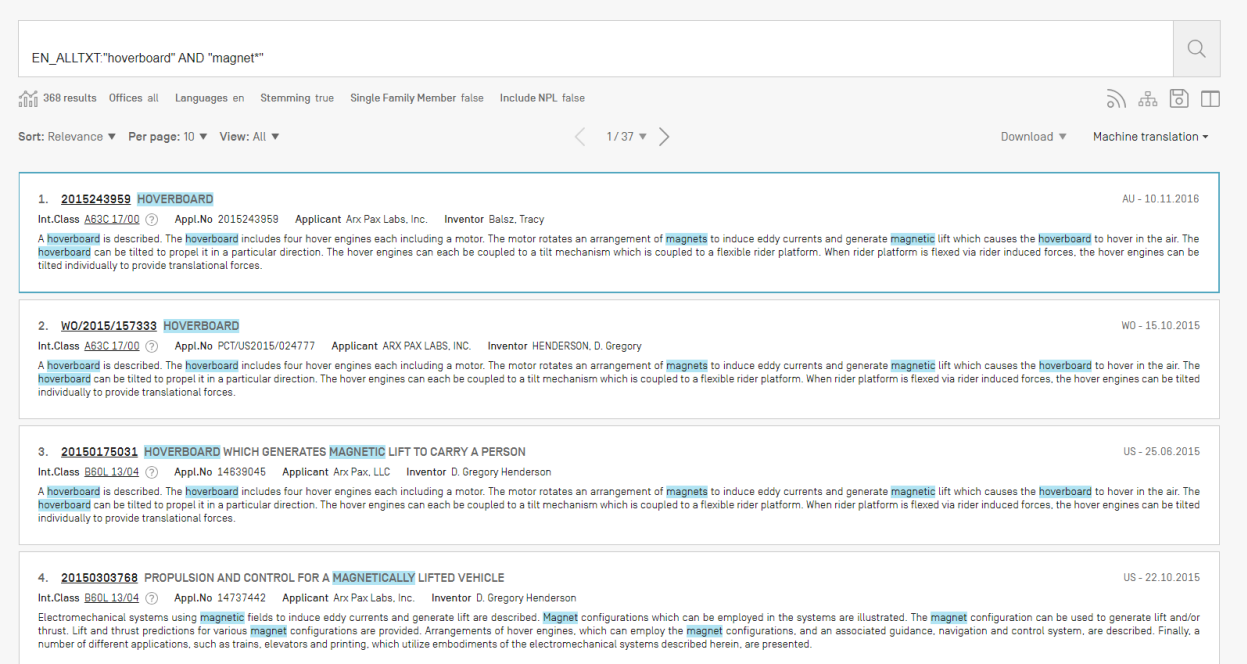


Abstract
[EN] An improvement to the sporting apparatus known as the snowboard. The hoverboard applies air cushioned technology to snowboards. The Hoverboard contains a powersourse, an airblower and a sport board platform modified to maintain an air cushion. The structure of the board is designed so that the board glides on a cushion of air. As a result the speed and maneuverability of the snowboarder is significantly increased.

B. Find patent applications for hoverboards which float on magnetic fields

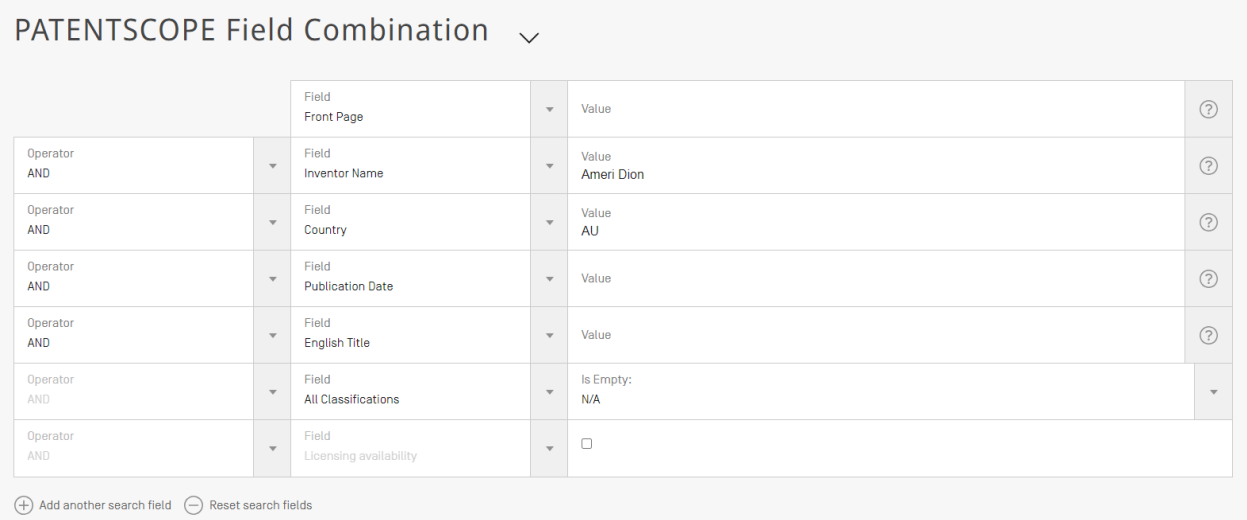
Use the field EN_ALLTXT (English All Text) to search “hoverboard” AND “magnet*”.

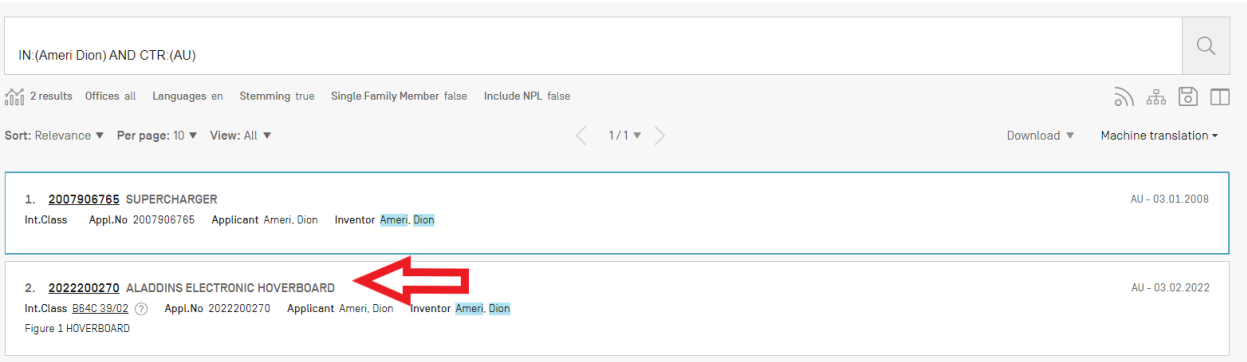


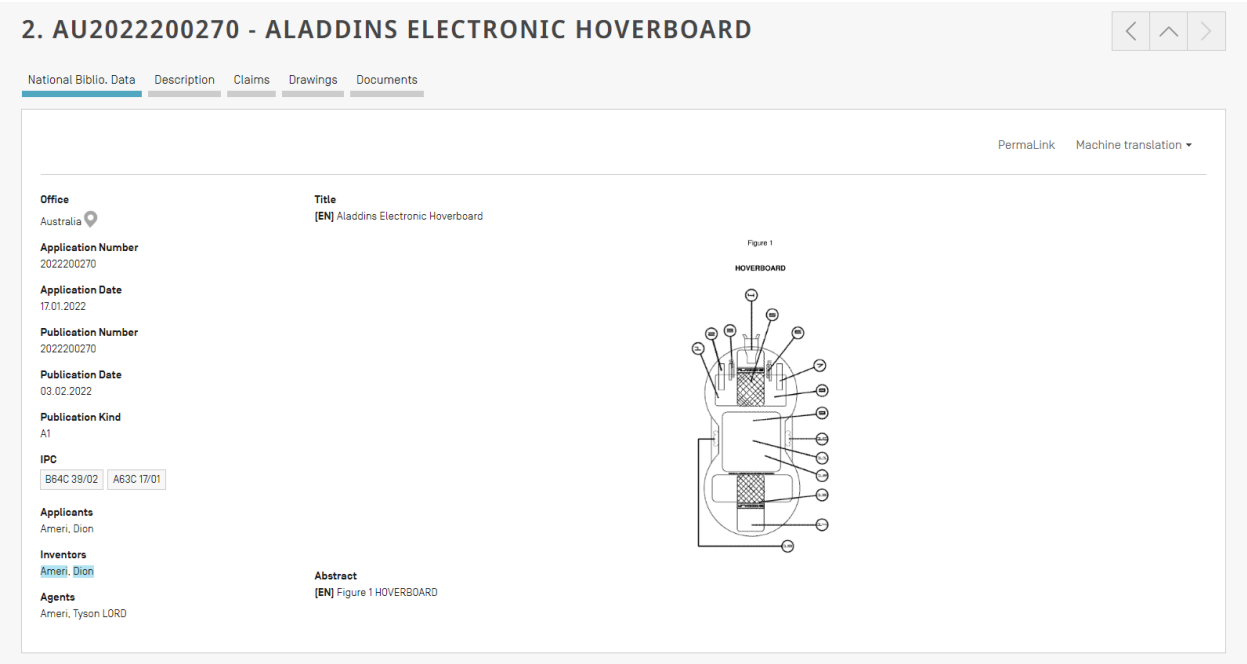


C. Sometimes the inventor´s imagination takes over and leads into the realms of fantasy and fairy tale. Find the Australian patent application by Ameri Dion published in February 2022.

Search “Ameri Dion” or “Dion Ameri” as Inventor Name and “AU” as Country code, then the relevant patent application **AU2022200270** “Aladdins Electronic Hoverboard” will be found.

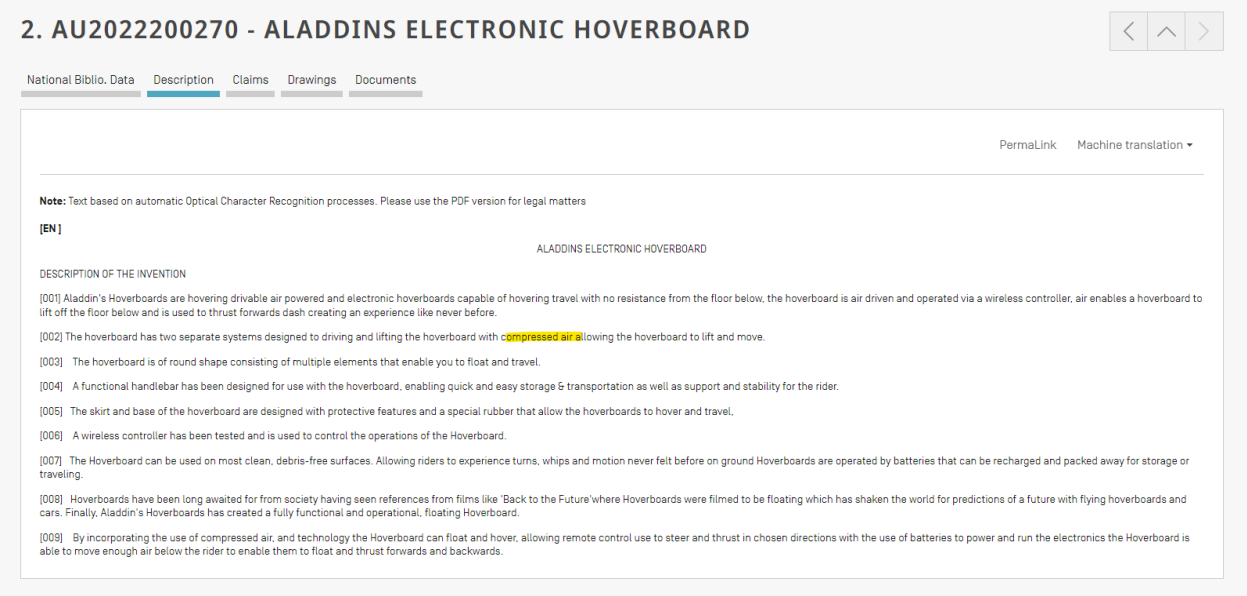






D. Despite the title, what is the real power driving this invention?

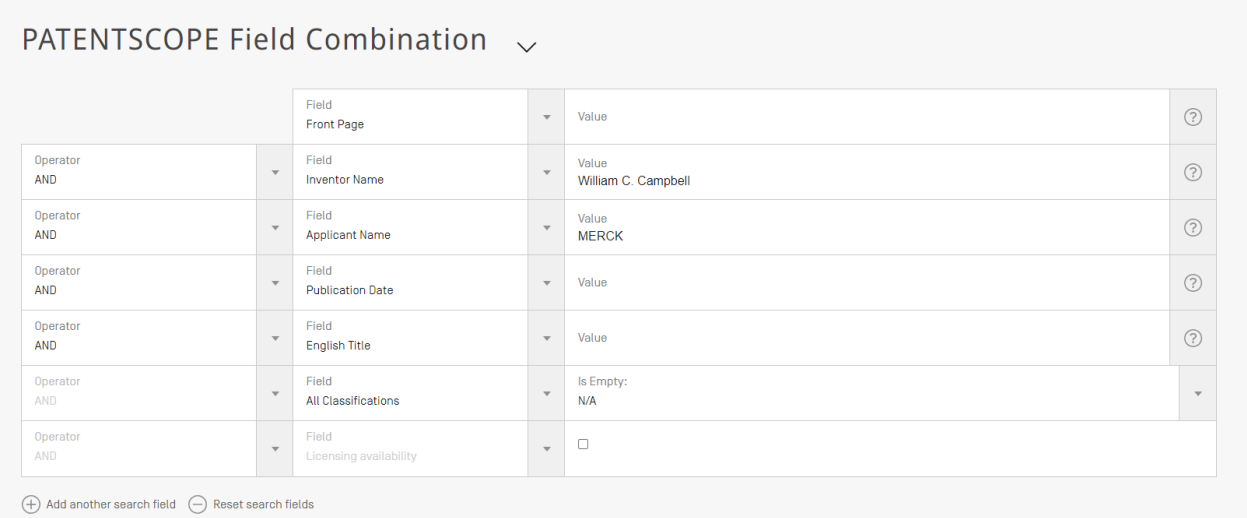
From the description, we can see that the real power driving this invention is compressed air.

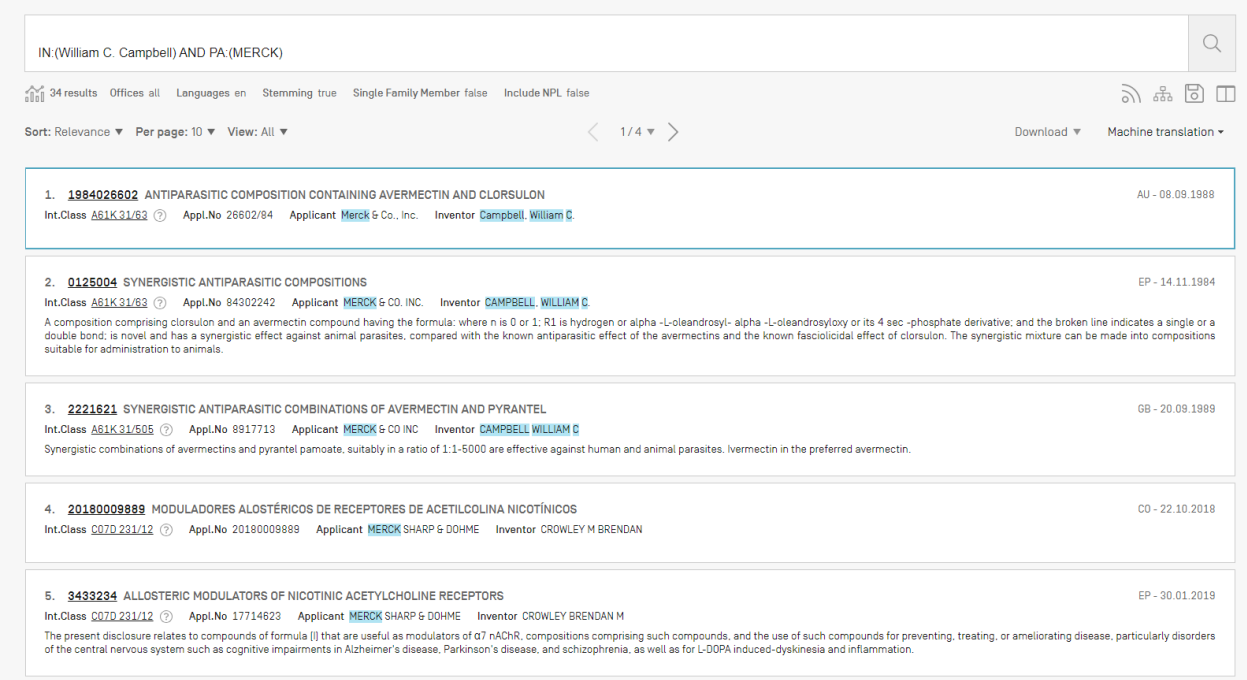


8. NOBEL PRIZE PARASITIC DISEASES

A. Find patent applications with William C. Campbell as inventor and MERCK as applicant

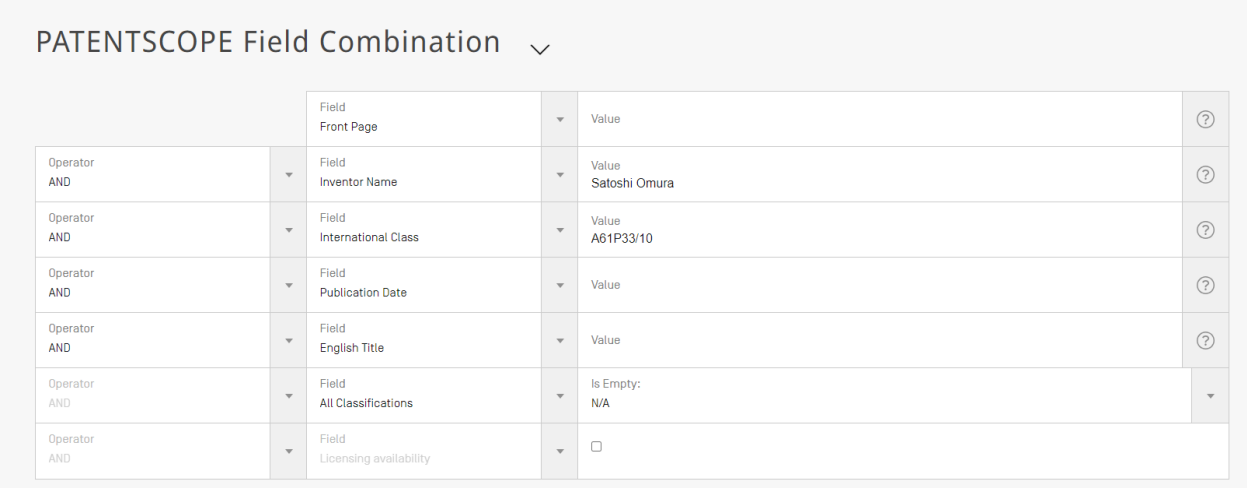
Use the field “Inventor Name” and “Applicant Name” to search the relevant patent applications.

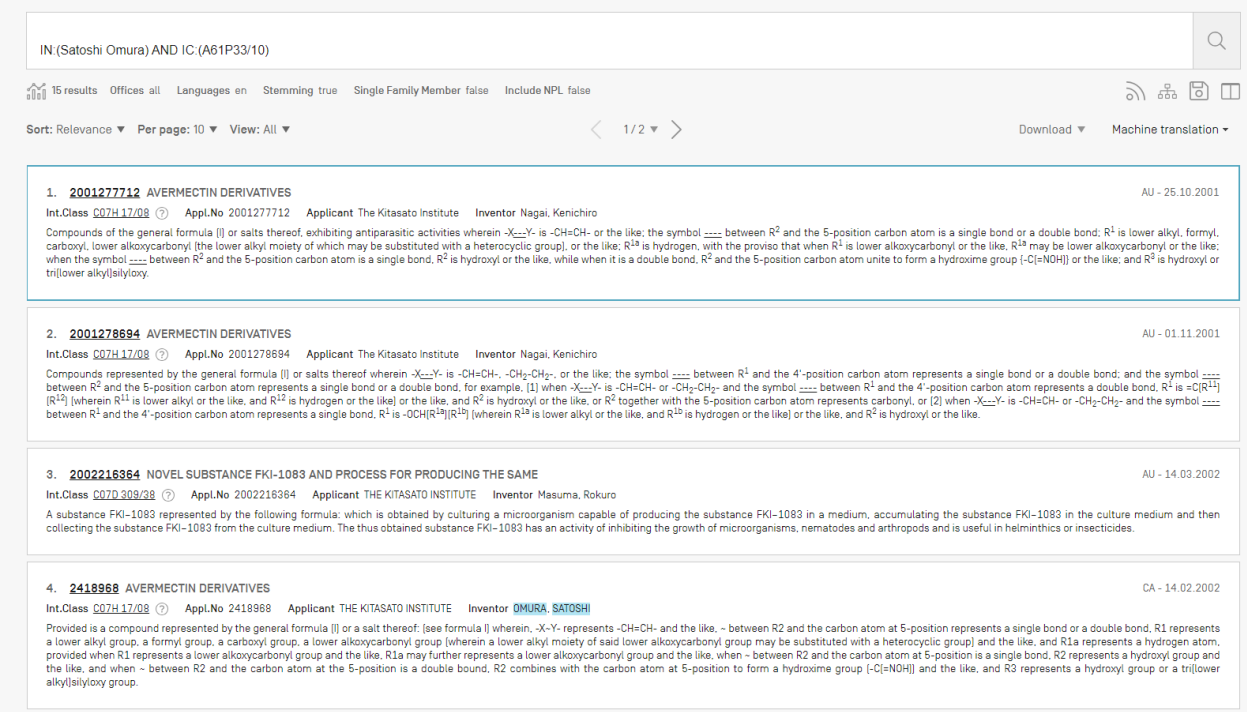




B. Find patent applications with Satoshi Ōmura as inventor in the field of antiparasitic drugs, especially anthelminthics

Use the field “inventor name” to search “Satoshi Omura” (no diacritic). As anthelminthics is classified as A61P 33/10 for IPC, combine with “A61P33/10” in the field “International Class”.





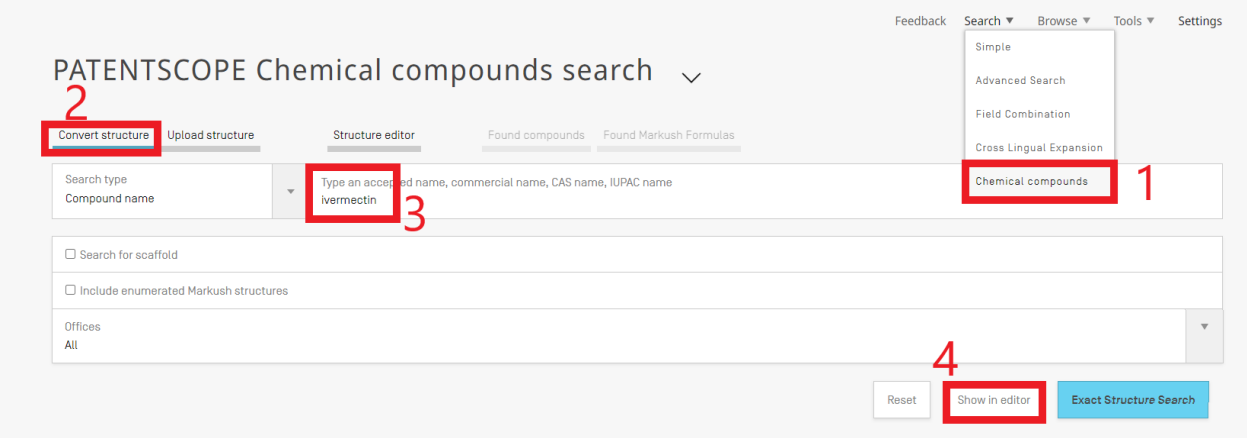
C. Find the structure of ivermectin.

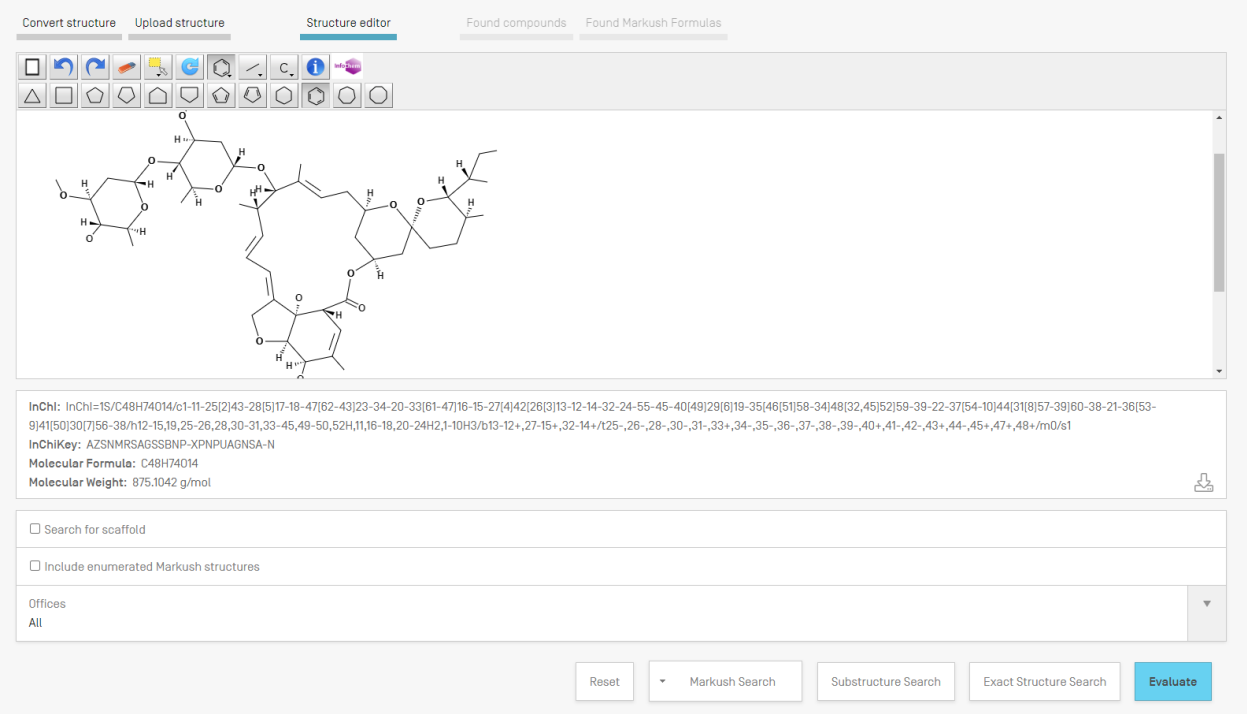
i. Login to IP Portal.

ii. Click the dropdown button and select “Chemical compounds”.

iii. In “Convert structure” section, enter “ivermectin” in “Compound name” search type.

iv. Click “Show in editor”.





D. What is the InChi Key?

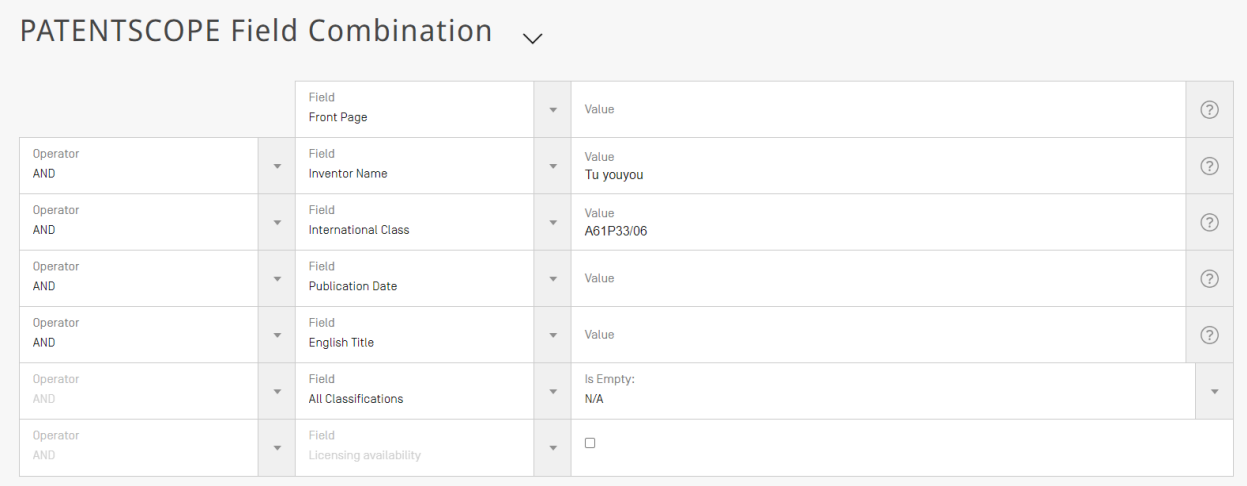
From the structure editor above, we can get:

InChI: InChI=1S/C48H74O14/c1-11-25(2)43-28(5)17-18-47(62-43)23-34-20-33(61-47)16-15-27(4)42(26(3)13-12-14-32-24-55-45-40(49)29(6)19-35(46(51)58-34)48(32,45)52)59-39-22-37(54-10)44(31(8)57-39)60-38-21-36(53-9)41(50)30(7)56-38/h12-15,19,25-26,28,30-31,33-45,49-50,52H,11,16-18,20-24H2,1-10H3/b13-12+,27-15+,32-14+/t25-,26-,28-,30-,31-,33+,34-,35-,36-,37-,38-,39-,40+,41-,42-,43+,44-,45+,47+,48+/m0/s1

InChiKey: AZSNMRSAGSSBNP-XPNPUAGNSA-N

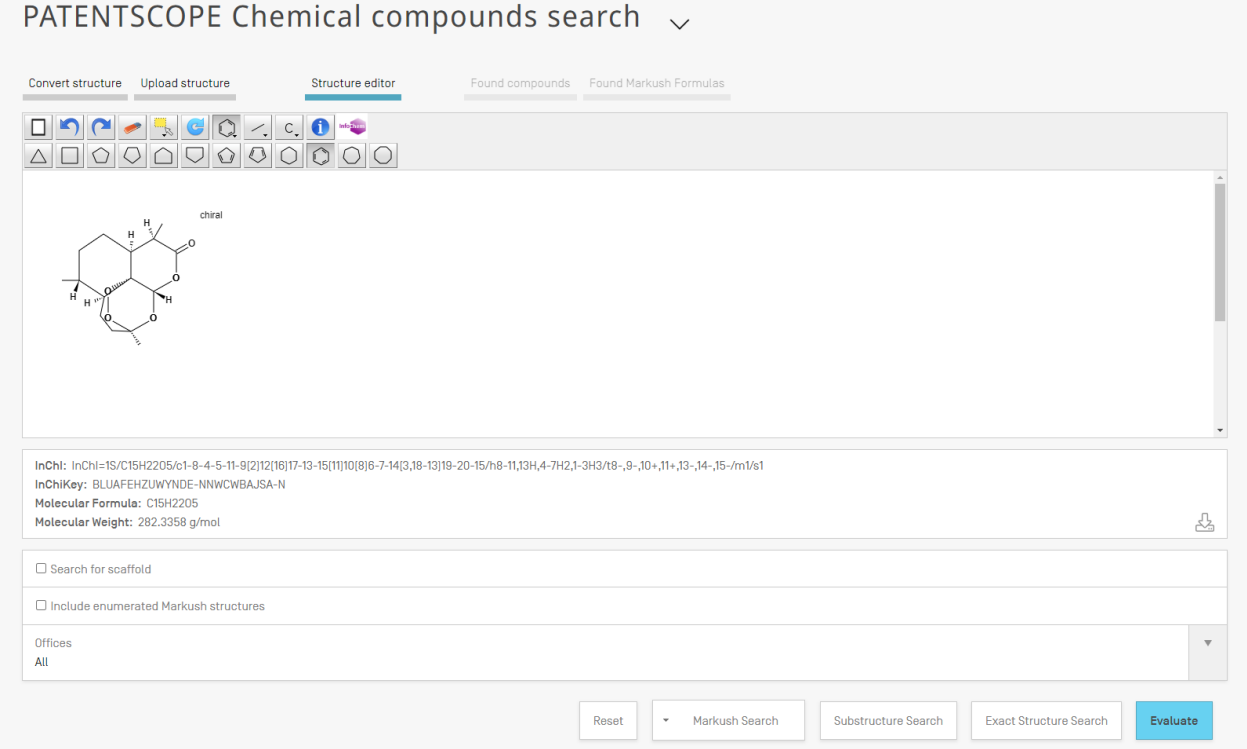
E. Find patent applications with Tu youyou as inventor

Search “Tu youyou” as Inventor Name, combine with IPC A61P 33/06 which is antimalarials.



F. Find the chemical structure of artemisinin

Repeat the steps in question C above but enter “artemisinin” in “Compound name” field.



G. What is the InChiKey?

From the structure editor page above, we can get:

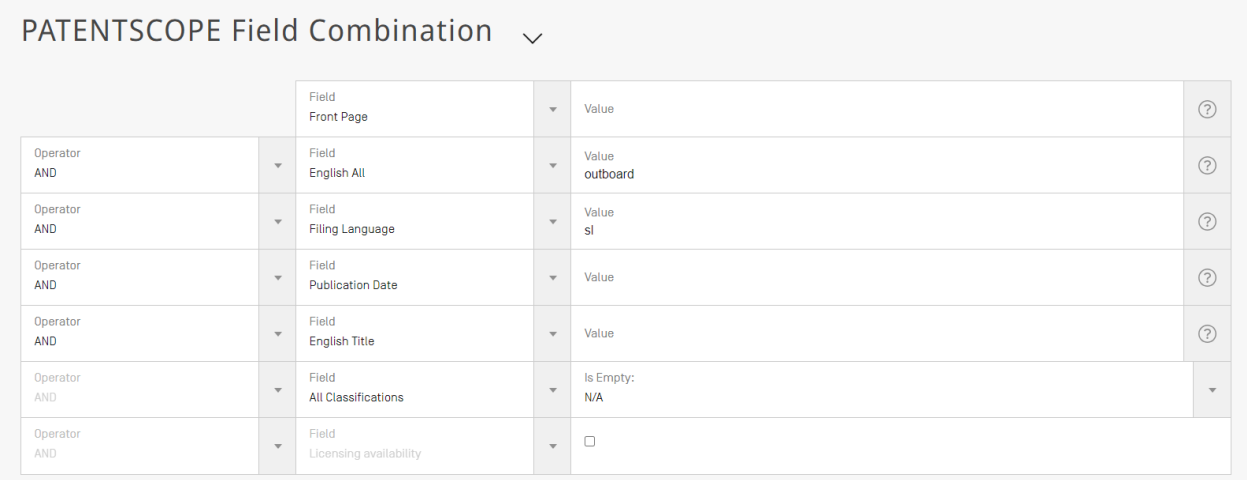
InChI: InChI=1S/C15H22O5/c1-8-4-5-11-9(2)12(16)17-13-15(11)10(8)6-7-14(3,18-13)19-20-15/h8-11,13H,4-7H2,1-3H3/t8-,9-,10+,11+,13-,14-,15-/m1/s1

InChiKey: BLUAFEHZUWYNDE-NNWCWBAJSA-N

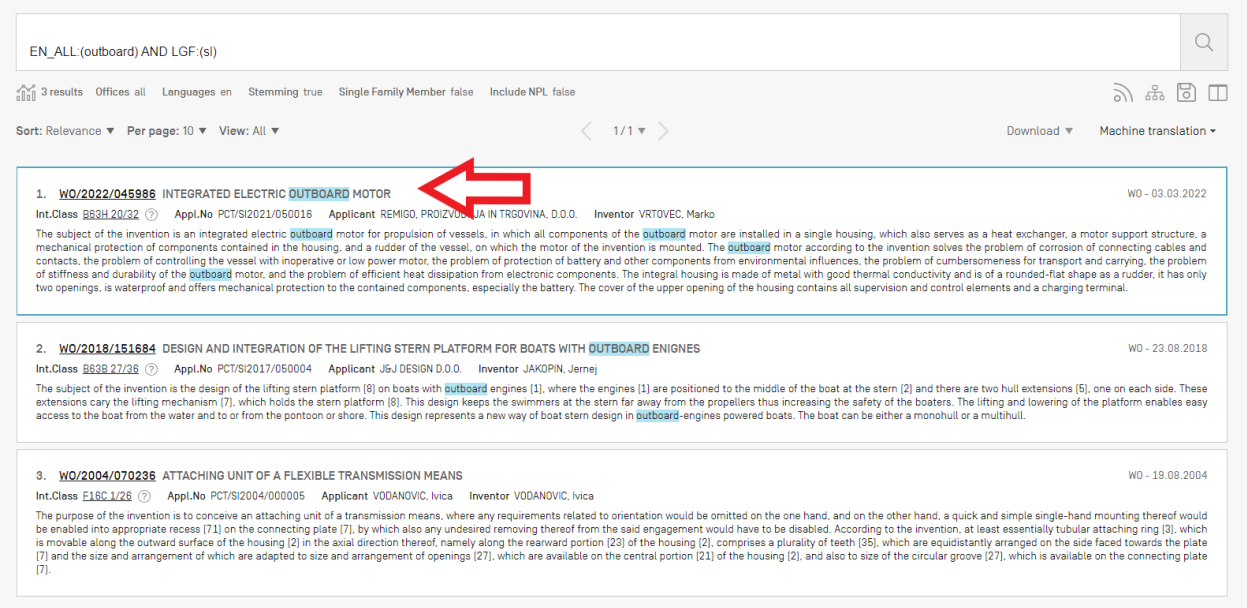
9. OUTBOARD MOTOR

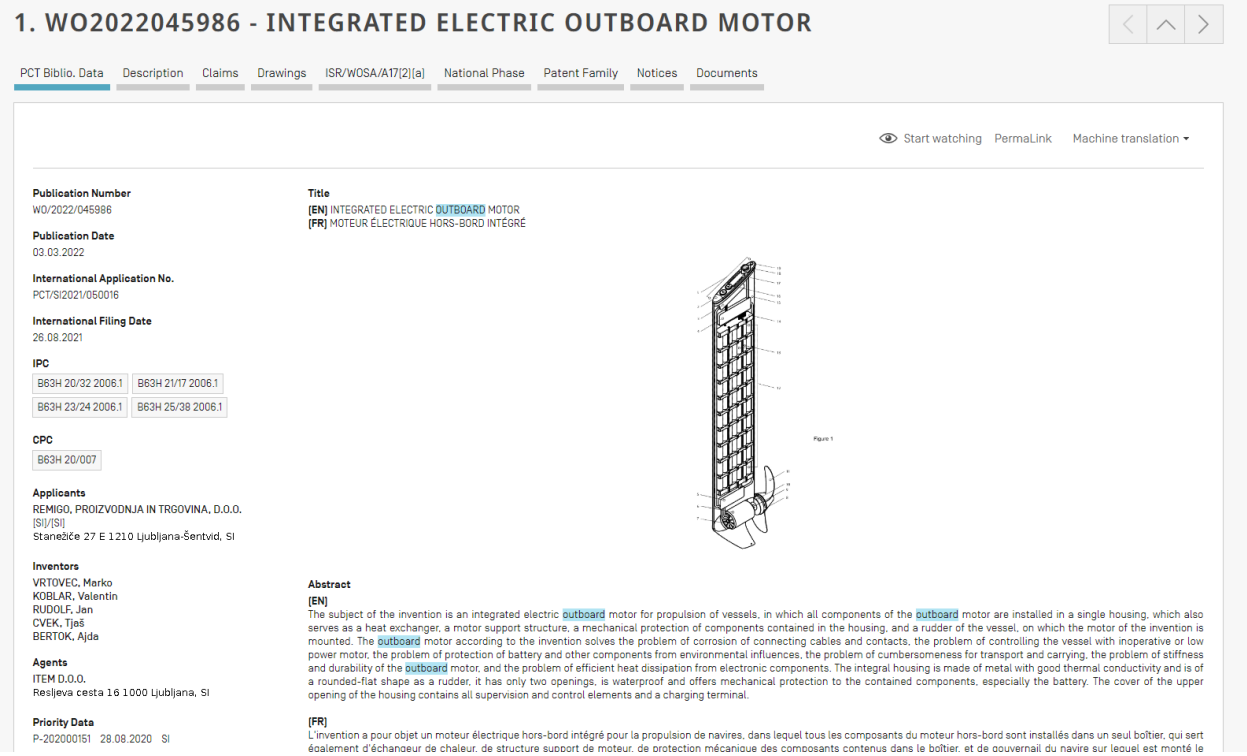
A. Find the Slovenian priority document published in the Slovenian language. How would you obtain a French language version?

i. Search “outboard” in the field English All and enter “sl” in the field Filling Language.

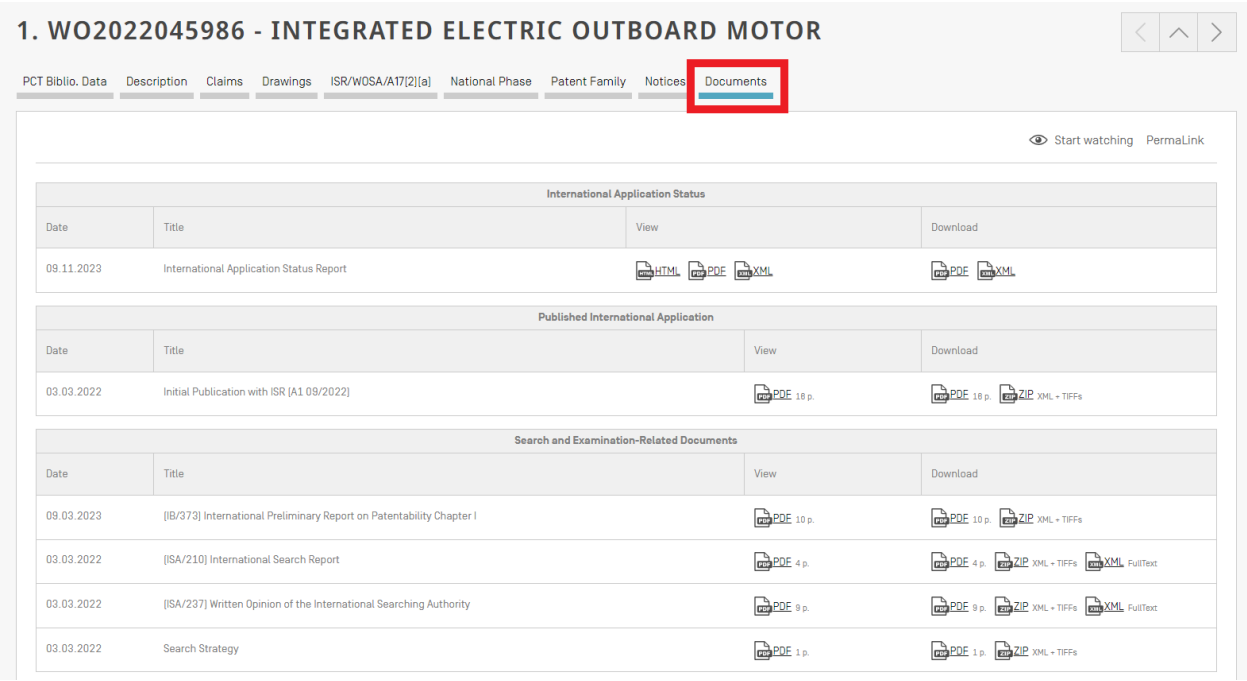


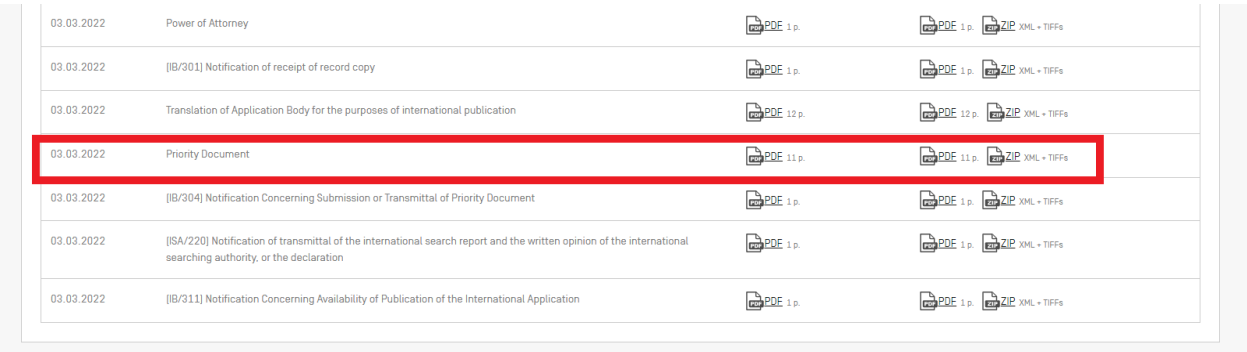
ii. Then the relevant PCT" application WO2022045986 "INTEGRATED ELECTRIC OUTBOARD MOTOR will be found.



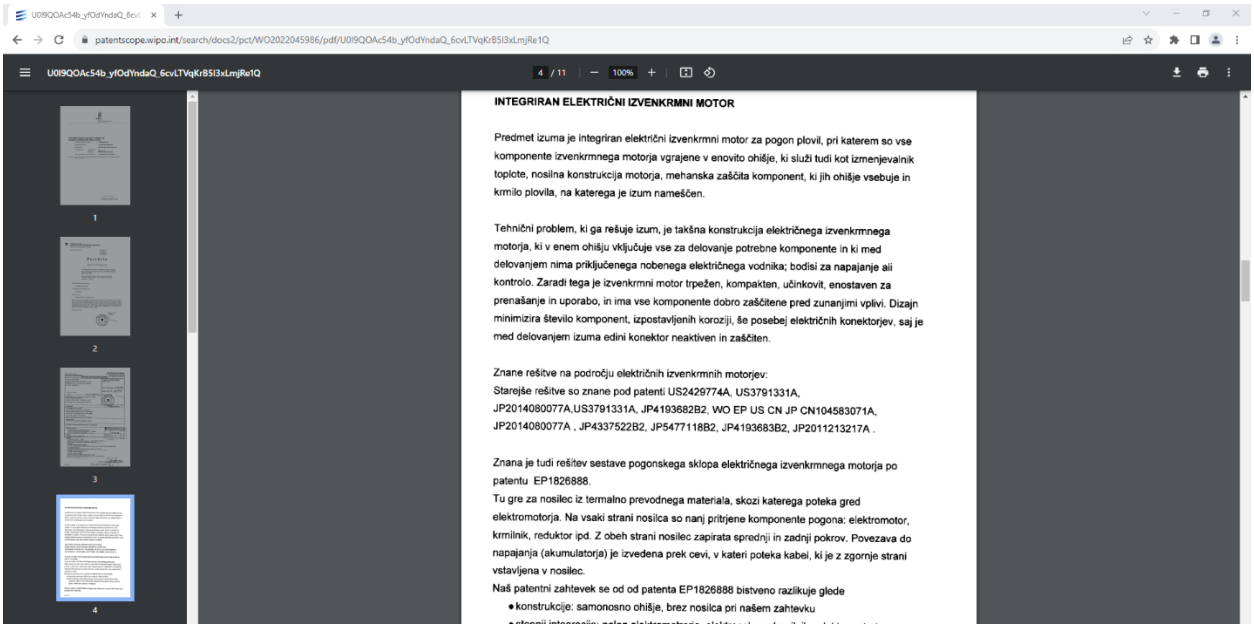


iii. Click the “Documents” button, scroll down and the priority document in Slovenian language will be found.





03.03.2022	Power of Attorney	PDF 1 p.	PDF 1 p. ZIP XML + TIFFs
03.03.2022	[IB/301] Notification of receipt of record copy	PDF 1 p.	PDF 1 p. ZIP XML + TIFFs
03.03.2022	Translation of Application Body for the purposes of international publication	PDF 12 p.	PDF 12 p. ZIP XML + TIFFs
03.03.2022	Priority Document	PDF 11 p.	PDF 11 p. ZIP XML + TIFFs
03.03.2022	[IB/304] Notification Concerning Submission or Transmittal of Priority Document	PDF 1 p.	PDF 1 p. ZIP XML + TIFFs
03.03.2022	[ISA/220] Notification of transmittal of the international search report and the written opinion of the international searching authority, or the declaration	PDF 1 p.	PDF 1 p. ZIP XML + TIFFs
03.03.2022	[IB/311] Notification Concerning Availability of Publication of the International Application	PDF 1 p.	PDF 1 p. ZIP XML + TIFFs



B. Find the PCT application associated with this invention

From the patent document above, we can see the PCT application is WO2022045986 “INTEGRATED ELECTRIC OUTBOARD MOTOR.

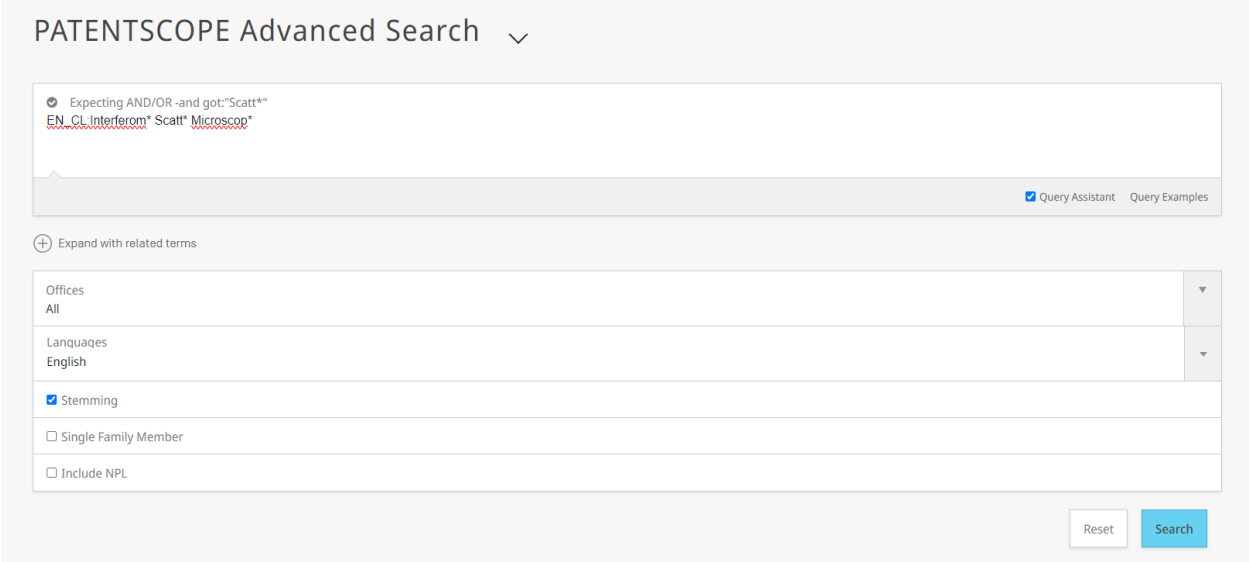
C. What is the name of the small Slovenian company?

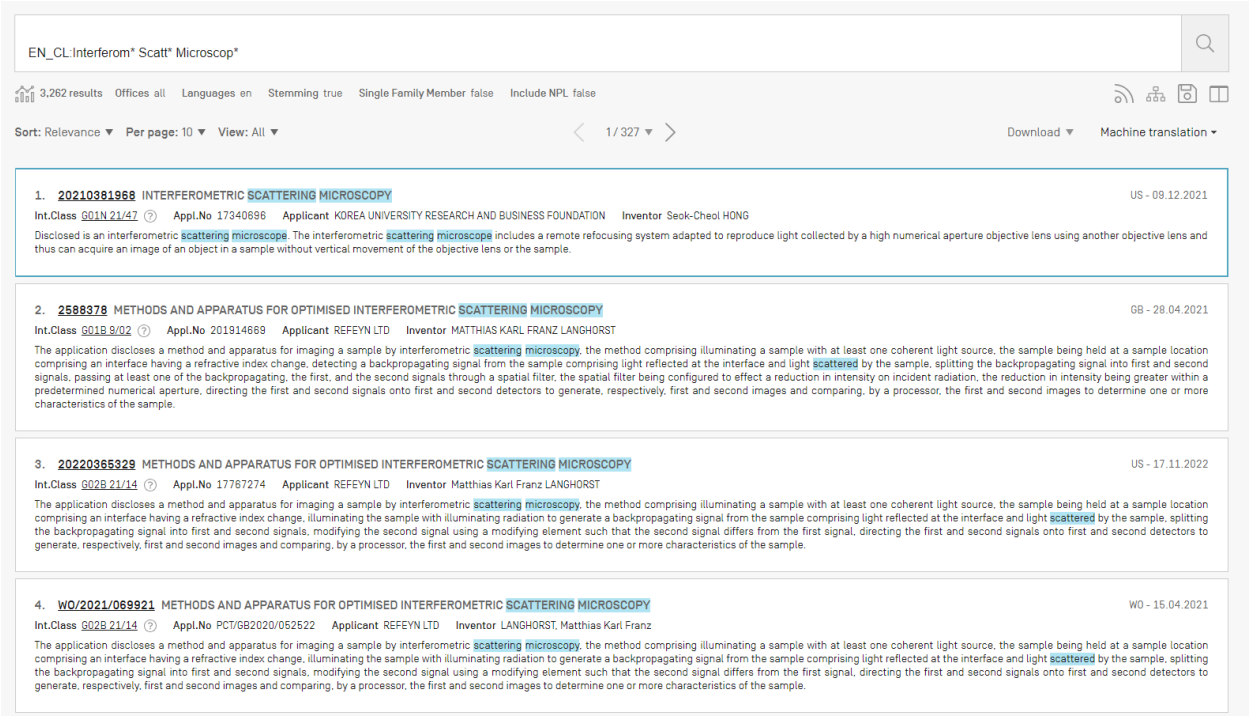
From the applicant information of the patent document, we can see the name of the small Slovenian company is REMIGO, PROIZVODNJA IN TRGOVINA, D.O.O.

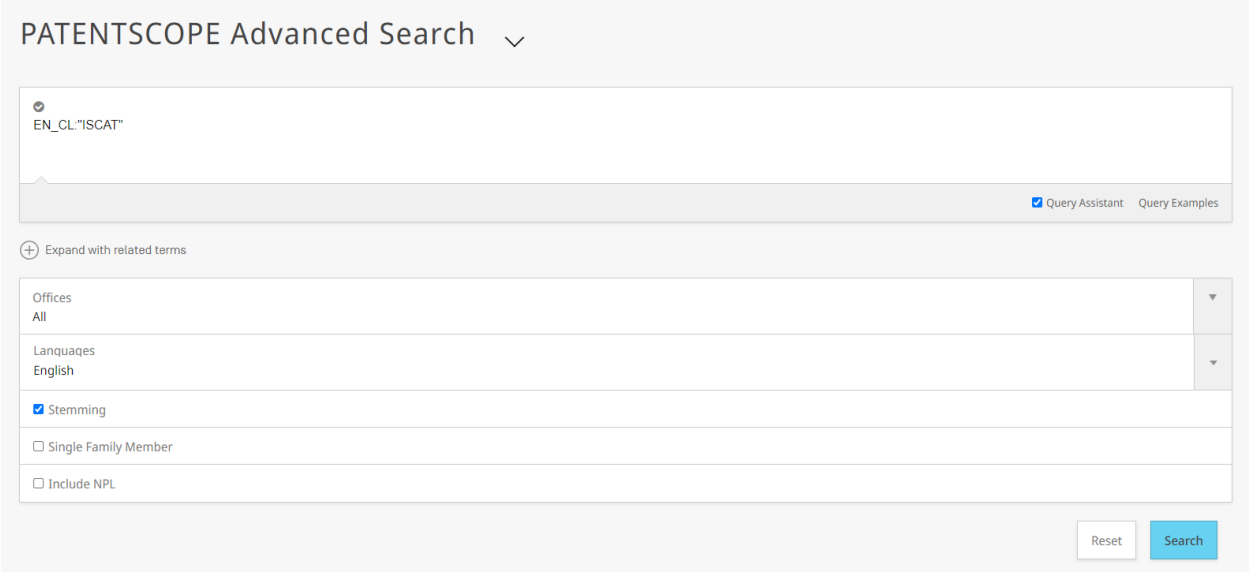
10. WEIGHING BIOMOLECULES WITH LIGHT

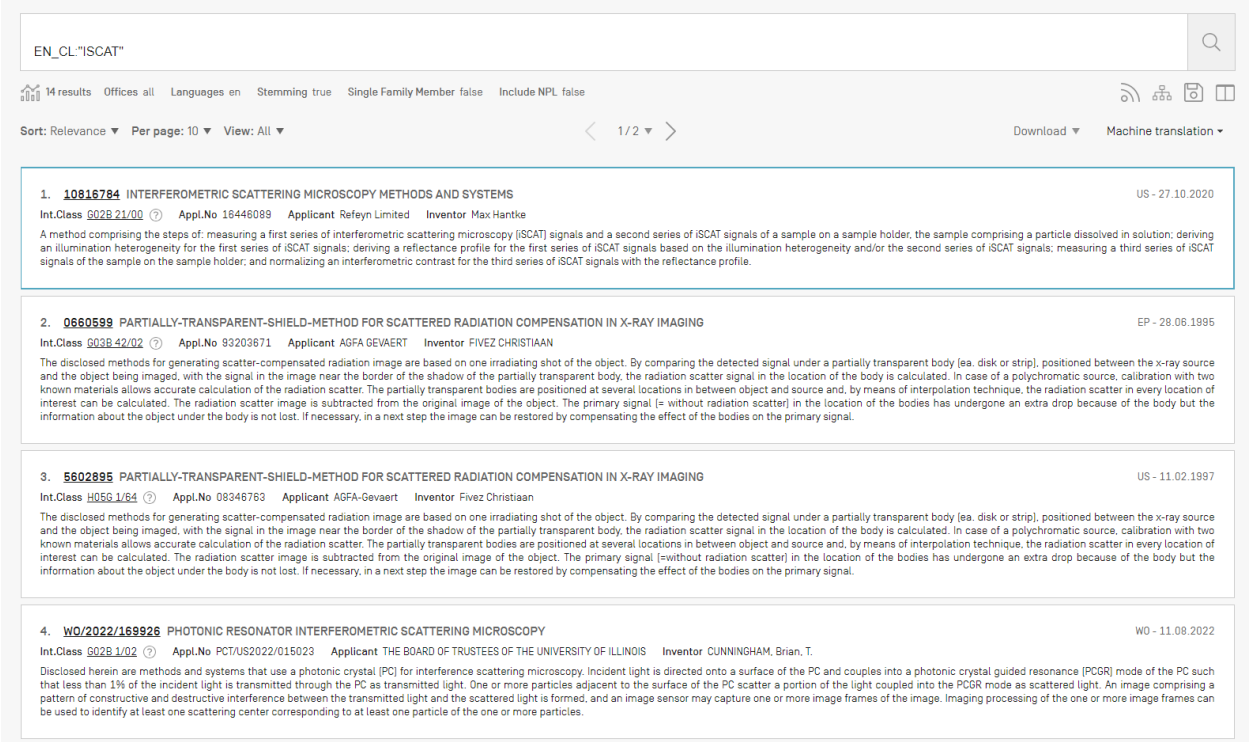
A. Find patent applications for ISCAT microscopy inventions

Use the field EN_CL to search “Interferom* Scatt* Microscop*” or ISCAT in English Claims



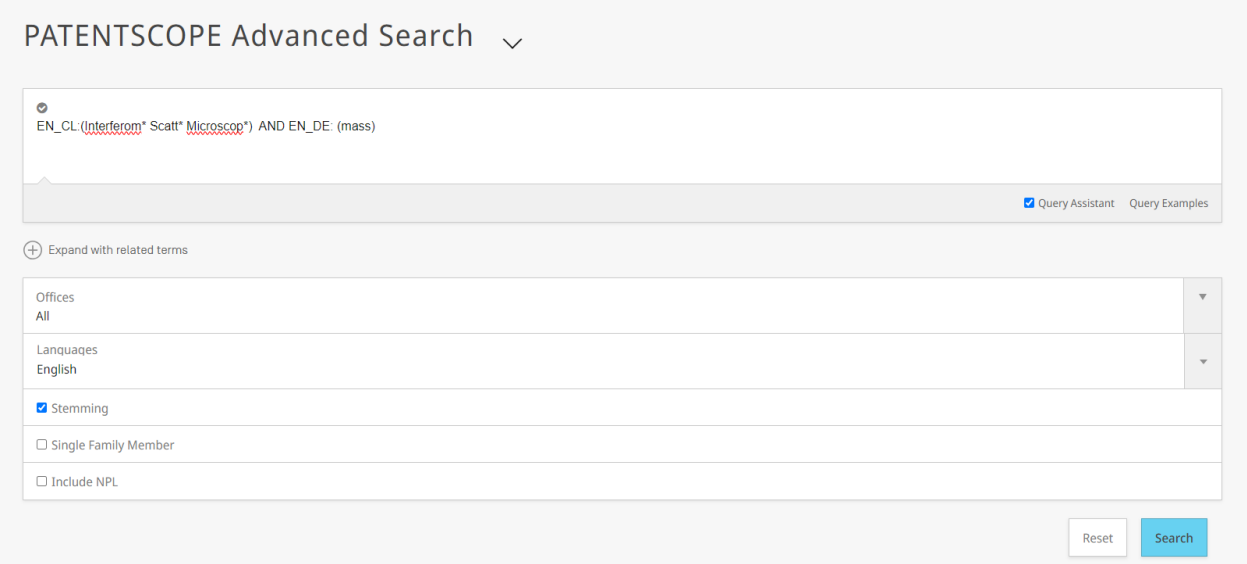


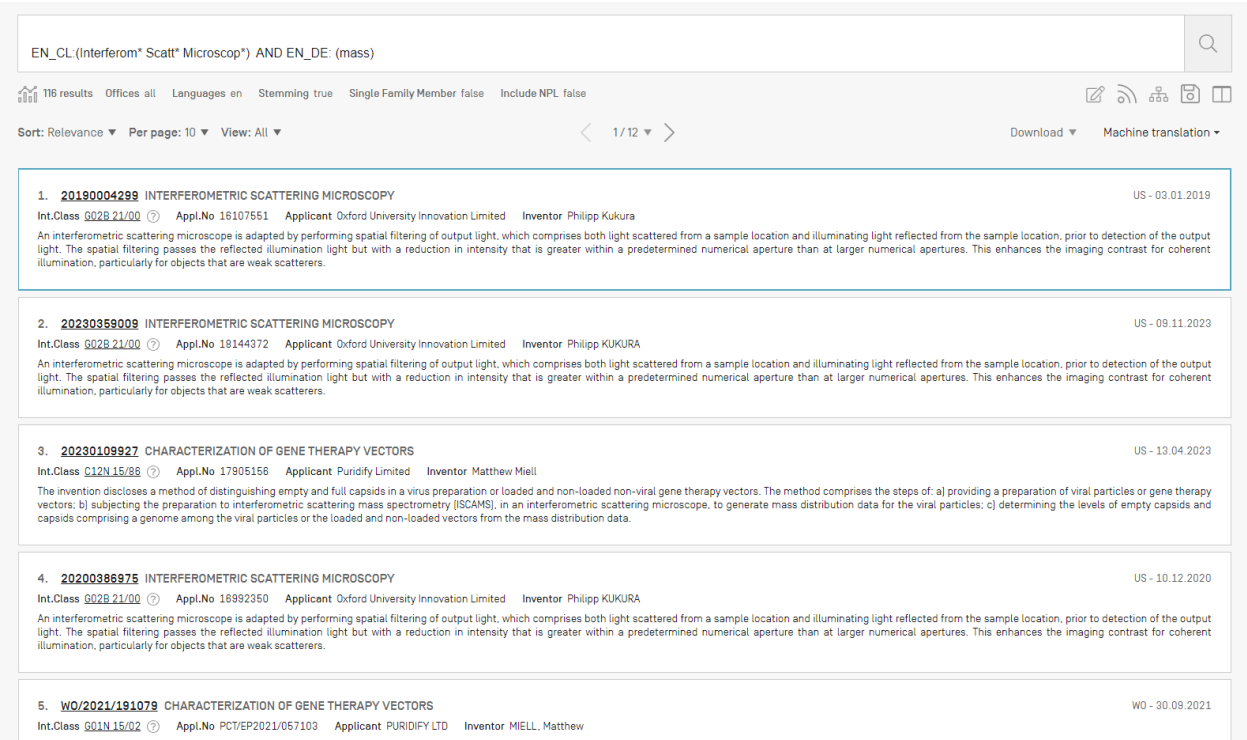




B. Find patent applications for ISCAT microscopy applied to the measurement of molecular mass – what is the name of this applied technology

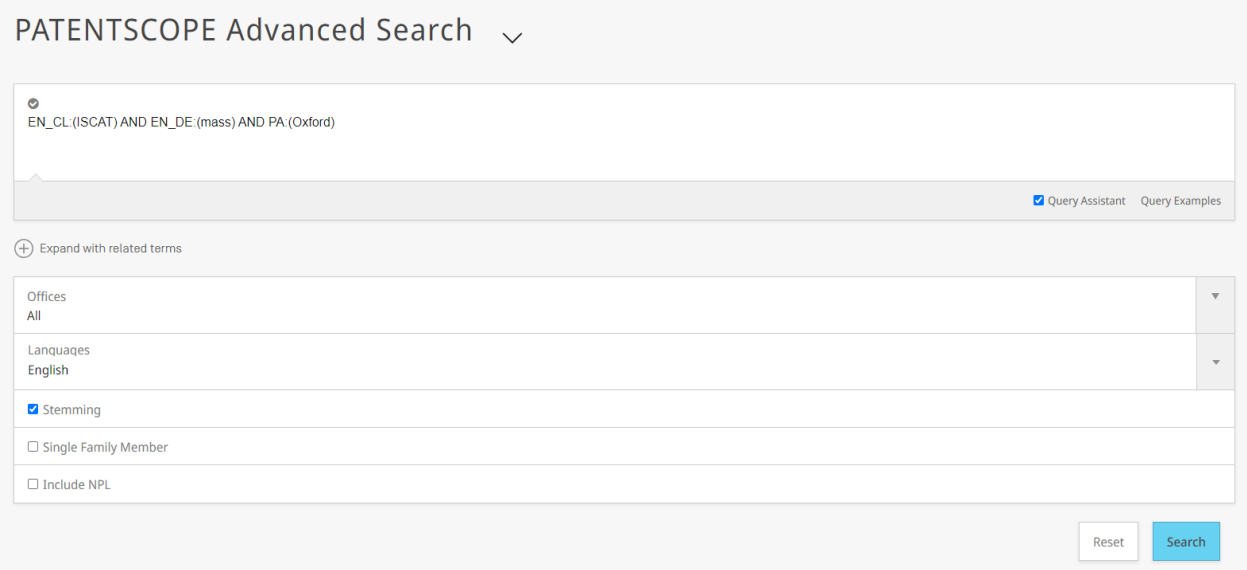
Repeat the search in A. above, combined with searching “mass” in the field English Description – in this way, the term “mass photometry” can be found.



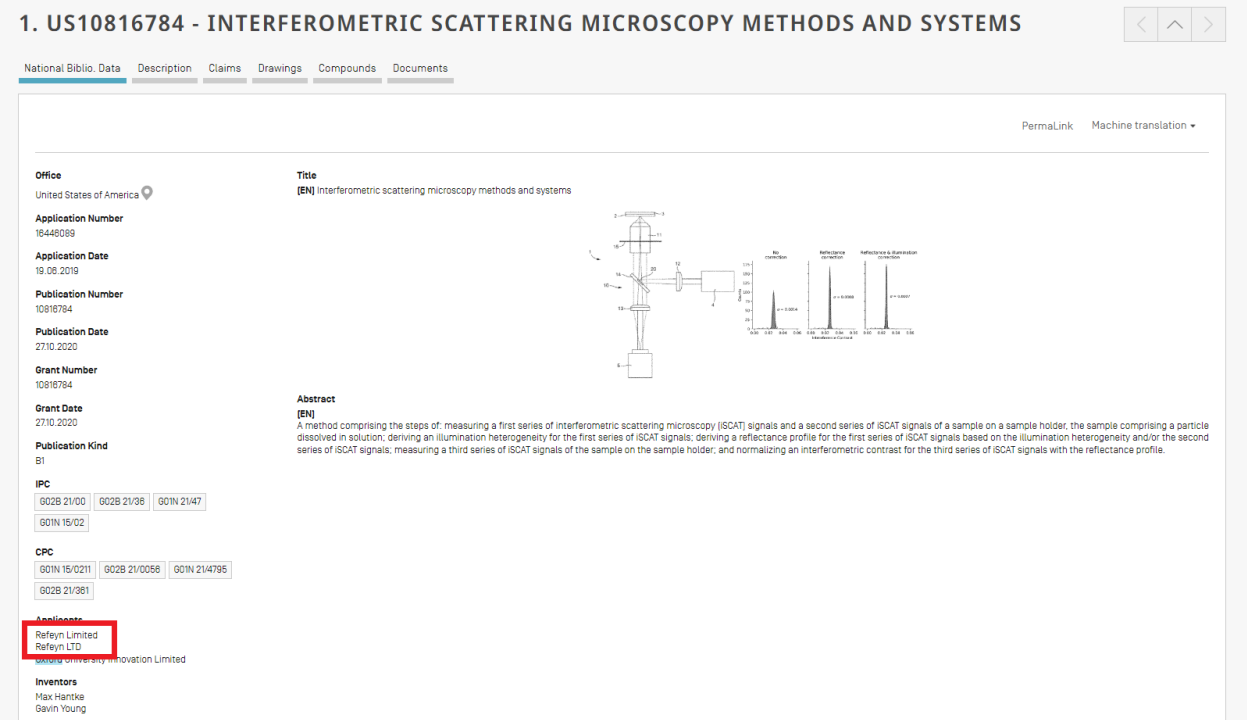


C. Find the small British company co-applicant with an Oxford University Institution. List the patent applications

Repeat the search above, combined with “Oxford” as Applicant Name.



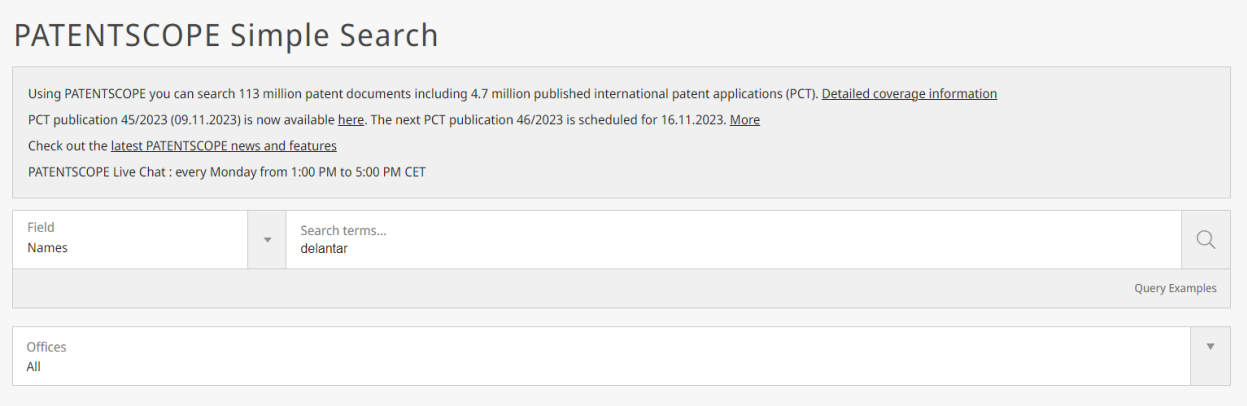
Then from the results, another applicant, a small British company called **Refeyn** will be noticed.

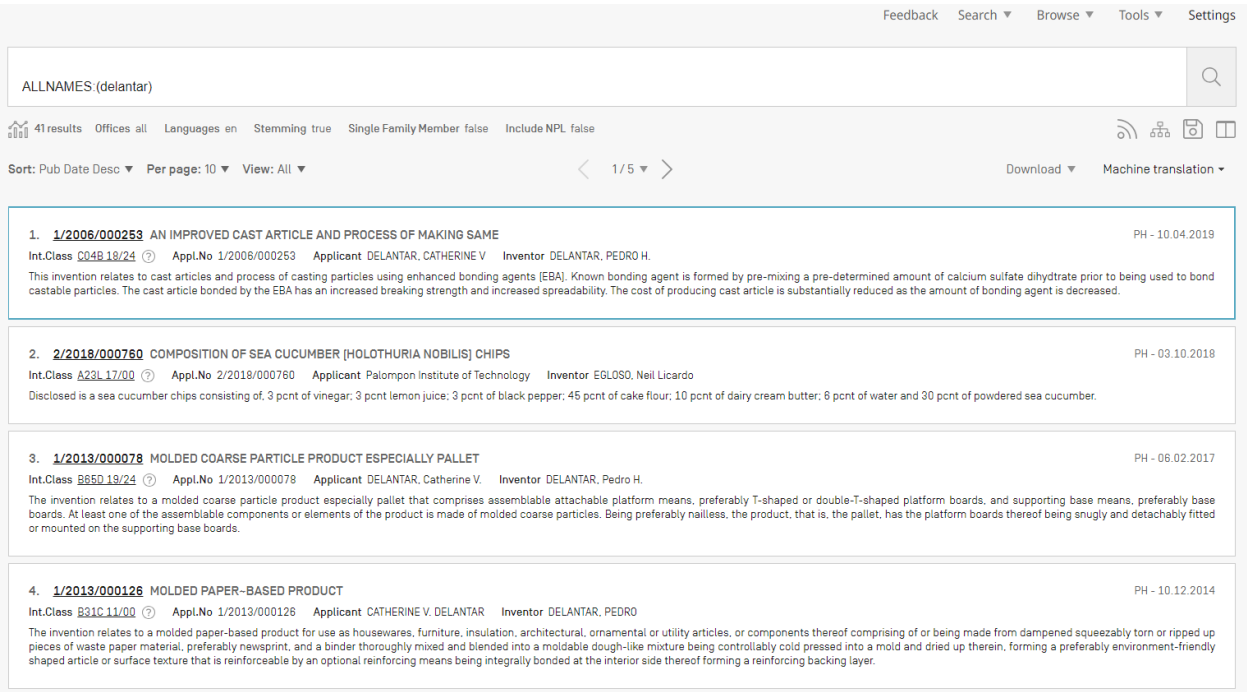


11.SUSTAINABLE CAST PRODUCTS

A. Find the relevant patent applications

Search “delantar” in the field “Names” and then the relevant patent applications can be found.





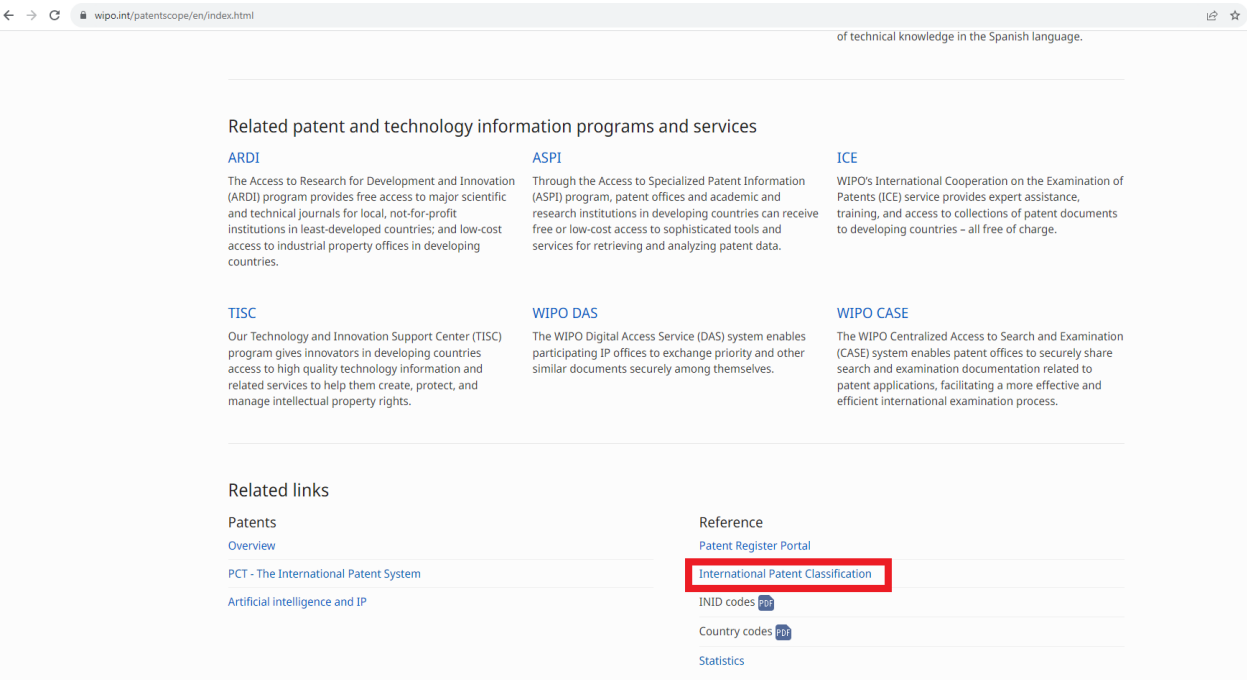
12.4D PRINTING

A. To begin with, suggest synonyms for 4D printing materials

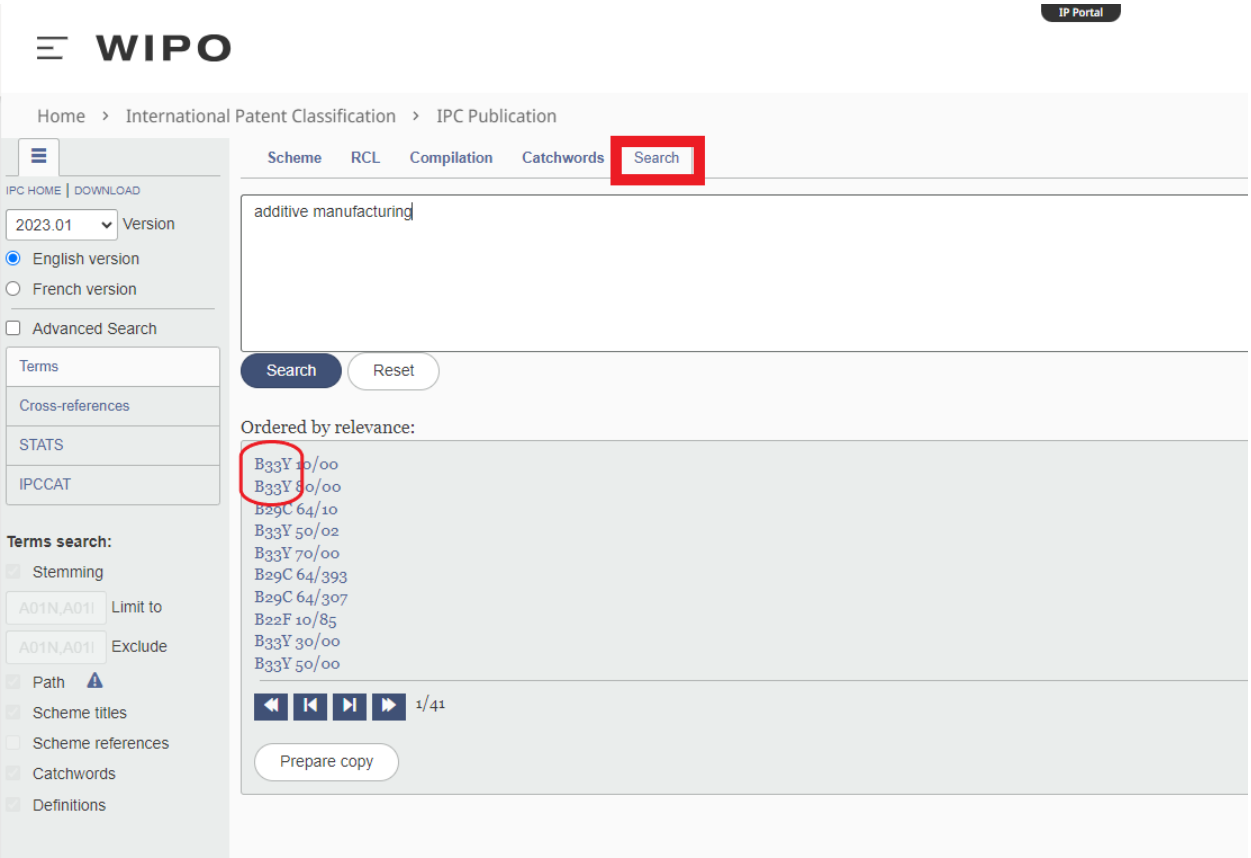
From the link provided (https://builtin.com/3d-printing/4d-printing), some synonyms for 4D printing materials can be obtained, for example, “programmable material”, shape memory (alloys, polymers, materials, metals), smart materials etc.

B. Find the main IPC group for additive manufacturing

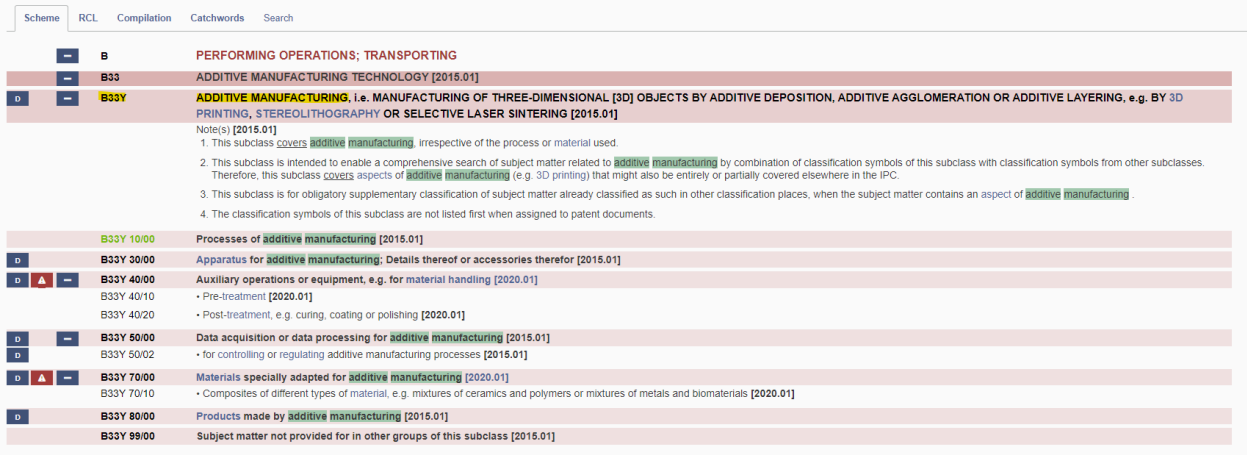
In the bottom of PATENTSCOPE homepage, click on the reference link to International Patent Classification, then access the IPC Publication.



Click the “Search” tab and enter the key words “additive manufacturing”.

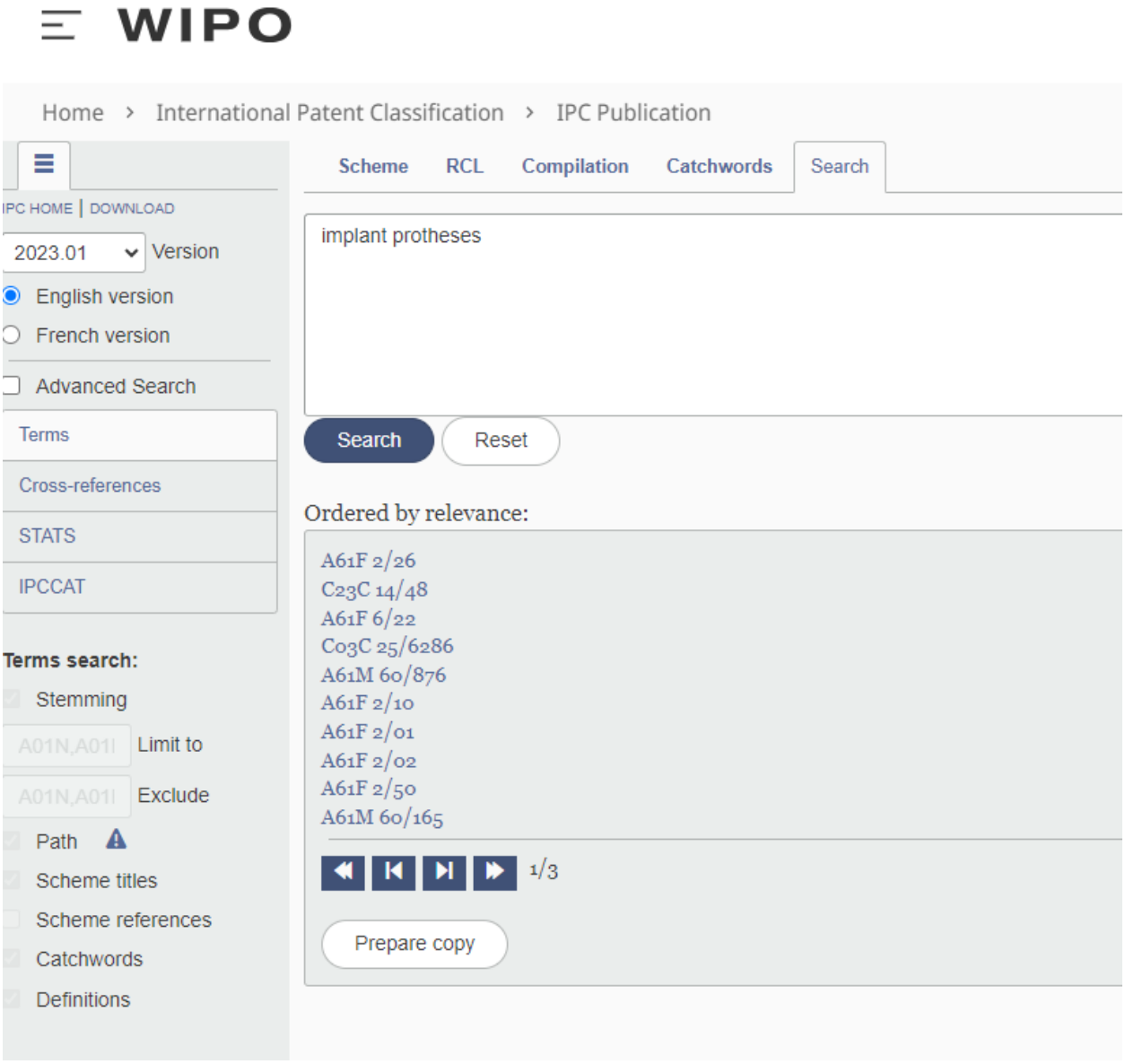


Click on those classes to look up the definition to verify. You will notice B33Y and its subgroups is the main IPC group.

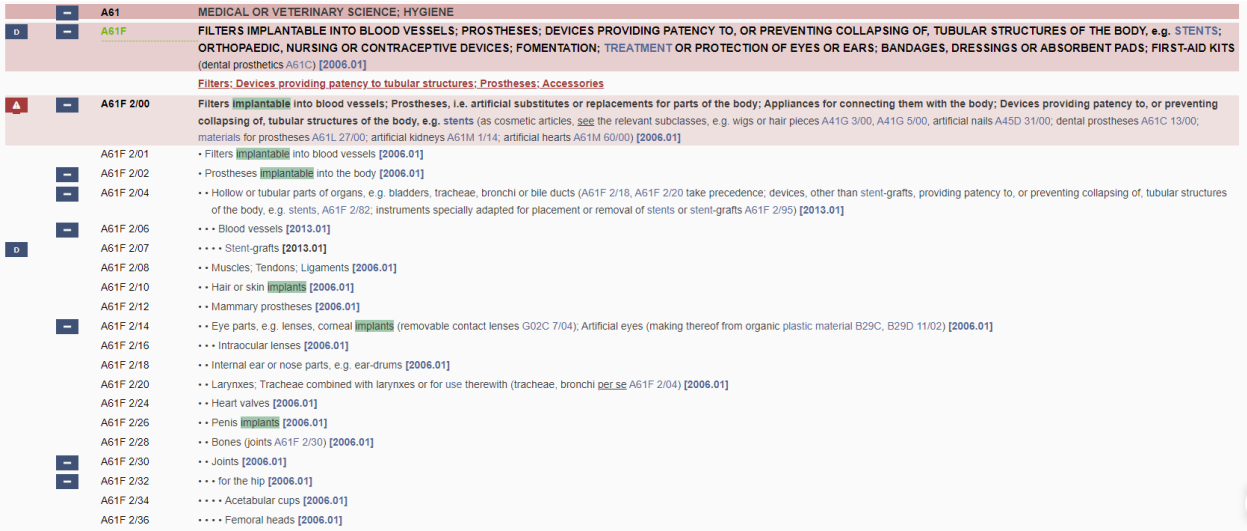


C. Find the main IPC group for implants, protheses etc.

Repeat the search above with the keywords “implant protheses”.



You will notice that A61F received many hits. Click on it to look up the definition to verify.

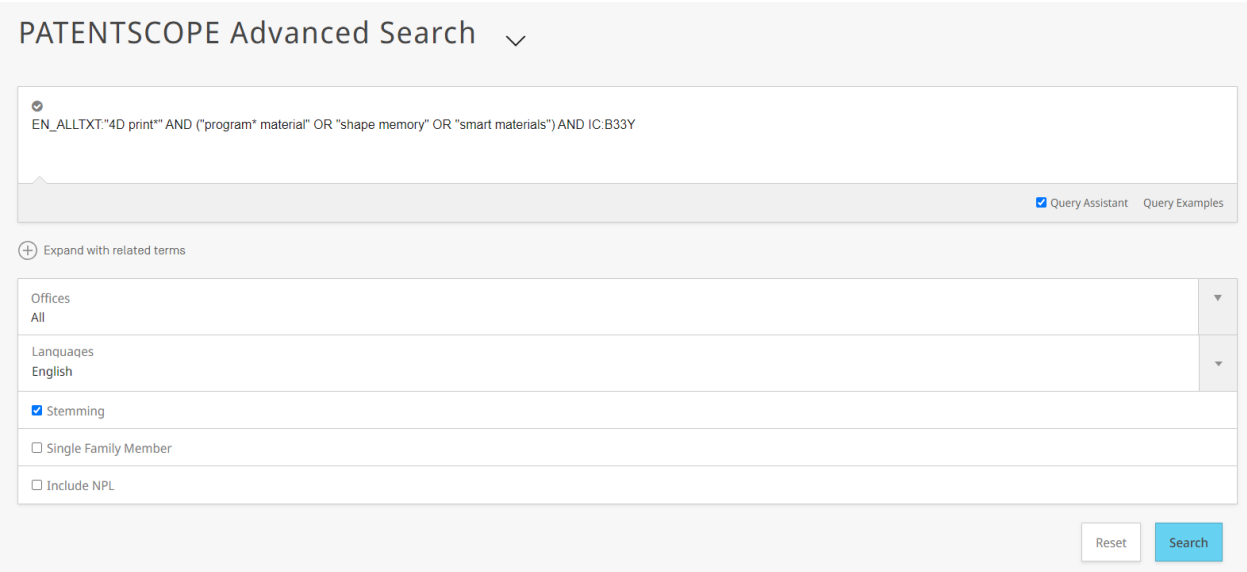


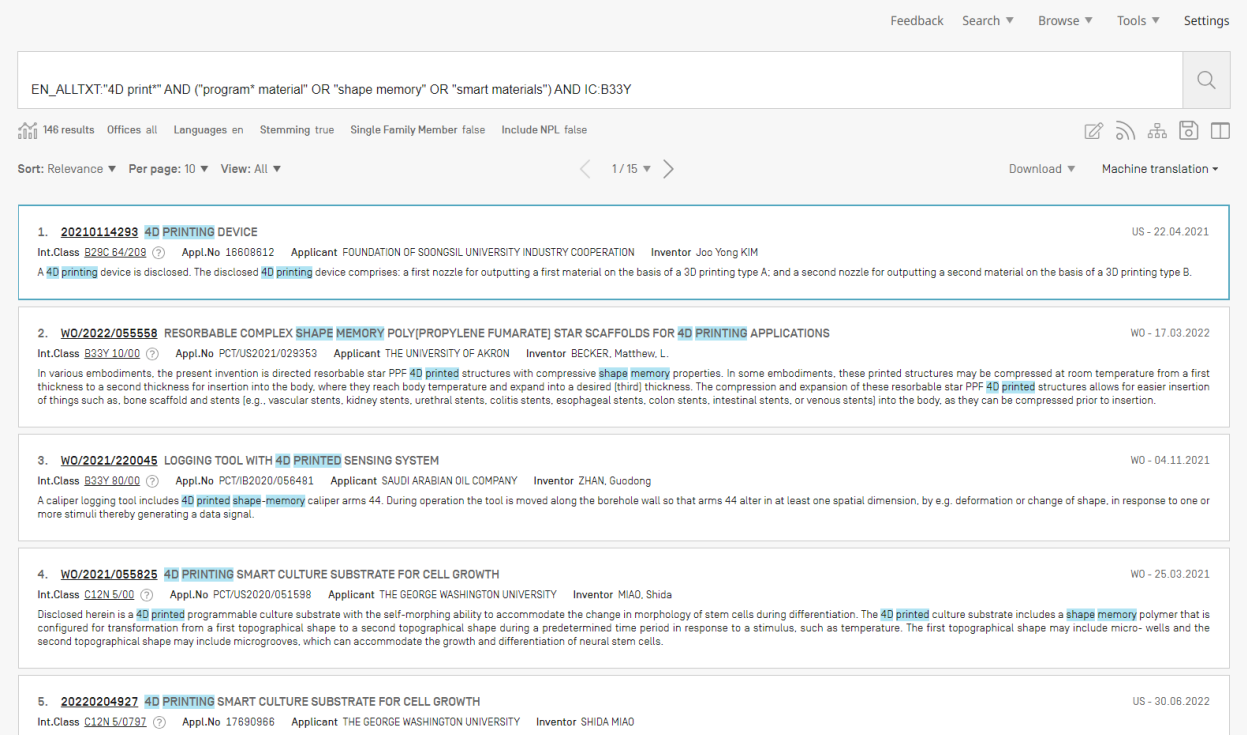
	−	A61	MEDICAL OR VETERINARY SCIENCE; HYGIENE
D	−	A61F	FILTERS IMPLANTABLE INTO BLOOD VESSELS; PROSTHESES; DEVICES PROVIDING PATENCY TO, OR PREVENTING COLLAPSING OF, TUBULAR STRUCTURES OF THE BODY, e.g. STENTS; ORTHOPAEDIC, NURSING OR CONTRACEPTIVE DEVICES; FOMENTATION; TREATMENT OR PROTECTION OF EYES OR EARS; BANDAGES, DRESSINGS OR ABSORBENT PADS; FIRST-AID KITS (dental prosthetics A61C) [2006.01]
			Filters; Devices providing patency to tubular structures; Prostheses; Accessories
	−	A61F 2/00	Filters implantable into blood vessels; Prostheses, i.e. artificial substitutes or replacements for parts of the body; Appliances for connecting them with the body; Devices providing patency to, or preventing collapsing of, tubular structures of the body, e.g. stents (as cosmetic articles, see the relevant subclasses, e.g. wigs or hair pieces A41G 3/00, A41G 5/00, artificial nails A45D 31/00; dental prostheses A61C 13/00; materials for prostheses A61L 27/00; artificial kidneys A61M 1/14; artificial hearts A61M 60/00) [2006.01]
		A61F 2/01	• Filters implantable into blood vessels [2006.01]
	−	A61F 2/02	• Prostheses implantable into the body [2006.01]
	−	A61F 2/04	• • Hollow or tubular parts of organs, e.g. bladders, tracheae, bronchi or bile ducts (A61F 2/18, A61F 2/20 take precedence; devices, other than stent-grafts, providing patency to, or preventing collapsing of, tubular structures of the body, e.g. stents, A61F 2/82; instruments specially adapted for placement or removal of stents or stent-grafts A61F 2/95) [2013.01]
	−	A61F 2/06	• • • Blood vessels [2013.01]
D		A61F 2/07	• • • • Stent-grafts [2013.01]
		A61F 2/08	• • Muscles; Tendons; Ligaments [2006.01]
		A61F 2/10	• • Hair or skin implants [2006.01]
		A61F 2/12	• • Mammary prostheses [2006.01]
	−	A61F 2/14	• • Eye parts, e.g. lenses, corneal implants (removable contact lenses G02C 7/04); Artificial eyes (making thereof from organic plastic material B29C, B29D 11/02) [2006.01]
		A61F 2/16	• • • Intraocular lenses [2006.01]
		A61F 2/18	• • Internal ear or nose parts, e.g. ear-drums [2006.01]
		A61F 2/20	• • Larynxes; Tracheae combined with larynxes or for use therewith (tracheae, bronchi per se A61F 2/04) [2006.01]
		A61F 2/24	• • Heart valves [2006.01]
		A61F 2/26	• • Penis implants [2006.01]
		A61F 2/28	• • Bones (joints A61F 2/30) [2006.01]
	−	A61F 2/30	• • Joints [2006.01]
	−	A61F 2/32	• • • for the hip [2006.01]
		A61F 2/34	• • • • Acetabular cups [2006.01]
		A61F 2/36	• • • • Femoral heads [2006.01]

Therefore, the main IPC group for implants, protheses is A61F and its subgroups.

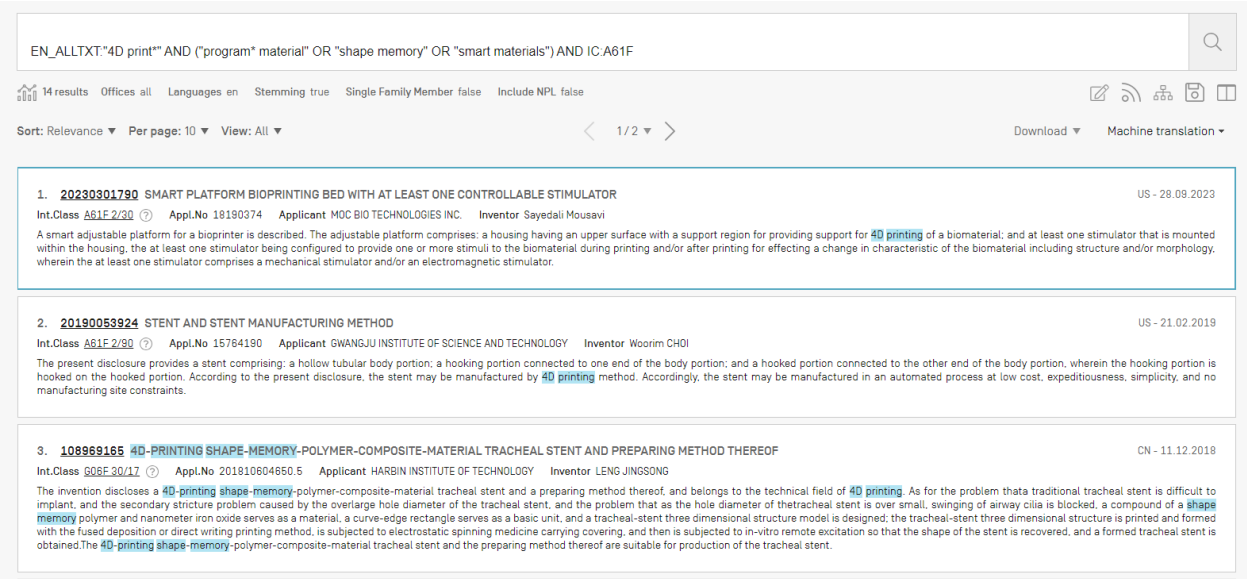
D. Combine your results to find patent applications for different medical products produced by 4D printing.

For additive manufacturing, use the field EN_ALLTXT (English All Text) to search for the key words "4D print*" AND ("program* material" OR "shape memory" OR "smart materials"), added with the field IC (International Classification) B33Y.



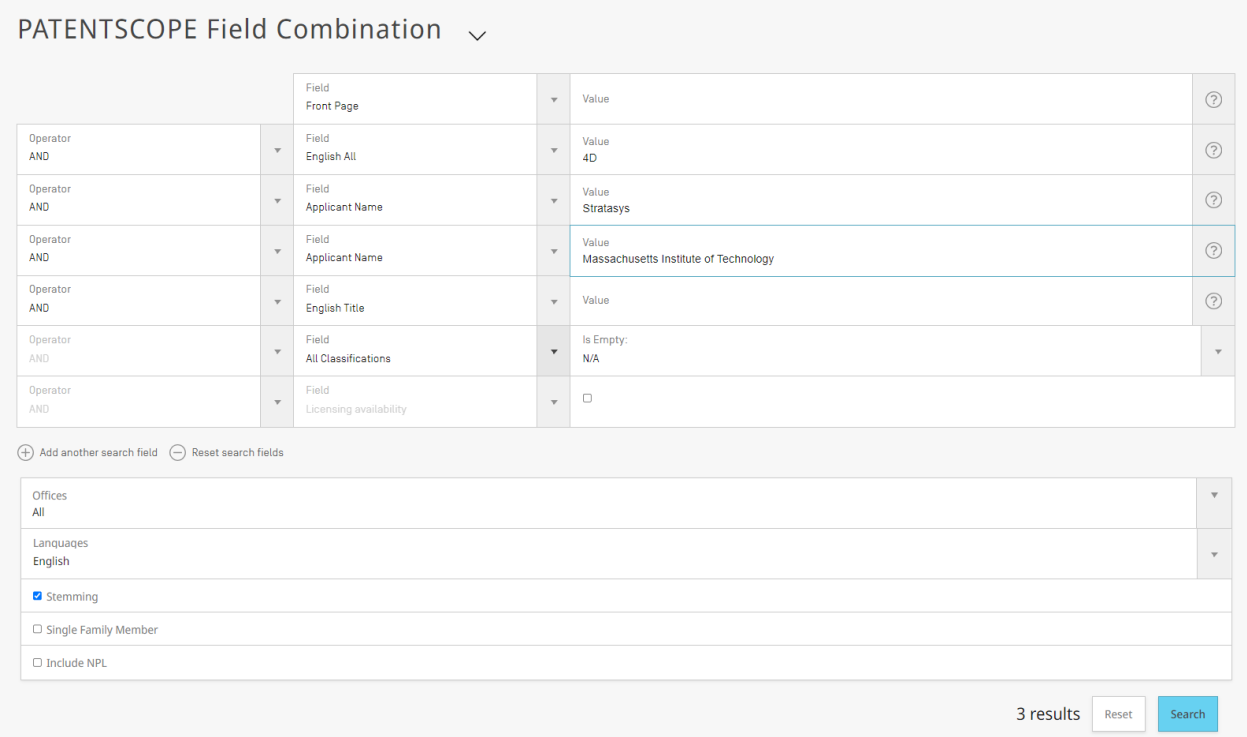


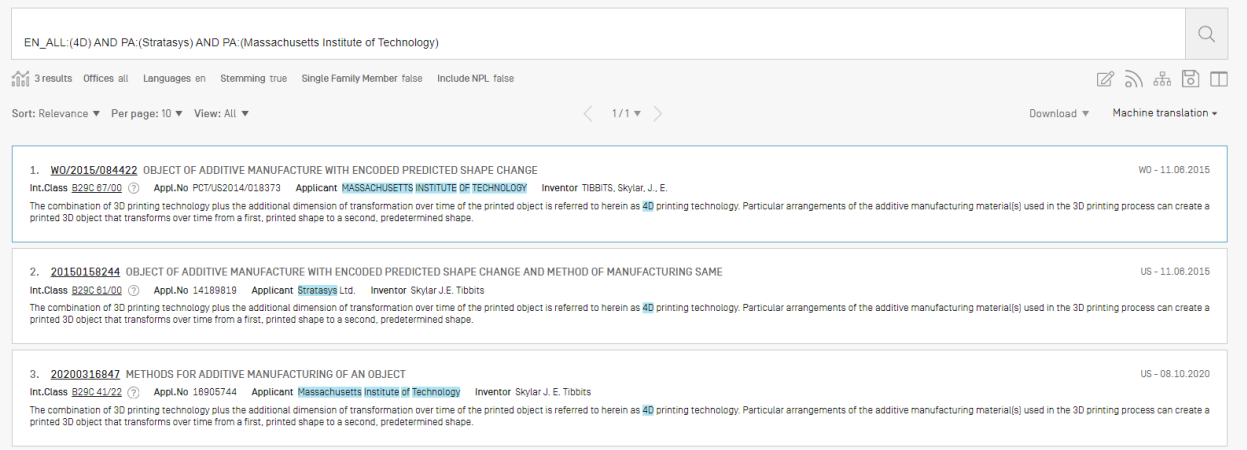
For implants, protheses etc., repeat the search but with IC: A61F.



E. Stratasys is a company working with MIT to produce 3D precursor shapes which can morph into other shapes. The leading exponent is a TED fellow. Can you find some of the relevant patent applications

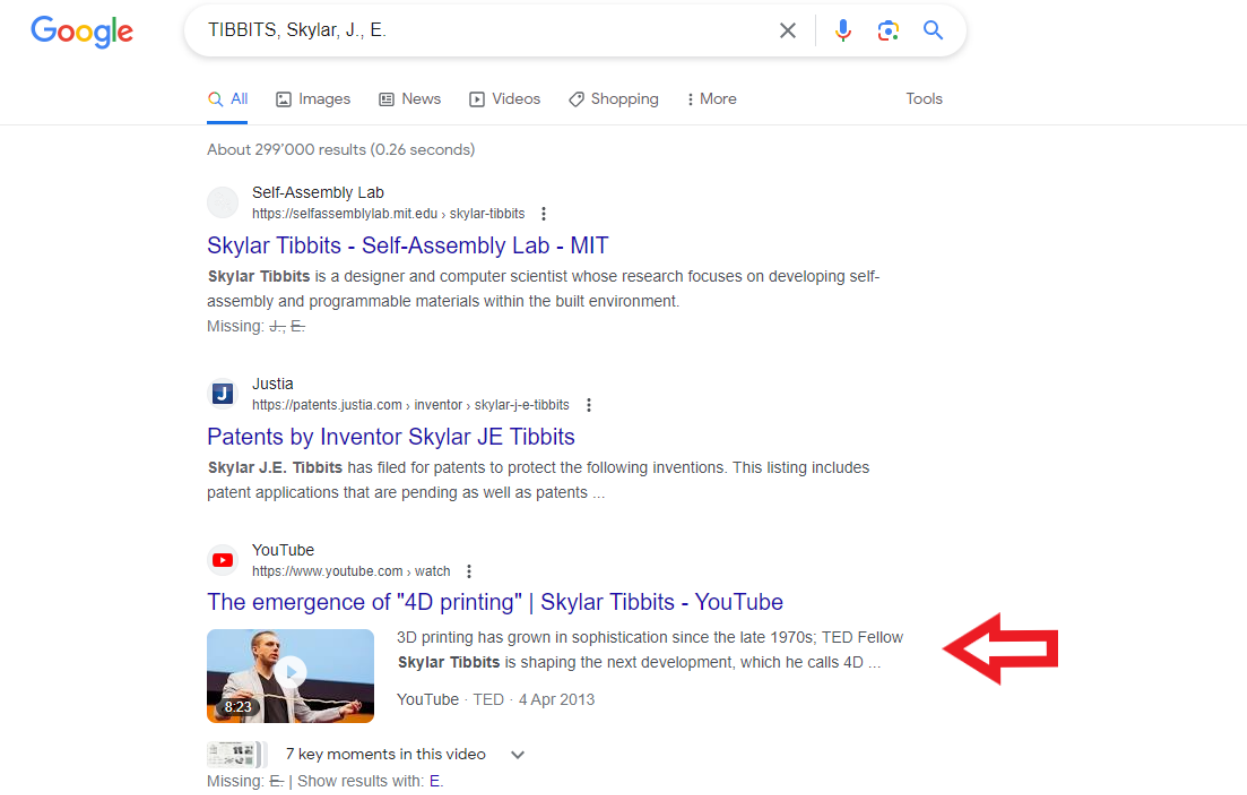
Search the key word “4D” in the field English All, Stratasys as the Applicant Name and Massachusetts Institute of Technology as another Applicant Name.





Open one of the patent documents and check the inventors.

Search each name on Google and you will find TIBBITS, Skylar, J., E. is a TED fellow.

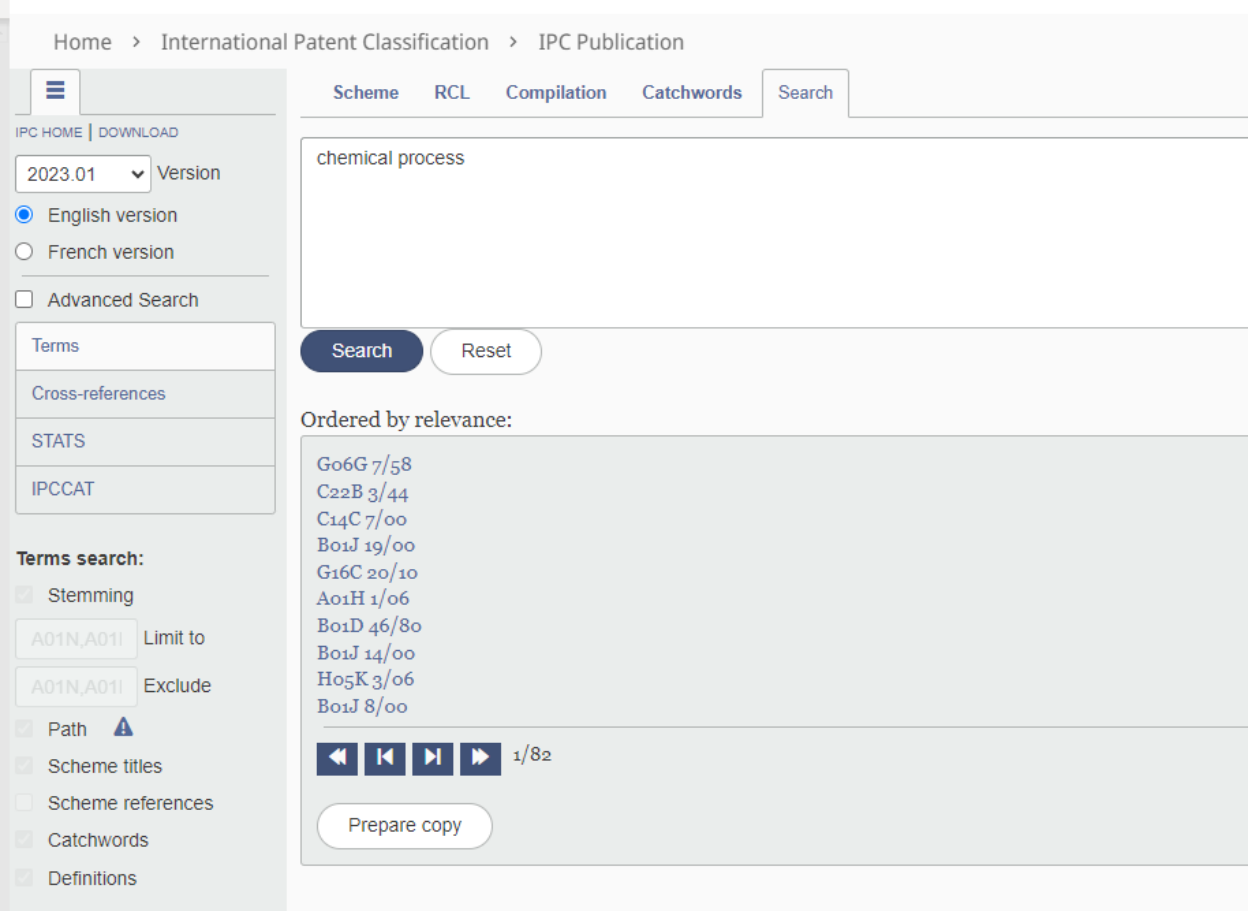


13.SONOCHEMISTRY

A. Find the most appropriate IPC classification symbols which cover the field of sonochemistry processes and equipment

Access the IPC Publication: https://ipcpub.wipo.int/

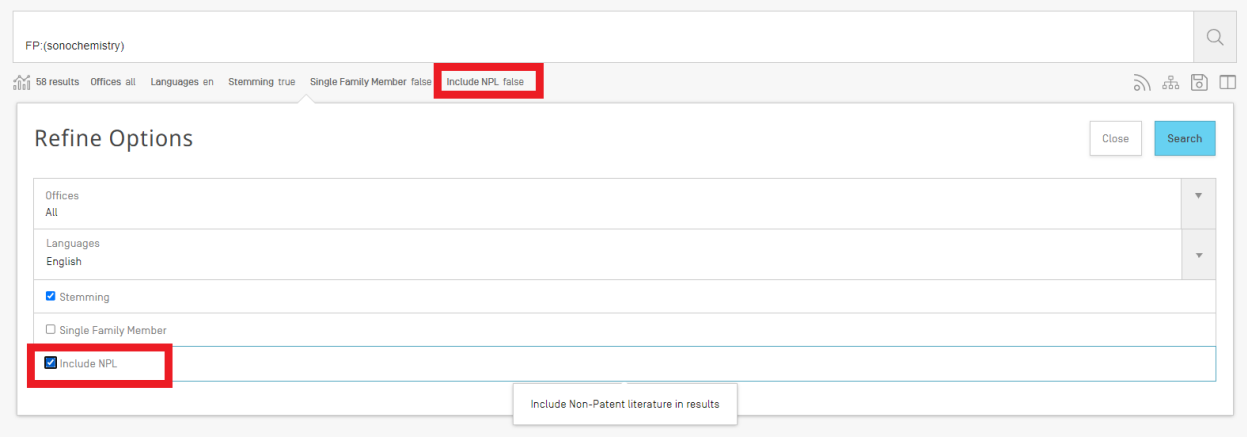
Click the “Search” tab, and enter the key words, such as “chemical process”.



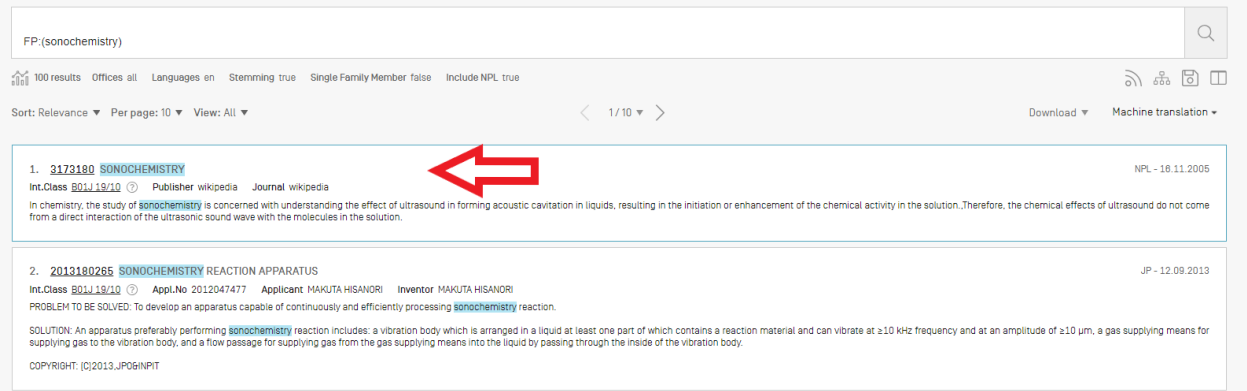
Click on those classes to look up the definition to verify. The appropriate IPC classification can be B01J19/10, B01J19/28, B06B1/00, B06B3/00.

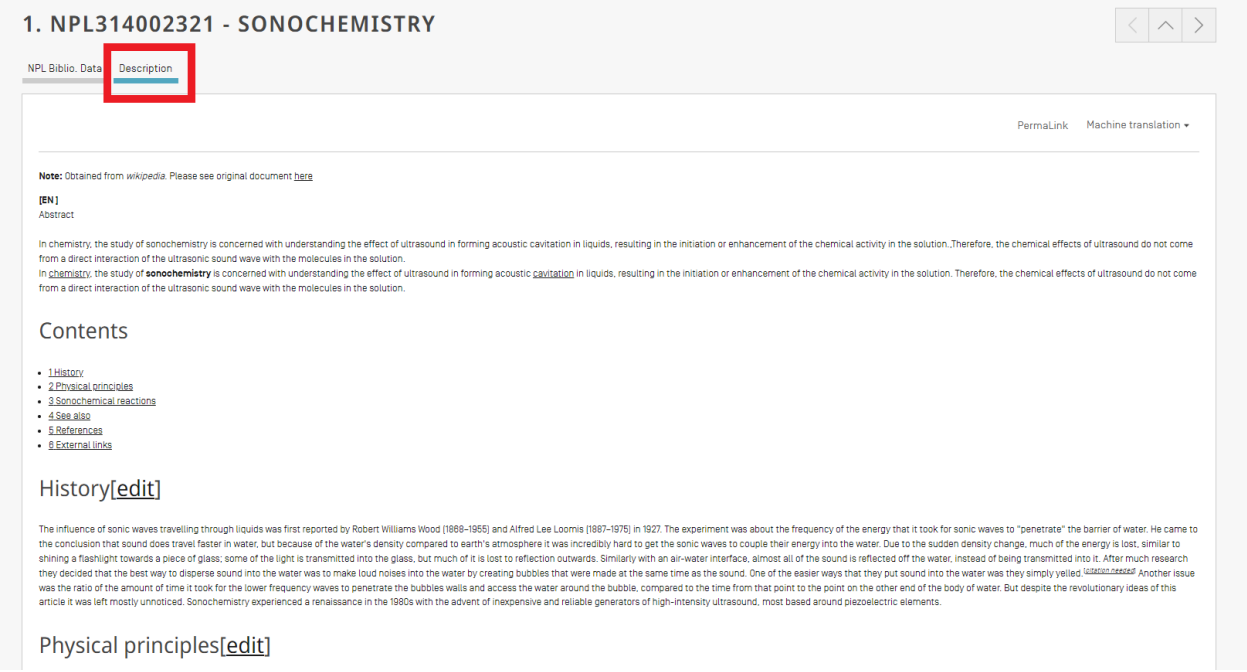
B. Use literature references to identify the most suitable keywords and synonyms which describe sonochemistry.

Search “sonochemistry” in Front Page and click on the checkbox of “Include NPL” to include non-Patent literature in results.

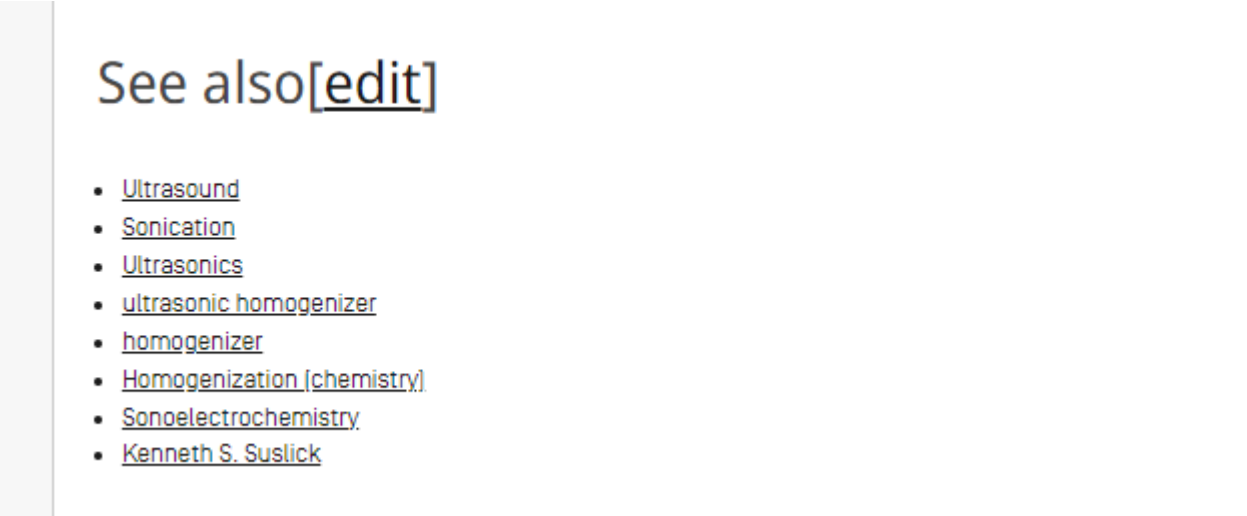


Click on the link from Wikipedia about sonochemistry, and go to the Description tab.



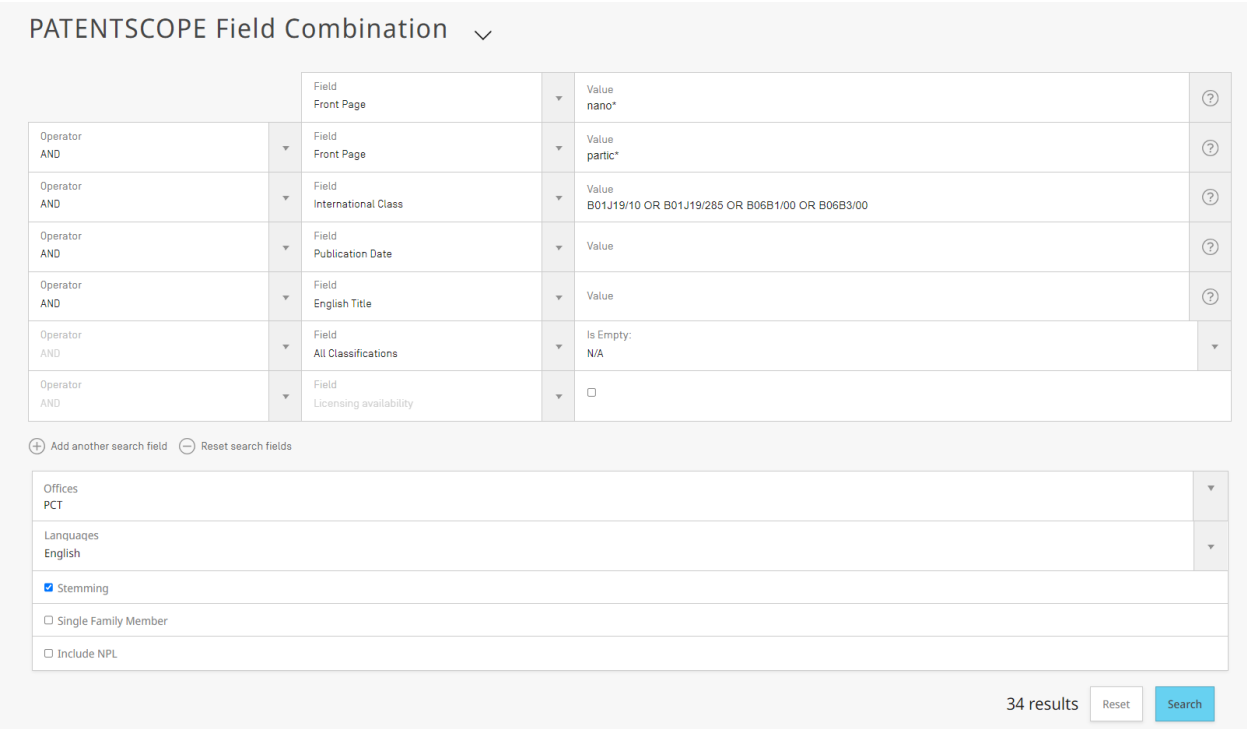


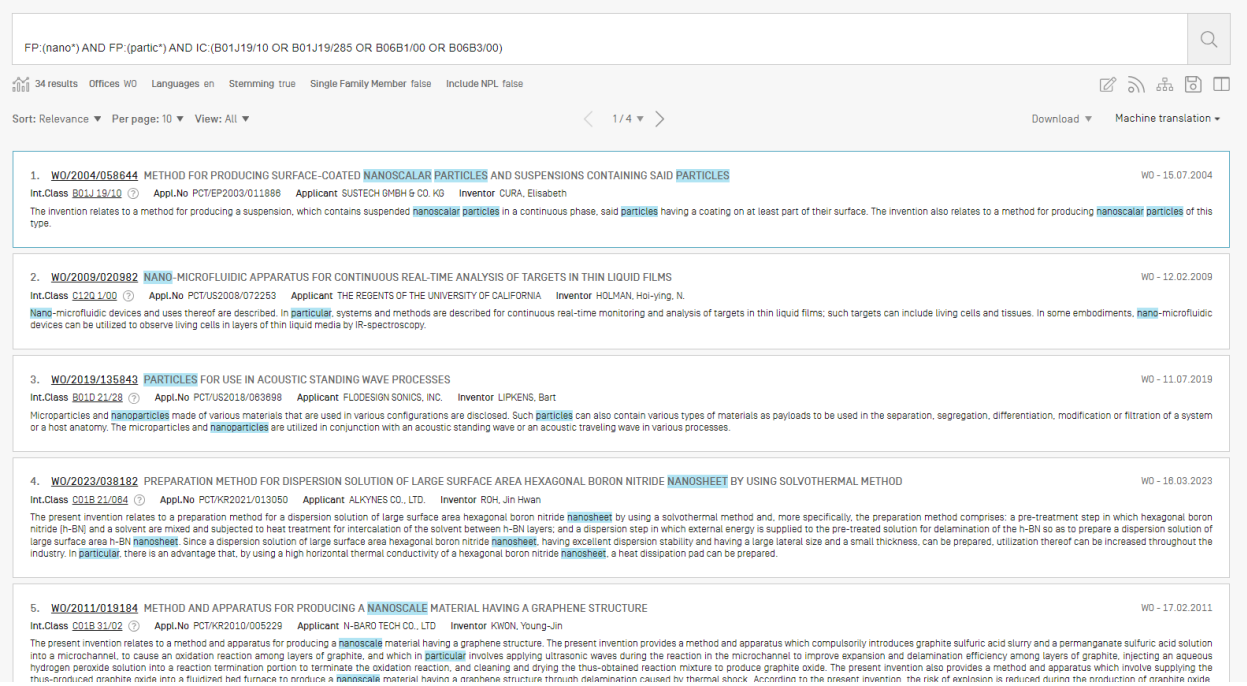
From the “See also” part, keywords and synonyms which describe sonochemistry are suggested as: Ultrasound, Sonication, Ultrasonics, ultrasonic homogenizer, homogenizer, Homogenization (chemistry), Sonoelectrochemistry etc. (not all are relevant).



C. Find PCT patent applications associated with the synthesis of nanometre scale particulate material.

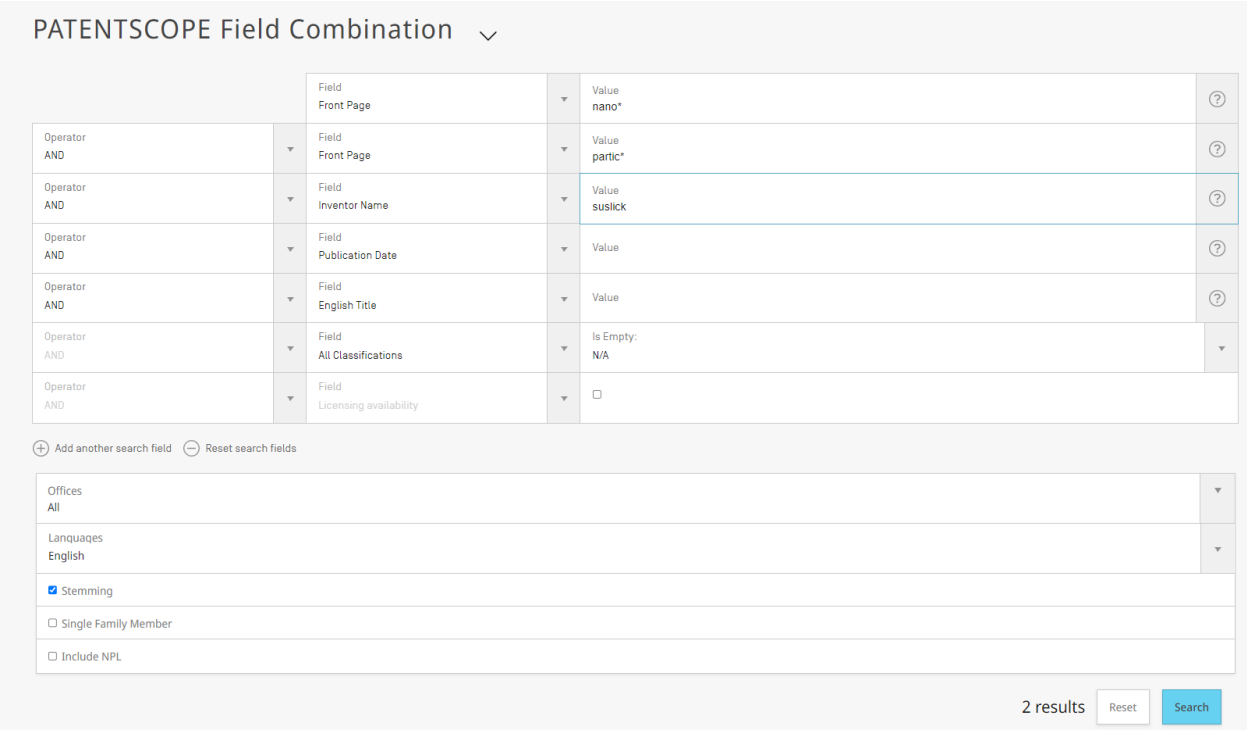
Search for keywords “nano*” and “partic*” in Front Page, B01J19/10 OR B01J19/285 OR B06B1/00 OR B06B3/00 as IC and then choose PCT as the office. The search query is: FP:(nano*) AND FP:(partic*) AND IC:(B01J19/10 OR B01J19/285 OR B06B1/00 OR B06B3/00)



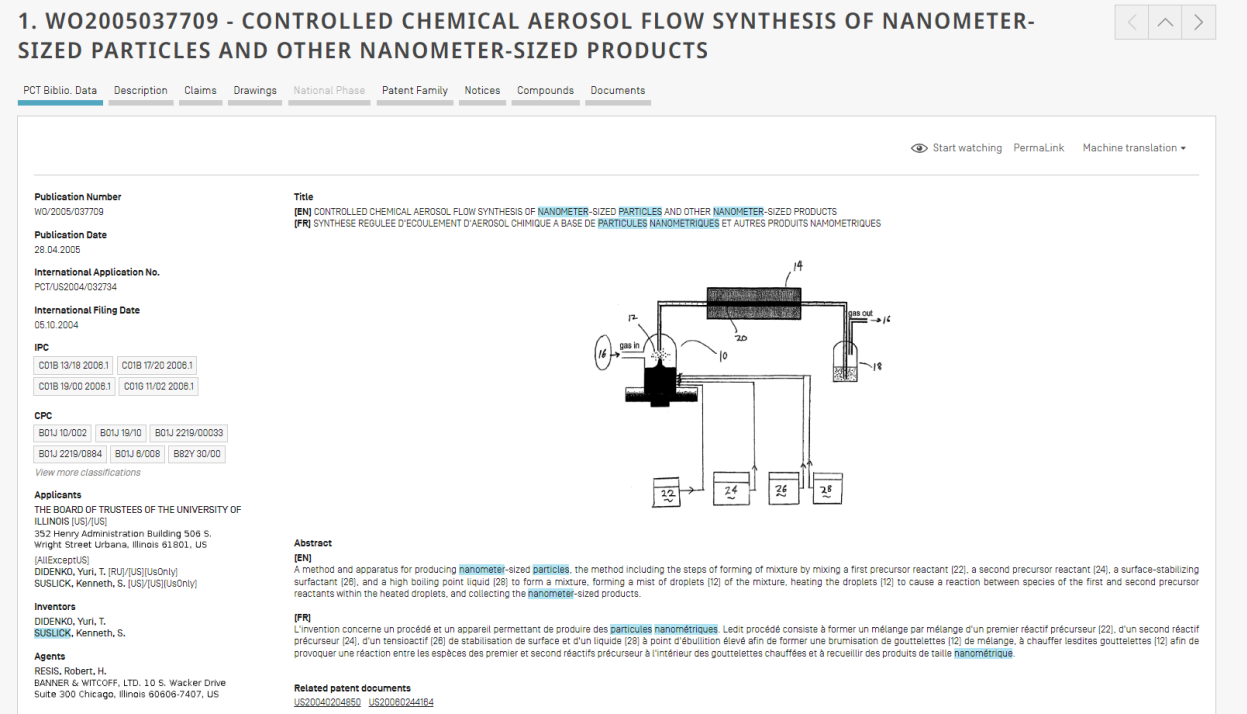


D. Professor K. Suslick is an active inventor in the fields of sonochemistry and biotechnology. Can you find any of his patent applications corresponding to the IPC classes or keywords you identified in A. and B. above?

Repeat the search above and add Suslick as Inventor Name.

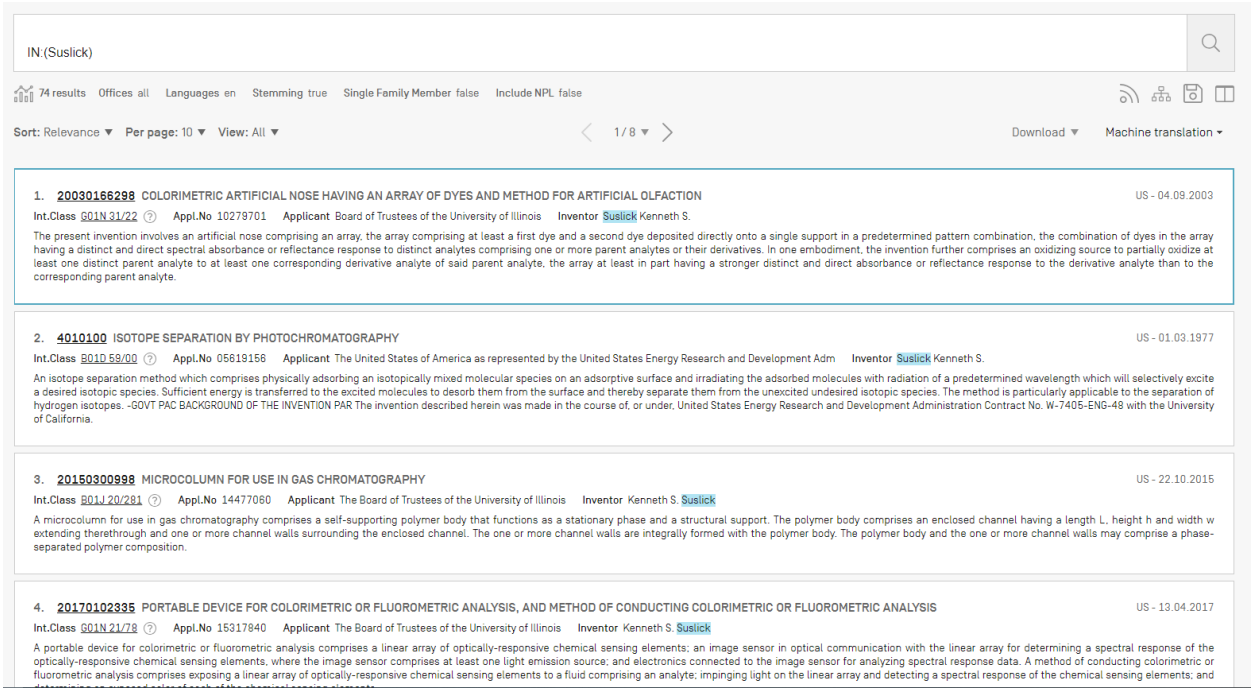


You will find the patent application **WO2005037709**.

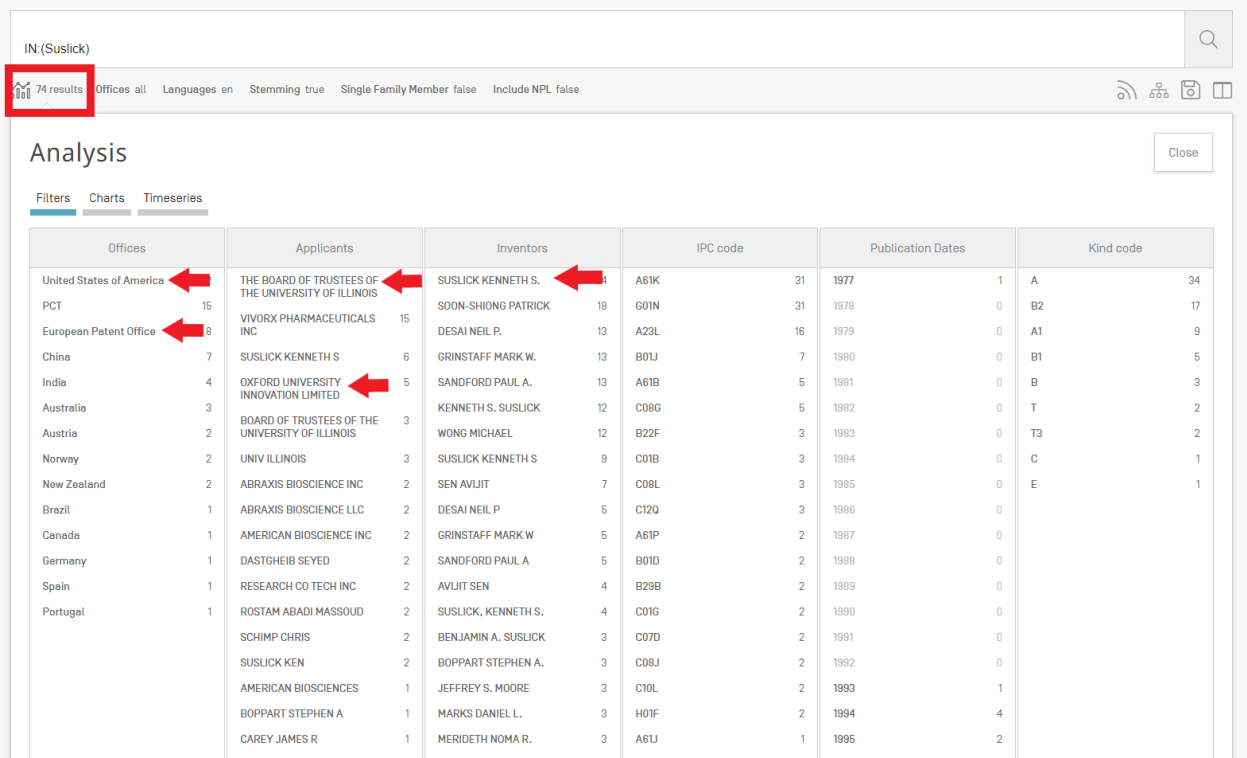


E. Which countries has he mainly been working in?

Search “Suslick” as Inventor Name.



Click on the “results” tab, you can see he’s mainly been working in USA and UK.

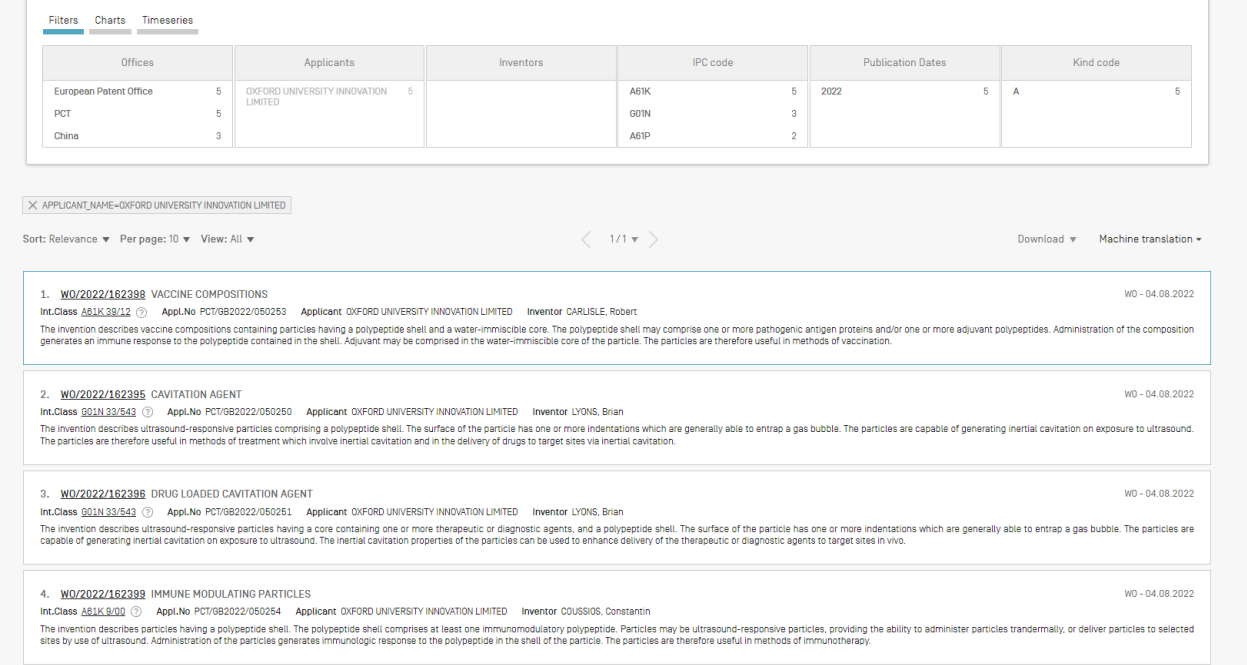


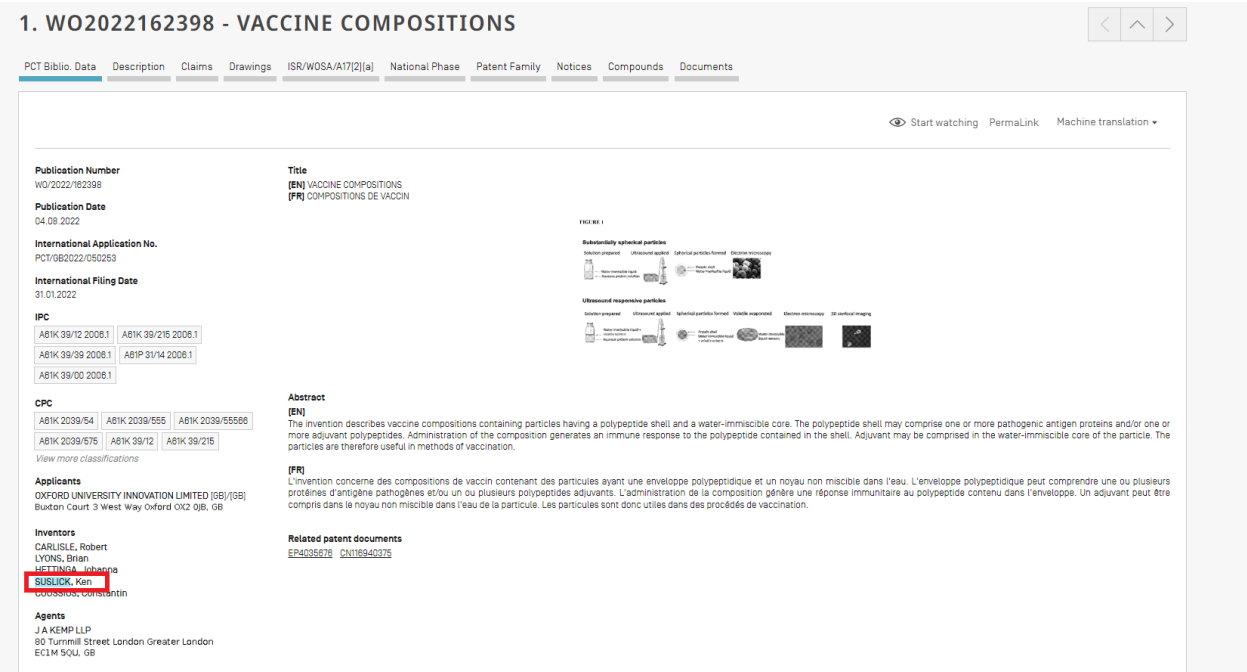
F. Which academic institutes has he mainly been working in?

From the results analysis, we can see he's mainly been working in University of Illinois and University of Oxford.

G. Which different forms of his name appear as inventor?

From the results analysis, we can see his name often appears as Suslick Kenneth S. But if we click on "Oxford University Innovation Limited", and click on one patent document from the results list, we can see his name appears as "Suslick Ken". Therefore, Predominantly Kenneth Suslik in the USA and predominantly Ken Suslick in the UK.





H. Find other patents with Prof. Suslick as inventor. It seems that Prof. Suslick´s interests lie not only in the applications of sonochemistry but in many other fields. Under what other IPC classifications are his patent applications filed?

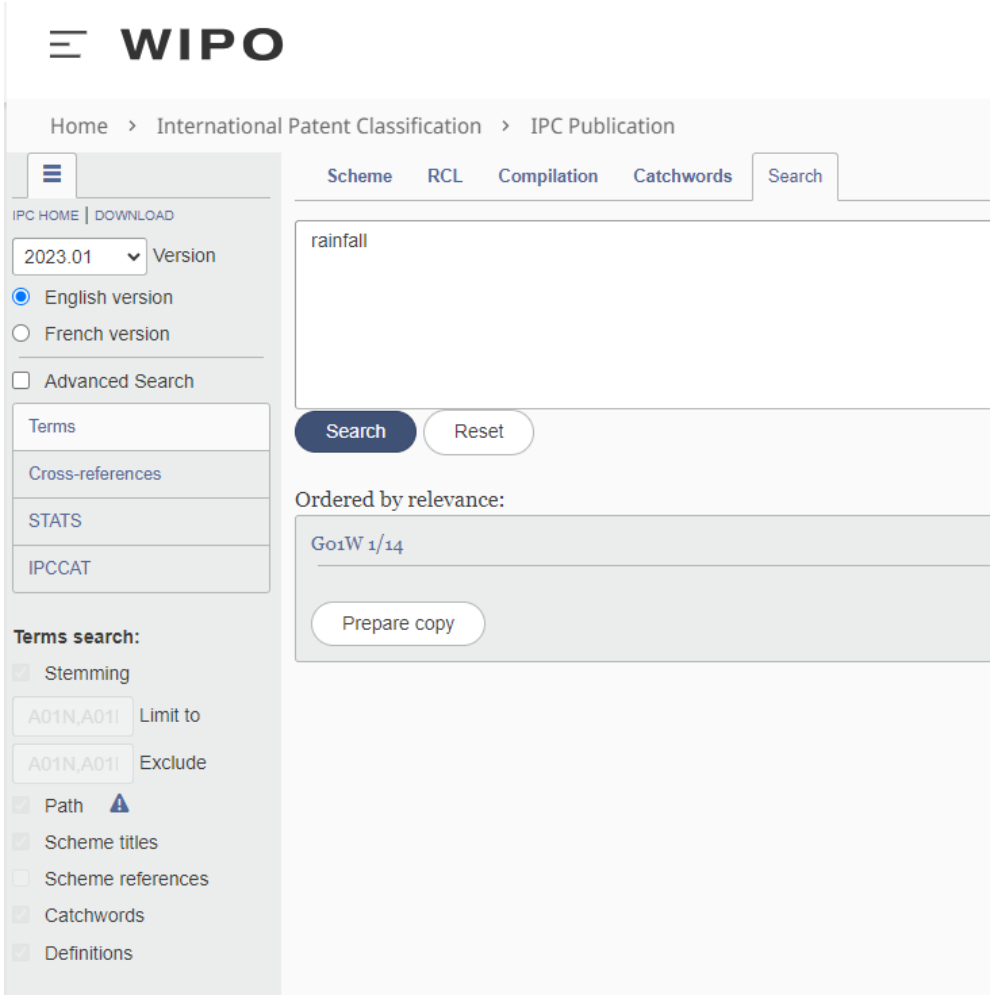
Still from the results analysis, we can see, for example A61K, G01N, A23L etc.

14.FLOOD PREDICTION

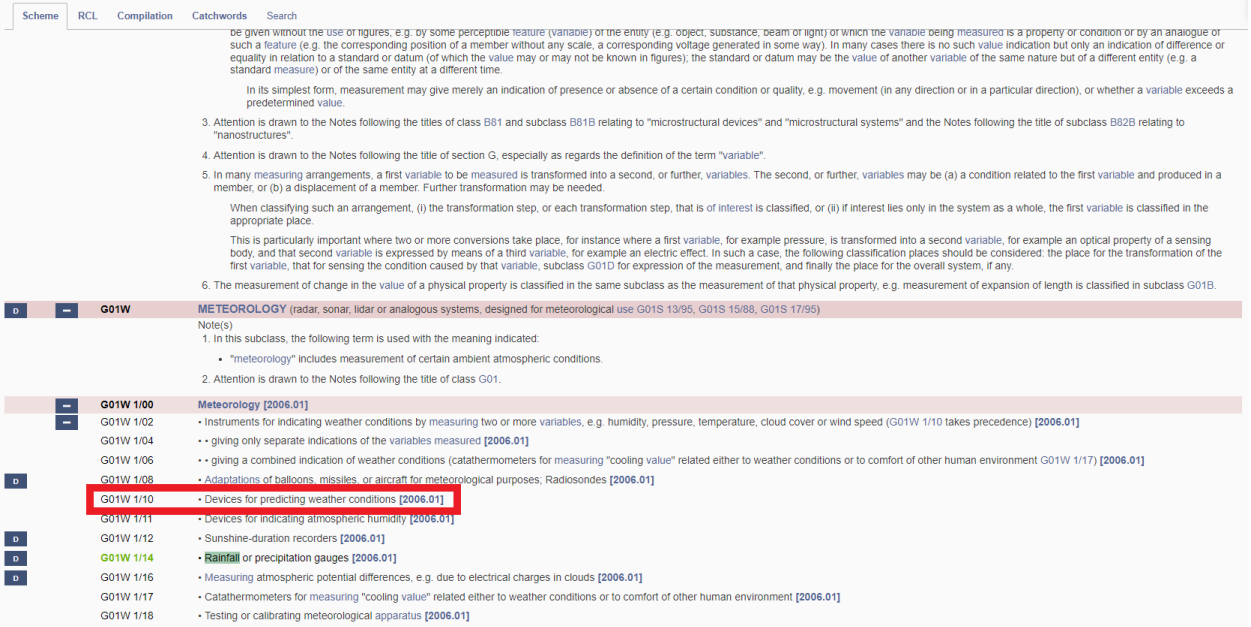
A. Find the most appropriate IPC classes associated with weather, climate and rainfall.

Access the IPC Publication: https://ipcpub.wipo.int/

Click the “Search” tab, and enter the key words, such as “rainfall”, G01W 1/14 is suggested.



Click on G01W 1/14 to look up the definition to verify. You will find **G01W 1/10** Devices for predicting weather conditions the most appropriate IPC class which covers weather, climate and rainfall.

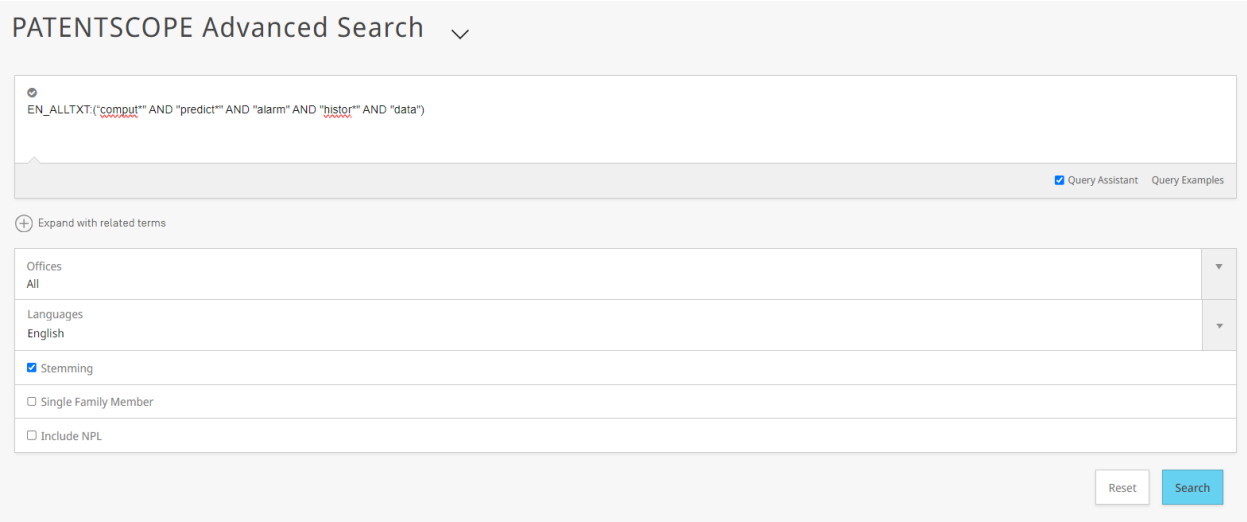


B. Find the most appropriate IPC classes associated with rainfall measurement

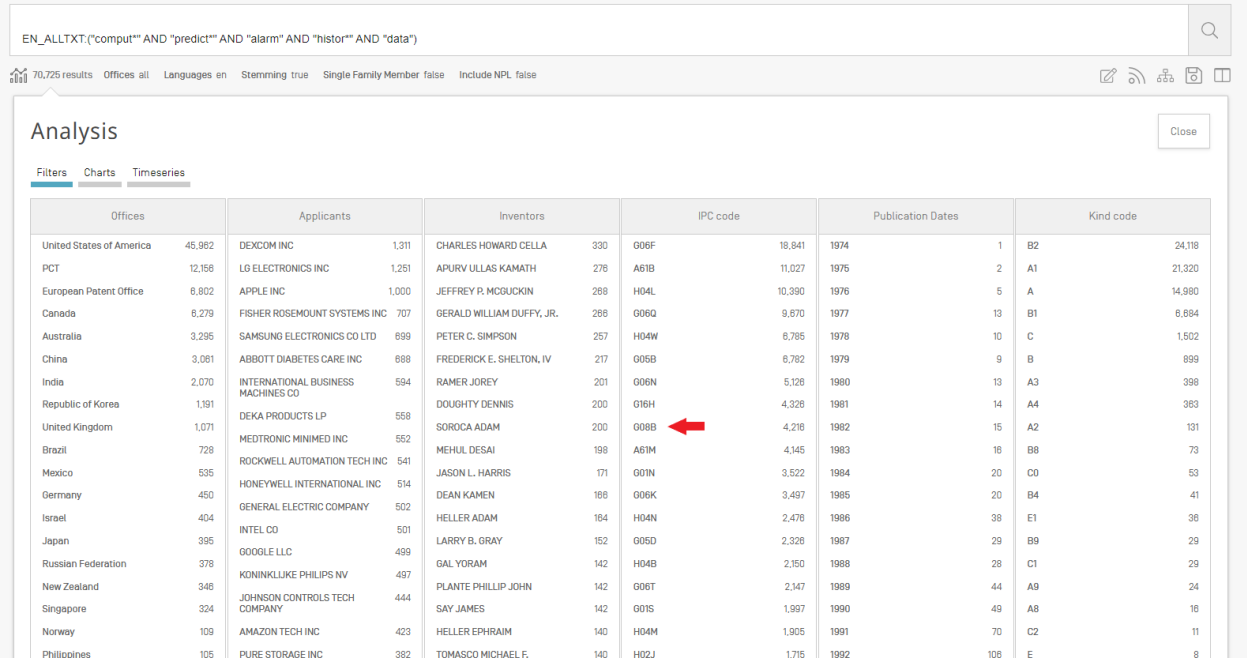
From the class G01W Meteorology, you will find that the most appropriate IPC classes associated with rainfall measurement is G01W 1/14 Rainfall or precipitation gauges.

C. Find the most appropriate IPC classes associated with computer predictions

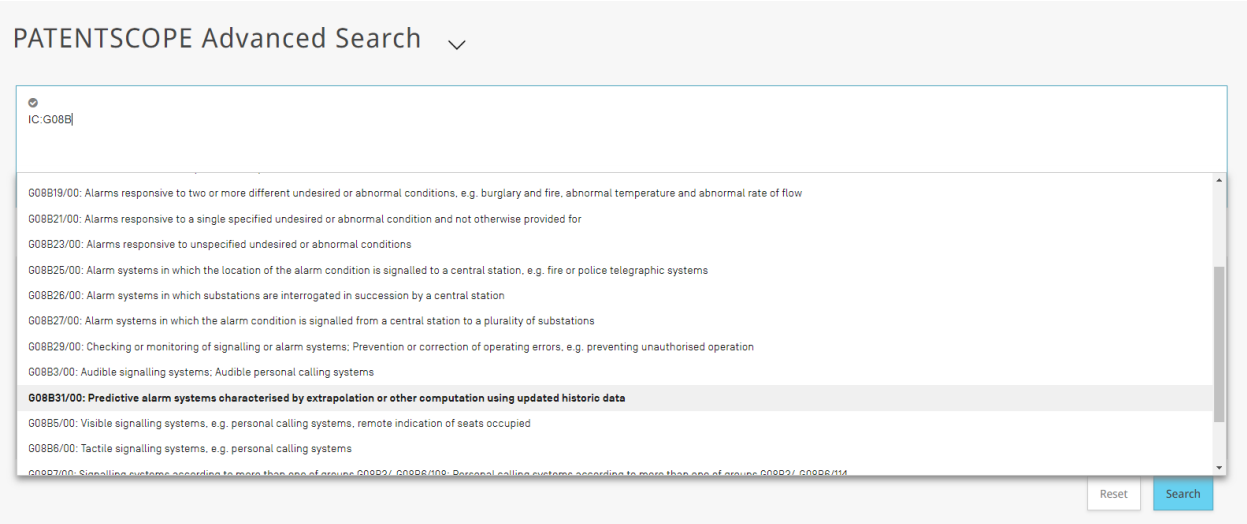
Another way to find the relevant IPC classes from PATENTSCOPE is that you search for the keywords and use the results analysis to see the IPC code list. For example, in this case, search for “comput*" AND "predict*" AND "alarm" AND "histor*" AND "data" in English All Text.



From the results analysis, you can gather some relevant IPC codes.



Then use Advanced Search, enter IC and the relevant code to check the definition.



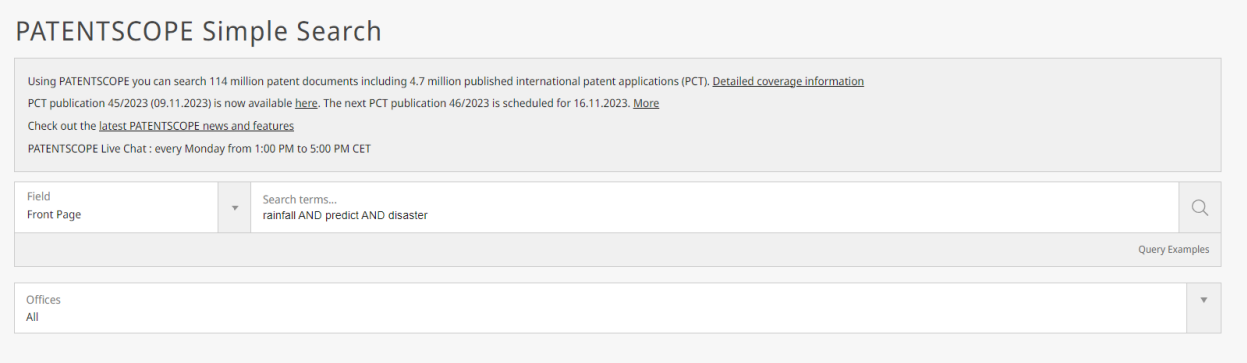
You will find G08B 31/00 Predictive alarm systems characterised by extrapolation or other computation using updated historic data the most the most appropriate

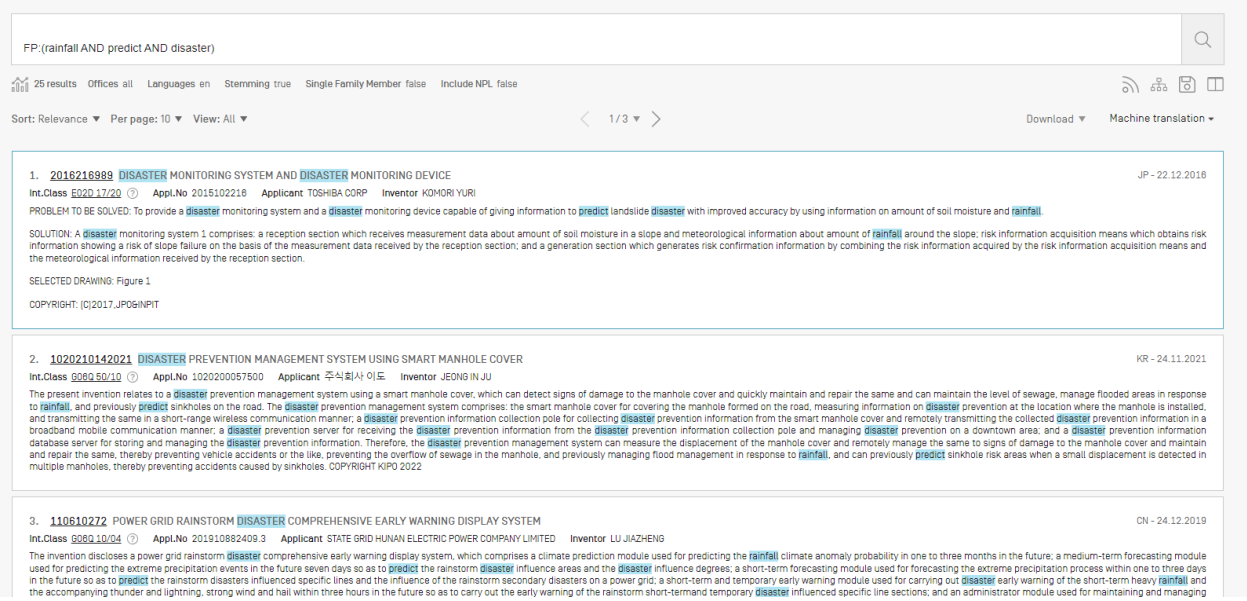
D. Find the most appropriate IPC classes associated with flood management

Repeat the search with the key words “flood management”, and you will find G06Q 50/00 Systems or methods specially adapted for [..] utilities [..].

E. Use appropriate keywords to find a range of relevant patents

Try the keywords, for example, “rain”, rainfall”, “runoff”, “run-off”, “weather forecast”, “predict*”, “flood*” , “disaster” “location or region” “river” “roads or streets” “computer” “data” “histor*”.

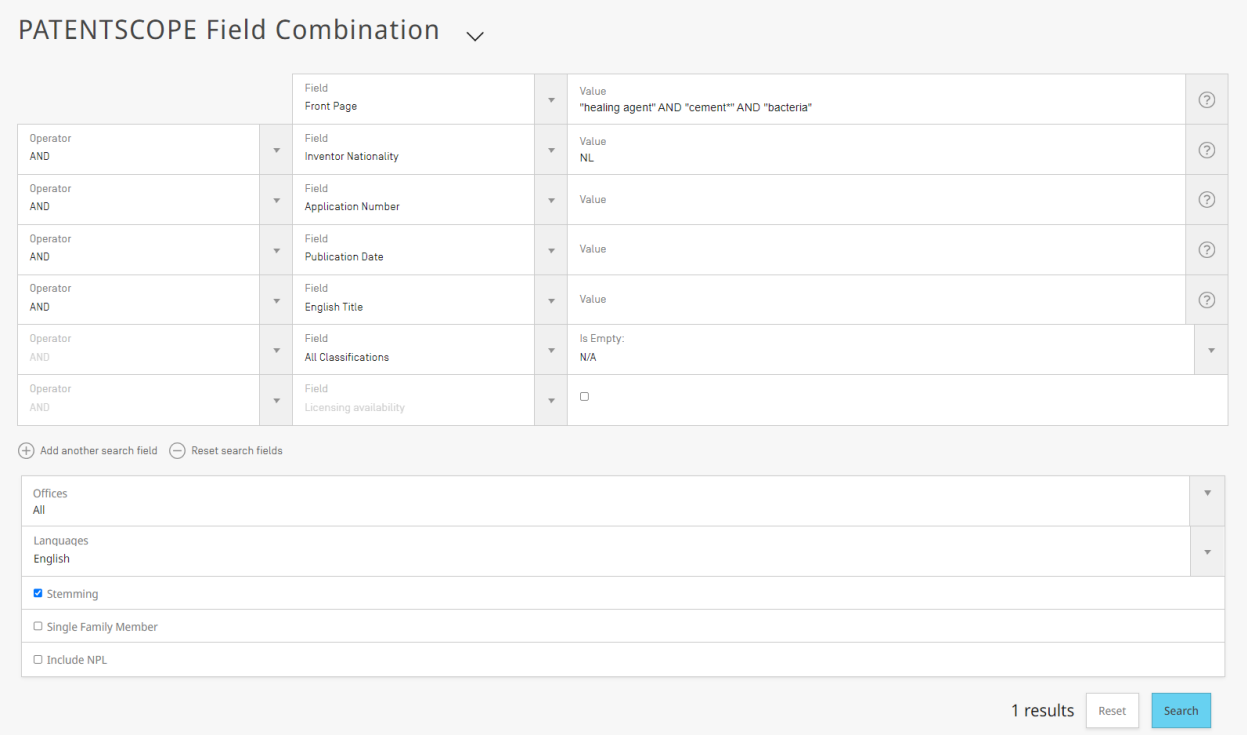




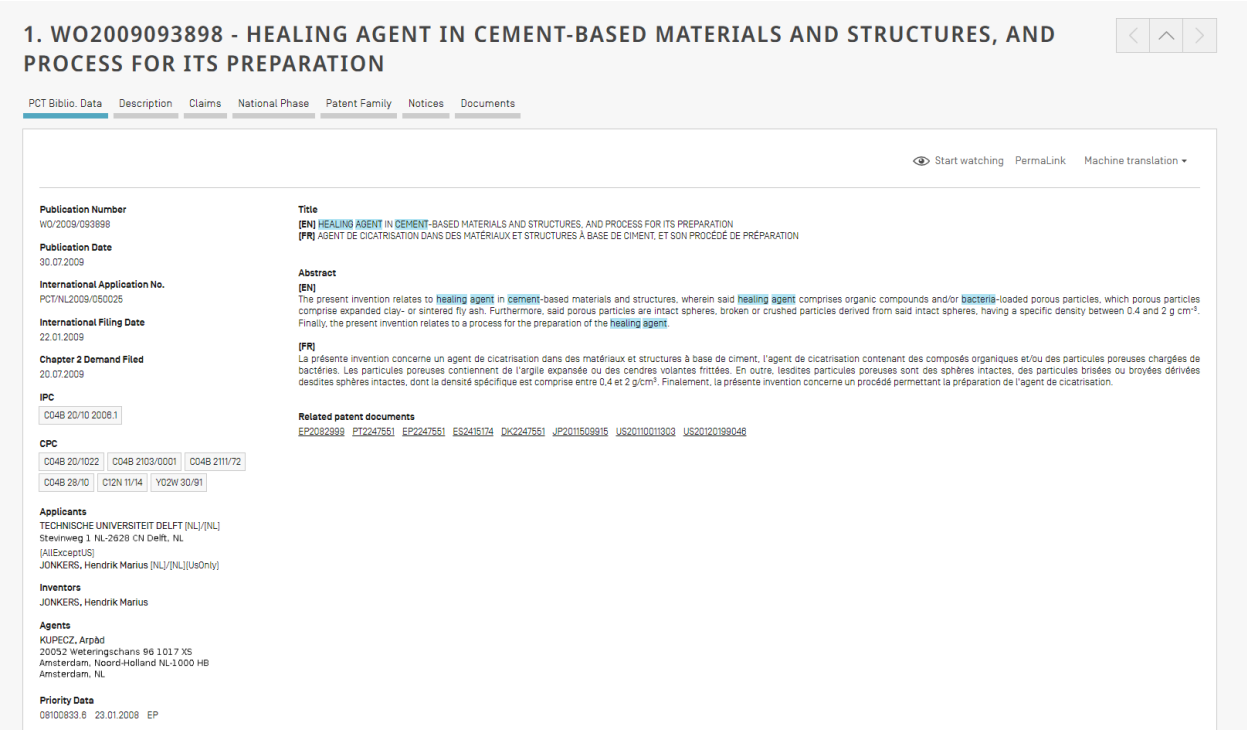
15.SELF HEALING CEMENT

A. Find patent applications for this technology

Search the key words “healing agent” AND “cement*” AND “bacteria” in Front Field and set the Inventor Nationality a NL (Netherlands).

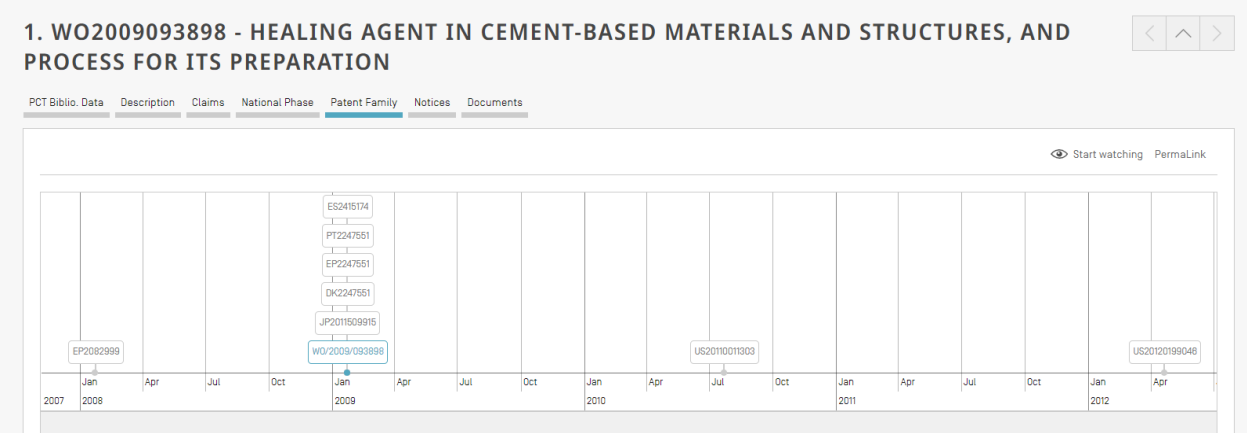


Then you will find this patent application WO2009093898.



B. What are the patent family members?

Click on the “Patent Family” tab then you will see the family member picture.



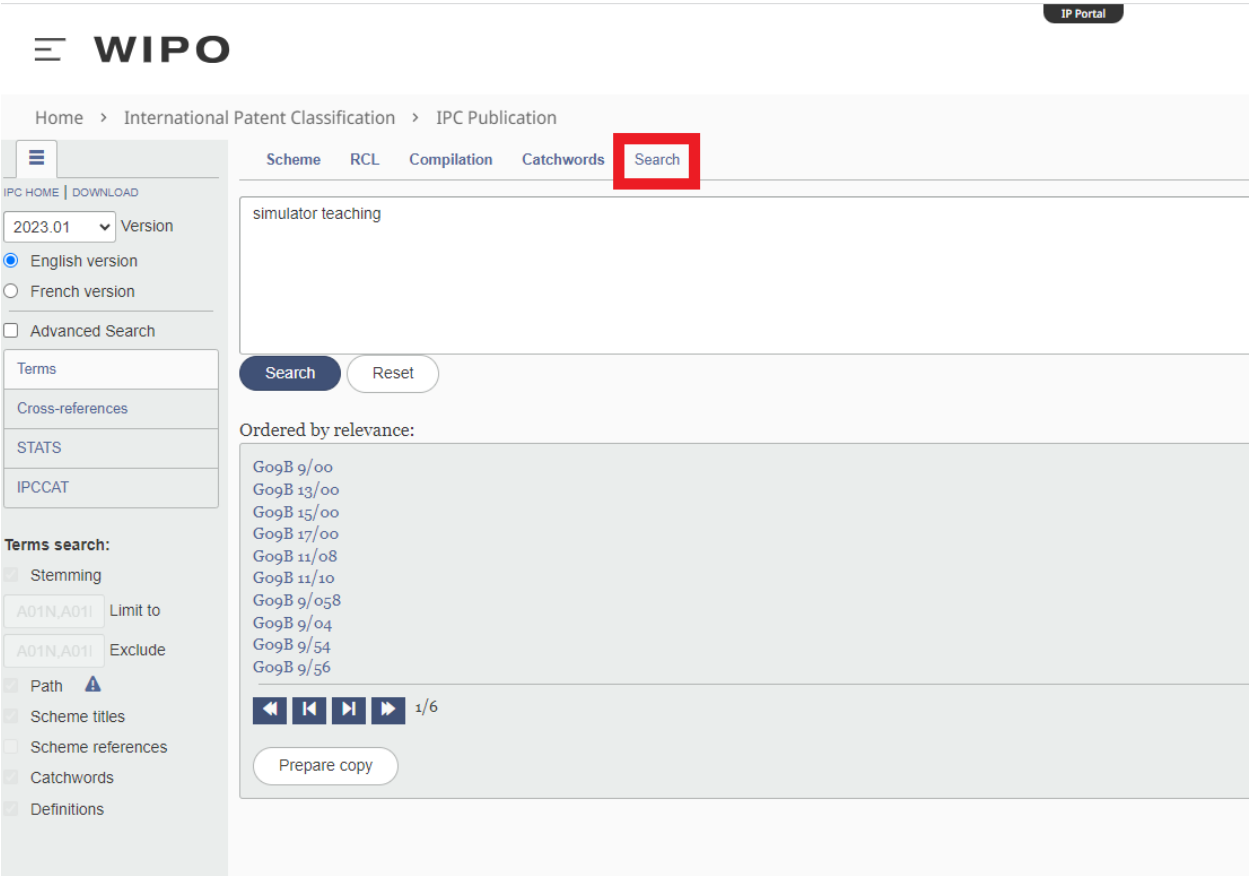
16. FLIGHT SIMULATOR

A. Find patents which combine flight simulator technologies with virtual reality

i. Find appropriate IPC classes covering the relevant simulator technologies.

Access the IPC Publication: https://ipcpub.wipo.int/

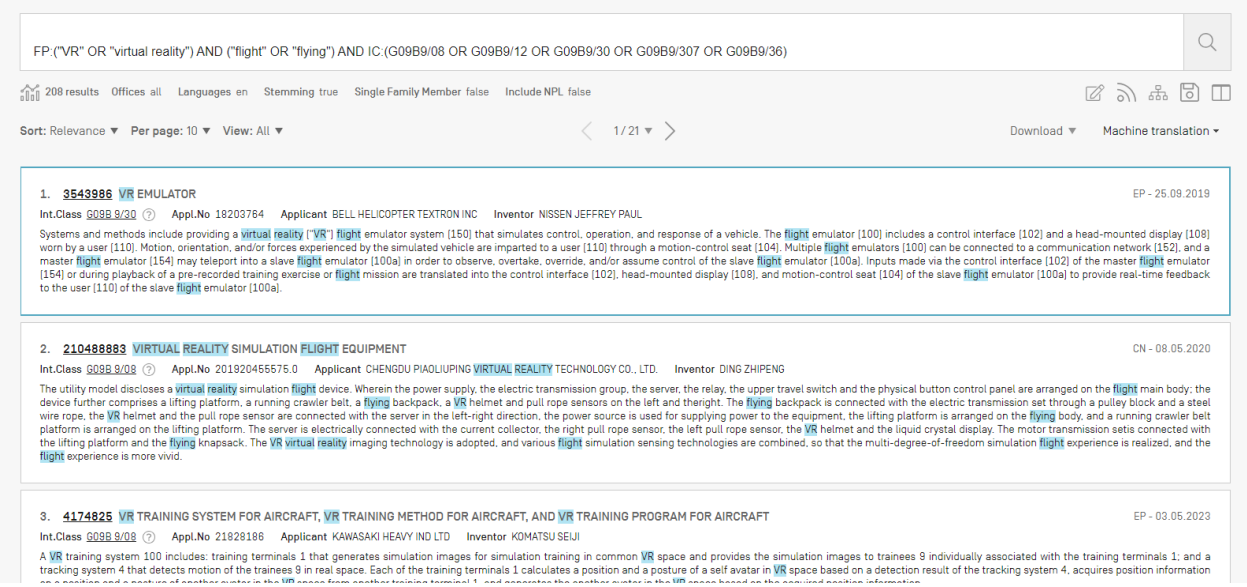
Click the “Search” tab, and enter the key words, such as “simulator teaching”



Look up the definitions of these classes from the results list to verify. You may find G09B9/02, G09B9/08, G09B9/12, G09B9/30, G09B9/307, G09B9/36 relevant.

ii. Combine these classes with Boolean “OR” and include the key words “VR” or “virtual reality” and “flight” or “flying”.

Use Advanced search and enter the query: FP:("VR" OR "virtual reality") AND ("flight" OR "flying") AND IC:(G09B9/08 OR G09B9/12 OR G09B9/30 OR G09B9/307 OR G09B9/36).



B. The ideal solution would be a VR set up where the trainee pilot wears a head set

Refine the search above and add with the key word “head”.