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PATENTSCOPE

Search features and exercise

June 2, 2021

Nathalie Montillot

Program Officer, Technology and Innovation Support Division

Patent documents

- 120+ million patent documents published to date
- 2+ million new patent applications published yearly


1995. II
1994. II
1992 II
1991 II
2003 II
2002 II
2001 II


11. H-I
12. J
7. Mo-Mü
Po

Patent databases

- Highly standardized format
  - Unique source of information
  - Easy access and retrieval

PATENTSCOPE figures

Patent documents	95 million
Patent collections	72
- National	68
- Regional	3
- International (PCT)	1
Cost	None!

Detailed data coverage:
https://patentscope.wipo.int/search/en/help/data_coverage.jsf

Is my invention new? What technologies already exist, e.g. solar cells?

SOLAR

drying solid material by SOLAR radiation F26B 3/28

SOLAR heat collectors F24S

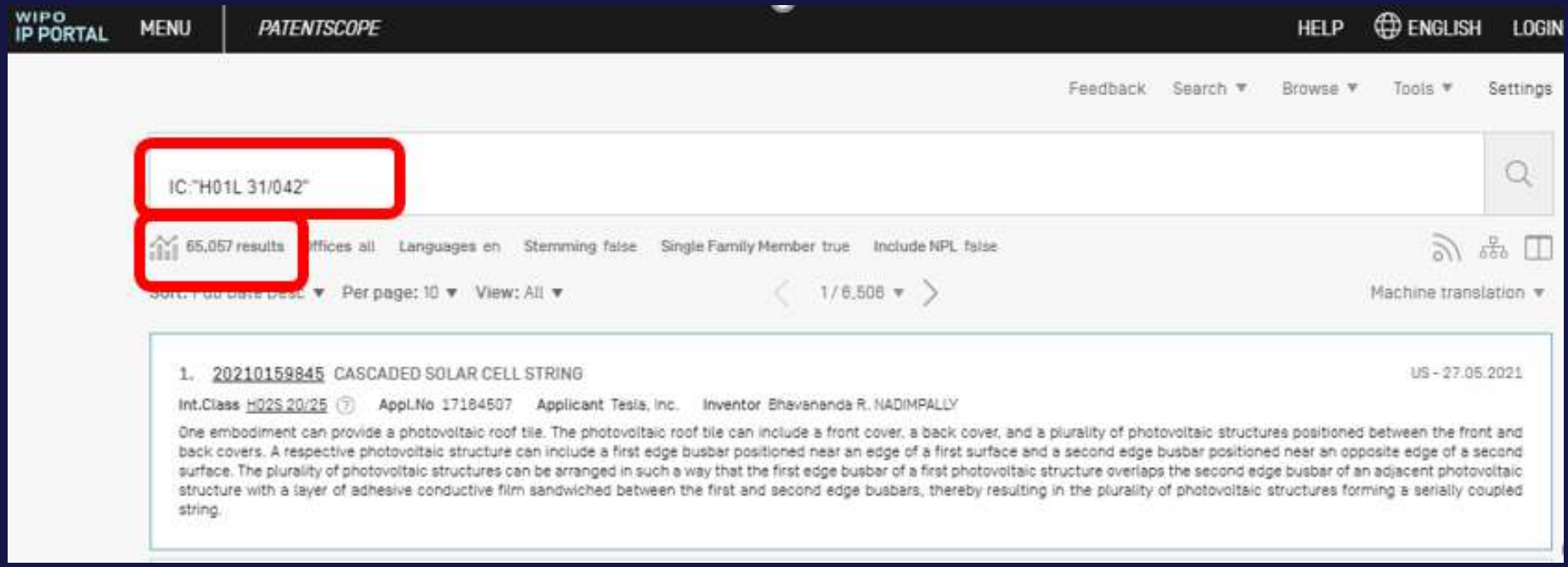
SOLAR panel of photoelectric cells H01L 31/042

using SOLAR energy F03G 6/00

using SOLAR heat F24S

H01L 31/042 • • PV modules or arrays of single PV cells (supporting structures for PV modules H02S 20/00) **[2014.01]**

IPC: https://www.wipo.int/classifications/ipc/ipcpub



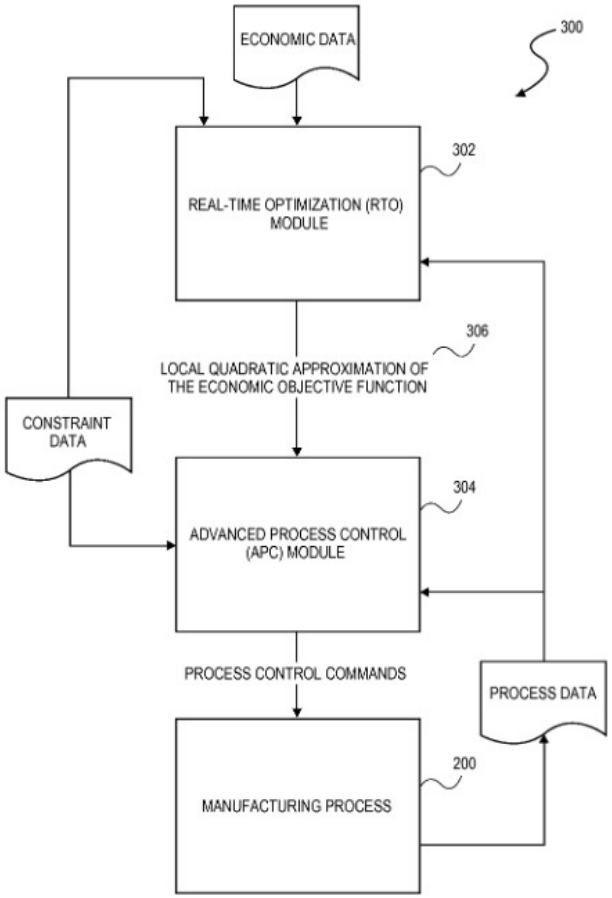
Why PATENTSCOPE?

- Flexible interfaces
  - Simple and advanced search interfaces
- Powerful translation tools
  - WIPO Translate: AI-powered tool to search and translate patent documents in up to 14 languages
  - Cross-lingual Expansion: looks for synonyms and translates terms and variations in up to 14 languages
- Graphical analysis of search results
- Save and export search results*
- Chemical compound search*

* requires to register with a free account

Scenario

- A researcher at a systems development laboratory is considering a direction for her research into adaptive control systems.



Scenario

- The researcher wants to know:
  - which technologies already exist in this area
  - which organizations or individuals are particularly active in this area

Task breakdown

- **Access the PATENTSCOPE search service**
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  - keywords
  - classification
  - keywords and classification
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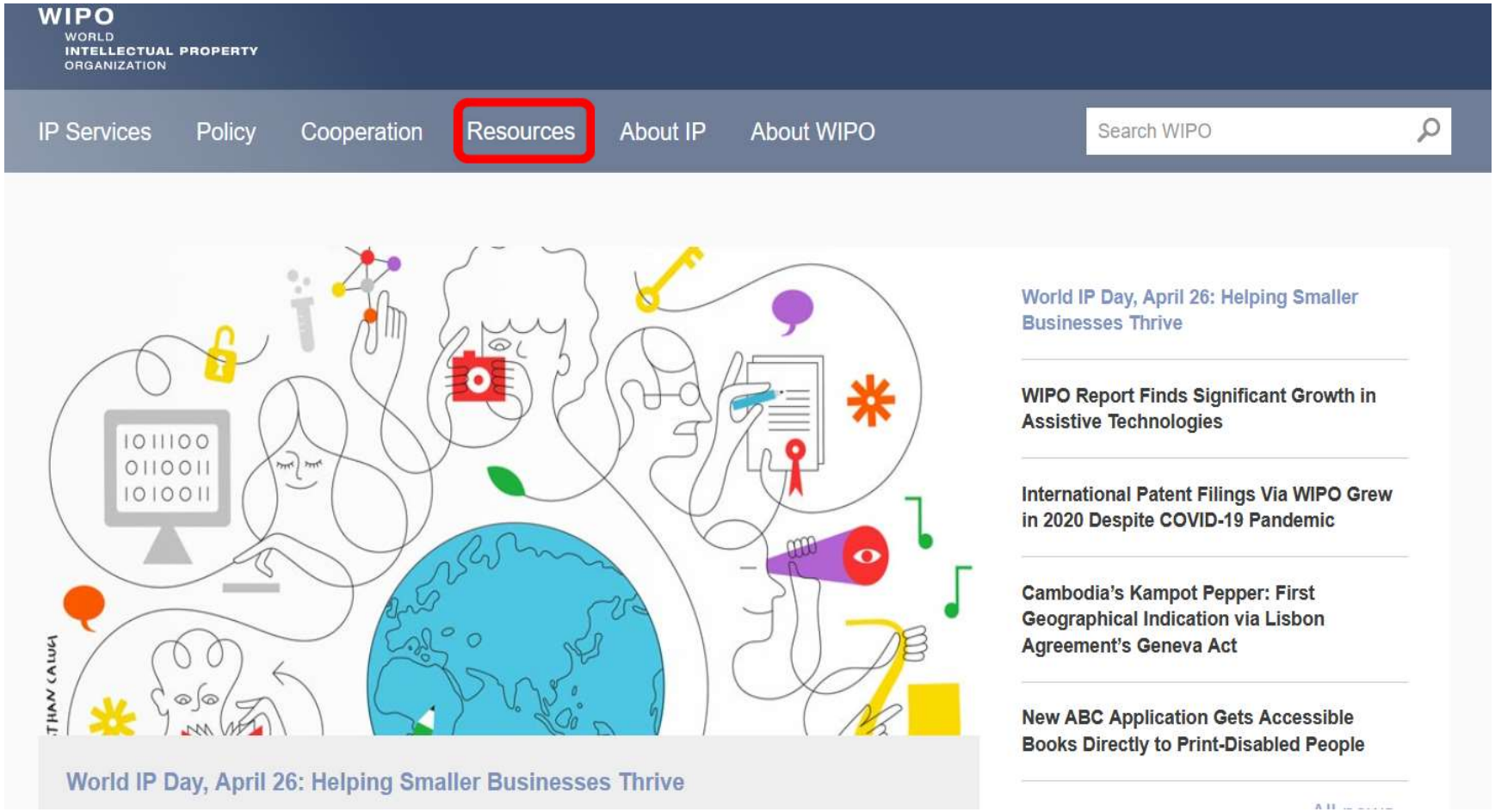
- Examine a specific patent document and its related documents within the results
- Keep up-to-date on new patent documents

WIPO homepage



http://www.wipo.int

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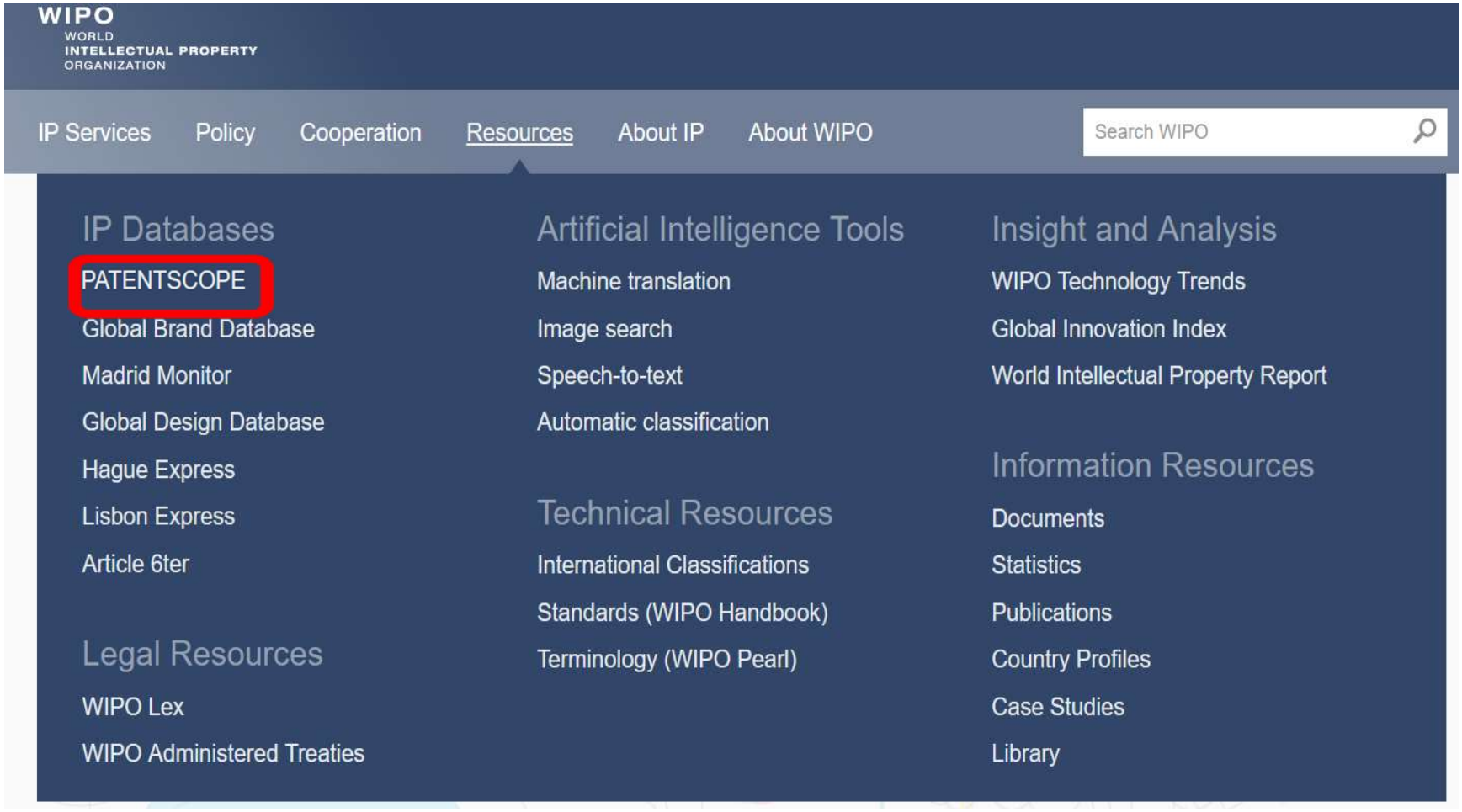
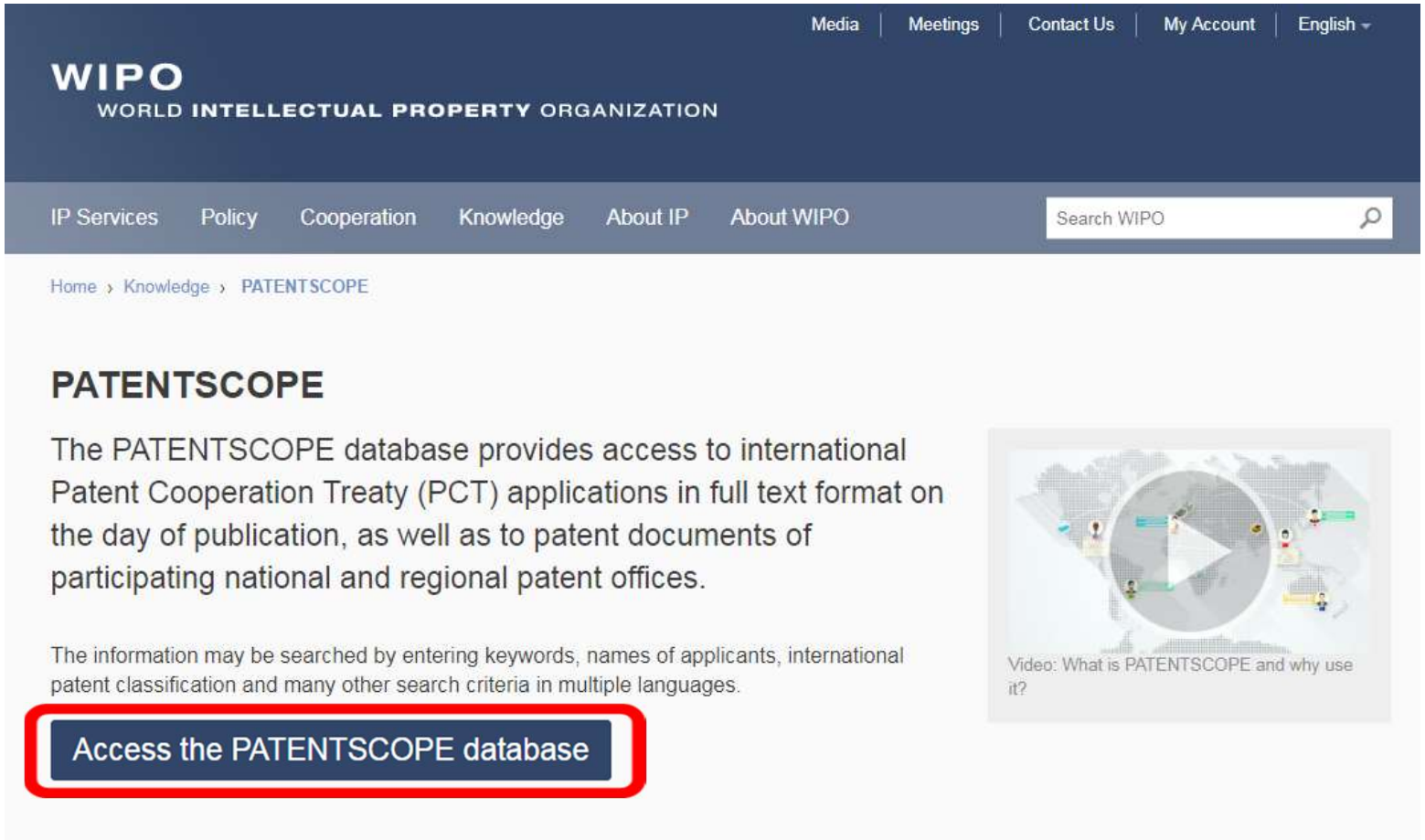
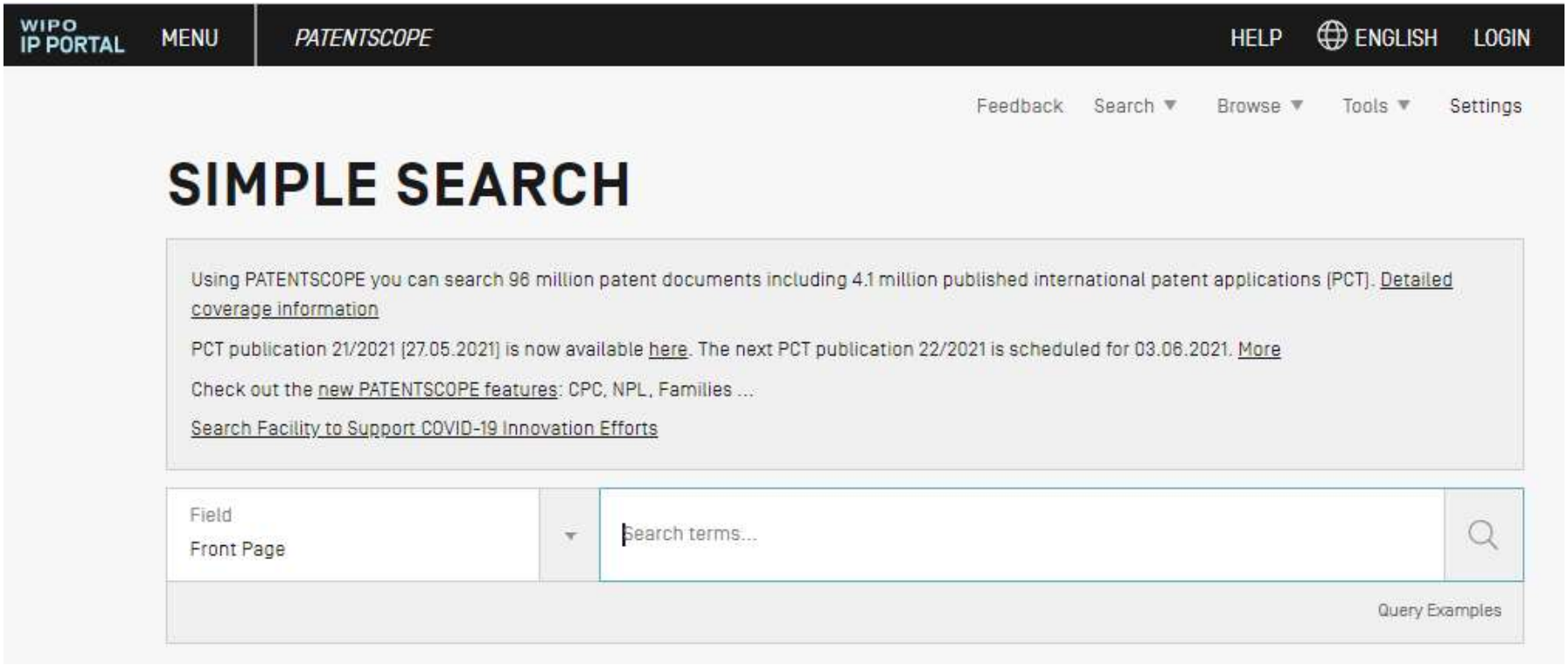
WIPO homepage



WIPO homepage: PATENTSCOPE



WIPO PATENTSCOPE



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CLIR: Synonyms and variants

- Original language

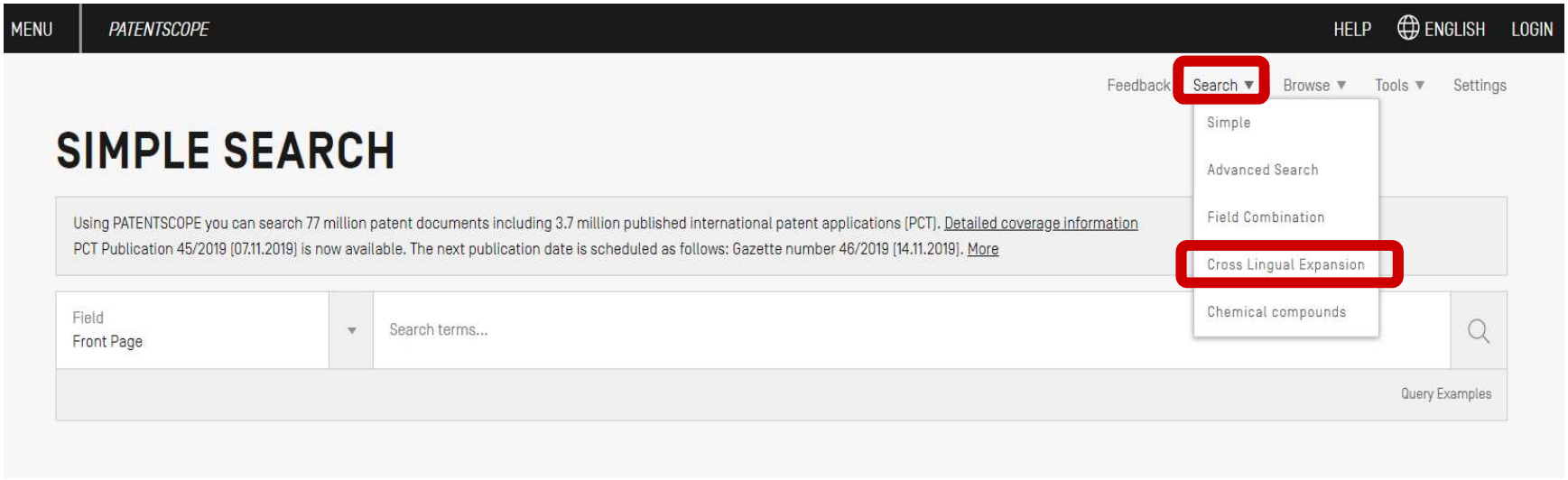
  adaptive control system → adaptive regulating system, …

- Other languages

  adaptive control system → système de régulation adaptatif, …

→ Chinese, English, French, German, Japanese, Korean, Portuguese, Russian, Spanish, Dutch, Italian, Swedish

Search interface: Cross Lingual Expansion (CLIR)



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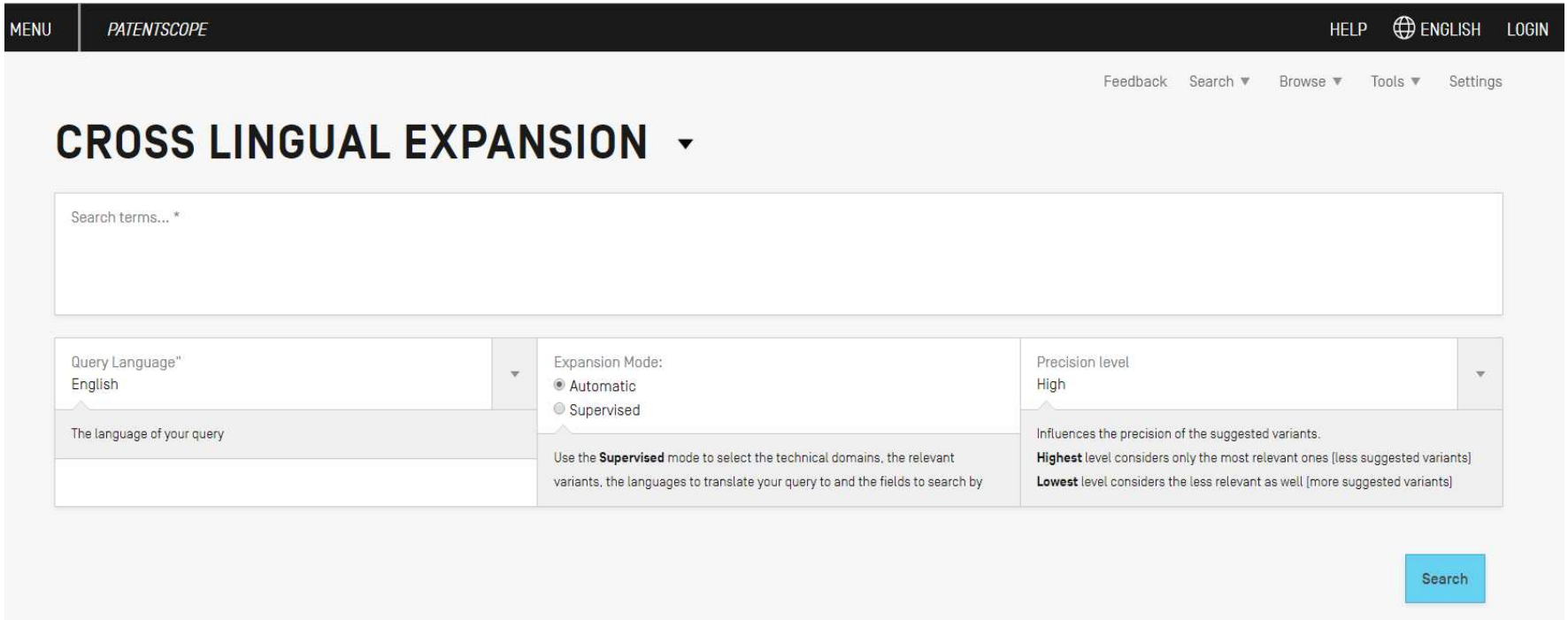
CLIR



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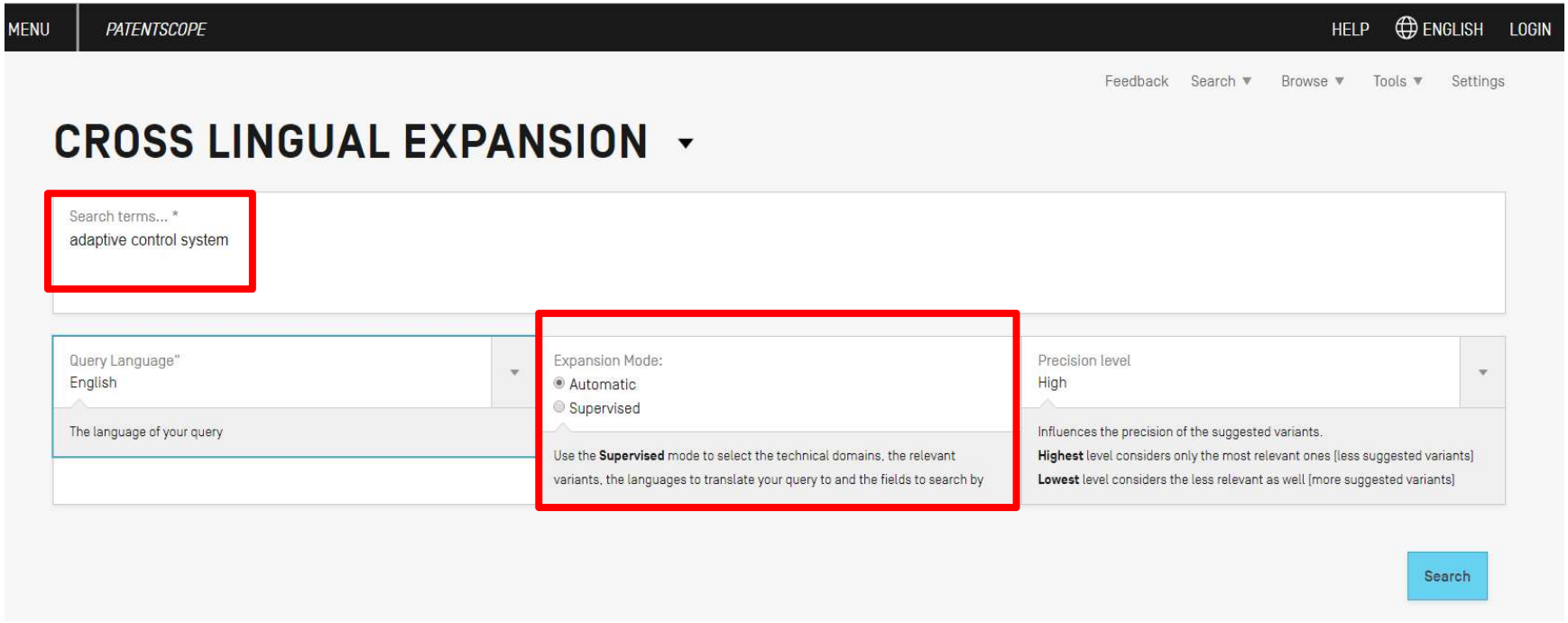
CLIR Search



→ Query language is the language in which your query is entered

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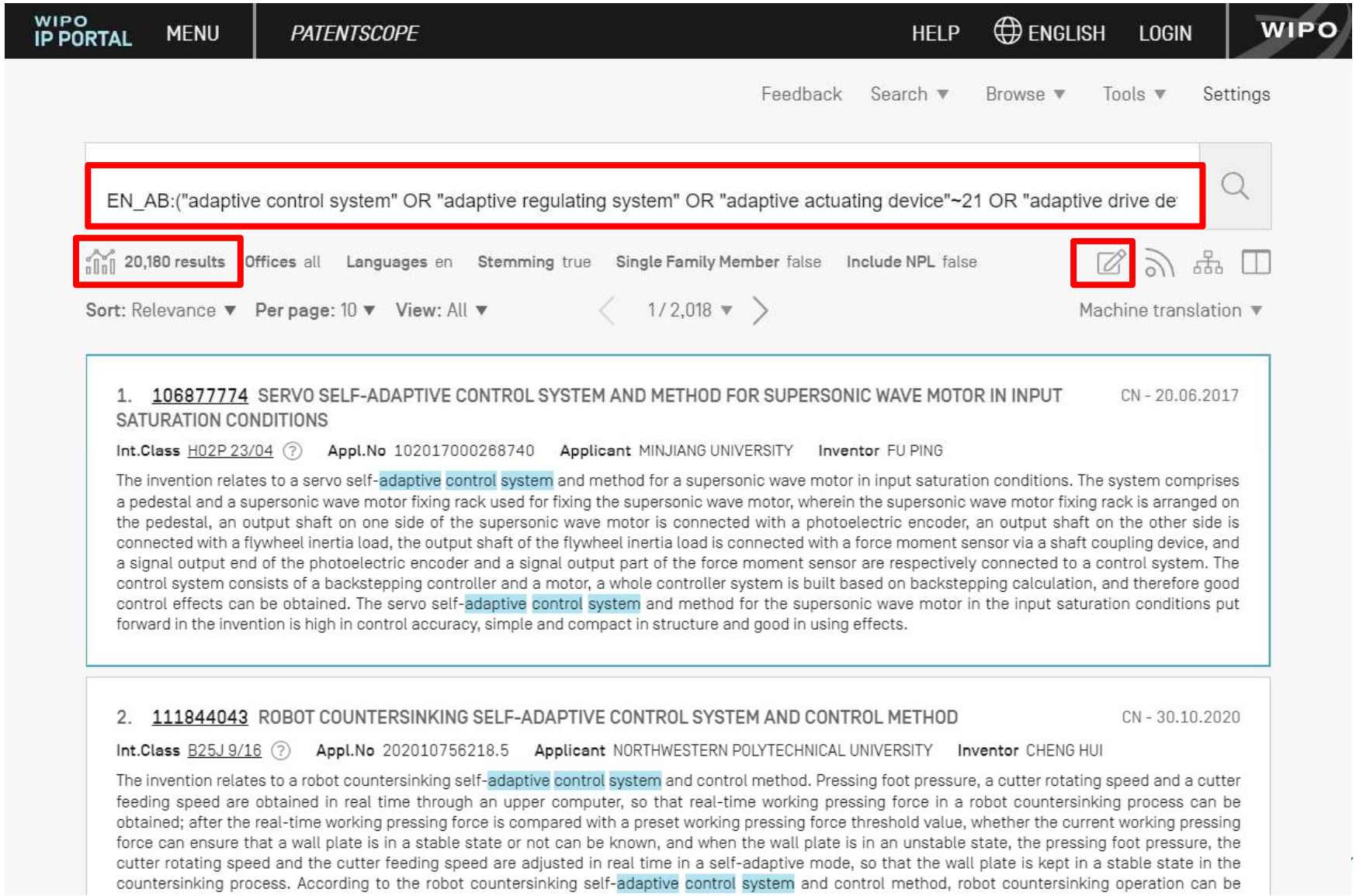
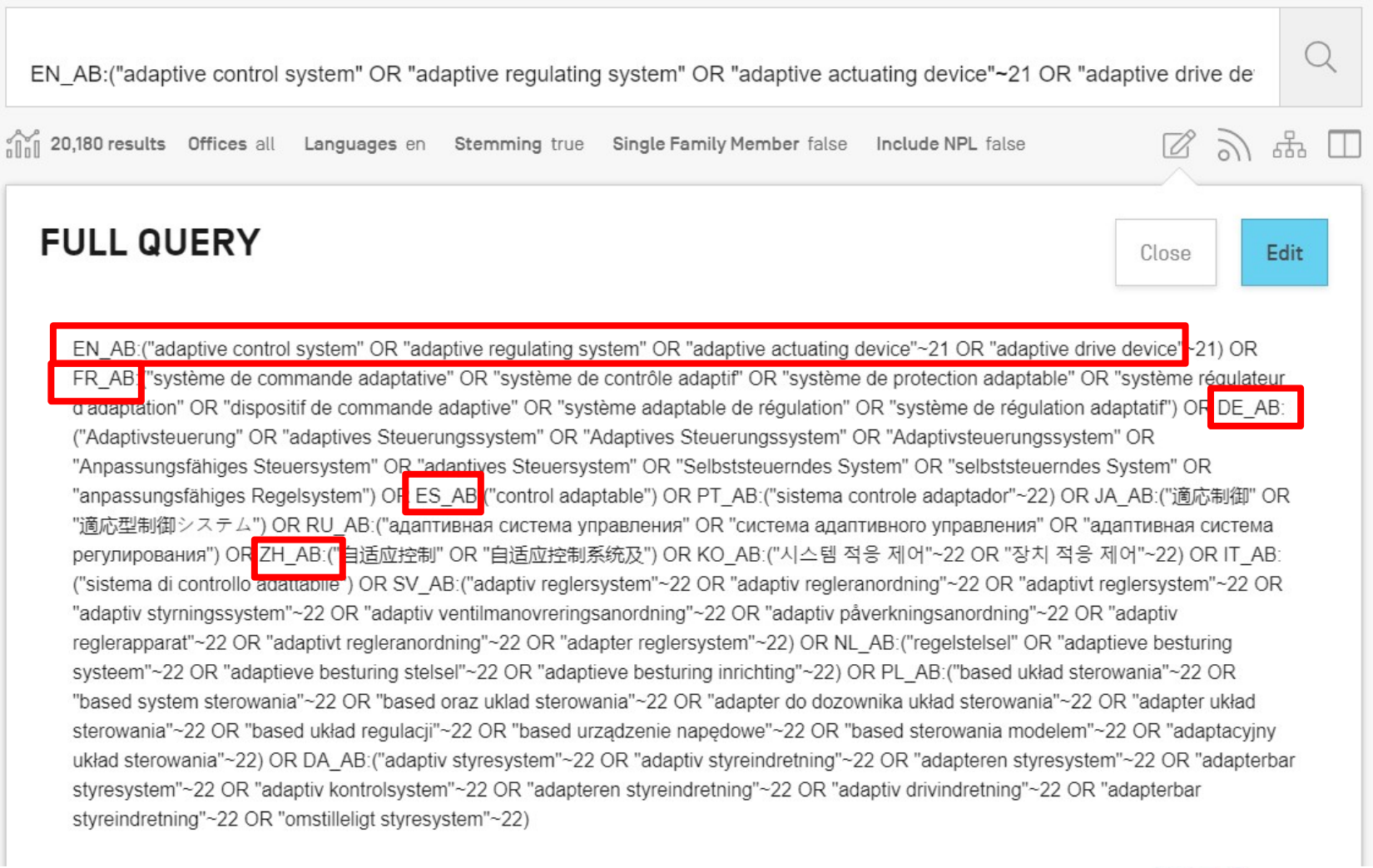
CLIR: Query and results



CLIR: Full query



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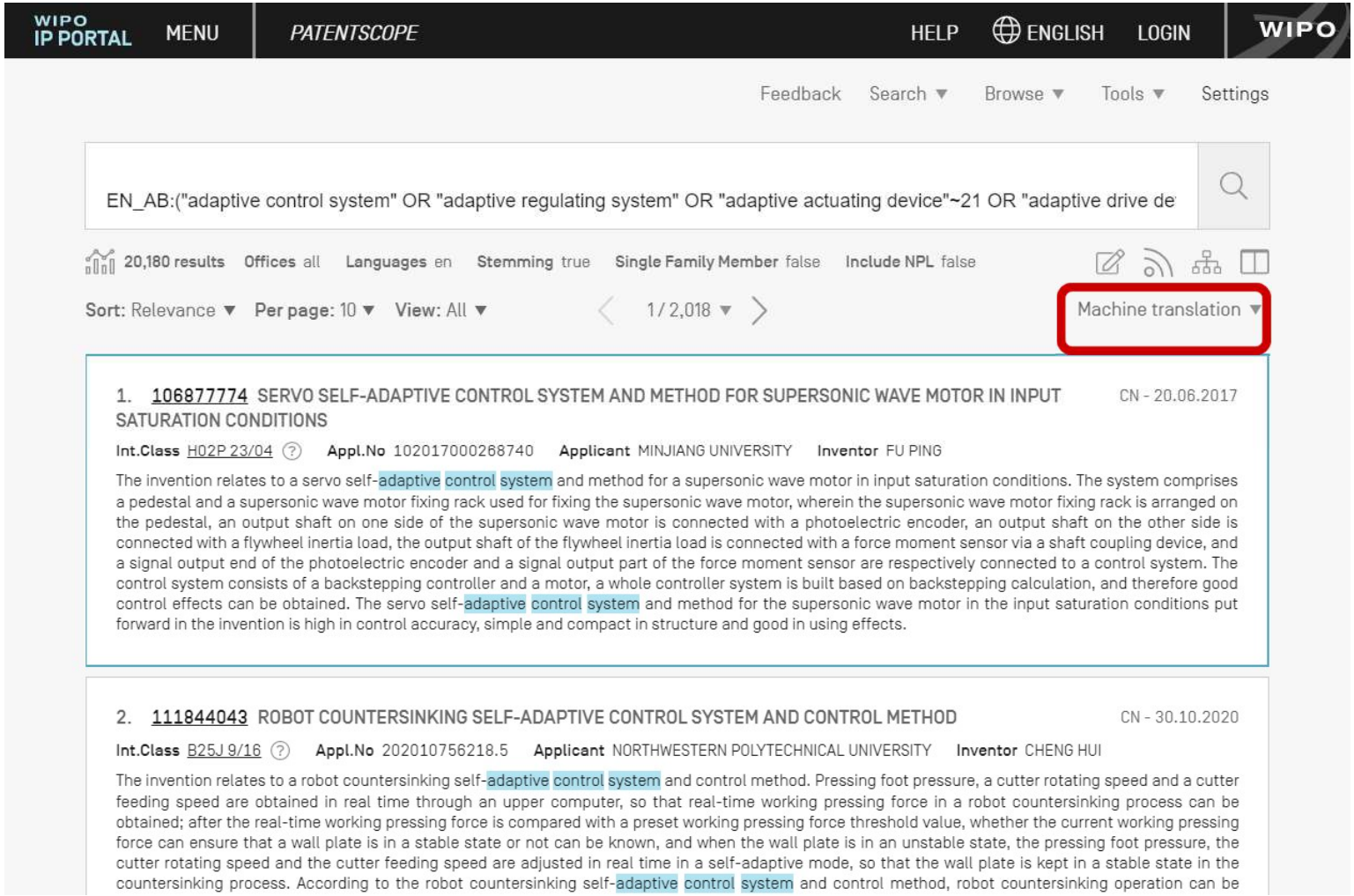
Machine translation



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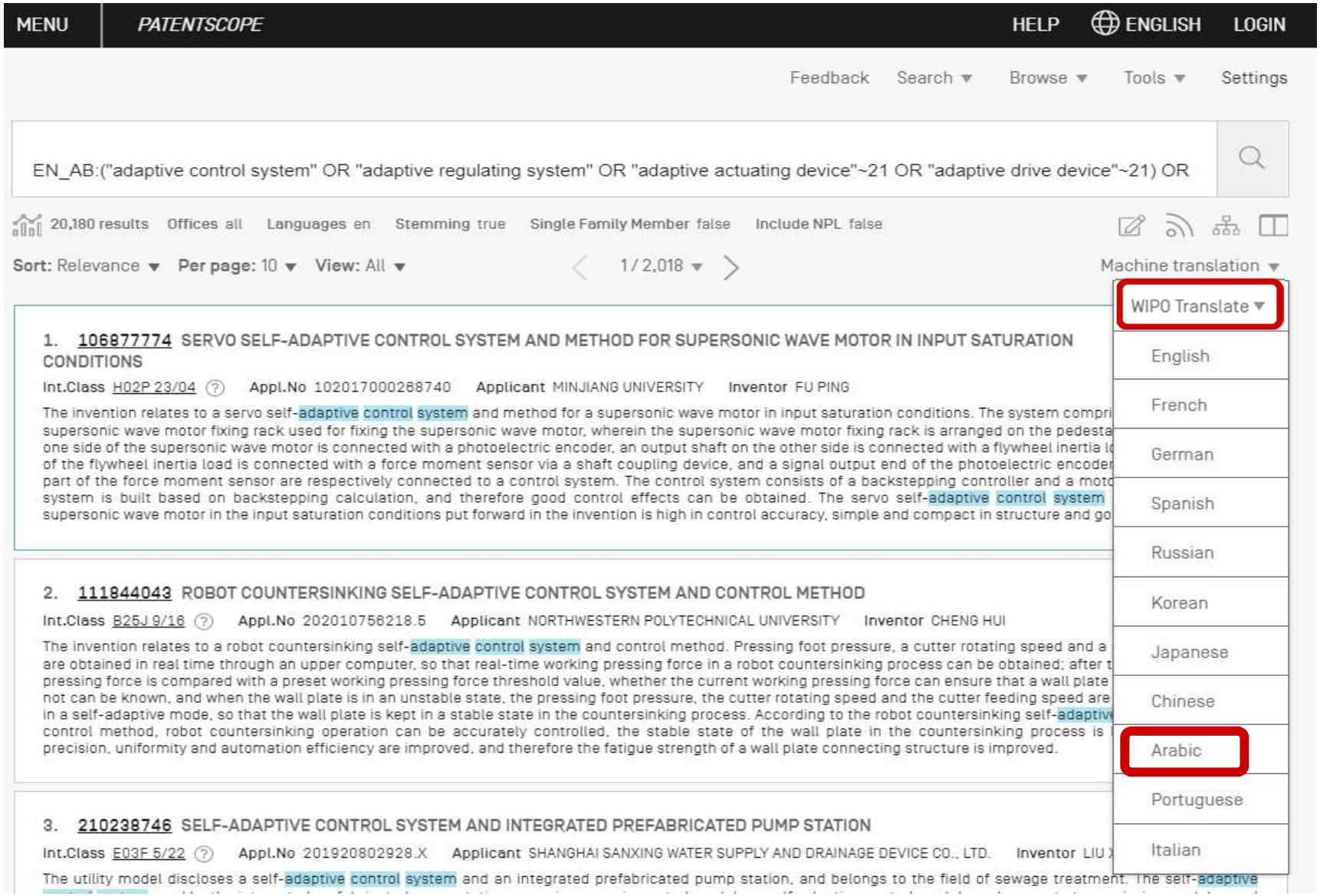
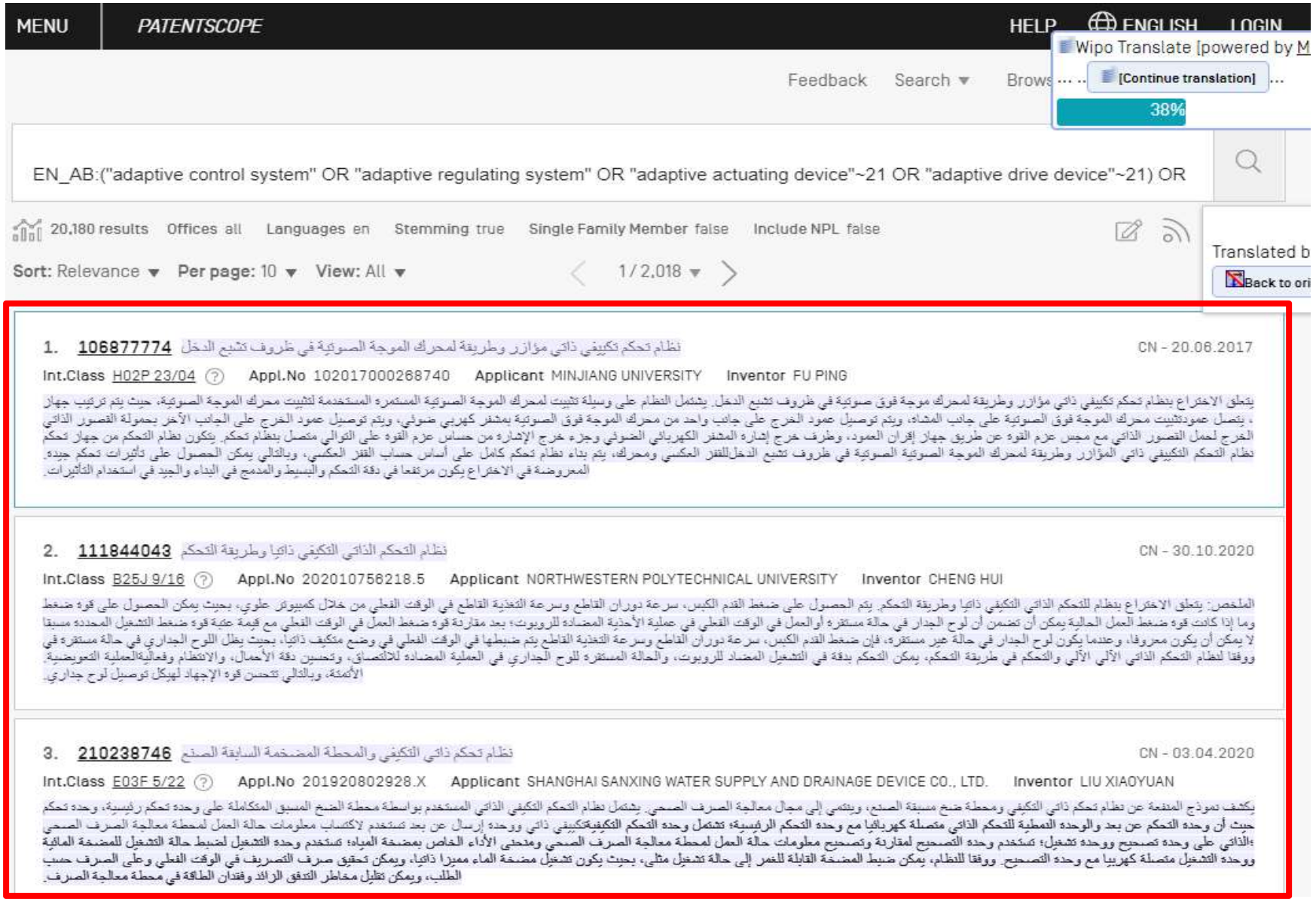
Machine translation



Machine translation



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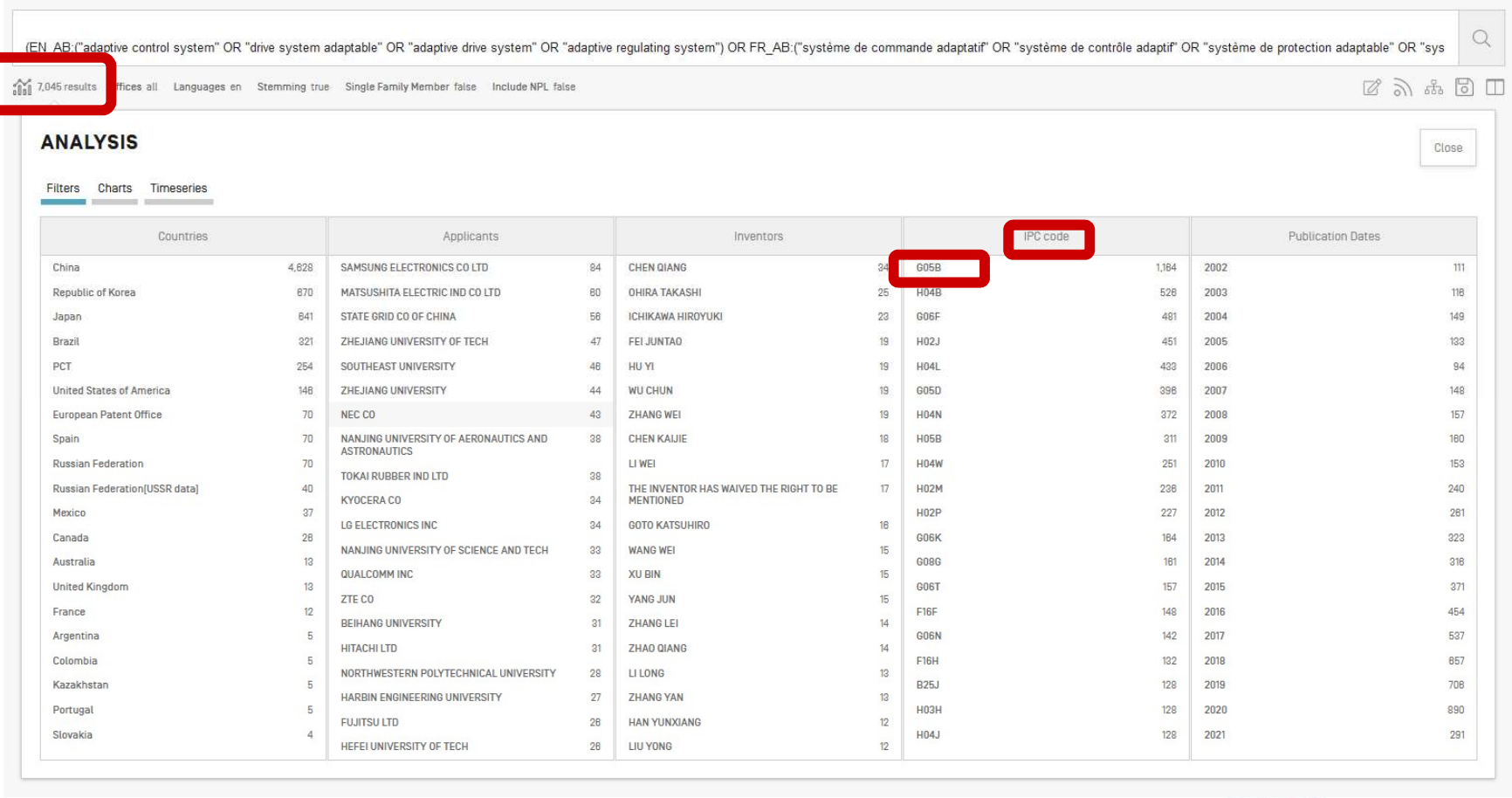
Results: Analysis



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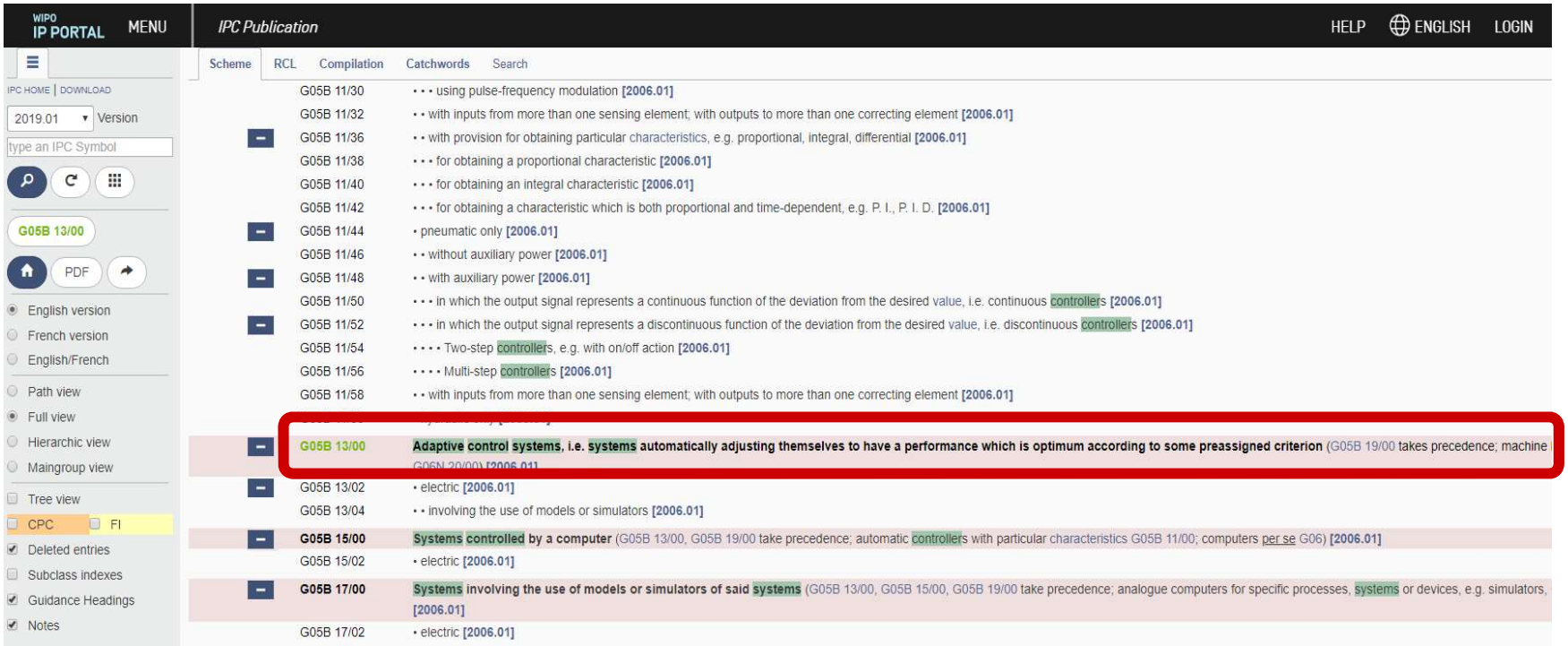
International Patent Classification



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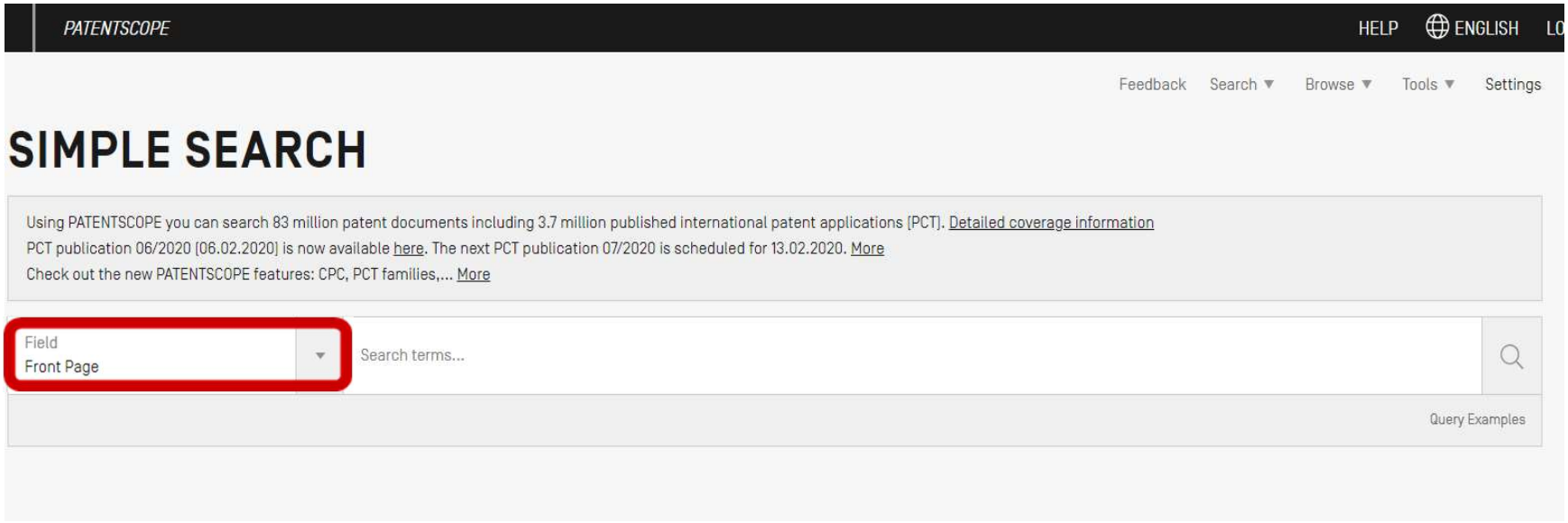
Interfaces: Simple search



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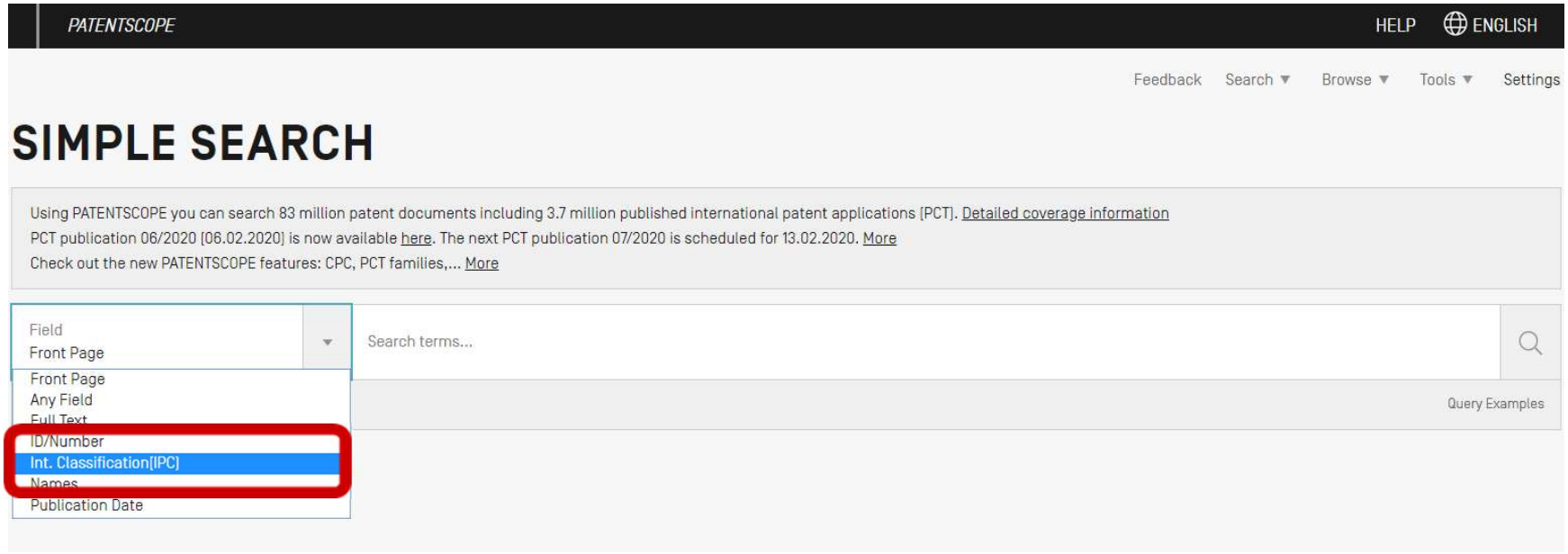
Interfaces: Simple search



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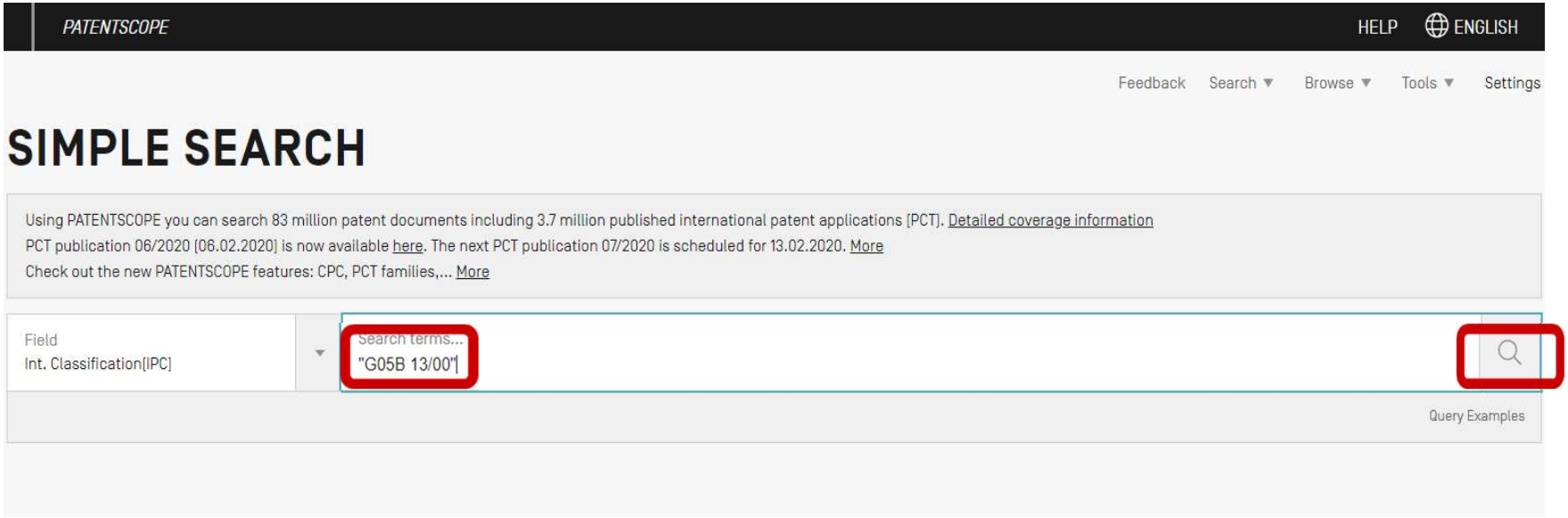
Simple search: IPC



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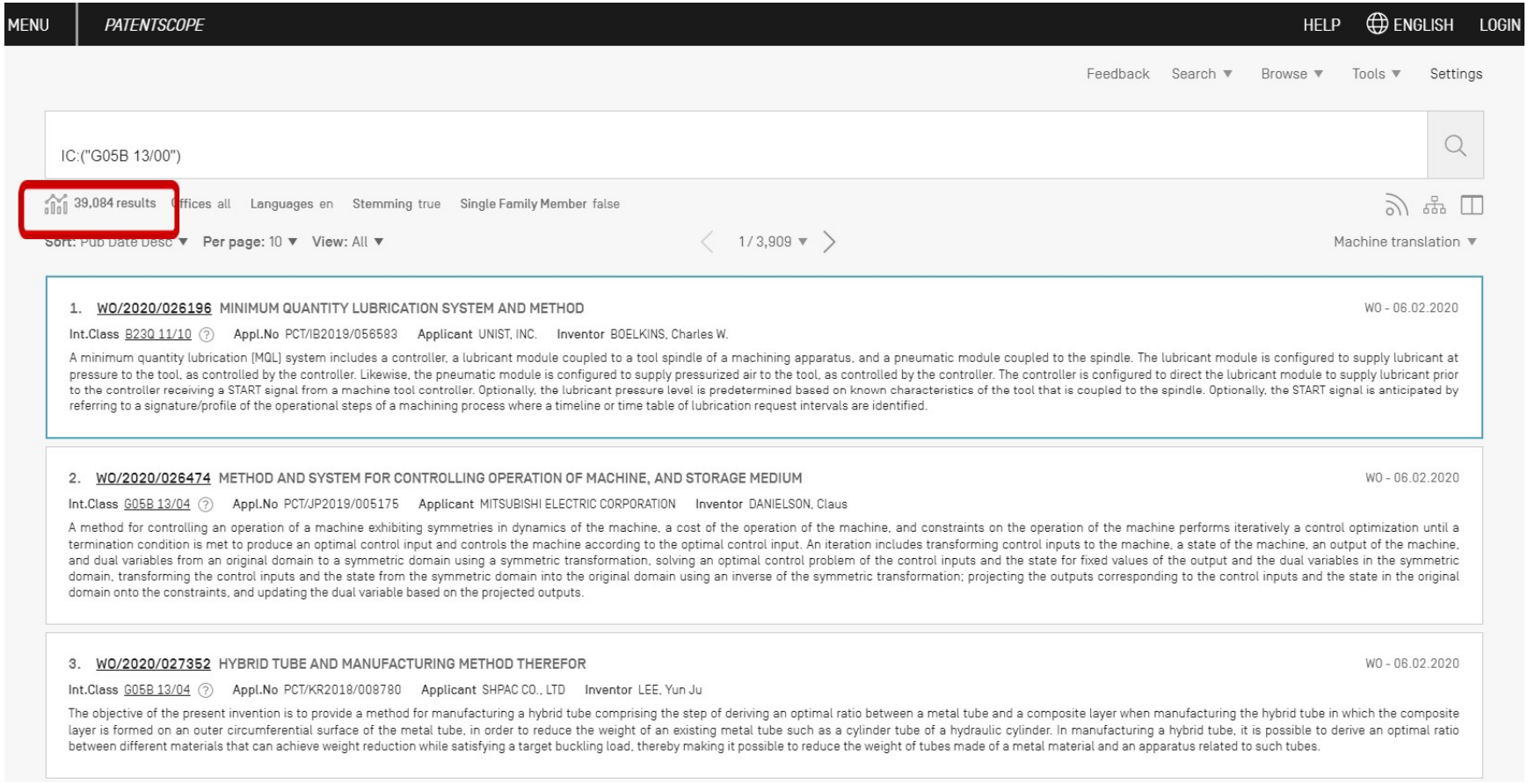
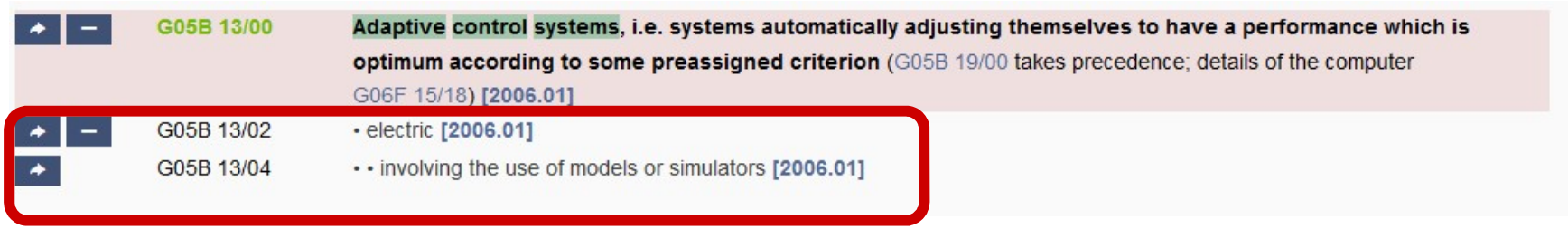
Simple search: Query and results



Scenario: A twist

- The researcher now wants to focus the research on adaptive control systems adapted for the oil industry

Classification: G05B 13/00



G05B 13/00	**Adaptive control systems, i.e. systems automatically adjusting themselves to have a performance which is optimum according to some preassigned criterion** (G05B 19/00 takes precedence; details of the computer G06F 15/18) **[2006.01]**
G05B 13/02	• electric **[2006.01]**
G05B 13/04	• • involving the use of models or simulators **[2006.01]**

→ No classification available for “Adaptive control systems … oil industry"

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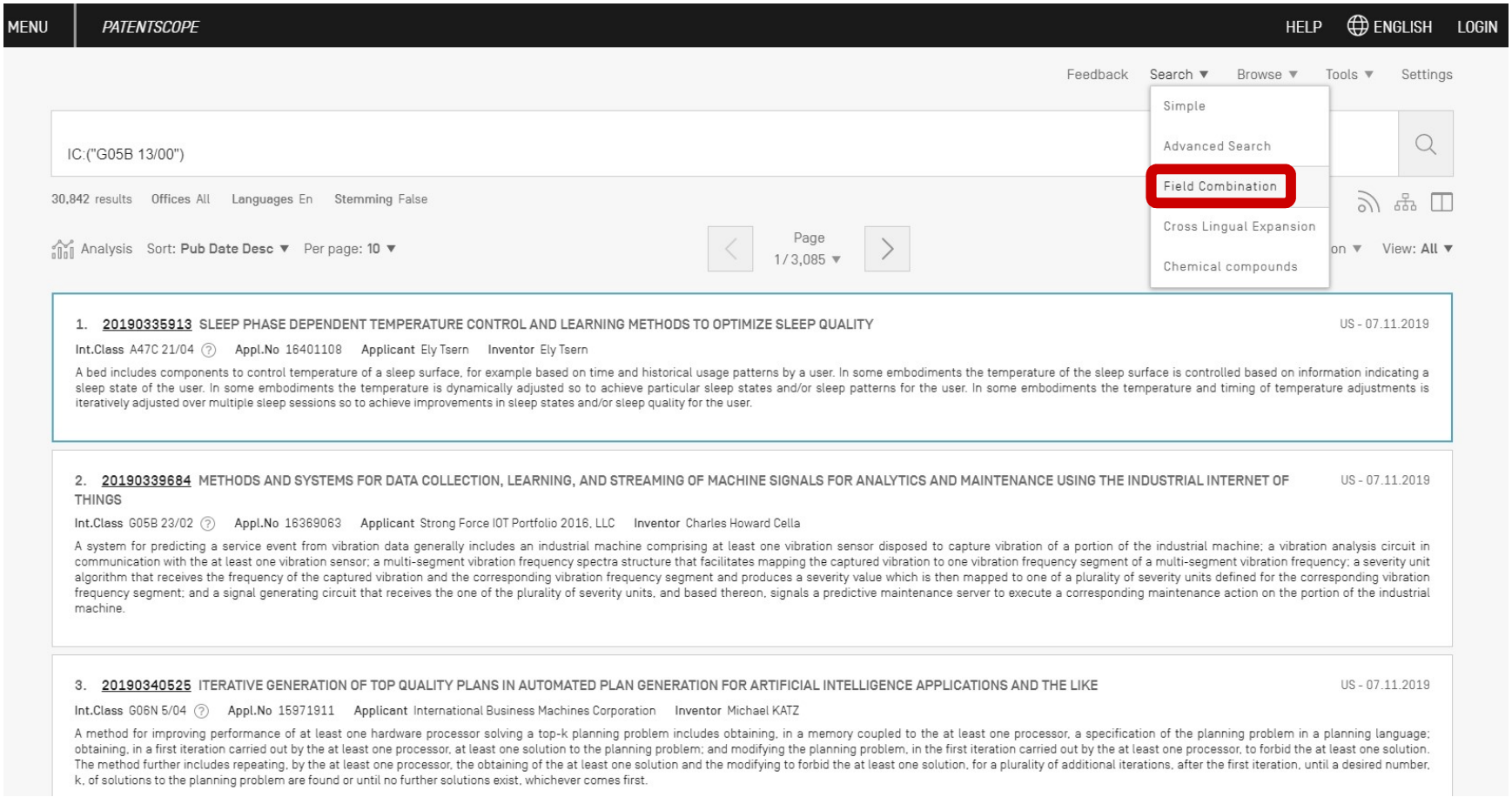
Simple search: Field combination



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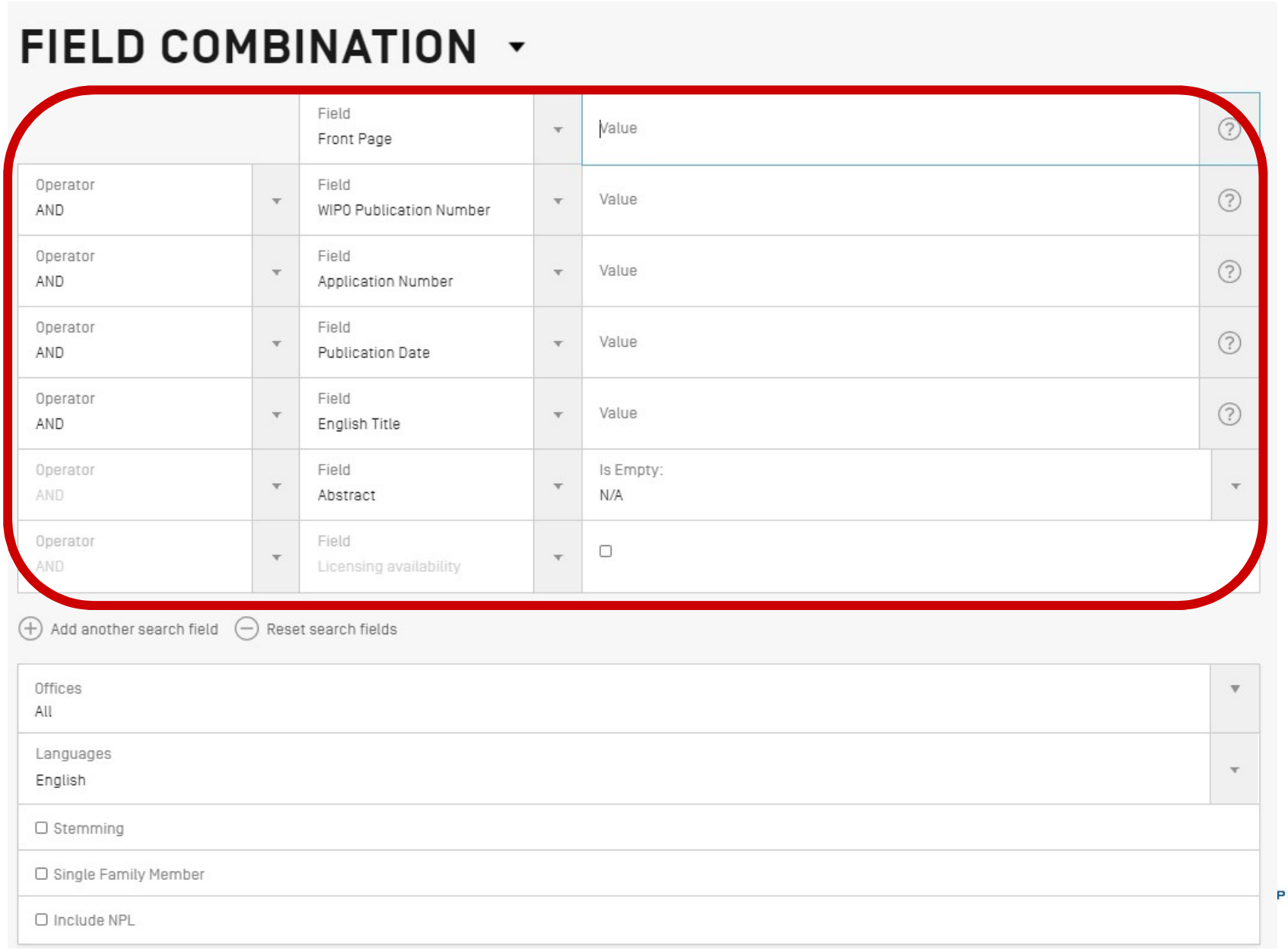
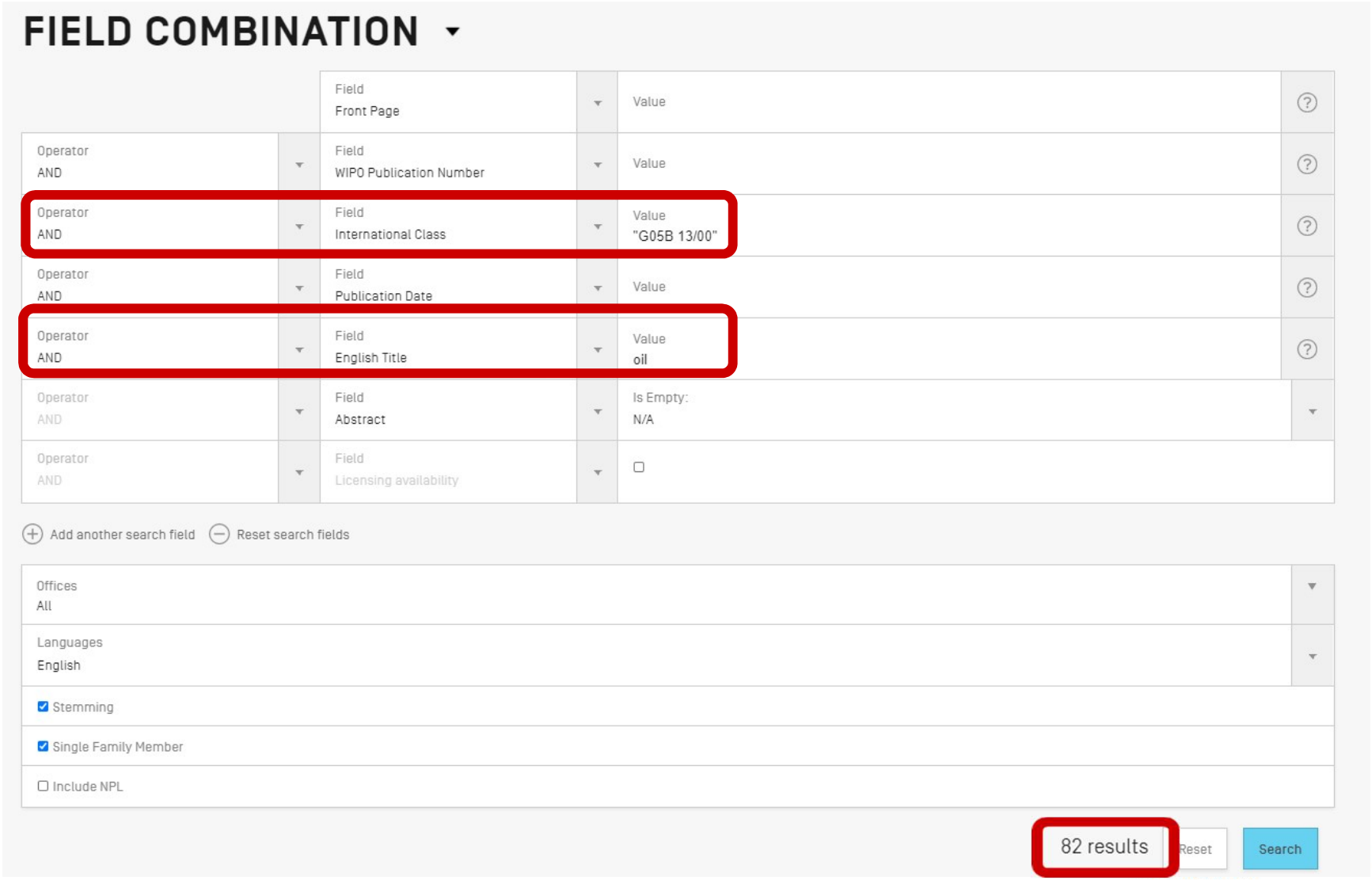
Interface: Field combination



PERTY

Interface: Field combination

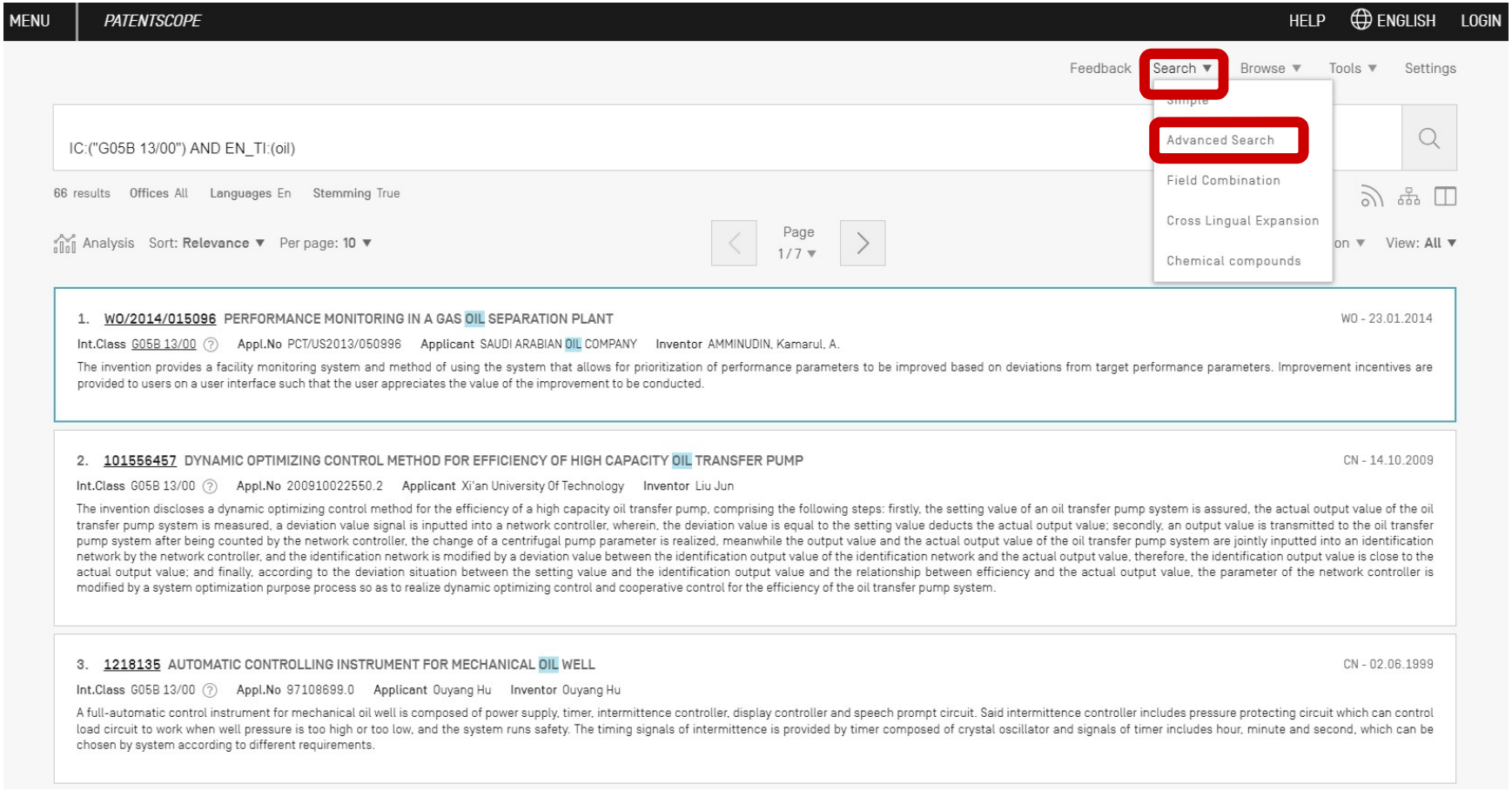


Concepts and synonyms

- oil: petroleum

  →oil **OR** petroleum

Interface: Advanced search



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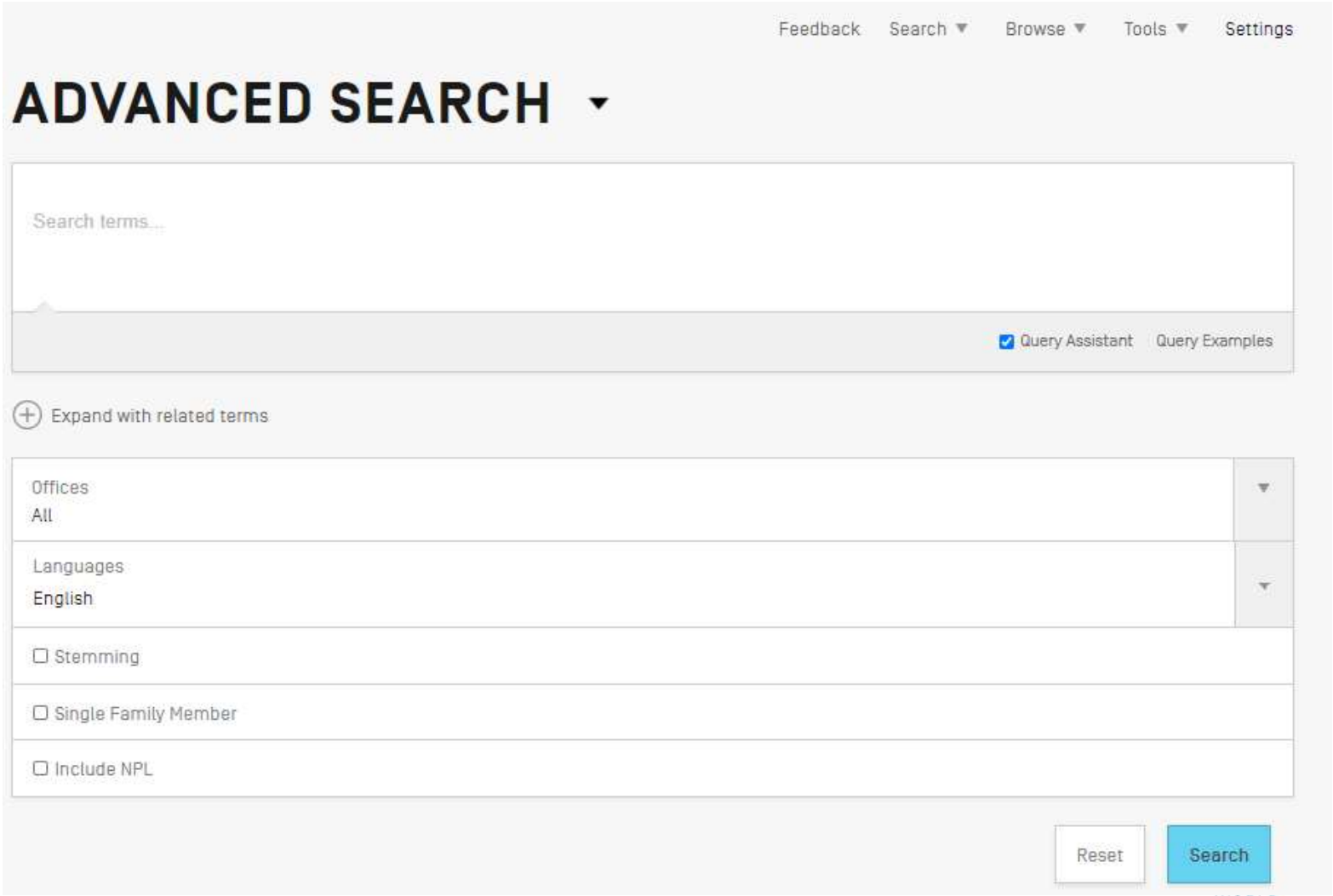
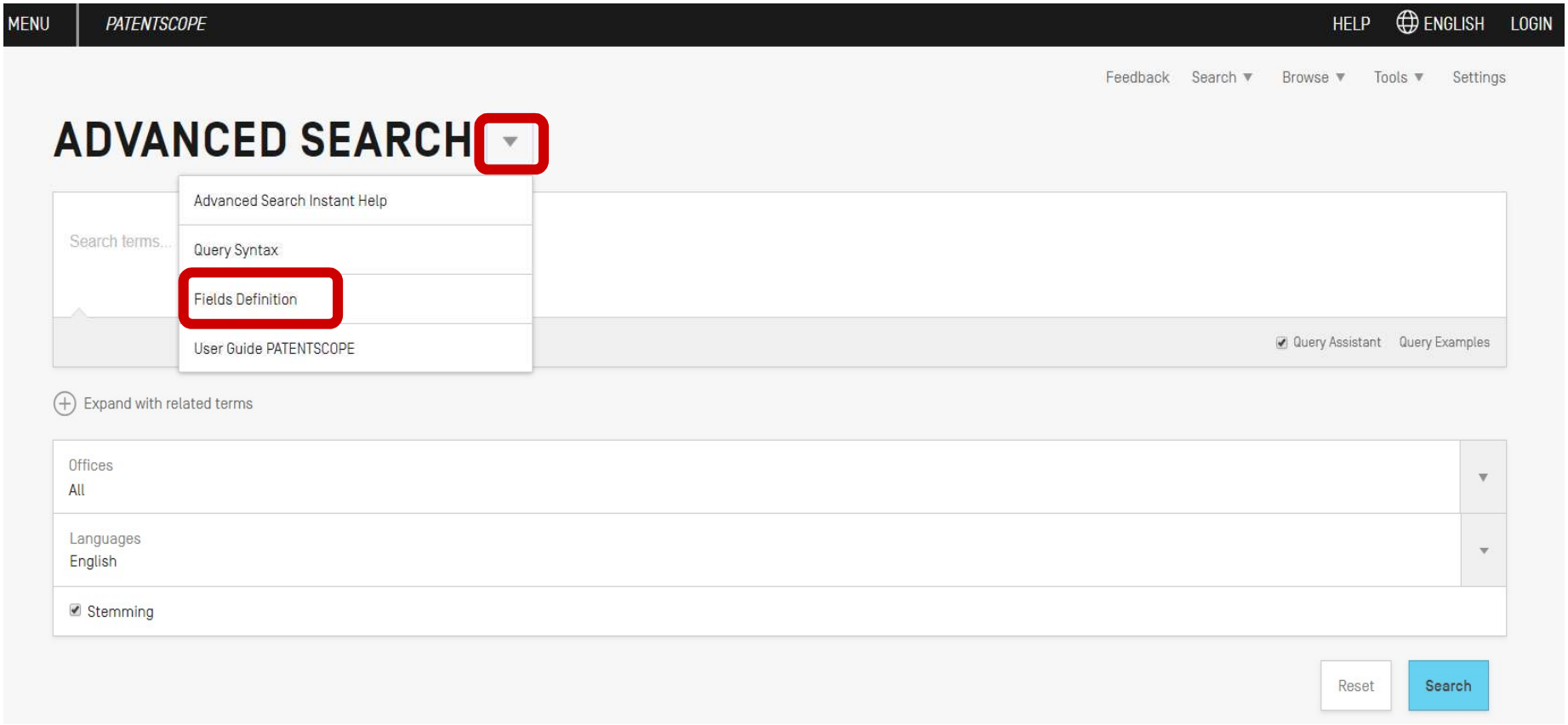
Interface: Advanced search



Advanced search interface: Field codes



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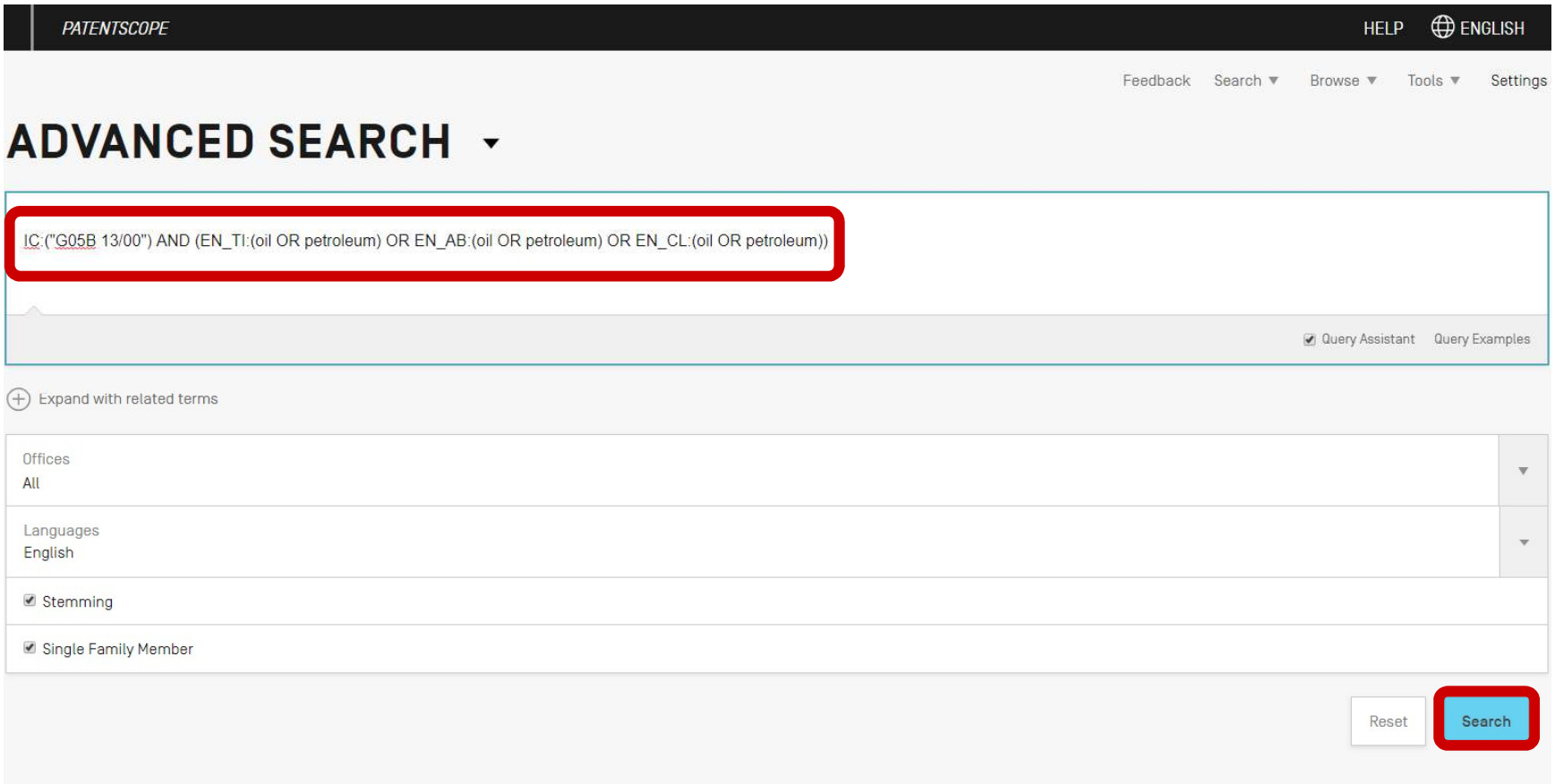
Advanced search interface: Field codes

- International classification → IC:(…)
- English title → EN_TI:(…)
- English abstract → EN_AB:(…)
- English claims → EN_CL:(…)

Query

→ IC:("G05B 13/00") AND (EN_TI:(oil OR petroleum) OR EN_AB:(oil OR petroleum) OR EN_CL:(oil OR petroleum))

Advanced search: Query



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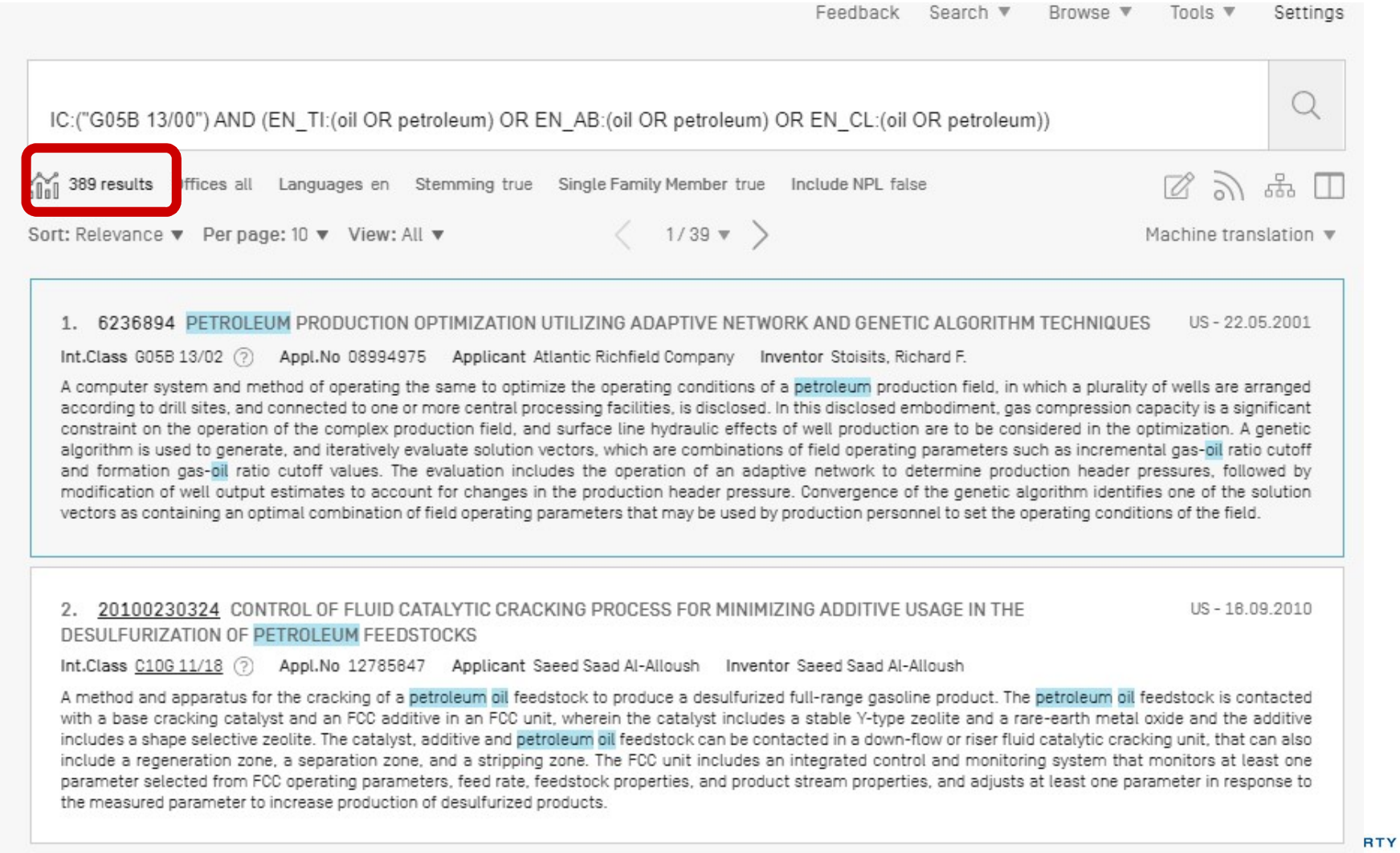
Advanced search: Query and results



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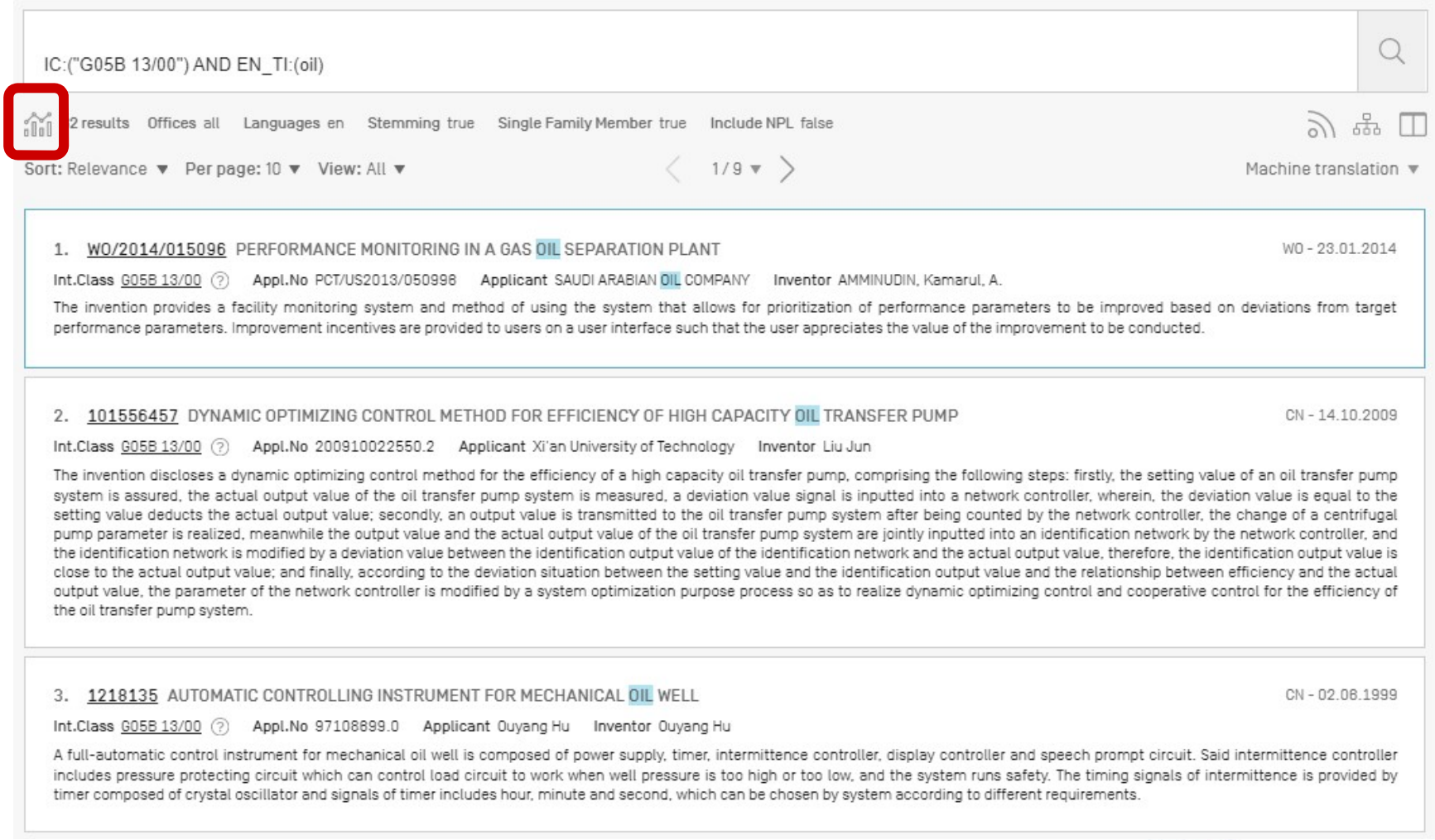
Results



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Results: Analysis

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

ANALYSIS

Close

Filters Charts

Countries		Applicants		Inventors		IPC code		Publication Dates	
China	45	STRONG FORCE IOT PORTFOLIO 2016 LLC	8	CHARLES HOWARD CELLA	8	G05B	82	2013	2
United States of America	20	EAST CHINA UNIVERSITY OF SCIENCE AND TECH	8	GERALD WILLIAM DUFFY, JR.	8	E21B	18	2014	5
Russian Federation	8	HANGZHOU DIANZI UNIVERSITY	8	JEFFREY P. MCGUCKIN	8	G05D	18	2015	0
PCT	8	INTERNATIONAL BUSINESS MACHINES CO	4	MEHUL DESAI	8	G06N	13	2016	2
Japan	2	CHINA UNIVERSITY OF PETROLEUM (EAST CHINA)	3	ZHANG RIDONG	8	G06K	8	2017	8
Australia	1	NANJING RICHISLAND INFORMATION ENGINEERING CO LTD	2	ANDREW R. CONN	4	H04B	8	2018	20
Bulgaria	1	RONGSHENG MACHINERY MANUFACTURE LTD OF HUABEI OILFIELD	2	LIOR HORESH	4	H04L	8	2019	18
Republic of Korea	1	SHENYANG INSTITUTE OF AUTOMATION CHINESE ACADEMY OF SCIENCES	2	MATTHIAS KORMAKSSON	4	G06F	4	2020	12
		SHENZHEN DITUO ELECTRONIC CO LTD	2	MOSHOOD O. SALIU	4	F04B	3	2021	2
		ABB AS	1	THEODORE G. VAN KESSEL	4	G01N	3		

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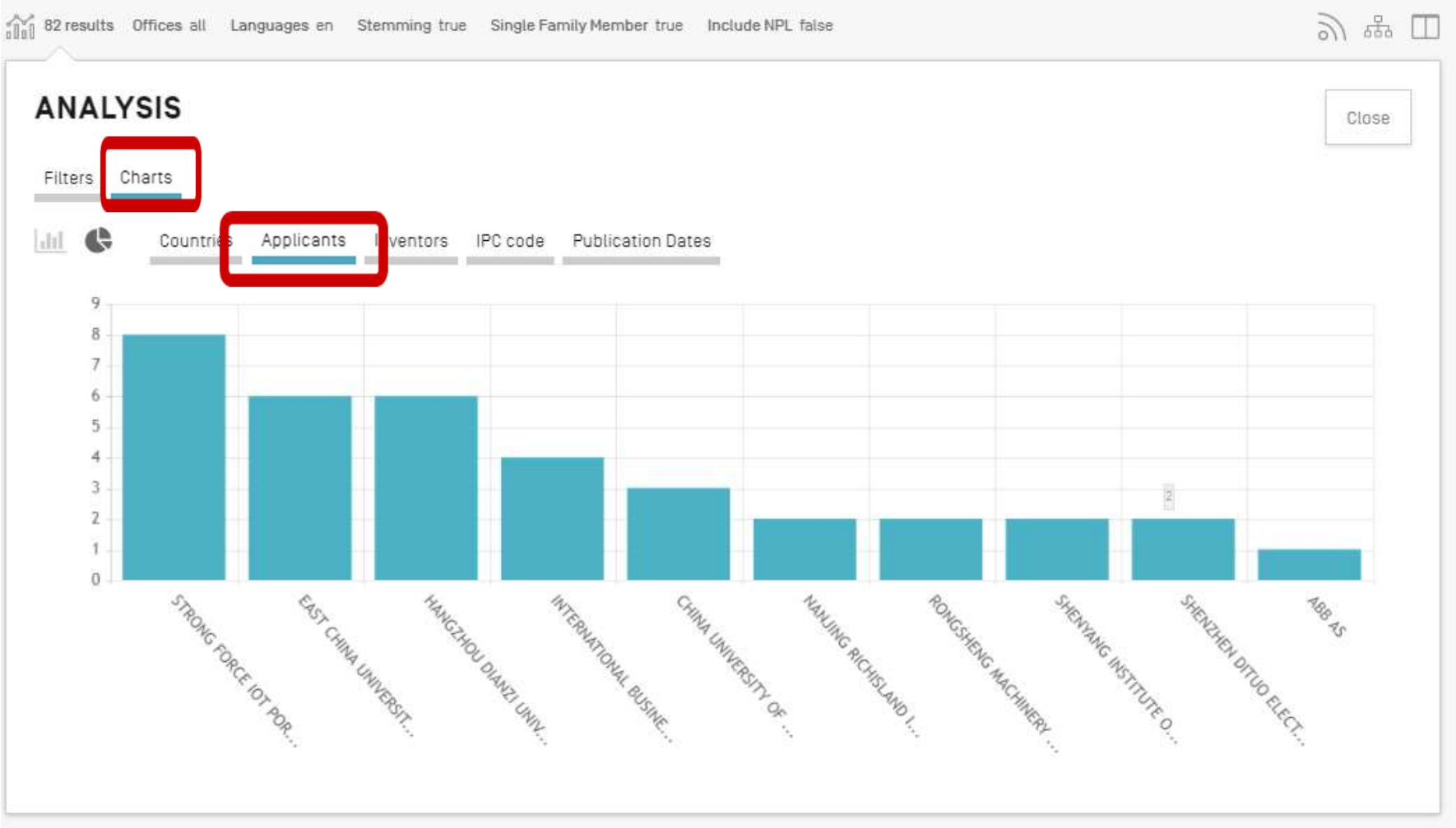
Results: Analysis



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Results

1. WO/2014/015096 PERFORMANCE MONITORING IN A GAS OIL SEPARATION PLANT — WO - 23.01.2014

Int.Class G05B 13/00 ⓘ Appl.No PCT/US2013/050998 Applicant SAUDI ARABIAN OIL COMPANY Inventor AMMINUDIN, Kamarul, A.

The invention provides a facility monitoring system and method of using the system that allows for prioritization of performance parameters to be improved based on deviations from target performance parameters. Improvement incentives are provided to users on a user interface such that the user appreciates the value of the improvement to be conducted.

2. WO/2020/199665 MULTI-TARGET ONLINE OPTIMIZATION METHOD FOR CRUDE OIL BLENDING — WO - 08.10.2020

Int.Class G05B 13/04 ⓘ Appl.No PCT/CN2019/128928 Applicant EAST CHINA UNIVERSITY OF SCIENCE AND TECHNOLOGY Inventor QIAN, Feng

Disclosed is a multi-target online optimization method for crude oil blending. The method comprises the steps of: initializing parameters of a blending task; configuring an optimization cycle and target function weights, and configuring upper and lower limits of respective attribute indexes of blended crude oil, reserves of respective component oils, the maximum blending and refining-line flow rate of each component oil, and a unit mass cost of each component oil; acquiring, according to the preconfigured optimization cycle, attribute data of respective blending components and a tank bottom oil, and updating a reading on an oil dipstick at the tank bottom, the reserves of the respective component oils, and the remaining blending time of the present batch; and obtaining the optimal formula of each blending component in the current optimization cycle, and sending the same to a blending control system for execution.

3. WO/2020/199666 BLENDING EFFECT PARAMETER CALCULATION METHOD FOR CRUDE OIL BLENDING — WO - 08.10.2020

Int.Class G05B 13/04 ⓘ Appl.No PCT/CN2019/128971 Applicant EAST CHINA UNIVERSITY OF SCIENCE AND TECHNOLOGY Inventor QIAN, Feng

A blending effect parameter calculation method for crude oil blending. The method comprises the steps: first, performing operating parameter initialization; next, configuring an operating cycle and target function weighting; then, according to the operating cycle, acquiring a component oil characteristic, a blending formula and a characteristic of crude oil obtained by blending at a blending head; finally, using an adaptive differential evolution smart optimization algorithm to solve a blending effect parameter model.

4. WO/2014/078830 PREDICTING THE OIL TEMPERATURE OF A TRANSFORMER — WO - 22.05.2014

Int.Class G05B 13/02 ⓘ Appl.No PCT/US2013/070698 Applicant ABB TECHNOLOGY AG Inventor DAGNINO, Aldo

Method and system for predicting an oil temperature of a transformer for a desired load and/or predicting a load that a transformer can support for a desired time. A machine learning algorithm is developed using historical data of a transformer. After the algorithm is developed, historical data corresponding to the transformer are input into the algorithm to develop a profile of the transformer describing how the temperature of oil within the transformer is expected to change as a function of a desired load. Using the profile, the oil temperature of the transformer is predicted for a desired load. In this way, a prediction is made as to whether and/or for how long a transformer may support a desired load before the oil temperature reaches a specified threshold and/or before the transformer fails due to the load.

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Record

1. WO2014078830 - PREDICTING THE OIL TEMPERATURE OF A TRANSFORMER

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

PermaLink | Machine translation

Publication Number
WO/2014/078830

Publication Date
22.05.2014

International Application No.
PCT/US2013/070696

International Filing Date
19.11.2013

IPC
G05B 13/02 2006.01 | H01F 27/40 2006.01

CPC
G05B 13/027 | H01F 2027/408 | H01F 27/12

Applicants
ABB TECHNOLOGY AG [CH]/[CH]
Affolternstrasse 44 CH-8050 Zurich, CH
[AllExceptUS]
DAGNINO, Aldo [CA]/[US] [US]
CHEIM, Luiz [BR]/[US] [US]
LIN, Lan [CN]/[US] [US]
PATEL, Poorvi [SE]/[US] [US]

Inventors
DAGNINO, Aldo
CHEIM, Luiz
LIN, Lan
PATEL, Poorvi

Agents

Title
[EN] PREDICTING THE OIL TEMPERATURE OF A TRANSFORMER
[FR] TRANSFORMATEUR DE PROFILAGE DE SYSTÈME D'ÉNERGIE

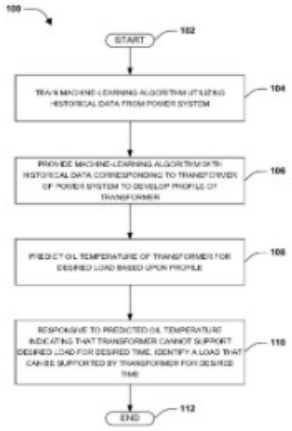

FIG. 1

Abstract
[EN]
Method and system for predicting an oil temperature of a transformer for a desired load and/or predicting a load that a transformer can support for a desired time. A machine learning algorithm is developed using historical data of a transformer. After the algorithm is developed, historical data corresponding to the transformer are input into the algorithm to develop a profile of the transformer describing how the temperature of oil within the transformer is expected to change as a function of a desired load. Using the profile, the oil temperature of the transformer is predicted for a desired load. In this way, a prediction is made as to whether and/or for how long a transformer may support a desired load before the oil temperature reaches a specified threshold and/or before the transformer fails due to

Record

4. WO2014078830 - PREDICTING THE OIL TEMPERATURE OF A TRANSFORMER

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

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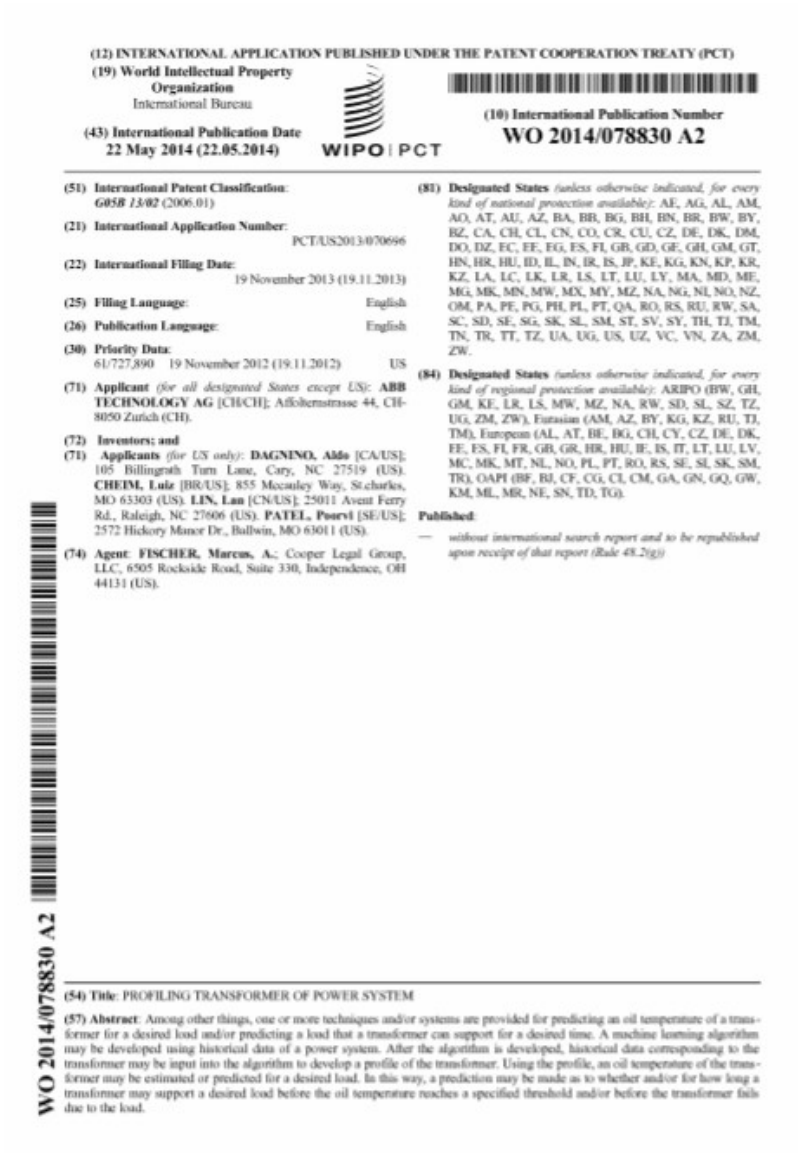
International Application Status			
Date	Title	View	Download
28.05.2021	International Application Status Report	HTML, PDF, XML	PDF, XML

Published International Application			
Date	Title	View	Download
28.08.2014	Later publication of international search report[[A3 35/2014]]	PDF [5p.]	PDF [5p.], ZIP[XML + TIFFs]
22.05.2014	Initial Publication without ISR[[A2 21/2014]]	PDF [34p.]	PDF [34p.], ZIP[XML + TIFFs]

Search and Examination-Related Documents			
Date	Title	View	Download
19.05.2015	[ISA/237] Written Opinion of the International Searching Authority	PDF [9p.]	PDF [9p.], ZIP[XML + TIFFs]
19.05.2015	[IB/373] International Preliminary Report on Patentability Chapter I	PDF [10p.]	PDF [10p.], ZIP[XML + TIFFs]
14.07.2014	[ISA/210] International Search Report	PDF [5p.]	PDF [5p.], ZIP[XML + TIFFs]

Documents: Application, search report



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Published:
— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

(54) Title: PROFILING TRANSFORMER OF POWER SYSTEM

(57) Abstract: Among other things, one or more techniques and/or systems are provided for predicting an oil temperature of a transformer for a desired load and/or predicting a load that a transformer can support for a desired time. A machine learning algorithm may be developed using historical data of a power system. After the algorithm is developed, historical data corresponding to the transformer may be input into the algorithm to develop a profile of the transformer. Using the profile, an oil temperature of the transformer may be estimated or predicted for a desired load. In this way, a prediction may be made as to whether and/or for how long a transformer may support a desired load before the oil temperature reaches a specified threshold and/or before the transformer fails due to the load.

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/070696

A. CLASSIFICATION OF SUBJECT MATTER
INV. G05B13/02
ADD. H01F27/40

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)
H01F G05B

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	QING HE ET AL: "Prediction of Top-Oil Temperature for Transformers Using Neural Networks", IEEE TRANSACTIONS ON POWER DELIVERY, IEEE SERVICE CENTER, NEW YORK, NY, US, vol. 15, no. 4, 1 October 2000 (2000-10-01), XP011049941, ISSN: 0885-8977 the whole document -----	1-10, 18-20

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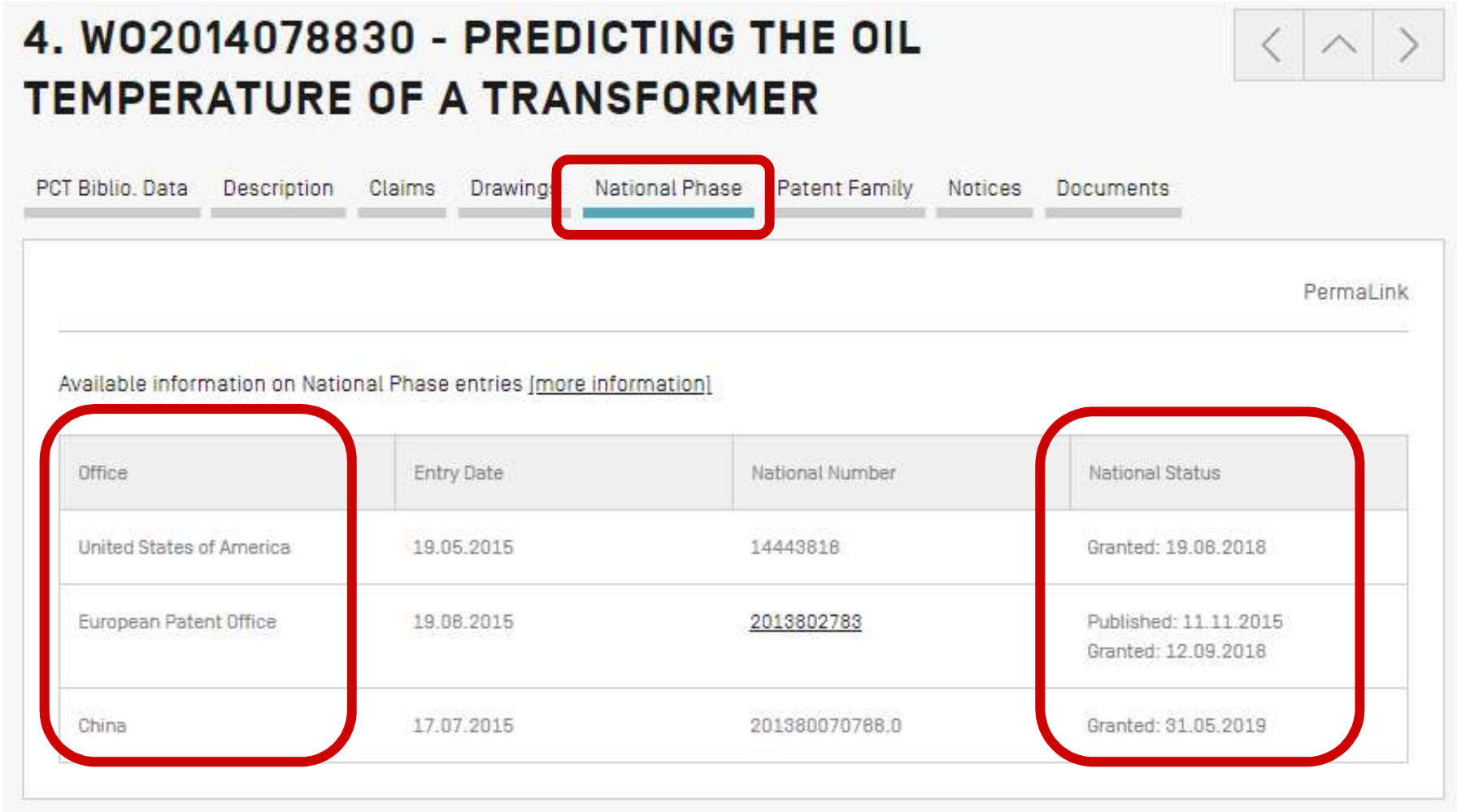

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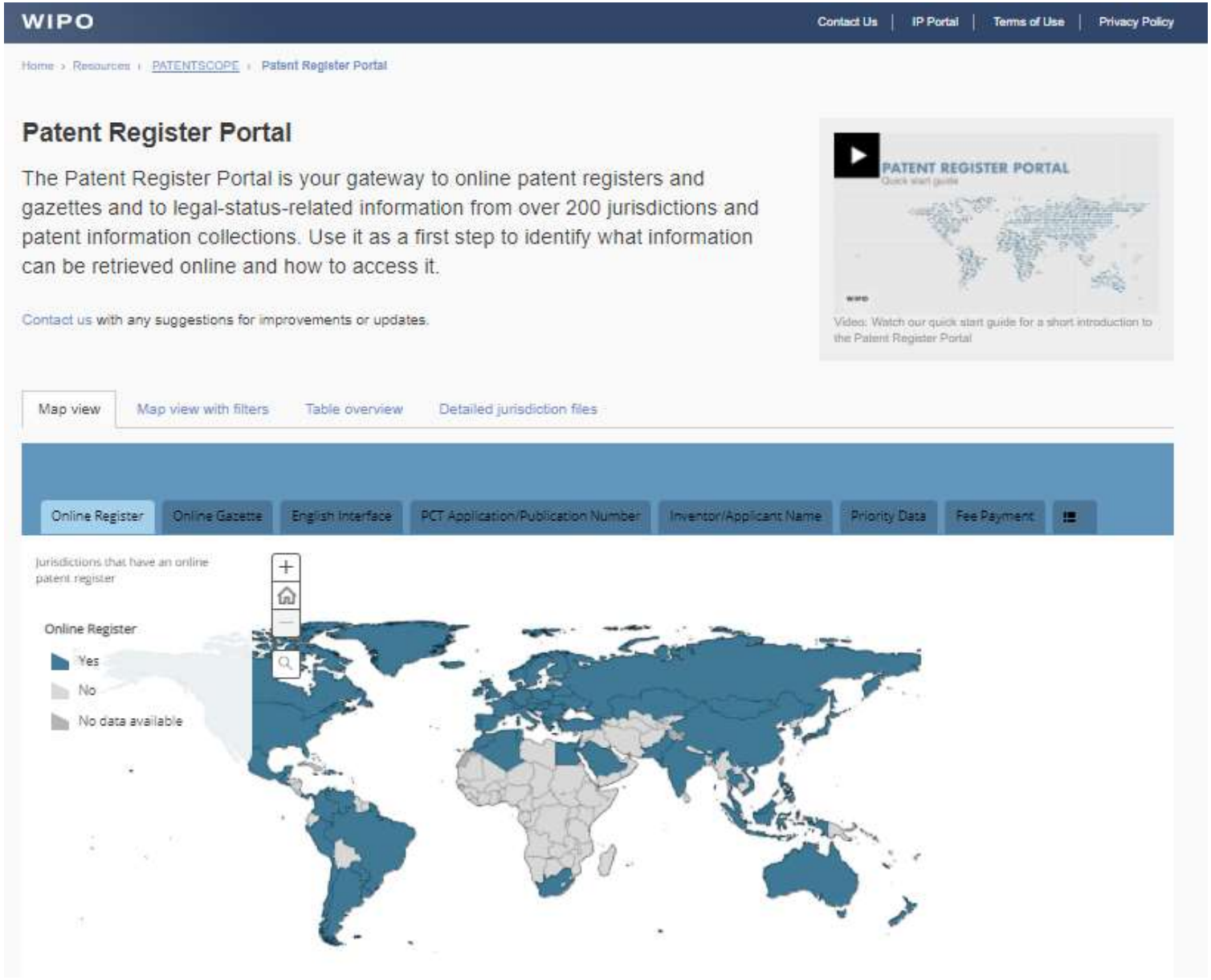
Available information on National Phase entries [more information]

Office	Entry Date	National Number	National Status
United States of America	19.05.2015	14443818	Granted: 19.06.2018
European Patent Office	19.08.2015	2013802783	Published: 11.11.2015 Granted: 12.09.2018
China	17.07.2015	201380070768.0	Granted: 31.05.2019



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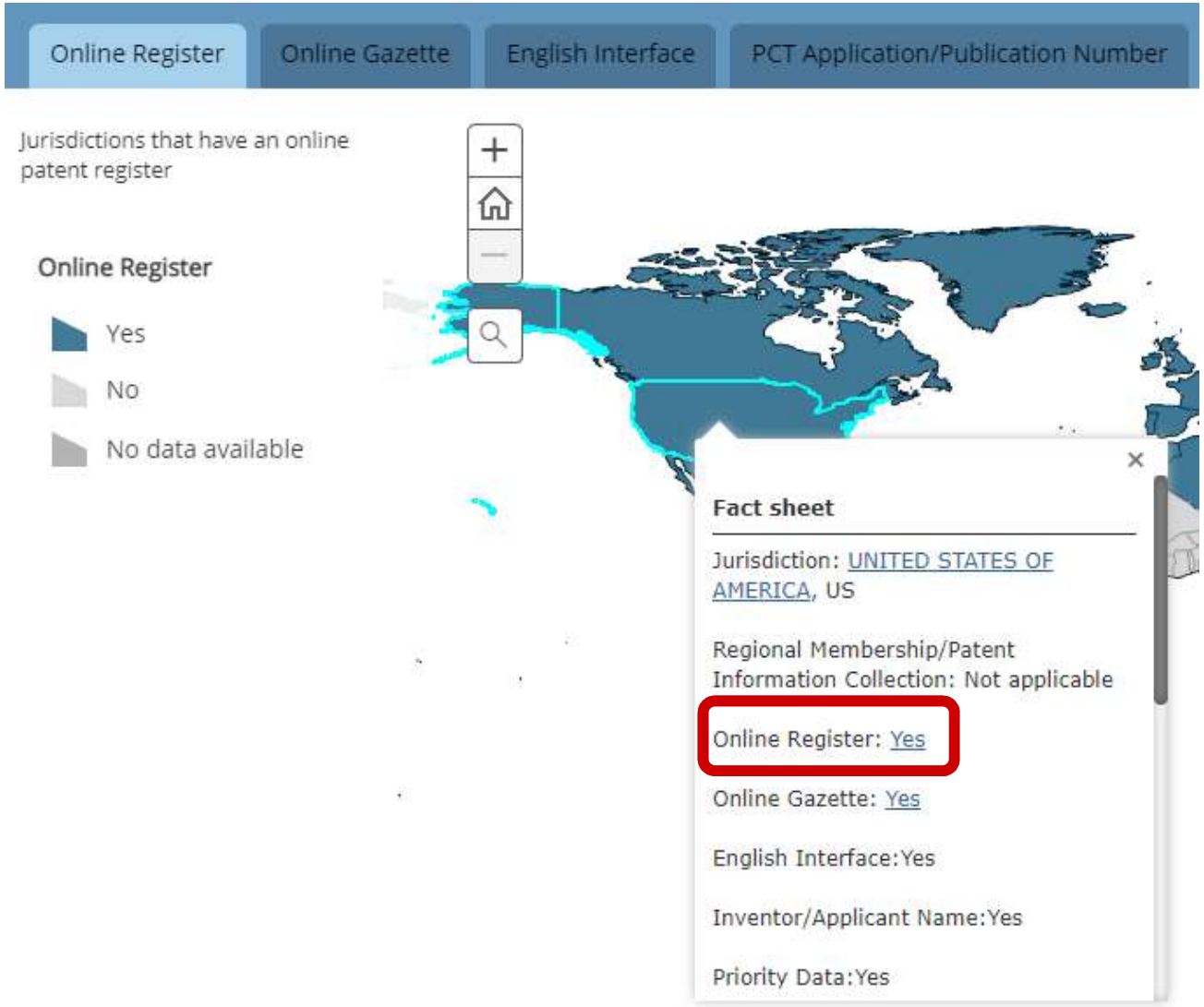

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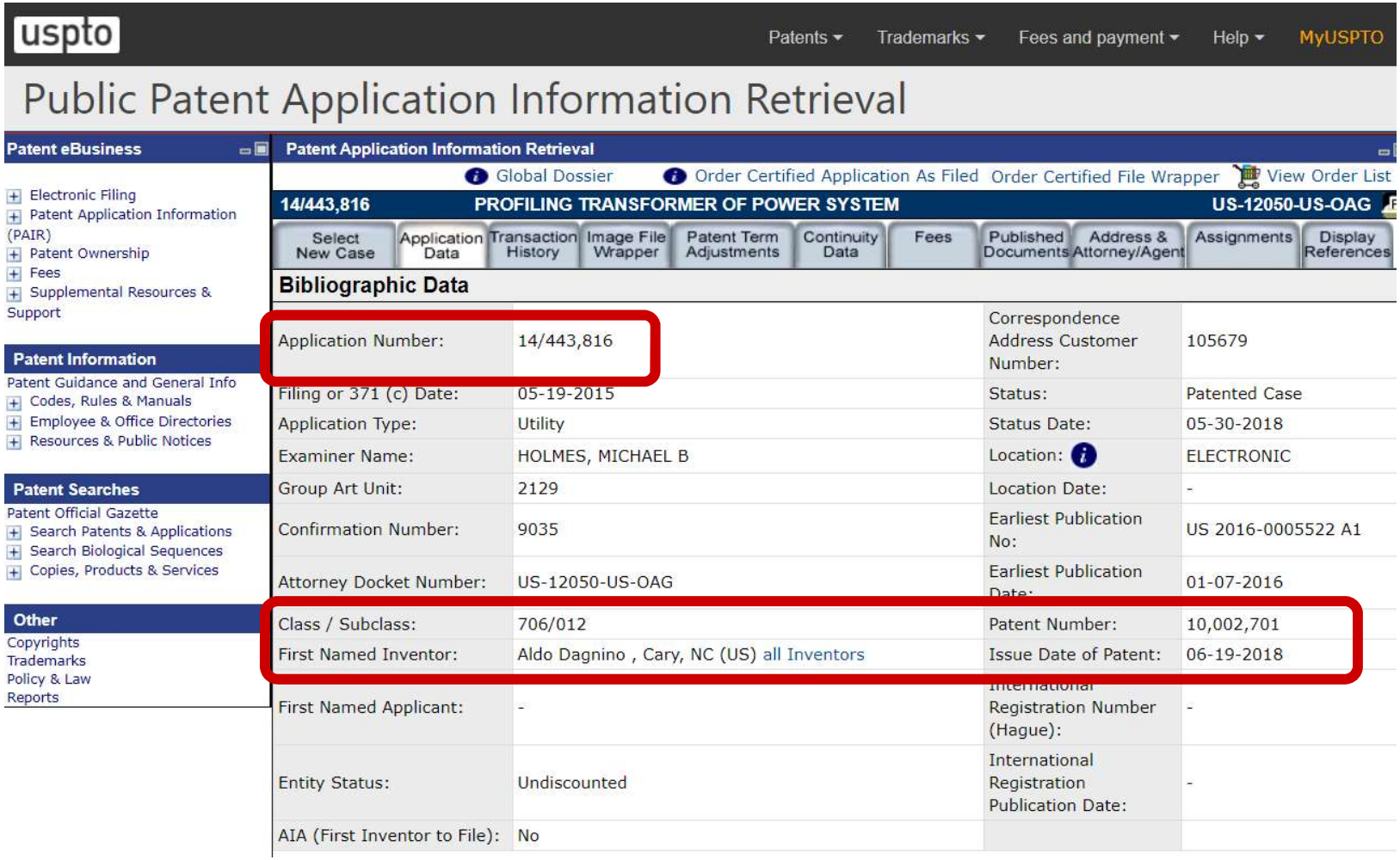

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Task breakdown

- Access the PATENTSCOPE search service
- Retrieve patent documents based on
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  - classification
  - keywords and classification
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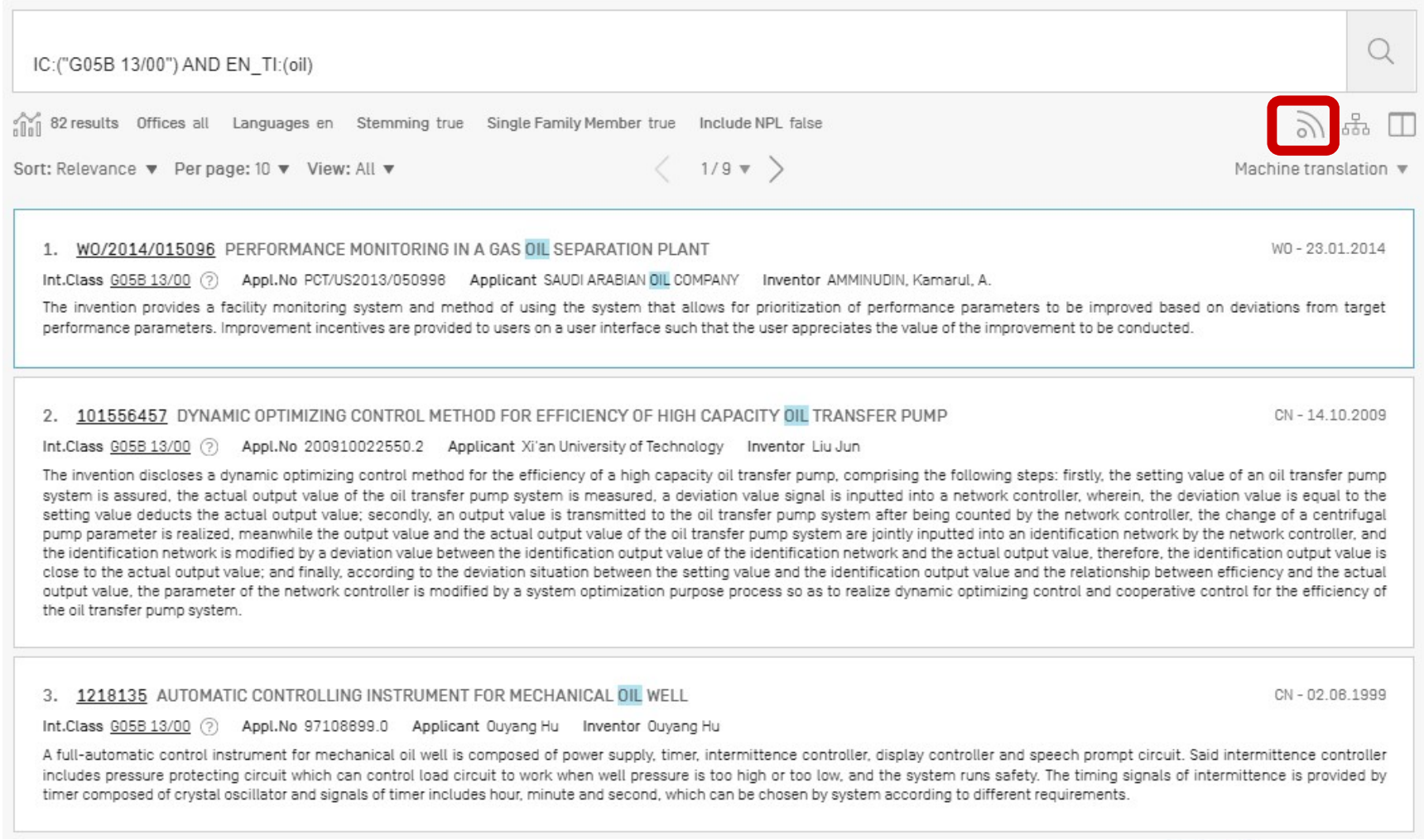

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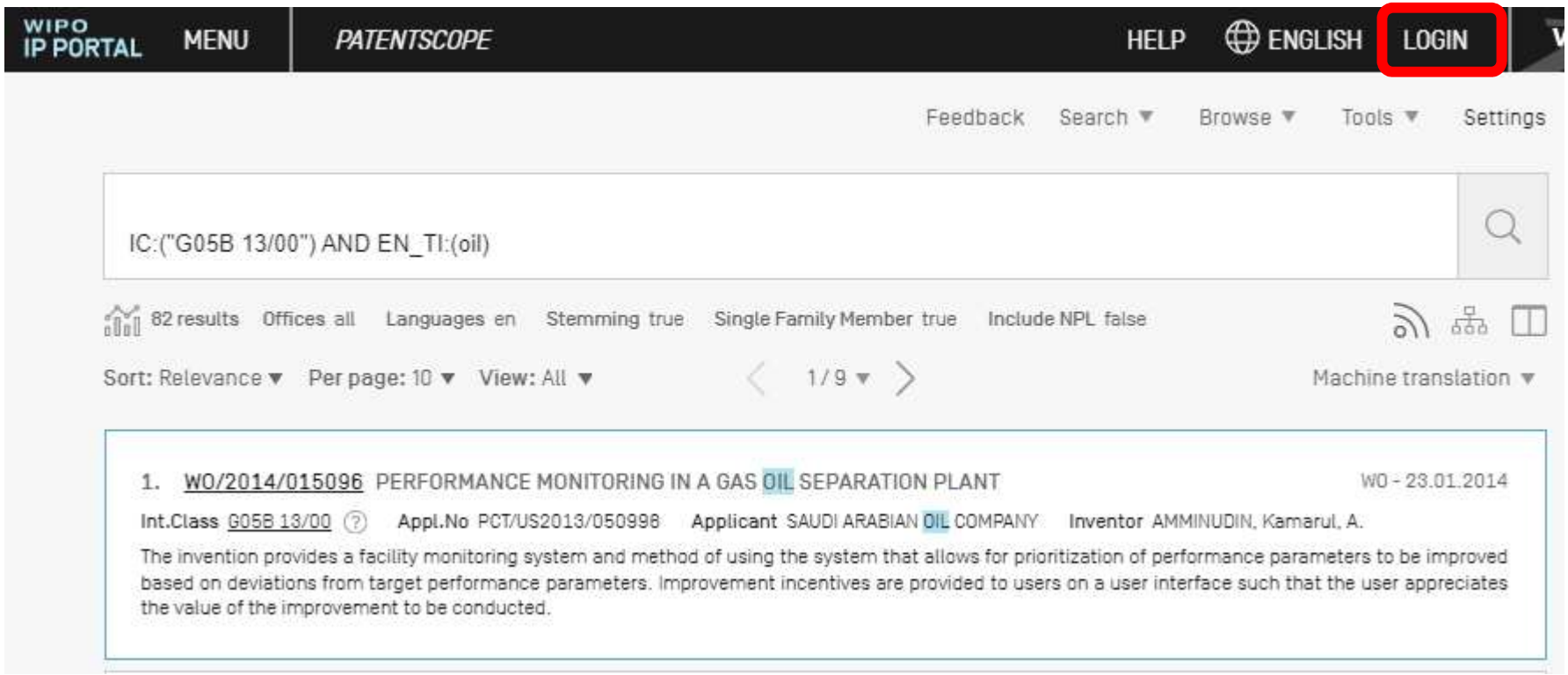

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- Save queries
- View saved and session queries
- Export data
- Chemical Compounds Search

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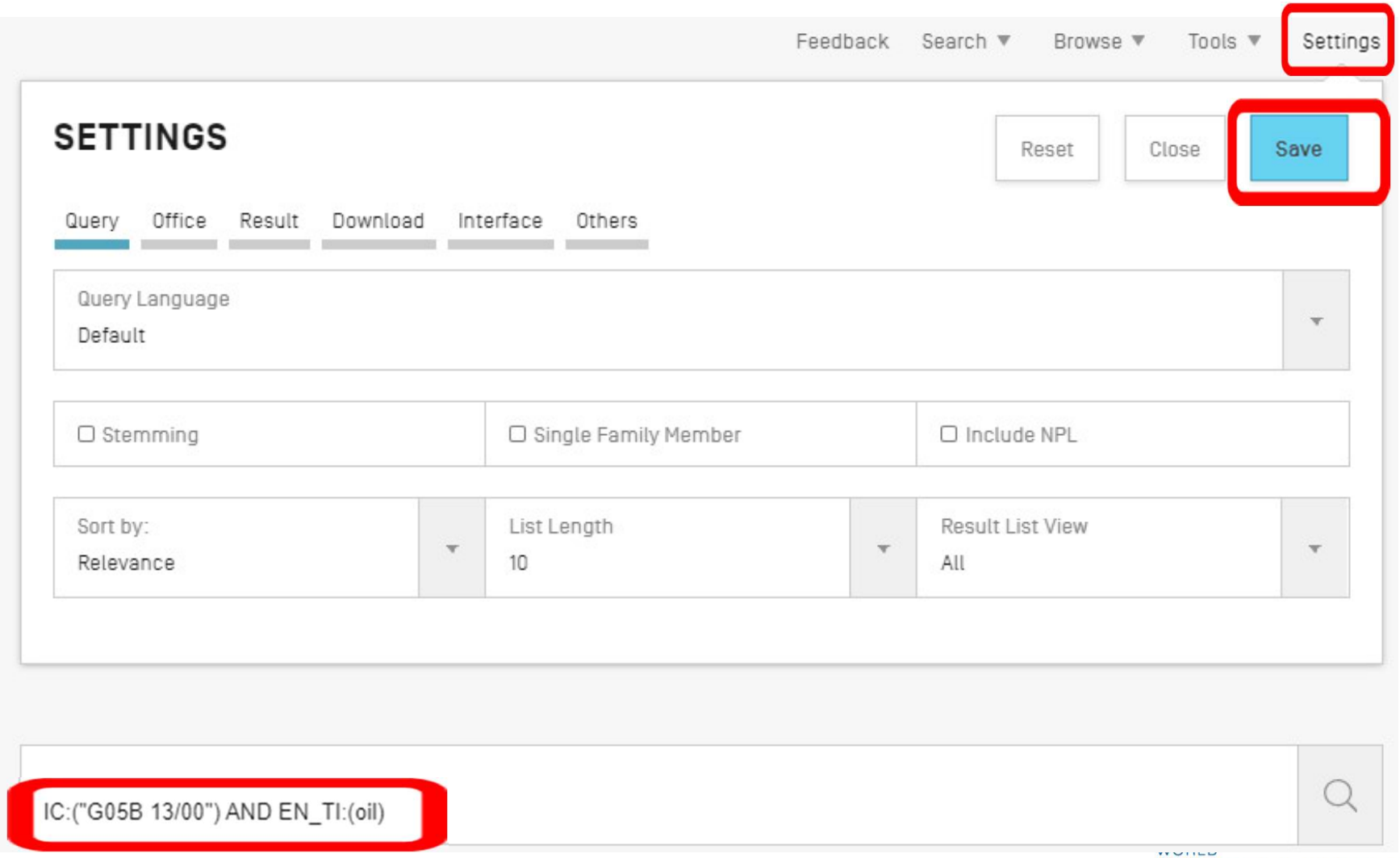
Save queries and customization



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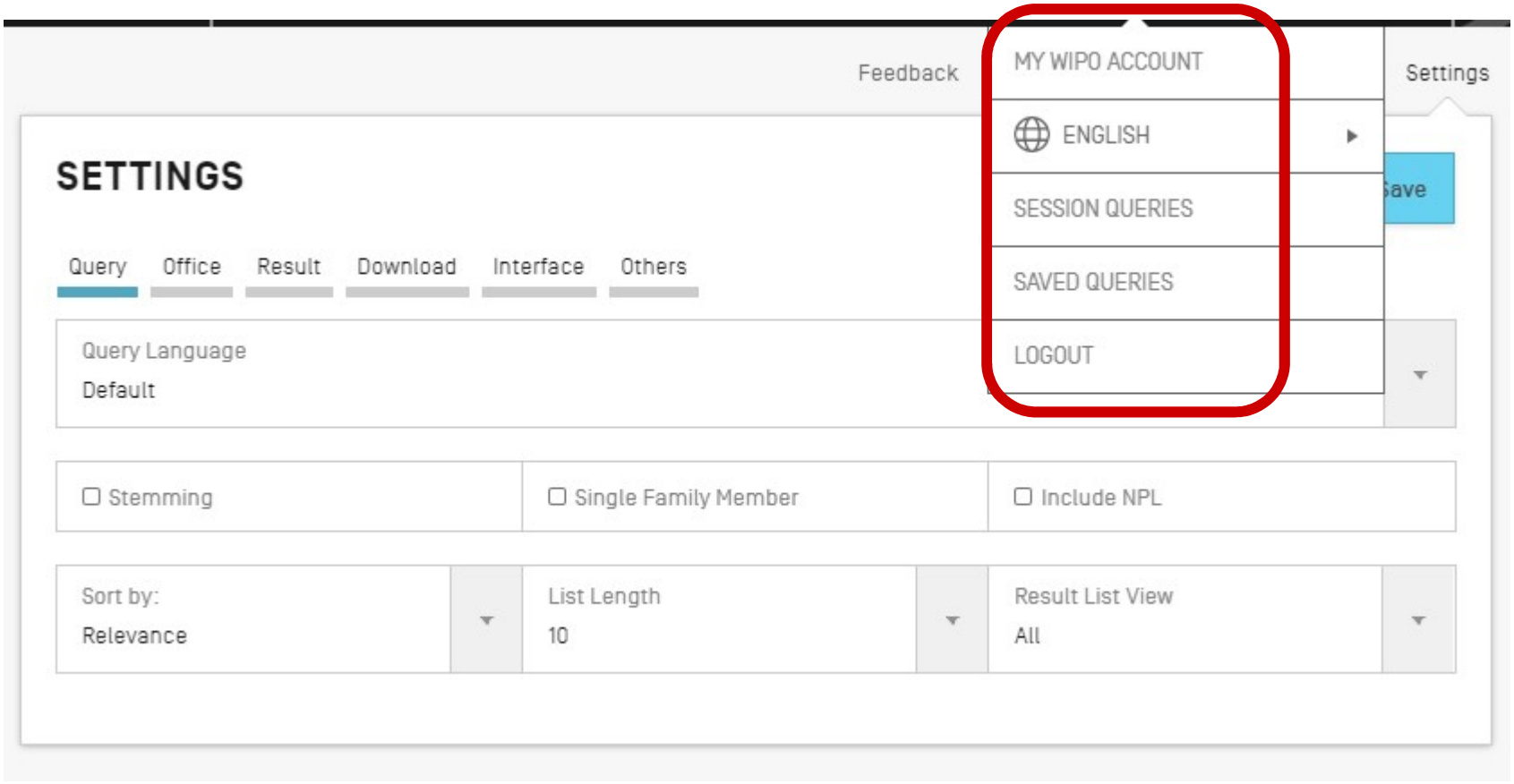

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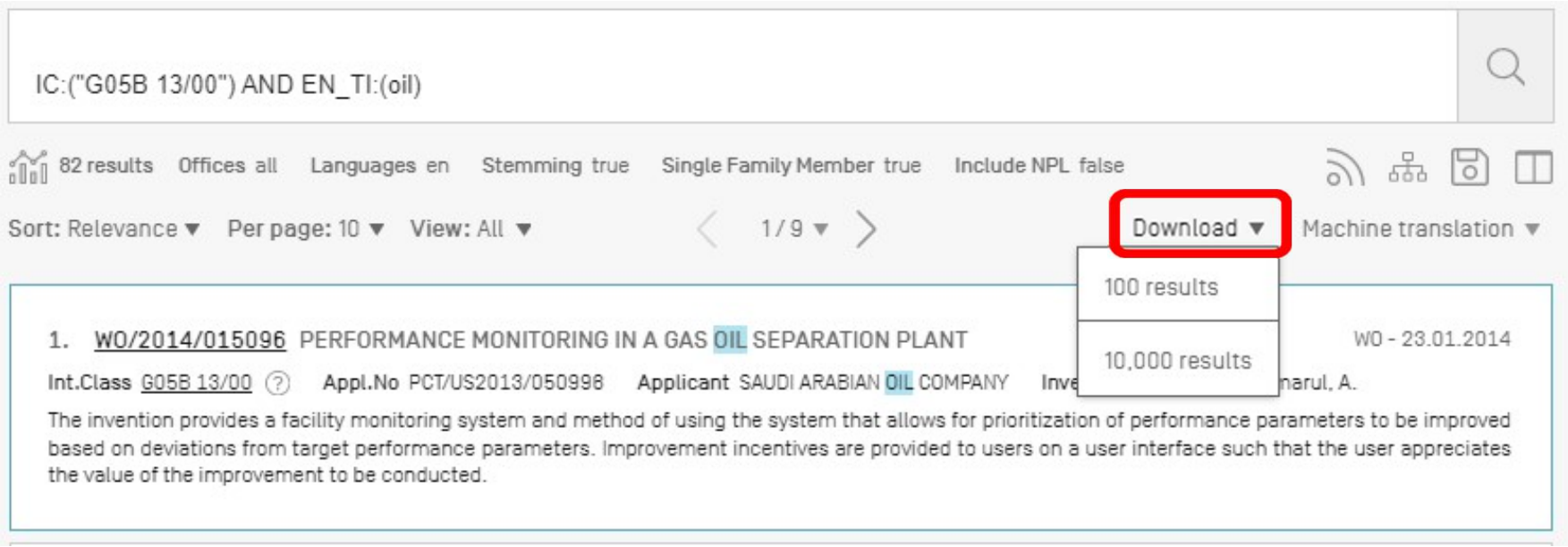

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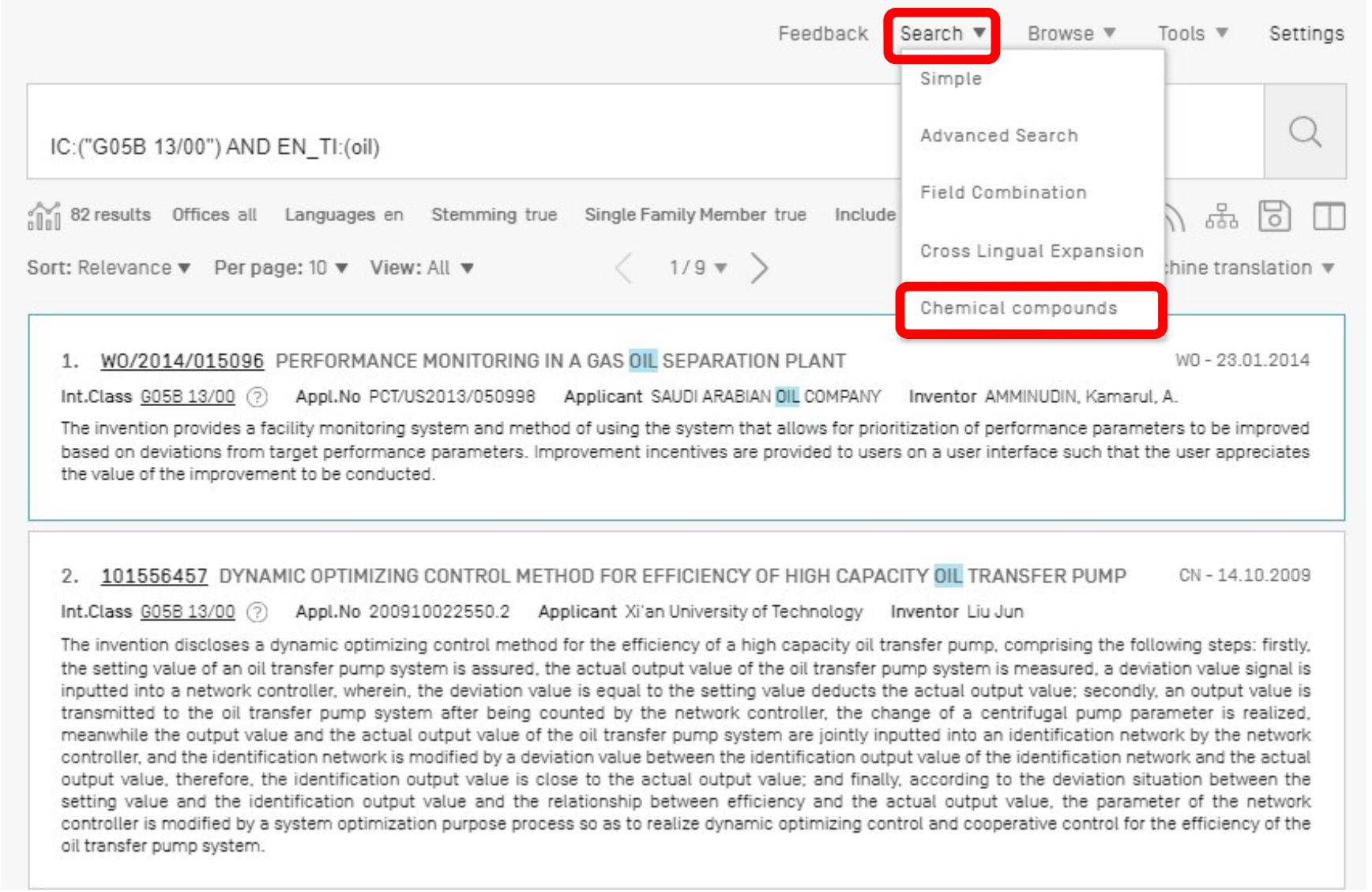
Chemical structure search interface



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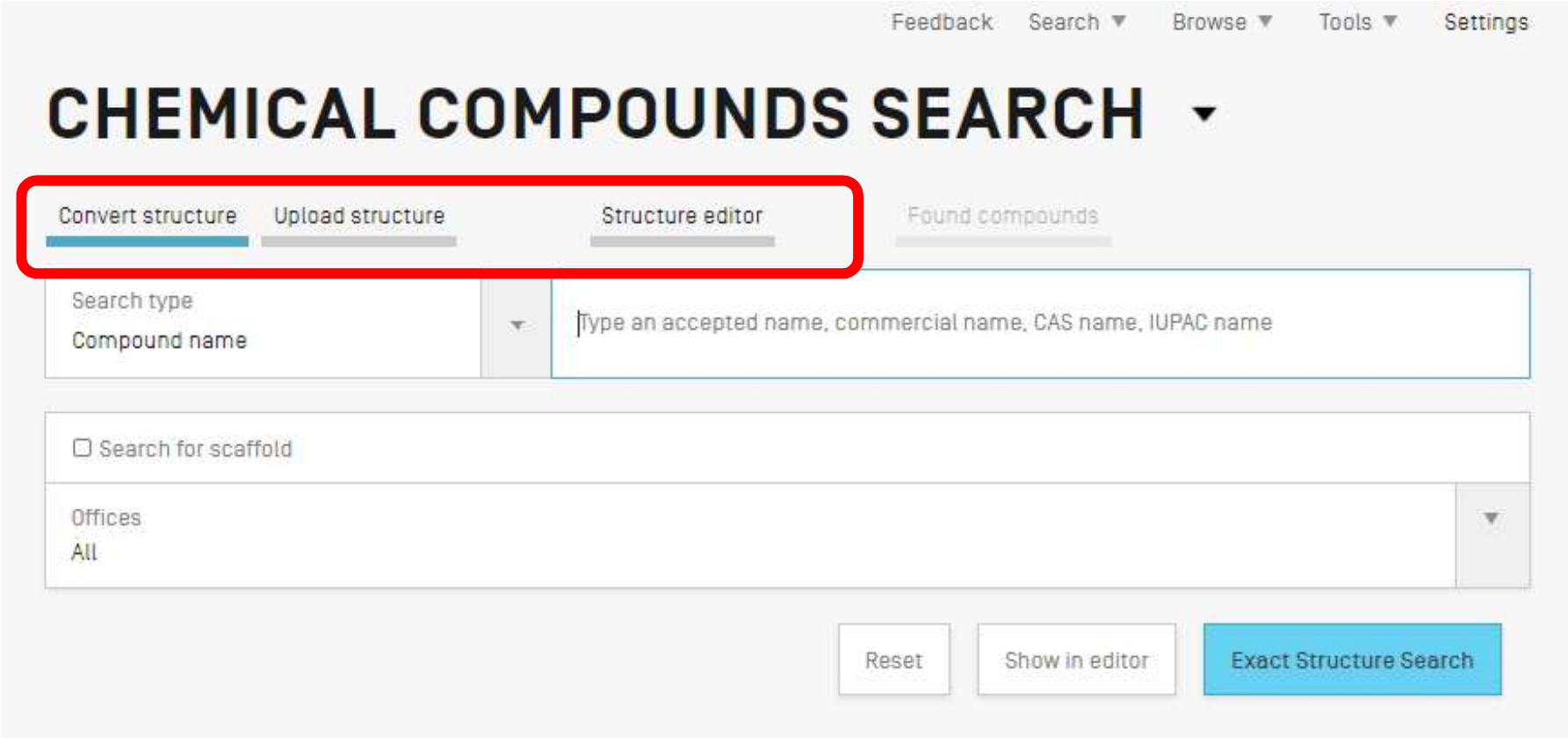

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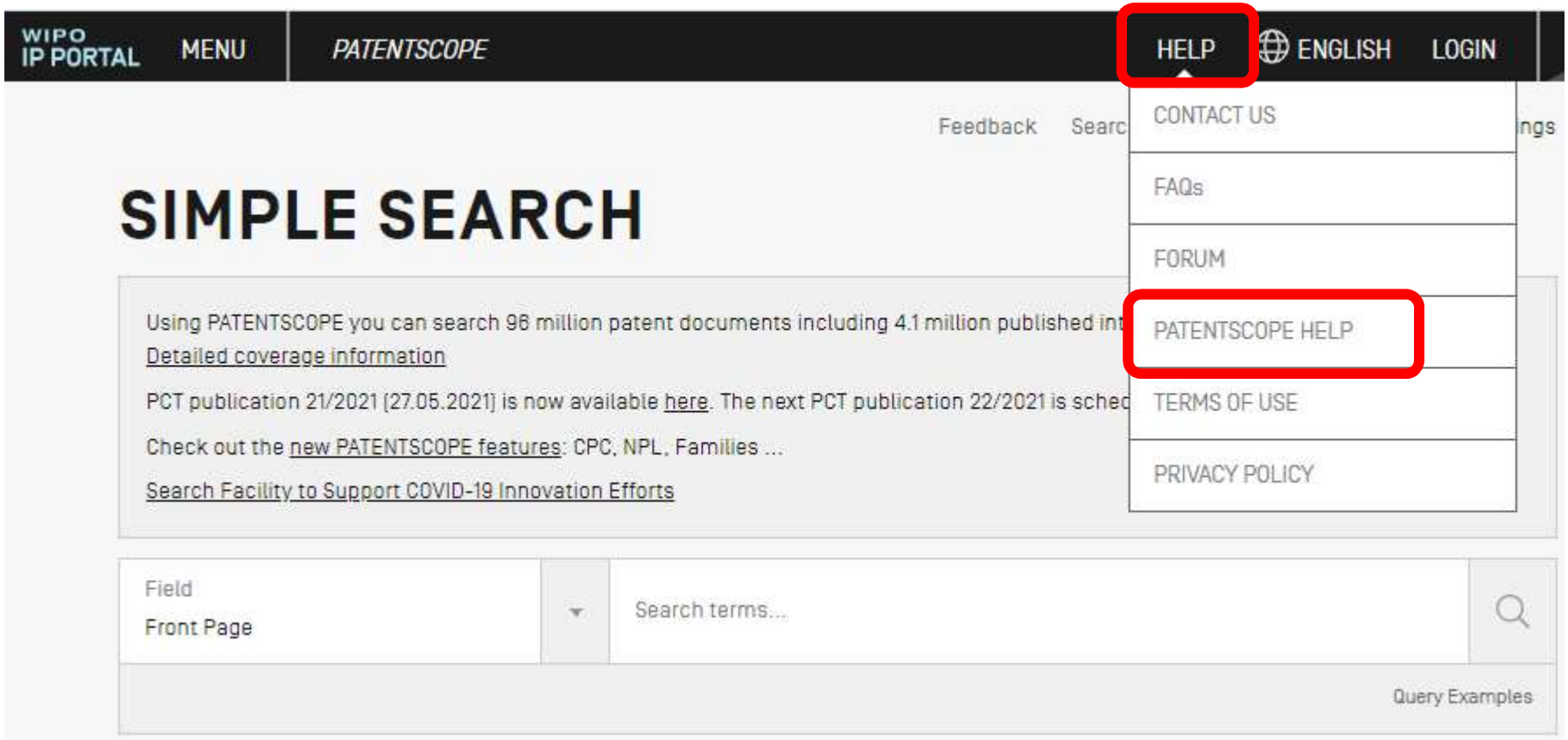

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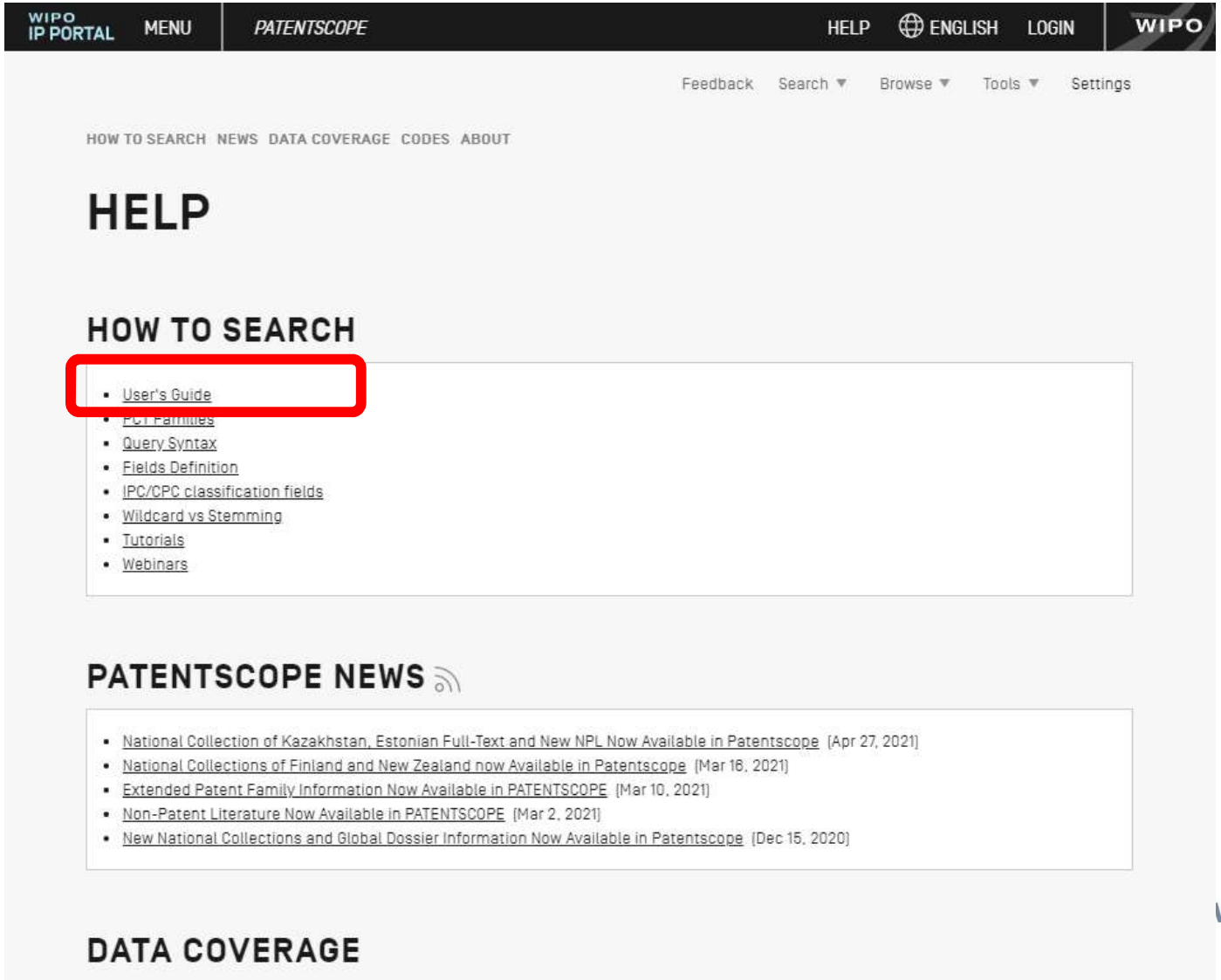

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