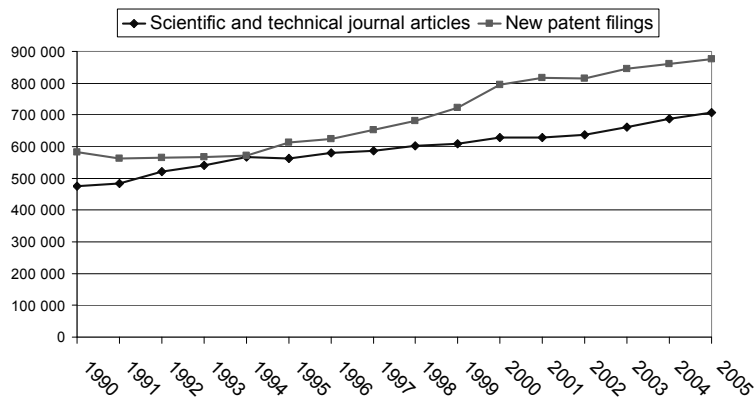


Using patent information for policy and business analysis

William Meredith
Head, Global IP Information Service
WIPO

New Technical Information Worldwide



Source: WIPO Statistical Database (patent families); World Bank, World Development Indicators (journals)

What is patent information?

- ▶ The patent system grants property rights to inventors in exchange for the disclosure of their invention for the benefit of the public.

- ▶ The disclosure includes:
 - Business information
 - Legal information
 - Technical information
 - Policy-relevant information

- ▶ Almost all patent applications are published (18 months from priority date/first filing date)

What is disclosed in a patent document?

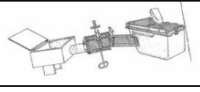
- ▶ Business Information:
 - Applicant details
 - Inventor details

- ▶ Legal Information:
 - Status (application, grant, opposition,...)
 - Patent claims

- ▶ Technical Information:
 - Background of the Invention
 - Summary of the Invention
 - Detailed description of the Invention
 - Method for carrying out the Invention

Patent application

(WO/2006/121222) VECTOR AND RODENT HOLDING DEVICES DURING PARASITE TRANSMISSION EXPERIMENTS IN THE LABORATORY

	Biblio. Data	Description	Claims	National Phase	Notices	Documents	
	Latest bibliographic data on file with the International Bureau						
Publication no.	Pub. No.:	WO/2006/121222	International Application No.:	PCT/KE2006/000014		Application no.	
Publication date	Publication Date:	16.11.2006	International Filing Date:	11.05.2006		Filing date	
	Chapter 2 Demand Filed:	11.05.2006					
Classification	IPC:	A01K 1/03 (2006.01)					
Applicant	Applicants:	KARI- TRYPANOSOMIASIS RESEARCH CENTRE [KE/KE]; P.O. Box 362, Kikuyu (KE) (All Except US); KARIUKI, Ndungu [KE/KE]; (KE) (US Only).					
Inventor	Inventor:	KARIUKI, Ndungu; (KE).					
Priority date	Priority Data:	KE/P/04/00409 11.05.2005 KE					
Title	Title:	VECTOR AND RODENT HOLDING DEVICES DURING PARASITE TRANSMISSION EXPERIMENTS IN THE LABORATORY					
Abstract	Abstract:	<p>A device for holding rodent and vector during vector infection and transmission process (Fig 7 & 8) comprising of a rodent holding compartment (Fig 1 & 2 - 1, 2, 3, 4, 5 & 6) and a vector cage (Fig 4); said rodent holding compartment having means for resting it on the bench (1 & 2 - 14, 15), and further fitted with means for engaging the vector cage (Fig 1, 12, 13) and fitted with a rodent release sliding door (Fig 1, 16) and a ladder (Fig 1 & 2 - A); said ladder leading the rodent to a resting cage (Fig 6) through entrance (75) that is closed with door (74) and the said rodent holding compartment accompanied by a special rodent cage (Fig 3) for introducing the rodent into the rodent holding compartment; said special rodent cage comprises of component A joined together and a door B to form an enclosure and a rodent escape route C.</p>					Drawing

Patent application

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

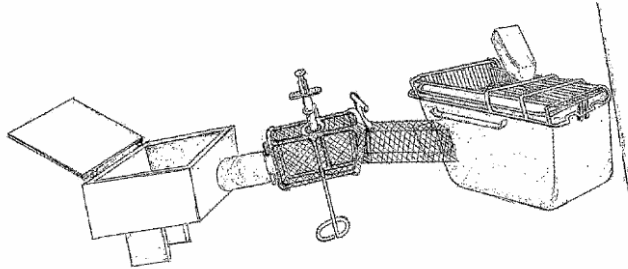


Publication date	(43) International Publication Date	16 November 2006 (16.11.2006)	(10) International Publication Number	WO 2006/121222 A1	Publication no.
Classification	(51) International Patent Classification:	A01K 1/03 (2006.01)	GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TH, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.	(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SI, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).	Designated states
Application no.	(21) International Application Number:	PCT/KE2006/000014			
Filing date	(22) International Filing Date:	11 May 2006 (11.05.2006)			
Priority date	(30) Priority Data:	KE/P/04/00409 11 May 2005 (11.05.2005) KE			
Applicant	(71) Applicant (for all designated States except US):	KARI- TRYPANOSOMIASIS RESEARCH CENTRE [KE/KE]; P.O. Box 362, Kikuyu (KE).	Declarations under Rule 4.17: — as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(i)) — as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(ii)) — of inventorship (Rule 4.17(iv))		
Inventor	(72) Inventor; and (75) Inventor/Applicant (for US only):	KARIUKI, Ndungu [KE/KE]; Kari- Trypanosomiasis Research Centre, P.O. Box 362, Kikuyu (KE).	Published: — with international search report		
Designated states	(81) Designated States (unless otherwise indicated, for every kind of national protection available):	AE, AG, AI, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,	For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.		

Patent application

Title → (54) Title: VECTOR AND RODENT HOLDING DEVICES DURING PARASITE TRANSMISSION EXPERIMENTS IN THE LABORATORY

Drawing →



Abstract → (57) Abstract: A device for holding rodent and vector during vector infection and transmission process (Fig: 7 & 8) comprising of a rodent holding compartment (Fig 1 & 2 - 1, 2, 3, 4, 5 & 6) and a vector cage (Fig 4); said rodent holding compartment having means for resting it on the bench (1 & 2 - 14, 15), and further fitted with means for engaging the vector cage (Fig 1; 12, 13) and fitted with a rodent release sliding door (Fig 1; 18) and a ladder (Fig 1 & 2 - A); said ladder leading the rodent to a resting cage (Fig 6) through entrance (75) that is closed with door (74) and the said rodent holding compartment accompanied by a special rodent cage (Fig 3) for introducing the rodent into the rodent holding compartment; said special rodent cage comprises of component A joined together and a door B to form an enclosure and a rodent escape route C.

Opportunities for exploiting patent information

- ▶ A patent is territorial, but disclosure is global.
- ▶ Patent protection is time-limited.
- ▶ The scope of the patent is limited by its claims.
- ▶ Patents give the owners a right to prevent others from carrying out the invention (manufacturing or marketing) but not from learning from the invention.

Opportunities for exploiting patent information

- ▶ Many patent collections are now digitised.
- ▶ Internet tools and databases make exploitation more cost-effective.
- ▶ Opportunities exist to open patent information to new categories of users - SMEs, researchers, general public.

Potential uses of patent information

- ▶ Target research resources more effectively – avoid re-inventing the wheel.
Experience from the Republic of Korea shows that a large proportion of R&D funding may be approved for work that is already patented
- ▶ Learn from the research work of others.
- ▶ Adapt technologies for local conditions.
- ▶ Identify opportunities and potential partners for licencing, technology transfer, etc
- ▶ Patent strategy – avoid infringement and litigation, improve patent drafting, reduce costs.

Patent Information and the Public Domain

Patent Information and Public Domain

- ▶ Technology disclosed in a patent document may be in the public domain if:
 - The patent application has not been filed in a given country
 - The patent has not been granted
 - The patent term has expired, or the patent has not been renewed
 - The disclosed information is not covered by the claims
- ▶ In any case, the “INFORMATION” is always in the public domain

Use of public domain information

China's high-speed train system

"Our technology is a re-innovation on the basis of assimilating advanced technologies of foreign countries"



Source: The Economist, March 23, 2006

Profile of Patenting in South Africa and ARIPO

Top International Patent Applicants (PCT):

1. MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.
2. KONINKLIJKE PHILIPS ELECTRONICS N.V.
3. SIEMENS AKTIENGESELLSCHAFT
4. HUAWEI TECHNOLOGIES CO., LTD.
5. ROBERT BOSCH GMBH

Top patent applicants at ARIPO:

1. PFIZER INC
2. GLAXO GROUP LIMITED
3. BASF AKTIENGESELLSCHAFT
4. JANSSEN PHARMACEUTICA N.V.
5. RHONE-POULENC AGROCHIMIE

Top patent applicants in South Africa:

1. UNILEVER PLC
2. THE PROCTER AND GAMBLE COMPANY
3. ASTRAZENECA AB
4. BASF AKTIENGESELLSCHAFT
5. NOVARTIS AG

Profile of Patenting in South Africa and ARIPO

- ▶ Many international companies are not patenting in southern Africa
- ▶ Many technologies may be in the public domain already

Profile of Pharmaceutical Patenting in South Africa and ARIPO

- ▶ 127,522 international patent applications (PCT)
- ▶ 17% of that number in South Africa
- ▶ 1% of that number in ARIPO
- ▶ Significant freedom to operate?

Offices		Main IPC	
Name ↕	No ↕	Name ↕	No ↕
PCT	127532	A61K	129370
Australia	33634	C07D	13000
Korea	25603	A61P	3680
South Africa	21939	C07K	2667
Singapore	4528	C12H	2193
Vietnam	4044	A01H	1941
Argentina	3289	C07C	1842
Mexico	2063	A23L	1730
ARIPO	1174	C07H	773
Cuba	130	A61F	722

Patent Information and Technology Transfer

What is Technology Transfer?

Several distinct processes:

- ▶ Public - private technology transfer
- ▶ Technology transfer for development and the environment
- ▶ Embedded technology transfer – via trade, licensing, FDI, etc

- ▶ In all cases, information is critical to the process

Public-Private Technology Transfer

- ▶ Example: US Bayh-Dole Act.
 - Recognises the fundamental role of the patent system in promoting innovation and technology transfer

- ▶ Information needs:
 - Avoid duplication of effort – state of the art searches
 - Avoid infringement – freedom to operate searches
 - Check patentability
 - Identify potential partners

Technology Transfer for Development and the Environment

- ▶ Examples:
 - UN Framework Convention on Climate Change – Kyoto protocol
 - Montreal agreement
 - Convention on Biodiversity (CBD)

- ▶ Information needs:
 - Identify trends in relevant technologies
 - Identify the major entities, countries, companies developing a technology
 - Investigate the patent landscape of a technology – legal status, ownership, geographical coverage
 - Find appropriate technologies for transfer

Embedded Technology Transfer

- ▶ Technology transfer by market mechanisms
- ▶ Countries can gain access to new technologies via
 - Trade in products and capital goods
 - Licensing
 - Direct investment
- ▶ Information needs:
 - Identify potential business partners
 - Validate legal status, ownership, legal scope of patent rights
 - Estimate the market value of a technology

Embedded Technology Transfer

Example: Use of mobile phones in Indian fisheries in Kerala

Between 1997 and 2001, mobile phone service was introduced throughout Kerala. The adoption of mobile phones by fishermen and wholesalers was associated with a dramatic reduction in price dispersion, the complete elimination of waste, and near-perfect adherence to the Law of One Price. Both consumer and producer welfare increased.



Source: Jensen, R. In The Quarterly Journal of Economics, August 2007

Case Study : Anti-retrovirals

Case study : Anti-retrovirals

- ▶ UNICEF project in Cameroon
- ▶ Aim: Deliver a fixed dose combination of Lamivudine+Zidovudine+Nevirapine for HIV treatment
 - Available from generic companies - about \$120 per year per person
 - Known GlaxoSmithKline patent for Combivir (Lamivudine + Zidovudine 300mg + 150mg)
- ▶ Question: What is the status of the GSK patent and does it prevent UNICEF from purchasing and delivering similar generic products?

Anti-retrovirals : Assumptions

- Any pharmaceutical product introduced onto the world market will have already been introduced onto the US market
 - All patents related to pharmaceuticals introduced onto the US market will be disclosed to the US Food and Drug Administration (and published by the FDA)
- ▶ The US FDA “Orange Book” will show all of the relevant US patents

Anti-retrovirals : US FDA “Orange Book”

▶ Zidovudine

Appl No	IE Code	RLD	Active Ingredient	Dosage Form; Strength Route	Proprietary Name	Applicant
021205		Yes	ABACAVIR SULFATE; LAMIVUDINE; ZIDOVUDINE	TABLET; ORAL	EQ 300MG BASE; 150MG; 300MG	TRIZVIR GLAXOSMITHKLINE
020857		Yes	LAMIVUDINE; ZIDOVUDINE	TABLET; ORAL	150MG; 300MG	COMBIVIR GLAXOSMITHKLINE
978128	AB	No	ZIDOVUDINE	CAPSULE; ORAL	100MG	ZIDOVUDINE AUROBINDO PHARMA LTD
978349	AB	No	ZIDOVUDINE	CAPSULE; ORAL	100MG	ZIDOVUDINE CIPLA LTD
019655	AB	Yes	ZIDOVUDINE	CAPSULE; ORAL	100MG	RETROVIR GLAXOSMITHKLINE
019951		Yes	ZIDOVUDINE	INJECTABLE; INJECTION	10MG/ML	RETROVIR GLAXOSMITHKLINE
977268	AA	No	ZIDOVUDINE	SYRUP; ORAL	50MG/5ML	ZIDOVUDINE AUROBINDO
977981	AA	No	ZIDOVUDINE	SYRUP; ORAL	50MG/5ML	ZIDOVUDINE CIPLA LTD

Anti-retrovirals : Orange Book

► Lamivudine

Appl No	TE Code	RLD	Active Ingredient	Dosage Form; Route	Strength	Proprietary Name	Applicant
021652		Yes	ABACAVIR SULFATE; LAMIVUDINE	TABLET; ORAL	EQ 600MG BASE;300MG	EPZICOM	SMITHKLINE BEECHAM
021205		Yes	ABACAVIR SULFATE; LAMIVUDINE; ZIDOVUDINE	TABLET; ORAL	EQ 300MG BASE;150MG;300MG	TRIZIVIR	GLAXOSMITHKLINE
020596		Yes	LAMIVUDINE	SOLUTION; ORAL	10MG/ML	EPIVIR	GLAXOSMITHKLINE
021004		Yes	LAMIVUDINE	SOLUTION; ORAL	5MG/ML	EPIVIR-HBV	GLAXOSMITHKLINE
021003		Yes	LAMIVUDINE	TABLET; ORAL	100MG	EPIVIR-HBV	GLAXOSMITHKLINE
020564		No	LAMIVUDINE	TABLET; ORAL	150MG	EPIVIR	GLAXOSMITHKLINE
020564		Yes	LAMIVUDINE	TABLET; ORAL	300MG	EPIVIR	GLAXOSMITHKLINE

Anti-retrovirals : Orange Book

► Nevirapine

Appl No	TE Code	RLD	Active Ingredient	Dosage Form; Route	Strength	Proprietary Name	Applicant
020933		Yes	NEVIRAPINE	SUSPENSION; ORAL	50MG/5ML	VIRAMUNE	BOEHRINGER INGELHEIM
020636		Yes	NEVIRAPINE	TABLET; ORAL	200MG	VIRAMUNE	BOEHRINGER INGELHEIM

Anti-retrovirals : Disclosed US patents

Product approved by FDA

Active Ingredient:	LAMIVUDINE; ZIDOVUDINE
Dosage Form/Route:	TABLET; ORAL
Proprietary Name:	COMBIVIR
Applicant:	GLAXOSMITHKLINE
Strength:	150MG;300MG
Application Number:	020857
Product Number:	001
Approval Date:	Sep 26, 1997
Reference Listed Drug	Yes
RX/OTC/DISCN:	RX
TE Code:	
Patent and Exclusivity Info for this product: View	

Disclosed US patents

Appl No	Prod No	Patent No	Patent Expiration	Drug Substance Claim	Drug Product Claim	Patent Use Code	Delist Requested
020857	001	5047407	Nov 17, 2009	Y	Y	U-248	
020857	001	5047407*PED	May 17, 2010				
020857	001	5859021	May 15, 2012	Y	Y	U-248	
020857	001	5905082	May 18, 2016	Y	Y	U-248	
020857	001	5905082*PED	Nov 18, 2016			U-248	
020857	001	7119202	Feb 8, 2009	Y			
020857	001	7119202*PED	Aug 8, 2009				

Anti-retrovirals : Unexpired US patents disclosed in Orange Book

- ▶ Lamivudine
 - 5,047,407 (IAF Biochem)
 - 6,004,968 (Glaxo Wellcome)
 - 7,119,202 (Glaxo Wellcome)
- ▶ Nevirapine
 - 5,366,972 (Boehringer Ingelheim Pharmaceuticals)
- ▶ Lamivudine + Zidovudine
 - 5,859,021 (Glaxo Group)

Anti-retrovirals : Priority claims

United States Patent 5,859,021
Cameron, et al. January 12, 1999

Antiviral combinations

Abstract

Combinations comprising a compound of formula (1) ##STR1## or a pharmaceutically acceptable derivative thereof and an inhibitor of HIV replication, pharmaceutical formulations thereof and their use in the treatment of HIV infections.

Inventors: Cameron; Janet Mary (Greenford, GB), Cammack; Nicholas (Greenford, GB)

Assignee: Glaxo Group Limited (Greenford, GB)

Appl. No.: 08/605,610

Filed: February 22, 1996

Related U.S. Patent Documents

Application Number	Filing Date	Patent Number	Issue Date
219176	Mar., 1994	5627186	
882169	May., 1992		

Foreign Application Priority Data

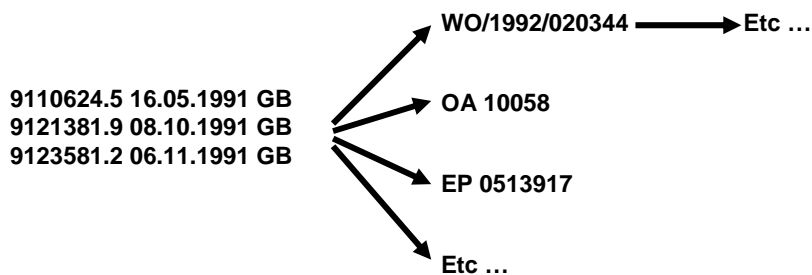
May 16, 1991 [GB]	9110624
Oct 08, 1991 [GB]	9121381
Nov 06, 1991 [GB]	9123581

Anti-retrovirals : Priority claims

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> ▶ Lamivudine <ul style="list-style-type: none"> • 07/308,101 (US) • 97 06295 (GB) • 39 45/90 (HU) • 90 310335 (EP) • 07/308,101 (US) ▶ Lamivudine + Zidovudine <ul style="list-style-type: none"> • 91 23581 (GB) • 91 21381 (GB) • 91 10624 (GB) | <ul style="list-style-type: none"> ▶ Nevirapine <ul style="list-style-type: none"> • US 08/091,418 (US) • US 07/740,828 (US) • US 07/600,390 (US) • US 07/579,001 (US) • US 07/438,923 (US) • US 07/372,974 (US) • US 07/340,970 (US) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Anti-retrovirals : Patent families

- ▶ Patent families : All documents based on the same priority application



Anti-retrovirals : Legal status

- ▶ Some patent offices provide online access to legal status data

European Patent Office

Home Contact Deutsch English Français Legal Notices

Register Plus Schedule of Fees EPO

EP0513917 - Antiviral combinations containing nucleoside analogs - GLAXO GROUP LIMITED

About this file
Legal status
Event history
Citations
Patent family
All documents

Advanced Search Search Results Download Print XML Data Open in esp@cenet

Search: Publication No. EP0513917 Search
Open recent: Open

Examination procedure:	08/05/1995	Fee for printing paid
Fees paid:	Renewal fee	
	09/05/1994	Renewal fee patent year 03
	12/04/1995	Renewal fee patent year 04
European patent granted:	20/12/1995	
Opposition procedure:	22/12/2000	Fee for printing new specification paid

Anti-retrovirals : Legal status

- ▶ But: Less than 1/3 of WIPO member states have electronic patent data



Numéro brevet	Date dépôt	Etat annuité paiement	Statut juridique
09193	08/02/1990	17 ^e annuité payée en 2006	Déchu pour non paiement de la 18 ^e annuité en 2007
09470	11/04/1989	18 ^e annuité payée en 2006	Déchu pour non paiement de la 19 ^e annuité en 2007
09741	28/06/1990	19 ^e annuité payée en 2008	En vigueur
09852	16/11/1990	18 ^e annuité payée en 2007	En vigueur
09913	02/06/1992	16 ^e annuité payée en 2007	En vigueur
10058	11/05/1992	17 ^e annuité payée en 2008	En vigueur

Anti-retrovirals - Conclusions

- ▶ Patent analysis helps to show what is patented and where
- ▶ But there are gaps in geographical coverage and in status information
- ▶ For more certainty, we need to contact individual patent offices for definitive status information

Patent Analysis Example : Wind Power

Example : Wind power

- ▶ Rapidly growing source of renewable energy
- ▶ Possibilities for small-scale distributed generation of power

Wind power : Search results

Home > IP Services > PATENTSCOPE® > Patent Search

Results of searching in PCT for:
(IC:F03D*); 2027 records
Showing records 1 to 25 of 2027 :

[\[Search Summary\]](#)

Next 25 records

Start At

Refine Search | (IC:F03D*)



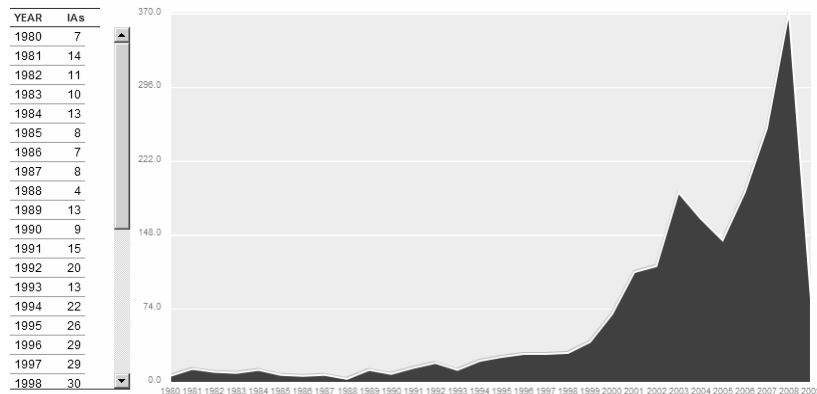
Title	Pub. Date	Int. Class	App. Num	Applicant
1. (WO 2009/036204) PHASE II DETOXIFICATION AND ANTIOXIDANT ACTIVITY	19.03.2009	F03D 1/04	PCT/US2008/076064	JOSLIN DIABETES CENTER, INC.
2. (WO 2009/036197) OFFSHORE VERTICAL-AXIS WIND TURBINE AND ASSOCIATED SYSTEMS AND METHODS	19.03.2009	F03D 3/00	PCT/US2008/075919	FLOATING WINDFARMS CORPORATION

Provided are methods and compositions that enhance Nrf2 (SKN-1) activation of phase II detoxification or antioxidant enzyme transcription, comprising plant extracts (e.g., willow extracts) or active fractions thereof, as well as methods for identifying additional compounds that increase the Nrf2-regulation of those enzymes.

An offshore wind turbine has a vertical-axis wind turbine (VAWT) mounted on a platform. The VAWT has a vertical rotor and curved blades coupled to a gearbox and an electric generator. The VAWT can fixedly extend from the platform or may be capable of reclining on the platform either manually or automatically. The platform can be composed of modular elements coupled together. Offshore, the platform can be semi-submersible with the VAWT extending out of the water and with a counterbalance extending below the platform. Alternatively, the platform can float on the water's surface and can have several arms that extend outwardly from the VAWT to increase the platform's footprint. To anchor the turbine offshore, anchoring systems can anchor the pl...

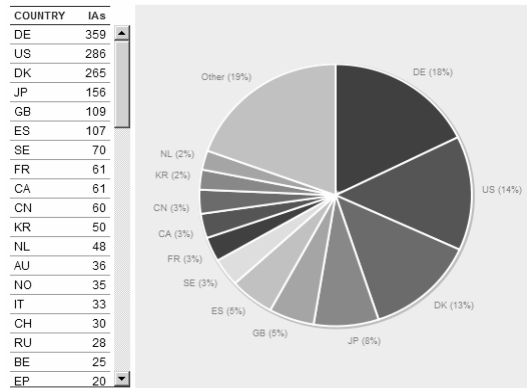
Wind power : Filing trends

International Applications by Publication Year

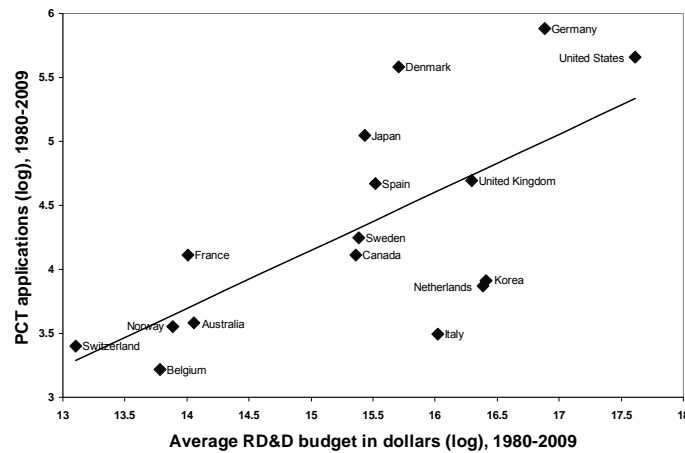


Wind power : Top countries of origin

International Applications by Country of Origin

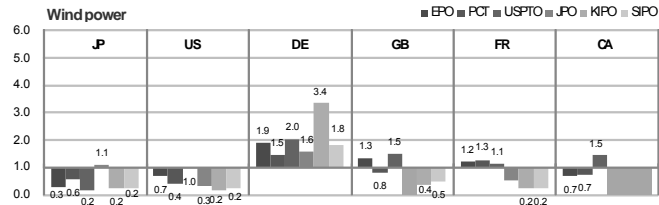


Wind power : R&D vs Patent Output



Source (RD&D figures): IEA, Energy Technology RD&D 2008 Edition

Wind power : Activity index



Source : WIPO, Patent-based Technology Analysis Report – Alternative Energy Technology (forthcoming)

- ▶ A country's degree of concentration of patent filings in a particular technology
- ▶ A positive value for a particular technology implies that the country has a relatively high share of patent applications published in that technology (i.e. it has a higher share in applications published in this technology relative to its share in all technologies).

Wind power : Top applicants

International Applications by Applicant/Assignee Name

FIRST APPLICANT / ASSIGNEE	IA#
1 VESTAS WIND SYSTEMS A/S	117
2 WOBLEN, Aloys	111
3 LM GLASFIBER A/S	52
4 REPOWER SYSTEMS AG	36
5 GENERAL ELECTRIC COMPANY	26
6 GAMESA INNOVATION & TECHNOLOGY, S.L.	21
7 SIEMENS AKTIENGESELLSCHAFT	20
8 MITSUBISHI HEAVY INDUSTRIES, LTD.	20
9 AERODYN ENGINEERING GMBH	17
10 NEG MICON A/S	15
11 HANSEN TRANSMISSIONS INTERNATIONAL NV	13
12 ABB AB	13
13 GAMESA INNOVATION AND TECHNOLOGY, S.L.	12
14 CLIPPER WINDPOWER TECHNOLOGY, INC.	10
15 FORSKNINGSCENTER RISØ	7
16 NORDEX ENERGY GMBH	7

Wind power : Bibliographic data

(WO/2001/069081) BEARING FOR AN ADJUSTABLE ROTOR BLADE ON A WIND ENERGY PLANT

Biblio. Data Description Claims National Phase Notices Documents

Latest bibliographic data on file with the International Bureau

Pub. No.: WO/2001/069081 International Application No.: PCT/EP2001/002008
 Publication Date: 20.09.2001 International Filing Date: 22.02.2001
 Chapter 2 Demand Filed: 18.07.2001

IPC: F03D 11/00 (2006.01), F16C 19/18 (2006.01), F16C 19/54 (2006.01)

Applicant: WOB BEN, Aloys [DE/DE]; (DE).

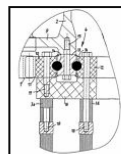
Inventor: WOB BEN, Aloys; (DE).

Agent: EISENFÜHR, Günther; Eisenführ, Speiser & Partner Martinstrasse 24 28195 Bremen (DE).

Priority Data: 100 11 464.4 10.03.2000 DE

Title: (EN) BEARING FOR AN ADJUSTABLE ROTOR BLADE ON A WIND ENERGY PLANT
 (DE) LAGERUNG EINES VERSTELLBAREN ROTORBLATTS EINER WINDENERGIEANLAGE

Abstract: (EN) The invention relates to the bearing for an adjustable rotor blade on the rotor hub of a wind energy plant, with a roller bearing as the pivot bearing for the positioning drive, which can transfer high axial forces and large twisting moments with low relative movements between the bearing halves. One bearing half comprises a bearing ring with two positive-fit rows of roller bodies, radially offset from each other and the other bearing half comprises a bearing ring engaging with the above with a U-shaped section. The bearing ring for the rotor blade, forming the other bearing half, comprises two rings (10, 12) of varying diameter, which are independently fixed to the rotor blade (3). The circular root of the hollow rotor blade is split into two sub-shells (3a, 3b) and each sub-shell is fixed to one of the both rings (10, 12), of the one bearing ring.
 (DE) Die Lagerung eines verstellbaren Rotorblattes an der Rotormabe einer



Wind power : National phase entries

(WO/2001/069081) BEARING FOR AN ADJUSTABLE ROTOR BLADE ON A WIND ENERGY PLANT

Biblio. Data Description Claims National Phase Notices Documents

Available information on National Phase entries (more information)

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Wind power : Legal status

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Wind power : Technology transfer



“Our main production and R&D centre is in Germany but we are also focusing on developing countries like India or Brazil, for example. In these countries we also have production lines for complete turbines and/or blades. I think it is important to support these countries via technology transfer.”

- Aloys Wobben (Interview with the European Wind Energy Association)

Thank you for your attention