

PATENTSCOPE – Exercise booklet November 2023 – Solutions

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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.

PATENTSCOPE Field Combination ▼

	Field	▼	Value	?
	Front Page		Detection signal delay method, detection device and encoder	
Operator	▼	Field	▼	Value
AND		Applicant Name	Huawei	?
Operator	▼	Field	▼	Value
AND		Publication Date	20111228	?
Operator	▼	Field	▼	Value
AND		Publication Date		?
Operator	▼	Field	▼	Value
AND		English Title		?
Operator	▼	Field	▼	Is Empty:
AND		All Classifications	N/A	▼
Operator	▼	Field	▼	
AND		Licensing availability	<input type="checkbox"/>	

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

1. CN102301748 - DETECTION SIGNAL DELAY METHOD, DETECTION DEVICE AND ENCODER

National Biblio. Data Description Claims Drawings Patent Family Documents

PermaLink Machine translation ▾

Office
China

Application Number
200980154791.0

Application Date
07.05.2009

Publication Number
102301748

Publication Date
28.12.2011

Grant Number
102301748

Grant Date
07.08.2013

Publication Kind
B

IPC
H04S 1/00

CPC
H04S 1/007 H04S 2420/03 H04S 1/00

Applicants
Huawei Technologies Co., Ltd.
华为技术有限公司

Inventors
Wu Wenhai

Title
[EN] Detection Signal Delay Method, Detection Device And Encoder
[ZH] 检测信号延迟的方法、检测装置及编码器

Abstract
[EN] A method of improving the accuracy of detecting signal delay, detection device and encoder are provided. The method includes: based on the cross-correlation function among the sound channel signals, acquiring a first accumulation cross-correlation function; determining the corresponding first delay of said first accumulation cross-correlation function among sound channel signals; adjusting second accumulative cross-correlation function based on the relationship between the first delay and the second delay among the sound channel signals, when the second accumulative cross-correlation function is adjusted, the said second delay is acquired and the first value of said second delay is determined based on an initial value of second weighting coefficients of the second accumulation cross-correlation function; determining adjusted corresponding second delay of the second accumulative cross-correlation function as the delay among detected sound channel signals.
[ZH] 一种能够提高准确性的检测信号延迟的方法、检测装置及编码器。该方法包括：根据声道信号间的互相关函数获取第一累积互相关函数；确定所述第一累积互相关函数对应的声道信号间的第一延迟；根据所述声道信号间的第一延迟和第二延迟的关系调整第二累积互相关函数，所述第二延迟在调整所述第二累积互相关函数时获得且所述第二延迟的首次确定值根据所述第二加权系数的初始值确定；确定调整后的第二累积互相关函数的第二延迟值为检测的声道信号间的延迟值。

- 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.

1. CN102301748 - DETECTION SIGNAL DELAY METHOD, DETECTION DEVICE AND ENCODER

National Biblio. Data Description Claims Drawings Patent Family Documents

PermaLink

Patent No.	Title	Applicant	Pub. Kind	Pub. Lang	Inclusion Criteria	Appl. Date	Pub. Date
EP2429218	DETECTION SIGNAL DELAY METHOD, DETECTION DEVICE AND ENCODER	HUAWEI TECH CO LTD	A1,A4	en	IC2	07.05.2009	14.03.2012
CN102301748	DETECTION SIGNAL DELAY METHOD, DETECTION DEVICE AND ENCODER	Huawei Technologies Co., Ltd.	A,B		IC2	07.05.2009	28.12.2011
KR1020120020147	신호 지연 검출 방법, 검출 장치 및 코드	후아웨이 테크놀로지 컴퍼니 리미티드	A,B1		IC2	07.05.2009	07.03.2012
WO/2010/127489	DETECTION SIGNAL DELAY METHOD, DETECTION DEVICE AND ENCODER	HU, Chen	A	zh	IC1	07.05.2009	11.11.2010

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

Feedback Search ▾ Browse ▾ Tools ▾ Settings

PATENTSCOPE Cross Lingual Expansion ▾

Search terms... *
detection signal delay method, detection device and encoder

Query Language*
English
The language of your query

Expansion Mode:
 Automatic
 Supervised
 Use the **Supervised** mode to select the technical domains, the relevant variants, the languages to translate your query to and the fields to search by

Precision level
High
Influences the precision of the suggested variants.
Highest level considers only the most relevant ones [less suggested variants]
Lowest level considers the less relevant as well [more suggested variants]

Search

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**.

PATENTSCOPE Simple Search

Using PATENTSCOPE you can search 114 million patent documents including 4.7 million published international patent applications (PCT). [Detailed coverage information](#)
 PCT publication 45/2023 (09.11.2023) is now available [here](#). The next PCT publication 46/2023 is scheduled for 16.11.2023. [More](#)
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[PATENTSCOPE Live Chat](#)

Field: Front Page Search terms... breeding tomatoes reduced water content

Offices: Israel



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.

1. IL131509 - METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT

National Biblio. Data Description Claims Patent Family Documents

Office: Israel

Title: [EN] METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT
[HE] שיטה לטיפוח גבניות ביצלות תכולת מים נמוכה

Application Number: 131509

Application Date: 19.08.1999

Publication Number: 131509

Publication Date: 08.03.2007

Publication Kind: B

CPC: A23L 19/09, A23L 27/83, A23L 1/02, A23L 5/08, A23L 6/825

Applicants: THE STATE OF ISRAEL- MINISTRY OF AGRICULTURE & RURAL DEVELOPMENT, AGRICULTURAL RESEARCH ORGANIZATION VOLCANI CENTER

Agents: א.א.ר.י. (1995) ב.ר.

Related patent documents: ES2211562, DE000060008829, EP1211928, CN1390090, AU2000055622, JP2003507044, WO/2001/013708, AT254838, CA2382191, US7119281, US20070022504, US20100095389, JP2011200229, US20150067911

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

1. IL131509 - METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT

National Biblio. Data Description Claims Patent Family Documents

Patent Family

Pub. No.	Title	Applicant	Pub. Kind	Pub. Lang	Inclusion Criteria	Appl. Date	Pub. Date
IL131509	METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT	THE STATE OF ISRAEL- MINISTRY OF AGRICULTURE & RURAL DEVELOPMENT, AGRICULTURAL RESEARCH ORGANIZATION VOLCANI CENTER	B	en	IC5	19.08.1999	08.03.2007
ES2211562	PROCEDIMIENTO PARA PRODUCIR TOMATES CON UN CONTENIDO EN AGUA REDUCIDO Y PRODUCTO DEL PROCEDIMIENTO.	STATE OF ISRAEL-MINISTRY OF AGRICULTURE	T3		IC8	04.07.2000	18.07.2004
DE000060008829	VERFAHREN ZUR ZUCHT VON TOMATEN MIT NIEDRIGEM WASSERGEHALT UND PRODUKT DIESES VERFAHRENS	ISRAEL STATE	T12		IC8	04.07.2000	23.09.2004
EP1211928	METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD	ISRAEL STATE	A1,B1	en	IC2	04.07.2000	12.08.2002
CN1390090	METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD	State of Israel-Ministry of Agriculture	A,C	zh	IC2	04.07.2000	08.01.2003
AU2000055622	METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD	State of Israel - Ministry of Agriculture	A		IC2	04.07.2000	24.05.2001
JP2003507044	水分の減少したトマトを育てるための方法及びその方法の生産物	株式会社 サブ イスラエル・ミニストリー サブ アグリカルチャー	A,J5	ja	IC2	04.07.2000	25.02.2003
WO/2001/013708	METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD	SCHAEFFER, Arthur	A	en	IC1	04.07.2000	01.09.2001

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.

1. WO2001013708 - METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD

PCT Biblio. Data Description Claims **National Phase** Patent Family Notices Documents

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Available information on National Phase entries [\[more information\]](#)

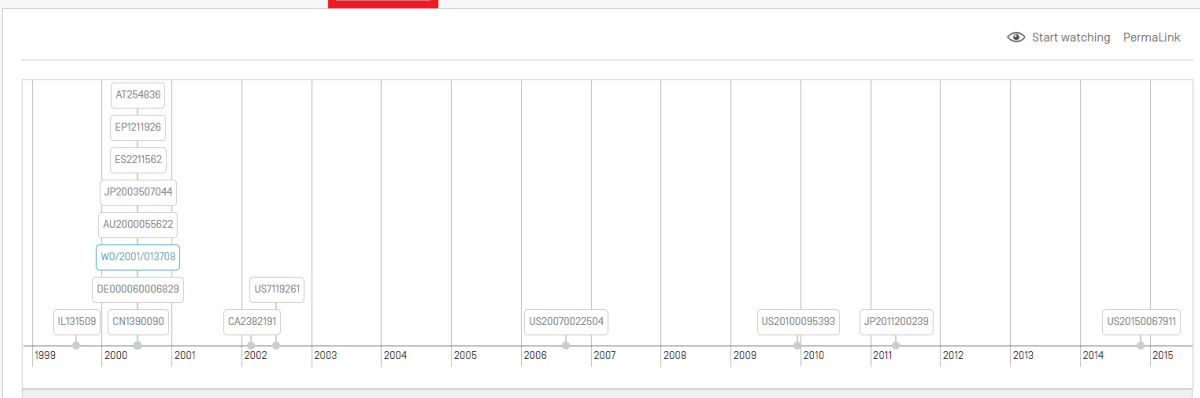
Office	Entry Date	National Number	National Status
China	04.07.2000	00814490.7	
Canada	19.02.2002	2382191	
Australia	01.03.2002	55822/00	Granted 29.09.2005
European Patent Office	07.03.2002	2000840724	Published 12.08.2002 Granted 26.11.2003 Withdrawn 30.07.2018
United States of America	01.07.2002	10089389	

C. Which other family members are there?

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

1. WO2001013708 - METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD

PCT Biblio. Data Description Claims National Phase **Patent Family** Notices Documents



IL131509 METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT Appl.No 131509 Applicant THE STATE OF ISRAEL- MINISTRY OF AGRICULTURE & RURAL DEVELOPMENT, AGRICULTURAL RESEARCH ORGANIZATION VOLCANI CENTER Pub.Kind B Pub.Lang en	Inclusion Criteria IC5	Appl.Date 19.08.1999 Pub.Date 08.03.2007
ES2211562 PROCEDIMIENTO PARA PRODUCIR TOMATES CON UN CONTENIDO EN AGUA REDUCIDO Y PRODUCTO DEL PROCESAMIENTO. Appl.No E00940724 Applicant STATE OF ISRAEL-MINISTRY OF AGRICULTURE Pub.Kind T3	Inclusion Criteria IC8	Appl.Date 04.07.2000 Pub.Date 16.07.2004
DE00060006829 VERFAHREN ZUR ZUCHT VON TOMATEN MIT NIEDRIGEM WASSERGEHALT UND PRODUKT DIESES VERFAHRENS Appl.No 60008829 Applicant ISRAEL STATE Pub.Kind T,T2	Inclusion Criteria IC8	Appl.Date 04.07.2000 Pub.Date 23.09.2004
EP1211926 METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD Appl.No 00940724 Applicant ISRAEL STATE Pub.Kind A1,B1 Pub.Lang en	Inclusion Criteria IC2	Appl.Date 04.07.2000 Pub.Date 12.06.2002
CN1390090 METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD Appl.No 00814490.7 Applicant State of Israel-Ministry of Agriculture Pub.Kind A,C Pub.Lang zh	Inclusion Criteria IC2	Appl.Date 04.07.2000 Pub.Date 08.01.2003
AU2000055622 METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD Appl.No 55622/00 Applicant State of Israel - Ministry of Agriculture Pub.Kind A	Inclusion Criteria IC2	Appl.Date 04.07.2000 Pub.Date 24.05.2001
JP2003507044 水分の減少したトマトを育てるための方法及びその方法の生産物 Appl.No 2001517882 Applicant ステイト サブ イスラエルーニミニスティー サブ アグリカルチャー Pub.Kind AJA5 Pub.Lang ja	Inclusion Criteria IC2	Appl.Date 04.07.2000 Pub.Date 25.02.2003
WO/2001/013708 METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD Appl.No PCT/IL2000/000889 Applicant SCHAFER, Arthur Pub.Kind A Pub.Lang en	Inclusion Criteria IC1	Appl.Date 04.07.2000 Pub.Date 01.03.2001
AT254836 VERFAHREN ZUR ZUCHT VON TOMATEN MIT NIEDRIGEM WASSERGEHALT UND PRODUKT DIESES VERFAHRENS Appl.No 00840724 Applicant ISRAEL STATE Pub.Kind T	Inclusion Criteria IC8	Appl.Date 04.07.2000 Pub.Date 15.12.2003
CA2382191 METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD Appl.No 2382191 Applicant STATE OF ISRAEL-MINISTRY OF AGRICULTURE Pub.Kind A1,C Pub.Lang en	Inclusion Criteria IC2	Appl.Date 19.02.2002 Pub.Date 01.03.2001
US7119261 METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD Appl.No 10089889 Applicant The State of Israel-Ministry of Agriculture & Rural Development Pub.Kind B1 Pub.Lang en	Inclusion Criteria IC2	Appl.Date 01.07.2002 Pub.Date 10.10.2008
US20070022504 METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD Appl.No 11608690 Applicant Organization, [A.R.O.], Volcani Center Pub.Kind A1 Pub.Lang en	Inclusion Criteria IC2	Appl.Date 21.08.2008 Pub.Date 25.01.2007
US20100095393 METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD Appl.No 12838880 Applicant Schaffer Arthur A. Pub.Kind A1,B2 Pub.Lang en	Inclusion Criteria IC4	Appl.Date 14.12.2009 Pub.Date 15.04.2010
JP2011200239 TOMATO PASTE, SAUCE OR KETCHUP HAVING TOMATO FRUIT INCLUDING GENOME OF LYCOPERSICON ESCULENTUM SPECIES Appl.No 2011108718 Applicant STATE OF ISRAEL-MINISTRY OF AGRICULTURE Pub.Kind A Pub.Lang ja	Inclusion Criteria IC8	Appl.Date 11.05.2011 Pub.Date 13.10.2011
US20150067911 METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD Appl.No 14538885 Applicant The State of Israel, Ministry of Agriculture & Rural Development, Agricultural Research Pub.Kind A1	Inclusion Criteria IC4	Appl.Date 12.11.2014 Pub.Date 05.03.2015

D. What was the fate of the European Patent family member?
Open the EP number application.

PCT Biblio. Data Description Claims National Phase Patent Family Notices Documents

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IL131509 METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT Appl.No 131509 Applicant THE STATE OF ISRAEL- MINISTRY OF AGRICULTURE & RURAL DEVELOPMENT, AGRICULTURAL RESEARCH ORGANIZATION VOLCANI CENTER Pub.Kind B Pub.Lang en	Inclusion Criteria IC5	Appl.Date 19.08.1999 Pub.Date 08.03.2007
ES2211562 PROCEDIMIENTO PARA PRODUCIR TOMATES CON UN CONTENIDO EN AGUA REDUCIDO Y PRODUCTO DEL PROCESAMIENTO. Appl.No E00940724 Applicant STATE OF ISRAEL-MINISTRY OF AGRICULTURE Pub.Kind T3	Inclusion Criteria IC6	Appl.Date 04.07.2000 Pub.Date 16.07.2004
DE00060006829 VERFAHREN ZUR ZUCHT VON TOMATEN MIT NIEDRIGEM WASSERGEHALT UND PRODUKT DIESES VERFAHRENS Appl.No 60008829 Applicant ISRAEL STATE Pub.Kind T,T2	Inclusion Criteria IC8	Appl.Date 04.07.2000 Pub.Date 23.09.2004
EP1211926 METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD Appl.No 00940724 Applicant ISRAEL STATE Pub.Kind A1,B1 Pub.Lang en	Inclusion Criteria IC2	Appl.Date 04.07.2000 Pub.Date 12.06.2002

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”.

1. EP1211926 - METHOD FOR BREEDING TOMATOES HAVING REDUCED WATER CONTENT AND PRODUCT OF THE METHOD

National Biblio. Data Description Claims Patent Family **Documents** PermaLink

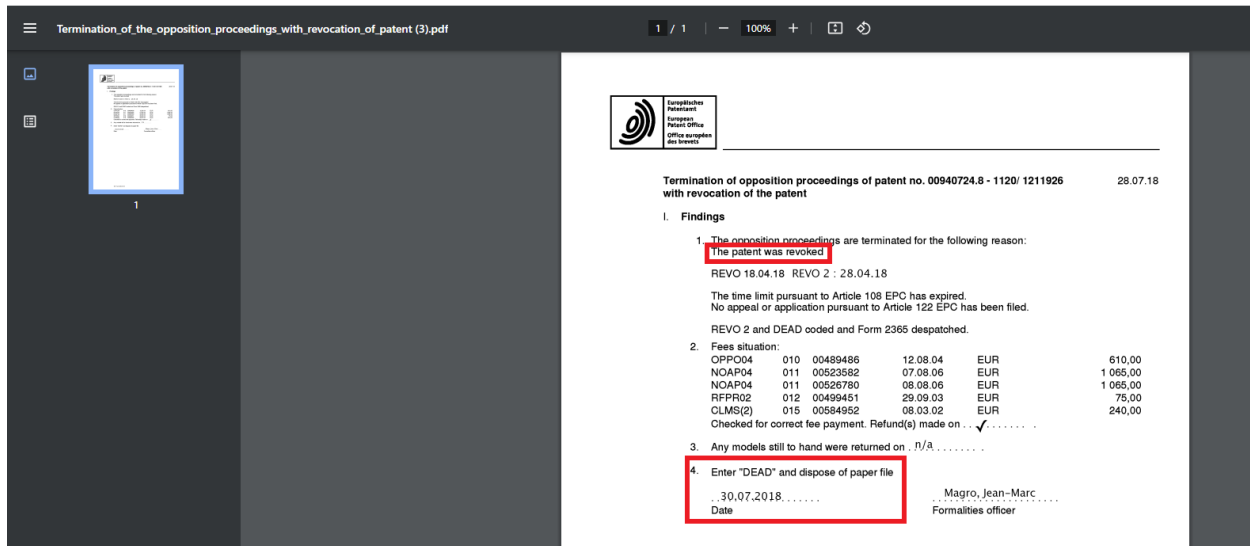
Published Application		
Download		
EP00940724B1	EP20031126	XML-TIFFS

Other Available Documents		
Title	View	Download
Original EP document		

Global Dossier		
Legal date	Description	Download
31.07.2000	Abstract	PDF (1 pages)
31.07.2000	Claims	PDF (2 pages)
31.07.2000	Description	PDF (10 pages)
...		
18.04.2018	Acknowledgement of a document	PDF (1 pages)
18.04.2018	Decision of the Opposition Division and instruction	PDF (1 pages)
18.04.2018	Decision revoking the European patent	PDF (2 pages)
18.04.2018	Grounds for the decision (Annex) - opposition	PDF (3 pages)
18.04.2018	Internal form - Opposition/addressees	PDF (1 pages)
20.04.2018	Advice of delivery	PDF (2 pages)
23.04.2018	Advice of delivery	PDF (1 pages)
26.04.2018	Advice of delivery	PDF (1 pages)
09.05.2018	Advice of delivery	PDF (2 pages)
30.07.2018	Termination of the opposition proceedings with revocation of patent	PDF (1 pages)
02.08.2018	Communication to the parties concerning the termination of the opposition proceedings [opponent]	PDF (1 pages)
02.08.2018	Communication to the parties concerning the termination of the opposition proceedings [proprietor]	PDF (1 pages)

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 30.7.2018¹.

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**.

PATENTSCOPE Simple Search

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PCT publication 45/2023 (09.11.2023) is now available [here](#). The next PCT publication 46/2023 is scheduled for 16.11.2023. [More](#)
Check out the [latest PATENTSCOPE news and features](#)
PATENTSCOPE Live Chat : every Monday from 1:00 PM to 5:00 PM CET

Field: Names | Search terms: immunowork

Offices: All

1. 2022097596 DIAGNOSIS, PREVENTION AND/OR TREATMENT OF AUTOIMMUNE DISEASES Int.Class A61P 13/12 Appl.No 2022078451 Applicant IMMUNOWORK LLC Inventor ZHU QUANSHENG PROBLEM TO BE SOLVED: To provide compositions, methods and kits for diagnosis, prevention and/or treatment of autoimmune diseases by detecting, targeting and/or eliminating epitope-specific autoimmune cells. SOLUTION: The compositions include a conjugate of an epitope and an agent that allows detecting, targeting and/or eliminating epitope-specific autoimmune cells. SELECTED DRAWING: Figure 1 COPYRIGHT: (C)2022.JP06/INPIT	JP - 30.06.2022
2. 20220193188 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES Int.Class A61K 38/17 Appl.No 17688811 Applicant ImmunoWork, LLC Inventor Quansheng Zhu Compositions, methods, and kits are for the diagnosis, prevention and/or treatment of autoimmune diseases by detecting, targeting, and/or eliminating epitope-specific autoimmune cells. The compositions include a conjugate of an epitope and an agent that allows for detecting, targeting, and/or eliminating epitope-specific autoimmune cells.	US - 23.08.2022
3. 20190183969 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES Int.Class A61K 38/18 Appl.No 16324870 Applicant IMMUNOWORK, LLC Inventor Quansheng Zhu Compositions, methods, and kits are for the diagnosis, prevention and/or treatment of autoimmune diseases by detecting, targeting, and/or eliminating epitope-specific autoimmune cells. The compositions include a conjugate of an epitope and an agent that allows for detecting, targeting, and/or eliminating epitope-specific autoimmune cells.	US - 20.06.2019
4. 3497452 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES Int.Class G01N 33/68 Appl.No 17840379 Applicant IMMUNOWORK LLC Inventor ZHU QUANSHENG Compositions, methods, and kits are for the diagnosis, prevention and/or treatment of autoimmune diseases by detecting, targeting, and/or eliminating epitope-specific autoimmune cells. The compositions include a conjugate of an epitope and an agent that allows for detecting, targeting, and/or eliminating epitope-specific autoimmune cells.	EP - 19.06.2019
5. 109891245 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES Int.Class G01N 33/68 Appl.No 201780062647.9 Applicant IMMUNOWORK LLC Inventor ZHU QUANSHENG Compositions, methods, and kits are for the diagnosis, prevention and/or treatment of autoimmune diseases by detecting, targeting, and/or eliminating epitope-specific autoimmune cells. The compositions include a conjugate of an epitope and an agent that allows for detecting, targeting, and/or eliminating epitope-specific autoimmune cells.	CN - 14.08.2019
6. WO/2018/031947 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES Int.Class G01N 33/68 Appl.No PCT/US2017/046626 Applicant IMMUNOWORK, LLC Inventor ZHU, Quansheng Compositions, methods, and kits are for the diagnosis, prevention and/or treatment of autoimmune diseases by detecting, targeting, and/or eliminating epitope-specific autoimmune cells. The compositions include a conjugate of an epitope and an agent that allows for detecting, targeting, and/or eliminating epitope-specific autoimmune cells.	WO - 15.02.2018



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.

6. WO2018031947 - DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES

PCT Biblio. Data Description Claims Drawings National Phase **Patent Family** Notices Compounds Documents

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US20190183969 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES Appl.No 18224870 Applicant IMMUNOWORK, LLC Pub.Kind A1,B2 Inclusion Criteria IC2 Appl.Date 11.08.2017 Pub.Date 20.08.2019
EP3497452 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES Appl.No 17840379 Applicant IMMUNOWORK LLC Pub.Kind A1,A4 Pub.Lang en Inclusion Criteria IC2 Appl.Date 11.08.2017 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 Inclusion Criteria IC2 Appl.Date 11.08.2017 Pub.Date 14.08.2019
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 Inclusion Criteria IC1 Appl.Date 11.08.2017 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 2019529483 Applicant イムワーク、リミテッド ライビリティ カンパニー Pub.Kind A,A5,B1 Pub.Lang ja Inclusion Criteria IC2 Appl.Date 11.08.2017 Pub.Date 05.09.2019
US20220193188 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES Appl.No 17688811 Applicant ImmunoWork, LLC Pub.Kind A1 Inclusion Criteria IC4 Appl.Date 07.03.2022 Pub.Date 23.08.2022
JP2022097596 DIAGNOSIS, PREVENTION AND/OR TREATMENT OF AUTOIMMUNE DISEASES Appl.No 2022078451 Applicant IMMUNOWORK LLC Pub.Kind A Pub.Lang ja Inclusion Criteria IC8 Appl.Date 08.05.2022 Pub.Date 30.08.2022

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 Pub.Date 20.06.2019	Inclusion Criteria IC2
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 Pub.Date 19.06.2019	Inclusion Criteria IC2
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 Pub.Date 14.06.2019	Inclusion Criteria IC2
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 Pub.Date 15.02.2018	Inclusion Criteria IC1
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 Pub.Date 05.09.2018	Inclusion Criteria IC2
US20220193188 DIAGNOSIS, PREVENTION, AND/OR TREATMENT OF AUTOIMMUNE DISEASES Appl.No 17888811 Applicant ImmunoWork, LLC Pub.Kind A1	Appl.Date 07.03.2022 Pub.Date 23.06.2022	Inclusion Criteria IC4
JP2022097598 DIAGNOSIS, PREVENTION AND/OR TREATMENT OF AUTOIMMUNE DISEASES Appl.No 2022078451 Applicant IMMUNOWORK,LLC Pub.Kind A Pub.Lang ja	Appl.Date 06.05.2022 Pub.Date 30.06.2022	Inclusion Criteria IC6

Technical Field

[0001] 関連出願への相互参照
本願は、2016年8月12日に提出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提出されている。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IMWO001WOSEQLI ST.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、エピソード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、腫瘍および/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、慢性腎臓病(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エピソードおよび薬物を含む複合体を患者に投与することを含み、該エピソードは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エピソードは、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フラグメントの配列は、配列番号3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で定められた通りである。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、またはアダゼレシン、ビゼレシン、カルゼレシン、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、ドキシゾリン、シクロホスファミド、エビルビシン、シスプラチン、5-フルオロウラシルおよびカベスタタイ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エピソード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、エピソードは、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エピソードは、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3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り、配列番号6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、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、またはアダゼレシン、ビゼレシン、カルゼレシン、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、ドキシゾリン、シクロホスファミド、エビルビシン、シスプラチン、5-フルオロウラシルおよびカベスタタイ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、バリン-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ソードを含むエピソード-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”.

PATENTSCOPE Field Combination ▼

	Field	Operator	Value	
	Field Front Page	▼	Value	?
Operator AND	Field English All	▼	Value laser	?
Operator AND	Field Inventor Name	▼	Value Isamu Akasaki	?
Operator AND	Field Applicant Name	▼	Value Meijo University	?
Operator AND	Field English Title	▼	Value	?
Operator AND	Field All Classifications	▼	Is Empty: N/A	▼
Operator AND	Field Licensing availability	▼	<input type="checkbox"/>	

[+](#) Add another search field [-](#) Reset search fields

Offices All	▼
Languages English	▼
<input checked="" type="checkbox"/> Stemming	
<input type="checkbox"/> Single Family Member	
<input type="checkbox"/> Include NPL	

32 results

[Reset](#)

[Search](#)

EN_ALL (laser) AND IN (Isamu Akasaki) AND PA (Meijo University) 🔍

32 results [Offices all](#) [Languages en](#) [Stemming true](#) [Single Family Member false](#) [Include NPL false](#)

Sort: Relevance ▼ Per page: 10 ▼ View: All ▼

< 1 / 4 >

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1. [20080123713](#) TWO-LIGHT FLUX INTERFERENCE EXPOSURE DEVICE, TWO-LIGHT FLUX INTERFERENCE EXPOSURE METHOD, SEMICONDUCTOR LIGHT EMITTING ELEMENT MANUFACTURING METHOD, US - 28.05.2008 AND SEMICONDUCTOR LIGHT EMITTING ELEMENT

Int.Class [H01S 3/08](#) ? Appl.No 11897895 Applicant [Meijo University](#) Inventor Kamiyama Satoshi

The present invention discloses a two-light flux interference exposure device comprising: a laser light source provided in a laser resonator; a single harmonic generation device provided in the laser resonator for converting laser light output by the laser light source to higher harmonics; an etalon provided in the laser resonator so as to serve as a narrowband wavelength filter; a beam splitter dividing laser light output outside the laser resonator into two light fluxes; and an interference optic system causing the light fluxes to interfere with each other on a target to be exposed.

2. [20160056333](#) NITRIDE SEMICONDUCTOR MULTILAYER FILM REFLECTOR AND LIGHT-EMITTING DEVICE USING THE SAME US - 25.02.2016

Int.Class [H01L 33/10](#) ? Appl.No 14781475 Applicant [MEIJO UNIVERSITY](#) Inventor Tetsuya Takeuchi

Achieving resistance reduction of a nitride semiconductor multilayer film reflector. In the nitride semiconductor multilayer film reflector, a first semiconductor layer has a higher Al composition than a second semiconductor layer. A first composition-graded layer is interposed between the first and second semiconductor layers so as to be located at a group III element face side of the first semiconductor layer, the first composition-graded layer being adjusted so that its Al composition becomes lower as coming close to the second semiconductor layer. A second composition-graded layer is interposed between the first and second semiconductor layers so as to be located at a nitride face side of the first semiconductor layer. The second composition-graded layer is adjusted so that its Al composition becomes lower as coming close to the second semiconductor layer.

3. [20160149078](#) NITRIDE SEMICONDUCTOR LIGHT-EMITTING DEVICE US - 28.05.2016

Int.Class [H01L 33/00](#) ? Appl.No 14898364 Applicant [MEIJO UNIVERSITY](#) Inventor Tetsuya Takeuchi

An object is to improve a positive hole injection efficiency into an active layer in a nitride semiconductor light-emitting device. The nitride semiconductor light-emitting device is formed by stacking nitride semiconductor crystals each of which contains Al and has a polar or semipolar surface either serving as a growth face. The device includes an active layer **103**, and first and second composition-graded layers **102**, **104**. The active layer **103** is interposed between the first and second composition-graded layers **102**, **104**. Each one of the first and second composition-graded layers is composition-graded so that an Al composition value is rendered smaller as each one of the first and second composition-graded layers **102**, **104** comes close to a side where a sum of spontaneous polarization and piezoelectric polarization is negative.

4. [20130330913](#) METHOD FOR MANUFACTURING SEMICONDUCTOR DEVICE US - 12.12.2013

Int.Class [H01L 21/00](#) ? Appl.No 14001454 Applicant Motoaki Iwaya Inventor Motoaki Iwaya

A structure includes a substrate, a template layer formed on the surface of the substrate and including an AlN layer, and a device structure portion formed by stacking AlGaN semiconductor layers on the template layer. For the structure, the AlN layer is irradiated from a side close to the substrate with a laser light with a wavelength by which the laser light passes through the substrate and the laser light is absorbed by the AlN layer, in a state in which the AlN layer receives compressive stress from the substrate. This allows the AlN layer to expand more than the surface of the substrate on at least an interface between the AlN layer and the substrate so as to increase the compressive stress, in order to remove the substrate from the AlN layer.

(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”.

PATENTSCOPE Field Combination ▼

	Field	Operator	Value	
	Front Page			?
Operator AND	English All		laser	?
Operator AND	Inventor Name		Hiroshi Amano	?
Operator AND	Applicant Name		Nagoya University	?
Operator AND	English Title			?
Operator AND	All Classifications		Is Empty: N/A	▼
Operator AND	Licensing availability		<input type="checkbox"/>	

⊕ Add another search field ⊖ Reset search fields

Offices	▼
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English	
<input checked="" type="checkbox"/> Stemming	
<input type="checkbox"/> Single Family Member	
<input type="checkbox"/> Include NPL	

2 results

Feedback Search ▼ Browse ▼ Tools ▼ Settings

EN_ALL:(laser) AND IN:(Hiroshi Amano) AND PA:(Nagoya University)

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

Sort: Relevance ▼ Per page: 10 ▼ View: All ▼ Download ▼ Machine translation ▼

1. **4911102** PROCESS OF VAPOR GROWTH OF GALLIUM NITRIDE AND ITS APPARATUS US - 27.03.1990
 Int.Class [G23C 18/44](#) Appl.No 07148933 Applicant Toyoda Gosei Co., Ltd. Inventor Manabe Katsuhide
 A process and apparatus, whereby in the process of vapor growth of a gallium nitride group semiconductor (Al.sub.x Ga.sub.1-x N, inclusive of x=0) thin film using an organometallic compound gas, a reactant gas which grows Al.sub.x Ga.sub.1-x N and a reactant gas containing a doping element are separately introduced near to a susceptor and mixed in the vicinity of a substrate held by the susceptor to grow an l-type Al.sub.x Ga.sub.1-x N thin film, are disclosed. Also, a process of vapor growth and apparatus having a mixing tube and a process and apparatus for inclining the susceptor relative to the reactant gas flow are disclosed. Moreover, a process and apparatus, whereby the Al.sub.x Ga.sub.1-x N thin film is subjected to the crystal growth using a plasma of the reactant gas under reduced pressure, under the irradiation of ultraviolet rays of **laser** beams, are disclosed.

2. **20150214423** METHOD FOR MANUFACTURING OPTICAL DEVICE AND OPTICAL DEVICE JP - 30.07.2015
 Int.Class [H01L 33/00](#) Appl.No 14481971 Applicant TOKYO ELECTRON LIMITED Inventor Shinya KIKUTA
 A method for manufacturing an optical device includes forming a mask on main surface of a first GaN layer such that the mask has one or more openings in first region on the main surface of the first layer, selectively growing first GaN in the opening such that core including the first GaN is formed on exposed portion of the first layer, forming an active layer on the core such that active region is formed, forming a second GaN layer on the active region, removing a portion of the mask covering second region, forming a first electrode in the second region on the first layer, forming a second electrode covering the second layer and extending onto the mask in third region on the first layer, forming a first pad on the first electrode, and forming a second pad in a pad-forming region of the second electrode in the third region.

< 1/1 >

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

PATENTSCOPE Field Combination ▼

	Field	Front Page	▼	Value	?
Operator	AND	Field	English All	Value	laser
Operator	AND	Field	Inventor Name	Value	Shuji Nakamura
Operator	AND	Field	Applicant Name	Value	University of California
Operator	AND	Field	English Title	Value	
Operator	AND	Field	All Classifications	Is Empty:	N/A
Operator	AND	Field	Licensing availability		<input type="checkbox"/>

+ Add another search field - Reset search fields

Offices	All	▼
Languages	English	▼
<input checked="" type="checkbox"/> Stemming		
<input type="checkbox"/> Single Family Member		
<input type="checkbox"/> Include NPL		

294 results

EN_ALL:(laser) AND IN:(Shuji Nakamura) AND PA:(University of California)

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

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- 10495288** HIGH INTENSITY SOLID STATE WHITE EMITTER WHICH IS LASER DRIVEN AND USES SINGLE CRYSTAL, CERAMIC OR POLYCRYSTALLINE PHOSPHORS US - 03.12.2019

Int.Class [E21K 9/64](#) Appl.No 14930201 Applicant The Regents of the University of California Inventor Michael Cantore

A white light emitting device includes an edge-emitting laser diode, such as a III-nitride laser diode, emitting light in a first wavelength range that is converted to light at a longer wavelength by a single crystal, ceramic or polycrystalline phosphor, such as a Ce:YAG single crystal phosphor, wherein the phosphor absorbs only some of the light emitted from the laser diode with the light at the longer wavelength emitted from the phosphor results in emission of high-intensity white light from the device. Reflectors on either side of the edge-emitting III-nitride laser diode reflect the light from both ends of the edge-emitting laser diode towards the phosphor. One or more sides of the phosphor may be roughened, or a scattering layer may be added, to promote uniform color mixing of the emissions.
- 20140301419** [AL,Ga,IN]N DIODE LASER FABRICATED AT REDUCED TEMPERATURE US - 09.10.2014

Int.Class [H01L 21/00](#) Appl.No 14308445 Applicant The Regents of the University of California Inventor Daniel A. Cohen

A method of fabricating an [AL,Ga,IN] laser diode, comprising depositing one or more III-N layers upon a growth substrate at a first temperature, depositing an indium containing laser core at a second temperature upon layers deposited at a first temperature, and performing all subsequent fabrication steps under conditions that inhibit degradation of the laser core, wherein the conditions are a substantially lower temperature than the second temperature.
- 20200259314** SYSTEMS INCLUDING VERTICAL CAVITY SURFACE EMITTING LASERS US - 13.08.2020

Int.Class [H01S 5/183](#) Appl.No 16760288 Applicant The Regents of the University of California Inventor Jared Kearns

A sensing apparatus, an illumination system, and a data communication system including a Vertical Cavity Surface Emitting Laser (VCSEL) or VCSEL array.
- 20150372456** HIGH POWER BLUE-VIOLET III-NITRIDE SEMIPOLAR LASER DIODES US - 24.12.2015

Int.Class [H01S 5/00](#) Appl.No 14768824 Applicant The Regents of the University of California Inventor Arash Pourhashemi

A high power blue-violet III-nitride semipolar laser diode (LD) with an output power in excess of 1 W, a slope efficiency of more than 1 W/A, and an external quantum efficiency (EQE) in excess of 25% and more preferably, in excess of 35%. These operating characteristics make these laser diodes suitable for use in solid state lighting systems.
- 20100142576** [AL,Ga,IN]N DIODE LASER FABRICATED AT REDUCED TEMPERATURE US - 10.06.2010

Int.Class [H01S 5/00](#) Appl.No 12476208 Applicant The Regents of the University of California Inventor Cohen Daniel A.

A method of fabricating an [AL,Ga,IN] laser diode, comprising depositing one or more III-N layers upon a growth substrate at a first temperature, depositing an indium containing laser core at a second temperature upon layers deposited at a first temperature, and performing all subsequent fabrication steps under conditions that inhibit degradation of the laser core, wherein the conditions are a substantially lower temperature than the second temperature.

- Together

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

- a(i) + a(ii)

PATENTSCOPE Field Combination ▼

Operator	Field	Value
AND	Front Page	Value
AND	English All	laser
AND	Inventor Name	Isamu Akasaki
AND	Inventor Name	Hiroshi Amano
AND	Applicant Name	Value
AND	All Classifications	Is Empty: N/A
AND	Licensing availability	<input type="checkbox"/>

[+](#) Add another search field [-](#) Reset search fields

Offices All
Languages English
<input checked="" type="checkbox"/> Stemming
<input type="checkbox"/> Single Family Member
<input type="checkbox"/> Include NPL

86 results [Reset](#) [Search](#)

EN_ALL:(laser) AND IN:(Isamu Akasaki) AND IN:(Hiroshi Amano)

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

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- 2013030913** METHOD FOR MANUFACTURING SEMICONDUCTOR DEVICE US - 12.12.2013

Int.Class [H01L 21/00](#) [?](#) Appl.No 14001454 Applicant Motoaki Iwaya Inventor Motoaki Iwaya

A structure includes a substrate, a template layer formed on the surface of the substrate and including an AlN layer, and a device structure portion formed by stacking AlGaIn semiconductor layers on the template layer. For the structure, the AlN layer is irradiated from a side close to the substrate with a [laser](#) light with a wavelength by which the [laser](#) light passes through the substrate and the [laser](#) light is absorbed by the AlN layer, in a state in which the AlN layer receives compressive stress from the substrate. This allows the AlN layer to expand more than the surface of the substrate on at least an interface between the AlN layer and the substrate so as to increase the compressive stress, in order to remove the substrate from the AlN layer.
- 5025789** PROCESS FOR PRODUCING A RESONATOR IN A SEMICONDUCTOR [LASER](#) DEVICE US - 20.10.1999

Int.Class [H01S 3/00](#) [?](#) Appl.No 08577820 Applicant Pioneer Electric Corporation Inventor Watanabe Yoshiaki

A method for forming a resonator in a semiconductor [laser](#) device comprises the steps of: filling with a resin a gap surrounding the side surfaces of the waveguide for a resonator other than the end-surface to be polished; polishing the end-surface and the resin surrounding it; forming a predetermined optical coating on the polished end-surface and the resin in the state of the [laser](#) waveguide and the electrode being embedded; and removing the embedding resin. Both the bending of polished end-surfaces and the entering of the thin film into the side surface of the [laser](#) waveguide is prevented so that a high smooth end-surface of mirror coating for resonator is achieved. Furthermore, any crystals are used for a substrate carrying a semiconductor [laser](#) structure with a resonator even if that crystal is of non-cleavage, according to that method.
- 5247533** GALLIUM NITRIDE GROUP COMPOUND SEMICONDUCTOR [LASER](#) DIODE US - 21.09.1993

Int.Class [H01L 33/00](#) [?](#) Appl.No 07812913 Applicant Toyoda Gosei Co., Ltd Inventor Okazaki Nobuo

A gallium nitride group compound semiconductor [laser](#) diode includes at least one pn junction layer disposed between an n-type layer and a p-type layer. The n-type layer is formed from a gallium nitride group compound semiconductor material defined by the composition equation $(Al_{1-x}Ga_x)_2O_{3-y}N$ (where 0 < x < 1 and 0 < y < 1). The p-type layer, doped with an acceptor impurity, is obtained by electron beam irradiating a gallium nitride group compound semiconductor material defined by the composition equation $(Al_{1-x}Ga_x)_2O_{3-y}N$ (where 0 < x < 1 and 0 < y < 1). The improved gallium nitride group semiconductor [laser](#) diode of the present invention is found to emit light in the visible short wavelength spectrum of light which includes the blue, violet and ultraviolet regions.
- 20080123713** TWO-LIGHT FLUX INTERFERENCE EXPOSURE DEVICE, TWO-LIGHT FLUX INTERFERENCE EXPOSURE METHOD, SEMICONDUCTOR LIGHT EMITTING ELEMENT MANUFACTURING METHOD, AND SEMICONDUCTOR LIGHT EMITTING ELEMENT US - 29.05.2008

Int.Class [H01S 3/00](#) [?](#) Appl.No 11897895 Applicant Meijo University Inventor Kamiyama Satoshi

The present invention discloses a two-light flux interference exposure device comprising: a [laser](#) light source provided in a [laser](#) resonator; a single harmonic generation device provided in the [laser](#) resonator for converting [laser](#) light output by the [laser](#) light source to higher harmonics; an etalon provided in the [laser](#) resonator so as to serve as a narrowband wavelength filter; a beam splitter dividing [laser](#) light output outside the [laser](#) resonator into two light fluxes; and an interference optic system causing the light fluxes to interfere with each other on a target to be exposed.

- 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:

	Field Front Page	▼	Value	?
Operator AND	Field English All	▼	Value blue laser	?
Operator AND	Field Inventor Name	▼	Value Isamu Akasaki	?
Operator AND	Field Applicant Name	▼	Value Meijo University	?
Operator AND	Field English Title	▼	Value	?
Operator AND	Field All Classifications	▼	Is Empty: N/A	▼
Operator AND	Field Licensing availability	▼	<input type="checkbox"/>	

+ Add another search field - Reset search fields

Offices All	▼
Languages English	▼
<input checked="" type="checkbox"/> Stemming	
<input type="checkbox"/> Single Family Member	
<input type="checkbox"/> Include NPL	

13 results Reset Search

EN_ALL (blue laser) AND IN (Isamu Akasaki) AND PA (Meijo University)

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

Sort: Relevance Per page: 10 View: All < 1 / 2 > Download Machine translation

1.	20080123713 TWO-LIGHT FLUX INTERFERENCE EXPOSURE DEVICE, TWO-LIGHT FLUX INTERFERENCE EXPOSURE METHOD, SEMICONDUCTOR LIGHT EMITTING ELEMENT MANUFACTURING METHOD, AND SEMICONDUCTOR LIGHT EMITTING ELEMENT	US - 29.05.2008
	Int.Class H01S 3/08 Appl.No 11897895 Applicant Meijo University Inventor Kamiyama Satoshi	
	The present invention discloses a two-light flux interference exposure device comprising: a laser light source provided in the laser resonator; a single harmonic generation device provided in the laser resonator for converting laser light output by the laser light source to higher harmonics; an etalon provided in the laser resonator so as to serve as a narrowband wavelength filter; a beam splitter dividing laser light output outside the laser resonator into two light fluxes; and an interference optic system causing the light fluxes to interfere with each other on a target to be exposed.	
2.	20160365479 METHOD OF MANUFACTURING N-P-N NITRIDE-SEMICONDUCTOR LIGHT-EMITTING DEVICE, AND N-P-N NITRIDE-SEMICONDUCTOR LIGHT-EMITTING DEVICE	US - 15.12.2018
	Int.Class H01L 33/04 Appl.No 15244763 Applicant MEIJO UNIVERSITY Inventor Tetsuya Takeuchi	
	This application provides a method of manufacturing an n-p-n nitride-semiconductor light-emitting device which includes a current confinement region (A) using a buried tunnel junction layer and in which a favorable luminous efficacy can be obtained and to provide the n-p-n nitride-semiconductor light-emitting device. The p-type activation of a p-type GaN crystal layer stacked below a tunnel junction layer is performed in an intermediate phase of a manufacturing process in which the p-type GaN crystal layer is exposed to atmosphere gas with the tunnel junction layer partially removed, before the tunnel junction layer is buried in an n-type GaN crystal layer. In the intermediate phase of the manufacturing process in which the p-type GaN crystal layer is exposed, p-type activation is efficiently performed on the p-type GaN crystal layer, and a p-type GaN crystal layer with low electric resistance can be obtained.	
3.	20170155016 NITRIDE SEMICONDUCTOR CRYSTAL AND METHOD OF FABRICATING THE SAME	US - 21.01.2016
	Int.Class H01L 33/02 Appl.No 14773045 Applicant MEIJO UNIVERSITY Inventor Tetsuya TAKEUCHI	
	Fabricating a high-quality nitride semiconductor crystal at a lower temperature. A nitride semiconductor crystal is fabricated by supplying onto a substrate (105) a group III element and/or a compound thereof, a nitrogen element and/or a compound thereof and an Sb element and/or a compound thereof, all of which serve as materials, and thereby vapor-growing at least one layer of nitride semiconductor film (104). A supply ratio of the Sb element to the nitrogen element in a growth process of the at least one layer of the nitride semiconductor film (104) is set to not less than 0.004.	
4.	20200144451 NITRIDE SEMICONDUCTOR CRYSTAL AND METHOD OF FABRICATING THE SAME	US - 07.05.2020
	Int.Class H01L 33/02 Appl.No 16738946 Applicant MEIJO UNIVERSITY Inventor Tetsuya TAKEUCHI	
	Fabricating a high-quality nitride semiconductor crystal at a lower temperature. A nitride semiconductor crystal is fabricated by supplying onto a substrate (105) a group III element and/or a compound thereof, a nitrogen element and/or a compound thereof and an Sb element and/or a compound thereof, all of which serve as materials, and thereby vapor-growing at least one layer of nitride semiconductor film (104). A supply ratio of the Sb element to the nitrogen element in a growth process of the at least one layer of the nitride semiconductor film (104) is set to not less than 0.004.	

5. NOTPLA

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

Search for "NotPla" as Applicant Name.

PATENTSCOPE Field Combination ▼

	Field Front Page	▼	Value	?
Operator AND	Field Applicant Name	▼	Value NotPla	?
Operator AND	Field Application Number	▼	Value	?
Operator AND	Field Publication Date	▼	Value	?
Operator AND	Field English Title	▼	Value	?
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< 1 / 2 >

1. [WQ/2020/065270](#) MACHINE FOR ENCAPSULATING LIQUID PRODUCTS WO - 02.04.2020

Int.Class [B65B 3/00](#) ? Appl.No PCT/GB2019/052629 Applicant **NOTPLA LIMITED** Inventor PASLIER, Pierre-Yves

A machine for encapsulating a liquid product, comprising an extruder head (a) comprising a shaped die, a dough inlet (b), a liquid product inlet (c), a spraying element (d), and a sealing means (e).
2. [2612816](#) NEW SINGLE-USE PACKAGING GB - 17.05.2023

Int.Class [B65D 65/48](#) ? Appl.No 202116935 Applicant **NOTPLA LTD** Inventor PIERRE-YVES PASLIER

A liquid having a water content of less than 20 wt.% is encapsulated within a membrane. The membrane comprises an extract derivable from seaweed. The liquid may be water-, glycerine or oil-based. The extract may be carrageenan, agar or a cellulose polymer, preferably hydroxypropyl methyl cellulose (HPMC). The membrane or liquid may comprise an additive, emulsifier, diluent, carrier, flavouring, fragrance and/or preservative. The liquid may be edible and/or suitable for applying to a body part. The liquid may comprise a personal hygiene or cosmetic product, e.g. shower gel, shampoo, conditioner, cream, sun cream, skin cream or toothpaste, or may comprise a food or drink product, e.g. a sauce, oil, condiment, energy gel or coffee. The liquid may comprise a single dose, and/or may have a volume of 0.1 to 30 ml. The membrane may be a soft gel capsule or film. A method of preparing the encapsulated liquid is also claimed, comprising the steps of (i) providing a solution of seaweed-derived extract, (ii) pumping the solution through a die to create two gel ribbons or films, (iii) injecting the liquid between the ribbons/films, and (iv) sealing the ribbons/films around the liquid to form the liquid encapsulated within a membrane.
3. [WQ/2023/084239](#) NEW SINGLE-USE PACKAGING WO - 19.05.2023

Int.Class [B65D 65/48](#) ? Appl.No PCT/GB2022/052872 Applicant **NOTPLA LIMITED** Inventor PASLIER, Pierre-Yves

The invention relates to a liquid encapsulated within a membrane, wherein the liquid has a water content of less than 20 wt%, wherein the membrane comprises an extract derivable from seaweed or a cellulose polymer. The invention also relates to methods of preparing the same and uses thereof.
4. [20200047927](#) METHOD OF ENCAPSULATING LIQUID PRODUCTS US - 13.02.2020

Int.Class [B65B 3/02](#) ? Appl.No 16496128 Applicant **NOTPLA LIMITED** Inventor Pierre-Yves Paslier

The invention relates to a method for encapsulating a liquid product, the method comprising blending together a solution of alginate and a thickener and extruding through an appropriately shaped die to form a membrane, applying a calcium rich ion solution to crosslink the membrane and create a water insoluble membrane, filling the water insoluble membrane with the liquid product; and sealing the membrane around the liquid product, encapsulating the liquid product therein.
5. [3601061](#) METHOD OF ENCAPSULATING LIQUID PRODUCTS EP - 05.02.2020

Int.Class [B65B 3/00](#) ? Appl.No 18715084 Applicant **NOTPLA LTD** Inventor PASLIER PIERRE-YVES

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.

1. WO2020065270 - MACHINE FOR ENCAPSULATING LIQUID PRODUCTS

PCT Biblio. Data Description Claims Drawings ISR/WOSA/A17(2)[a] National Phase Notices Documents

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Publication Number
WO/2020/065270

Publication Date
02.04.2020

International Application No.
PCT/GB2019/052629

International Filing Date
18.09.2019

IPC
B65B 3/00 2006.1 B65B 3/02 2006.1
B65B 9/10 2006.1 B65B 9/24 2006.1

CPC
B65B 3/02 B65B 9/24

Applicants
NOTPLA LIMITED [GB]/[GB]
258 Paradise Row London E2 9LE, GB

Inventors
PASLIER, Pierre-Yves
GARCIA GONZÁLEZ, Rodrigo

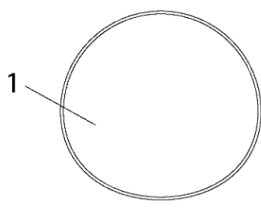
Agents
NEWCOMBE, Christopher

Priority Data
1815789.1 27.09.2018 GB

Publication Language
English (en)

Title
[EN] MACHINE FOR ENCAPSULATING LIQUID PRODUCTS
[FR] MACHINE POUR ENCAPSULER DES PRODUITS LIQUIDES

Figure 1



Abstract
[EN] A machine for encapsulating a liquid product, comprising an extruder head [a] comprising a shaped die, a dough inlet [b], a liquid product inlet [c], a spraying element [d], and a sealing means [e].
[FR] Machine pour encapsuler un produit liquide, comprenant une tête d'extrudeuse [a] comprenant une matrice façonnée, une entrée de pâte [b], une entrée de produit liquide [c], un élément de pulvérisation [d], et un moyen d'étanchéité [e].

C. List the patent applications you found

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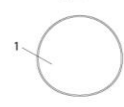
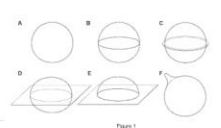
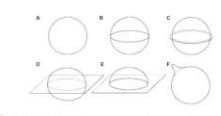

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- WO/2020/065270** MACHINE FOR ENCAPSULATING LIQUID PRODUCTS
Int.Class B65B 3/00 Appl.No PCT/GB2019/052629 Applicant NOTPLA LIMITED Inventor PASLIER, Pierre-Yves
A machine for encapsulating a liquid product, comprising an extruder head [a] comprising a shaped die, a dough inlet [b], a liquid product inlet [c], a spraying element [d], and a sealing means [e].
- 2612916** NEW SINGLE-USE PACKAGING
Int.Class B65D 85/48 Appl.No 202116335 Applicant NOTPLA LTD Inventor PIERRE-YVES PASLIER
A liquid having a water content of less than 20 wt.%, is encapsulated within a membrane. The membrane comprises an extract derivable from seaweed. The liquid may be water-, glycerine or oil-based. The extract may be carrageenan, agar or a cellulose polymer, preferably hydroxypropyl methyl cellulose (HPMC). The membrane or liquid may comprise an additive, emulsifier, diluent, carrier, flavouring, fragrance and/or preservative. The liquid may be edible and/or suitable for applying to a body part. The liquid may comprise a personal hygiene or cosmetic product, e.g. shower gel, shampoo, conditioner, cream, sun cream, skin cream or toothpaste, or may comprise a food or drink product, e.g. a sauce, oil, condiment, energy gel or coffee. The liquid may comprise a single dose, and/or may have a volume of 0.1 to 30 ml. The membrane may be a soft gel capsule or film. A method of preparing the encapsulated liquid is also claimed, comprising the steps of (i) providing a solution of seaweed-derived extract, (ii) pumping the solution through a die to create two gel ribbons or films, (iii) injecting the liquid between the ribbons/films, and (iv) sealing the ribbons/films around the liquid to form the liquid encapsulated within a membrane.
- WO/2023/084239** NEW SINGLE-USE PACKAGING
Int.Class B65D 85/48 Appl.No PCT/GB2022/052872 Applicant NOTPLA LIMITED Inventor PASLIER, Pierre-Yves
The invention relates to a liquid encapsulated within a membrane, wherein the liquid has a water content of less than 20 wt%, wherein the membrane comprises an extract derivable from seaweed or a cellulose polymer. The invention also relates to methods of preparing the same and uses thereof.
- 20200047927** METHOD OF ENCAPSULATING LIQUID PRODUCTS
Int.Class B65B 3/02 Appl.No 18496128 Applicant NOTPLA LIMITED Inventor Pierre-Yves Paslier
The invention relates to a method for encapsulating a liquid product, the method comprising blending together a solution of alginate and a thickener and extruding through an appropriately shaped die to form a membrane, applying a calcium rich ion solution to crosslink the membrane and create a water insoluble membrane, filling the water insoluble membrane with the liquid product, and sealing the membrane around the liquid product, encapsulating the liquid product therein.

Application Id	Application Number	Application Date	Country	Title	IPC	Image
WO/2020/065270	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 
GB38811986	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 1/28, C08L 5/06, C08L 5/12	Figure 1 
WO/2023/084239	PCT/GB2022/052872	11.11.2022	WO	NEW SINGLE-USE PACKAGING	B65D 65/46, C08L 5/06, 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	Figure 1 
US233323520	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	



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Query:	PA:(NotPla)	
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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”.

PATENTSCOPE Field Combination ▾

	Field	Front Page	▾	Value	?
Operator	AND	Field	Inventor Name	Value	Pierre-Yves Paslier
Operator	AND	Field	Inventor Name	Value	Rodrigo Garcia Gonzalez
Operator	AND	Field	Publication Date	Value	?
Operator	AND	Field	English Title	Value	?
Operator	AND	Field	All Classifications	Is Empty:	N/A
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From the results list, you will notice an applicant different from NotPla, which is SKIPPING ROCKS LAB LIMITED.

IN:(Pierre-Yves Paslier) AND IN:(Rodrigo Garcia Gonzalez)

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11. **WO/2018/172781** METHOD OF ENCAPSULATING LIQUID PRODUCTS WO - 27.09.2018
 Int.Class [B65B 3/00](#) Appl.No PCT/GB2018/050758 Applicant SKIPPING ROCKS LAB LIMITED Inventor [PASLIER, Pierre-Yves](#)
 The invention relates to a method for encapsulating a liquid product, the method comprising blending together a solution of alginate and a thickener and extruding through an appropriately shaped die to form a membrane, applying a calcium rich ion solution to crosslink the membrane and create a water insoluble membrane, filling the water insoluble membrane with the liquid product; and sealing the membrane around the liquid product, encapsulating the liquid product therein.

12. **3601061** METHOD OF ENCAPSULATING LIQUID PRODUCTS EP - 05.02.2020
 Int.Class [B65B 3/00](#) Appl.No 18715084 Applicant NOTPLA LTD Inventor [PASLIER PIERRE-YVES](#)
 The invention relates to a method for encapsulating a liquid product, the method comprising blending together a solution of alginate and a thickener and extruding through an appropriately shaped die to form a membrane, applying a calcium rich ion solution to crosslink the membrane and create a water insoluble membrane, filling the water insoluble membrane with the liquid product; and sealing the membrane around the liquid product, encapsulating the liquid product therein.

13. **2945415** MÉTODO PARA ENCAPSULAR PRODUCTOS LÍQUIDOS ES - 03.07.2023
 Int.Class [B65B 3/00](#) Appl.No 18715084 Applicant Notpla Limited Inventor [PASLIER, Pierre-Yves](#)
 La invención se relaciona con un método para encapsular un producto líquido, el método comprende mezclar una solución de alginato y un espesante y extruir a través de una matriz de forma adecuada para formar una membrana, aplicando una solución de iones rica en calcio para reticular la membrana y crear un agua, membrana insoluble, llenando la membrana insoluble en agua con el producto líquido; y sellar la membrana alrededor del producto líquido, encapsulando el producto líquido en su interior. [Traducción automática con Google Translate, sin valor legal]

11. WO2018172781 - METHOD OF ENCAPSULATING LIQUID PRODUCTS

PCT Biblio. Data Description Claims Drawings ISR/WOSA/A17[2][a] National Phase Patent Family Notices Documents

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Publication Number
WO/2018/172781

Publication Date
27.09.2018

International Application No.
PCT/GB2018/050758

International Filing Date
22.03.2018

IPC
[B65B 3/00 2006.1](#) [B65B 9/00 2006.1](#)
[B65D 65/46 2006.1](#)

CPC
[A23P 20/10](#) [B65B 3/02](#) [B65B 61/06](#)
[B65B 9/24](#) [B65D 65/463](#) [B65D 65/466](#)

Applicants
 SKIPPING ROCKS LAB LIMITED (GB)/(GB)
 242 Leamore Court 1 Meath Crescent
 London E2 9QA, GB

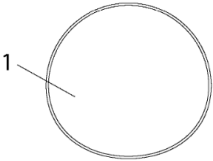
Inventors
[PASLIER, Pierre-Yves](#)
 GARCÍA GONZÁLEZ, Rodrigo

Agents
 LEANSE, Thomas

Priority Data
 1704547:7 22.03.2017 GB

Title
[EN] METHOD OF ENCAPSULATING LIQUID PRODUCTS
[FR] PROCÉDÉ D'ENCAPSULATION DE PRODUITS LIQUIDES

Figure 1



Abstract
[EN]
 The invention relates to a method for encapsulating a liquid product, the method comprising blending together a solution of alginate and a thickener and extruding through an appropriately shaped die to form a membrane, applying a calcium rich ion solution to crosslink the membrane and create a water insoluble membrane, filling the water insoluble membrane with the liquid product; and sealing the membrane around the liquid product, encapsulating the liquid product therein.
[FR]
 L'invention concerne un procédé d'encapsulation d'un produit liquide, le procédé consistant à mélanger une solution d'alginate et un épaississant et à extruder à travers une matrice de forme appropriée en vue de former une membrane, à appliquer une solution d'ions riche en calcium en vue de réticuler la membrane et de créer une membrane insoluble dans l'eau, à remplir la membrane insoluble dans l'eau avec le produit liquide; et à sceller la membrane autour du produit liquide, encapsulant ainsi le produit liquide à l'intérieur de cette dernière.

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.

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IN (Emmanuelle Charpentier) 🔍

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1. **20220154158** CAS9 VARIANTS WITH ENHANCED SPECIFICITY US - 19.05.2022
 Int.Class [C12N 9/22](#) 🔍 Appl.No 17437504 Applicant Max-PLANCK-GESELLSCHAFT ZUR FORDERUNG DER WISSENSCHAFTEN E.V. Inventor [Emmanuelle CHARPENTIER](#)
 The present invention relates to engineered Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)/CRISPR-associated protein 9 (Cas9) variants with enhanced specificity compared to wild type Cas9. The present invention also relates to compositions comprising one or more of those Cas9 variant(s), wherein the composition can be used for genome engineering. Furthermore, the present invention relates to pharmaceutical compositions comprising one or more of those Cas9 variant(s), wherein the pharmaceutical compositions can be used for treating disease(s), such as genetic disorders.
2. **2995/KOLNP/2014** METHODS AND COMPOSITIONS FOR RNA DIRECTED TARGET DNA MODIFICATION AND FOR RNA DIRECTED MODULATION OF TRANSCRIPTION IN - 04.12.2015
 Int.Class [C12N 15/11](#) 🔍 Appl.No 2995/KOLNP/2014 Applicant THE REGENTS OF THE UNIVERSITY OF CALIFORNIA Inventor [CHARPENTIER Emmanuelle](#)
 The present disclosure provides a DNA targeting RNA that comprises a targeting sequence and together with a modifying polypeptide provides for site specific modification of a target DNA and/or a polypeptide associated with the target DNA. The present disclosure further provides site specific modifying polypeptides. The present disclosure further provides methods of site specific modification of a target DNA and/or a polypeptide associated with the target DNA. The present disclosure provides methods of modulating transcription of a target nucleic acid in a target cell generally involving contacting the target nucleic acid with an enzymatically inactive Cas9 polypeptide and a DNA targeting RNA. Kits and compositions for carrying out the methods are also provided. The present disclosure provides genetically modified cells that produce Cas9, and Cas9 transgenic non human multicellular organisms.
3. **3241902** FREMGANGSMÅDER OG SAMMENSÆTNINGER TIL RNA-RETTET TARGET-DNA-MODIFICERING OG TIL RNA-RETTET MODULERING AF TRANSKRIPTION DK - 07.05.2018
 Int.Class [C12N 15/11](#) 🔍 Appl.No 17183434 Applicant The Regents of The University of California Inventor [CHARPENTIER, Emmanuelle](#)
 The present disclosure provides a DNA-targeting RNA that comprises a targeting sequence and, together with a modifying polypeptide, provides for site-specific modification of a target DNA and/or a polypeptide associated with the target DNA. The present disclosure further provides site-specific modifying polypeptides. The present disclosure further provides methods of site-specific modification of a target DNA and/or a polypeptide associated with the target DNA. The present disclosure provides methods of modulating transcription of a target nucleic acid in a target cell, generally involving contacting the target nucleic acid with an enzymatically inactive Cas9 polypeptide and a DNA-targeting RNA. Kits and compositions for carrying out the methods are also provided. The present disclosure provides genetically modified cells that produce Cas9, and Cas9 transgenic non-human multicellular organisms.

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

Search “Jennifer A. Doudna” as Inventor Name.

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1. **20150361406** METHOD OF PRODUCING DICER US - 17.12.2015
 Int.Class [C12N 9/22](#) 🔍 Appl.No 14468109 Applicant The Regents of the University of California Inventor [Jennifer A. Doudna](#)
 The present disclosure provides a method for producing a Dicer polypeptide in a prokaryotic host cell. The present disclosure further provides a purified Dicer complex. The present disclosure further provides kits for producing a Dicer polypeptide in a prokaryotic host cell.
2. **20230193255** COMPOSITIONS AND METHODS FOR DELIVERING CRISPR/CAS EFFECTOR POLYPEPTIDES US - 22.08.2023
 Int.Class [C12N 15/11](#) 🔍 Appl.No 17287392 Applicant The Regents of the University of California Inventor [Jennifer A. Doudna](#)
 The present disclosure provides a virus-like particle (VLP) comprising a therapeutic polypeptide, and nucleic acids comprising nucleotide sequences encoding the components of the VLP. The present disclosure provides a virus-like particle (VLP) comprising a CRISPR/Cas effector polypeptide, and nucleic acids comprising nucleotide sequences encoding the components of the VLP. The present disclosure provides a system for making a VLP of the present disclosure, as well as methods of making the VLP.
3. **20180002736** METHODS AND COMPOSITIONS FOR LABELING A SINGLE-STRANDED TARGET NUCLEIC ACID US - 04.01.2018
 Int.Class [C12Q 1/6806](#) 🔍 Appl.No 15540227 Applicant The Regents of the University of California Inventor Mitchell R. O'Connell
 The present disclosure provides compositions and methods for labeling a single stranded target nucleic acid. Subject compositions include a Cas9 protein, a Cas9 guide RNA, and a quenched PAMmer. A subject quenched PAMmer is a single stranded oligonucleotide having (i) a protospacer adjacent motif (PAM) sequence; (ii) a detectable label; (iii) a quencher moiety that quenches the detectable label; and (iv) at least one of: a specificity segment positioned 5' of the PAM sequence, and an orientation segment positioned 3' of the PAM sequence. In the subject methods, the Cas9 protein cleaves the quenched PAMmer at a cleavage site positioned between the detectable label and the quencher moiety to produce: (a) a first cleavage product that is hybridized with the target nucleic acid and comprises the detectable label; and (b) a second cleavage product that is not hybridized with the target nucleic acid and comprises the quencher moiety.

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

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

IN (Emmanuelle Charpentier AND Jennifer A. Doudna)

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- 20140068797** METHODS AND COMPOSITIONS FOR RNA-DIRECTED TARGET DNA MODIFICATION AND FOR RNA-DIRECTED MODULATION OF TRANSCRIPTION US - 08.03.2014

Int.Class [C12N 9/22](#) Appl.No 13842858 Applicant The Regents of the University of California Inventor [Jennifer A. Doudna](#)

The present disclosure provides a DNA-targeting RNA that comprises a targeting sequence and, together with a modifying polypeptide, provides for site-specific modification of a target DNA and/or a polypeptide associated with the target DNA. The present disclosure further provides site-specific modifying polypeptides. The present disclosure further provides methods of site-specific modification of a target DNA and/or a polypeptide associated with the target DNA. The present disclosure provides methods of modulating transcription of a target nucleic acid in a target cell, generally involving contacting the target nucleic acid with an enzymatically inactive Cas9 polypeptide and a DNA-targeting RNA. Kits and compositions for carrying out the methods are also provided. The present disclosure provides genetically modified cells that produce Cas9, and Cas9 transgenic non-human multicellular organisms.
- 20160130609** METHODS AND COMPOSITIONS FOR RNA-DIRECTED TARGET DNA MODIFICATION AND FOR RNA-DIRECTED MODULATION OF TRANSCRIPTION US - 12.05.2016

Int.Class [C12N 9/22](#) Appl.No 14685504 Applicant The Regents of the University of California Inventor [Jennifer A. Doudna](#)

The present disclosure provides a DNA-targeting RNA that comprises a targeting sequence and, together with a modifying polypeptide, provides for site-specific modification of a target DNA and/or a polypeptide associated with the target DNA. The present disclosure further provides site-specific modifying polypeptides. The present disclosure further provides methods of site-specific modification of a target DNA and/or a polypeptide associated with the target DNA. The present disclosure provides methods of modulating transcription of a target nucleic acid in a target cell, generally involving contacting the target nucleic acid with an enzymatically inactive Cas9 polypeptide and a DNA-targeting RNA. Kits and compositions for carrying out the methods are also provided. The present disclosure provides genetically modified cells that produce Cas9, and Cas9 transgenic non-human multicellular organisms.
- 20160130608** METHODS AND COMPOSITIONS FOR RNA-DIRECTED TARGET DNA MODIFICATION AND FOR RNA-DIRECTED MODULATION OF TRANSCRIPTION US - 12.05.2016

Int.Class [C12N 9/22](#) Appl.No 14685502 Applicant The Regents of the University of California Inventor [Jennifer A. Doudna](#)

The present disclosure provides a DNA-targeting RNA that comprises a targeting sequence and, together with a modifying polypeptide, provides for site-specific modification of a target DNA and/or a polypeptide associated with the target DNA. The present disclosure further provides site-specific modifying polypeptides. The present disclosure further provides methods of site-specific modification of a target DNA and/or a polypeptide associated with the target DNA. The present disclosure provides methods of modulating transcription of a target nucleic acid in a target cell, generally involving contacting the target nucleic acid with an enzymatically inactive Cas9 polypeptide and a DNA-targeting RNA. Kits and compositions for carrying out the methods are also provided. The present disclosure provides genetically modified cells that produce Cas9, and Cas9 transgenic non-human multicellular organisms.

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**.

2. WO2013176772 - METHODS AND COMPOSITIONS FOR RNA-DIRECTED TARGET DNA MODIFICATION AND FOR RNA-DIRECTED MODULATION OF TRANSCRIPTION

Start watching Permalink Machine translation

[PCT Biblio. Data](#)
[Description](#)
[Claims](#)
[Drawings](#)
[National Phase](#)
[Patent Family](#)
[Notices](#)
[Compounds](#)
[Documents](#)

Publication Number WD/2013/176772	Title [EN] METHODS AND COMPOSITIONS FOR RNA-DIRECTED TARGET DNA MODIFICATION AND FOR RNA-DIRECTED MODULATION OF TRANSCRIPTION [FR] PROCÉDES ET COMPOSITIONS PERMETTANT LA MODIFICATION DE L'ADN CIBLE DIRIGÉE PAR L'ARN ET LA MODULATION DE LA TRANSCRIPTION DIRIGÉE PAR L'ARN
Publication Date 28.11.2013	Abstract [EN] The present disclosure provides a DNA-targeting RNA that comprises a targeting sequence and, together with a modifying polypeptide, provides for site-specific modification of a target DNA and/or a polypeptide associated with the target DNA. The present disclosure further provides site-specific modifying polypeptides. The present disclosure further provides methods of site-specific modification of a target DNA and/or a polypeptide associated with the target DNA. The present disclosure provides methods of modulating transcription of a target nucleic acid in a target cell, generally involving contacting the target nucleic acid with an enzymatically inactive Cas9 polypeptide and a DNA-targeting RNA. Kits and compositions for carrying out the methods are also provided. The present disclosure provides genetically modified cells that produce Cas9, and Cas9 transgenic non-human multicellular organisms. [FR] Cette invention concerne un ARN ciblant l'ADN qui comprend une séquence de ciblage et qui, avec un polypeptide de modification, permet la modification spécifique de site d'un ADN cible et/ou d'un polypeptide associé à l'ADN cible. Cette invention concerne également des polypeptides de modification spécifique de site, des procédés de modification spécifique de site d'un ADN cible et/ou d'un polypeptide associé à l'ADN cible; ainsi que des procédés de modulation de la transcription d'un acide nucléique cible dans une cellule cible, impliquant généralement la mise en contact de l'acide nucléique cible avec un polypeptide Cas9 enzymatiquement inactif et un ARN ciblant l'ADN. Des kits et des compositions pour la mise en oeuvre des procédés selon l'invention sont également décrits. La présente invention permet d'obtenir des cellules génétiquement modifiées qui produisent Cas9, et des organismes Cas9 multicellulaires transgéniques non humains.
International Application No. PCT/US2013/032589	Related patent documents BR122019026691 BR122019026662 US2934778 GR2518764 DE202013012240 GB2537000 SG10201701800Y DE202013012241 DE202013012242 CN107603976 DK3241902 ES2670718 MYPI 2018700285 PT2800811 PT2421902 EP3401400 LT2800811 LT3241902 DK3401400 LT3401400 ES2728782 PT2401400 EP3597749 RS59199 RS57287 EP2800811 CA2872241 SG1201407702X PE2015-0336 EA201401319 KR1020150016588 US20180046881 AU2013286968 BR112014029441 DK2800811 CN104854241 MYPI 2014003102 PH12014/502574 VN43181 MA37663 ES2636902 EP2421902 KR1020170124766 TH173084 RS56119 PE2019-0842 PE2019-0842 PE2019-0844 JP2015523856 NZ714353 NZ728024 NZ730867 NZ753426 SG10201809817U GEP20172751B PL3401400 PL3241902 PL2800811 MYPI 20220006689 EP4043564 DK3597749 LT3597749 FIPEP3597749 RS64622 PT3597749 NZ701926 IL235461 CR24/20140528 CO7151523 MX362866 ECSP201428704 MX365071 MX2019012772 MX349744 TN2014000493 CL2014003208 KEKEP2014002178 EC2014-28704 AEP1296/2014 UZ2016/03367 IN2985/KOLNP/2014 UAa201419385 GE13674/1 US2017051312 AU201725060 US20180282764 JP2018138054 IL261563 IL261565 IL261566 IL261567 IL261568
International Filing Date 15.03.2013	
IPC C12N 15/11 2006.1 C12N 15/63 2006.1 C07K 19/00 2006.1 C12N 5/10 2006.1	
CPC A01H 6/4684 A01K 67/027 A61K 38/465 A61K 48/00 A61P 31/00 A61P 31/04	
Applicants THE REGENTS OF THE UNIVERSITY OF CALIFORNIA (US)/[US] 1111 Franklin Street 12th Floor Oakland, California 94607, US UNIVERSITY OF WIENNA [AT]/[AT] Universitätsring 1 A-1010 Vienna, AT	

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	Front Page	▼	Value	?
Operator	AND	Field	Inventor Name	▼	Value
				Michele Palladino	?
Operator	AND	Field	Application Date	▼	Value
				1996	?
Operator	AND	Field	Country	▼	Value
				CA	?
Operator	AND	Field	English Title	▼	Value
					?
Operator	AND	Field	All Classifications	▼	Is Empty:
				N/A	▼
Operator	AND	Field	Licensing availability	▼	<input type="checkbox"/>

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 powersource, 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

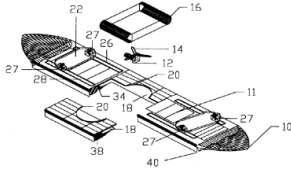
IPC
[A63C 17/01](#) [B60V 3/02](#)

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 powersource, 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*”.

PATENTSCOPE Advanced Search ▼

EN_ALLTXT:"hoverboard" AND "magnet*"

Query Assistant Query Examples

+ Expand with related terms

Offices	All	▼
Languages	English	▼
<input checked="" type="checkbox"/> Stemming		
<input type="checkbox"/> Single Family Member		
<input type="checkbox"/> Include NPL		

Reset Search

EN_ALLTXT:"hoverboard" AND "magnet*"

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

Sort: Relevance Per page: 10 View: All 1/37 Download Machine translation

- 2015243959 HOVERBOARD** AU - 10.11.2016
Int.Class [A63C 17/00](#) ? Appl.No 2015243959 Applicant Arx Pax Labs, Inc. Inventor Balsz, Tracy
A **hoverboard** is described. The **hoverboard** includes four hover engines each including a motor. The motor rotates an arrangement of **magnets** to induce eddy currents and generate **magnetic** lift which causes the **hoverboard** to hover in the air. The **hoverboard** can be tilted to propel it in a particular direction. The hover engines can each be coupled to a tilt mechanism which is coupled to a flexible rider platform. When rider platform is flexed via rider induced forces, the hover engines can be tilted individually to provide translational forces.
- WO/2015/157333 HOVERBOARD** WO - 15.10.2015
Int.Class [A63C 17/00](#) ? Appl.No PCT/US2015/024777 Applicant ARX PAX LABS, INC. Inventor HENDERSON, D. Gregory
A **hoverboard** is described. The **hoverboard** includes four hover engines each including a motor. The motor rotates an arrangement of **magnets** to induce eddy currents and generate **magnetic** lift which causes the **hoverboard** to hover in the air. The **hoverboard** can be tilted to propel it in a particular direction. The hover engines can each be coupled to a tilt mechanism which is coupled to a flexible rider platform. When rider platform is flexed via rider induced forces, the hover engines can be tilted individually to provide translational forces.
- 20150175031 HOVERBOARD WHICH GENERATES MAGNETIC LIFT TO CARRY A PERSON** US - 25.06.2015
Int.Class [B60L 13/04](#) ? Appl.No 14639045 Applicant Arx Pax, LLC Inventor D. Gregory Henderson
A **hoverboard** is described. The **hoverboard** includes four hover engines each including a motor. The motor rotates an arrangement of **magnets** to induce eddy currents and generate **magnetic** lift which causes the **hoverboard** to hover in the air. The **hoverboard** can be tilted to propel it in a particular direction. The hover engines can each be coupled to a tilt mechanism which is coupled to a flexible rider platform. When rider platform is flexed via rider induced forces, the hover engines can be tilted individually to provide translational forces.
- 20150303768 PROPULSION AND CONTROL FOR A MAGNETICALLY LIFTED VEHICLE** US - 22.10.2015
Int.Class [B60L 13/04](#) ? Appl.No 14737442 Applicant Arx Pax Labs, Inc. Inventor D. Gregory Henderson
Electromechanical systems using **magnetic** fields to induce eddy currents and generate lift are described. **Magnet** configurations which can be employed in the systems are illustrated. The **magnet** configuration can be used to generate lift and/or thrust. Lift and thrust predictions for various **magnet** configurations are provided. Arrangements of hover engines, which can employ the **magnet** configurations, and an associated guidance, navigation and control system, are described. Finally, a number of different applications, such as trains, elevators and printing, which utilize embodiments of the electromechanical systems described herein, are presented.

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.

PATENTSCOPE Field Combination ∨

	Field	Front Page	Value	?
Operator AND	Field	Inventor Name	Value Ameri Dion	?
Operator AND	Field	Country	Value AU	?
Operator AND	Field	Publication Date	Value	?
Operator AND	Field	English Title	Value	?
Operator AND	Field	All Classifications	Is Empty: N/A	∨
Operator AND	Field	Licensing availability	<input type="checkbox"/>	

+ Add another search field − Reset search fields

IN (Ameri Dion) AND CTR.(AU) 🔍

🏠 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 ∨

- 2007906765 SUPERCHARGER** AU - 03.01.2008
 Int.Class [B64C 39/02](#) ? Appl.No 2007906765 Applicant Ameri, Dion Inventor [Ameri, Dion](#)
- 2022200270 ALADDINS ELECTRONIC HOVERBOARD** AU - 03.02.2022
 Int.Class [B64C 39/02](#) ? Appl.No 2022200270 Applicant Ameri, Dion Inventor [Ameri, Dion](#)
 Figure 1 HOVERBOARD



2. AU2022200270 - ALADDINS ELECTRONIC HOVERBOARD ⏪ ⏩

National Biblio. Data Description Claims Drawings Documents

PermaLink Machine translation ∨

Office
Australia 📍

Title
[EN] Aladdins Electronic Hoverboard

Application Number
2022200270

Application Date
17.01.2022

Publication Number
2022200270

Publication Date
03.02.2022

Publication Kind
A1

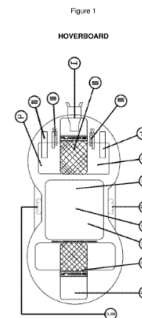
IPC
[B64C 39/02](#) [A63C 17/01](#)

Applicants
Ameri, Dion

Inventors
[Ameri, Dion](#)

Agents
Ameri, Tyson LORD

Abstract
[EN] Figure 1 HOVERBOARD



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.

2. AU2022200270 - ALADDINS ELECTRONIC HOVERBOARD



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

PermaLink Machine translation ▾

Note: Text based on automatic Optical Character Recognition processes. Please use the PDF version for legal matters

[EN]

ALADDINS ELECTRONIC HOVERBOARD

DESCRIPTION OF THE INVENTION

[001] Aladdin's Hoverboards are hovering drivable air powered and electronic hoverboards capable of hovering travel with no resistance from the floor below, the hoverboard is air driven and operated via a wireless controller, air enables a hoverboard to lift off the floor below and is used to thrust forwards dash creating an experience like never before.

[002] The hoverboard has two separate systems designed to driving and lifting the hoverboard with **compressed air**, allowing the hoverboard to lift and move.

[003] The hoverboard is of round shape consisting of multiple elements that enable you to float and travel.

[004] A functional handlebar has been designed for use with the hoverboard, enabling quick and easy storage & transportation as well as support and stability for the rider.

[005] The skirt and base of the hoverboard are designed with protective features and a special rubber that allow the hoverboards to hover and travel.

[006] A wireless controller has been tested and is used to control the operations of the Hoverboard.

[007] The Hoverboard can be used on most clean, debris-free surfaces. Allowing riders to experience turns, whips and motion never felt before on ground Hoverboards are operated by batteries that can be recharged and packed away for storage or traveling.

[008] Hoverboards have been long awaited for from society having seen references from films like 'Back to the Future' where Hoverboards were filmed to be floating which has shaken the world for predictions of a future with flying hoverboards and cars. Finally, Aladdin's Hoverboards has created a fully functional and operational, floating Hoverboard.

[009] By incorporating the use of compressed air, and technology the Hoverboard can float and hover, allowing remote control use to steer and thrust in chosen directions with the use of batteries to power and run the electronics the Hoverboard is able to move enough air below the rider to enable them to float and thrust forwards and backwards.

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.

PATENTSCOPE Field Combination ▾

	Field	Value	?
	Field Front Page	Value	?
Operator AND	Field Inventor Name	Value William C. Campbell	?
Operator AND	Field Applicant Name	Value MERCK	?
Operator AND	Field Publication Date	Value	?
Operator AND	Field English Title	Value	?
Operator AND	Field All Classifications	Is Empty: N/A	▾
Operator AND	Field Licensing availability	<input type="checkbox"/>	

⊕ Add another search field ⊖ Reset search fields

IN (William C. Campbell) AND PA (MERCK)

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

Sort: Relevance Per page: 10 View: All 1/4

- 1. 1984026602** ANTIPARASITIC COMPOSITION CONTAINING AVERMECTIN AND CLORSULON AU - 08.09.1988
 Int.Class [A61K 31/63](#) Appl.No 26602/84 Applicant [Merck & Co., Inc.](#) Inventor [Campbell, William C.](#)
- 2. 0125004** SYNERGISTIC ANTIPARASITIC COMPOSITIONS EP - 14.11.1984
 Int.Class [A61K 31/63](#) Appl.No 84302242 Applicant [MERCK & CO. INC.](#) Inventor [CAMPBELL, WILLIAM C.](#)
 A composition comprising clorsulon and an avermectin compound having the formula: where n is 0 or 1; R1 is hydrogen or alpha -L-oleandrosyl- alpha -L-oleandrosyloxy or its 4 sec -phosphate derivative; and the broken line indicates a single or a double bond; is novel and has a synergistic effect against animal parasites, compared with the known antiparasitic effect of the avermectins and the known fasciolocidal effect of clorsulon. The synergistic mixture can be made into compositions suitable for administration to animals.
- 3. 2221621** SYNERGISTIC ANTIPARASITIC COMBINATIONS OF AVERMECTIN AND PYRANTEL GB - 20.09.1989
 Int.Class [A61K 31/505](#) Appl.No 8917713 Applicant [MERCK & CO INC](#) Inventor [CAMPBELL WILLIAM C](#)
 Synergistic combinations of avermectins and pyrantel pamoate, suitably in a ratio of 1:1-5000 are effective against human and animal parasites. Ivermectin in the preferred avermectin.
- 4. 20180009889** MODULADORES ALOSTÉRICOS DE RECEPTORES DE ACETILCOLINA NICOTÍNICOS CO - 22.10.2018
 Int.Class [C07D 231/12](#) Appl.No 20180009889 Applicant [MERCK SHARP & DOHME](#) Inventor [CROWLEY M BRENDAN](#)
- 5. 3433234** ALLOSTERIC MODULATORS OF NICOTINIC ACETYLCHOLINE RECEPTORS EP - 30.01.2019
 Int.Class [C07D 231/12](#) Appl.No 17714623 Applicant [MERCK SHARP & DOHME](#) Inventor [CROWLEY BRENDAN M](#)
 The present disclosure relates to compounds of formula (I) that are useful as modulators of $\alpha 7$ nAChR, compositions comprising such compounds, and the use of such compounds for preventing, treating, or ameliorating disease, particularly disorders of the central nervous system such as cognitive impairments in Alzheimer's disease, Parkinson's disease, and schizophrenia, as well as for L-DOPA induced-dyskinesia and inflammation.

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

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

PATENTSCOPE Field Combination

	Field	Value	
	Front Page		?
Operator AND	Field	Value	?
	Inventor Name	Satoshi Omura	
Operator AND	Field	Value	?
	International Class	A61P33/10	
Operator AND	Field	Value	?
	Publication Date		
Operator AND	Field	Value	?
	English Title		
Operator AND	Field	Is Empty:	
	All Classifications	N/A	
Operator AND	Field	<input type="checkbox"/>	
	Licensing availability		

IN (Satoshi Omura) AND IC (A61P33/10)

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

Sort: Relevance Per page: 10 View: All

- 2001277712** AVERMECTIN DERIVATIVES AU - 25.10.2001

Int.Class [C07H 17/08](#) Appl.No 2001277712 Applicant The Kitasato Institute Inventor Nagai, Kenichiro

Compounds of the general formula [I] or salts thereof, exhibiting antiparasitic activities wherein -X₁-Y- is -CH=CH- or the like; the symbol ---- between R² and the 5-position carbon atom is a single bond or a double bond; R¹ is lower alkyl, formyl, carboxyl, lower alkoxy carbonyl (the lower alkyl moiety of which may be substituted with a heterocyclic group), or the like; R² is hydrogen, with the proviso that when R¹ is lower alkoxy carbonyl or the like, R² may be lower alkoxy carbonyl or the like; when the symbol ---- between R² and the 5-position carbon atom is a single bond, R² is hydroxyl or the like, while when it is a double bond, R² and the 5-position carbon atom unite to form a hydroxime group [-C(=NOH)] or the like; and R³ is hydroxyl or tri(lower alkyl)silyloxy.
- 2001278694** AVERMECTIN DERIVATIVES AU - 01.11.2001

Int.Class [C07H 17/08](#) Appl.No 2001278694 Applicant The Kitasato Institute Inventor Nagai, Kenichiro

Compounds represented by the general formula [I] or salts thereof wherein -X₁-Y- is -CH=CH-, -CH₂-CH₂-, or the like; the symbol ---- between R¹ and the 4'-position carbon atom represents a single bond or a double bond; and the symbol ---- between R² and the 5-position carbon atom represents a single bond or a double bond, for example, [1] when -X₁-Y- is -CH=CH- or -CH₂-CH₂- and the symbol ---- between R¹ and the 4'-position carbon atom represents a double bond, R¹ is =C(R^{1a})(R^{1b}) [wherein R^{1a} is lower alkyl or the like, and R^{1b} is hydrogen or the like, and R² is hydroxyl or the like, or R² together with the 5-position carbon atom represents carbonyl, or [2] when -X₁-Y- is -CH=CH- or -CH₂-CH₂- and the symbol ---- between R¹ and the 4'-position carbon atom represents a single bond, R¹ is -OCH(R^{1a})(R^{1b}) [wherein R^{1a} is lower alkyl or the like, and R^{1b} is hydrogen or the like] or the like, and R² is hydroxyl or the like.
- 2002216364** NOVEL SUBSTANCE FKI-1083 AND PROCESS FOR PRODUCING THE SAME AU - 14.03.2002

Int.Class [C07D 309/38](#) Appl.No 2002216364 Applicant THE KITASATO INSTITUTE Inventor Masuma, Rokuro

A substance FKI-1083 represented by the following formula, which is obtained by culturing a microorganism capable of producing the substance FKI-1083 in a medium, accumulating the substance FKI-1083 in the culture medium and then collecting the substance FKI-1083 from the culture medium. The thus obtained substance FKI-1083 has an activity of inhibiting the growth of microorganisms, nematodes and arthropods and is useful in helminthics or insecticides.
- 2418968** AVERMECTIN DERIVATIVES CA - 14.02.2002

Int.Class [C07H 17/08](#) Appl.No 2418968 Applicant THE KITASATO INSTITUTE Inventor OMURA, SATOSHI

Provided is a compound represented by the general formula [I] or a salt thereof: [see formula I] wherein, -X-Y- represents -CH=CH- and the like, - between R₂ and the carbon atom at 5-position represents a single bond or a double bond, R₁ represents a lower alkyl group, a formyl group, a carboxyl group, a lower alkoxy carbonyl group (wherein a lower alkyl moiety of said lower alkoxy carbonyl group may be substituted with a heterocyclic group) and the like, and R_{1a} represents a hydrogen atom, provided when R₁ represents a lower alkoxy carbonyl group and the like, R_{1a} may further represent a lower alkoxy carbonyl group and the like, when - between R₂ and the carbon atom at 5-position is a single bond, R₂ represents a hydroxyl group and the like, and when - between R₂ and the carbon atom at the 5-position is a double bond, R₂ combines with the carbon atom at 5-position to form a hydroxime group [-C(=NOH)] and the like, and R₃ represents a hydroxyl group or a tri(lower alkyl)silyloxy group.

C. Find the structure of ivermectin.

- Login to IP Portal.
- Click the dropdown button and select "Chemical compounds".
- In "Convert structure" section, enter "ivermectin" in "Compound name" search type.
- Click "Show in editor".

Feedback Search Browse Tools Settings

PATENTSCOPE Chemical compounds search

2 Convert structure Upload structure Structure editor Found compounds Found Markush Formulas

Search type: Type an accepted name, commercial name, CAS name, IUPAC name

Compound name: **3** ivermectin

Chemical compounds **1**

Search for scaffold

Include enumerated Markush structures

Offices: All

4 Reset Show in editor Exact Structure Search

Convert structure Upload structure Structure editor Found compounds Found Markush Formulas

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-XPNUAGNSA-N

Molecular Formula: C48H74O14

Molecular Weight: 875.1042 g/mol

Search for scaffold

Include enumerated Markush structures

Offices
All

Reset Markush Search Substructure Search Exact Structure Search Evaluate

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-XPNUAGNSA-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.

PATENTSCOPE Field Combination ▼

	Field	Front Page	Value	?
Operator AND	Field	Inventor Name	Value Tu youyou	?
Operator AND	Field	International Class	Value A61P33/06	?
Operator AND	Field	Publication Date	Value	?
Operator AND	Field	English Title	Value	?
Operator AND	Field	All Classifications	Is Empty: N/A	▼
Operator AND	Field	Licensing availability	<input type="checkbox"/>	

1. CN113350334 - ANTIMALARIAL DRUG CONTAINING DIHYDROARTEMISININ ◀ ▶

National Biblio. Data Description Claims Drawings Compounds Documents

PermaLink Machine translation ▼

Office
China

Application Number
202110841441.4

Application Date
28.07.2021

Publication Number
113350334

Publication Date
07.09.2021

Publication Kind
A

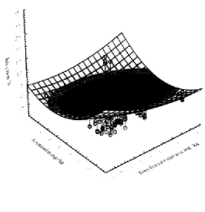
IPC
A61K 31/366 A61K 31/357 A61K 31/4745
A61P 33/06

OPC
A61K 31/366 A61K 31/357 A61K 31/4745
A61P 33/06 Y02A 50/30

Applicants
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中國中醫科學院中藥研究所

Inventors
TU YOUYOU
屠呦呦
LI YUJIE
李玉洁

Title
[EN] Antimalarial drug containing dihydroartemisinin
[ZH] 一种含有双氢青蒿素的抗疟药物



Abstract
[EN] The invention relates to a pharmaceutical composition for treating malaria. The pharmaceutical composition is prepared from the following raw material medicines in a weight ratio of artemisinin or a derivative thereof to pyronandine or a salt thereof being [0.5-4]: [1-3].
[ZH] 本发明涉及一种治疗疟疾的药物组合物。该药物组合物由以下原料药按照重量配比制成：青蒿素或其衍生物：咯萘啶或其盐 = 0.5-4: 1-3。

F. Find the chemical structure of artemisinin

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

PATENTSCOPE Chemical compounds search ▼

Convert structure Upload structure **Structure editor** Found compounds Found Markush Formulas

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
Molecular Formula: C15H22O5
Molecular Weight: 282.3358 g/mol

Search for scaffold
 Include enumerated Markush structures

Offices
All

Reset Markush Search Substructure Search Exact Structure Search Evaluate

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 Filing Language.

PATENTSCOPE Field Combination ∨

	Field	Front Page	Value	?
Operator AND	Field	English All	Value outboard	?
Operator AND	Field	Filing Language	Value sl	?
Operator AND	Field	Publication Date	Value	?
Operator AND	Field	English Title	Value	?
Operator AND	Field	All Classifications	Is Empty: N/A	∨
Operator AND	Field	Licensing availability	<input type="checkbox"/>	

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

🔍

📄 3 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. [WO/2022/045986](#) INTEGRATED ELECTRIC **OUTBOARD** MOTOR WO - 03.03.2022

Int.Class [B63H 20/32](#) ? Appl.No PCT/SI2021/050016 Applicant REMIGO, PROIZVODNA JAVNA AGENCIJA REPUBLIKE SLOVENIJE, D.O.O. Inventor VRTOVEC, Marko

The subject of the invention is an integrated electric **outboard** motor for propulsion of vessels, in which all components of the **outboard** motor are installed in a single housing, which also serves as a heat exchanger, a motor support structure, a mechanical protection of components contained in the housing, and a rudder of the vessel, on which the motor of the invention is mounted. The **outboard** motor according to the invention solves the problem of corrosion of connecting cables and contacts, the problem of controlling the vessel with inoperative or low power motor, the problem of protection of battery and other components from environmental influences, the problem of cumbersome for transport and carrying, the problem of stiffness and durability of the **outboard** motor, and the problem of efficient heat dissipation from electronic components. The integral housing is made of metal with good thermal conductivity and is of a rounded-flat shape as a rudder; it has only two openings, is waterproof and offers mechanical protection to the contained components, especially the battery. The cover of the upper opening of the housing contains all supervision and control elements and a charging terminal.

2. [WO/2018/151684](#) DESIGN AND INTEGRATION OF THE LIFTING STERN PLATFORM FOR BOATS WITH **OUTBOARD** ENGINES WO - 23.08.2018

Int.Class [B63B 27/38](#) ? Appl.No PCT/SI2017/050004 Applicant J&J DESIGN D.O.O. Inventor JAKOPIN, Jernej

The subject of the invention is the design of the lifting stern platform [8] on boats with **outboard** engines [1], where the engines [1] are positioned to the middle of the boat at the stern [2] and there are two hull extensions [5], one on each side. These extensions carry the lifting mechanism [7], which holds the stern platform [8]. This design keeps the swimmers at the stern far away from the propellers thus increasing the safety of the boaters. The lifting and lowering of the platform enables easy access to the boat from the water and to or from the pontoon or shore. This design represents a new way of boat stern design in **outboard**-engines powered boats. The boat can be either a monohull or a multihull.

3. [WO/2004/070236](#) ATTACHING UNIT OF A FLEXIBLE TRANSMISSION MEANS WO - 19.08.2004

Int.Class [F18C 1/26](#) ? Appl.No PCT/SI2004/000005 Applicant VODANOVIC, Ivica Inventor VODANOVIC, Ivica

The purpose of the invention is to conceive an attaching unit of a transmission means, where any requirements related to orientation would be omitted on the one hand, and on the other hand, a quick and simple single-hand mounting thereof would be enabled into appropriate recess [71] on the connecting plate [7], by which also any undesired removing thereof from the said engagement would have to be disabled. According to the invention, at least essentially tubular attaching ring [3], which is movable along the outward surface of the housing [2] in the axial direction thereof, namely along the rearward portion [23] of the housing [2], comprises a plurality of teeth [35], which are equidistantly arranged on the side faced towards the plate [7] and the size and arrangement of which are adapted to size and arrangement of openings [27], which are available on the central portion [21] of the housing [2], and also to size of the circular groove [27], which is available on the connecting plate [7].

1. WO2022045986 - INTEGRATED ELECTRIC OUTBOARD MOTOR



PCT Biblio. Data Description Claims Drawings ISR/WOSA/A17[2][a] National Phase Patent Family Notices Documents

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Publication Number
WO/2022/045986

Publication Date
03.03.2022

International Application No.
PCT/SI/2021/050016

International Filing Date
26.08.2021

IPC
B63H 20/22 2006.1 B63H 21/17 2006.1
B63H 23/24 2006.1 B63H 25/38 2006.1

CPC
B63H 20/007

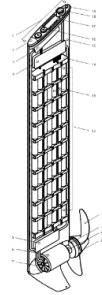
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Resljeva cesta 16 1000 Ljubljana, SI

Priority Data
P-202000151 28.08.2020 SI

Titre
[EN] INTEGRATED ELECTRIC **OUTBOARD** MOTOR
[FR] MOTEUR ÉLECTRIQUE HORS-BORD INTÉGRÉ



Abstract

[EN]
The subject of the invention is an integrated electric **outboard** motor for propulsion of vessels, in which all components of the **outboard** motor are installed in a single housing, which also serves as a heat exchanger, a motor support structure, a mechanical protection of components contained in the housing, and a rudder of the vessel, on which the motor of the invention is mounted. The **outboard** motor according to the invention solves the problem of corrosion of connecting cables and contacts, the problem of controlling the vessel with inoperative or low power motor, the problem of protection of battery and other components from environmental influences, the problem of cumbersome for transport and carrying, the problem of stiffness and durability of the **outboard** motor, and the problem of efficient heat dissipation from electronic components. The integral housing is made of metal with good thermal conductivity and is of a rounded-flat shape as a rudder, it has only two openings, is waterproof and offers mechanical protection to the contained components, especially the battery. The cover of the upper opening of the housing contains all supervision and control elements and a charging terminal.

[FR]
L'invention a pour objet un moteur électrique hors-bord intégré pour la propulsion de navires, dans lequel tous les composants du moteur hors-bord sont installés dans un seul boîtier, qui sert également d'échangeur de chaleur, de structure support de moteur, de protection mécanique des composants contenus dans le boîtier, et de gouvernail du navire sur lequel est monté le

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

1. WO2022045986 - INTEGRATED ELECTRIC OUTBOARD MOTOR



PCT Biblio. Data Description Claims Drawings ISR/WOSA/A17[2][a] National Phase Patent Family Notices **Documents**

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International Application Status			
Date	Title	View	Download
09.11.2023	International Application Status Report		
Published International Application			
Date	Title	View	Download
03.03.2022	Initial Publication with ISR [A1.09/2022]	18 p.	18 p. XML + TIFFs
Search and Examination-Related Documents			
Date	Title	View	Download
09.03.2023	[IB/373] International Preliminary Report on Patentability Chapter I	10 p.	10 p. XML + TIFFs
03.03.2022	[ISA/210] International Search Report	4 p.	4 p. XML + TIFFs FullText
03.03.2022	[ISA/237] Written Opinion of the International Searching Authority	9 p.	9 p. XML + TIFFs FullText
03.03.2022	Search Strategy	1 p.	1 p. XML + TIFFs

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

INTEGRIRAN ELEKTRIČNI IZVENKRMNI MOTOR

Predmet izuma je integriran električni izvenkrmni motor za pogon plovil, pri katerem so vse komponente izvenkrmnega motorja vgrajene v enovito ohišje, ki služi tudi kot izmenjevalnik toplote, nosilna konstrukcija motorja, mehanska zaščita komponent, ki jih ohišje vsebuje in krmilo plovila, na katerega je izum nameščen.

Tehnični problem, ki ga rešuje izum, je takšna konstrukcija električnega izvenkrmnega motorja, ki v enem ohišju vključuje vse za delovanje potrebne komponente in ki med delovanjem nima priključenega nobenega električnega vodnika; bodisi za napajanje ali kontrolno. Zaradi tega je izvenkrmni motor trpežen, kompakten, učinkovit, enostaven za prenašanje in uporabo, in ima vse komponente dobro zaščitene pred zunanji vplivi. Dizajn minimizira število komponent, izpostavljenih koroziji, še posebej električnih konektorjev, saj je med delovanjem izuma edini konektor neaktiven in zaščiten.

Znane rešitve na področju električnih izvenkrmnih motorjev:
 Starejše rešitve so znane pod patenti US2429774A, US3791331A, JP2014080077A, US3791331A, JP4193682B2, WO EP US CN JP CN104583071A, JP2014080077A, JP4337522B2, JP547118B2, JP4193683B2, JP2011213217A.

Znana je tudi rešitev sestave pogonskega sklopa električnega izvenkrmnega motorja po patentu EP1826888.

Tu gre za nosilec iz termalno prevodnega materiala, skozi katerega poteka gred elektromotorja. Na vsaki strani nosilca so nanj pritrjene komponente pogona: elektromotor, krmilnik, reduktor ipd. Z obeh strani nosilec zapirata sprednji in zadnji pokrov. Povezava do napajanja (akumulatorja) je izvedena prek cevi, v kateri poteka kabel, ki je z zgornje strani vstavljena v nosilec.

Naš patentni zahtevek se od od patenta EP1826888 bistveno razlikuje glede

- konstrukcije: samonosno ohišje, brez nosilca pri našem zahtevku

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

PATENTSCOPE Advanced Search ▾

Expecting AND/OR -and got:"Scatt*"

 EN_CL:Interferom* Scatt* Microscop*

Query Assistant Query Examples

Expand with related terms

Offices All	▾
Languages English	▾
<input checked="" type="checkbox"/> Stemming	
<input type="checkbox"/> Single Family Member	
<input type="checkbox"/> Include NPL	

EN_CL:Interferom* Scatt* Microscop*		🔍
3,262 results Offices all Languages en Stemming true Single Family Member false Include NPL false		<input type="button" value="Download"/> <input type="button" value="Machine translation"/>
Sort: Relevance ▾ Per page: 10 ▾ View: All ▾		1 / 327 ▾
<p>1. 20210381968 INTERFEROMETRIC SCATTERING MICROSCOPY US - 09.12.2021</p> <p>Int.Class G01N 21/47 Appl.No 17340696 Applicant KOREA UNIVERSITY RESEARCH AND BUSINESS FOUNDATION Inventor Seok-Cheol HONG</p> <p>Disclosed is an interferometric scattering microscope. The interferometric scattering microscope includes a remote refocusing system adapted to reproduce light collected by a high numerical aperture objective lens using another objective lens and thus can acquire an image of an object in a sample without vertical movement of the objective lens or the sample.</p>		
<p>2. 2598378 METHODS AND APPARATUS FOR OPTIMISED INTERFEROMETRIC SCATTERING MICROSCOPY GB - 28.04.2021</p> <p>Int.Class G01B 9/02 Appl.No 201914689 Applicant REFEYN LTD Inventor MATTHIAS KARL FRANZ LANGHORST</p> <p>The application discloses a method and apparatus for imaging a sample by interferometric scattering microscopy, the method comprising illuminating a sample with at least one coherent light source, the sample being held at a sample location comprising an interface having a refractive index change, detecting a backpropagating signal from the sample comprising light reflected at the interface and light scattered by the sample, splitting the backpropagating signal into first and second signals, passing at least one of the backpropagating, the first, and the second signals through a spatial filter, the spatial filter being configured to effect a reduction in intensity on incident radiation, the reduction in intensity being greater within a predetermined numerical aperture, directing the first and second signals onto first and second detectors to generate, respectively, first and second images and comparing, by a processor, the first and second images to determine one or more characteristics of the sample.</p>		
<p>3. 20220365329 METHODS AND APPARATUS FOR OPTIMISED INTERFEROMETRIC SCATTERING MICROSCOPY US - 17.11.2022</p> <p>Int.Class G02B 21/14 Appl.No 17767274 Applicant REFEYN LTD Inventor Matthias Karl Franz LANGHORST</p> <p>The application discloses a method and apparatus for imaging a sample by interferometric scattering microscopy, the method comprising illuminating a sample with at least one coherent light source, the sample being held at a sample location comprising an interface having a refractive index change, illuminating the sample with illuminating radiation to generate a backpropagating signal from the sample comprising light reflected at the interface and light scattered by the sample, splitting the backpropagating signal into first and second signals, modifying the second signal using a modifying element such that the second signal differs from the first signal, directing the first and second signals onto first and second detectors to generate, respectively, first and second images and comparing, by a processor, the first and second images to determine one or more characteristics of the sample.</p>		
<p>4. WO/2021/069921 METHODS AND APPARATUS FOR OPTIMISED INTERFEROMETRIC SCATTERING MICROSCOPY WO - 15.04.2021</p> <p>Int.Class G02B 21/14 Appl.No PCT/GB2020/052522 Applicant REFEYN LTD Inventor LANGHORST, Matthias Karl Franz</p> <p>The application discloses a method and apparatus for imaging a sample by interferometric scattering microscopy, the method comprising illuminating a sample with at least one coherent light source, the sample being held at a sample location comprising an interface having a refractive index change, illuminating the sample with illuminating radiation to generate a backpropagating signal from the sample comprising light reflected at the interface and light scattered by the sample, splitting the backpropagating signal into first and second signals, modifying the second signal using a modifying element such that the second signal differs from the first signal, directing the first and second signals onto first and second detectors to generate, respectively, first and second images and comparing, by a processor, the first and second images to determine one or more characteristics of the sample.</p>		

PATENTSCOPE Advanced Search ∨

EN_CL:"ISCAT"

Query Assistant [Query Examples](#)

⊕ Expand with related terms

Offices	▼
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English	
<input checked="" type="checkbox"/> Stemming	
<input type="checkbox"/> Single Family Member	
<input type="checkbox"/> Include NPL	

EN_CL:"ISCAT"

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

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1. 10816784 INTERFEROMETRIC SCATTERING MICROSCOPY METHODS AND SYSTEMS US - 27.10.2020

Int.Class [G02B 21/00](#) Appl.No 18446089 Applicant Refeyn Limited Inventor Max Hantke

A method comprising the steps of: measuring a first series of interferometric scattering microscopy (iSCAT) signals and a second series of iSCAT signals of a sample on a sample holder, the sample comprising a particle dissolved in solution; deriving an illumination heterogeneity for the first series of iSCAT signals; deriving a reflectance profile for the first series of iSCAT signals based on the illumination heterogeneity and/or the second series of iSCAT signals; measuring a third series of iSCAT signals of the sample on the sample holder; and normalizing an interferometric contrast for the third series of iSCAT signals with the reflectance profile.

2. 0660599 PARTIALLY-TRANSPARENT-SHIELD-METHOD FOR SCATTERED RADIATION COMPENSATION IN X-RAY IMAGING EP - 28.06.1995

Int.Class [G03B 42/02](#) Appl.No 93203671 Applicant AGFA GEVAERT Inventor FIVEZ CHRISTIAAN

The disclosed methods for generating scatter-compensated radiation image are based on one irradiating shot of the object. By comparing the detected signal under a partially transparent body (ea. disk or strip), positioned between the x-ray source and the object being imaged, with the signal in the image near the border of the shadow of the partially transparent body, the radiation scatter signal in the location of the body is calculated. In case of a polychromatic source, calibration with two known materials allows accurate calculation of the radiation scatter. The partially transparent bodies are positioned at several locations in between object and source and, by means of interpolation technique, the radiation scatter in every location of interest can be calculated. The radiation scatter image is subtracted from the original image of the object. The primary signal (= without radiation scatter) in the location of the bodies has undergone an extra drop because of the body but the information about the object under the body is not lost. If necessary, in a next step the image can be restored by compensating the effect of the bodies on the primary signal.

3. 5602895 PARTIALLY-TRANSPARENT-SHIELD-METHOD FOR SCATTERED RADIATION COMPENSATION IN X-RAY IMAGING US - 11.02.1997

Int.Class [H05G 1/84](#) Appl.No 08346763 Applicant AGFA-Gevaert Inventor Fizez Christiaan

The disclosed methods for generating scatter-compensated radiation image are based on one irradiating shot of the object. By comparing the detected signal under a partially transparent body (ea. disk or strip), positioned between the x-ray source and the object being imaged, with the signal in the image near the border of the shadow of the partially transparent body, the radiation scatter signal in the location of the body is calculated. In case of a polychromatic source, calibration with two known materials allows accurate calculation of the radiation scatter. The partially transparent bodies are positioned at several locations in between object and source and, by means of interpolation technique, the radiation scatter in every location of interest can be calculated. The radiation scatter image is subtracted from the original image of the object. The primary signal (=without radiation scatter) in the location of the bodies has undergone an extra drop because of the body but the information about the object under the body is not lost. If necessary, in a next step the image can be restored by compensating the effect of the bodies on the primary signal.

4. WO/2022/169926 PHOTONIC RESONATOR INTERFEROMETRIC SCATTERING MICROSCOPY WO - 11.08.2022

Int.Class [G02B 1/02](#) Appl.No PCT/US2022/015023 Applicant THE BOARD OF TRUSTEES OF THE UNIVERSITY OF ILLINOIS Inventor CUNNINGHAM, Brian, T.

Disclosed herein are methods and systems that use a photonic crystal (PC) for interference scattering microscopy. Incident light is directed onto a surface of the PC and couples into a photonic crystal guided resonance (PCGR) mode of the PC such that less than 1% of the incident light is transmitted through the PC as transmitted light. One or more particles adjacent to the surface of the PC scatter a portion of the light coupled into the PCGR mode as scattered light. An image comprising a pattern of constructive and destructive interference between the transmitted light and the scattered light is formed, and an image sensor may capture one or more image frames of the image. Imaging processing of the one or more image frames can be used to identify at least one scattering center corresponding to at least one particle of the one or more particles.

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.

PATENTSCOPE Advanced Search ∨

EN_CL:(Interferom* Scatt* Microscop*) AND EN_DE: (mass)

Query Assistant [Query Examples](#)

⊕ Expand with related terms

Offices	▼
All	
Languages	▼
English	
<input checked="" type="checkbox"/> Stemming	
<input type="checkbox"/> Single Family Member	
<input type="checkbox"/> Include NPL	

Reset Search

EN_CL:(Interferom* Scatt* Microscop*) AND EN_DE: (mass)
🔍

🏠 116 results Offices all Languages en Stemming true Single Family Member false Include NPL false
🔗 📄 📁 📧 📧

Sort: Relevance ▼ Per page: 10 ▼ View: All ▼
Download ▼ Machine translation ▼

1. 20190004299 INTERFEROMETRIC SCATTERING MICROSCOPY US - 03.01.2019

Int.Class [G02B 21/00](#) Appl.No 18107551 Applicant Oxford University Innovation Limited Inventor Philipp Kukura

An interferometric scattering microscope is adapted by performing spatial filtering of output light, which comprises both light scattered from a sample location and illuminating light reflected from the sample location, prior to detection of the output light. The spatial filtering passes the reflected illumination light but with a reduction in intensity that is greater within a predetermined numerical aperture than at larger numerical apertures. This enhances the imaging contrast for coherent illumination, particularly for objects that are weak scatterers.

2. 20230359009 INTERFEROMETRIC SCATTERING MICROSCOPY US - 09.11.2023

Int.Class [G02B 21/00](#) Appl.No 18144372 Applicant Oxford University Innovation Limited Inventor Philipp KUKURA

An interferometric scattering microscope is adapted by performing spatial filtering of output light, which comprises both light scattered from a sample location and illuminating light reflected from the sample location, prior to detection of the output light. The spatial filtering passes the reflected illumination light but with a reduction in intensity that is greater within a predetermined numerical aperture than at larger numerical apertures. This enhances the imaging contrast for coherent illumination, particularly for objects that are weak scatterers.

3. 20230109927 CHARACTERIZATION OF GENE THERAPY VECTORS US - 13.04.2023

Int.Class [C12N 15/86](#) Appl.No 17905156 Applicant Purify Limited Inventor Matthew Miell

The invention discloses a method of distinguishing empty and full capsids in a virus preparation or loaded and non-loaded non-viral gene therapy vectors. The method comprises the steps of: a) providing a preparation of viral particles or gene therapy vectors; b) subjecting the preparation to interferometric scattering mass spectrometry (ISCAMS), in an interferometric scattering microscope, to generate mass distribution data for the viral particles; c) determining the levels of empty capsids and capsids comprising a genome among the viral particles or the loaded and non-loaded vectors from the mass distribution data.

4. 20200386975 INTERFEROMETRIC SCATTERING MICROSCOPY US - 10.12.2020

Int.Class [G02B 21/00](#) Appl.No 18992350 Applicant Oxford University Innovation Limited Inventor Philipp KUKURA

An interferometric scattering microscope is adapted by performing spatial filtering of output light, which comprises both light scattered from a sample location and illuminating light reflected from the sample location, prior to detection of the output light. The spatial filtering passes the reflected illumination light but with a reduction in intensity that is greater within a predetermined numerical aperture than at larger numerical apertures. This enhances the imaging contrast for coherent illumination, particularly for objects that are weak scatterers.

5. WO/2021/191079 CHARACTERIZATION OF GENE THERAPY VECTORS WO - 30.09.2021

Int.Class [G01N 15/02](#) Appl.No PCT/EP2021/057103 Applicant PURIDIFY LTD Inventor MIELL, Matthew

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.

PATENTSCOPE Advanced Search

EN_CL:(ISCAT) AND EN_DE:(mass) AND PA:(Oxford)

Query Assistant [Query Examples](#)

Expand with related terms

Offices
All

Languages
English

Stemming

Single Family Member

Include NPL

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

1. US10816784 - INTERFEROMETRIC SCATTERING MICROSCOPY METHODS AND SYSTEMS

National Biblio. Data Description Claims Drawings Compounds Documents

PermaLink Machine translation

Office
United States of America

Application Number
16448089

Application Date
19.08.2019

Publication Number
10816784

Publication Date
27.10.2020

Grant Number
10816784

Grant Date
27.10.2020

Publication Kind
B1

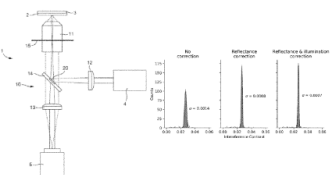
IPC
G02B 21/00 G02B 21/36 G01N 21/47
G01N 15/02

CPC
G01N 15/0211 G02B 21/0056 G01N 21/4795
G02B 21/361

Applicants
Refeyn Limited
Refeyn LTD
Baylor University Innovation Limited

Inventors
Max Hantke
Gavin Young

Title
[EN] Interferometric scattering microscopy methods and systems



Abstract
[EN]
A method comprising the steps of: measuring a first series of interferometric scattering microscopy (ISCAT) signals and a second series of ISCAT signals of a sample on a sample holder, the sample comprising a particle dissolved in solution; deriving an illumination heterogeneity for the first series of ISCAT signals; deriving a reflectance profile for the first series of ISCAT signals based on the illumination heterogeneity and/or the second series of ISCAT signals; measuring a third series of ISCAT signals of the sample on the sample holder; and normalizing an interferometric contrast for the third series of ISCAT signals with the reflectance profile.

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.

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Field Names	Search terms... delantar	Q
Query Examples		
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ALLNAMES:(delantar)	Q
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41 results Offices all Languages en Stemming true Single Family Member false Include NPL false

Sort: Pub Date Desc ▼ Per page: 10 ▼ View: All ▼

< 1 / 5 >

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1. 1/2006/000253 AN IMPROVED CAST ARTICLE AND PROCESS OF MAKING SAME PH - 10.04.2019 Int.Class C04B 18/24 (2) Appl.No 1/2006/000253 Applicant DELANTAR, CATHERINE V Inventor DELANTAR, PEDRO H. This invention relates to cast articles and process of casting particles using enhanced bonding agents (EBA). Known bonding agent is formed by pre-mixing a pre-determined amount of calcium sulfate dihydrate prior to being used to bond castable particles. The cast article bonded by the EBA has an increased breaking strength and increased spreadability. The cost of producing cast article is substantially reduced as the amount of bonding agent is decreased.
2. 2/2018/000760 COMPOSITION OF SEA CUCUMBER (HOLOTHURIA NOBILIS) CHIPS PH - 03.10.2018 Int.Class A23L 17/00 (2) Appl.No 2/2018/000760 Applicant Palompon Institute of Technology Inventor EGLOSO, Neil Licardo Disclosed is a sea cucumber chips consisting of, 3 pcnt of vinegar; 3 pcnt lemon juice; 3 pcnt of black pepper; 45 pcnt of cake flour; 10 pcnt of dairy cream butter; 6 pcnt of water and 30 pcnt of powdered sea cucumber.
3. 1/2013/000078 MOLDED COARSE PARTICLE PRODUCT ESPECIALLY PALLET PH - 06.02.2017 Int.Class B65D 19/24 (2) Appl.No 1/2013/000078 Applicant DELANTAR, Catherine V. Inventor DELANTAR, Pedro H. The invention relates to a molded coarse particle product especially pallet that comprises assemblable attachable platform means, preferably T-shaped or double-T-shaped platform boards, and supporting base means, preferably base boards. At least one of the assemblable components or elements of the product is made of molded coarse particles. Being preferably hallow, the product, that is, the pallet, has the platform boards thereof being snugly and detachably fitted or mounted on the supporting base boards.
4. 1/2013/000126 MOLDED PAPER-BASED PRODUCT PH - 10.12.2014 Int.Class B31C 11/00 (2) Appl.No 1/2013/000126 Applicant CATHERINE V. DELANTAR Inventor DELANTAR, PEDRO The invention relates to a molded paper-based product for use as housewares, furniture, insulation, architectural, ornamental or utility articles, or components thereof comprising of or being made from dampened squeezably torn or ripped up pieces of waste paper material, preferably newspaper, and a binder thoroughly mixed and blended into a moldable dough-like mixture being controllably cold pressed into a mold and dried up therein, forming a preferably environment-friendly shaped article or surface texture that is reinforceable by an optional reinforcing means being integrally bonded at the interior side thereof forming a reinforcing backing layer.

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.

The screenshot shows the PATENTSCOPE homepage with a browser address bar at the top displaying "wipo.int/patentscope/en/index.html". Below the address bar, there is a navigation menu with "of technical knowledge in the Spanish language." on the right. The main content area is divided into two sections: "Related patent and technology information programs and services" and "Related links".

Related patent and technology information programs and services

- ARDI**: The Access to Research for Development and Innovation (ARDI) program provides free access to major scientific and technical journals for local, not-for-profit institutions in least-developed countries; and low-cost access to industrial property offices in developing countries.
- ASPI**: Through the Access to Specialized Patent Information (ASPI) program, patent offices and academic and research institutions in developing countries can receive free or low-cost access to sophisticated tools and services for retrieving and analyzing patent data.
- ICE**: WIPO's International Cooperation on the Examination of Patents (ICE) service provides expert assistance, training, and access to collections of patent documents to developing countries - all free of charge.
- TISC**: Our Technology and Innovation Support Center (TISC) program gives innovators in developing countries access to high quality technology information and related services to help them create, protect, and manage intellectual property rights.
- WIPO DAS**: The WIPO Digital Access Service (DAS) system enables participating IP offices to exchange priority and other similar documents securely among themselves.
- WIPO CASE**: The WIPO Centralized Access to Search and Examination (CASE) system enables patent offices to securely share search and examination documentation related to patent applications, facilitating a more effective and efficient international examination process.

Related links

- Patents**
 - Overview
 - PCT - The International Patent System
 - Artificial intelligence and IP
- Reference**
 - Patent Register Portal
 - International Patent Classification** (highlighted with a red box)
 - INID codes
 - Country codes
 - Statistics

International Patent Classification (IPC)

The International Patent Classification (IPC), established by the [Strasbourg Agreement 1971](#), provides for a hierarchical system of language independent symbols for the classification of [patents](#) and utility models according to the different areas of technology to which they pertain. A new version of the IPC enters into force each year on January 1.

[Access the IPC Publication](#)

Find out more

- [Preface](#)
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Click the "Search" tab and enter the key words "additive manufacturing".

Scheme RCL Compilation Catchwords **Search**

additive manufacturing

Search Reset

Ordered by relevance:

- B33Y 10/00
- B33Y 30/00
- B29C 64/10
- B33Y 50/02
- B33Y 70/00
- B29C 64/393
- B29C 64/307
- B22F 10/85
- B33Y 30/00
- B33Y 50/00

1/41

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Terms search:

Stemming

A01N,A01 Limit to

A01N,A01 Exclude

Path

Scheme titles

Scheme references

Catchwords

Definitions

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

Scheme RCL Compilation Catchwords Search

B PERFORMING OPERATIONS; TRANSPORTING

B33 ADDITIVE MANUFACTURING TECHNOLOGY [2015.01]

B33Y ADDITIVE MANUFACTURING, i.e. MANUFACTURING OF THREE-DIMENSIONAL [3D] OBJECTS BY ADDITIVE DEPOSITION, ADDITIVE AGGLOMERATION OR ADDITIVE LAYERING, e.g. BY 3D PRINTING, STEREOLITHOGRAPHY OR SELECTIVE LASER SINTERING [2015.01]

Notes) [2015.01]

- This subclass covers additive manufacturing irrespective of the process or material used.
- This subclass is intended to enable a comprehensive search of subject matter related to additive manufacturing by combination of classification symbols of this subclass with classification symbols from other subclasses. Therefore, this subclass covers aspects of additive manufacturing (e.g. 3D printing) that might also be entirely or partially covered elsewhere in the IPC.
- This subclass is for obligatory supplementary classification of subject matter already classified as such in other classification places, when the subject matter contains an aspect of additive manufacturing.
- The classification symbols of this subclass are not listed first when assigned to patent documents.

B33Y 10/00 Processes of additive manufacturing [2015.01]

B33Y 30/00 Apparatus for additive manufacturing; Details thereof or accessories therefor [2015.01]

B33Y 40/00 Auxiliary operations or equipment, e.g. for material handling [2020.01]

- B33Y 40/10 • Pre-treatment [2020.01]
- B33Y 40/20 • Post-treatment, e.g. curing, coating or polishing [2020.01]

B33Y 50/00 Data acquisition or data processing for additive manufacturing [2015.01]

- B33Y 50/02 • for controlling or regulating additive manufacturing processes [2015.01]

B33Y 70/00 Materials specially adapted for additive manufacturing [2020.01]

- B33Y 70/10 • Composites of different types of material, e.g. mixtures of ceramics and polymers or mixtures of metals and biomaterials [2020.01]

B33Y 80/00 Products made by additive manufacturing [2015.01]

B33Y 99/00 Subject matter not provided for in other groups of this subclass [2015.01]

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

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

Home > International Patent Classification > IPC Publication

Scheme RCL Compilation Catchwords Search

implant prostheses

Search Reset

Ordered by relevance:

- A61F 2/26
- C23C 14/48
- A61F 6/22
- C03C 25/6286
- A61M 60/876
- A61F 2/10
- A61F 2/01
- A61F 2/02
- A61F 2/50
- A61M 60/165

◀ ◀ ▶ ▶ 1/3

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Scheme titles

Scheme references

Catchwords

Definitions

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

	A61	MEDICAL OR VETERINARY SCIENCE; HYGIENE
0	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 prostheses A61C) [2006.01] Filters: Devices providing patency to tubular structures; Prostheses; Accessories
A	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]
	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 <i>per se</i> 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, prostheses 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.

PATENTSCOPE Advanced Search v

EN_ALLTXT:"4D print*" AND ("program* material" OR "shape memory" OR "smart materials") AND IC:B33Y

Query Assistant Query Examples

Expand with related terms

Offices All	v
Languages English	v
<input checked="" type="checkbox"/> Stemming	
<input type="checkbox"/> Single Family Member	
<input type="checkbox"/> Include NPL	

Feedback Search Browse Tools Settings

EN_ALLTXT:"4D print*" AND ("program" material" OR "shape memory" OR "smart materials") AND IC:B33Y

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

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- 20210114293 4D PRINTING DEVICE** US - 22.04.2021

Int.Class [B28C 84/208](#) Appl.No 18688612 Applicant FOUNDATION OF SOONGSIL UNIVERSITY INDUSTRY COOPERATION Inventor Joo Yong KIM

A 4D printing device is disclosed. The disclosed 4D printing device comprises: a first nozzle for outputting a first material on the basis of a 3D printing type A; and a second nozzle for outputting a second material on the basis of a 3D printing type B.
- WO/2022/055558 RESORBABLE COMPLEX SHAPE MEMORY POLY(PROPYLENE FUMARATE) STAR SCAFFOLDS FOR 4D PRINTING APPLICATIONS** WO - 17.03.2022

Int.Class [B32Y 10/00](#) Appl.No PCT/US2021/029353 Applicant THE UNIVERSITY OF AKRON Inventor BECKER, Matthew, L.

In various embodiments, the present invention is directed resorbable star PPF 4D printed structures with compressive shape memory properties. In some embodiments, these printed structures may be compressed at room temperature from a first thickness to a second thickness for insertion into the body, where they reach body temperature and expand into a desired (third) thickness. The compression and expansion of these resorbable star PPF 4D printed structures allows for easier insertion of things such as, bone scaffold and stents (e.g., vascular stents, kidney stents, urethral stents, colitis stents, esophageal stents, colon stents, intestinal stents, or venous stents) into the body, as they can be compressed prior to insertion.
- WO/2021/220045 LOGGING TOOL WITH 4D PRINTED SENSING SYSTEM** WO - 04.11.2021

Int.Class [B33Y 80/00](#) Appl.No PCT/IB2020/056481 Applicant SAUDI ARABIAN OIL COMPANY Inventor ZHAN, Guodong

A caliper logging tool includes 4D printed shape-memory caliper arms 44. During operation the tool is moved along the borehole wall so that arms 44 alter in at least one spatial dimension, by e.g. deformation or change of shape, in response to one or more stimuli thereby generating a data signal.
- WO/2021/055825 4D PRINTING SMART CULTURE SUBSTRATE FOR CELL GROWTH** WO - 25.03.2021

Int.Class [C12N 5/00](#) Appl.No PCT/US2020/051598 Applicant THE GEORGE WASHINGTON UNIVERSITY Inventor MIAO, Shida

Disclosed herein is a 4D printed programmable culture substrate with the self-morphing ability to accommodate the change in morphology of stem cells during differentiation. The 4D printed culture substrate includes a shape memory polymer that is configured for transformation from a first topographical shape to a second topographical shape during a predetermined time period in response to a stimulus, such as temperature. The first topographical shape may include micro-wells and the second topographical shape may include microgrooves, which can accommodate the growth and differentiation of neural stem cells.
- 20220204927 4D PRINTING SMART CULTURE SUBSTRATE FOR CELL GROWTH** US - 30.06.2022

Int.Class [C12N 5/0297](#) Appl.No 17690968 Applicant THE GEORGE WASHINGTON UNIVERSITY Inventor SHIDA MIAO

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

EN_ALLTXT:"4D print*" AND ("program" material" OR "shape memory" OR "smart materials") AND IC:A61F

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

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- 20230301790 SMART PLATFORM BIOPRINTING BED WITH AT LEAST ONE CONTROLLABLE STIMULATOR** US - 28.09.2023

Int.Class [A61F 2/30](#) Appl.No 18190374 Applicant MOC BIO TECHNOLOGIES INC. Inventor Sayedali Mousavi

A smart adjustable platform for a bioprinter is described. The adjustable platform comprises: a housing having an upper surface with a support region for providing support for 4D printing of a biomaterial; and at least one stimulator that is mounted within the housing, the at least one stimulator being configured to provide one or more stimuli to the biomaterial during printing and/or after printing for effecting a change in characteristic of the biomaterial including structure and/or morphology, wherein the at least one stimulator comprises a mechanical stimulator and/or an electromagnetic stimulator.
- 20190053924 STENT AND STENT MANUFACTURING METHOD** US - 21.02.2019

Int.Class [A61F 2/90](#) Appl.No 15784190 Applicant GWANGJU INSTITUTE OF SCIENCE AND TECHNOLOGY Inventor Woorim CHOI

The present disclosure provides a stent comprising: a hollow tubular body portion; a hooking portion connected to one end of the body portion; and a hooked portion connected to the other end of the body portion, wherein the hooking portion is hooked on the hooked portion. According to the present disclosure, the stent may be manufactured by 4D printing method. Accordingly, the stent may be manufactured in an automated process at low cost, expeditiousness, simplicity, and no manufacturing site constraints.
- 108969165 4D-PRINTING SHAPE-MEMORY-POLYMER-COMPOSITE-MATERIAL TRACHEAL STENT AND PREPARING METHOD THEREOF** CN - 11.12.2018

Int.Class [G08F 30/17](#) Appl.No 201810604850.5 Applicant HARBIN INSTITUTE OF TECHNOLOGY Inventor LENG JINGSONG

The invention discloses a 4D-printing shape-memory-polymer-composite-material tracheal stent and a preparing method thereof, and belongs to the technical field of 4D printing. As for the problem that a traditional tracheal stent is difficult to implant, and the secondary structure problem caused by the overlarge hole diameter of the tracheal stent, and the problem that as the hole diameter of the tracheal stent is over small, swinging of airway cilia is blocked, a compound of a shape memory polymer and nanometer iron oxide serves as a material, a curve-edge rectangle serves as a basic unit, and a tracheal-stent three dimensional structure model is designed; the tracheal-stent three dimensional structure is printed and formed with the fused deposition or direct writing printing method, is subjected to electrostatic spinning medicine carrying covering, and then is subjected to in-vitro remote excitation so that the shape of the stent is recovered, and a formed tracheal stent is obtained. The 4D-printing shape-memory-polymer-composite-material tracheal stent and the preparing method thereof are suitable for production of the tracheal stent.

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.

PATENTSCOPE Field Combination ▼

	Field	Value	
	Field Front Page	Value	?
Operator AND	Field English All	Value 4D	?
Operator AND	Field Applicant Name	Value Stratays	?
Operator AND	Field Applicant Name	Value Massachusetts Institute of Technology	?
Operator AND	Field English Title	Value	?
Operator AND	Field All Classifications	Is Empty: N/A	▼
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Offices All	▼
Languages English	▼
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3 results Reset Search

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📄 3 results Offices all Languages en Stemming true Single Family Member false Include NPL false 🔗 📄 🗨️ 📄

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- 1. WO/2015/084422** OBJECT OF ADDITIVE MANUFACTURE WITH ENCODED PREDICTED SHAPE CHANGE WO - 11.08.2015

Int.Class [B29C 67/00](#) ? Appl.No PCT/US2014/018373 Applicant MASSACHUSETTS INSTITUTE OF TECHNOLOGY Inventor TIBBITS, Skylar, J. E.

The combination of 3D printing technology plus the additional dimension of transformation over time of the printed object is referred to herein as 4D printing technology. Particular arrangements of the additive manufacturing material(s) used in the 3D printing process can create a printed 3D object that transforms over time from a first, printed shape to a second, predetermined shape.
- 2. 20150158244** OBJECT OF ADDITIVE MANUFACTURE WITH ENCODED PREDICTED SHAPE CHANGE AND METHOD OF MANUFACTURING SAME US - 11.08.2015

Int.Class [B29C 67/00](#) ? Appl.No 14189819 Applicant Stratays Ltd. Inventor Skylar J.E. Tibbits

The combination of 3D printing technology plus the additional dimension of transformation over time of the printed object is referred to herein as 4D printing technology. Particular arrangements of the additive manufacturing material(s) used in the 3D printing process can create a printed 3D object that transforms over time from a first, printed shape to a second, predetermined shape.
- 3. 20200316847** METHODS FOR ADDITIVE MANUFACTURING OF AN OBJECT US - 08.10.2020

Int.Class [B29C 41/22](#) ? Appl.No 16905744 Applicant Massachusetts Institute of Technology Inventor Skylar J. E. Tibbits

The combination of 3D printing technology plus the additional dimension of transformation over time of the printed object is referred to herein as 4D printing technology. Particular arrangements of the additive manufacturing material(s) used in the 3D printing process can create a printed 3D object that transforms over time from a first, printed shape to a second, predetermined shape.

Open one of the patent documents and check the inventors.

1. WO2015084422 - OBJECT OF ADDITIVE MANUFACTURE WITH ENCODED PREDICTED SHAPE CHANGE

PCT Biblio. Data Description Claims Drawings National Phase Patent Family Notices Documents

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Publication Number
WO/2015/084422

Publication Date
11.08.2015

International Application No.
PCT/US2014/018373

International Filing Date
25.02.2014

IPC
B29C 67/00 2006.1

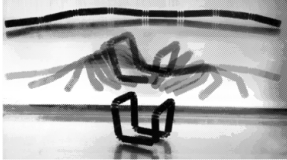
CPC
B29C 61/003 B29C 61/02 B29C 61/04
B29C 64/108 B29C 64/112 B29C 64/388
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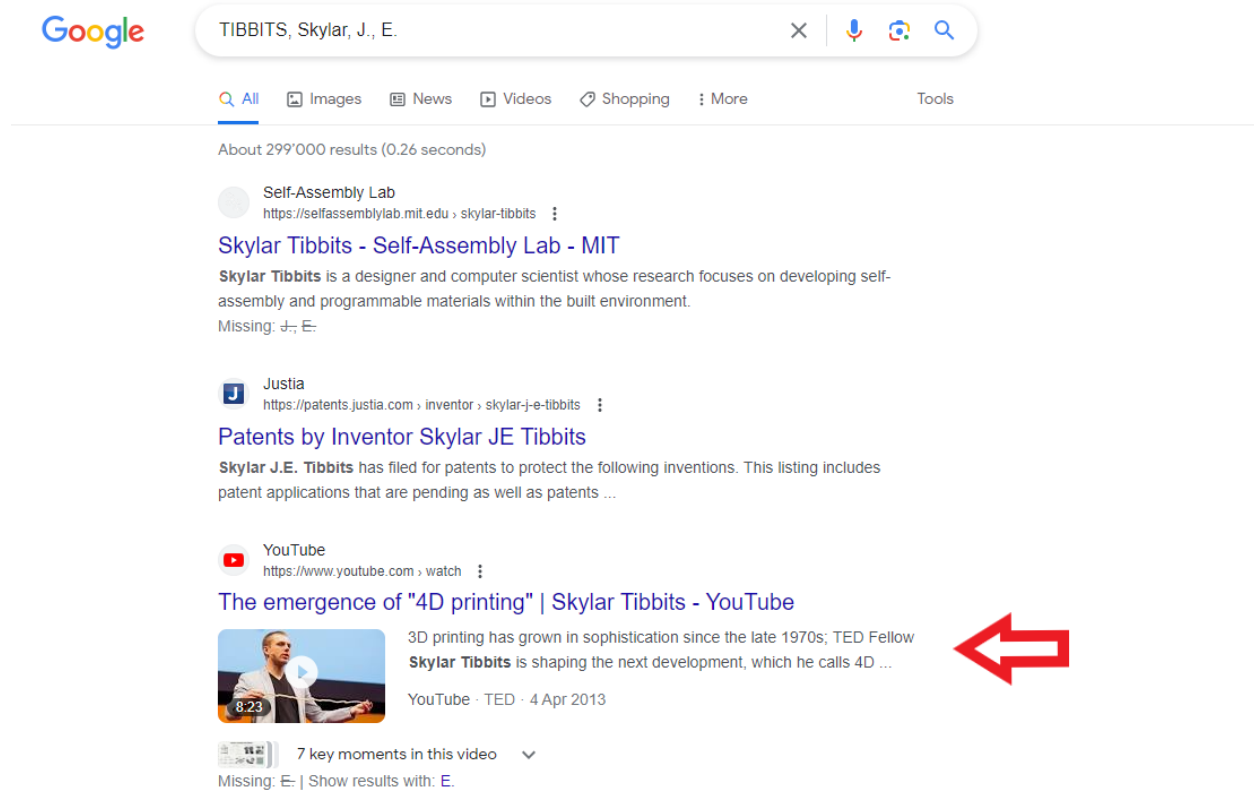
Title
[EN] OBJECT OF ADDITIVE MANUFACTURE WITH ENCODED PREDICTED SHAPE CHANGE
[FR] OBJET DE FABRICATION ADDITIVE À CHANGEMENT DE FORME PRÉVUE CODÉ



Abstract
[EN] The combination of 3D printing technology plus the additional dimension of transformation over time of the printed object is referred to herein as **4D** printing technology. Particular arrangements of the additive manufacturing material(s) used in the 3D printing process can create a printed 3D object that transforms over time from a first, printed shape to a second, predetermined shape.
[FR] Selon l'invention, l'association de la technologie d'impression 3D et de la dimension supplémentaire de transformation dans le temps de l'objet imprimé est appelée ici technologie d'impression **4D**. Des agencements particuliers du/des matériau(x) de fabrication additive utilisé(s) dans le processus d'impression 3D permettent de créer un objet imprimé 3D qui se transforme dans le temps d'une première forme imprimée en une deuxième forme imprimée prédéterminée.

Related patent documents
[US20160159244](#) [US20200218947](#)

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



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About 299'000 results (0.26 seconds)

Self-Assembly Lab
<https://selfassemblylab.mit.edu/skylar-tibbits>


Skylar Tibbits - Self-Assembly Lab - MIT
Skylar Tibbits is a designer and computer scientist whose research focuses on developing self-assembly and programmable materials within the built environment.
Missing: J, E-

Justia
<https://patents.justia.com/inventor/skylar-j-e-tibbits>

Patents by Inventor Skylar JE Tibbits
Skylar J.E. Tibbits has filed for patents to protect the following inventions. This listing includes patent applications that are pending as well as patents ...

YouTube
<https://www.youtube.com/watch>

The emergence of "4D printing" | Skylar Tibbits - YouTube



3D printing has grown in sophistication since the late 1970s; TED Fellow **Skylar Tibbits** is shaping the next development, which he calls 4D ...
YouTube · TED · 4 Apr 2013

7 key moments in this video
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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”.

The screenshot shows the IPC Publication search interface. The breadcrumb navigation is "Home > International Patent Classification > IPC Publication". The search tab is selected, and the search term "chemical process" is entered. The search results are ordered by relevance and include the following classification codes: Go6G 7/58, C22B 3/44, C14C 7/00, B01J 19/00, G16C 20/10, A01H 1/06, B01D 46/80, B01J 14/00, H05K 3/06, and B01J 8/00. The interface also features a sidebar with navigation options like "Terms", "Cross-references", "STATS", and "IPCCAT", and a "Terms search" section with checkboxes for "Stemming", "Path", "Scheme titles", "Scheme references", "Catchwords", and "Definitions".

Click on those classes to look up the definition to verify. The appropriate IPC classification can be B01J19/10, B01J19/285, 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.

FP:(sonochemistry)

58 results Offices all Languages en Stemming true Single Family Member false **Include NPL false**

Refine Options

Offices: All

Languages: English

Stemming

Single Family Member

Include NPL


Include Non-Patent literature in results

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

FP:(sonochemistry)

100 results Offices all Languages en Stemming true Single Family Member false **Include NPL true**

Sort: Relevance Per page: 10 View: All

1. [3173180 SONOCHEMISTRY](#)  NPL - 18.11.2005
 Int.Class [B01J 19/10](#) Publisher wikipedia Journal wikipedia
 In chemistry, the study of **sonochemistry** is concerned with understanding the effect of ultrasound in forming acoustic cavitation in liquids, resulting in the initiation or enhancement of the chemical activity in the solution. Therefore, the chemical effects of ultrasound do not come from a direct interaction of the ultrasonic sound wave with the molecules in the solution.

2. [2013180265 SONOCHEMISTRY REACTION APPARATUS](#) JP - 12.09.2013
 Int.Class [B01J 19/10](#) Appl.No 2012047477 Applicant MAKUTA HISANORI Inventor MAKUTA HISANORI
 PROBLEM TO BE SOLVED: To develop an apparatus capable of continuously and efficiently processing **sonochemistry** reaction.
 SOLUTION: An apparatus preferably performing **sonochemistry** reaction includes: a vibration body which is arranged in a liquid at least one part of which contains a reaction material and can vibrate at ± 10 kHz frequency and at an amplitude of ± 10 μ m, a gas supplying means for supplying gas to the vibration body, and a flow passage for supplying gas from the gas supplying means into the liquid by passing through the inside of the vibration body.
 COPYRIGHT: (C)2013, JPO&NPIIT

1. NPL314002321 - SONOCHEMISTRY

NPL Biblio. Data **Description**

PermaLink Machine translation

Note: Obtained from wikipedia. Please see original document [here](#)

[EN]
 Abstract

In chemistry, the study of sonochemistry is concerned with understanding the effect of ultrasound in forming acoustic cavitation in liquids, resulting in the initiation or enhancement of the chemical activity in the solution. Therefore, the chemical effects of ultrasound do not come from a direct interaction of the ultrasonic sound wave with the molecules in the solution.
 In **chemistry**, the study of **sonochemistry** is concerned with understanding the effect of ultrasound in forming acoustic **cavitation** in liquids, resulting in the initiation or enhancement of the chemical activity in the solution. Therefore, the chemical effects of ultrasound do not come from a direct interaction of the ultrasonic sound wave with the molecules in the solution.

Contents

- 1 [History](#)
- 2 [Physical principles](#)
- 3 [Sonochemical reactions](#)
- 4 [See also](#)
- 5 [References](#)
- 6 [External links](#)

History[[edit](#)]

The influence of sonic waves travelling through liquids was first reported by Robert Williams Wood (1888–1965) and Alfred Lee Loomis (1887–1975) in 1927. The experiment was about the frequency of the energy that it took for sonic waves to "penetrate" the barrier of water. He came to the conclusion that sound does travel faster in water, but because of the water's density compared to earth's atmosphere it was incredibly hard to get the sonic waves to couple their energy into the water. Due to the sudden density change, much of the energy is lost, similar to shining a flashlight towards a piece of glass; some of the light is transmitted into the glass, but much of it is lost to reflection outwards. Similarly with an air-water interface, almost all of the sound is reflected off the water, instead of being transmitted into it. After much research they decided that the best way to disperse sound into the water was to make loud noises into the water by creating bubbles that were made at the same time as the sound. One of the easier ways that they put sound into the water was they simply yelled. Another issue was the ratio of the amount of time it took for the lower frequency waves to penetrate the bubbles walls and access the water around the bubble, compared to the time from that point to the point on the other end of the body of water. But despite the revolutionary ideas of this article it was left mostly unnoticed. Sonochemistry experienced a renaissance in the 1980s with the advent of inexpensive and reliable generators of high-intensity ultrasound, most based around piezoelectric elements.

Physical principles[[edit](#)]

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).

See also [\[edit\]](#)

- [Ultrasound](#)
- [Sonication](#)
- [Ultrasonics](#)
- [ultrasonic homogenizer](#)
- [homogenizer](#)
- [Homogenization \(chemistry\)](#)
- [Sonoelectrochemistry](#)
- [Kenneth S. Suslick](#)

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)

PATENTSCOPE Field Combination ▼

	Field Front Page	▼	Value nano*	?
Operator AND	Field Front Page	▼	Value partic*	?
Operator AND	Field International Class	▼	Value B01J19/10 OR B01J19/285 OR B06B1/00 OR B06B3/00	?
Operator AND	Field Publication Date	▼	Value	?
Operator AND	Field English Title	▼	Value	?
Operator AND	Field All Classifications	▼	Is Empty: N/A	▼
Operator AND	Field Licensing availability	▼	<input type="checkbox"/>	

⊕ Add another search field
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PCT

Languages
English

Stemming

Single Family Member

Include NPL

34 results
Reset
Search

FP:(nano*) AND FP:(partic*) AND IC:(B01J19/10 OR B01J19/285 OR B06B1/00 OR B06B3/00)

34 results Offices WO Languages en Stemming true Single Family Member false Include NPL false

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- WO/2004/058644** METHOD FOR PRODUCING SURFACE-COATED **NANOSCALAR PARTICLES** AND SUSPENSIONS CONTAINING SAID **PARTICLES** WO - 15.07.2004
 Int.Class [B01J19/10](#) Appl.No PCT/EP2003/011888 Applicant SUSTECH GMBH & CO. KG Inventor CURA, Elisabeth
 The invention relates to a method for producing a suspension, which contains suspended **nanoscalar particles** in a continuous phase, said **particles** having a coating on at least part of their surface. The invention also relates to a method for producing **nanoscalar particles** of this type.
- WO/2009/020982** **NANO**-MICROFLUIDIC APPARATUS FOR CONTINUOUS REAL-TIME ANALYSIS OF TARGETS IN THIN LIQUID FILMS WO - 12.02.2009
 Int.Class [C12Q1/00](#) Appl.No PCT/US2008/072253 Applicant THE REGENTS OF THE UNIVERSITY OF CALIFORNIA Inventor HOLMAN, Hoi-ying, N.
Nano-microfluidic devices and uses thereof are described. In **particular**, systems and methods are described for continuous real-time monitoring and analysis of targets in thin liquid films, such targets can include living cells and tissues. In some embodiments, **nano**-microfluidic devices can be utilized to observe living cells in layers of thin liquid media by IR-spectroscopy.
- WO/2019/135843** **PARTICLES** FOR USE IN ACOUSTIC STANDING WAVE PROCESSES WO - 11.07.2019
 Int.Class [B01D21/22](#) Appl.No PCT/US2019/089898 Applicant FLODESIGN SONICS, INC. Inventor LIPKENS, Bart
 Microparticles and **nanoparticles** made of various materials that are used in various configurations are disclosed. Such **particles** can also contain various types of materials as payloads to be used in the separation, segregation, differentiation, modification or filtration of a system or a host anatomy. The microparticles and **nanoparticles** are utilized in conjunction with an acoustic standing wave or an acoustic traveling wave in various processes.
- WO/2023/038182** PREPARATION METHOD FOR DISPERSION SOLUTION OF LARGE SURFACE AREA HEXAGONAL BORON NITRIDE **NANOSHEET** BY USING SOLVOTHERMAL METHOD WO - 18.03.2023
 Int.Class [C01B21/084](#) Appl.No PCT/KR2021/013050 Applicant ALKYNES CO., LTD. Inventor ROK, Jin Hwan
 The present invention relates to a preparation method for a dispersion solution of large surface area hexagonal boron nitride **nanosheet** by using a solvothermal method and, more specifically, the preparation method comprises: a pre-treatment step in which hexagonal boron nitride (h-BN) and a solvent are mixed and subjected to heat treatment for intercalation of the solvent between h-BN layers, and a dispersion step in which external energy is supplied to the pre-treated solution for delamination of the h-BN so as to prepare a dispersion solution of large surface area h-BN **nanosheet**. Since a dispersion solution of large surface area hexagonal boron nitride **nanosheet**, having excellent dispersion stability and having a large lateral size and a small thickness, can be prepared, utilization thereof can be increased throughout the industry. In **particular**, there is an advantage that, by using a high horizontal thermal conductivity of a hexagonal boron nitride **nanosheet**, a heat dissipation pad can be prepared.
- WO/2011/019184** METHOD AND APPARATUS FOR PRODUCING A **NANOSCALE** MATERIAL HAVING A GRAPHENE STRUCTURE WO - 17.02.2011
 Int.Class [C01B31/02](#) Appl.No PCT/KR2010/005229 Applicant N-BARO TECH CO., LTD. Inventor KWON, Young-Jin
 The present invention relates to a method and apparatus for producing a **nanoscale** material having a graphene structure. The present invention provides a method and apparatus which compulsorily introduces graphite sulfuric acid slurry and a permanganate sulfuric acid solution into a microchannel, to cause an oxidation reaction among layers of graphite, and which in **particular** involves applying ultrasonic waves during the reaction in the microchannel to improve expansion and delamination efficiency among layers of graphite, injecting an aqueous hydrogen peroxide solution into a reaction termination portion to terminate the oxidation reaction, and cleaning and drying the thus-obtained reaction mixture to produce graphite oxide. The present invention also provides a method and apparatus which involve supplying the thus-produced graphite oxide into a fluidized bed furnace to produce a **nanoscale** material having a graphene structure through delamination caused by thermal shock. According to the present invention, the risk of explosion is reduced during the production of graphite oxide.

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.

PATENTSCOPE Field Combination

	Field	Value	
	Front Page	nano*	?
Operator AND	Field	Value	?
	Front Page	partic*	
Operator AND	Field	Value	?
	Inventor Name	suslick	
Operator AND	Field	Value	?
	Publication Date		
Operator AND	Field	Value	?
	English Title		
Operator AND	Field	Is Empty:	
	All Classifications	N/A	
Operator AND	Field		
	Licensing availability	<input type="checkbox"/>	

+ Add another search field - Reset search fields

Offices All

Languages English

Stemming

Single Family Member

Include NPL

2 results [Reset] [Search]

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

1. WO2005037709 - CONTROLLED CHEMICAL AEROSOL FLOW SYNTHESIS OF NANOMETER-SIZED PARTICLES AND OTHER NANOMETER-SIZED PRODUCTS

PCT Biblio. Data Description Claims Drawings National Phase Patent Family Notices Compounds Documents

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Publication Number
WO/2005/037709

Publication Date
28.04.2005

International Application No.
PCT/US2004/022794

International Filing Date
05.10.2004

IPC
C01B 19/18 2006.1 C01B 19/20 2006.1
C01B 19/00 2006.1 C01B 11/02 2006.1

CPC
B01J 10/002 B01J 19/10 B01J 2219/00033
B01J 2219/0884 B01J 8/008 B82Y 30/00
[View more classifications](#)

Applicants
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[All/Except/US]
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SUSLICK, Kenneth, S.

Agents
REIS, Robert, H.
BANNER & WITCOFF, LTD. 10 S. Wacker Drive Suite 300 Chicago, Illinois 60606-7407, US

Title
[EN] CONTROLLED CHEMICAL AEROSOL FLOW SYNTHESIS OF NANOMETER-SIZED PARTICLES AND OTHER NANOMETER-SIZED PRODUCTS
[FR] SYNTHÈSE RÉGULÉE D'ÉCOULEMENT D'AÉROSOL CHIMIQUE À BASE DE PARTICULES NANOMÉTRIQUES ET AUTRES PRODUITS NANOMÉTRIQUES

Abstract
[EN] A method and apparatus for producing nanometer-sized particles, the method including the steps of forming of mixture by mixing a first precursor reactant (22), a second precursor reactant (24), a surface-stabilizing surfactant (26), and a high boiling point liquid (28) to form a mixture, forming a mist of droplets (12) of the mixture, heating the droplets (12) to cause a reaction between species of the first and second precursor reactants within the heated droplets, and collecting the nanometer-sized products.
[FR] L'invention concerne un procédé et un appareil permettant de produire des particules nanométriques. Ledit procédé consiste à former un mélange par mélange d'un premier réactif précurseur (22), d'un second réactif précurseur (24), d'un tensioactif (26) de stabilisation de surface et d'un liquide (28) à point d'ébullition élevé afin de former une brumisation de gouttelettes (12) de mélange, à chauffer lesdites gouttelettes (12) afin de provoquer une réaction entre les espèces des premier et second réactifs précurseur à l'intérieur des gouttelettes chauffées et à recueillir des produits de taille nanométrique.

Related patent documents
[US20040204560](#) [US20060244164](#)

E. Which countries has he mainly been working in?

Search "Suslick" as Inventor Name.

IN.(Suslick) 🔍

📄 74 results [Offices all](#) [Languages en](#) [Stemming true](#) [Single Family Member false](#) [Include NPL false](#) 📄 📄 📄 📄

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1. **20030166298** COLORIMETRIC ARTIFICIAL NOSE HAVING AN ARRAY OF DYES AND METHOD FOR ARTIFICIAL OLFACTION US - 04.09.2003
 Int.Class [G01N 31/22](#) (🔍) Appl.No 10279701 Applicant Board of Trustees of the University of Illinois Inventor [Suslick Kenneth S.](#)
 The present invention involves an artificial nose comprising an array, the array comprising at least a first dye and a second dye deposited directly onto a single support in a predetermined pattern combination, the combination of dyes in the array having a distinct and direct spectral absorbance or reflectance response to distinct analytes comprising one or more parent analytes or their derivatives. In one embodiment, the invention further comprises an oxidizing source to partially oxidize at least one distinct parent analyte to at least one corresponding derivative analyte of said parent analyte, the array at least in part having a stronger distinct and direct absorbance or reflectance response to the derivative analyte than to the corresponding parent analyte.

2. **4010100** ISOTOPE SEPARATION BY PHOTOCROMATOGRAPHY US - 01.03.1977
 Int.Class [B01D 59/00](#) (🔍) Appl.No 05619156 Applicant The United States of America as represented by the United States Energy Research and Development Adm Inventor [Suslick Kenneth S.](#)
 An isotope separation method which comprises physically adsorbing an isotopically mixed molecular species on an adsorptive surface and irradiating the adsorbed molecules with radiation of a predetermined wavelength which will selectively excite a desired isotopic species. Sufficient energy is transferred to the excited molecules to desorb them from the surface and thereby separate them from the unexcited undesired isotopic species. The method is particularly applicable to the separation of hydrogen isotopes. -GOVT PAC BACKGROUND OF THE INVENTION PAR The invention described herein was made in the course of, or under, United States Energy Research and Development Administration Contract No. W-7405-ENG-48 with the University of California.

3. **20150300998** MICROCOLUMN FOR USE IN GAS CHROMATOGRAPHY US - 22.10.2015
 Int.Class [B01J 20/281](#) (🔍) Appl.No 14477060 Applicant The Board of Trustees of the University of Illinois Inventor [Kenneth S. Suslick](#)
 A microcolumn for use in gas chromatography comprises a self-supporting polymer body that functions as a stationary phase and a structural support. The polymer body comprises an enclosed channel having a length L, height h and width w extending therethrough and one or more channel walls surrounding the enclosed channel. The one or more channel walls are integrally formed with the polymer body. The polymer body and the one or more channel walls may comprise a phase-separated polymer composition.

4. **20170102335** PORTABLE DEVICE FOR COLORIMETRIC OR FLUOROMETRIC ANALYSIS, AND METHOD OF CONDUCTING COLORIMETRIC OR FLUOROMETRIC ANALYSIS US - 13.04.2017
 Int.Class [G01N 21/78](#) (🔍) Appl.No 15317840 Applicant The Board of Trustees of the University of Illinois Inventor [Kenneth S. Suslick](#)
 A portable device for colorimetric or fluorometric analysis comprises a linear array of optically-responsive chemical sensing elements; an image sensor in optical communication with the linear array for determining a spectral response of the optically-responsive chemical sensing elements, where the image sensor comprises at least one light emission source; and electronics connected to the image sensor for analyzing spectral response data. A method of conducting colorimetric or fluorometric analysis comprises exposing a linear array of optically-responsive chemical sensing elements to a fluid comprising an analyte; impinging light on the linear array and detecting a spectral response of the chemical sensing elements; and

Click on the "results" tab, you can see he's mainly been working in USA and UK.

IN (Suslick) Q

74 results Offices all Languages en Stemming true Single Family Member false Include NPL false 📶 🗺️ 📄 🗂️

Analysis Close

Filters Charts Timeseries

Offices	Applicants	Inventors	IPC code	Publication Dates	Kind code
United States of America	THE BOARD OF TRUSTEES OF THE UNIVERSITY OF ILLINOIS	SUSLICK KENNETH S.	A61K	31 1977	1 A 34
PCT 15	VIVORX PHARMACEUTICALS INC	SOON-SHIONG PATRICK	G01N	31 1978	0 B2 17
European Patent Office 8	INC	DESAI NEIL P.	A23L	16 1979	0 A1 9
China 7	SUSLICK KENNETH S	GRINSTAFF MARK W.	B01J	7 1980	0 B1 5
India 4	OXFORD UNIVERSITY INNOVATION LIMITED	SANDFORD PAUL A.	A61B	5 1981	0 B 3
Australia 3	BOARD OF TRUSTEES OF THE UNIVERSITY OF ILLINOIS	KENNETH S. SUSLICK	C08G	5 1982	0 T 2
Austria 2	UNIV ILLINOIS	WONG MICHAEL	B22F	3 1993	0 T3 2
Norway 2	ABRAXIS BIOSCIENCE INC	SUSLICK KENNETH S	C01B	3 1984	0 C 1
New Zealand 2	ABRAXIS BIOSCIENCE LLC	SEN AVIJIT	C08L	3 1985	0 E 1
Brazil 1	AMERICAN BIOSCIENCE INC	DESAI NEIL P	C12Q	3 1986	0 0
Canada 1	AMERICAN BIOSCIENCE INC	GRINSTAFF MARK W	A61P	2 1987	0 0
Germany 1	DASTGHEIB SEYED	SANDFORD PAUL A	B01D	2 1988	0 0
Spain 1	RESEARCH CO TECH INC	AVIJIT SEN	B29B	2 1989	0 0
Portugal 1	ROSTAM ABADI MASSOUD	SUSLICK, KENNETH S.	C01G	2 1990	0 0
	SCHIMP CHRIS	BENJAMIN A. SUSLICK	C07D	2 1991	0 0
	SUSLICK KEN	BOPPART STEPHEN A.	C08J	2 1992	0 0
	AMERICAN BIOSCIENCES	JEFFREY S. MOORE	C10L	2 1993	1 1
	BOPPART STEPHEN A	MARKS DANIEL L.	H01F	2 1994	4 4
	CAREY JAMES R	MERIDETH NOMA R.	A61J	1 1995	2 2

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.

Offices	Applicants	Inventors	IPC code	Publication Dates	Kind code
European Patent Office	5	OXFORD UNIVERSITY INNOVATION LIMITED	5	2022	5
PCT	5		A61K		A
China	3		G01N		
			A61P		

X APPLICANT_NAME=OXFORD UNIVERSITY INNOVATION LIMITED

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- 1. WO/2022/162398 VACCINE COMPOSITIONS** WO - 04.08.2022

Int.Class [A61K 39/12](#) (2006.01) Appl.No PCT/GB2022/050253 Applicant OXFORD UNIVERSITY INNOVATION LIMITED Inventor CARLSLE, Robert

The invention describes vaccine compositions containing particles having a polypeptide shell and a water-immiscible core. The polypeptide shell may comprise one or more pathogenic antigen proteins and/or one or more adjuvant polypeptides. Administration of the composition generates an immune response to the polypeptide contained in the shell. Adjuvant may be comprised in the water-immiscible core of the particle. The particles are therefore useful in methods of vaccination.
- 2. WO/2022/162395 CAVITATION AGENT** WO - 04.08.2022

Int.Class [G01N 33/543](#) (2006.01) Appl.No PCT/GB2022/050250 Applicant OXFORD UNIVERSITY INNOVATION LIMITED Inventor LYONS, Brian

The invention describes ultrasound-responsive particles comprising a polypeptide shell. The surface of the particle has one or more indentations which are generally able to entrap a gas bubble. The particles are capable of generating inertial cavitation on exposure to ultrasound. The particles are therefore useful in methods of treatment which involve inertial cavitation and in the delivery of drugs to target sites via inertial cavitation.
- 3. WO/2022/162396 DRUG LOADED CAVITATION AGENT** WO - 04.08.2022

Int.Class [G01N 33/543](#) (2006.01) Appl.No PCT/GB2022/050251 Applicant OXFORD UNIVERSITY INNOVATION LIMITED Inventor LYONS, Brian

The invention describes ultrasound-responsive particles having a core containing one or more therapeutic or diagnostic agents, and a polypeptide shell. The surface of the particle has one or more indentations which are generally able to entrap a gas bubble. The particles are capable of generating inertial cavitation on exposure to ultrasound. The inertial cavitation properties of the particles can be used to enhance delivery of the therapeutic or diagnostic agents to target sites in vivo.
- 4. WO/2022/162399 IMMUNE MODULATING PARTICLES** WO - 04.08.2022

Int.Class [A61K 39/00](#) (2006.01) Appl.No PCT/GB2022/050254 Applicant OXFORD UNIVERSITY INNOVATION LIMITED Inventor COUSSIOS, Constantin

The invention describes particles having a polypeptide shell. The polypeptide shell comprises at least one immunomodulatory polypeptide. Particles may be ultrasound-responsive particles, providing the ability to administer particles transdermally, or deliver particles to selected sites by use of ultrasound. Administration of the particles generates immunologic response to the polypeptide in the shell of the particle. The particles are therefore useful in methods of immunotherapy.

1. WO2022162398 - VACCINE COMPOSITIONS

PCT Biblio. Data Description Claims Drawings ISR/WOSA/A17(2)(a) National Phase Patent Family Notices Compounds Documents

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<p>Publication Number WO/2022/162398</p> <p>Publication Date 04.08.2022</p> <p>International Application No. PCT/GB2022/050253</p> <p>International Filing Date 31.01.2022</p> <p>IPC</p> <p>A61K 39/12 2006.01 A61K 39/215 2006.01 A61K 39/39 2006.01 A61P 31/14 2006.01 A61K 39/00 2006.01</p> <p>CPC</p> <p>A61K 2039/54 A61K 2039/555 A61K 2039/55588 A61K 2039/575 A61K 39/12 A61K 39/215</p> <p>View more classifications</p> <p>Applicants OXFORD UNIVERSITY INNOVATION LIMITED (GB) (GB) Buckton Court, 3 West Way Oxford OX2 0JB, GB</p> <p>Inventors CARLSLE, Robert LYONS, Brian SUSLICK, Ken COUSSIOS, Constantin</p> <p>Agents J A KEMP LLP 80 Turnmill Street London Greater London EC1M 9QU, GB</p>	<p>Title [EN] VACCINE COMPOSITIONS [FR] COMPOSITIONS DE VACCIN</p> <p>Abstract [EN] The invention describes vaccine compositions containing particles having a polypeptide shell and a water-immiscible core. The polypeptide shell may comprise one or more pathogenic antigen proteins and/or one or more adjuvant polypeptides. Administration of the composition generates an immune response to the polypeptide contained in the shell. Adjuvant may be comprised in the water-immiscible core of the particle. The particles are therefore useful in methods of vaccination. [FR] L'invention concerne des compositions de vaccin contenant des particules ayant une enveloppe polypeptidique et un noyau non miscible dans l'eau. L'enveloppe polypeptidique peut comprendre une ou plusieurs protéines d'antigène pathogènes et/ou un ou plusieurs polypeptides adjuvants. L'administration de la composition génère une réponse immunitaire au polypeptide contenu dans l'enveloppe. Un adjuvant peut être compris dans le noyau non miscible dans l'eau de la particule. Les particules sont donc utiles dans des procédés de vaccination.</p> <p>Related patent documents EP2403527B CN116940375</p>	<p>FIG 1</p>
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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.

The screenshot displays the WIPO International Patent Classification (IPC) Publication search interface. The top navigation bar includes 'Home', 'International Patent Classification', and 'IPC Publication'. Below this, there are tabs for 'Scheme', 'RCL', 'Compilation', 'Catchwords', and 'Search'. The search input field contains the text 'rainfall'. Below the search bar are 'Search' and 'Reset' buttons. The results are ordered by relevance, showing 'G01W 1/14' as the top result. A 'Prepare copy' button is visible below the result. On the left side, there is a sidebar with various options: 'IPC HOME | DOWNLOAD', a version selector set to '2023.01', radio buttons for 'English version' (selected) and 'French version', a checkbox for 'Advanced Search', and buttons for 'Terms', 'Cross-references', 'STATS', and 'IPCCAT'. Under 'Terms search:', there are checkboxes for 'Stemming', 'Path', 'Scheme titles', 'Scheme references', 'Catchwords', and 'Definitions'. There are also input fields for 'Limit to' and 'Exclude' with the value 'A01N,A01I'.

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.

Scheme	RCL	Compilation	Catchwords	Search
				<p>be given without the use of figures, e.g. by some perceptible feature (variable) or the entity (e.g. object, substance, beam or light) or which the variable being measured is a property or condition or by an analogue of such a feature (e.g. the corresponding position of a member without any scale, a corresponding voltage generated in some way). In many cases there is no such value indication but only an indication of difference or equality in relation to a standard or datum (of which the value may or may not be known in figures), the standard or datum may be the value of another variable of the same nature but of a different entity (e.g. a standard measure) or of the same entity at a different time.</p> <p>In its simplest form, measurement may give merely an indication of presence or absence of a certain condition or quality, e.g. movement (in any direction or in a particular direction), or whether a variable exceeds a predetermined value.</p> <p>3. Attention is drawn to the Notes following the titles of class B81 and subclass B81B relating to "microstructural devices" and "microstructural systems" and the Notes following the title of subclass B82B relating to "nanostructures".</p> <p>4. Attention is drawn to the Notes following the title of section G, especially as regards the definition of the term "variable".</p> <p>5. In many measuring arrangements, a first variable to be measured is transformed into a second, or further, variables. The second, or further, variables may be (a) a condition related to the first variable and produced in a member, or (b) a displacement of a member. Further transformation may be needed.</p> <p>When classifying such an arrangement, (i) the transformation step, or each transformation step, that is of interest is classified, or (ii) if interest lies only in the system as a whole, the first variable is classified in the appropriate place.</p> <p>This is particularly important where two or more conversions take place, for instance where a first variable, for example pressure, is transformed into a second variable, for example an optical property of a sensing body, and that second variable is expressed by means of a third variable, for example an electric effect. In such a case, the following classification places should be considered: the place for the transformation of the first variable, that for sensing the condition caused by that variable, subclass G01D for expression of the measurement, and finally the place for the overall system, if any.</p> <p>6. The measurement of change in the value of a physical property is classified in the same subclass as the measurement of that physical property, e.g. measurement of expansion of length is classified in subclass G01B.</p>
0		G01W	METEOROLOGY	(radar, sonar, lidar or analogous systems, designed for meteorological use: G01S 13/95, G01S 15/88, G01S 17/95)
			Note(s)	<p>1. In this subclass, the following term is used with the meaning indicated:</p> <ul style="list-style-type: none"> "meteorology" includes measurement of certain ambient atmospheric conditions. <p>2. Attention is drawn to the Notes following the title of class G01.</p>
		G01W 1/00	Meteorology [2006.01]	
		G01W 1/02		• Instruments for indicating weather conditions by measuring two or more variables, e.g. humidity, pressure, temperature, cloud cover or wind speed (G01W 1/10 takes precedence) [2006.01]
		G01W 1/04		• giving only separate indications of the variables measured [2006.01]
		G01W 1/06		• giving a combined indication of weather conditions (cathetermometers for measuring "cooling value" related either to weather conditions or to comfort of other human environment G01W 1/17) [2006.01]
		G01W 1/08		• Adaptations of balloons, missiles, or aircraft for meteorological purposes; Radiosondes [2006.01]
		G01W 1/10		• Devices for predicting weather conditions [2006.01]
		G01W 1/11		• Devices for indicating atmospheric humidity [2006.01]
		G01W 1/12		• Sunshine-duration recorders [2006.01]
		G01W 1/14		• Rainfall or precipitation gauges [2006.01]
		G01W 1/16		• Measuring atmospheric potential differences, e.g. due to electrical charges in clouds [2006.01]
		G01W 1/17		• Cathetermometers for measuring "cooling value" related either to weather conditions or to comfort of other human environment [2006.01]
		G01W 1/18		• Testing or calibrating meteorological apparatus [2006.01]

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.

PATENTSCOPE Advanced Search ▼

EN_ALLTXT:(comput* AND predict* AND alarm AND histor* AND data)

Query Assistant Query Examples

+ Expand with related terms

Offices	▼
All	
Languages	▼
English	
<input checked="" type="checkbox"/> Stemming	
<input type="checkbox"/> Single Family Member	
<input type="checkbox"/> Include NPL	

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

EN_ALLTXT:("comput*" AND "predict*" AND "alarm*" AND "histor*" AND "data*")

70,725 results Offices all Languages en Stemming true Single Family Member false Include NPL false

Analysis

Filters Charts Timeseries

Offices	Applicants	Inventors	IPC code	Publication Dates	Kind code
United States of America	45,962	DEXDOM INC 1,311	CHARLES HOWARD CELLA 330	G06F 18,841	1974 1 B2 24,118
PCT	12,158	LG ELECTRONICS INC 1,251	APURV ULLAS KAMATH 278	A61B 11,027	1975 2 A1 21,320
European Patent Office	6,802	APPLE INC 1,000	JEFFREY P. MCGUCKIN 268	H04L 10,390	1976 5 A 14,980
Canada	6,279	FISHER ROSEMOUNT SYSTEMS INC 707	GERALD WILLIAM DUFFY, JR. 268	G06Q 9,870	1977 13 B1 6,884
Australia	3,295	SAMSUNG ELECTRONICS CO LTD 699	PETER C. SIMPSON 257	H04W 6,785	1978 10 C 1,502
China	3,081	ABBOTT DIABETES CARE INC 688	FREDERICK E. SHELTON, IV 217	G05B 6,782	1979 9 B 899
India	2,070	INTERNATIONAL BUSINESS MACHINES CO 594	RAMER JOREY 201	G06N 5,128	1980 13 A3 398
Republic of Korea	1,191	DEKA PRODUCTS LP 558	DOUGHTY DENNIS 200	G16H 4,328	1981 14 A4 383
United Kingdom	1,071	MEDTRONIC MINIMED INC 552	SOROCA ADAM 200	G08B 4,218	1982 15 A2 131
Brazil	728	ROCKWELL AUTOMATION TECH INC 541	MEHUL DESAI 198	A61M 4,145	1983 16 B8 73
Mexico	535	HONEYWELL INTERNATIONAL INC 514	JASON L. HARRIS 171	G01N 3,522	1984 20 C0 53
Germany	450	GENERAL ELECTRIC COMPANY 502	DEAN KAMEN 168	G06K 3,497	1985 20 B4 41
Israel	404	INTEL CO 501	HELLER ADAM 184	H04N 2,476	1986 38 E1 38
Japan	395	GOOGLE LLC 499	LARRY B. GRAY 152	G05D 2,328	1987 29 B9 29
Russian Federation	378	KONINKLIJKE PHILIPS NV 497	GAL YORAM 142	H04B 2,150	1988 28 C1 29
New Zealand	348	JOHNSON CONTROLS TECH COMPANY 444	PLANTE PHILLIP JOHN 142	G06T 2,147	1989 44 A9 24
Singapore	324	AMAZON TECH INC 423	SAY JAMES 142	G01S 1,997	1990 49 A8 18
Norway	109	PURE STORAGE INC 382	HELLER EPHRAIM 140	H04M 1,905	1991 70 C2 11
Philippines	105	TOMASCO MICHAEL F. 140	H02J 1,715	1992 106 E 8	

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

PATENTSCOPE Advanced Search

IC:G08B

G08B19/00: Alarms responsive to two or more different undesired or abnormal conditions, e.g. burglary and fire, abnormal temperature and abnormal rate of flow

G08B21/00: Alarms responsive to a single specified undesired or abnormal condition and not otherwise provided for

G08B23/00: Alarms responsive to unspecified undesired or abnormal conditions

G08B25/00: Alarm systems in which the location of the alarm condition is signalled to a central station, e.g. fire or police telegraphic systems

G08B26/00: Alarm systems in which substations are interrogated in succession by a central station

G08B27/00: Alarm systems in which the alarm condition is signalled from a central station to a plurality of substations

G08B29/00: Checking or monitoring of signalling or alarm systems; Prevention or correction of operating errors, e.g. preventing unauthorised operation

G08B3/00: Audible signalling systems; Audible personal calling systems

G08B31/00: Predictive alarm systems characterised by extrapolation or other computation using updated historic data

G08B5/00: Visible signalling systems, e.g. personal calling systems, remote indication of seats occupied

G08B6/00: Tactile signalling systems, e.g. personal calling systems

G08B7/00: Signalling systems according to more than one of groups G08B3/00, G08B6/00; Personal calling systems according to more than one of groups G08B3/00, G08B6/00

Reset Search

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*”.

PATENTSCOPE Simple Search

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PCT publication 45/2023 (09.11.2023) is now available [here](#). The next PCT publication 46/2023 is scheduled for 16.11.2023. [More](#)
Check out the [latest PATENTSCOPE news and features](#)
PATENTSCOPE Live Chat: every Monday from 1:00 PM to 5:00 PM CET

Field	Search terms...	Q
Front Page	rainfall AND predict AND disaster	
Query Examples		
Offices		▼
All		

FP:(rainfall AND predict AND disaster) Q

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

Sort: Relevance Per page: 10 View: All 1/3 Download Machine translation

- 2016216989 DISASTER MONITORING SYSTEM AND DISASTER MONITORING DEVICE** JP - 22.12.2018
Int.Class [E02D 17/20](#) Appl.No 2015102218 Applicant TOSHIBA CORP Inventor KOMORI YURI
PROBLEM TO BE SOLVED: To provide a **disaster** monitoring system and a **disaster** monitoring device capable of giving information to **predict** landslide **disaster** with improved accuracy by using information on amount of soil moisture and **rainfall**.
SOLUTION: A **disaster** monitoring system 1 comprises: a reception section which receives measurement data about amount of soil moisture in a slope and meteorological information about amount of **rainfall** around the slope; risk information acquisition means which obtains risk information showing a risk of slope failure on the basis of the measurement data received by the reception section, and a generation section which generates risk confirmation information by combining the risk information acquired by the risk information acquisition means and the meteorological information received by the reception section.
SELECTED DRAWING: Figure 1
COPYRIGHT: (C)2017 JPO&NPIIT
- 1020210142021 DISASTER PREVENTION MANAGEMENT SYSTEM USING SMART MANHOLE COVER** KR - 24.11.2021
Int.Class [G08G 50/10](#) Appl.No 1020200057500 Applicant 주식회사 이도 Inventor JEONG INJU
The present invention relates to a **disaster** prevention management system using a smart manhole cover, which can detect signs of damage to the manhole cover and quickly maintain and repair the same and can maintain the level of sewage, manage flooded areas in response to **rainfall**, and previously **predict** sinkholes on the road. The **disaster** prevention management system comprises: the smart manhole cover for covering the manhole formed on the road, measuring information on **disaster** prevention at the location where the manhole is installed, and transmitting the same in a short-range wireless communication manner; a **disaster** prevention information collection pole for collecting **disaster** prevention information from the smart manhole cover and remotely transmitting the collected **disaster** prevention information in a broadband mobile communication manner; a **disaster** prevention server for receiving the **disaster** prevention information from the **disaster** prevention information collection pole and managing **disaster** prevention on a downtown area; and a **disaster** prevention information database server for storing and managing the **disaster** prevention information. Therefore, the **disaster** prevention management system can measure the displacement of the manhole cover and remotely manage the same to signs of damage to the manhole cover and maintain and repair the same, thereby preventing vehicle accidents or the like, preventing the overflow of sewage in the manhole, and previously managing flood management in response to **rainfall**, and can previously **predict** sinkhole risk areas when a small displacement is detected in multiple manholes, thereby preventing accidents caused by sinkholes. COPYRIGHT KIPO 2022
- 110610272 POWER GRID RAINSTORM DISASTER COMPREHENSIVE EARLY WARNING DISPLAY SYSTEM** CN - 24.12.2019
Int.Class [G08G 10/04](#) Appl.No 201910892409.3 Applicant STATE GRID HUNAN ELECTRIC POWER COMPANY LIMITED Inventor LU JIAZHENG
The invention discloses a power grid rainstorm **disaster** comprehensive early warning display system, which comprises a climate prediction module used for predicting the **rainfall** climate anomaly probability in one to three months in the future; a medium-term forecasting module used for predicting the extreme precipitation events in the future seven days so as to **predict** the rainstorm **disaster** influence areas and the **disaster** influence degrees; a short-term forecasting module used for forecasting the extreme precipitation process within one to three days in the future so as to **predict** the rainstorm disasters influenced specific lines and the influence of the rainstorm secondary disasters on a power grid; a short-term and temporary early warning module used for carrying out **disaster** early warning of the short-term heavy **rainfall** and the accompanying thunder and lightning, strong wind and hail within three hours in the future so as to carry out the early warning of the rainstorm short-term temporary **disaster** influenced specific line sections; and an administrator module used for maintaining and managing

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).

PATENTSCOPE Field Combination ▼

	Field	Value	
	Front Page	"healing agent" AND "cement" AND "bacteria"	?
Operator AND	Field	Value	?
	Inventor Nationality	NL	
Operator AND	Field	Value	?
	Application Number		
Operator AND	Field	Value	?
	Publication Date		
Operator AND	Field	Value	?
	English Title		
Operator AND	Field	Is Empty:	▼
	All Classifications	N/A	
Operator AND	Field		
	Licensing availability	<input type="checkbox"/>	

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Offices	▼
All	
Languages	▼
English	
<input checked="" type="checkbox"/> Stemming	
<input type="checkbox"/> Single Family Member	
<input type="checkbox"/> Include NPL	

1 results [Reset](#) [Search](#)

Then you will find this patent application WO2009093898.

1. WO2009093898 - HEALING AGENT IN CEMENT-BASED MATERIALS AND STRUCTURES, AND PROCESS FOR ITS PREPARATION

[PCT Biblio. Data](#) [Description](#) [Claims](#) [National Phase](#) [Patent Family](#) [Notices](#) [Documents](#)

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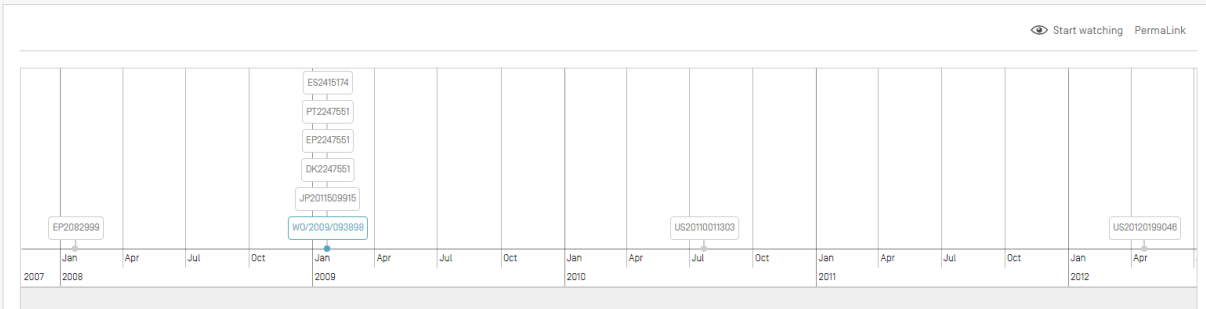
<p>Publication Number WO/2009/093898</p> <p>Publication Date 30.07.2009</p> <p>International Application No. PCT/NL2009/050025</p> <p>International Filing Date 22.01.2009</p> <p>Chapter 2 Demand Filed 20.07.2009</p> <p>IPC C04B 20/10 2006.01</p> <p>CPC C04B 20/1022 C04B 2103/0001 C04B 2111/72 C04B 28/10 C12N 11/14 Y02W 30/91</p> <p>Applicants TECHNISCHE UNIVERSITEIT DELFT (NL)/(NL) Stevinweg 1 NL-2628 CN Delft, NL [AllExceptUS] JONKERS, Hendrik Marius (NL)/(NL)(USOnly)</p> <p>Inventors JONKERS, Hendrik Marius</p> <p>Agents KUIPERS, Arpad 2009Z Wettingschans 96 1017 XS Amsterdam, Noord-Holland NL-1000 HB Amsterdam, NL</p> <p>Priority Data 08100833.6 23.01.2008 EP</p>	<p>Title [EN] HEALING AGENT IN CEMENT-BASED MATERIALS AND STRUCTURES, AND PROCESS FOR ITS PREPARATION [FR] AGENT DE CICATRISATION DANS DES MATERIAUX ET STRUCTURES A BASE DE CIMENT, ET SON PROCEDE DE PREPARATION</p> <p>Abstract [EN] The present invention relates to healing agent in cement-based materials and structures, wherein said healing agent comprises organic compounds and/or bacteria-loaded porous particles, which porous particles comprise expanded clay- or sintered fly ash. Furthermore, said porous particles are intact spheres, broken or crushed particles derived from said intact spheres, having a specific density between 0.4 and 2 g cm⁻³. Finally, the present invention relates to a process for the preparation of the healing agent. [FR] La présente invention concerne un agent de cicatrisation dans des matériaux et structures à base de ciment, l'agent de cicatrisation contenant des composés organiques et/ou des particules poreuses chargées de bactéries. Les particules poreuses contiennent de l'argile expansée ou des cendres volantes frittées. En outre, lesdites particules poreuses sont des sphères intactes, des particules brisées ou broyées dérivées desdites sphères intactes, dont la densité spécifique est comprise entre 0.4 et 2 g/cm³. Finalement, la présente invention concerne un procédé permettant la préparation de l'agent de cicatrisation.</p> <p>Related patent documents EP2062299 PT2247851 EP2247551 ES2418174 DK2247551 JP2011508816 US20100110032 US20120199046</p>
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B. What are the patent family members?

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

1. WO2009093898 - HEALING AGENT IN CEMENT-BASED MATERIALS AND STRUCTURES, AND PROCESS FOR ITS PREPARATION

PCT Biblio. Data Description Claims National Phase Patent Family Notices Documents



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”

The screenshot shows the WIPO International Patent Classification (IPC) Publication search interface. The search term "simulator teaching" is entered in the search box. The results are ordered by relevance and list the following IPC classes: G09B 9/00, G09B 13/00, G09B 15/00, G09B 17/00, G09B 11/08, G09B 11/10, G09B 9/058, G09B 9/04, G09B 9/54, and G09B 9/56. The interface includes a sidebar with search options, a search bar, and a results list.

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.

Scheme	RCL	Compilation	Catchwords	Search
D	-	G09B 9/00	Simulators for teaching or training purposes [2006.01]	
	-	G09B 9/02	• for teaching control of vehicles or other craft [2006.01]	
	-	G09B 9/04	•• for teaching control of land vehicles [2006.01]	
		G09B 9/042	••• providing simulation in a real vehicle (G09B 9/052, G09B 9/058 take precedence) [2006.01]	
		G09B 9/048	••• a model being viewed and manoeuvred from a remote point (G09B 9/052, G09B 9/058 take precedence) [2006.01]	
		G09B 9/05	••• the view from a vehicle being simulated (G09B 9/052, G09B 9/058 take precedence) [2006.01]	
D		G09B 9/052	••• characterised by provision for recording or measuring trainee's performance [2006.01]	
		G09B 9/058	••• for teaching control of cycles or motorcycles [2006.01]	
		G09B 9/06	•• for teaching control of ships, boats, or other waterborne vehicles [2006.01]	
	-	G09B 9/08	•• for teaching control of aircraft, e.g. Link trainer [2006.01]	
		G09B 9/10	•• with simulated flight- or engine-generated force being applied to aircraft occupant (G09B 9/28 takes precedence) [2006.01]	
	-	G09B 9/12	••• Motion systems for aircraft simulators [2006.01]	
		G09B 9/14	•••• controlled by fluid actuated piston or cylinder ram [2006.01]	
	-	G09B 9/16	••• Ambient or aircraft conditions simulated or indicated by instrument or alarm [2006.01]	
		G09B 9/18	•••• Condition of engine or fuel supply [2006.01]	
		G09B 9/20	•••• Simulation or indication of aircraft attitude [2006.01]	
		G09B 9/22	••• including aircraft sound simulation [2006.01]	
		G09B 9/24	•• including display or recording of simulated flight path [2006.01]	
		G09B 9/26	•• Simulation of radio-navigation [2006.01]	
		G09B 9/28	••• Simulation of stick forces or the like [2006.01]	
	-	G09B 9/30	••• Simulation of view from aircraft [2006.01]	
		G09B 9/32	•••• by projected image (G09B 9/36 takes precedence) [2006.01]	
		G09B 9/34	•••• by cathode-ray screen display (G09B 9/36 takes precedence) [2006.01]	
	-	G09B 9/36	•••• Simulation of night or reduced visibility flight [2006.01]	
		G09B 9/38	••••• Simulation of runway outlining or approach lights [2006.01]	
		G09B 9/40	••• Simulation of airborne radar [2006.01]	
		G09B 9/42	••• Aircraft, aircraft simulator, or means connected thereto, travelling on the ground or water during simulated flight training [2006.01]	
		G09B 9/44	••• providing simulation in a real aircraft flying through the atmosphere without restriction of its path [2006.01]	
	-	G09B 9/46	••• the aircraft being a helicopter [2006.01]	
			Note(s) [B]	
			When classifying in group G09B 9/46, classification is also made in other appropriate subgroups of group G09B 9/08, if of interest.	

- 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).

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)

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

Sort: Relevance Per page: 10 View: All 1/21 Download Machine translation

- 3543986 VR EMULATOR** EP - 25.09.2019

Int.Class G09B 9/30 Appl.No 18203764 Applicant BELL HELICOPTER TEXTRON INC Inventor NISSEN JEFFREY PAUL

Systems and methods include providing a virtual reality (VR) flight emulator system (150) that simulates control, operation, and response of a vehicle. The flight emulator (100) includes a control interface (102) and a head-mounted display (108) worn by a user (110). Motion, orientation, and/or forces experienced by the simulated vehicle are imparted to a user (110) through a motion-control seat (104). Multiple flight emulators (100) can be connected to a communication network (152), and a master flight emulator (154) may teleport into a slave flight emulator (100a) in order to observe, overtake, override, and/or assume control of the slave flight emulator (100a). Inputs made via the control interface (102) of the master flight emulator (154) or during playback of a pre-recorded training exercise or flight mission are translated into the control interface (102), head-mounted display (108), and motion-control seat (104) of the slave flight emulator (100a) to provide real-time feedback to the user (110) of the slave flight emulator (100a).
- 210488883 VIRTUAL REALITY SIMULATION FLIGHT EQUIPMENT** CN - 08.05.2020

Int.Class G09B 9/08 Appl.No 201920455575.0 Applicant CHENGDU PIAOLIPIING VIRTUAL REALITY TECHNOLOGY CO., LTD. Inventor DING ZHIPENG

The utility model discloses a virtual reality simulation flight device. Wherein the power supply, the electric transmission group, the server, the relay, the upper travel switch and the physical button control panel are arranged on the flight main body; the device further comprises a lifting platform, a running crawler belt, a flying backpack, a VR helmet and pull rope sensors on the left and the right. The flying backpack is connected with the electric transmission set through a pulley block and a steel wire rope, the VR helmet and the pull rope sensor are connected with the server in the left-right direction, the power source is used for supplying power to the equipment, the lifting platform is arranged on the flying body, and a running crawler belt platform is arranged on the lifting platform. The server is electrically connected with the current collector, the right pull rope sensor, the left pull rope sensor, the VR helmet and the liquid crystal display. The motor transmission set is connected with the lifting platform and the flying knapsack. The VR virtual reality imaging technology is adopted, and various flight simulation sensing technologies are combined, so that the multi-degree-of-freedom simulation flight experience is realized, and the flight experience is more vivid.
- 4174825 VR TRAINING SYSTEM FOR AIRCRAFT, VR TRAINING METHOD FOR AIRCRAFT, AND VR TRAINING PROGRAM FOR AIRCRAFT** EP - 03.05.2023

Int.Class G09B 9/08 Appl.No 21828186 Applicant KAWASAKI HEAVY IND LTD Inventor KOMATSU SEJI

A VR training system 100 includes: training terminals 1 that generates simulation images for simulation training in common VR space and provides the simulation images to trainees 9 individually associated with the training terminals 1; and a tracking system 4 that detects motion of the trainees 9 in real space. Each of the training terminals 1 calculates a position and a posture of a self avatar in VR space based on a detection result of the tracking system 4, acquires position information on a position and a posture of another avatar in the VR space from another training terminal 1, and connects the another avatar in the VR space based on the acquired position information.

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".

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) AND FP:"head"

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

Sort: Relevance Per page: 10 View: All 1/4 Download Machine translation

- 3543986 VR EMULATOR** EP - 25.09.2019

Int.Class G09B 9/30 Appl.No 18203764 Applicant BELL HELICOPTER TEXTRON INC Inventor NISSEN JEFFREY PAUL

Systems and methods include providing a virtual reality (VR) flight emulator system (150) that simulates control, operation, and response of a vehicle. The flight emulator (100) includes a control interface (102) and a head-mounted display (108) worn by a user (110). Motion, orientation, and/or forces experienced by the simulated vehicle are imparted to a user (110) through a motion-control seat (104). Multiple flight emulators (100) can be connected to a communication network (152), and a master flight emulator (154) may teleport into a slave flight emulator (100a) in order to observe, overtake, override, and/or assume control of the slave flight emulator (100a). Inputs made via the control interface (102) of the master flight emulator (154) or during playback of a pre-recorded training exercise or flight mission are translated into the control interface (102), head-mounted display (108), and motion-control seat (104) of the slave flight emulator (100a) to provide real-time feedback to the user (110) of the slave flight emulator (100a).
- 211719074 VR ALL-IN-ONE MACHINE FOR SIMULATING FLIGHT OPERATION** CN - 20.10.2020

Int.Class G09B 9/08 Appl.No 201921833104.0 Applicant BEIJING YOUJI VIRTUAL REALITY CULTURAL TRANSMISSION CO., LTD. Inventor HU JIANZHONG

The utility model relates to the field of virtual reality, and particularly discloses a VR all-in-one machine for simulating flight operation, which comprises an all-in-one box, an operating rod and an accelerator thruster, and the operating rod and the accelerator thruster are connected to the all-in-one box; wherein the VR head-mounted device is connected with the main control computer, the main control computer is further connected with the operating rod and the accelerator propeller, and the main control computer and the VR head-mounted device are both connected to the integrated box. According to the utility model, the practical operation environment can be fully simulated, the psychological quality of a user is challenged, and the training effect is better.
- 20190130761 VR EMULATOR** US - 02.05.2019

Int.Class G09B 9/30 Appl.No 15928644 Applicant Bell Helicopter Textron Inc. Inventor Jeffrey Paul Nissen

Systems and methods include providing a virtual reality (VR) flight emulator system that simulates control, operation, and response of a vehicle. The flight emulator includes a control interface and a head-mounted display worn by a user. Motion, orientation, and/or forces experienced by the simulated vehicle are imparted to a user through a motion-control seat. Multiple flight emulators can be connected to a communication network, and a master flight emulator may teleport into a slave flight emulator in order to observe, overtake, override, and/or assume control of the slave flight emulator. Inputs made via the control interface of the master flight emulator or during playback of a pre-recorded training exercise or flight mission are translated into the control interface, head-mounted display, and motion-control seat of the slave flight emulator to provide real-time feedback to the user of the slave flight emulator.