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GradProSkills GPLL238

ENCS Graduate Research Essentials

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Your Engineering Librarians

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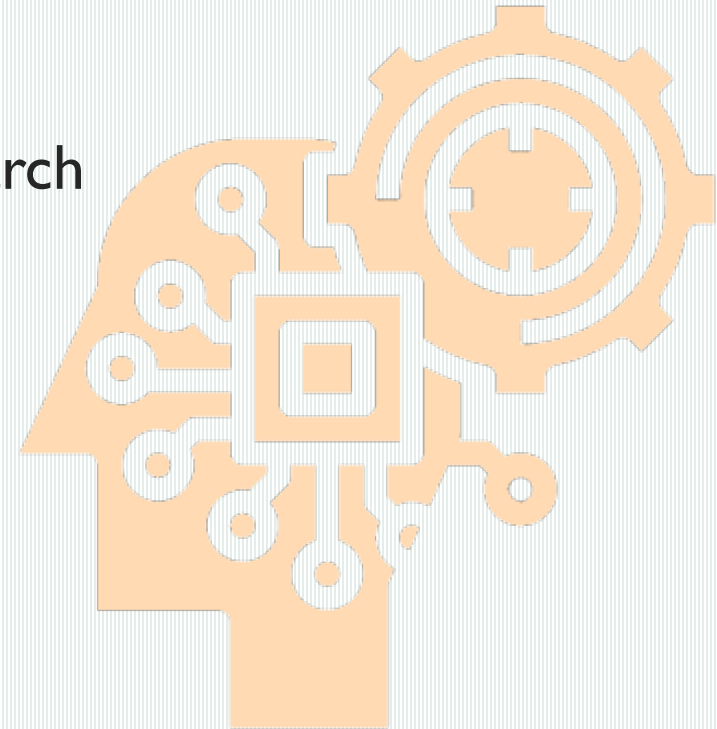
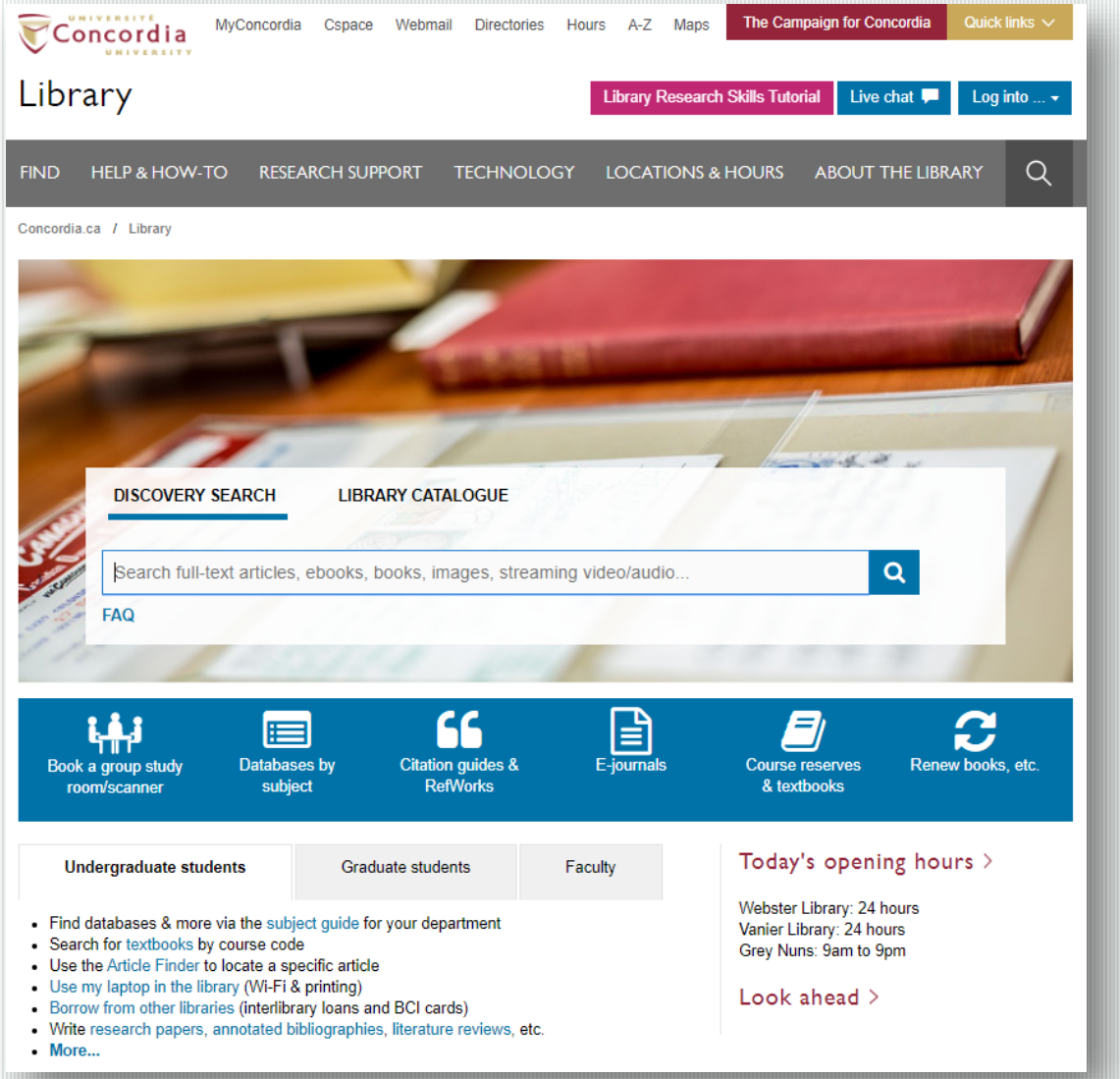
Overview

- Recognize the differences between major library search tools
- Conduct literature searching in Engineering Village and make use of its advanced search functions
- Make use of available tools to stay organized and track research



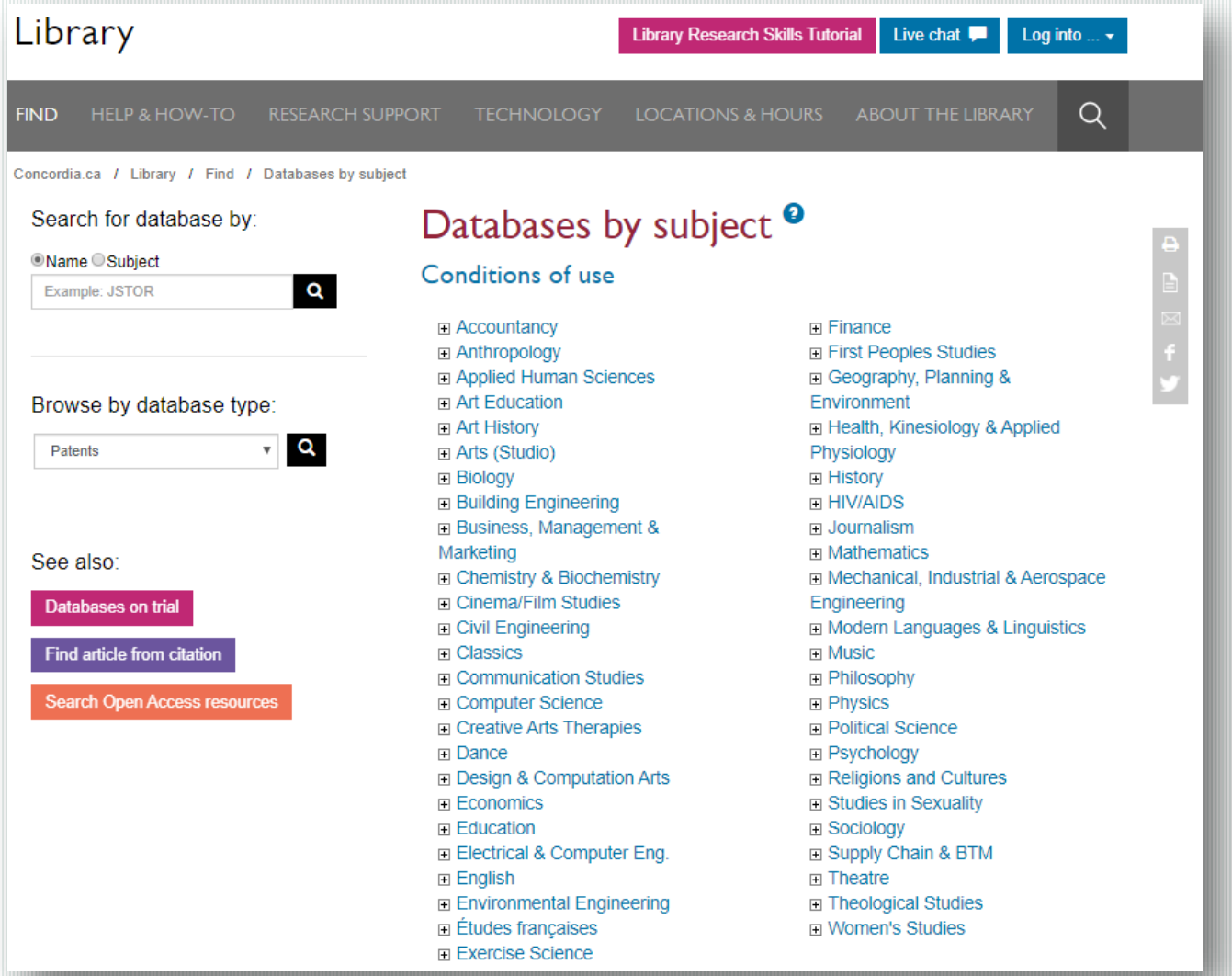
Library search basics

Major library search tools



- Discovery Search
- Library Catalogue
- Databases
- Interlibrary Loan

Subject Databases



Explore them

- by subject
- by type

Library Databases and Google Scholar

Library Databases

- Focus search within a discipline/subject
- Many options for precise searching
- Full text can be obtained most of the time

Google Scholar

- A broad search of the scholarly literature
- Limited advanced search options
- Full text is not usually included (can set up library links to check)

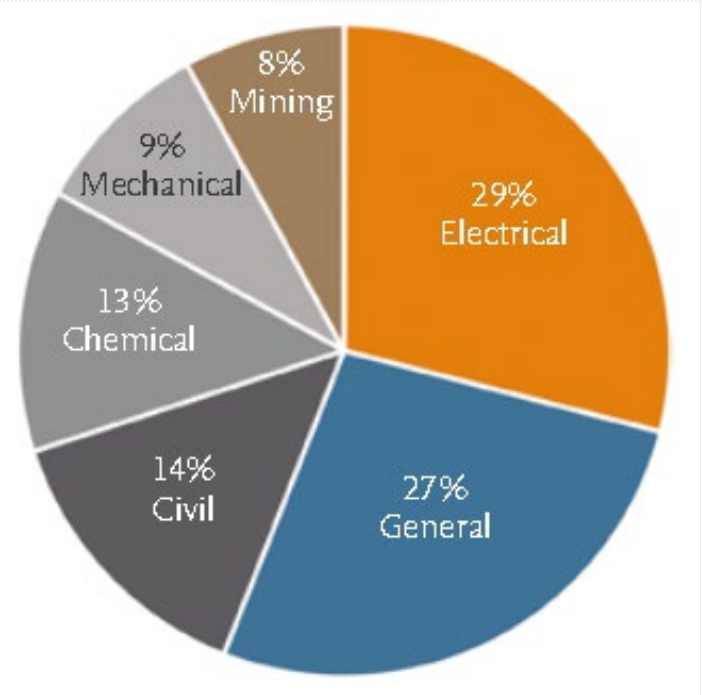
Engineering Village

About Engineering Village

- A major platform for engineering literature
- Content from core engineering databases (e.g. Compendex, Inspec, Geobase)
- Carefully selected and indexed
- Types of information: Journals, conference proceedings, dissertations, technical standards, trade magazines, technical reports…

Compendex

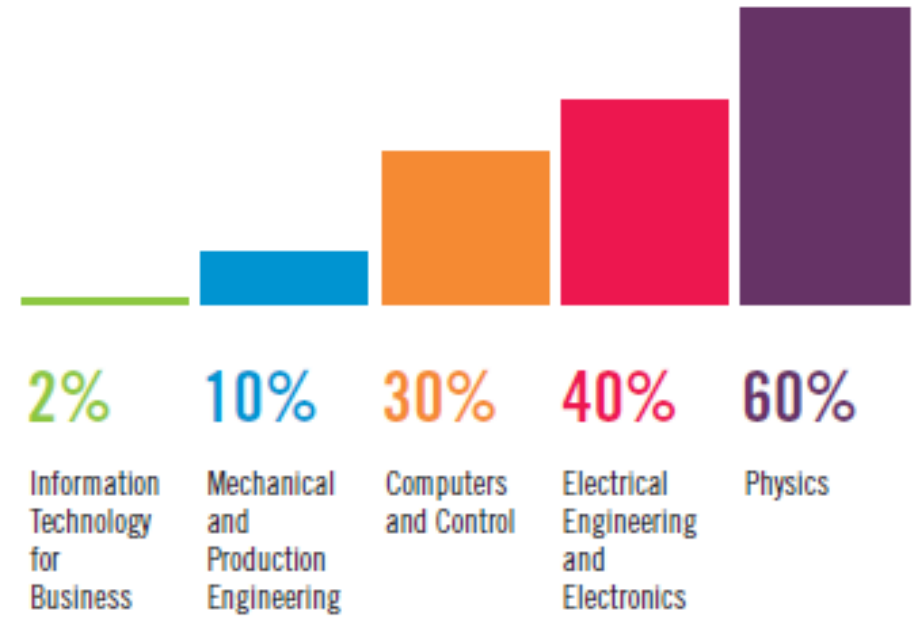
- Comprehensive coverage of various engineering subjects
- Over 18.8 million records from 1970 – present
- Over 1.7 million records from1884 – 1969
- Publications from over 76 countries



Source: https://www.elsevier.com/__data/assets/pdf_file/0011/56378/Ei-Compendex-factsheet.pdf

INSPEC

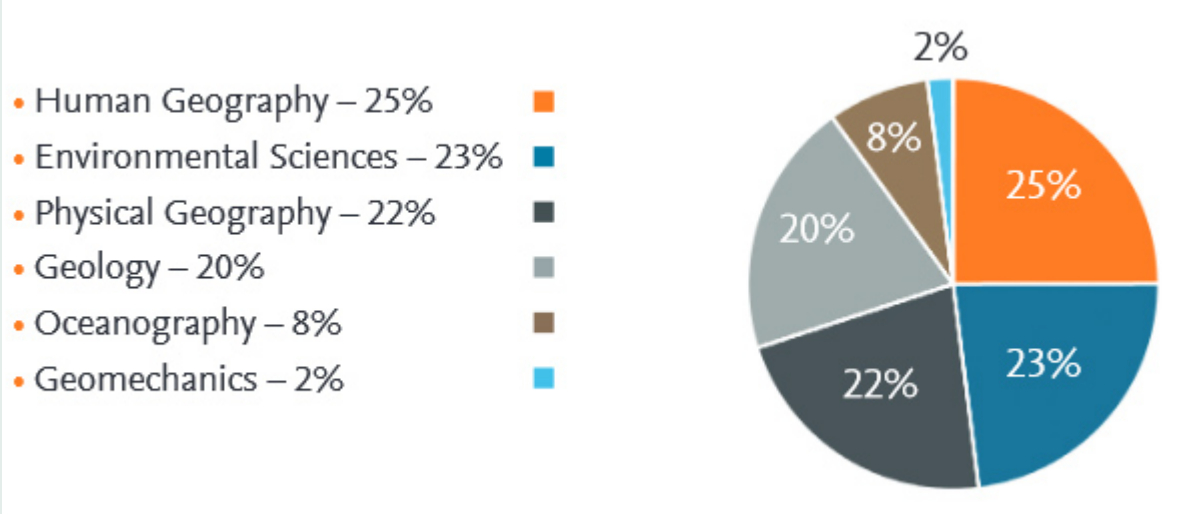
- Physics, electrical engineering and electronics, computers and control, mechanical, production engineering, information technology and more
- Around 837,000 records from1898 to1968
- Almost 16 million records since1969
- Publications from over 95 countries



Source: https://www-elsevier-com.lib-ezproxy.concordia.ca/__data/assets/pdf_file/0004/56407/IET-Inspec-factsheet.pdf
http://www.theiet.org/resources/inspec/about/

GEOBASE

- Earth sciences, ecology, geology, human and physical geography, environmental sciences, oceanography, geomechanics, alternative energy sources, pollution, waste management and nature conservation
- Over 3 million records
- 200,000 records added per year
- Publications from over 68 countries



Source Elsevier: https://www.elsevier.com/__data/assets/pdf_file/0003/56424/Geobase-factsheet.pdf

Accessing Engineering Village

A few things to keep in mind:

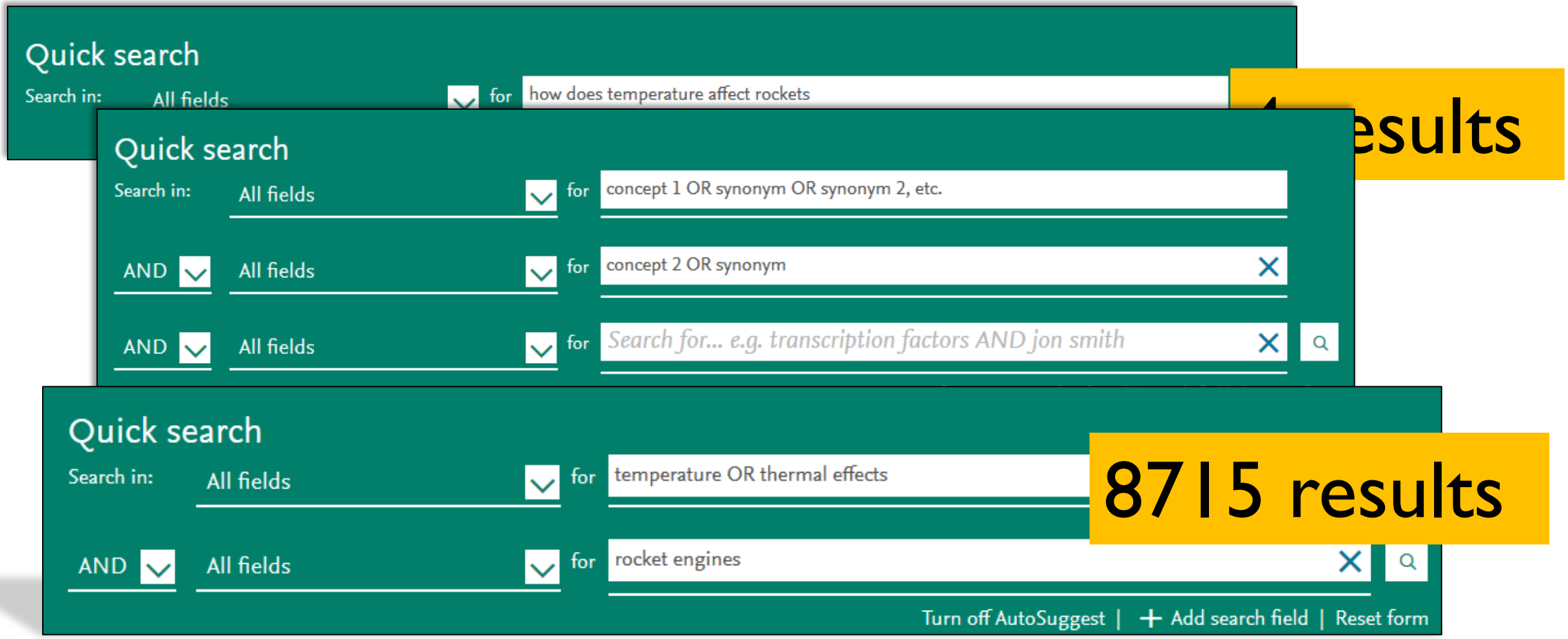
- What's the difference between Quick Search and Expert Search?
- By default, is the function "AutoSuggest" turned on?
- Should I create an account?

Engineering Village: https://clues.concordia.ca/record=e1000983

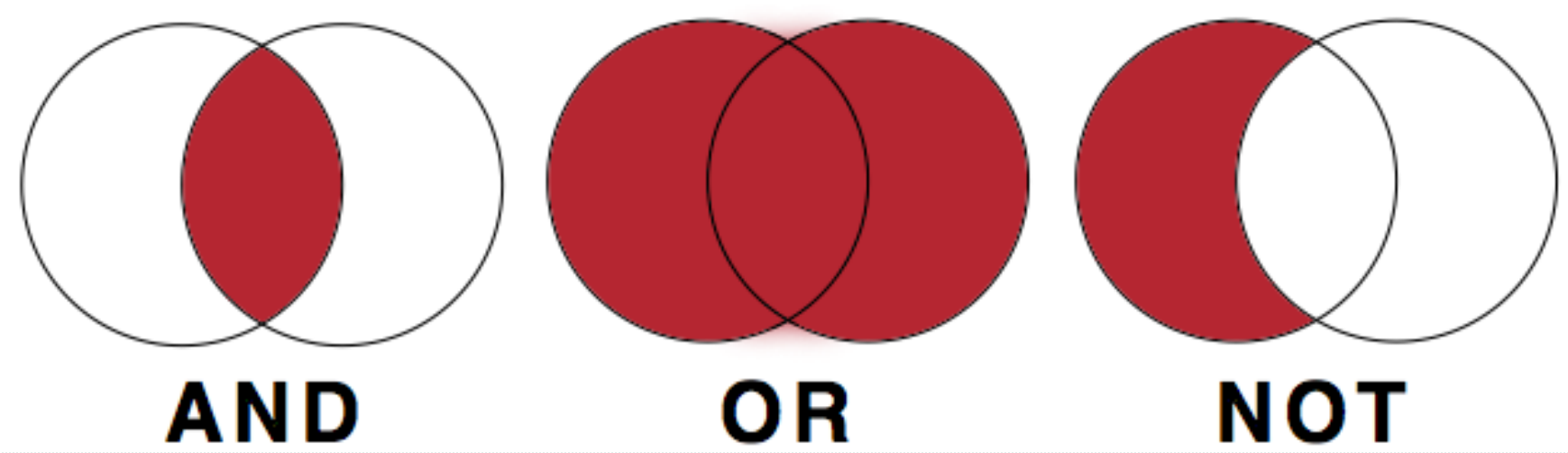
Starting the Search

- Try to break down your topic into different concepts
- In Quick Search, you can add more search fields as needed

Starting the Search



Combine Search Terms



This is usually the default setting. AND is used to combine ideas together

Use OR to combine synonyms

If the main idea has a common use you want to exclude, use NOT to exclude that word

Source: https://courses.lumenlearning.com/suny-fmcc-researchsuccess/chapter/search-statements/

Thesaurus/Controlled Vocabulary

- Each article is indexed in Engineering Village
- Controlled vocabulary is used to standardize the way the articles are indexed

Blockchain Technology: An Aid to the Governance of Smart Cities

Patel, Vishva Nitin [1] ✉; Patel, Chhayaben Nitin [2] ✉

Source: *Advances in Intelligent Systems and Computing*, v 933, p 373-382, 2020; **ISSN:** 21945357; **DOI:** 10.1007/978-981-13-7166-0_36; **Publisher:** Springer Verlag

Author affiliations : [1] Department of Information Technology, Madhuben and Bhanubhai Patel Women's Institute of Engineering, Gujarat Technological University, Anand; Gujarat, India
[2] Anand Institute of Information Science, Anand; Gujarat, India

Main heading: Information management

Controlled terms: Blockchain - Data handling - Digital storage - Distributed computer systems - Economics - Hash functions - Network architecture - Peer to peer networks - Smart city

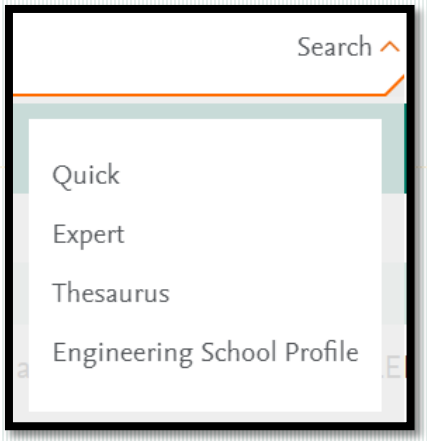
Uncontrolled terms: Decentralized architecture - Double-spending - Proof of work - Shared economy - Smart property - Transparent governance - Trust-free

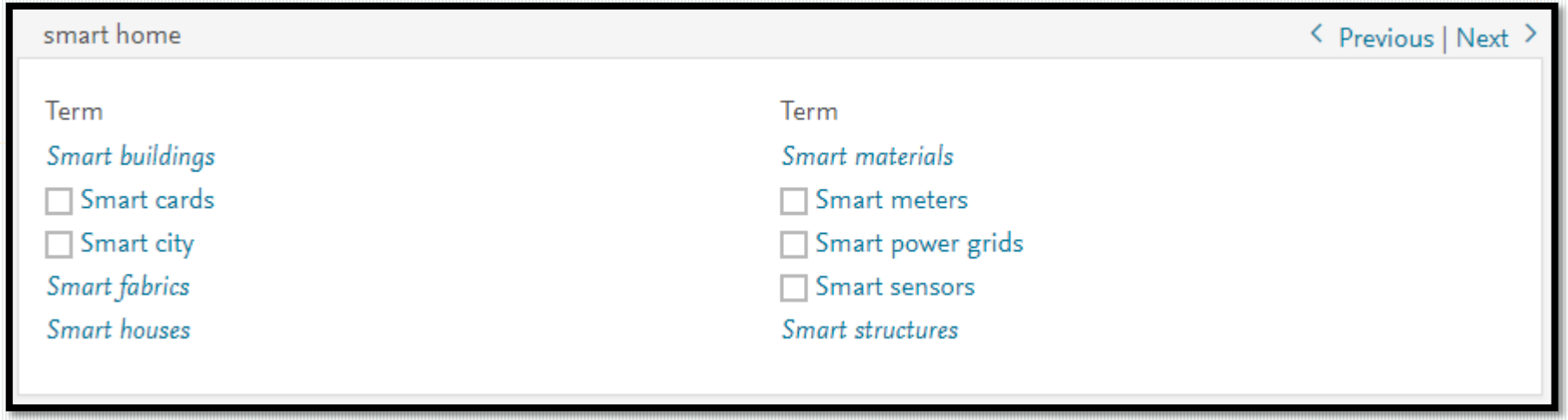
Classification code: 722 Computer Systems and Equipment - 723.2 Data Processing and Image Processing - 971 Social Sciences

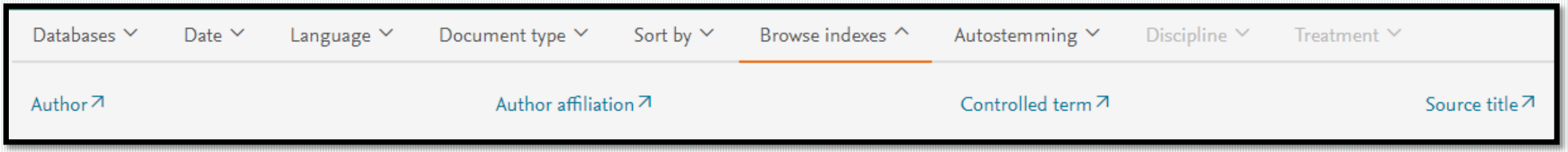
Database: Compendex

Thesaurus/Controlled Vocabulary

- Find synonyms and related terms
- Improve your search strategy with suggested broader and narrower terms







Try it out

1. Pick a topic of your choice. Brainstorm some keywords. Try them out in Quick Search.

2. Go through the results, explore controlled terms that are relevant to your topic.

3. Branch out or narrow down your search using controlled terms/thesaurus.

Example topics:

- *How can nanotechnology make solar energy technology more efficient?*
- *What virtual reality techniques can be used for emergency response?*
- *How can integrated transportation systems reduce waste?*
- *What benefits and problems are present in using hydrogels to 3D print tissue for medical use?*

Variations of Words

- **Autostemming (turned on by default)**

  management → manage, managed, manager, managers, managing, management, etc.

- **Truncation (use it if autostemming is not sufficient enough)**

  col*r → color, colour

  h*emoglobin → hemoglobin, haemoglobin, hemimethemoglobin

  *sorption → adsorption, absorption, desorption, resorption

  comput* → computers, computing, computerize, etc.

Source: https://service-elsevier-com.lib-ezproxy.concordia.ca/app/answers/detail/a_id/25941/c/10545/supporthub/engineering-village/

Phrase Searching

- Search for exact phrases, so certain words appear together
- Both quotation marks and curly brackets would work

“social media”

{social media}

"social media" {artificial intelligence}

Methods to identify fake news in **social media** using **artificial intelligence** technologies

Zhuk, Denis [1]; Tretiakov, Arsenii [1] ✉; Gordeichuk, Andrey [1]; Puchkovskaia, Antonina [1]

Source: *Communications in Computer and Information Science*, v 858, p 446-454, 2018, *Digital Transformation and Global Society - Third I 2018, Revised Selected Papers*; **ISSN:** 18650929; **ISBN-13:** 9783030028428; **DOI:** 10.1007/978-3-030-02843-5_36; **Conference:** 3rd In Transformation and Global Society, DTGS 2018, May 30, 2018 - June 2, 2018; **Publisher:** Springer Verlag

Author affiliation : [1] ITMO University, St. Petersburg; 197101, Russia

Abstract: Fake news (fake-news) existed long before the advent of the Internet and spread rather quickly via all possible means of com tool for influencing public opinion. Currently, there are many definitions of fake news, but the professional community cannot fully a creates a big problem for its detection. Many large IT companies, such as Google and Facebook, are developing their own algorithms falsification of information. At the same time, the lack of a common understanding regarding the essence of fake news makes the sol impossible. Consequently, experts and digital humanists specializing in different fields must study this problem intensively. This resea publishing and distributing fake-news according to the classification, structure and algorithm of the construction. Conclusions are th identifying this type of news in **social media** using systems with elements of **artificial intelligence** and machine learning.

When do I use Expert Search?

- Search within specific fields that are not available in Quick Search (e.g. doi, conference code, funding number)
- Combine many fields and operators in a complex search

(ICTC WN CF) AND (smart NEAR phone)

Within

Conference information

The two search terms are near to each other in any order

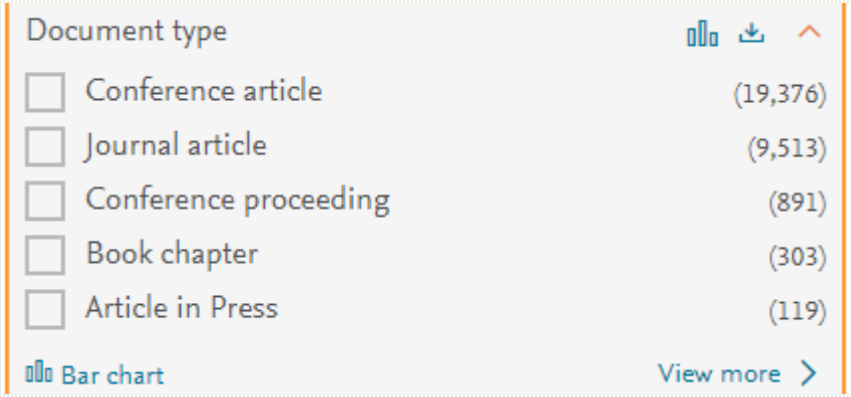
Code = Field	
AB	= Abstract (c,i,g)
ACT	= Access type (c)
AN	= Accession number (c,i,g)
AF	= Affiliation/Assignee (c,i,g)
ALL	= All fields (c,i,g)
AI	= Astronomical indexing (i)
AU	= Author/Inventor (c,i,g)
CI	= Chemical indexing (i)
CL	= Classification code (c,i,g)

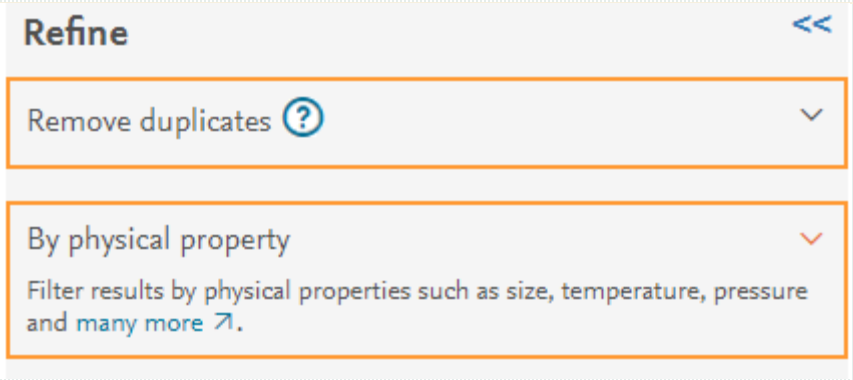
Code = Field	
PID	= IPC Code (i)
BN	= ISBN (c,i,g)
SN	= ISSN (c,i,g)
SU	= Issue (c,i,g)
LA	= Language (c,i,g)
MI	= Material identity number (i)
NU	= see Numerical Data Codes (c,i)
NI	= Numerical indexing (i)
OC	= Original classification code (i)

Source: https://service-elsevier-com.lib-ezproxy.concordia.ca/app/answers/detail/a_id/25633/c/10545/supporthub/engineering-village/

Refine Results with Facets

- Common criteria such as "Document Type", "Controlled Vocabulary", and "Year"
- Other specialized ones include "By Physical Property" and "Remove Duplicates"





The Article Record

- Very detailed metadata about the article
- Options to check full text, share, or download the record
- Link out to other relevant content

Development of mobile application for **smart home** energy management: iSHome

Chen Li [1] ✉; Logenthiran, T. [1] ✉; Woo, W.L. [1] ✉

Source: *2016 IEEE 6th International Conference on Power Systems (ICPS)*, 6 pp., 2016; **ISBN-13:** 978-1-5090-0128-6; **DOI:** 10.1109/ICPES.2016.7584199; **Conference:** 2016 IEEE 6th International Conference on Power Systems (ICPS), 4-6 March 2016, New Delhi, India; **Publisher:** IEEE, Piscataway, NJ, USA

Author affiliation : [1] Sch. of Electr. & Electron. Eng., Newcastle Univ., Singapore, Singapore

Abstract: Singapore looks forward to be a **smart** nation soon where **smart homes** and **smart** buildings are the key elements. In a **smart** nation, **smart homes** will interact themselves and interact with the **smart** power grid to have a high efficient and sustainable electricity system. Newcastle University, Singapore campus sets out to realistic design and development of ICT (Information and Communications Technology) - enabled collaborative technical and commercial architecture for **smart** power distribution system in the context of **smart homes** and **smart** buildings. This paper presents the design and development of a **smart** phone application that can control all **smart** appliances in **smart home**. A mobile application was developed on Eclipse that allows writing an Android application. These were two versions of the application designed and developed: iSHome 1 and iSHome 2. iSHome 1 is able to communicate with power plugs and iSHome 2 is able to interact with **smart home** management server. Both versions of the application use Bluetooth for their communication. Even though the current version of the mobile application has not been included any energy saving algorithms, it saves much electrical energy wastage and brings many attractive features to the **smart homes**.

Inspec controlled terms: Android (operating system) - Bluetooth - building management systems - domestic appliances - energy conservation - energy management systems - groupware - **home** automation - mobile computing - **smart** power grids - sustainable development

Uncontrolled terms: mobile application development - **smart home** energy management - iSHome - **smart** nation - **smart** buildings - **smart** power grid - sustainable electricity system - Newcastle University - Singapore campus - ICT enabled collaborative technical architecture - ICT enabled collaborative commercial architecture - information and communications technology - **smart** power distribution system - **smart** appliances - Eclipse - Android application - power plugs - **smart home** management server - Bluetooth - electrical energy wastage reduction

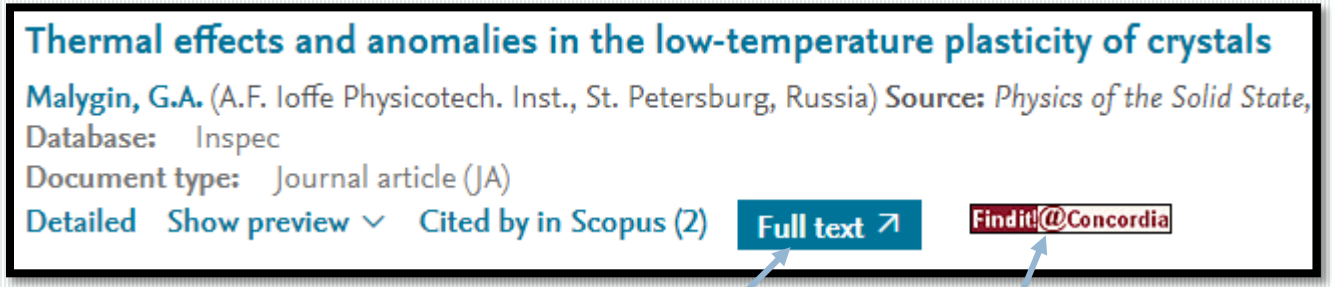
Classification code: A8620Q Buildings (energy utilisation) - B8570 Domestic appliances - B6250F Mobile radio systems - B8110B Power system management, operation and economics - C3365 Automated buildings - C6190V Mobile, ubiquitous and pervasive computing - C3340H Control of electric power systems - C7420 Control engineering computing

IPC Code: G05B15/00 - G06F9/44 - G06F9/46 - H02J13/00 - H04B7/00 - H04B7/26 - H04W

Treatment: Practical (PRA)

Database: Inspec

Getting Full Text



1. "Full text" button, if one exists
2. "Find it @ Concordia" button
3. Check **Library Catalogue** for print copies & use **Article Delivery Service** to get a scanned copy
4. Use **Interlibrary loans**

Try it out

1. For the same topic or a different topic, conduct a search (make use of the tips discussed).

2. Go through the results and identify 2 articles of interest. Are the full text available?

3. Set up an account to explore personalized options (e.g. create alerts, save searches, export/download results,)

Example topics:

- *How can nanotechnology make solar energy technology more efficient?*
- *What virtual reality techniques can be used for emergency response?*
- *How can integrated transportation systems reduce waste?*
- *What benefits and problems are present in using hydrogels to 3D print tissue for medical use?*

Stay organized

&

Track research

Zotero - Managing References

- Make use of a reference manager such as Zotero to help organize your literature
- A browser plug-in that makes saving content easy while searching
- Integration with MS Word and Google Doc makes citing and referencing easy when writing
- The Library a guide on using Zotero

zotero

Getting Started

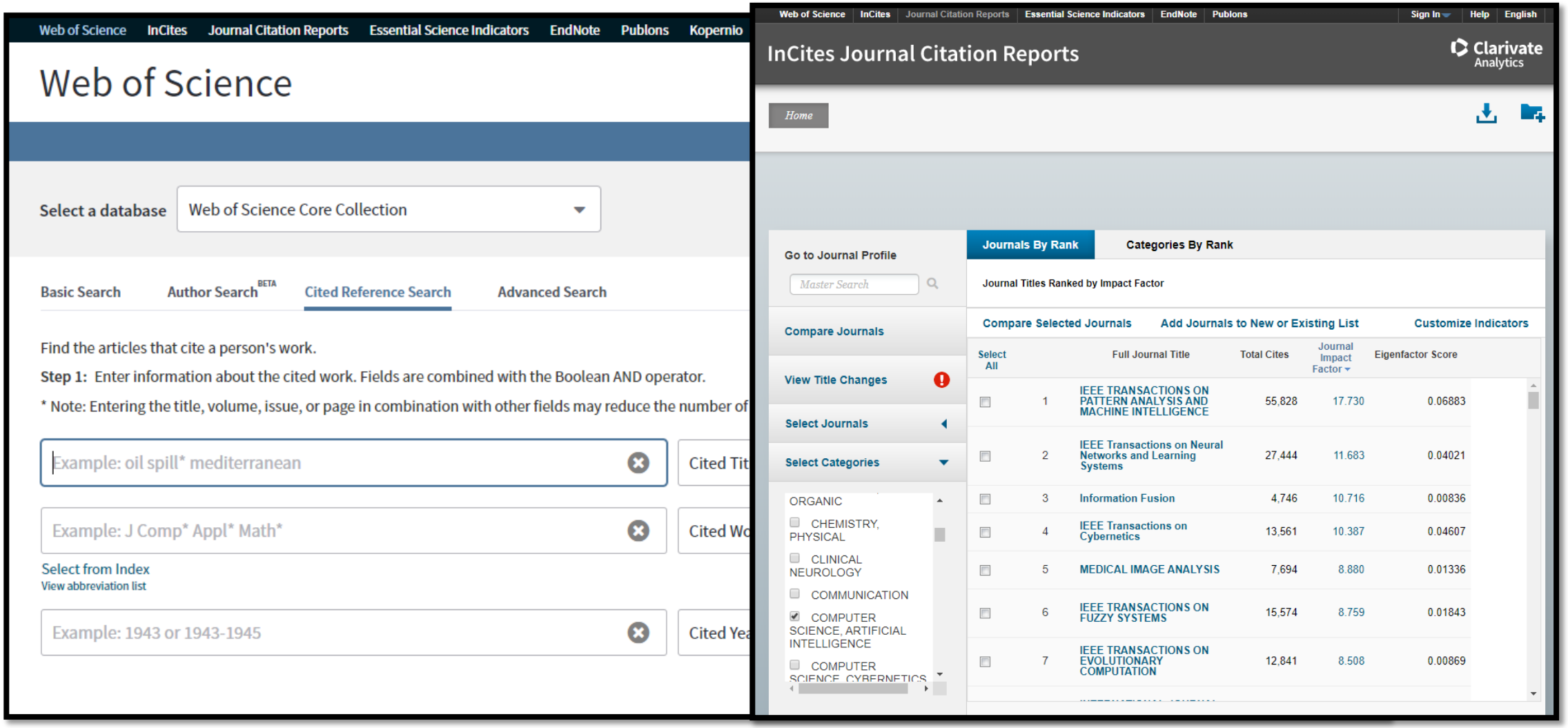
http://zotero.org

Tracking Research Impact

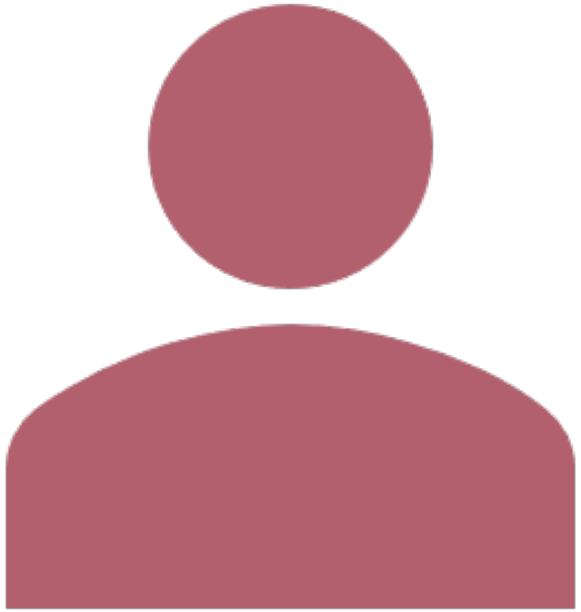
- There are metrics and indicators to help analyze research trends and impact
- Citation counts, h-index, journal impact factor, altmetrics…
- The 2 main citation databases: Web of Science, Scopus
- Bibliometrics and research impact guide

Source:

Tracking Research Impact



Getting help



- Ask us desk
- Live chat service
- Contact your subject librarian

Engineering Subject Guide: https://www.concordia.ca/library/guides/encs