Patent Search Using PATENTSCOPE, USPTO and Espacenet

What is a Patent?

Definition of Patent

An exclusive right granted for an invention, which is a product , product use, a process or an apparatus , for example that provides a new way of doing something, or offers a new technical solution to a problem.

What does a Patent do?

A patent provides protection for the invention to the owner of the patent for a limited period of time (generally 20 years). In other words, the invention cannot be commercially made, used, distributed or sold without the patent owner's consent.

However, it does not give its owner the right to make use of his invention.

Patentability of the invention

There are three main criteria for patentability:

The invention must:

- Show an element of novelty
- Show an inventive step
- Be of practical use

How is a Patent Granted?

- Filing of a patent application at patent office
- Examination which involves formal examination and substantive examination
- Publication (for opposition purposes)

A patent is granted by a National Patent Office or by a Regional Office that does the work for a number of countries.

Patent Specification

1. Cover Page: Bibliographic data and Abstract
2. Description
3. Claims
4. Drawings

Bibliographic Data

[19] PATENT OFFICE OF THE COOPERATION COUNCIL FOR THE ARAB STATES OF THE GULF

[19] مكتب براءات الاختراع لمجلس التعاون لدول الخليج العربية

[12] Patent

[11] Patent No.:GC0010145
[45] Date of Publishing the Grant of the Patent: 30/Apr /2019 60/2019

Number of the Decision to Grant the Patent:2019/148885
Date of the Decision to Grant the Patent:15/Apr/2019

[21] Application No.:GC 2010-17044
[22] Filing Date:3/11/2010
[30] Priority:

[31] Priority No.	[32] Priority date	[33] State
256123-2009	9/11/2009	JP

[72] Inventors:1- Kazuhiko TASAKA،2- Yuichi TANAKA،3- Marie IWAMA
[73] Owners:1- Japan Oil, Gas and Metals National Corporation, 1310 Aumia-sho, seaway-ku, Kawassaki-she, Kagawa-ken, Japan،2- Inpex Corporation, 5- 3 - 1 Akasaka, Minato-ku, Tokyo, Japan،3- JX Nippon Oil & Energy Corporation, 6-3, Otemachi 2-Chome, Chiyoda-ku, Tokyo, Japan،4- Japan Petroleum Exploration Co.Ltd, 7-12 Maronochi 1-chome, chuda-ku , Tokyo, Japan،5- Cosmo Oil Co,Ltd, 1- 1- 1 shipora, Minato-ku, Tokyo, Japan،6- Nippon Steel Engineering Co,Ltd, Japan
[74] Agent: Saba & Co. T.M.P

[51]IPC:
C10G47/36, C10G2/00
[56] Cited Documents:
JP 2009221298 A (Japan Oil, Gas and Metals National Corp., Inpex Corp., Nippon Oil Corp., Japan Petroleum Exploration Co., Ltd., Cosmo Oil Co., Ltd., Nippon Steel Engineering Co., Ltd.), 1 October 2009
JP 2007204506 A (Nippon Oil Corp.) 16 August 2007-
Examiner: Eng. Abdulaziz S. AlMotek

Title and Abstract

[54] HYDROCRACKING PROCESS AND PROCESS FOR PRODUCING HYDROCARBON OIL

[57] Abstract: A hydrocracking process for a wax fraction that includes a wax fraction hydrocracking step of hydrocracking a wax fraction contained within liquid hydrocarbons synthesized by a Fischer-Tropsch synthesis reaction, thereby obtaining a hydrocracked product, a fractional distillation step of supplying the hydrocracked product to a fractionator in which a bottom cut temperature is set to a constant value, and obtaining at least a middle distillate and a bottom oil from the fractionator, a recycling step of resupplying all of the bottom oil to the wax fraction hydrocracking step, and a hydrocracking control step of controlling the wax fraction hydrocracking step using a flow rate of the bottom oil as an indicator.

No. of claims: 4 No. of figures: 3

Description- Technical Field

Description

TECHNICAL FIELD

[0001] The present invention relates to a hydrocracking process for hydrocracking a wax fraction contained within a synthetic oil produced by a Fischer-Tropsch synthesis reaction, and also relates to a process for producing a hydrocarbon oil.

Priority is claimed on Japanese Patent Application No. 2009-256123, filed November 9, 2009, the content of which is incorporated herein by reference.

Description- Background of invention

BACKGROUND ART

[0002] In recent years, the desire to reduce environmental impact has resulted in growing demands for clean liquid fuels that contain minimal amounts of sulfur and aromatic hydrocarbons and are gentle on the environment. As a result of these demands, processes that employ a Fischer-Tropsch synthesis reaction (hereafter abbreviated as "FT synthesis reaction"), which uses a gas containing carbon monoxide gas and hydrogen gas as a feedstock, have begun to be investigated as potential processes that are capable of producing fuel oil base stocks, and particularly kerosene and gas oil base stocks, that contain minimal sulfur and aromatic hydrocarbons and are rich in aliphatic hydrocarbons (for example, see Patent Document 1).

Description- Summary of invention

SUMMARY OF INVENTION

TECHNICAL PROBLEM

[0007] However, conventionally, when a bottom oil is recovered from a fractionator in this manner and then resupplied to the wax fraction hydrocracking step, for reasons of operational simplicity, the fractionator has typically been controlled so that the flow rate of the recovered and resupplied bottom oil remains constant. If this type of fractionator control is employed, then if the properties (mainly the composition distribution) of the hydrocarbon

Description- Description of Drawings

BRIEF DESCRIPTION OF THE DRAWINGS

[0017]

FIG. 1 is a schematic diagram illustrating a liquid fuel synthesizing system performing GTL process.
FIG. 2 is a diagram illustrating specifics of a upgrading unit producing liquid fuel base stocks which is a portion of FIG. 1.
FIG. 3 is a graph illustrating the relationship between the flow rate of bottom oil, and the reaction temperature (actual measured value) of the wax fraction hydrocracking step that gives such a bottom oil flow rate.

Description- Detailed Description of Invention

DESCRIPTION OF EMBODIMENTS

[0018] A more detailed description of the present invention is presented below.

FIG. 1 illustrates a liquid fuel synthesizing system 1 that carries out a GTL process for converting a natural gas as a hydrocarbon feedstock to liquid fuel base stocks. This liquid fuel synthesizing system 1 is composed of a synthesis gas production unit 3, an FT synthesis unit 5, and an upgrading unit 7.

Claims

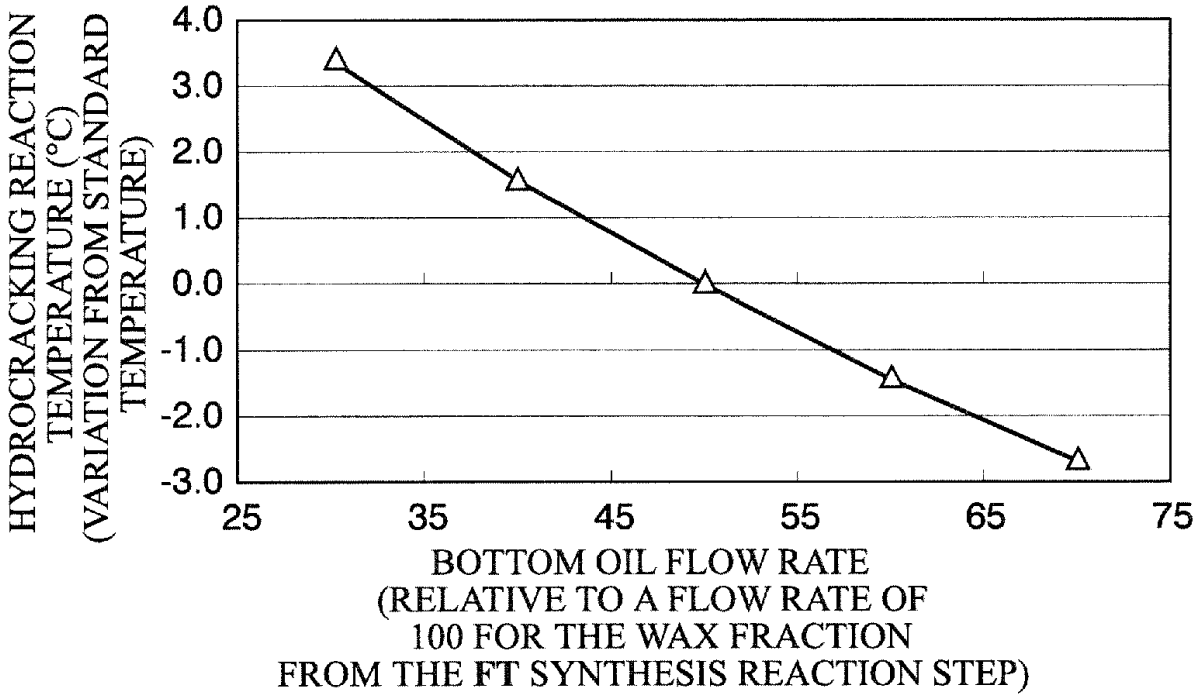
Claims

1. A hydrocracking process for a wax fraction, comprising:

a wax fraction hydrocracking step of hydrocracking a wax fraction contained within liquid hydrocarbons synthesized by a Fischer-Tropsch synthesis reaction, thereby obtaining a hydrocracked product,

Drawings

FIG. 3



Search Reports

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2010/068916

A. CLASSIFICATION OF SUBJECT MATTER
C10G47/36(2006.01)i, *C10G2/00*(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
C10G47/36, C10G2/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Jitsuyo Shinan Toroku Koho	1996-2011
Kokai Jitsuyo Shinan Koho	1971-2011	Toroku Jitsuyo Shinan Koho	1994-2011

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.

Sources of Patent Information

- Paper publications of the patent granting authorities (Patent Office)
- CD-ROM/DVD Series
- Internet databases (e.g., National Patent site, international patent site, Legal status databases, etc.)

Patent Search

Objectives of Patent Search & Usefulness of Patent Information

- Avoid duplication of R&D work
- Improve an existing product or process
- Develop new technical solutions, products or processes
- Monitor activities to gain a clear picture of competitor’s
- Discover new trends in technology or product development at an early stage.
- Assess novelty and patentability of own developments

Objectives of Patent Search & Usefulness of Patent Information

- Assess specific technology to identify possible licensors, new markets, opportunities, etc.
- Identify the state-of-the-art in certain field, to be aware of the latest development
- Identify specific new ideas and technical solutions, products or processes
- Identify existing IP rights (validity, ownership) to avoid infringement actions

Patent databases on Internet

What advantages do patent databases on internet offer?

Is an invention new?

What is state-of-the-art?

Do I infringe someone‘s patent or am I free to use?

Which solutions exist for a technical problem?

Who are my competitors?

What are my competitors doing?

What is going on in a specific technical field?

National Patent Office Databases

National Patent Office Databases

- AR - INPI - Argentina
- AP - IP ARIPO Online Services
- AT - Serv.ip - Austria
- AU - AUSPAT - Australian Government - IP Australia
- BE - Economie BBP-eRegister- Belgium
- BR - INPI - Brazil
- CA - Canadian Intellectual Property Office
- CH - IGE-IPI - Swiss IP Rights Database
- CN - CNIPR - China Intellectual Property Net
- CZ - Czech Industrial Property Office
- DE - DPMAregister - German Patent and Trade Mark Office
- DK - Danish Patent and Trademark office
- DZ - INAPI - Algerian National Institute of Industrial Property
- EA - Eurasian Patent Organization
- EE - PATENDIAMET - The Estonian Patent Office
- EG - Egyptian Patent Office
- EP - European Patent Register

General views on most valuable worldwide patent databases

- PATENTSCOPE: http://patentscope.wipo.int/
- USPTO: http://patft.uspto.gov/
- Espacenet: http://worldwide.espacenet.com/

PATENTSCOPE- WIPO Patent Portal

- ✓ WIPO: The World Intellectual Property Organization
- ✓ Access: http://patentscope.wipo.int/
- ✓ Dedicated to promoting the use and protection of works of the human spirit

PATENTSCOPE- Data Coverage

- [x] All
- [ ] PCT
- [ ] Africa
  - [ ] African Regional Intellectual Property Organization (ARIPO)
  - [ ] Kenya
  - [ ] South Africa
- [ ] ARABPAT
  - [ ] Egypt
  - [ ] Jordan
  - [ ] Morocco
  - [ ] Saudi Arabia
  - [ ] Tunisia
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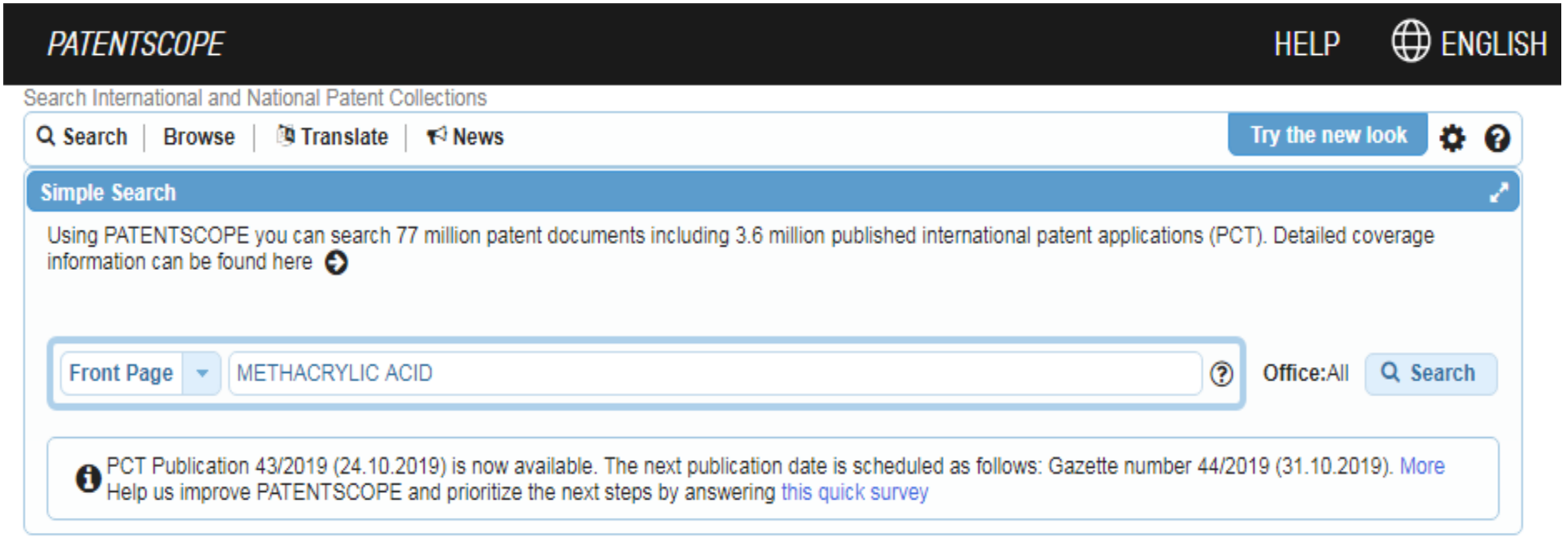
  - [ ] Malaysia
  - [ ] Philippines
  - [ ] Singapore
  - [ ] Thailand
  - [ ] Viet Nam

PATENTSCOPE- Search Strategy

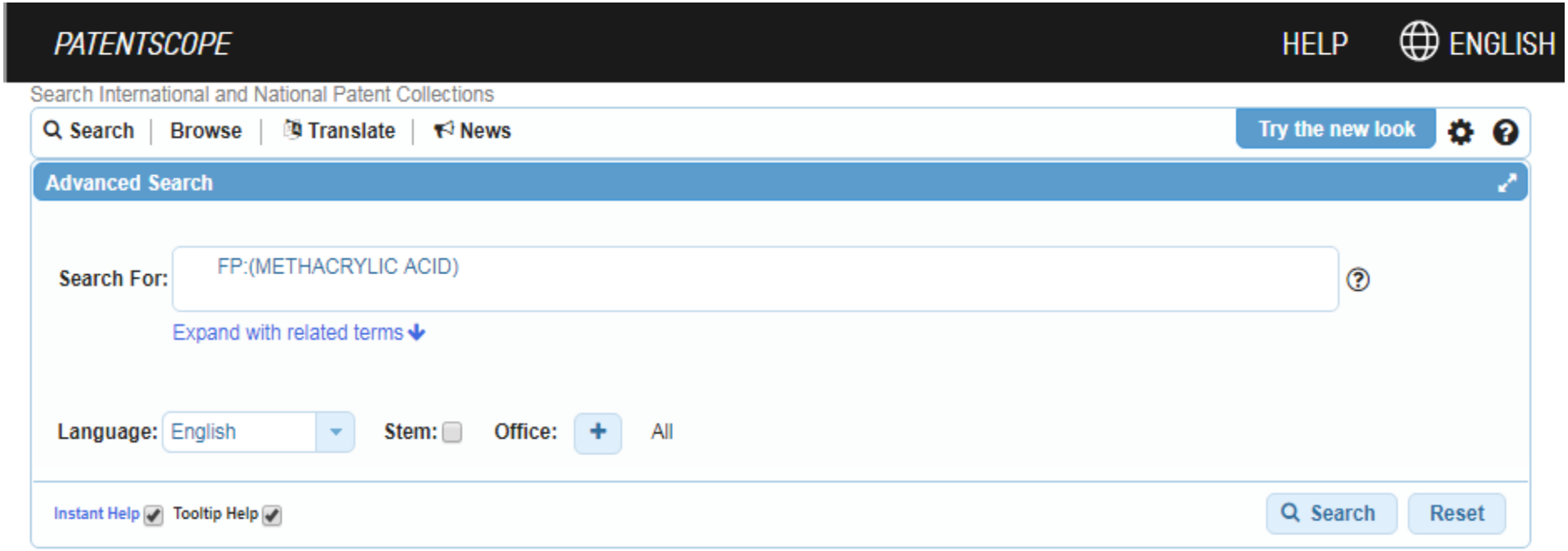
WIPO Database offers five ways of searching:

- Simple Search
- Advanced Search
- Field Combination Search
- Cross Lingual Expansion
- Chemical Compounds

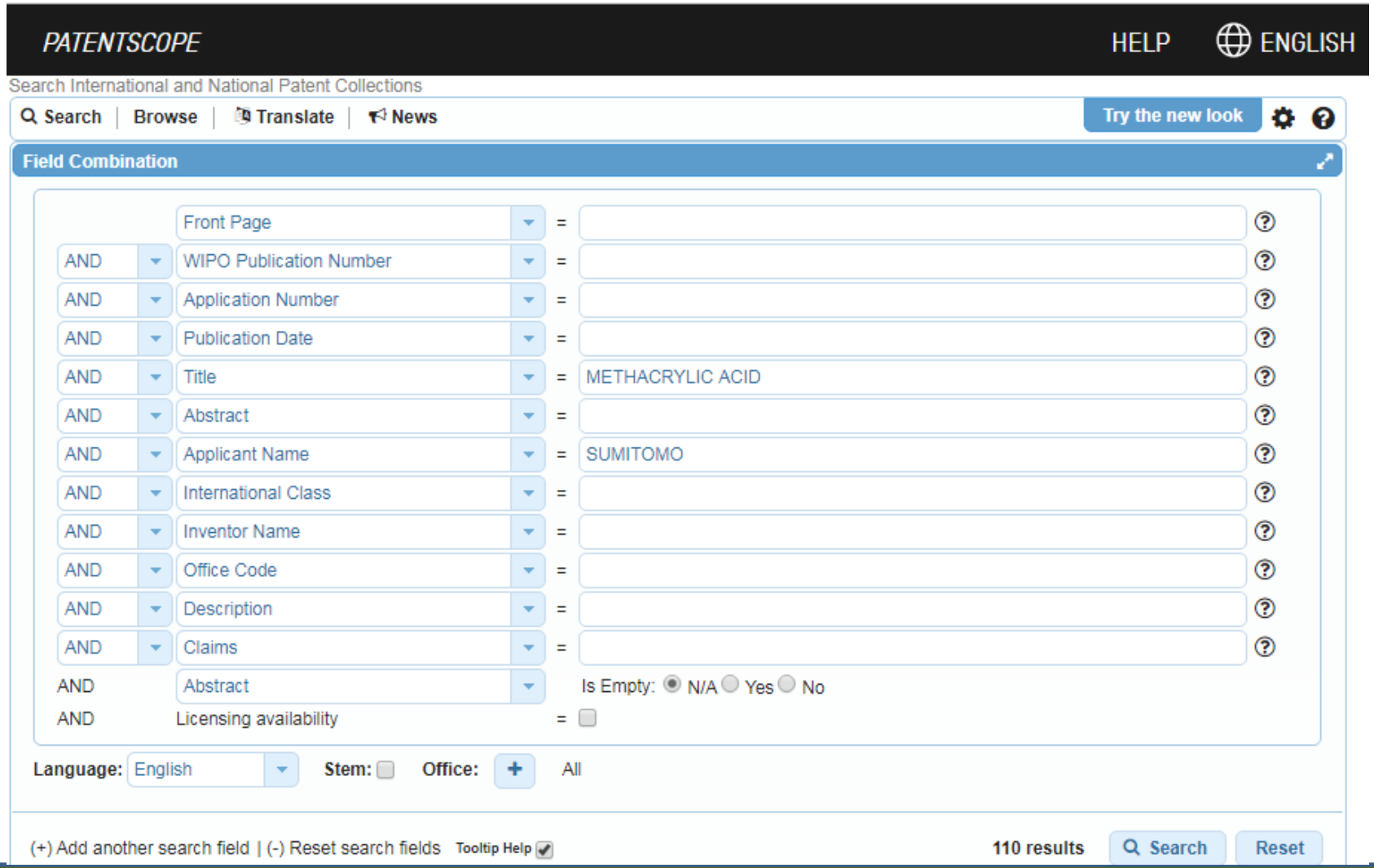
PATENTSCOPE- Simple Search



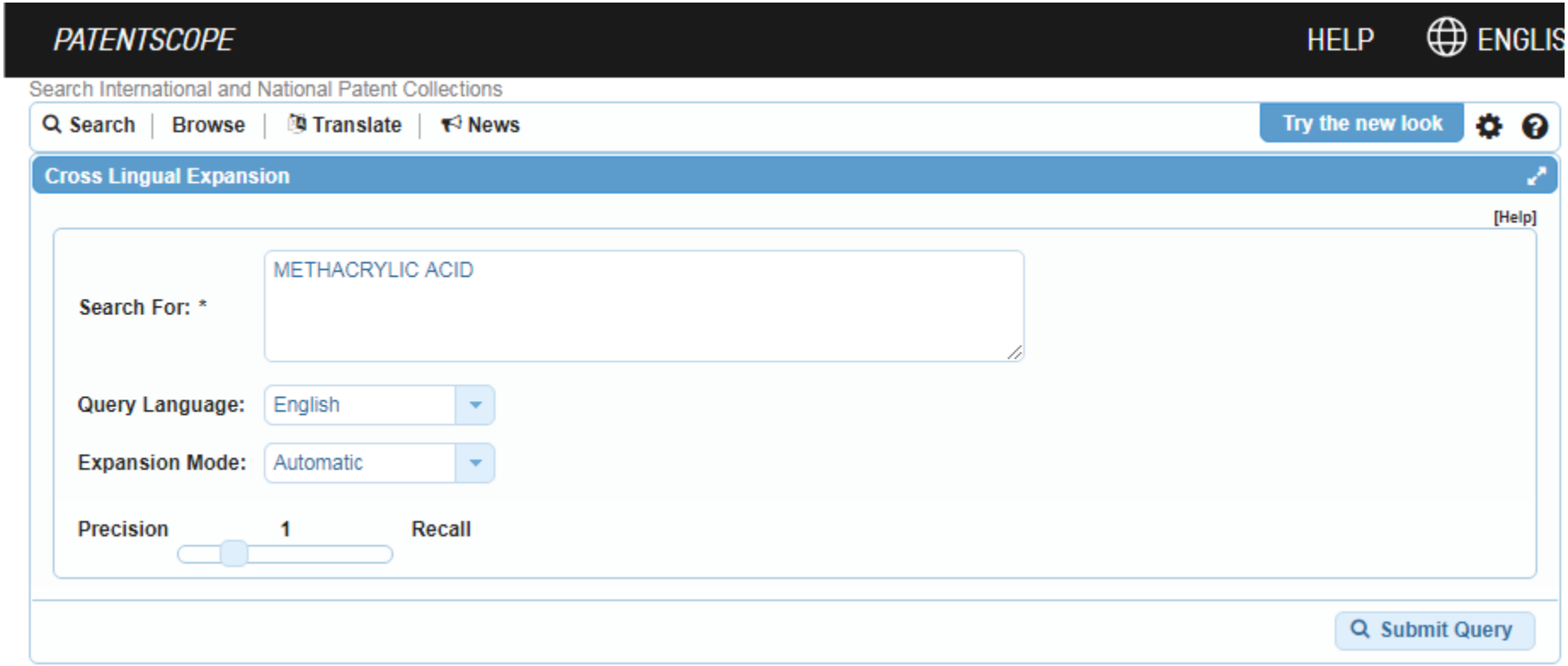
PATENTSCOPE- Advanced Search



PATENTSCOPE- Field Combination



PATENTSCOPE- Cross Lingual Expansion



PATENTSCOPE- Search Results

Refine Search FP:(METHACRYLIC ACID) Search RSS

Results **1-10** of **24,717** for Criteria:**FP:(METHACRYLIC ACID)** Office(s):**all** Language:**en** Stemming: **false**

1 2 3 4 5 6 7 8 9 10 11 12 Page: 1 / 2472 Go

Analysis

Sort by: Relevance View All List Length 10 Machine translation Side-by-side

Appl.No	Applicant	Inventor	Title	Ctr	PubDate / Int.Class
1. 31213			**Preparation of acrylic acid and methacrylic acid**	TH	03.12.1998
9701002717	บีเอเอสเอฟ อัคเทียน เกเซลล์ชาฟท์	นาย เกอร์ฮาร์ดเนสท์เลอร์		C07C 57//0	

A method of preparing acrylic acid or methacrylic acid comprises the following steps: (a) preparation of a gaseous reaction mixture which contains acrylic acid or methacrylic acid, essentially having the composition of a reaction mixture of catalytic gas-phase oxidation of C3/C4 alkanes, alkenes, alkanols and/or alkanals and/or precursors thereof to form acrylic acid or methacrylic acid, (b) absorption of the reaction product with a solvent mixture consisting of at least one lactame dissolved in at least one polar organic solvent, and (c) distillation of the reaction product-bearing solvent mixture to obtain a crude acrylic acid or crude methacrylic acid and the solvent mixture.

2. 31357			**Process for producing methacrylic acid ester or acrylic acid ester**	TH	15.12.1998
9701003645	อาซาฮี คาไซ คาบูชิกิ ไคชา	นายทาทสึโอ ยามากูชิ		C07C 67//0	

A process for producing a methacrylic acid ester or an acrylic acid ester comprising: reacting methacrolein or acrolein with an alcohol or molecular oxygen in the presence of a catalyst comprising Pd; removing water with a separation membrane which can selectively permeate water from a mixed liquid of the alcohol and water.

3. 1872830			**Method for purifying methacrylic acid**	CN	06.12.2006
200610028499.2	Huayi Acrylic Acid Co., Ltd., Shanghai	Liu Hanyong		C07C 57/07	

This invention provides a method for purifying methacrylic acid. The method can effectively remove microcontent impurities such as Cu and aldehyde, thus realizing the purification and decoloring of methacrylic acid. The method comprises adding a decoloring agent during methacrylic acid purification process, which can react with the

USPTO

The United States Patent and Trademark Office

Access: http://patft.uspto.gov/

It is specialized in the American patents and divided into two databases:

1- PatFT: Patents (Full-Text from 1976)

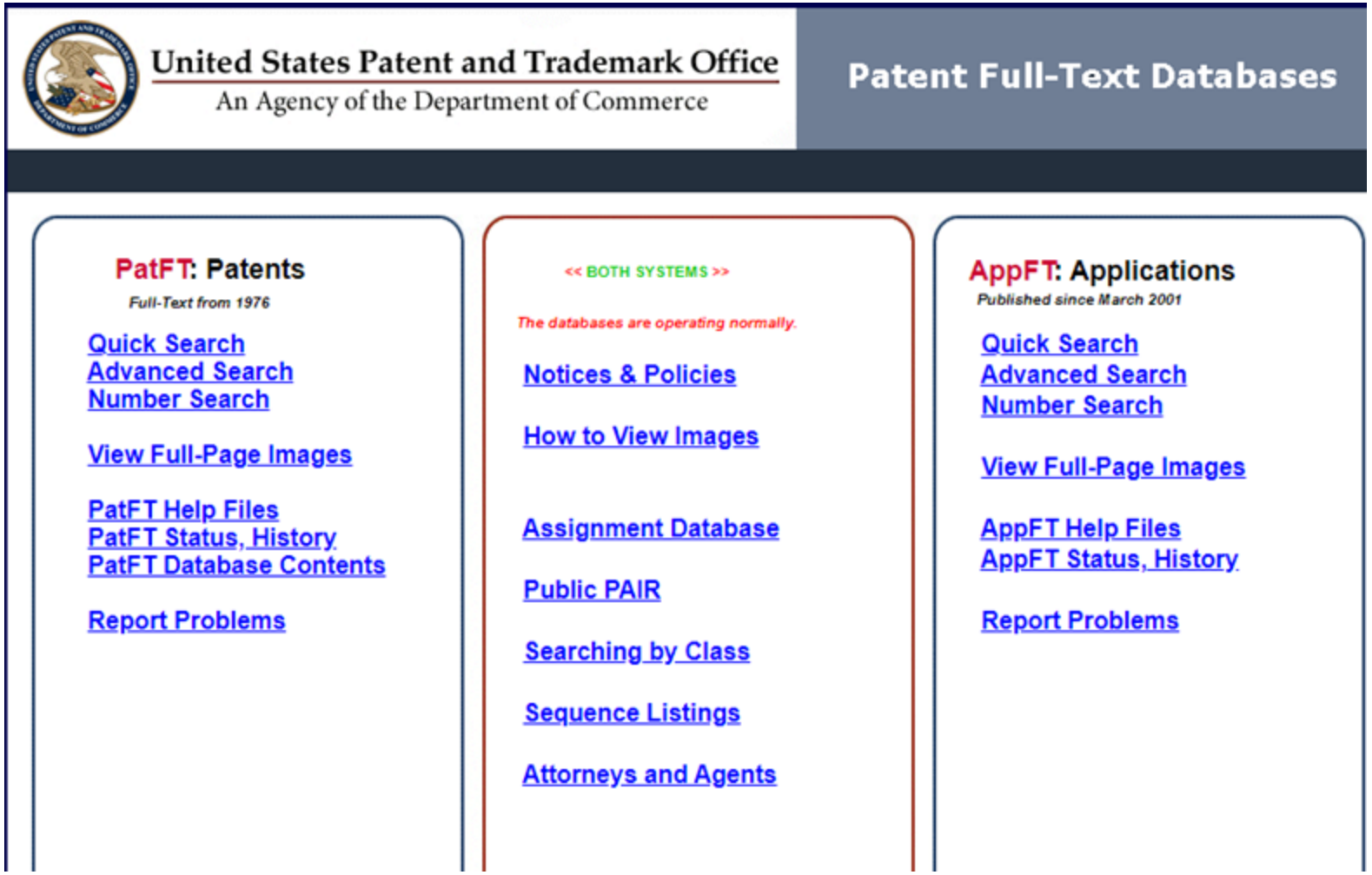
2- AppFT: Applications (Published since March 2001)

USPTO- Patent Search Strategy

USPTO offers three ways of searching:

- Quick Search
- Advanced Search
- Number Search

USPTO- Patent Search Strategy



USPTO- Quick Search

Query [Help]

Term 1: METHACRYLIC **in Field 1:** Title

AND

Term 2: SUMITOMO **in Field 2:** Assignee Name

Select years [Help]

1976 to present [full-text]

Search Reset

USPTO- Advanced Search

Query [Help]

TTL/METHACRYLIC AND AN/SUMITOMO

Select Years [Help]

1976 to present [full-text] ▼

Search

Patents from 1790 through 1975 are searchable only by

When searching for specific numbers in the Patent Number field, utility patent numbers a

Field Code	Field Name
PN	Patent Number
ISD	Issue Date

USPTO- Number Search

Enter the patent numbers you are searching for in the box below.

Query [Help]

9,682,915 Search

Utility patents must have numbers entered as seven or eight characters in length, excluding commas, which are optional. Examples:

10,000,000 -- 100000000 -- 6923014 -- 6,923,014 -- 0000001

Note: Utility Patent 10,000,000 will issue in 2018

The below patent types must have numbers entered as seven characters in length, excluding commas, which are optional. Examples:

Design -- D339,456 D321987 D000152
Plant -- PP08,901 PP07514 PP00003
Reissue -- RE35,312 RE12345 RE00007
Defensive Publication -- T109,201 T855019 T100001
Statutory Invention Registration -- H001,523 H001234 H000001
Additional Improvement -- AI00,002 AI000318 AI00007
X-Patents -- X011,280 X007640 X000001
Reissued X-Patents -- RX00116 RX00031 RX00001

USPTO- Search Results

United States Patent **9,682,915**
Seki , et al. **June 20, 2017**

Method for producing methacrylic acid ester

Abstract

Production of methacrylic acid ester comprising a step of having acetone undergo a dehydration reaction in the presence of a dehydration reaction catalyst to obtain a reaction mixture; a step of separating a mixture containing propyne and propadiene as main components from the obtained reaction mixture; a step of separating the separated mixture containing propyne and propadiene as main components into a liquid, gas, or gas-liquid mixture containing propyne as a main component, and a liquid, gas, or gas-liquid mixture containing propadiene as a main component; and a step of bringing the obtained liquid, gas, or gas-liquid mixture containing propyne as a main component into contact with carbon monoxide and an alcohol having 1 to 3 carbon atoms in the presence of a catalyst containing at least one selected from the group consisting of Group 8 metal elements, Group 9 metal elements, and Group 10 metal elements.

Inventors: **Seki; Kohei** (Niihama, JP), **Suzuta; Tetsuya** (Niihama, JP), **Miura; Naoki** (Ichihara, JP)

Applicant:

Name	City	State	Country	Type
SUMITOMO CHEMICAL COMPANY, LIMITED	Tokyo	N/A	JP	

Assignee: SUMITOMO CHEMICAL COMPANY, LIMITED (Chuo-ku, Tokyo, JP)

Family ID: 51624395
Appl. No.: 14/780,232
Filed: March 19, 2014
PCT Filed: March 19, 2014
PCT No.: PCT/JP2014/058707
371(c)(1),(2),(4) Date: September 25, 2015
PCT Pub. No.: WO2014/157432

Espacenet

- ✓ Worldwide coverage (100+ countries) and simple search features
- ✓ Access: http://worldwide.espacenet.com/
- ✓ Free access to information about inventions and technical developments from 1782 to today
- ✓ Contains data on more than 110 million patent documents from around the world

Data available on Espacenet

- Bibliographic Data for more than 110 million patent documents from around the world, most of which are patent applications, not granted patents
- Description, Claims, Mosaics, Original Documents, Cited and Citing Documents
- Patent families, telling you if very similar patents have been claimed in other countries
- Legal status information, helping you find out if the patent is in force or not and in what countries

Espacenet – Patent Search Strategy

Espacenet offers three ways of searching:

- Quick Search
- Advanced Search
- Number Search

Espacenet – Smart Search

- This option enables the user to enter up to 20 search terms (a maximum of ten terms per searchable bibliographic data), with or without field identifiers
- You can search for numbers: Application, Publication or priority you already know
- You can search for keywords: Titles, Abstract, Persons & organizations

Espacenet – Smart Search

Smart search
Advanced search
Classification search

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Due to technical maintenance work, Espacenet will not be available between 09:00 and 19:00 hrs CET on 17 March 2019. Regular maintenance outages: scheduled between 05.00 and 05.30 hrs CET, Monday to Sunday.
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Data coverage

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Smart search:

METHACRYLIC

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How Application, Publication and Priority Numbers are entered?

Searching by numbers enables the user to use the following numbers to search for documents:

Application Number

The application number is the number assigned to a patent application when it is filed.

Format:

Two letters (country code)

Four digits (year of filing)

Serial number (variable, seven/eight digits)

Application Number Format

Example: (21) Application number: **13187750.8**

Format:

Country Code 2 letters	Filing Year 4 Digits	Serial Number
EP	2013	0187750

EP: European Patent Office

2013: Year Of Filing

0187750: Serial Number of the Application

Publication Number

The publication number is the number assigned to a patent application on publication.

Format:

Country code (two letters)

Serial number (variable, one to twelve digits).

Publication Number Format

Example: (11) **EP 2 676 539 A2**

Format:

Country Code 2 letters	Serial Number
EP	2676539

EP: European Patent Office

2676539: Serial Number of the publication

Priority Number

The earliest filed patent application number for an invention. Priority is claimed if protection rights are also applied for in other countries.

Format:

Two letters (country code)

Four digits (year of filing)

Serial number (variable, seven/eight digits)

Priority Number Format

Example: (30) Priority: **13.04.2012 US 201261623861 P**

Format:

Country Code 2 letters	Filing Year 4 Digits	Serial Number
US	2012	61623861

US: United States

2012: Year Of Filing

61623861: Serial Number of the Application

Espacenet – Advanced Search

This feature in Espacenet enables the users to combine various search ways. In other words, we can combine search term, number search and classification search together in one screen.

The "Advanced Search" mode has 10 searchable fields, including title, title and abstract, inventor, applicant, IPC, CPC, date of publication, application number, publication number, and priority number.

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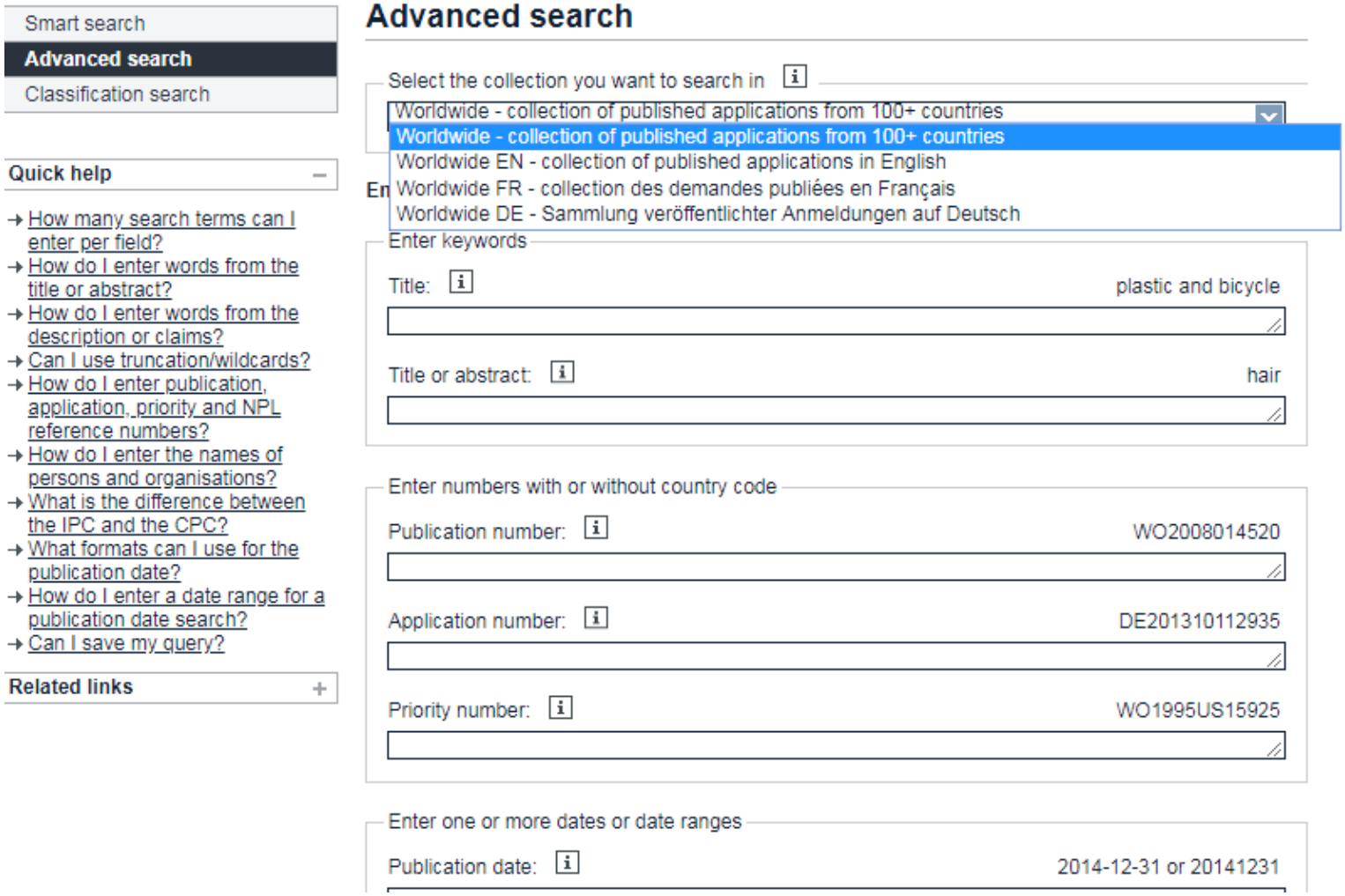

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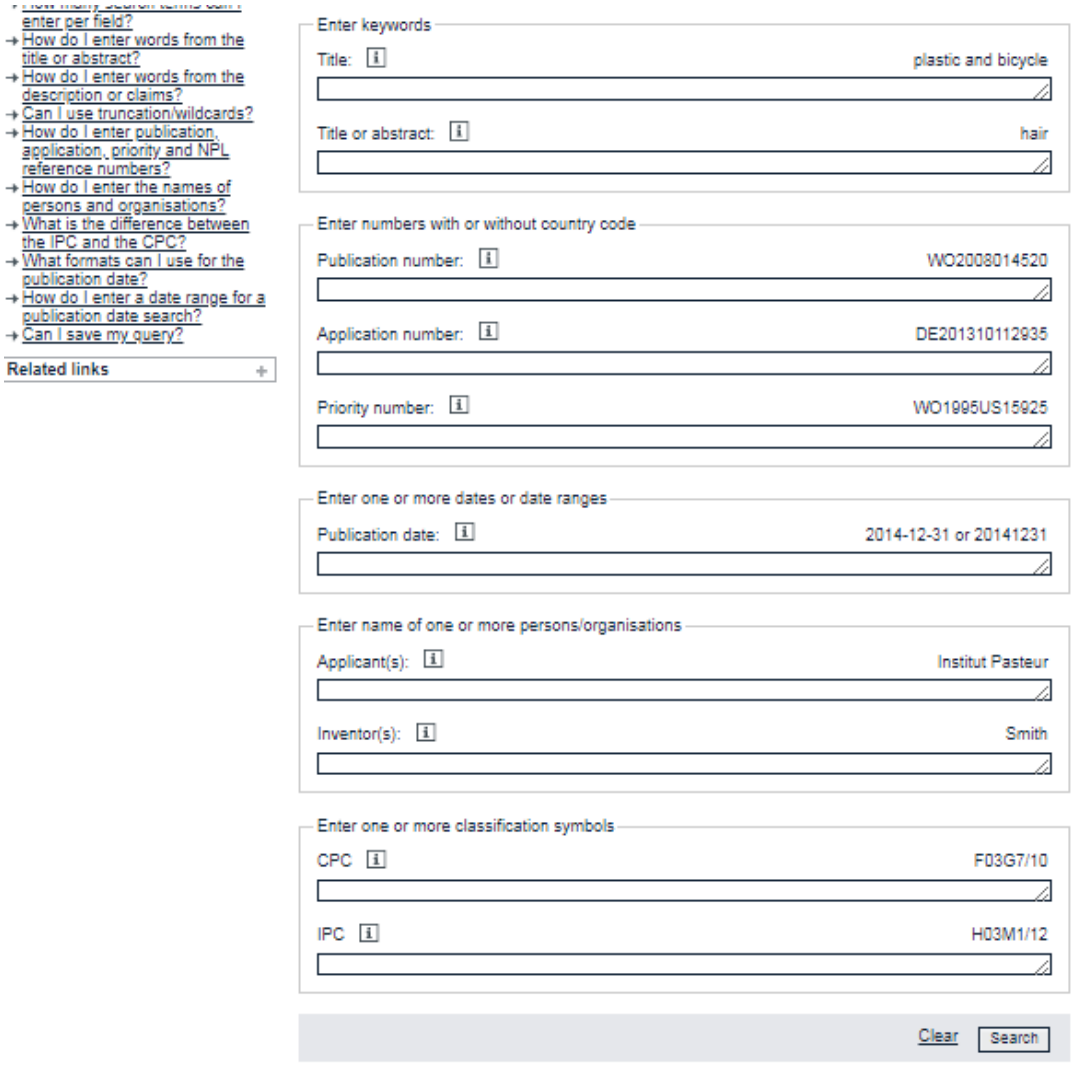

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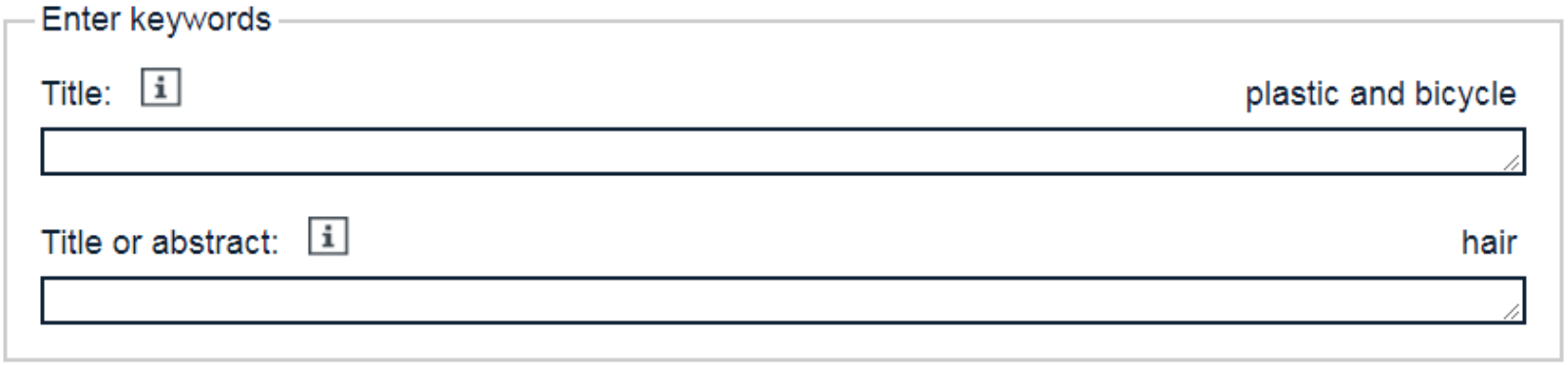
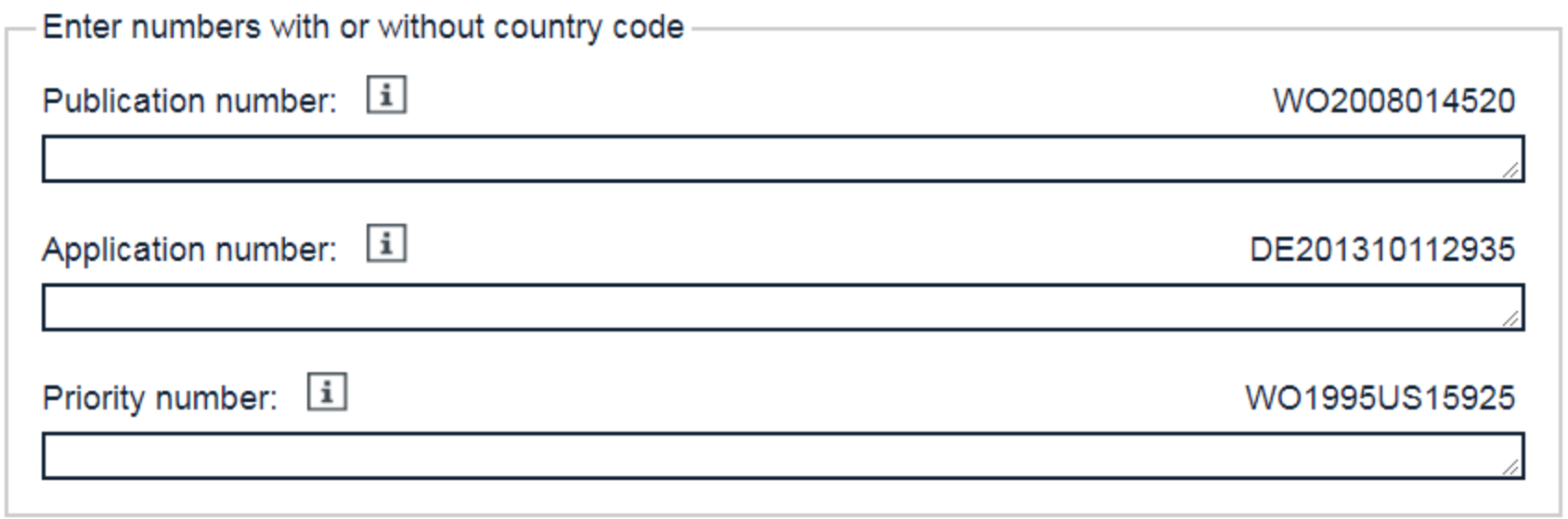
Entering information in advanced search fields.

Keyword(s) in (title) or in (title or abstract)



Espacenet – Advanced Search

User can search for application, publication or priority number



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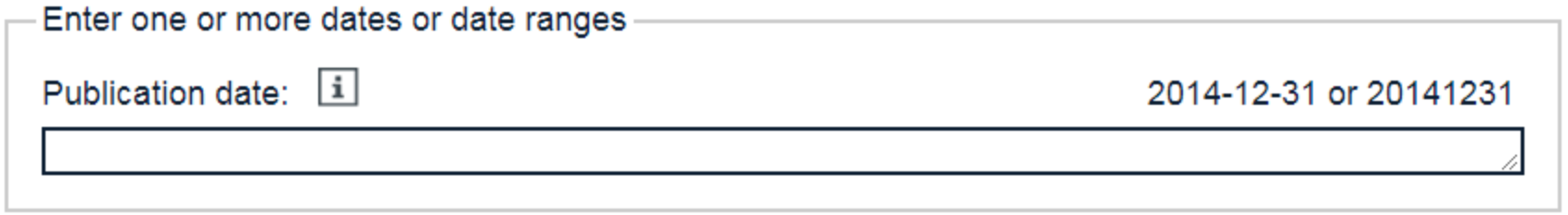


User can search for applicant or inventor name quick search

Espacenet – Advanced Search

Enter name of one or more persons/organisations

Applicant(s): Institut Pasteur

Inventor(s): Smith

The user can search for certain patents via CPC or IPC, by entering a classification symbol

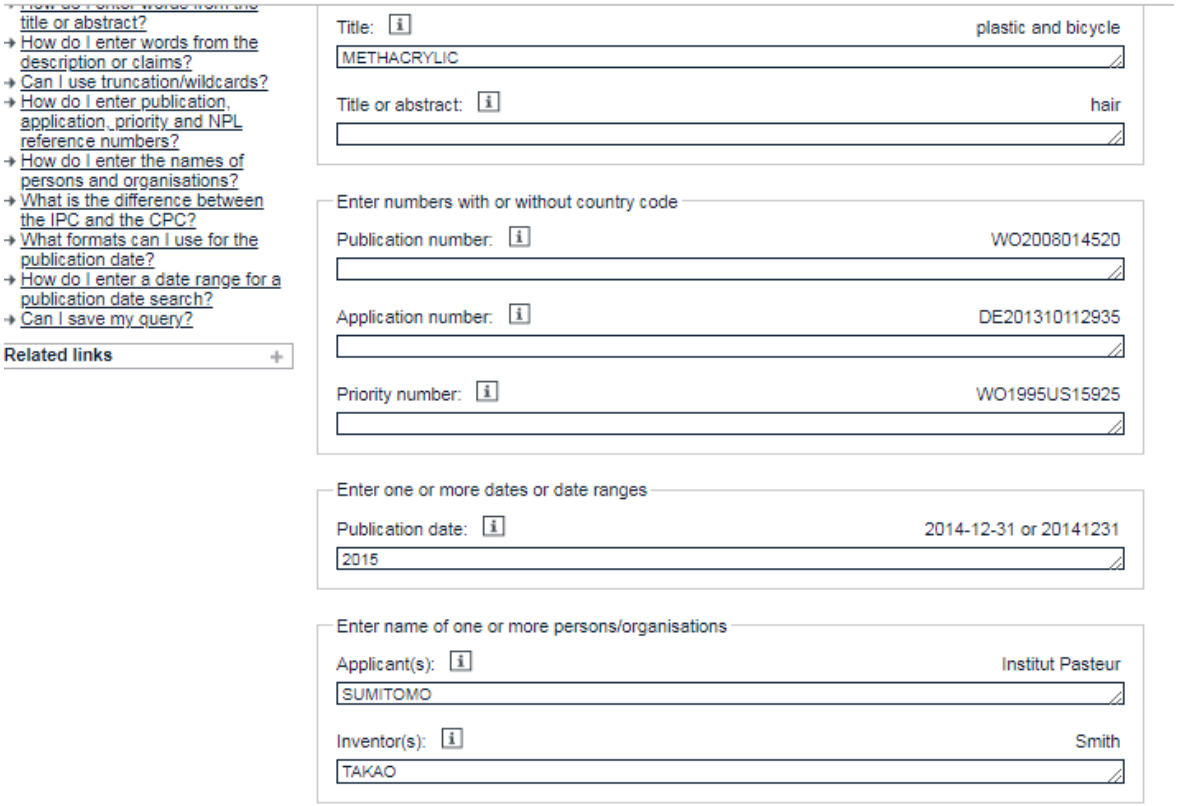
Enter one or more classification symbols

CPC F03G7/10

IPC H03M1/12

Espacenet – Advanced Search

Multiple fields may be combined in one search but no field may include more than four terms



Espacenet – Result List

3 results found in the Worldwide database for:
METHACRYLIC in the title AND **2015** as the publication date AND **SUMITOMO** as the applicant AND **TAKAO** as the inventor

Sort by Publication date Sort order Descending Sort

1. METHOD FOR PRODUCING METHACRYLIC POLYMER COMPOSITION, AND MOLDED ARTICLE

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
YAMAMORI AKIHIRO [JP] WAKE TAKAO [JP] (+1)	SUMITOMO CHEMICAL CO [JP]	C08F2/001 C08F2/02 C08F2/38 (+6)	C08F2/01 C08F2/02 C08F20/18	SG11201504287W (A) 2015-07-30	2012-12-03

2. Methacrylic resin composition

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
WAKE TAKAO [JP] MANABE MAKOTO [JP]	SUMITOMO CHEMICAL CO [JP]	C08F220/14 C08F220/18 C08K5/005 (+9)	B29C45/00 C08F220/18	TW201522387 (A) 2015-06-16	2013-09-11

3. METHACRYLIC RESIN COMPOSITION FOR HOT PLATE MELT-BONDING, USE OF THE SAME FOR HOT PLATE MELT-BONDING, AND MELT-BONDING METHOD

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
WAKE TAKAO [JP] YAMAZAKI KAZUHIRO [JP]	SUMITOMO CHEMICAL CO [JP]	B29C65/20 B29C66/1142 B29C66/54 (+13)	C08F20/10 C08L33/12	KR20150088323 (A) 2015-07-31	2008-04-08

Espacenet – Bibliographic Data

Bibliographic data: SG11201504287W (A) — 2015-07-30

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METHOD FOR PRODUCING METHACRYLIC POLYMER COMPOSITION, AND MOLDED ARTICLE

Page bookmark	SG11201504287W (A) - METHOD FOR PRODUCING METHACRYLIC POLYMER COMPOSITION, AND MOLDED ARTICLE
Inventor(s):	YAMAMORI AKIHIRO [JP]; WAKE TAKAO [JP]; YAMAZAKI KAZUHIRO [JP] ±
Applicant(s):	SUMITOMO CHEMICAL CO [JP] ±
Classification:	- international: *C08F2/01; C08F2/02; C08F20/18*
	- cooperative: C08F20/14 (US); C08F220/14 (EP, US); C09D133/08 (EP, US) → more
Application number:	SG20151104287W 20131129
Priority number(s):	JP20120264021 20121203 ; WO2013JP82750 20131129
Also published as:	CN104955853 (A) CN104955853 (B) EP2927249 (A1) → EP2927249 (A4) JP2014108988 (A) → more

Abstract not available for SG11201504287W (A)
Abstract of corresponding document: EP2927249 (A1)

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A method for producing a methacrylic polymer composition, which comprises a first polymerization step wherein a raw material composition A comprising a raw material monomer A containing no less than 50% by weight of methyl methacrylate, a polymerization initiator A, and a chain transfer agent A is supplied into a first complete mixing type reactor through a supply port of the reactor, and the raw material composition A is subjected to a continuous bulk polymerization in the first complete mixing type reactor, and a resulting intermediate composition is withdrawn through an effluent port of the first complete mixing type reactor; and a second polymerization step wherein a raw material composition B comprising a raw material monomer B containing no less than 50% by weight of methyl methacrylate, a polymerization initiator B, and a chain transfer agent B, and the intermediate composition withdrawn in the first polymerization step are supplied into a second complete mixing type

Espacenet – Description

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Description: SG11201504287W (A) — 2015-07-30

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METHOD FOR PRODUCING METHACRYLIC POLYMER COMPOSITION, AND MOLDED ARTICLE

Description of SG11201504287W (A)

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METHOD FOR PRODUCING METHACRYLIC POLYMER COMPOSITION, AND MOLDED ARTICLE

DESCRIPTION Title of the Invention:
METHOD FOR PRODUCING METHACRYLIC POLYMER COMPOSITION, AND 5 MOLDED ARTICLE Technical Field [0001] The present invention relates to a method for 10 producing a methacrylic polymer composition, and a molded article obtained/obtainable from the methacrylic polymer composition obtained/obtainable by the method.

Background Art 15 [0002] Methacrylic resin composition has superior transparency and weather durability. The methacrylic resin composition is utilized as a molding material for a light guide plate, which is used as a member of a backlight unit 20 for various types of liquid crystal displays, or for vehicle members such as a rear lamp cover, a head lamp cover, a meter panel, and so on (See Patent Literatures 1 and 2).

[0003] 25 As a methacrylic resin composition, there is a known 2 composition containing a higher molecular weight polymer and a lower

Espacenet – Claims

Display the full text of the claims, respectively and if available

Claims: SG11201504287W (A) — 2015-07-30

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METHOD FOR PRODUCING METHACRYLIC POLYMER COMPOSITION, AND MOLDED ARTICLE

Claims of SG11201504287W (A)

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Original claims | **Claims tree**

A method for producing a methacrylic polymer composition, which comprises 5 a first polymerization step wherein a raw material composition A comprising a raw material monomer A containing no less than 50% by weight of methyl methacrylate, a polymerization initiator A, and a chain transfer agent A is supplied into a first complete mixing 10 type reactor through a supply port o f the reactor, and the raw material composition A is subjected to a continuous bulk polymerization in the first complete mixing type reactor, and a resulting intermediate composition is withdrawn through an effluent port of the first complete 15 mixing type reactor; and a second polymerization step wherein a raw material composition B comprising a raw material monomer B containing no less than 50% by weight of methyl methacrylate, a polymerization initiator B, and a chain 20 transfer agent B, and the intermediate composition withdrawn in the first polymerization step are supplied into a second complete mixing type reactor through a supply port of the reactor, and the raw material composition B and the intermediate composition are further subjected to a 25 continuous bulk polymerization in the second complete 113 mixing type reactor, and a resulting methacrylic polymer composition is

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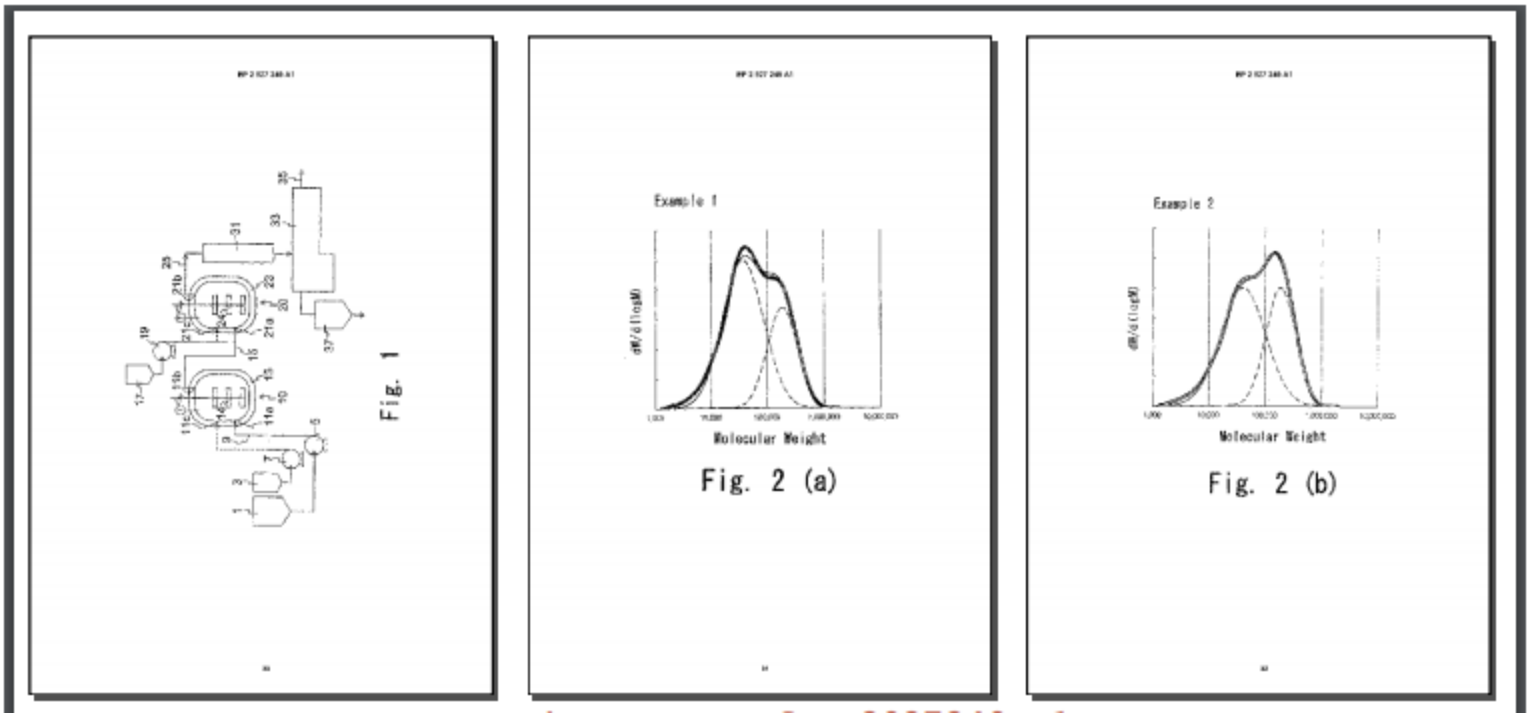

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(19) Europäisches Patentamt
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(11) **EP 2 927 249 A1**

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INPADOC legal status: EP2927249 (A1) — 2015-10-07

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METHOD FOR PRODUCING METHACRYLIC POLYMER COMPOSITION, AND MOLDED ARTICLE

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Legal status of EP2927249 (A1) 2015-10-07; EP2927249 (A4) 2016-05-11:

EP	**F**	**13860754 A** (Patent of invention)
	Event date :	2015/10/07
	Event code :	AK
	Code Expl.:	+ DESIGNATED CONTRACTING STATES
	KD OF CORRESP. PAT. :	A1
	DESIGNATED COUNTR. :	AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
	Event date :	2015/10/07

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8 application(s) for: **SG11201504287W (A)**

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1. METHOD FOR PRODUCING METHACRYLIC POLYMER COMPOSITION, AND MOLDED ARTICLE

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
YAMAMORI AKIHIRO [JP] WAKE TAKAO [JP] (+1)	SUMITOMO CHEMICAL CO [JP]	C08F2/001 C08F2/02 C08F2/38 (+6)	C08F2/01 C08F2/02 C08F20/18	SG11201504287W (A) 2015-07-30	2012-12-03

2. Method for producing methacrylic polymer composition, and molded article

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
YAMAMORI AKIHIRO WAKE TAKAO (+1)	SUMITOMO CHEMICAL CO	C08F2/001 C08F2/02 C08F2/38 (+6)	C08F2/01 C08F2/02 C08F20/18	CN104955853 (A) 2015-09-30 CN104955853 (B) 2016-12-14 Global Dossier	2012-12-03

3. METHOD FOR PRODUCING METHACRYLIC POLYMER COMPOSITION, AND MOLDED ARTICLE

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
YAMAMORI AKIHIRO [JP] WAKE TAKAO [JP] (+1)	SUMITOMO CHEMICAL CO [JP]	C08F2/001 C08F2/02 C08F2/38 (+6)	C08F2/01 C08F2/02 C08F20/18	EP2927249 (A1) 2015-10-07 EP2927249 (A4) 2016-05-11 Global Dossier	2012-12-03

4. METHOD OF MANUFACTURING METHACRYLIC POLYMER COMPOSITION

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
YAMAMORI AKIHIRO	SUMITOMO CHEMICAL CO	C08F2/001	C08F2/01	JP2014108988 (A)	2012-12-03

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The classification of patent documents is necessary to facilitate the administration of an enormous number of publications

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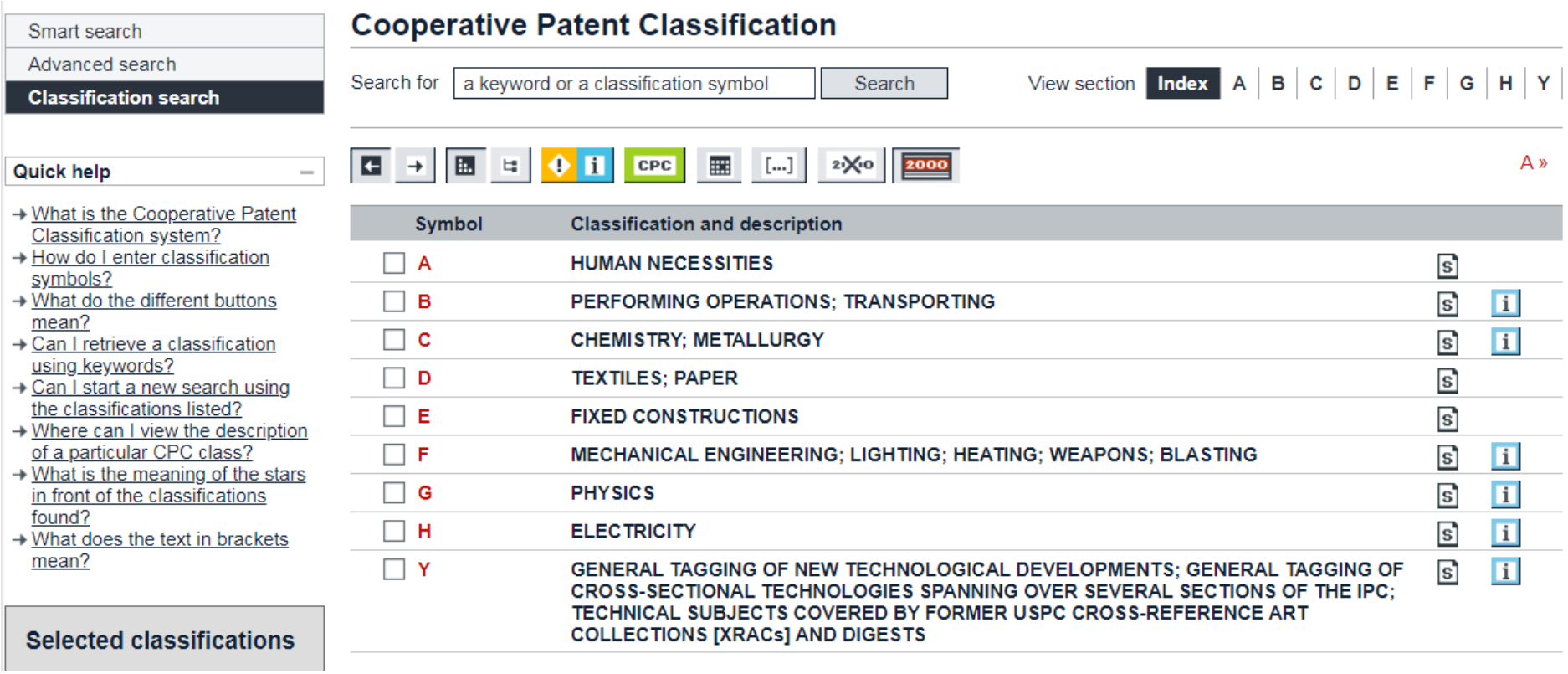

Classification Systems

- USC (United States Classification)
- UKC (United Kingdom Classification)
- IPC (International Patent Classification)
- CPC (Cooperative Patent Classification)

How classification numbers are entered?

Ways to search via classification:

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Or by entering a classification symbol and this way enables the user to know the class for a certain classification symbol. E.g. C: Chemistry

Espacenet– Classification- Keyword Search

Cooperative Patent Classification

Search for METHACRYLIC ACID Search

View section **Index** A | B | C | D | E | F | G | H | Y

CPC 2000

A »

Symbol	Classification and description
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
Y	GENERAL TAGGING OF NEW TECHNOLOGICAL DEVELOPMENTS; GENERAL TAGGING OF CROSS-SECTIONAL TECHNOLOGIES SPANNING OVER SEVERAL SECTIONS OF THE IPC; TECHNICAL SUBJECTS COVERED BY FORMER USPC CROSS-REFERENCE ART COLLECTIONS [XRACs] AND DIGESTS

Espacenet– Classification- Keyword Search

Search for METHACRYLIC ACID Search

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CPC 2000

A »

Symbol	Classification and description
★★	A61K 9/00 **Medicinal preparations characterised by special physical form** (nuclear magnetic resonance contrast preparations or magnetic resonance imaging contrast preparataions A61K 49/18; preparations containing radioactive substances A61K 51/12)
★★	C08F 220/00 **Copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and only one being terminated by only one carboxyl radical or a salt, anhydride ester, amide, imide or nitrile thereof**
★★	C07C 51/00 **Preparation of carboxylic acids or their salts, halides or anhydrides** (of acids by hydrolysis of oils, fats or waxes C11C)
★	C08L 33/00 **Compositions of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and only one being terminated by only one carboxyl radical, or of salts, anhydrides, esters, amides, imides or nitriles thereof; Compositions of derivatives of such polymers**
★	A61K 31/00 **Medicinal preparations containing organic active ingredients**
★	B01J 27/00 **Catalysts comprising the elements or compounds of halogens, sulfur, selenium, tellurium, phosphorus or nitrogen; Catalysts comprising carbon compounds**
★	C08F 2/00 **Processes of polymerisation**
★	B01J 23/00 **Catalysts comprising metals or metal oxides or hydroxides, not provided for in group** B01J 21/00 (B01J 21/16 takes precedence)
★	B01J 37/00 **Processes, in general, for preparing catalysts; Processes, in general, for activation of catalysts**
★	B01J 2523/00 **Constitutive chemical elements of heterogeneous catalysts**

Espacenet– Classification- Symbol Search

Cooperative Patent Classification

Search for C07C51 Search

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CPC 2000

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Symbol	Classification and description
A	HUMAN NECESSITIES
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Espacenet– Classification- Symbol Search

Cooperative Patent Classification

Search for C07C51 Search

View section | Index | A | B | C | D | E | F | G | H | Y |

« C07C50/00 C07C53/00 »

Symbol	Classification and description
C	CHEMISTRY; METALLURGY
	CHEMISTRY
C07	ORGANIC CHEMISTRY
C07C	ACYCLIC OR CARBOCYCLIC COMPOUNDS

Compounds containing carbon and oxygen, with or without hydrogen or halogens
(irradiation products of cholesterol or its derivatives C07C 401/00; vitamin D derivatives, 9,10-seco cyclopenta[a]phenanthrene or analogues obtained by chemical preparation without irradiation C07C 401/00; derivatives of cyclohexane or of a cyclohexene {or of cyclohexadiene}, having a side-chain containing an acyclic unsaturated part of at least four carbon atoms, this part being directly attached to the cyclohexane or cyclohexene {or cyclohexadiene} rings C07C 403/00; prostaglandins or derivatives thereof C07C 405/00; peroxy compounds C07C 407/00, C07C 409/00)

Thank you

Prepared by:

Eng. Nesreen Al-Rajabi