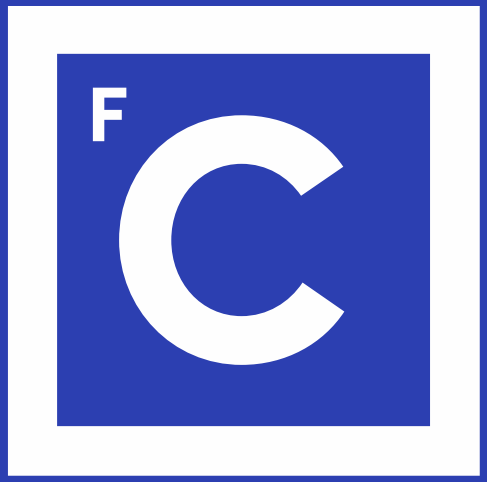


Ciências ULisboa

Faculdade
de Ciências
da Universidade
de Lisboa

Eng Energy & Environment

Research methods & Dissertation Project

Professor: Carla Silva (camsilva@ciencias.ulisboa.pt)

Assignments

Important dates

4 November– Connection to ODS
Research objective and research questions
List of references in the Template

15 December – Literature review w/ references + 10 minutes presentation

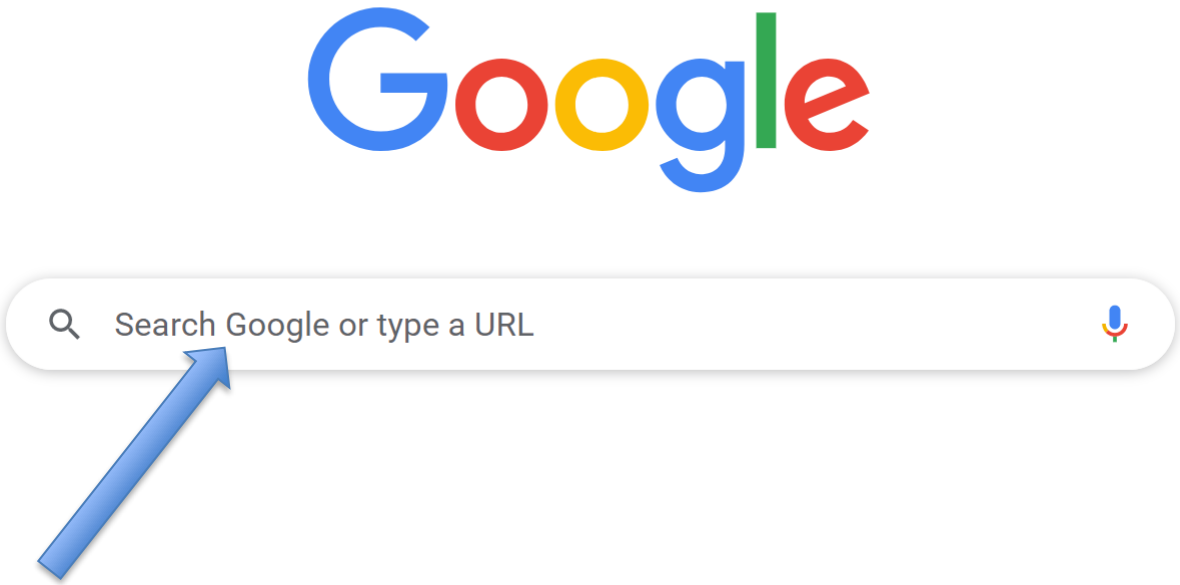
OR

9 February + 10 minutes presentation

Program

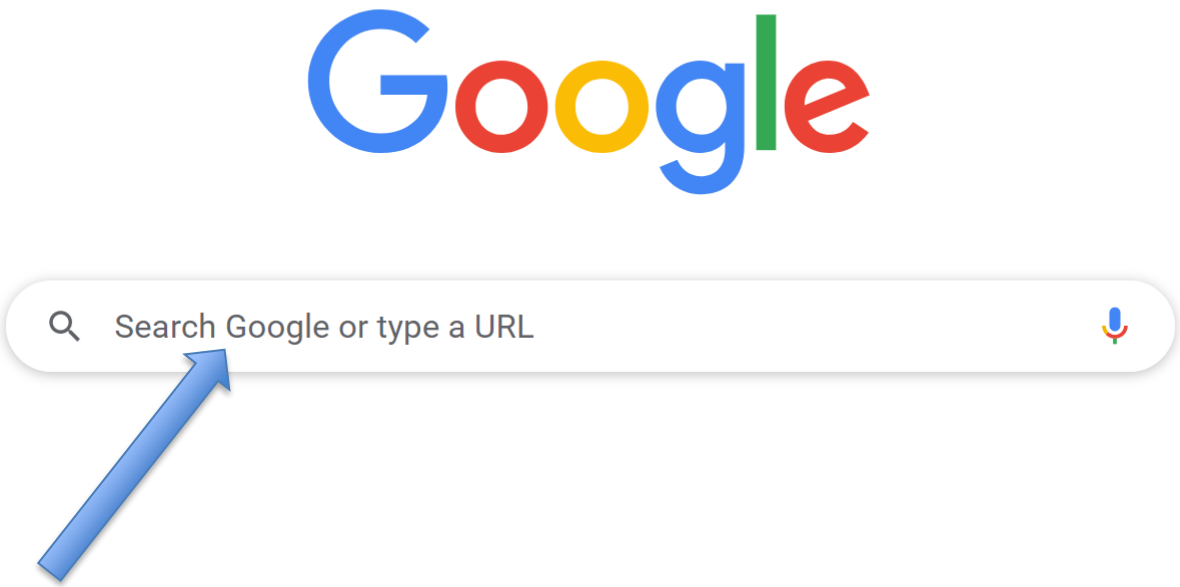
Module 1	**"My experience"** **former students of Eng. Energy and Environment** **EDP company** **Private bank** **Audit and consulting** **PhD "Sustainable Energy Systems"**
Module 2	"Dissertation offers" Research Professors & Companies
Module 3	What is the research? What is the generic research methodology? Research objectives and research questions Methodology and method
Module 4	Literature review
Module 5	Reference manager
Module 6	Plagiarism & copyright
Module 7	Examples, assignments and doubts
	Oral evaluation

Literature review



Keywords are very important to find relevant documents, 1st page of search results should be enough

Literature review



Example:
Thesis title " Life cycle assessment microalgae jet fuel"

Try the full title in English

Google

Life cycle assessment microalgae jet fuel

All Images News Videos Shopping More Tools

About 235,000 results (0.60 seconds)

https://www.sciencedirect.com › science › article › pii

Life cycle assessment of bio-jet fuel from hydrothermal ...

by MOP Fortier · 2014 · Cited by 209 — An **LCA** was performed for a functional unit of 1 GJ of bio-**jet fuel** produced through thermochemical conversion (hydrothermal liquefaction (HTL)) ...
You've visited this page 2 times. Last visit: 10/17/22

https://www.sciencedirect.com › science › article › pii

Life cycle assessment of microalgae-based aviation fuel

by F Guo · 2016 · Cited by 21 — The aim of this work is to compare the life cycle assessments of low-N and ... Current research shows bio-jet fuel from microalgae **can** reduce life cycle ...

https://biotechnologyforbiofuels.biomedcentral.com › a...

Life-cycle analysis of greenhouse gas emissions from ...

by S de Jong · 2017 · Cited by 198 — **A life-cycle analysis** (**LCA**) framework can be used to assess the environmental impact across the entire product life-cycle.
You visited this page on 10/17/22.

https://www.mdpi.com › pdf PDF

Life-Cycle Assessment of Bio-Jet Fuel Production from Waste ...

Sep 9, 2022 — This study aimed to evaluate the sustainability and find out the bottleneck restricting the development of WCO-based **jet fuel** production.

https://www.researchgate.net › publication › 26042322...

Life cycle assessment of bio-jet fuel from ... - ResearchGate

Jul 5, 2022 — This type of **analysis** is necessary to ensure that the **fuel** produced with **microalgae** does not generate more environmental impacts, ...

Literature review

Global warming potential analysis of bio-jet fuel based on life ...

by X Zhu · 2022 — Life cycle assessment (LCA) is **a powerful tool to assess the environmental performance of products, processes and production systems** [8], and ...

https://ideas.repec.org › a › eee › appene

Life cycle assessment of bio-jet fuel from ... - IDEAS/RePEc

by MOP Fortier · 2014 · Cited by 210 — An **LCA** was performed for a functional unit of 1 GJ of bio-**jet fuel** produced through thermochemical conversion (hydrothermal liquefaction (HTL)) of...

https://www.osti.gov › servlets › purl PDF

Lifecycle Assessment of Microalgae to Biofuel - OSTI.GOV

by EP Bennion · 2015 · Cited by 240 — **Microalgae** is being investigated as **a** renewable transportation **fuel** feedstock ... Key works: **Biofuel**; Hydrothermal liquefaction; **Life Cycle**...

You've visited this page 2 times. Last visit: 4/25/22

https://pubs.acs.org › doi › abs

Life Cycle Assessment of Biofuels from Algae Hydrothermal ...

by EB Connelly · 2015 · Cited by 54 — This paper identifies important factors in the quantification of LC-GHG of algae-derived diesel, **jet fuel**, and gasoline, using hydrothermal ...

https://eprints.qut.edu.au › ...

Environmental life cycle assessment (LCA) of aviation biofuel ...

by K Cox · 2014 · Cited by 61 — **Microalgae** and pongamia have lower FER and GHG abatement (1.0 and 1.1; 53% and 43%), but mostly avoid eutrophication and reduce water use...

Literature review

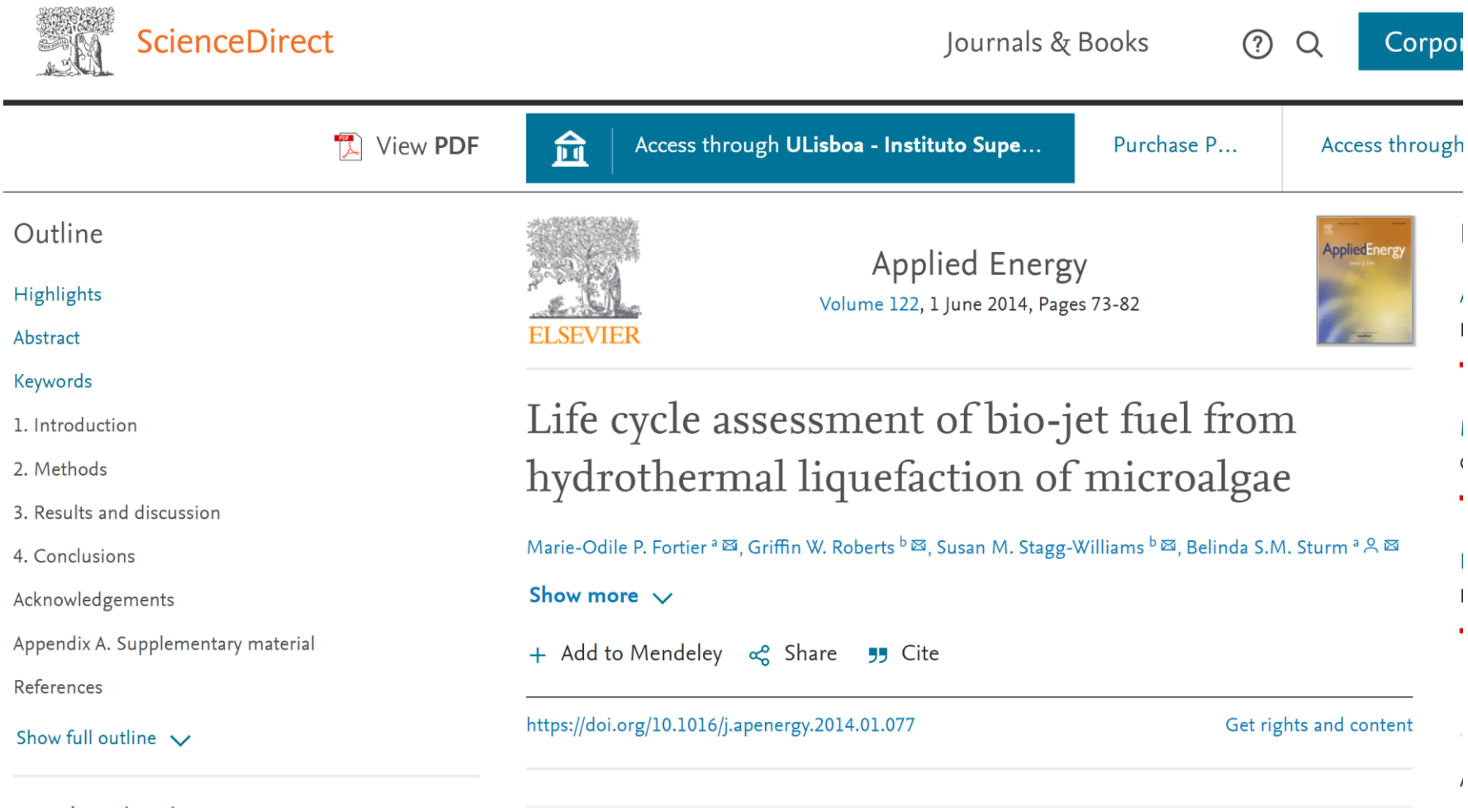
LOOK INSIDE!!

Its really relevant to your work? If no, then you have to change the keywords….

If yes, you nail it!!

Literature review

Access from FCUL or VPN to FCUL



Literature review

Access from FCUL or VPN to FCUL. If relevant add your Library

Literature review

Access from FCUL or VPN to FCUL. If relevant add your Library

Choose:
A selection of works that you can relate/compare/discuss in your Results section against your own outcomes because you should
LINK RESULTS SECTION WITH LITERATURE REVIEW

At least 1!

Probably 3 is enough!

Literature review

Literature review

Results

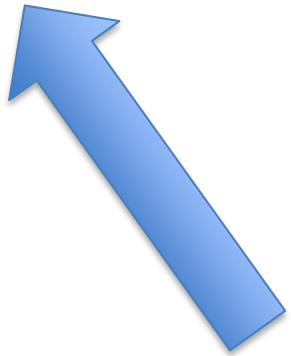
Literature review

Systematic review and Web of Science

Clarivate

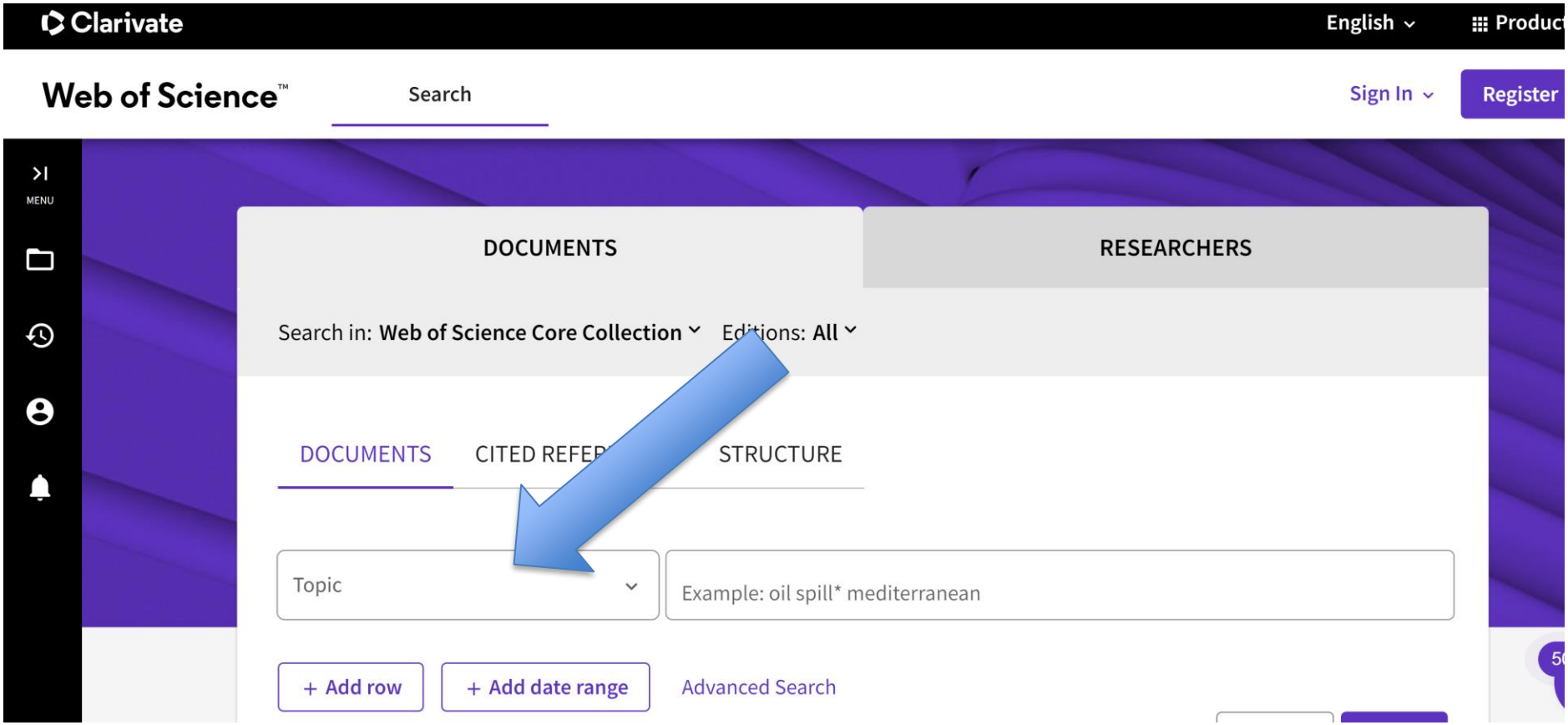
Web of Science™

https://www.webofscience.com/wos/woscc/basic-search



Literature review

Systematic review and Web of Science



Literature review

Systematic review and Web of Science

TOPIC search in TITLE, ABSTRACT, KEYWORDS

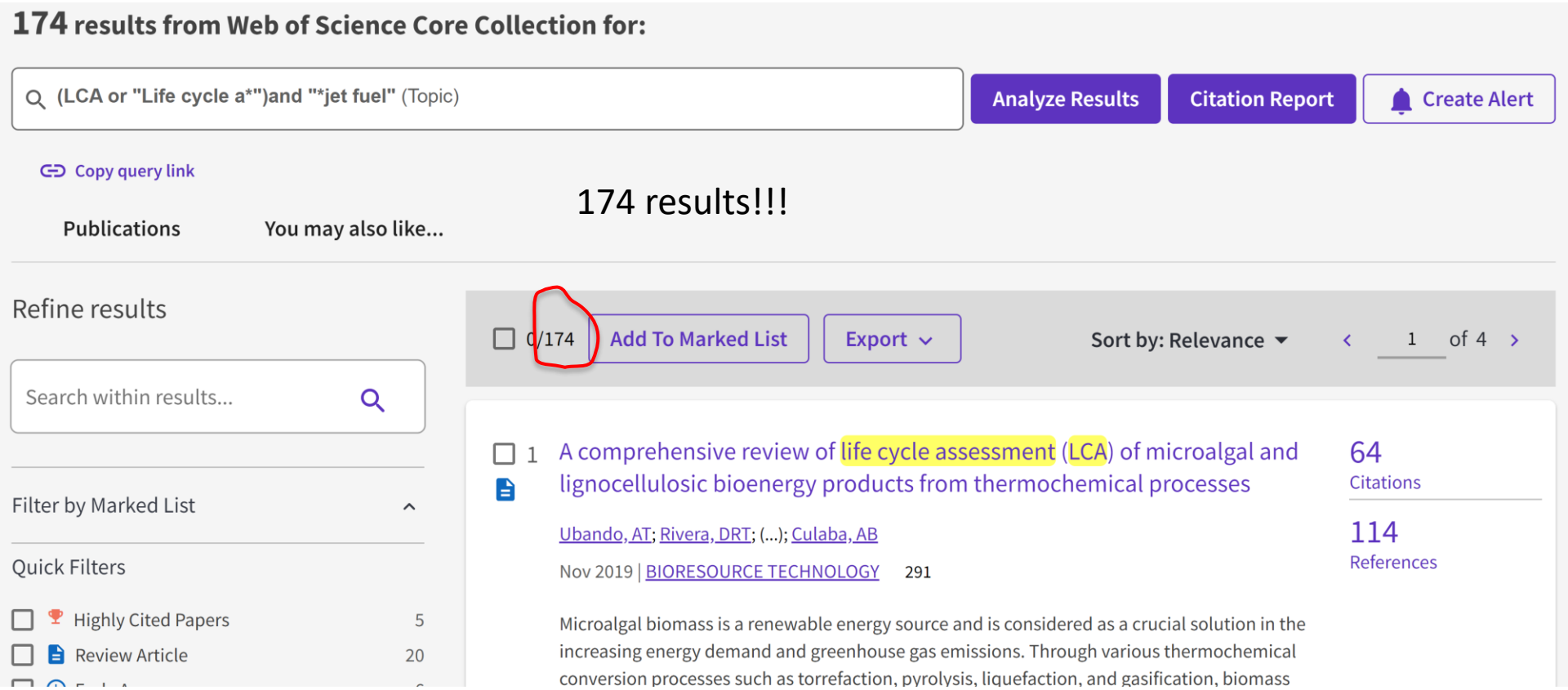
(LCA or "Life cycle a*")and “*jet fuel"

* analysis or assessment

*Biojet

Literature review

Systematic review and Web of Science



Literature review

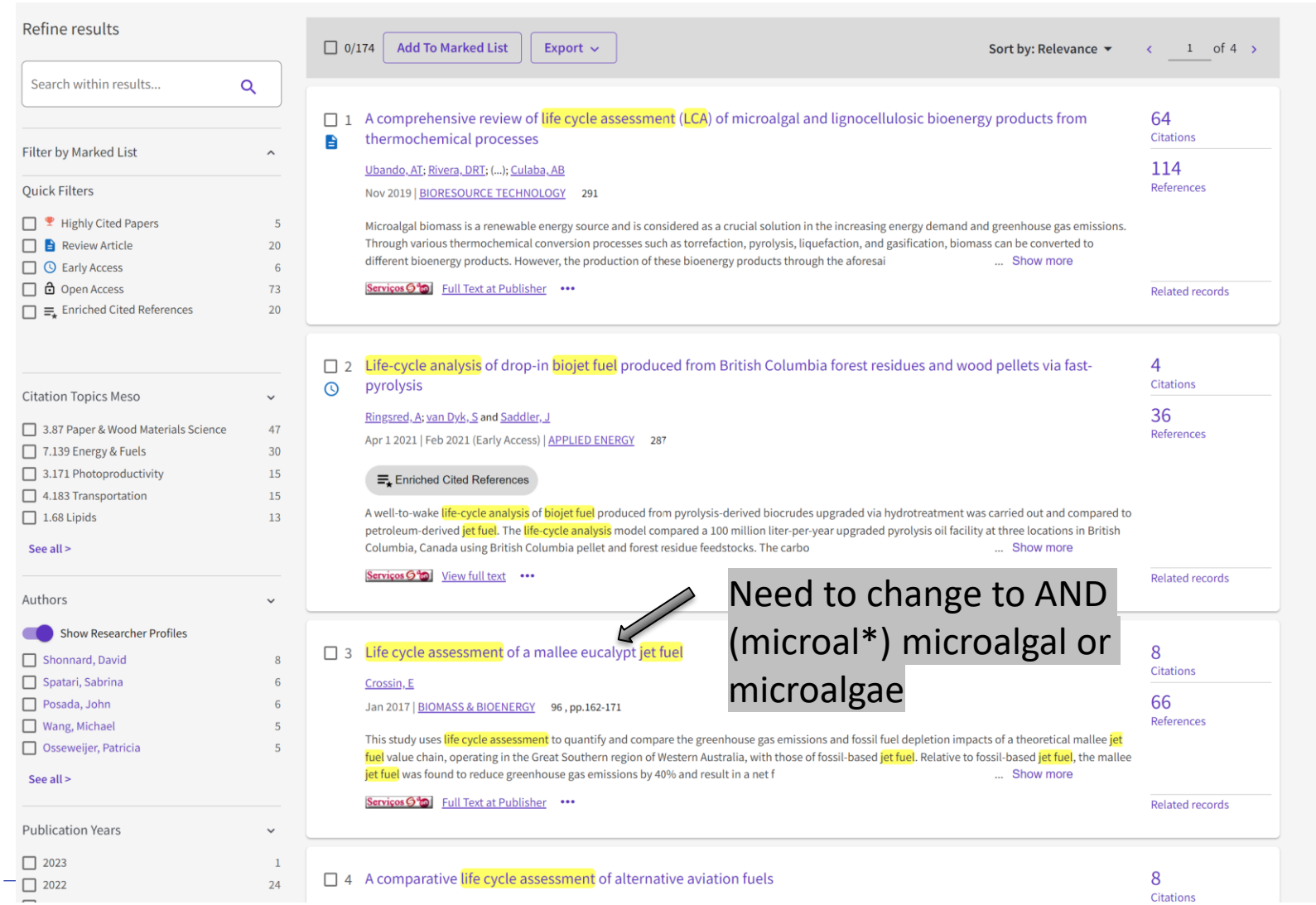
LOOK INSIDE!!

Its really relevant to your work? If no, then you have to change the keywords….

If yes, you nail it!!

Literature review

Systematic review and Web of Science



Literature review

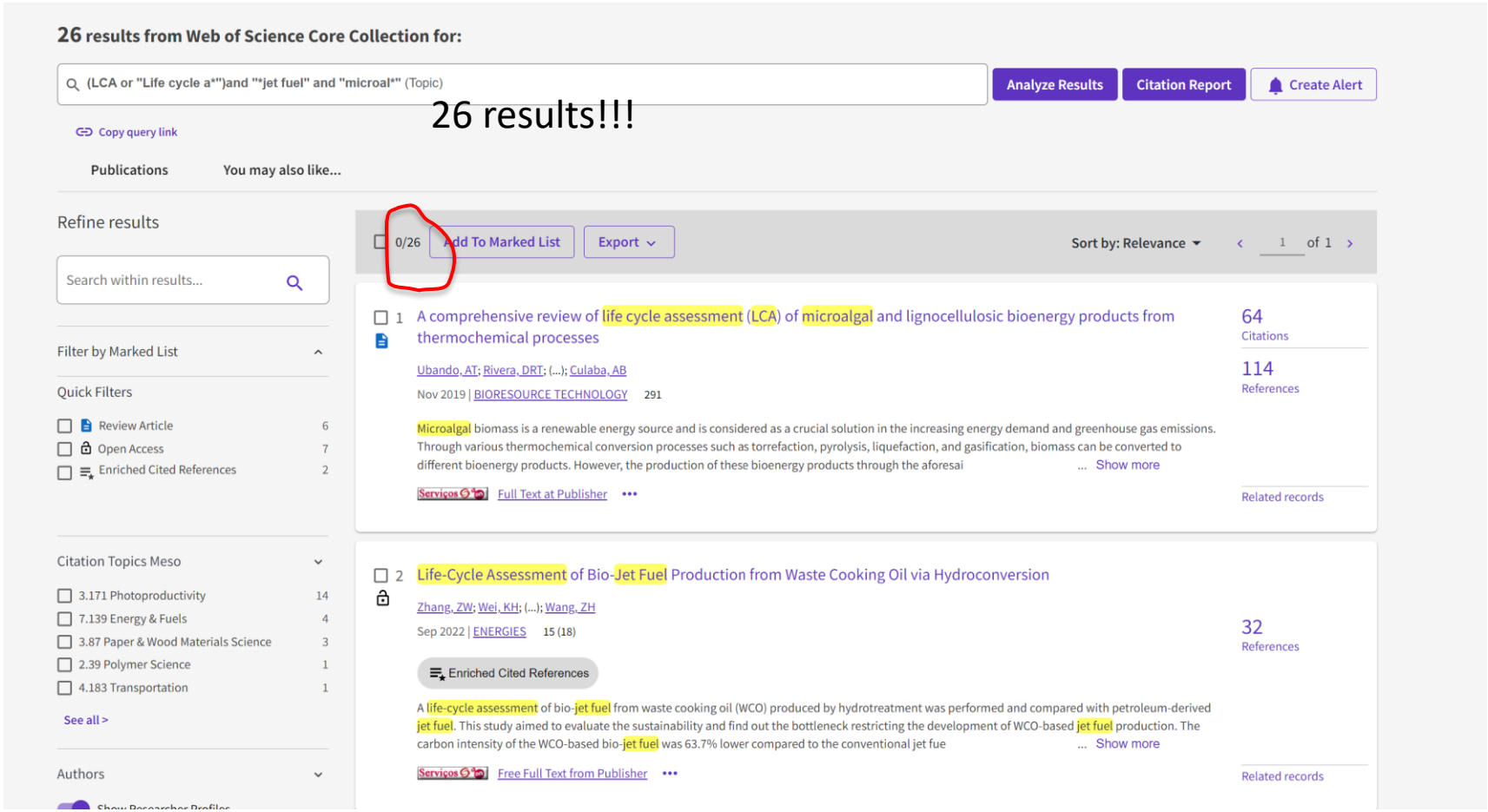
Systematic review and Web of Science

NEW QUERY!!!

(LCA or "Life cycle a*") and “*jet fuel" and “microal*)

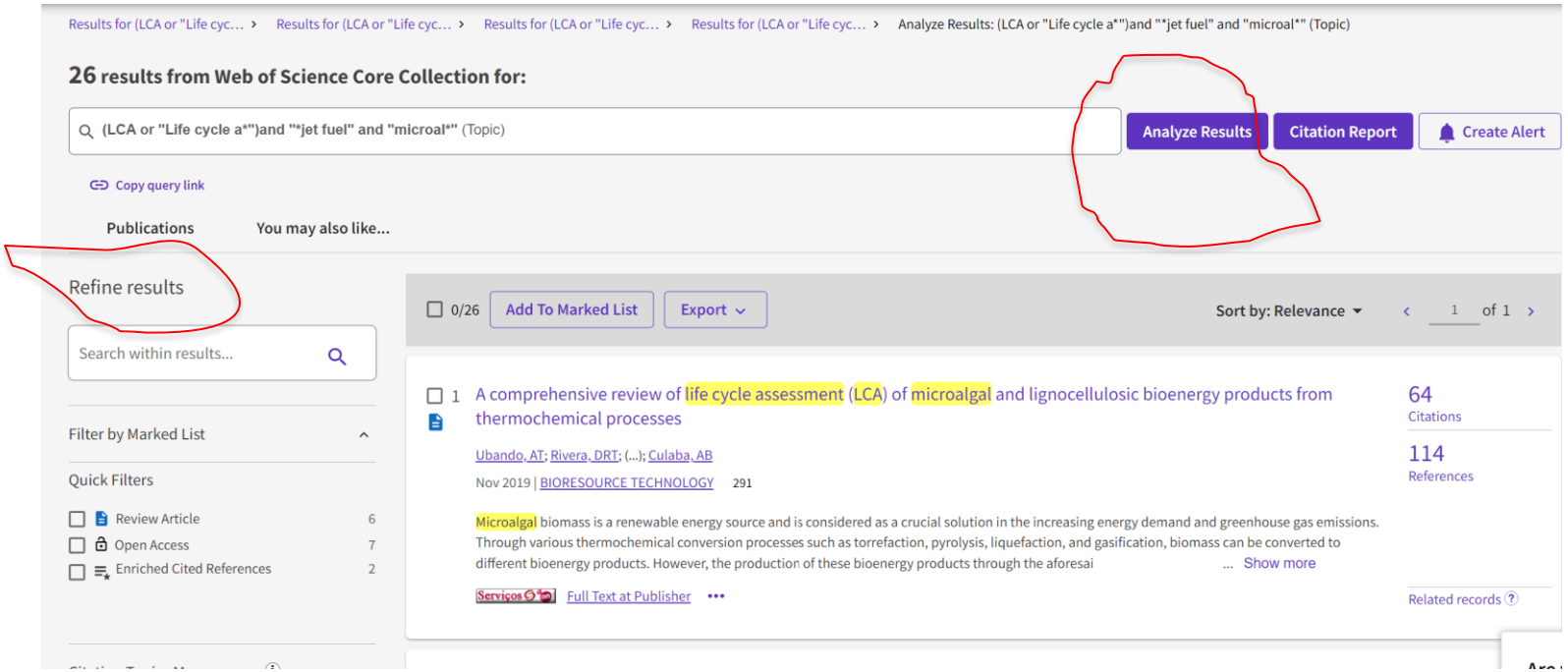
Literature review

Systematic review and Web of Science



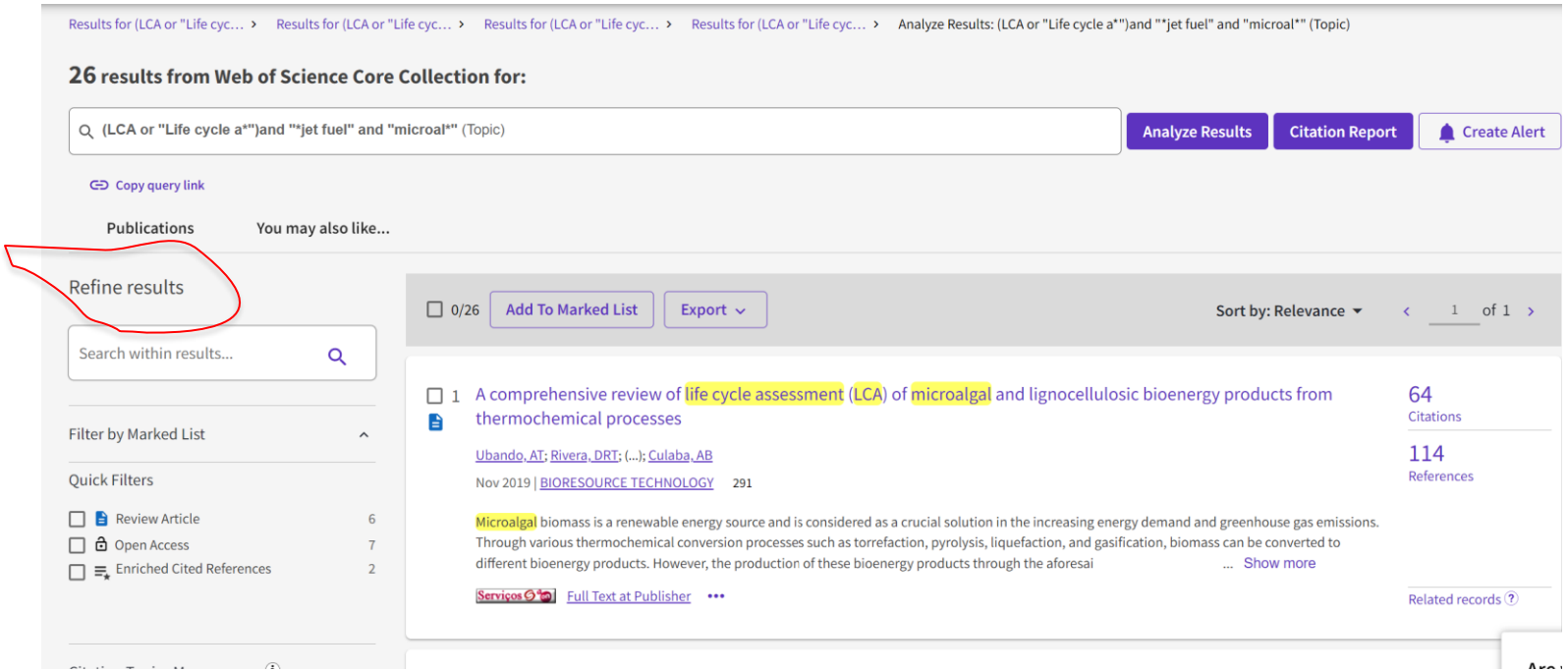
Literature review

Systematic review and Web of Science



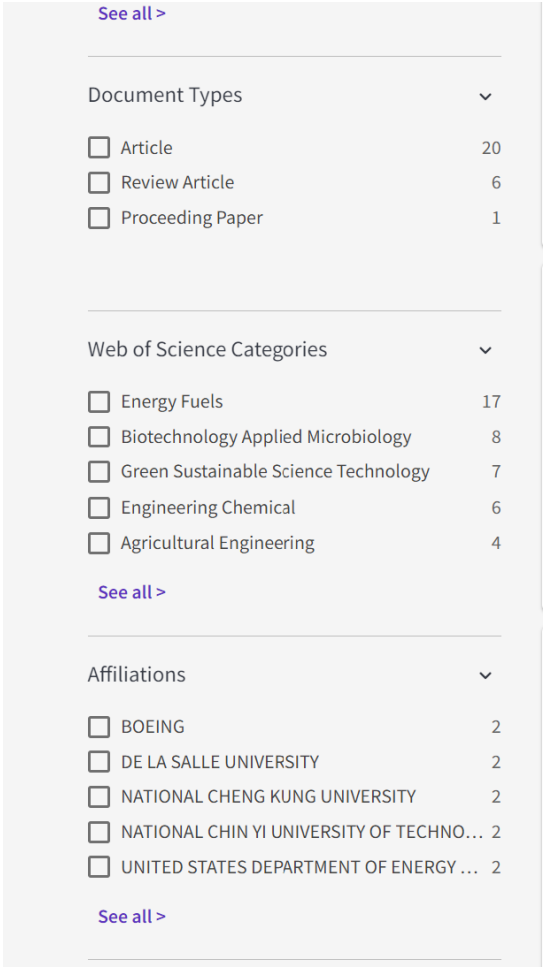
Literature review

Systematic review and Web of Science

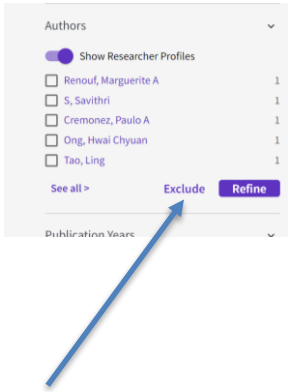


Literature review

Systematic review and Web of Science



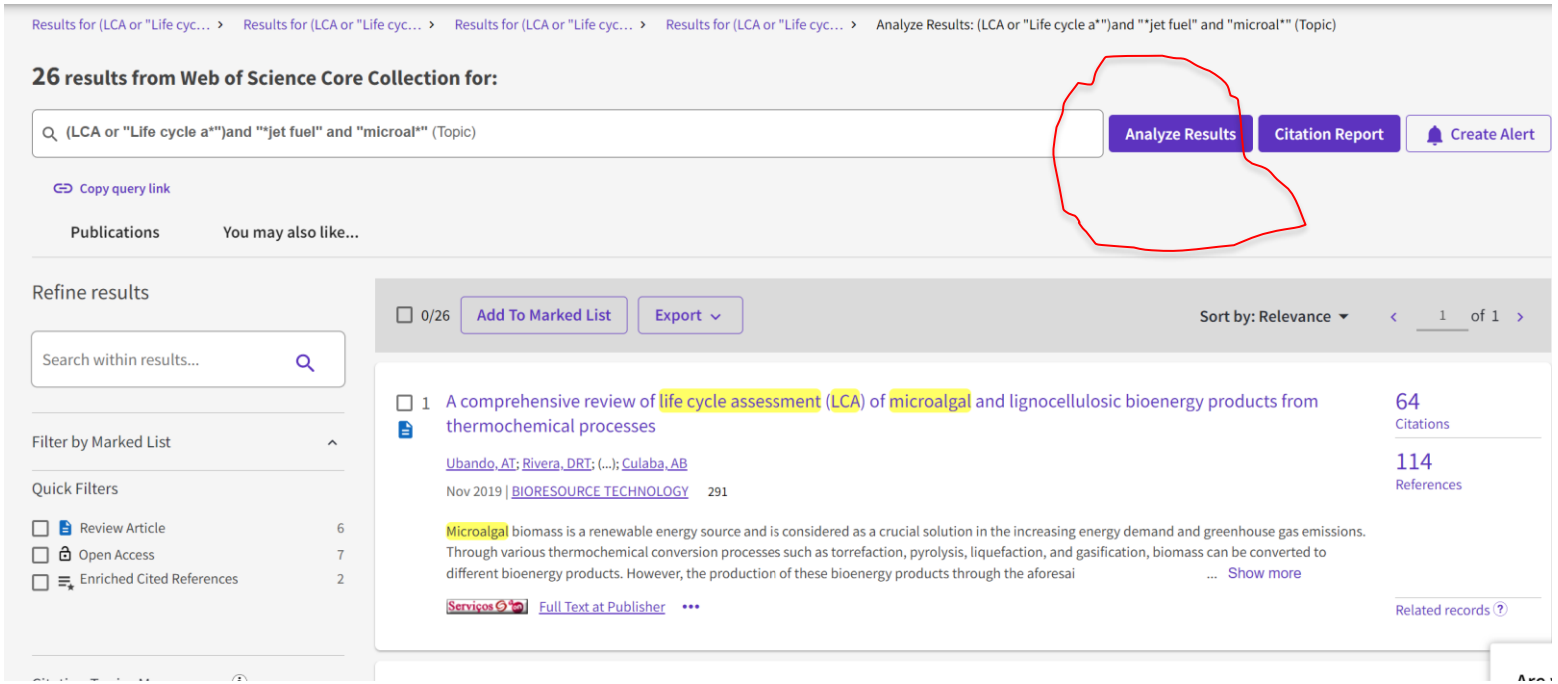
For example, don't consider Review article



For example, select only documents written in english

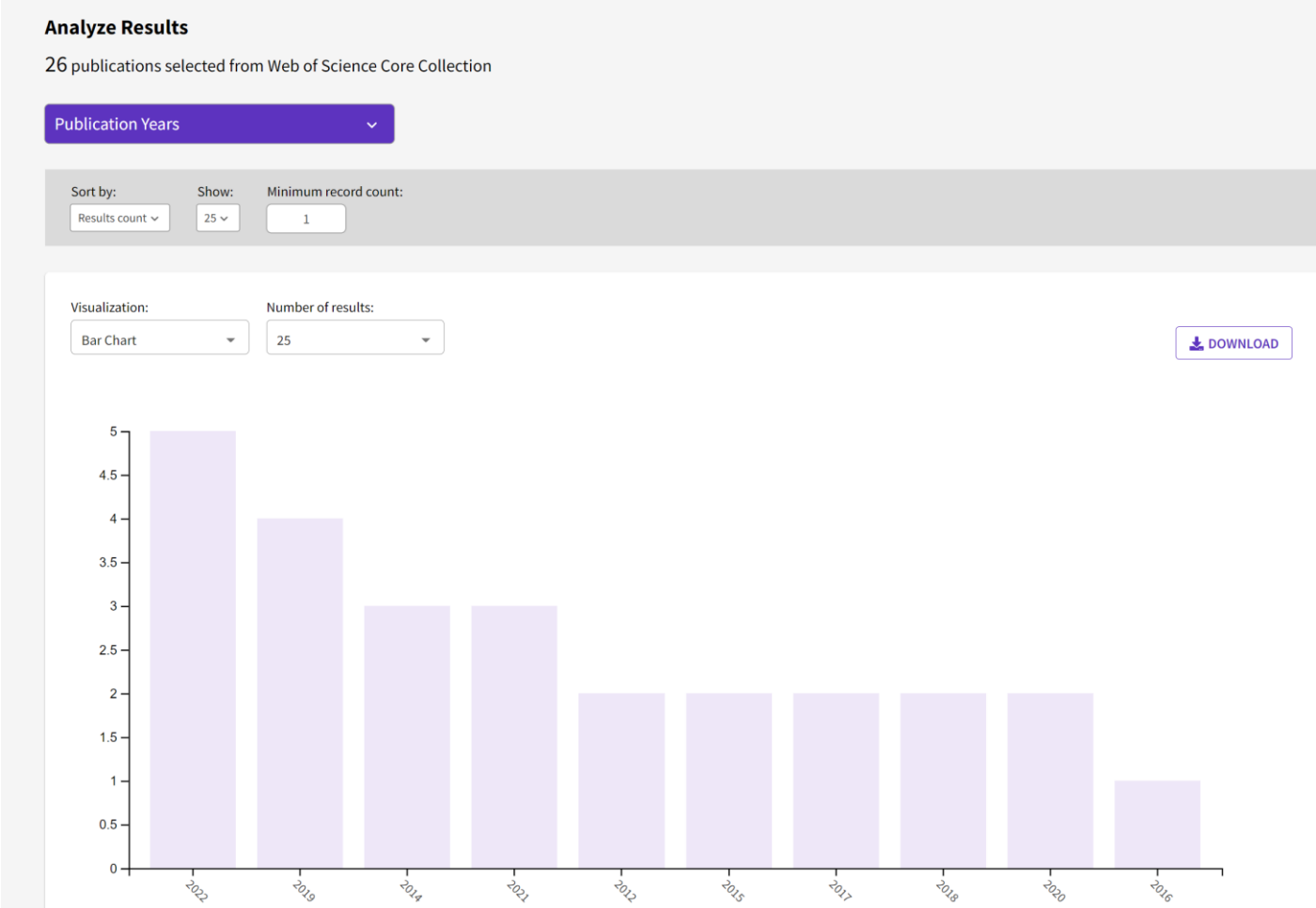
Literature review

Systematic review and Web of Science



Literature review

Systematic review and Web of Science



Literature review

Systematic review and Web of Science

Select All	Field: Publication Years	Record Count	% of 26
☐	2022	5	19.231%
☐	2019	4	15.385%
☐	2014	3	11.538%
☐	2021	3	11.538%
☐	2012	2	7.692%
☐	2015	2	7.692%
☐	2017	2	7.692%
☐	2018	2	7.692%
☐	2020	2	7.692%
☐	2016	1	3.846%

Analyze Data Table

Refining will return you to the search results

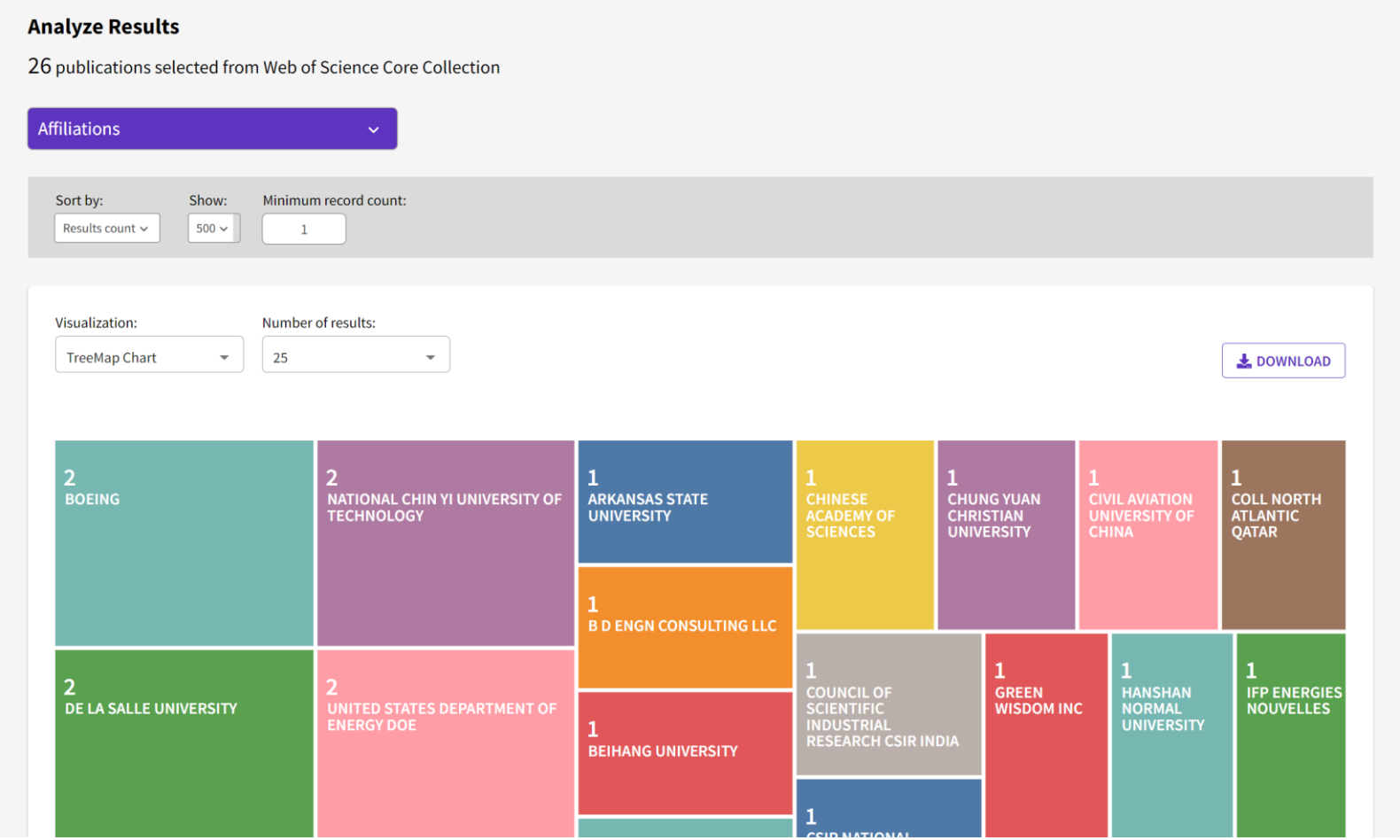
Refine results by selected | Exclude results by selected

◉ Data rows displayed in table
○ All data rows (up to 100,000)

Download data table

Literature review

Systematic review and Web of Science



Literature review

Systematic review and Web of Science

Select All	Field: Affiliations	Record Count	% of 26
☐	BOEING	2	7.692%
☐	DE LA SALLE UNIVERSITY	2	7.692%
☐	NATIONAL CHENG KUNG UNIVERSITY	2	7.692%
☐	NATIONAL CHIN YI UNIVERSITY OF TECHNOLOGY	2	7.692%
☐	UNITED STATES DEPARTMENT OF ENERGY DOE	2	7.692%
☐	AIR FORCE INSTITUTE OF TECHNOLOGY AFIT	1	3.846%
☐	ARGONNE NATIONAL LABORATORY	1	3.846%
☐	ARKANSAS STATE UNIVERSITY	1	3.846%
☐	B D ENGN CONSULTING LLC	1	3.846%
☐	BEIHANG UNIVERSITY	1	3.846%
☐	BEIJING FORESTRY UNIVERSITY	1	3.846%
☐	BRNO UNIVERSITY OF TECHNOLOGY	1	3.846%
☐	CHINESE ACADEMY OF SCIENCES	1	3.846%
☐	CHUNG YUAN CHRISTIAN UNIVERSITY	1	3.846%
☐	CIVIL AVIATION UNIVERSITY OF CHINA	1	3.846%
☐	COLL NORTH ATLANTIC QATAR	1	3.846%
☐	COUNCIL OF SCIENTIFIC INDUSTRIAL RESEARCH CSIR INDIA	1	3.846%
☐	CSIR NATIONAL INSTITUTE INTERDISCIPLINARY SCIENCE TECHNOLOGY NIIST	1	3.846%
☐	ESKISEHIR TECHNICAL UNIVERSITY	1	3.846%
☐	GREEN WISDOM INC	1	3.846%
☐	HANSHAN NORMAL UNIVERSITY	1	3.846%
☐	IFP ENERGIES NOUVELLES	1	3.846%
☐	INSTITUTE OF PROCESS ENGINEERING CAS	1	3.846%
☐	INVENT GMBH	1	3.846%
☐	JOINT BIOENERGY INSTITUTE JBEI	1	3.846%

Analyze Data Table

Refining will return you to the search results

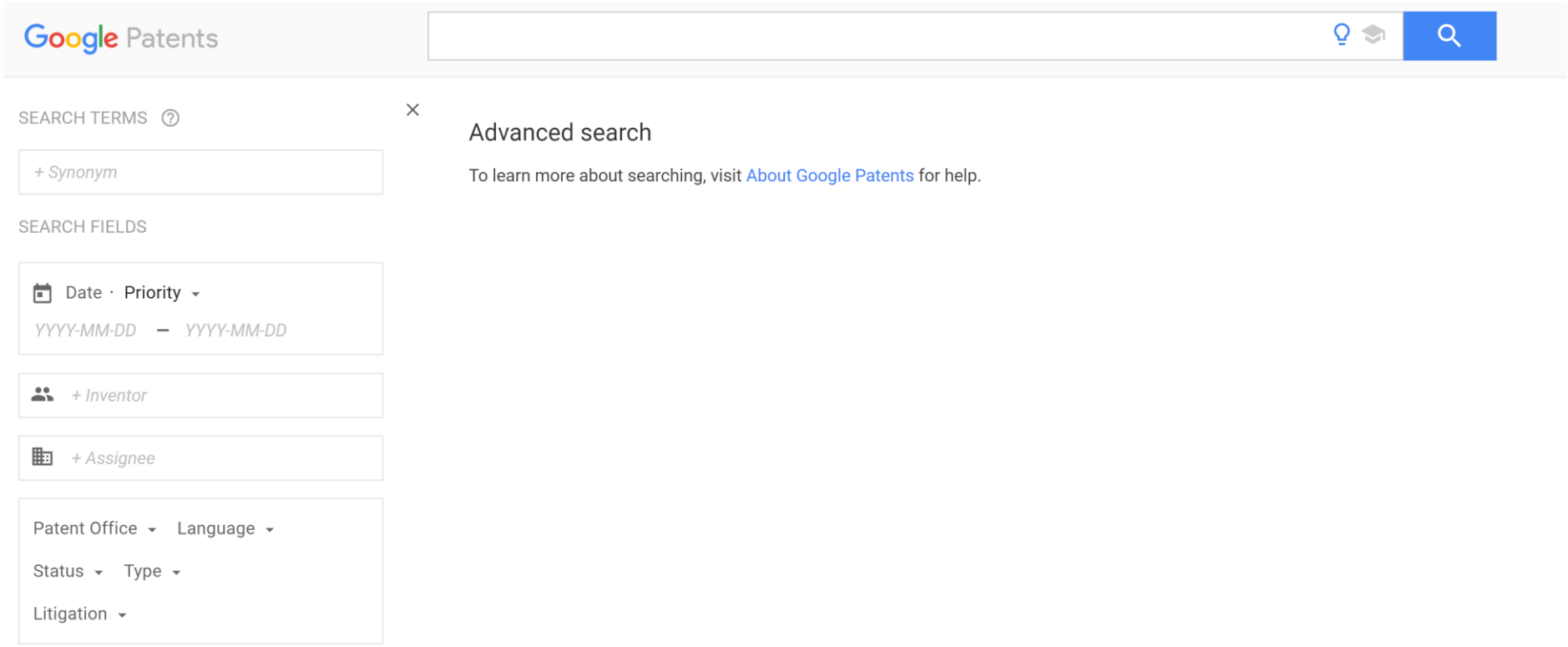
Refine results by selected | Exclude results by selected

◉ Data rows displayed in table
○ All data rows (up to 100,000)

Download data table

Literature review

Search patents (if you are developing a new sensor….equipment…new technology)



Literature review

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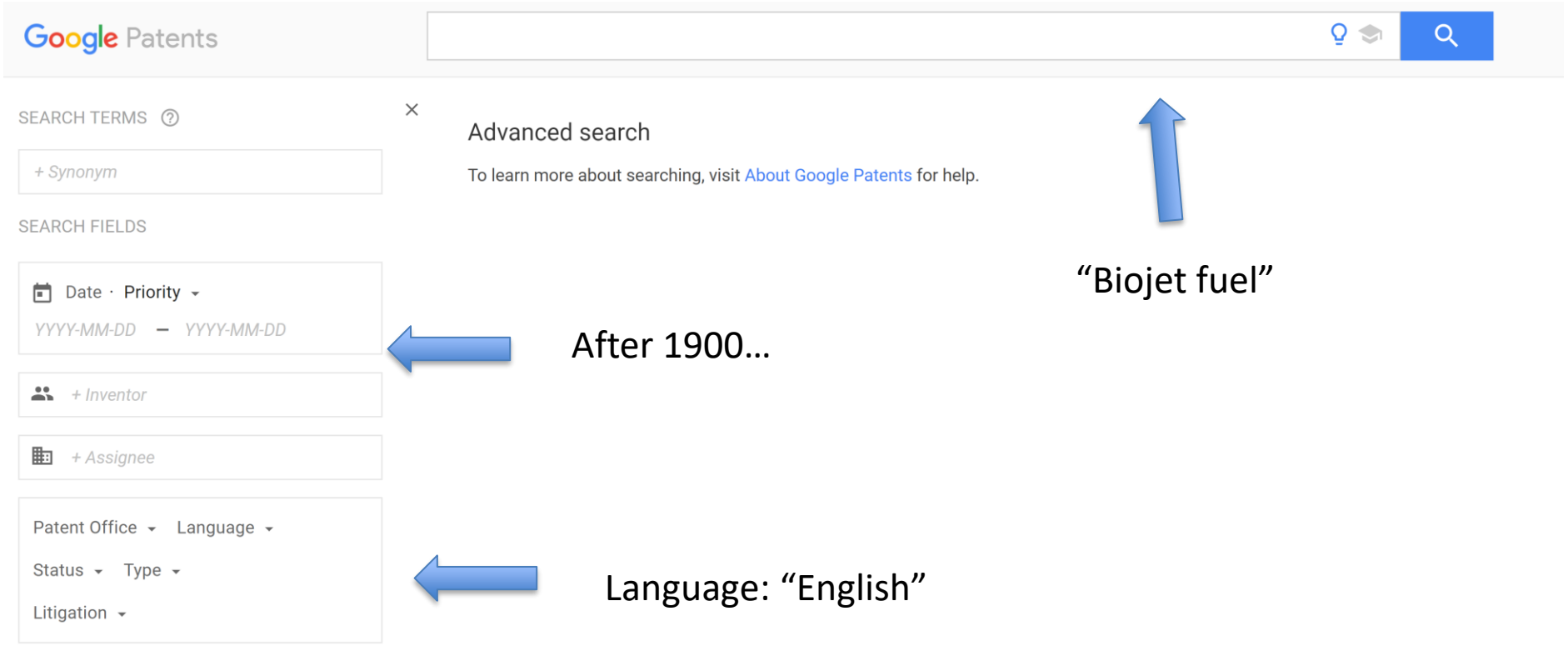
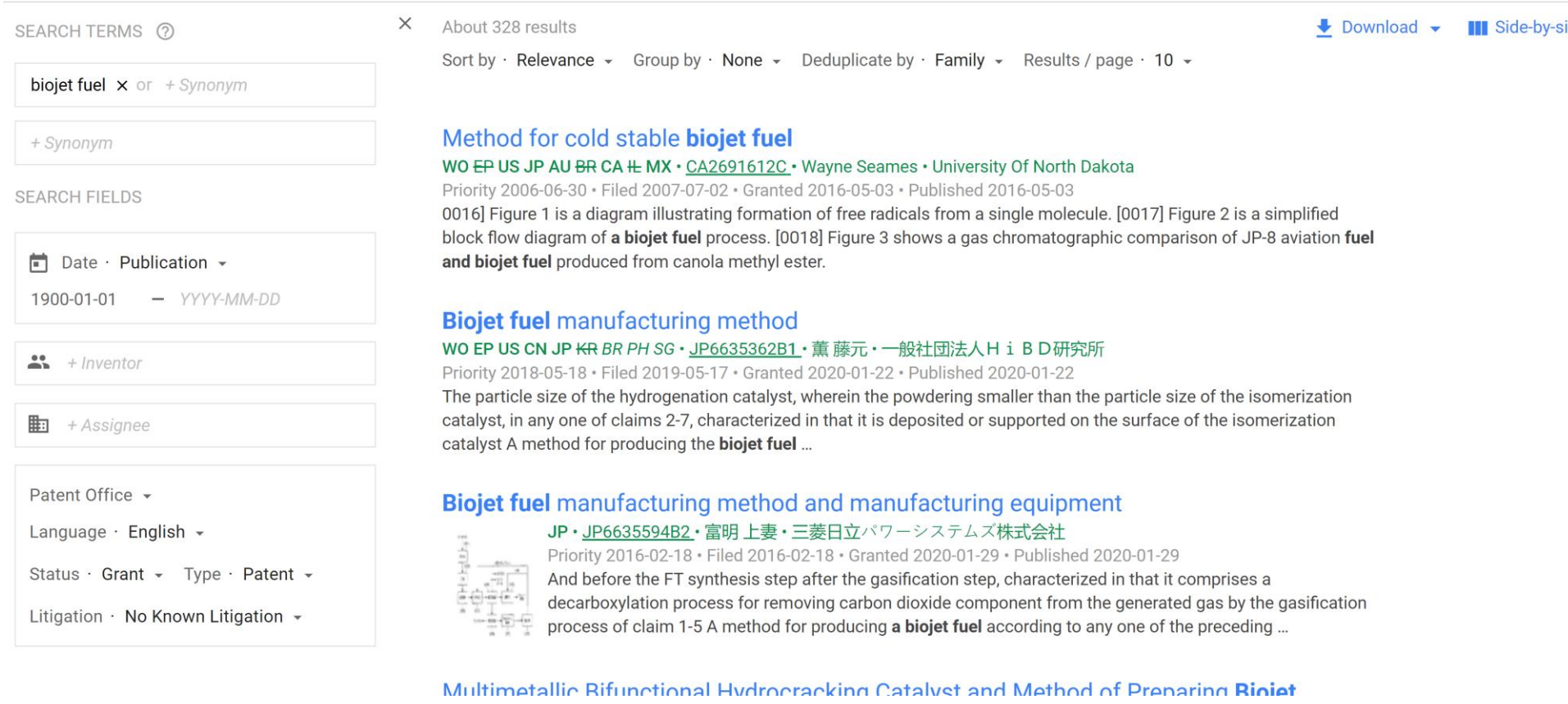


Literature review

Search patents (if you are developing a new sensor….equipment…new technology)….



Literature review

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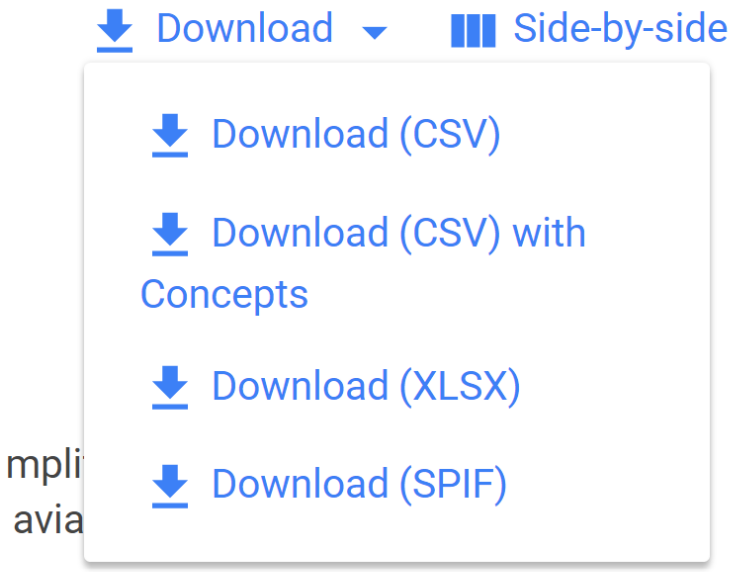

Literature review

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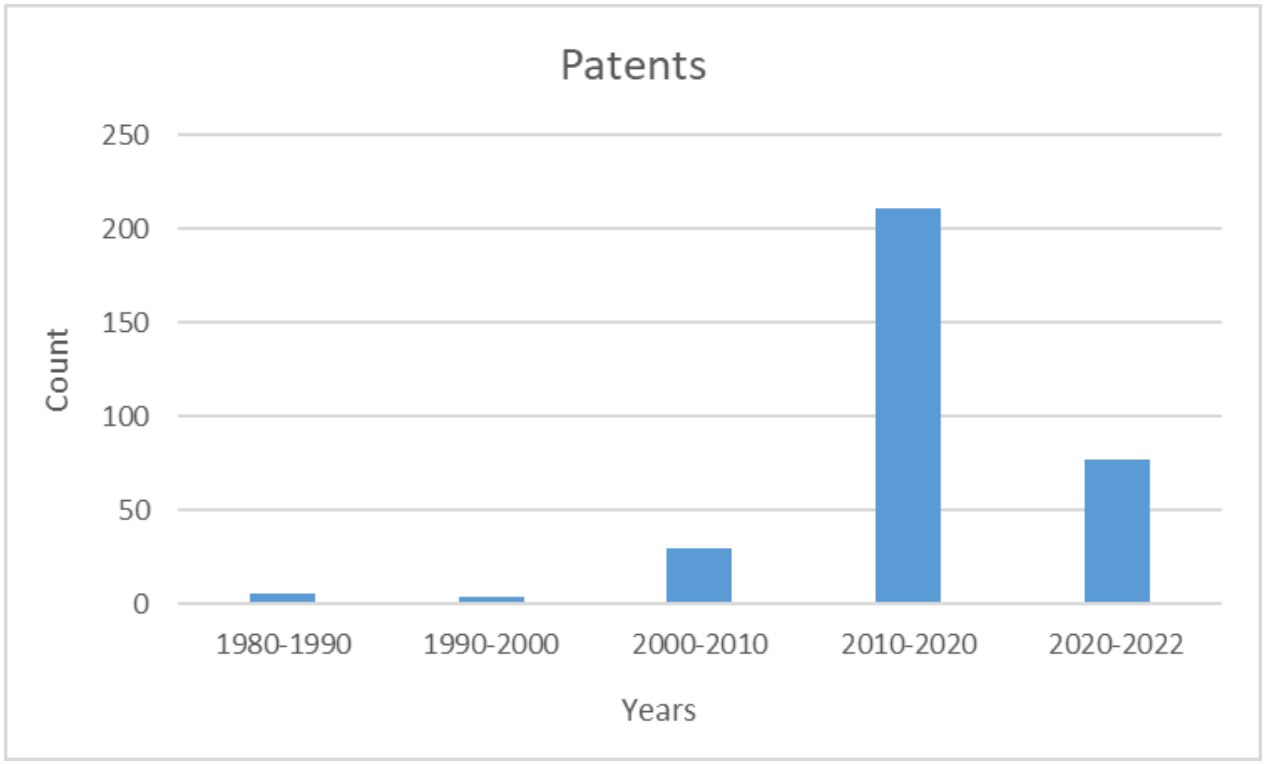
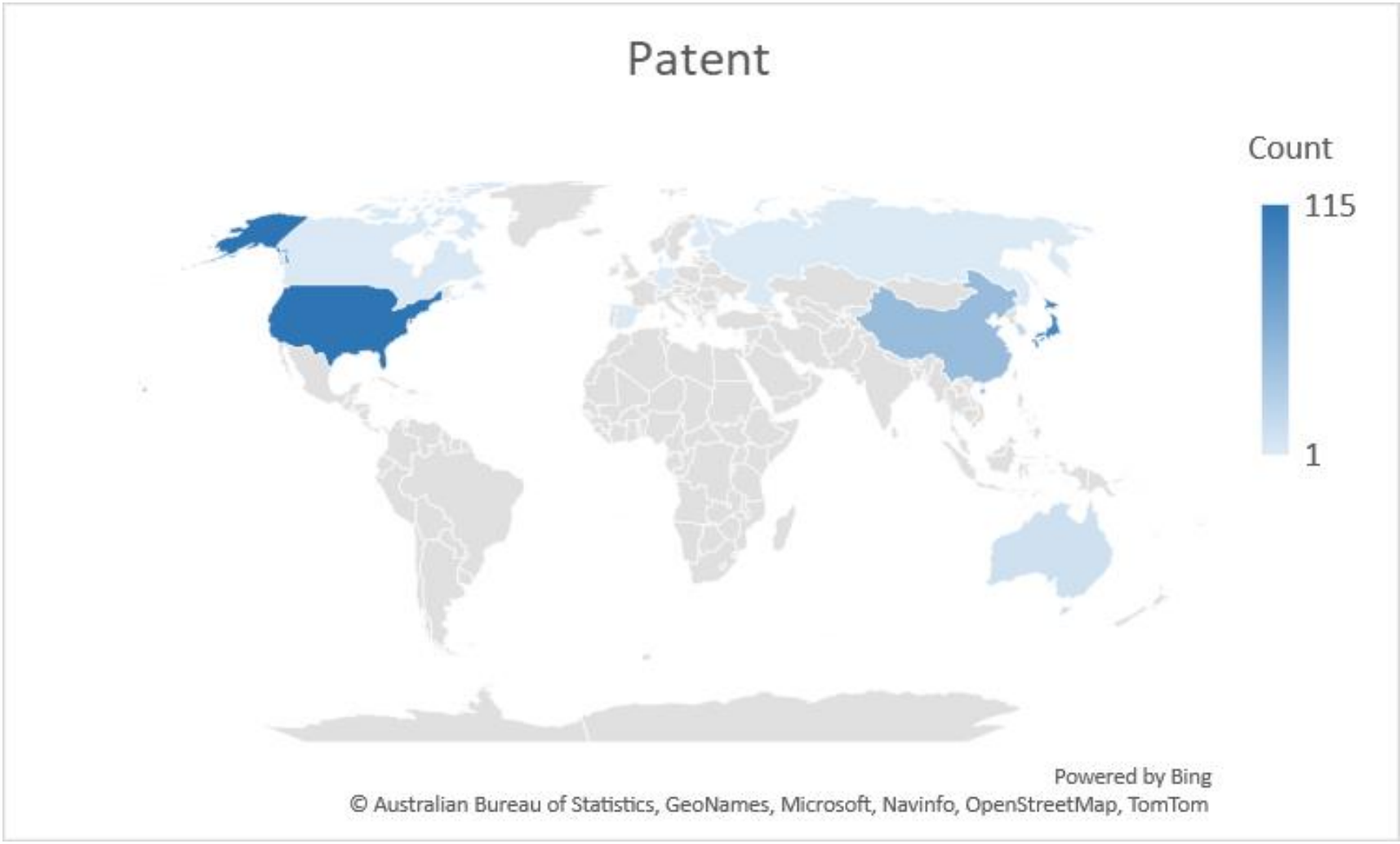


Literature review

Interpretation:

The number of patents has been increasing steeply in the last decade, and in 2020-2022 the number of granted patents is higher than 2000-2009 timeframe and already amounts to 1/3 of the granted patents in 2010-2019.

Literature review

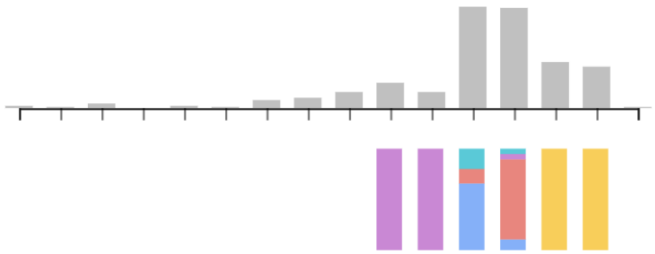


Literature review

Interpretation:

Most patents are granted in US and JP countries. Top 5 applicants with filled patents:

Top 1000 results by filing date

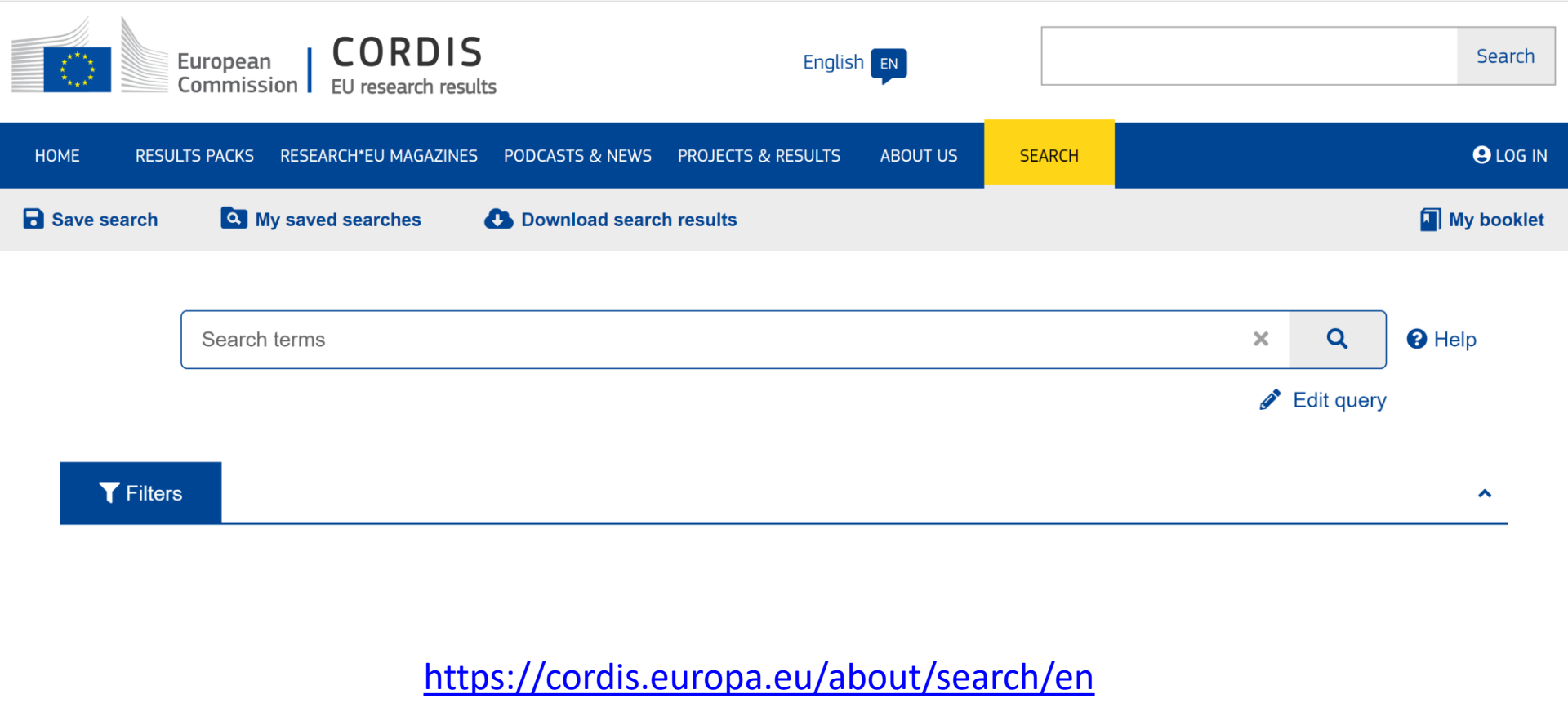


Relative count of top 5 values

Assignees	Inventors	CPCs
ＪｘＴＧエネルギー株式会社		7.6%
京セラ株式会社		6%
Nuseed Global Innovation Ltd.		3.6%
デンカ生研株式会社		2.7%
清华大学深圳研究生院		2.4%

Literature review

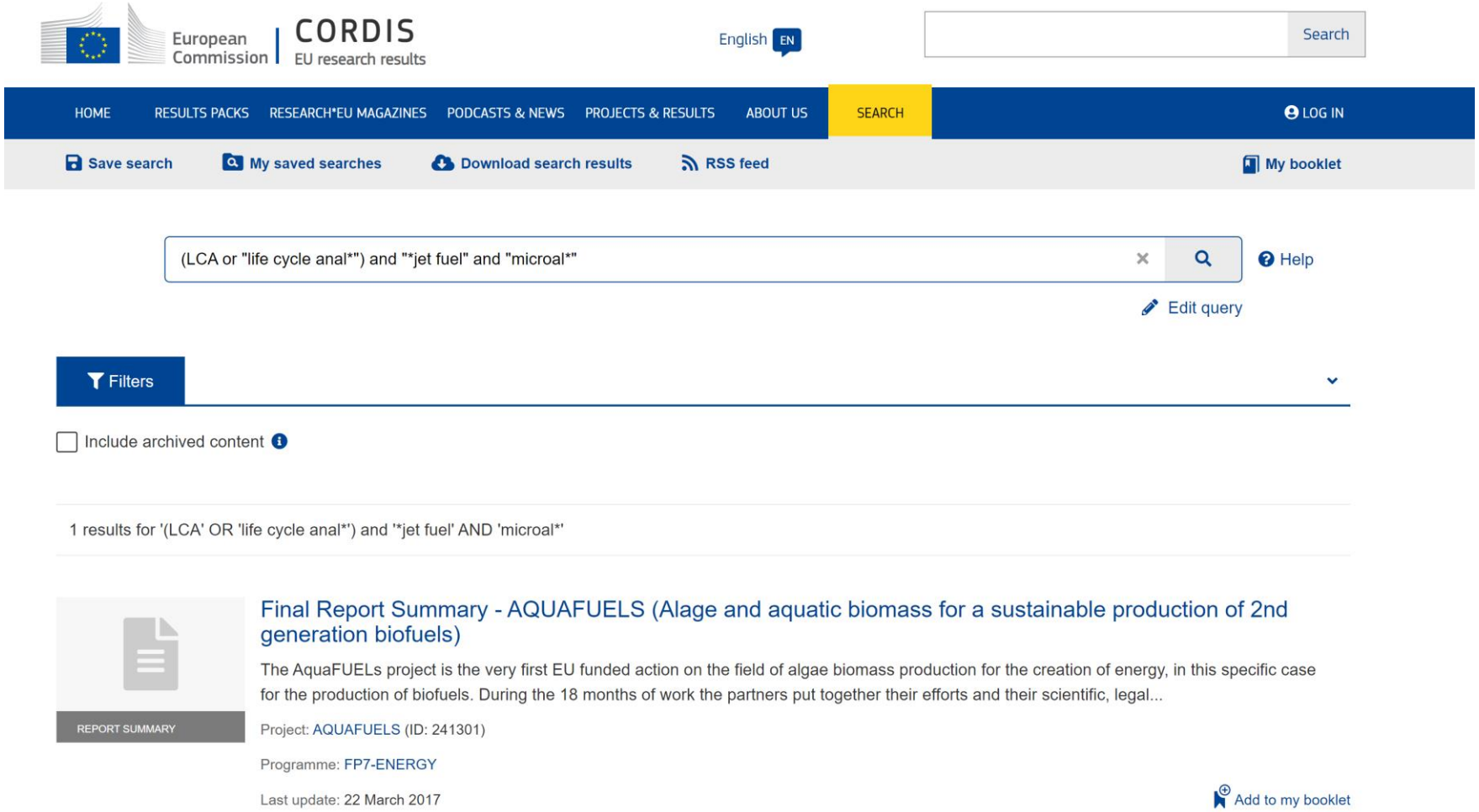
Other possible search engines:



https://cordis.europa.eu/about/search/en

Literature review

Other possible search engines:



Literature review

LOOK INSIDE!!

Its really relevant to your work? If no, then you have to change the keywords….

If yes, you nail it!!

Literature review

When doing your Literature Review:

Include in the Literature review:

At least two graph with interpretation

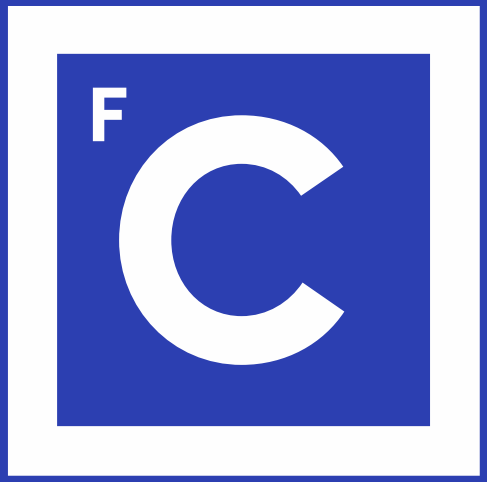
- ✓ mention to the search engine and query
- ✓ covering distribution of the number of publications per year and
- ✓ geographical distribution
- ✓ A selection of works that you can relate/compare/discuss in your Results section against your own outcomes because you should **LINK RESULTS SECTION WITH LITERATURE REVIEW**

Literature review

Literature review

Results

Thanks



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