Technique of Patent Search and Analysis: Insights and strategy

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Overview About The Talk

- Patents and Different forms of Prior Art
- Importance of Patent Search
- Users of Patent Search
- Anatomy of Patent document
- Patent Searching tools
- Strategies for Patent Search
- Steps to be followed for Patent Search
- Types of Patent Search reports
- Patentability Assessment Report: Insights and Case Study
- Patent Landscape Report: Insights and Case Study
- Freedom to Operate Report: Insights and Case Study
- Where to stop the search?

Background

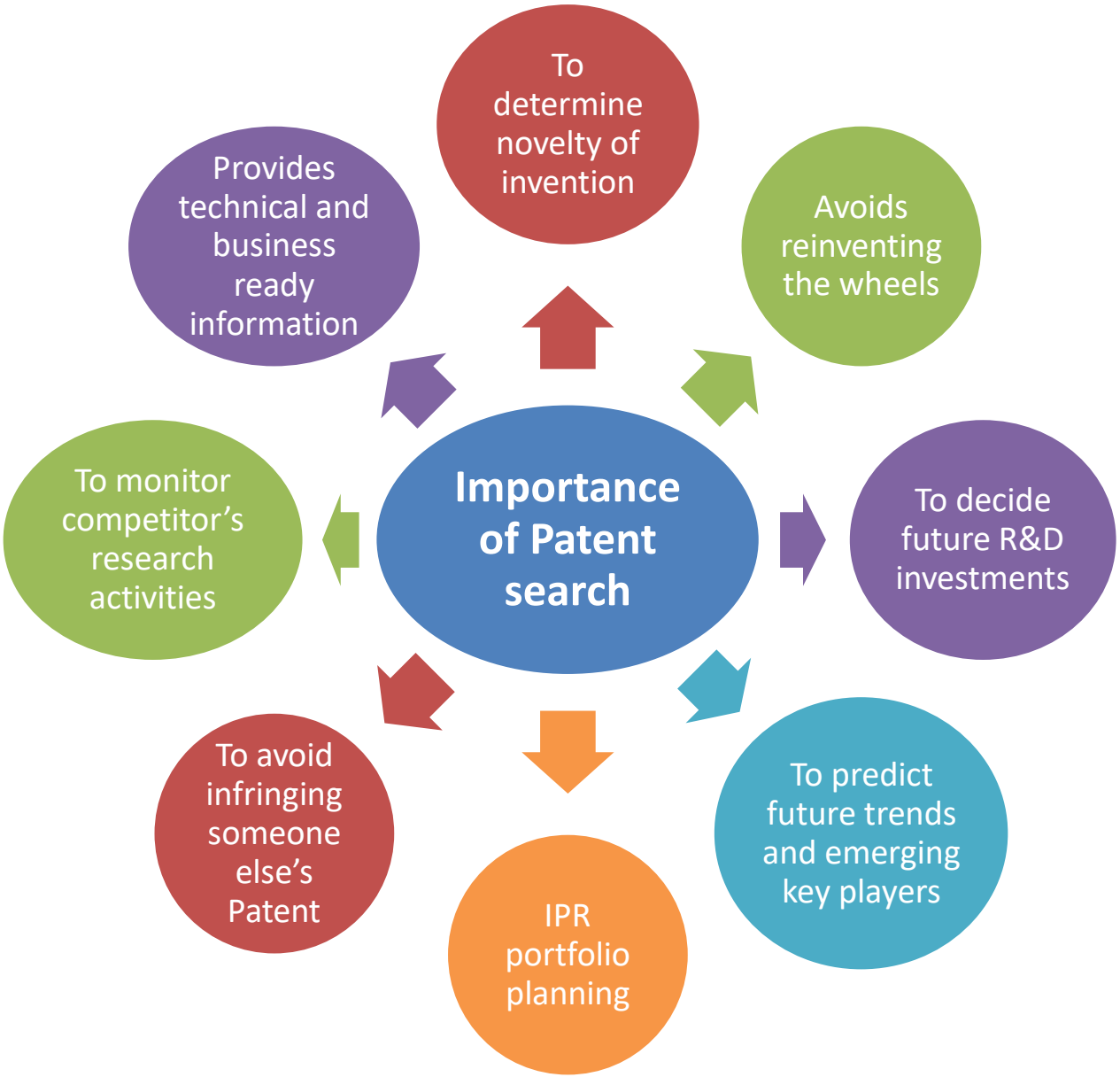
What are Patents?

- Types of Intellectual Property
- Exclusive legal rights given to the owner
- Negative right: Excludes others from making, using, or selling an invention
- Limited period rights (20 -Years in most of countries)
- Territorial rights: Governed by particular jurisdiction and enforceable in that jurisdiction
- In exchange for disclosure of the invention to the public
- Subject matter: Process or Method, Machine or apparatus, Article of manufacture Improvements of any of the above
- Criteria: **N**ovelty, **U**tility, **N**on-obviousness, **S**ubject matter (NUNs)
- 80% of the technical disclosures are published in Patents

What Is Prior Art?

- It refers to scientific and technical information that exists prior to the effective date of a Patent application
- Effective date=Filing date
- Rich in information of cutting-edge technologies
- Can be freely used to support research
- Problem solving approach

Why To Perform Patent Search?



From the journey of ideation to enforcement, Patent search can't be just ignored as it may pose considerable amount of risk when neglected.
It can give you idea of what needs to be done before proceeding to next stage.

Users of Patent Search

Researchers/ inventors/applicants

- Focus on research area to avoid redundant research
- Novelty
- State-of-the-art searches
- Decision of Patent Application (Patentability searches)
- Patent examination searches

IP practitioners like IP lawyers, patent agents

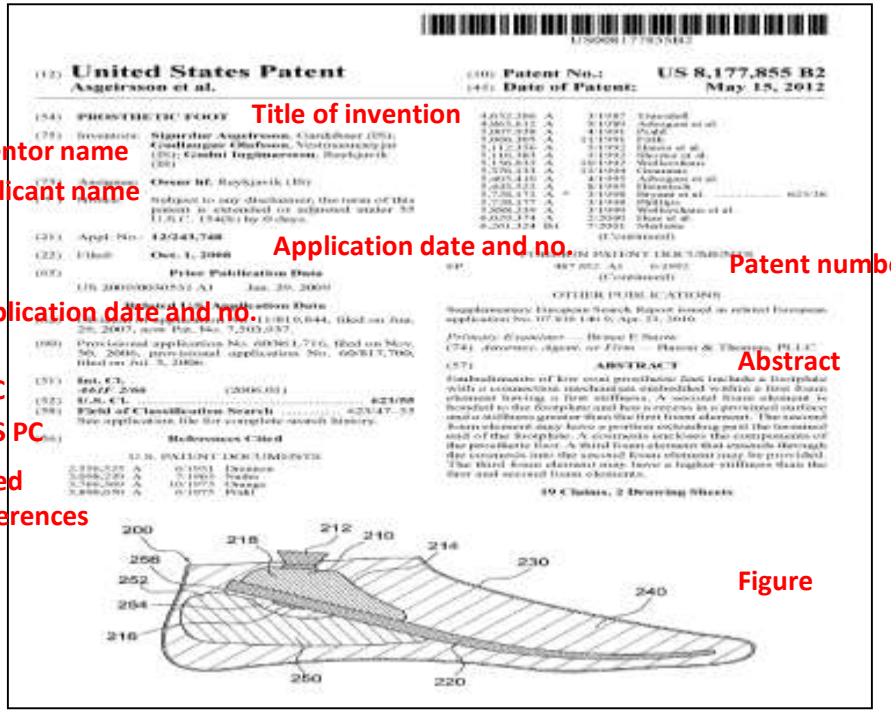
- Validity searches
- Legal status of patent application e.g., Detection of possible infringement,

Companies/ University/R&D Institution managers/researchers

- R&D investment strategy (e.g., Preventing overlap of investment)
- IP as economic asset
- Marketing
- Commercialization
- Competitors activities

Patent Information: US and EP Publication

Typical Patent document



(12) **United States Patent**
Asgeirsson et al.

(10) Patent No.: US 8,177,855 B2
(45) Date of Patent: May 15, 2012

(54) PROSTHETIC FOOT

Title of invention

Inventor name

Applicant name

Application date and no.

Patent number

Publication date and no.

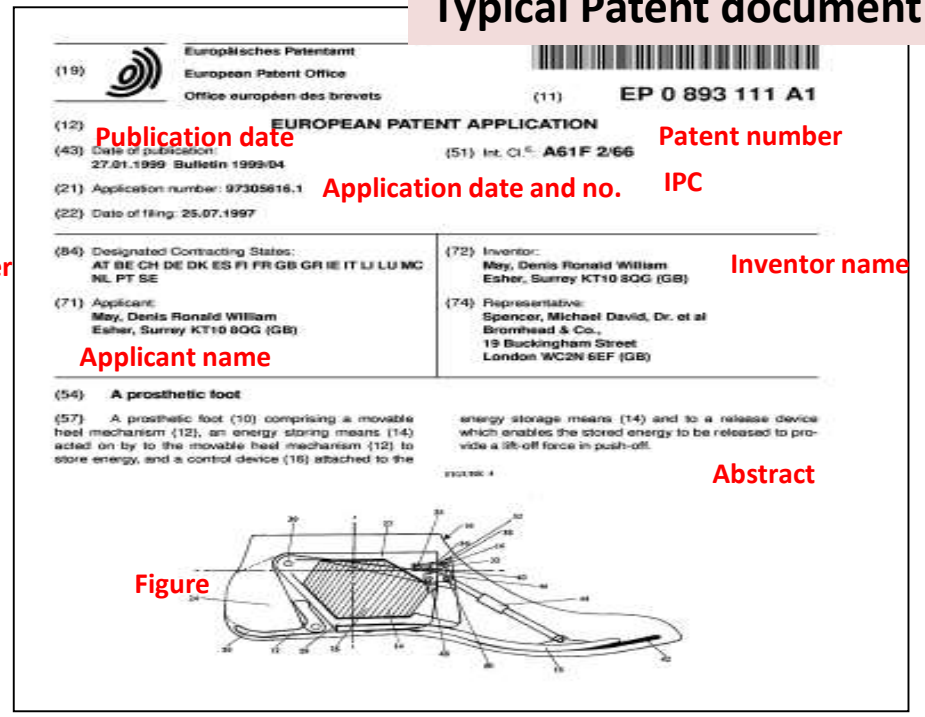
IPC

US PC

Cited references

Abstract

Figure



Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 893 111 A1

(12) EUROPEAN PATENT APPLICATION

Publication date

Patent number

(43) Date of publication: 27.01.1999 Bulletin 1999/04

(51) Int. Cl.[6]: A61F 2/66

IPC

(21) Application number: 97305616.1

Application date and no.

(22) Date of filing: 25.07.1997

(84) Designated Contracting States: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

(72) Inventor: May, Denis Ronald William, Esher, Surrey KT10 8QG (GB)

Inventor name

(71) Applicant: May, Denis Ronald William, Esher, Surrey KT10 8QG (GB)

(74) Representative: Spencer, Michael David, Dr. et al, Bromhead & Co., 19 Buckingham Street, London WC2N 6EF (GB)

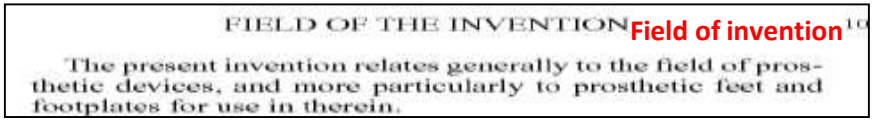
Applicant name

(54) A prosthetic foot

(57) A prosthetic foot (10) comprising a movable heel mechanism (12), an energy storing means (14) acted on by to the movable heel mechanism (12) to store energy, and a control device (16) attached to the energy storage means (14) and to a release device which enables the stored energy to be released to provide a lift-off force in push-off.

Abstract

Figure



FIELD OF THE INVENTION

Field of invention

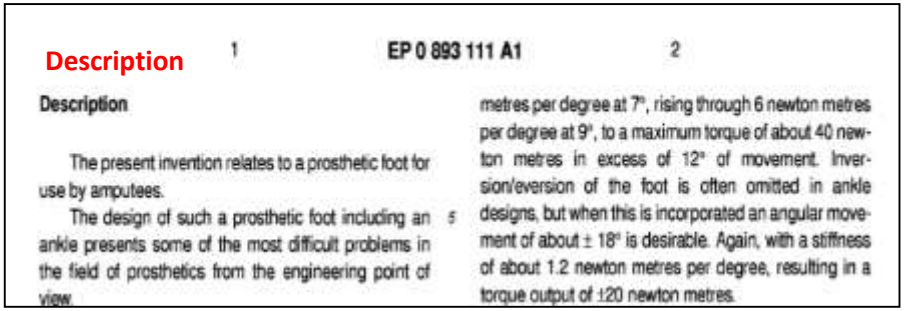
The present invention relates generally to the field of prosthetic devices, and more particularly to prosthetic feet and footplates for use in therein.

DETAILED DESCRIPTION OF VARIOUS EMBODIMENTS

Detailed description

A. Environment and Context of the Various Embodiments

The prosthetic feet in accordance with this disclosure are designed for implementation in connection with typical arti-



Description

EP 0 893 111 A1

Description

The present invention relates to a prosthetic foot for use by amputees.

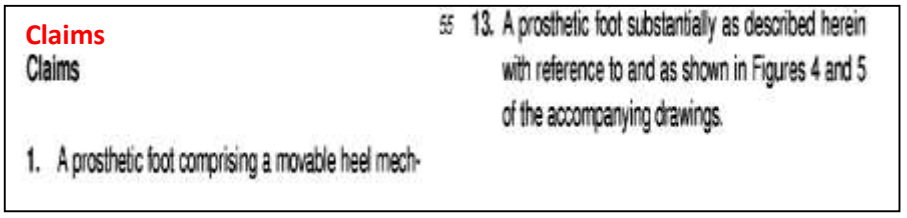
The design of such a prosthetic foot including an ankle presents some of the most difficult problems in the field of prosthetics from the engineering point of view.

metres per degree at 7°, rising through 6 newton metres per degree at 9°, to a maximum torque of about 40 newton metres in excess of 12° of movement. Inversion/eversion of the foot is often omitted in ankle designs, but when this is incorporated an angular movement of about ± 18° is desirable. Again, with a stiffness of about 1.2 newton metres per degree, resulting in a torque output of ±20 newton metres.

Claims

The invention claimed is:

1. A prosthetic foot comprising:
a first foam element having a first stiffness and substantially defining an outer periphery of the prosthetic foot;
a resilient footplate embedded within the first foam element, and having proximal and distal surfaces, and anterior and posterior portions;
a second foam element embedded within the first foam element and bonded to the distal surface of the posterior portion of the footplate, and further defining a recess
a scuff, puncture and tear resistant outer shell defining a cosmesis that surrounds a substantial portion of the outer periphery wherein the stiffness of the cosmesis is within the range of 45-55 on the Shore A scale.
7. The prosthetic foot according to claim 2, and the stiffness of the first foam element is within the range of 45-55 on the Shore A scale.
8. The prosthetic foot according to claim 2, wherein the footplate is a carbon or carbon fiber composite footplate.
9. A prosthetic foot comprising:
a first foam element having a first stiffness and substan-



Claims

Claims

1. A prosthetic foot comprising a movable heel mech-

13. A prosthetic foot substantially as described herein with reference to and as shown in Figures 4 and 5 of the accompanying drawings.

Patent Fields and Outputs

Fields	Actionable conclusion
Name of assignee	• Potential partners, customers, licensees, acquisition candidates or organizations who are using the technology, competitor details
Name of inventor	• Scientist working the invention
Priority date, application date, publication date	• Date of the first filing from which one year priority period starts • Filing trends about the invention
Legal status	• To know Patent has been granted or not, valid or expired
Protection, filing, designated countries	• If the application is regional or international, the countries to which the rights may be extended; to know global market
Citation and references	• References to related technology information uncovered by the applicant or by a Patent examiner during the Patent granting procedure
Description	• Explanation of known existing technology, explanation about how the invention could be applied to address the problem in prior art, specific embodiments of the new technology
Claims	• Legal boundary of the invention, unique technical features, supported by description

Where The Patent Information Can Be Searched?

Databases for Patent search

Free databases (National Patent office)

Patentscope, USPTO, ESPACENET, INPASS

Free databases (private sector)

Google patents, Lens.org

Paid databases

Orbit, Derwent, PatBase, PatSeer, STN, SciFinder

Chemical structures/ Markush structures/ Chemical reaction

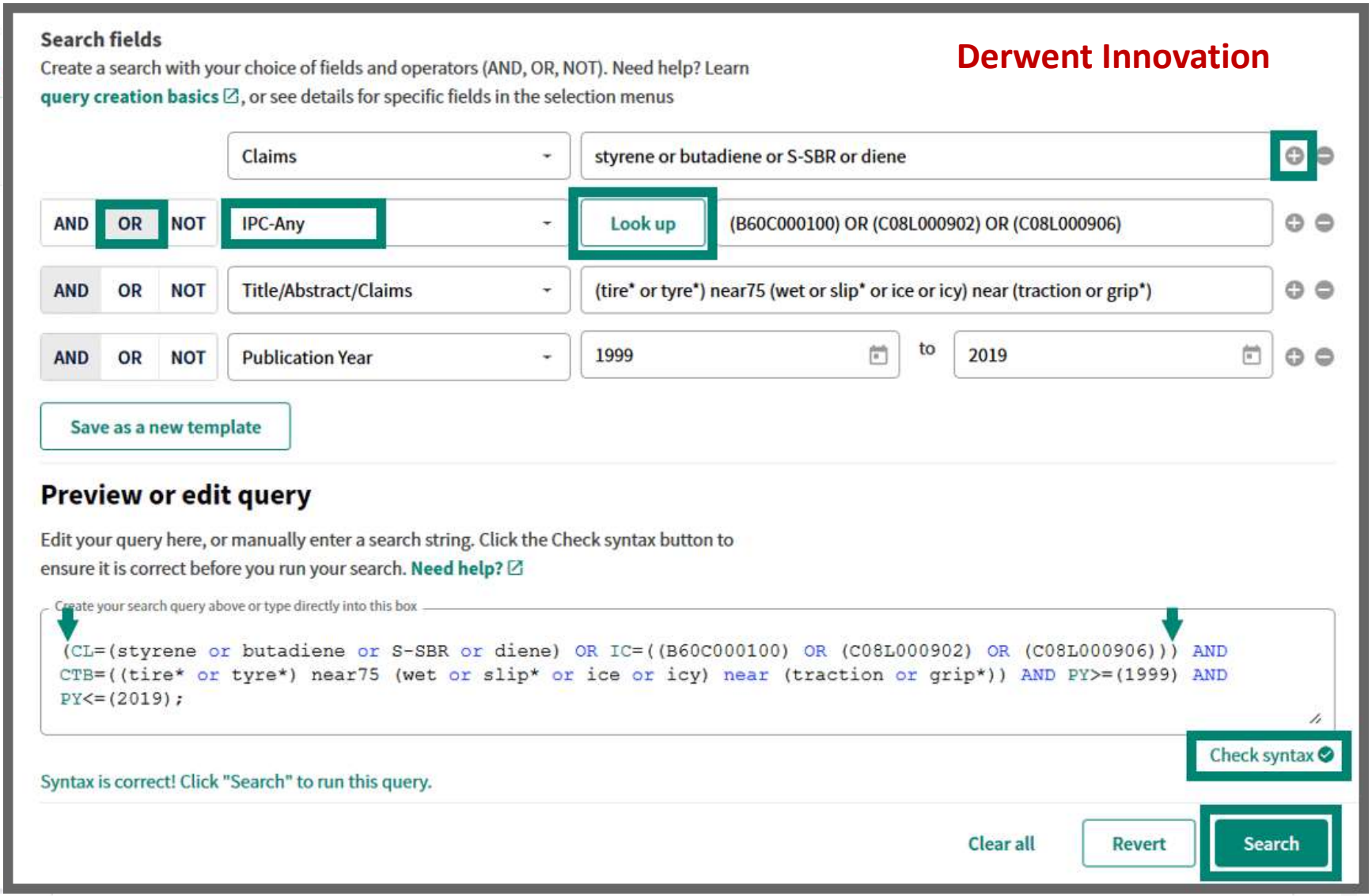
PubChem, Chemspider, Reaxys, STN, SciFinder, Patentscope, SureChEMBL

Biosequences

PubMed, Orbit BioSequence, STNNext, Lens.org, BLAST ®

Traditional medicinal knowledge/herbal medicaments Traditional Knowledge Digital Library (TKDL)

Snippets of Patent Information Search Databases

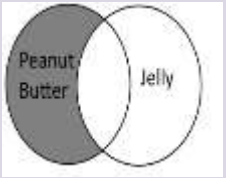


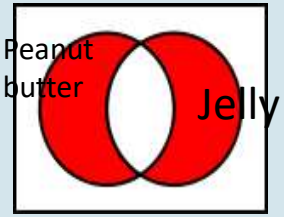
Strategies for Patent Information Search

Keywords	• Inclusion of synonyms, different representations of words, exclusion of homonyms by operators, truncations, nesting in title abstract , claims and description
Classifications	• By using standardized classification system followed by Patent examiners for invention belonging same technological groups
Names	• Assignee, Inventor, Agent, Examiner
Numbers	• Application number, publication number, priority number, Patent grant no.
Countries	• Filing country, protection country, designated country, priority application country
Legal status	• Latest status of Patent /Patent application, rights associated with it like (in force/not, withdrawn, objected, lapsed, revoked), objection filed if any.
Licensing details	• Licensing interest reported by assignee of Patent
Citation	• Cited documents (Forward and backward citations), Patent families

Searching With Keywords: Operators

AND	OR	ANDNOT	XOR
• Documents having both the word • Narrow your results	• Documents having either of the word • To broaden your search	• Documents having first word but not second word • Exclude words from your search	• Documents having first word or second word but not both





Proximity Operators: NEAR/W/ADJ

Used with a numerical to define the maximum distance between the search terms E.g. mouse NEAR<3 trap

the mousetrap is placed at a place where a mouse often runs out, bait for trapping the mouse is placed in the trap body, when the mouse treads on the other side of the seesaw, the seesaw rotates to incline towards the inner side of the trap body, the mouse enters the trap body, and

Truncations: */+:Unlimited

?: Replacing 0 or 1

#: Replacing exactly 1

E.g.. Fung*= Fungus, Fungi, Fungal, Fungicidal, Fungible

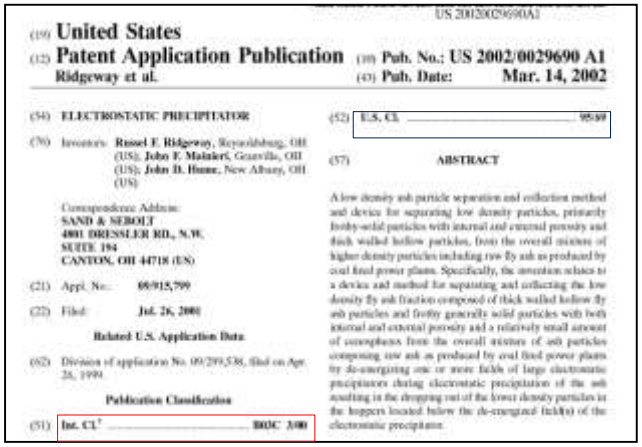
Alumin?m=Aluminium, aluminum

Med#cine=Medicine, Medecine

Searching With Classification codes

•Hierarchical classification system used primarily to classify and search Patent documents according to the technical fields to which they pertain

•International Patent Classification (IPC), Cooperative Patent Classification (CPC), United States Patent Classifications (USPC), European Classifications (ECLA), Japanese Classification Systems (F-Term and F-Index)



(19) **United States**
(12) **Patent Application Publication** (10) **Pub. No.: US 2002/0029690 A1**
Ridgeway et al. (43) **Pub. Date: Mar. 14, 2002**

(54) **ELECTROSTATIC PRECIPITATOR**

(76) Inventors: **Russel F. Ridgeway**, Reynoldsburg, OH (US); **John F. Mainieri**, Gearville, OH (US); **John D. Hume**, New Albany, OH (US)

Correspondence Address:
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4801 DRESSLER RD., N.W.
SUITE 104
CANTON, OH 44718 (US)

(21) Appl. No.: **09/915,799**

(22) Filed: **Jul. 26, 2001**

Related U.S. Application Data

(62) Division of application No. 09/299,538, filed on Apr. 26, 1999

Publication Classification

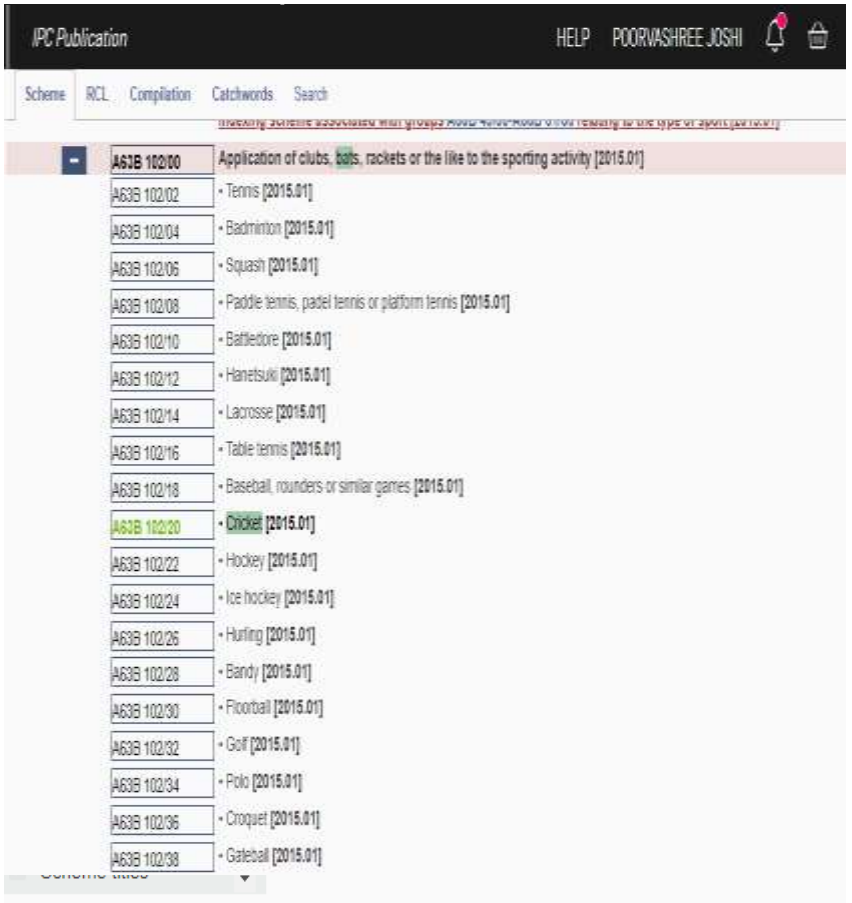
(51) **Int. Cl.**[7] **B03C 3/00**

(52) **U.S. Cl.** **95/69**

(57) **ABSTRACT**

A low density ash particle separation and collection method and device for separating low density particles, primarily frothy-solid particles with internal and external porosity and thick walled hollow particles, from the overall mixture of higher density particles including raw fly ash as produced by coal fired power plants. Specifically, the invention relates to a device and method for separating and collecting the low density fly ash fraction composed of thick walled hollow fly ash particles and frothy generally solid particles with both internal and external porosity and a relatively small amount of cenospheres from the overall mixture of ash particles comprising raw ash as produced by coal fired power plants by de-energizing one or more fields of large electrostatic precipitators during electrostatic precipitation of the ash resulting in the dropping out of the lower density particles in the hoppers located below the de-energized field(s) of the electrostatic precipitator.

- A HUMAN NECESSITIES
- B PERFORMING OPERATIONS; TRANSPORTING
- C CHEMISTRY; METALLURGY
- D TEXTILES; PAPER
- E FIXED CONSTRUCTIONS
- F MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING
- G PHYSICS
- H ELECTRICITY



IPC Publication HELP POORVASHREE JOSHI

Scheme | RCL | Compilation | Catchwords | Search

- A63B 102/00 Application of clubs, bats, rackets or the like to the sporting activity [2015.01]
  - A63B 102/02 • Tennis [2015.01]
  - A63B 102/04 • Badminton [2015.01]
  - A63B 102/06 • Squash [2015.01]
  - A63B 102/08 • Paddle tennis, padel tennis or platform tennis [2015.01]
  - A63B 102/10 • Battledore [2015.01]
  - A63B 102/12 • Hanetsuki [2015.01]
  - A63B 102/14 • Lacrosse [2015.01]
  - A63B 102/16 • Table tennis [2015.01]
  - A63B 102/18 • Baseball, rounders or similar games [2015.01]
  - A63B 102/20 • Cricket [2015.01]
  - A63B 102/22 • Hockey [2015.01]
  - A63B 102/24 • Ice hockey [2015.01]
  - A63B 102/26 • Hurling [2015.01]
  - A63B 102/28 • Bandy [2015.01]
  - A63B 102/30 • Floorball [2015.01]
  - A63B 102/32 • Golf [2015.01]
  - A63B 102/34 • Polo [2015.01]
  - A63B 102/36 • Croquet [2015.01]
  - A63B 102/38 • Gateball [2015.01]

International Patent classification (IPC)

Steps To Be Followed For Patent Search

Determine purpose of search

Deconstruct the Invention : keywords, classification codes

Preparation phase

Develop combined search strategy by using operators and truncations

Perform a search using search string

Search phase

Find out relevancy of the search results

Analyze and Summarize

Compilation of report

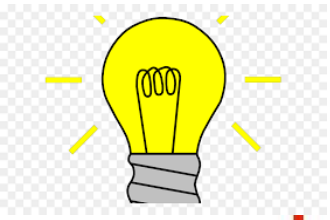
Post-search phase

Features

- **Device**
  - Form
  - Parts, structure
  - How it functions
  - The effect it produces
- **Process**
  - Sequence of steps
- **Combination of devices and process**
  - Has an end product
  - Does not have an end product
- **New chemical substance**
- **New use for a known substance**

Types of Patent Search Reports

Discovery | **Idea screen** | **Development** | **Testing and validation** | **Product**



New idea

Before sharing

12 months period from provisional to complete filing

- State of art report
- Competitor analysis report
- Patent landscape report

- Novelty search report
- Complete patentability report
- Freedom to operate report

New Idea

- Freedom to operate report

New Idea

- Freedom to operate report
- Validity/invalidity report
- Infringement analysis report

Patent search report follows the product development journey

Patentability Assessment Report: Insights

What is it?

Assessment of invention for its novelty, non-obviousness , industrial utility and patentable subject matter

Insights obtained from it?

Potential for Patentability of invention, filing strategies for invention, possible prior art citations in first examination report, if any expansion of invention required to over rule the non-obviousness

Who will benefit?

Researchers and innovators,
Product developers,
Applicants,
Legal teams

How to perform it?

Through search of Patent and non-Patent prior art in global databases, review of prior art, opinion of NUNS parameter for Patentability

Importance:

Easy identification or understanding of the state-of-the-art technology and thereby minimizing research time

Helps a product developer to be free from anticipated infringement suits

Helps an inventor to modify his ideas to be suitable for the Patentability criteria

Helps applicant to decide weather to go with filing of Patent application or to save the application fees

Helps as examiner to determine Patentability of application and Patentee to assess the strength of invention

Helps during drafting of claims in complete specification

Limitations: Fails to report unpublished documents as Patent applications are not published until 18 months from filing

Patentability Search: Case study

Key features: 1. **A mixed microalgae consortium** of Chlorella sp., along with Scenedesmus sp., Spirulina sp. and Synechocystis sp. used as a plant growth biostimulant

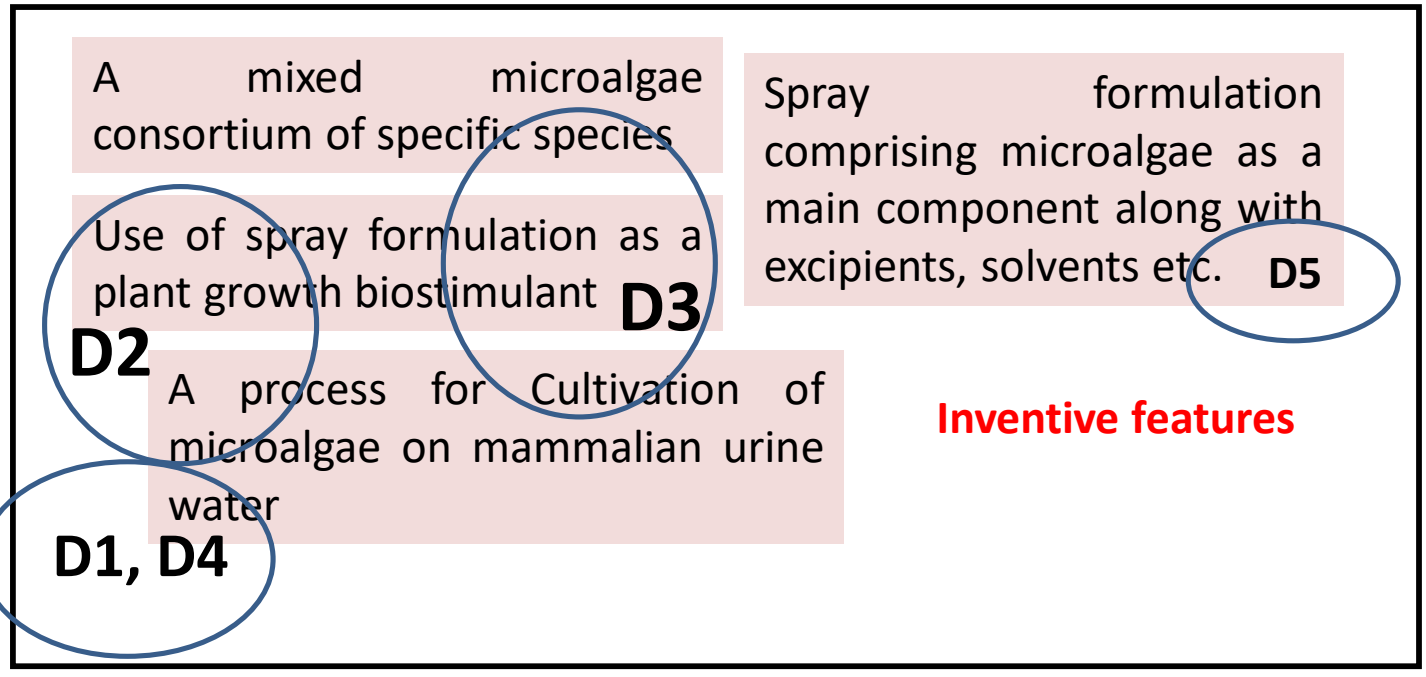
2**. A bio stimulant formulation** for plant growth comprising microalgae as a main component along with excipients, solvents etc.

3. **A process for production** of microalgae on mammalian urine water.

biostimulants, biostimulation, growth stimulants, growth stimulation, biofertilizer/s, promotion/promoter	microalgae, algae, algal, microbial/microbia	cultivation, cultivate, develop, development, developing, co-cultivation, co-cultivate, treatment	waste water, water

	Database
Search query	((Biostimulat* OR (promot*)) AND (microalga* OR *alga* OR *microbi*) AND (cultivat* OR develop*) AND (water OR waste W1 water))
Classification Codes	Y02A40/20, Y02W30/40, C05F11/08
Results retrieved	PL:10,NPL: 20
Relevant results	PL:4 (D4: US4551164A, D5: AU2016204301B2, D2: US20160095334A1, D3: CN102653775B) NPL:1 (D1: Environ Sci Pollut Res, 2015, 5884-6)

Patentability Opinion: Case Study



Novelty : Spray formulation comprising microalgae as major component and process for production as a plant bio stimulant as a invention is seems to be novel.

Non-obviousness: When all the above documents D1-D5 combined together, present invention seems to be obvious for the person skilled in art.

Non patentable subject mater: The method of cultivation of microalgae cannot be considered as patentable subject matter u/s 3(j) according to Indian Patent act, 1970.

Patent Landscape Report (PLR): Insights

What is it?

a snapshot of the Patent situation of a specific technology, either within a given country or region, or globally

Insights obtained from it?

Patent filing trends, major companies and universities, key Patents, emerging players, IP collaboration networks, exploited fields, uncrowded areas, in/ out licensing opportunities

Whom will be benefited?

Researchers and innovators
Corporates and business developers
Public policy makers
Human resource teams, legal teams

How to perform it?

Search, review, and refine the subject matter, Review data, create categories and populate, Create charts/tables and visualizations

Importance:

To Researchers and innovators: provides the current 'State-of-the-Art' , Provides knowledge about major technologies in the market

To Businessmen: helps to formulate plans and strategize for possible business ventures, acquisitions and mergers, compare their technology with competitors and asses the need of in/out licensing opportunities

To Policymakers: strategic decisions related to R&D investment, prioritization, technology transfer or local manufacturing, geographically more representative information to support key policy processes

To human resource teams: areas in infancy/maturity/ declining phase for management of resources

To legal team: identify any potential patent infringement.

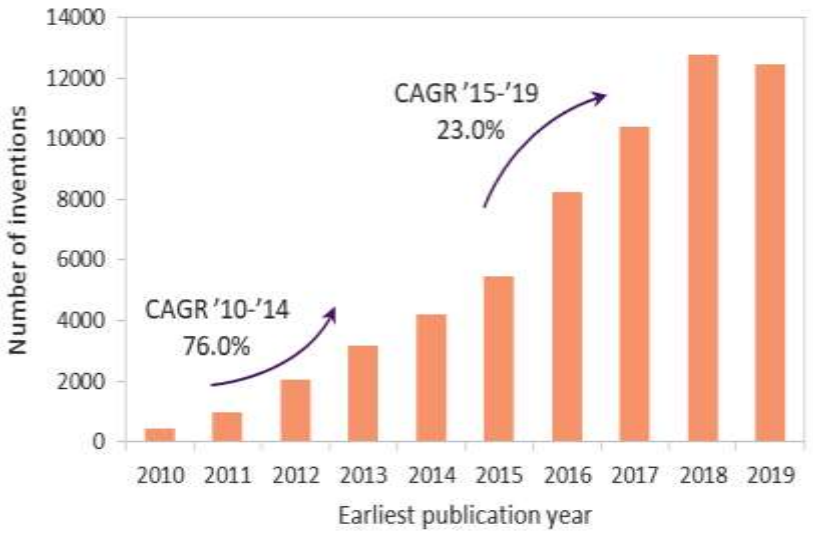
For White space analysis: determine ‘crowded' or 'open' a technological area

Patent Landscape Search: Case study

A. Information from client	
Client request	Patent landscape report on “Graphene Technologies”
Key questions to be answered	• What are global innovation trends? • Top regions or countries active in Graphene research? • What are publication trends of graphene-related inventions by top countries/regions? • Who are top graphene technology holders? • What is maturity matrix of graphene technologies? • What is Patent filing trend in Graphene production methods and their use in the manufacture of graphene products? • What are applicant profiles for application of graphene technologies?
B. Methodology of search	
Relevant keywords	Graphene, graphene oxide, reduced graphene oxide, single layer, monolayer, bi-layer, few layers, film, sheet, nanoplatelets, pellet, nano-plate, nano-flake, nano-composite, dispersion, suspension, Battery, cell, lithium ion, Li-ion, lithium sulphur, lead acid, lead carbon, super capacitor, fuel cell, water desalination, seawater, water purification, water treatment, sewage, waste water; fuel, gasoline
Classification codes of Subject matter	C01B 32/00, C01B 31/00, C01B 2204/00, C23C 16/00, Y02E 10/00, Y02E 10/00, Y02P 70/00, C09D 11/00

C. Search results

Global innovation trends



Top regions or countries

Applicant origin	No. of inventions	
	Overall	Cited inventions
China	46914	20736
S. Korea	4765	2701
U.S.	3343	2405
Japan	1531	1031
Taiwan	494	216
U.K.	443	215
Germany	411	265

Publication trends of graphene-related inventions

Earliest publication year

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
China	137	424	1166	1803	2654	3963	5995	8654	11182	10936
South Korea	77	231	357	578	612	567	641	676	497	529
U.S.	116	181	233	325	413	348	380	449	446	452
Japan	48	70	140	227	195	188	182	173	181	127
Taiwan	1	9	21	35	70	84	64	65	74	71
U.K.	15	17	38	36	70	54	73	54	64	22
Germany	14	26	38	45	52	51	39	55	55	36

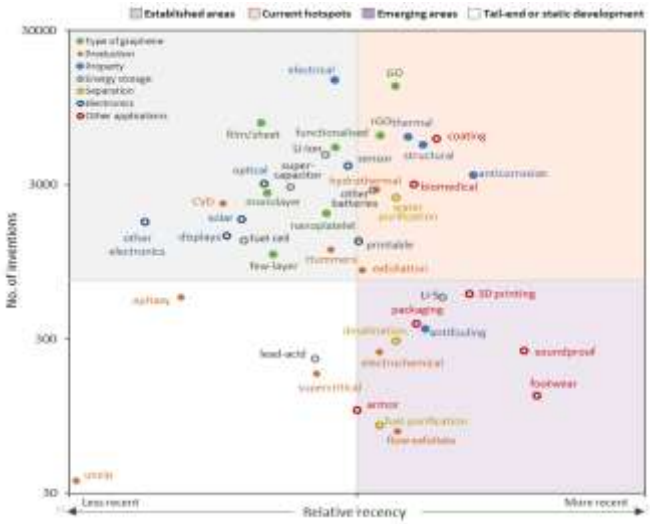
Year-on-year growth
-50% 0 50% 100%

Top graphene technology holders

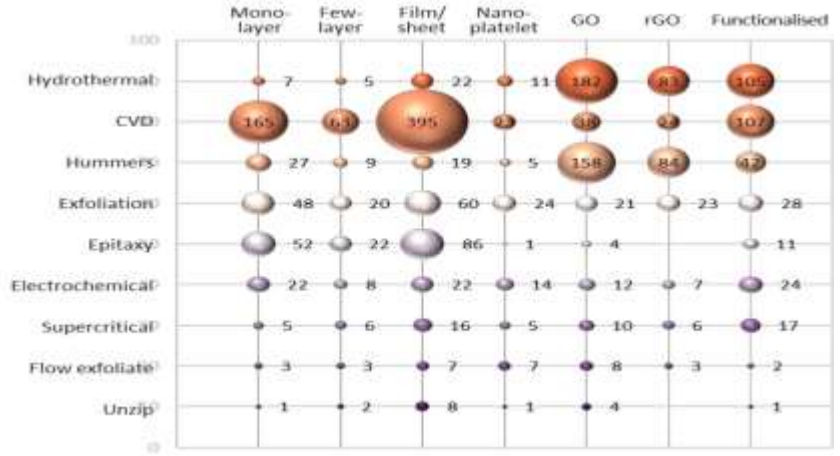
	China	Rest of the world
Universities/Institutes	CAS [2187]	KAIST, KR [253]
	Zhejiang Univ. [455]	Sungyunkwan Univ. [237]
	Harbin Inst of Tech [406]	KIST, KR [166]
	Jiangsu Univ. [371]	Hanyang Univ., KR [144]
	Tsinghua Univ. [362]	UNIST, KR [129]
	Southeast Univ. Nanjing [334]	Univ. California [97]
	Univ. of Jinan [325]	Korea Electronics Tech Inst [86]
	Tianjin Univ. [315]	MIT [63]
	South China Univ. of Tech [305]	CEA, FR [46]
	Changzhou Univ. [299]	NIMS, JP [34]
Commercial entities	Oceans King Lighting [406]	Samsung [509]
	Chengdu New Keli [360]	Global Graphene Group [316]
	Shengquan Group [186]	LG [252]
	Hangzhou GaoxiTech [165]	IBM [151]
	TCL [154]	Toshiba [111]
	Sixth Element [150]	Semiconductor Energy Lab [88]
	BOE Technology [132]	Nokia [88]
	Chenzhou Botai [129]	Fujitsu [76]
	Hunan Gonsion Graphite Tech [116]	Sekisui Chemical [76]
	Sinopec [113]	Lockheed Martin [60]

C. Search results

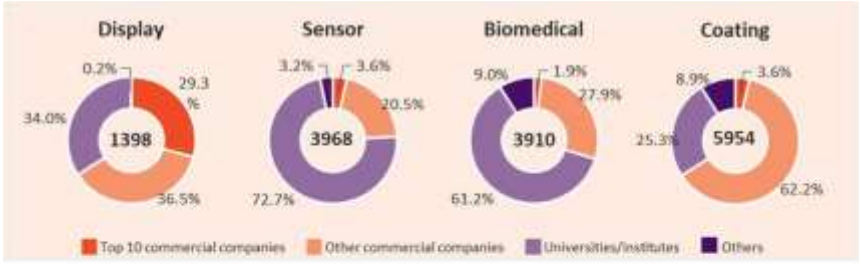
Maturity matrix of graphene technologies



Graphene production methods and their use in the manufacture of graphene products

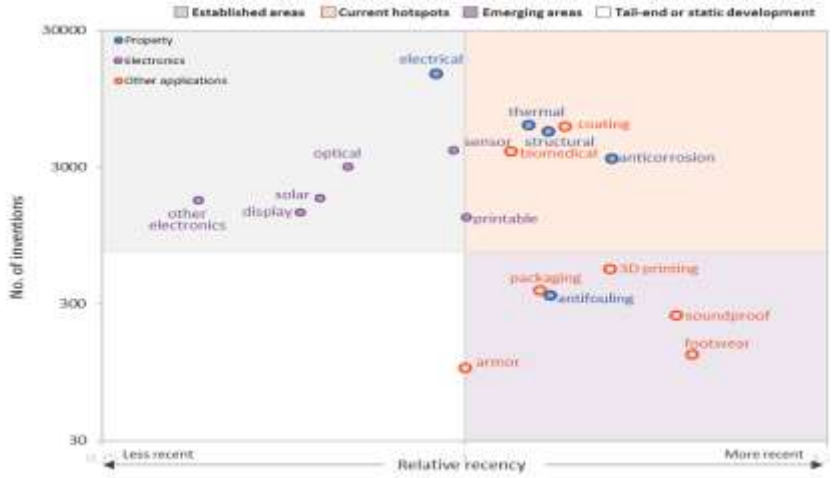


Applicant profiles for application of graphene technologies



Top 5 Enterprise Applicants			
TCL [109]	Nokia [37]	Chengdu New Keli [15]	Chengdu New Keli [50]
BOE Technology [104]	Samsung [33]	Samsung [11]	Global Graphene Group [31]
Samsung [68]	IBM [13]	Lockheed Martin [11]	Hunan Gonsion Graphite [22]
LG [44]	Sixth Element [11]	Nanomedical Diagnostics [9]	Samsung [20]
Chongqing Graphene Tech [23]	Fujitsu [8]	Shengquan Group [7]	LG [17]

Innovation Maturity Matrix of graphene in electronics and other applications



Freedom to Operate (FTO): Insights

What is it?

Right to use or clearance search, "clearance" to make, use, and sell an inventive concept.

Insights obtained from it?

Legal liabilities of product to be commercialized, idea about infringement while making, using, or selling a product or process, options for design around/ wait until expiration of Patent/choose different jurisdiction/purchase/ licensing it

Whom will be benefited?

Researchers and innovators
Corporates and business developers

How to perform it?

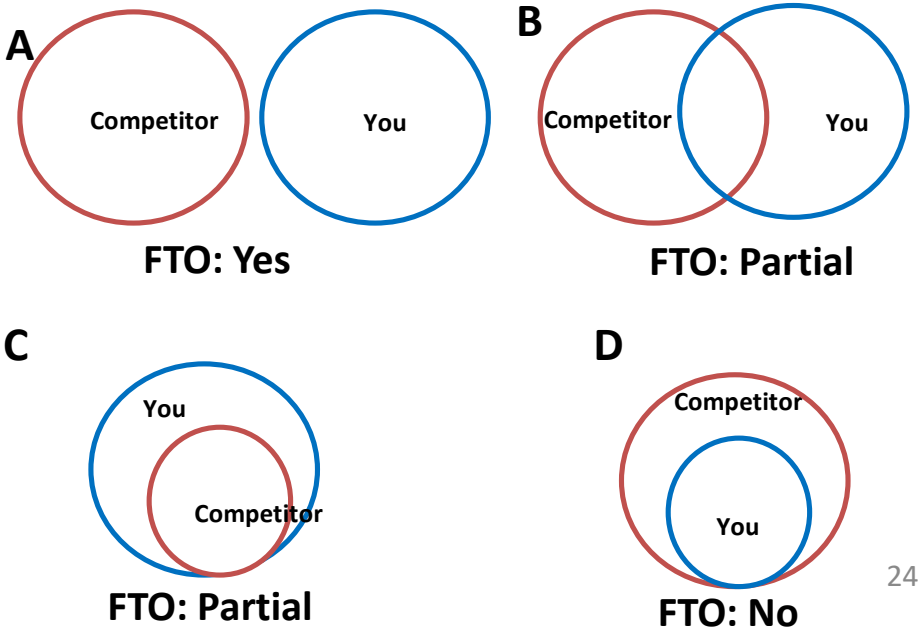
Background study, searching for relevant Patent, claims study, mapping of relevant portion, opinion and recommendations
Filtering parameters: Granted active Patents, jurisdiction specific

Importance:

For identifying if the product or proposed product violates already existing rights

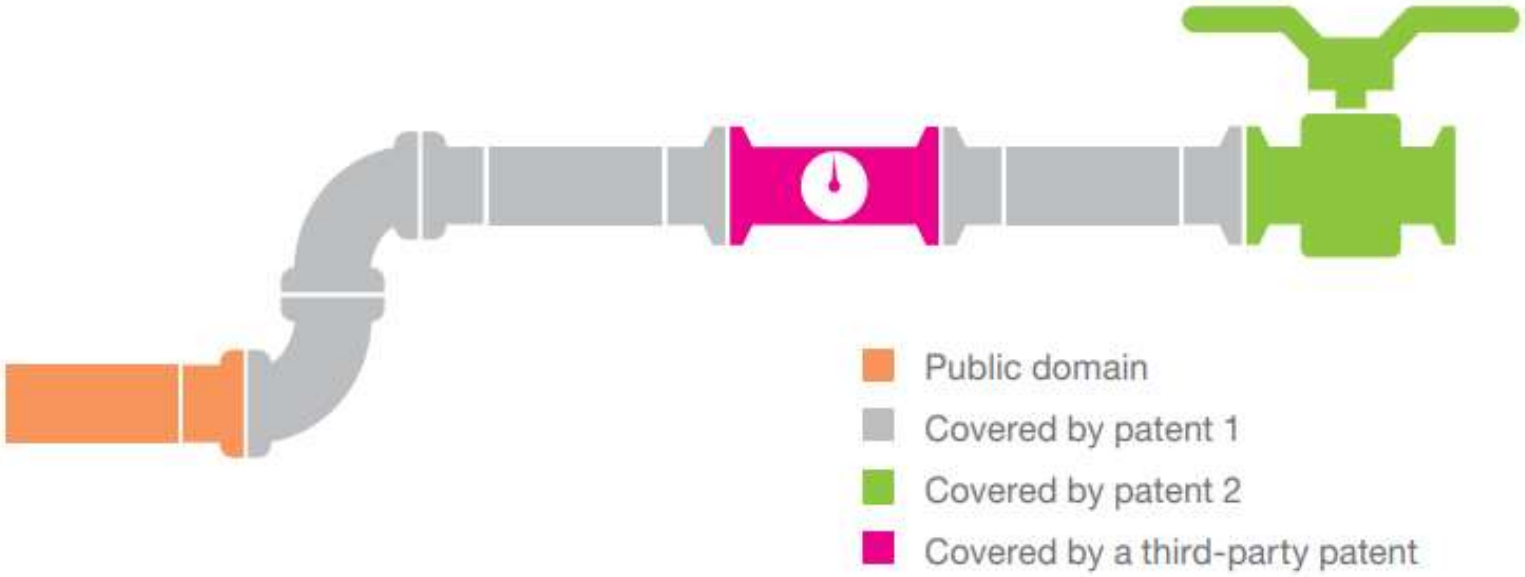
Clarifies as to which countries possibly rights apply

Saves on cost as unnecessary investments in production and marketing can be avoided



Understanding About FTO

Product A of 7 Sub-components
A Startup wants to produce and sell product A



Strategies for entry of product A in market:

-To remove the protected valve from the final product

-To adopt a different design (invent around/ design around) that avoids using the Patented valve.

-To buy the Patent or secure a license from the Patent owner to use the valve technology.

-To challenge the validity of the Patent

Having a Patent ≠ Freedom-To-Operate

Freedom to Operate Search: Case Study

Case Study: US Patent on film delivery systems via buccal-oral route comprising of Insulin Gold Nanoparticles, its method of preparation and its use in disorders of blood glucose regulation . Company wants to know FTO in US?

Keywords and different representations of keywords:

Oral/orally/per-oral/peroral Exogenous/exogenously	Insulin Protein/ peptide hormone	Nanoparticle Nano delivery	Amino acid Cysteine	Encapsulation/encapsulate Loaded/ load/loading, Adsorbed/adsorb/ adsorption

	Patentscope	Questel orbit
Search string	CL:(((insulin **OR** (Peptide **ADJ** hormone)) **AND** (oral OR exogenous) **AND** (nanoparticle))) **AND** CLASSIF:((A61K38 **OR** A61K47)) **AND** **AD**:([01.01.2000 TO 01.07.2021])	((Oral **W** ((administer*) **OR** (deliver*) **OR** (ingest*))) **AND** (insulin **OR** Protein **OR** macromolecule **OR** (peptide **W** hormone)) **AND** (loaded OR absorbed) **AND** ((metal **W** oxide) **OR** (Iron **W** oxide) **OR** (alumin*****m hydroxide) **OR** (magnesium **W** hydroxide) **OR** alumina **OR** silica **OR** (zinc **W** oxide) **OR** (aluminosilicophosphate) **OR** (zirconia) **OR** (tantalum **W** oxide)) **AND** ((encapsulat*****) **OR** (adduct) **OR** (complex*****)) **AND** ((amino **W** acid) **OR** (cysteine))) **AND** (A61K38 OR A61K47)

Freedom to Operate Search: Case study

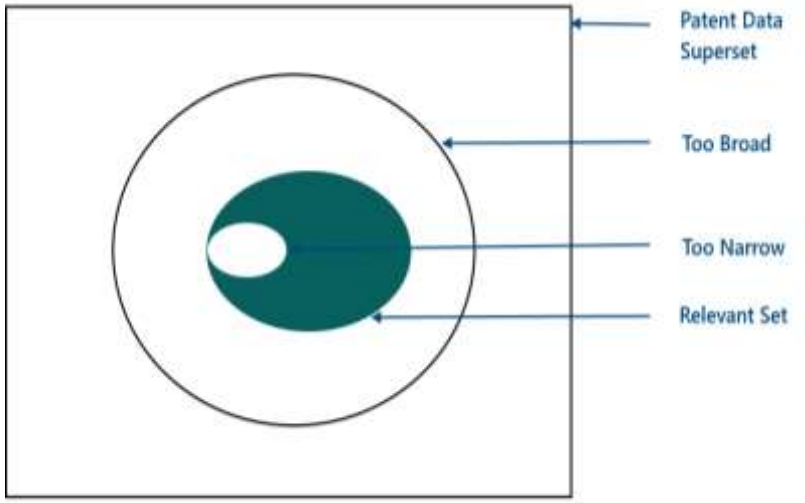
	Patentscope	Questel orbit
Restriction in FTO point of view	Jurisdiction: US Filing year: 2001-2021 (last 20 years)	Jurisdiction: US , Inforce Patent Filing year: 2001-2021 (last 20 years)
Results retrieved	38	9
Relevant results	2 (US20150051142, US10143754)	2 (US8974826B2, US10143754)

Key observations:

- **US10143754:** Koteswara rao kollipara has granted US Patent for **peroral delivery of insulin and its analogues in nanoparticle form** wherein insulin or its analogues encapsulated with a suitable encapsulating agent and a pharmaceutical excipient, **with sustained hypoglycaemic activity**.
- **US8974826B2:** Aquestive Therapeutics Inc's has granted US Patent for film delivery systems **via buccal-oral route comprising of Insulin Gold Nanoparticles**, its method of preparation and its use in disorders of **blood glucose regulation** with a priority date before company's Patent filling. The said Pharmaceutical film enters into systemic circulation directly without exposure into GIT.

Opinion: Company's pharmaceutical composition seems **not to have Freedom to Operate** in context of Aquestive Therapeutics Inc's and Koteswara rao kollipara granted Patent for the therapeutic delivery system.

When To Stop The Search?



•**Novelty Search Report:**

only one comprehensive document is required to Knock out a claim

•**Freedom To Operate Search Report:**

a clear defined end- point

•**Patentability Search:**

If we have knocked out all of the claims, or have reached a point where the claims diverge widely from a central idea and it is not clear which is the preferred direction, it is legitimate to stop

•**State Of Art Search:**

It depends on the nature of the query and the extent of the material, a limited number of hits can be analyzed thoroughly; where there is a great deal of prior art, it is reasonable to adopt a broader brush approach

Ref: https://www.wipo.int/export/sites/www/tisc/en/ppt/Philippines/efficient_Patent_searching.pdf

THANK YOU!!

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Types of Patent search reports

	Novelty and Patentability search	**Validity search**	**Infringement search**	**Freedom to operate search**	**Patent landscape search**
Scope	Patents (worldwide), publications	Claims of Patents (worldwide) – Publications (Before priority date)	Claims of Patents (specific country) (last 20 years data only)	Claims of Patents (worldwide)	Patents (worldwide) – Publications [For whole technical field]
When to do?	Writing a new Patent application	To defend Patent application or litigate a competitor's Patent	Before launching a product in market	Before launching a product in market	At ideation stage
Why to do?	To construct claims not affected by prior art	To validate or invalidate Patents on the basis of claims	To verify that product can be commercialized in market	To know whether product is infringing anyone's IP rights	To know Patent situation around the technology
Search restriction	Date: Prior to application	Date: Prior to application	Legal status: Inforce Patents, country	Legal status: Inforce Patents, country	No restrictions

Differences between paid databases and free databases

	Free databases	Paid databases
Combining multiple search strategies	Not available	Available
Advance visualisation tools	Not available	Quick, easy-to-read bar charts allowing summarization of key bibliographic data
Limit search to patent families	Not available	Available
Citation search	Not available	Available
Coverage of patents by jurisdiction	Limited coverage	Huge coverage
Title, abstract, description, technical advancement illustrations using clear, concise, industry-specific terms	Not available	Available
Alerts	Not available	Available
Saving of result sets	Not available	Available for review for future reference
Extensive hyperlinking to a variety of related information	Not available	Available e.g. commercial sources, cited NPL
Family legal status information	Not available	Available, updated on regular basis