Introduction to Web of Science & Scopus

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Introduction to
Web of Science & Scopus

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November 2021

Which institution are you from?

A. Czech Technical University in Prague

B. University of Chemistry and Technology Prague

C. Czech University of Life Sciences Prague

D. Charles University

E. Other

Which citation database do you use the most often, if any?

A. Web of Science

B. Scopus

C. Google Scholar

D. Other (+ comment in chat)

E. None, that's why I'm here

Outline

1. Introduction to citation databases
2. Searching by topic
3. Searching for journals and journal metrics
4. Searching for authors and author metrics
5. Summary
6. Getting assistance

1. Introduction to citation databases

Evaluating research impact

*"Hopefully, your PhD research will make an **impact** by advancing knowledge in your field or by contributing to real-world applications."*[1]

The results of research are usually presented in form of scientific articles, proceedings, and books.

One of the (limited) ways of measuring the impact of a researcher in their field is the **number of citations** for papers published in **quality, peer-reviewed scientific** journals.

1) PhD On Track. (n.d.). Citation impact. https://www.phdontrack.net/share-and-publish/citation-impact/

Scientific communication & quality control

- Submitted papers are evaluated via a **rigorous [peer review process](#)** in quality scientific journals.

- Citation databases include resources (usually journals) in them according to selection criteria ([Scopus criteria](#), [Web of Science criteria](#)).

- Citation information is then analyzed within citation databases and **citation metrics** for journals, articles, and authors are calculated.

- **Web of Science** and **Scopus** citation databases are currently used in the Czech academic performance evaluation system**.**

Citation metrics are important if you choose a career in academia, and they are also used to evaluate scientific institutions around the world.

How can citation databases help you?

- In searching for reliable, peer-reviewed resources (better chances of avoiding low-quality/[predatory journals](#))

- In checking journal metrics to make better decisions about where to publish (to build your academic reputation and get RIV points)

- In looking up author metrics (h-index counts) for proposals or one's own CV

- In identifying new trends and seminal articles in your field

Web of Science (WoS) and Scopus

- **Peer-reviewed scholarly literature:**
  - Journals, books, and conference proceedings
- **Content policy** and **selection criteria**:
  - **Evaluation of included literature** by standards, subject/content relevance, and impact
- **Citation information**:
  - Others who cite a work (times cited)
  - Views (usage count) and analysis
- Other citation metrics
- **No full texts, but links to full texts and abstracts**
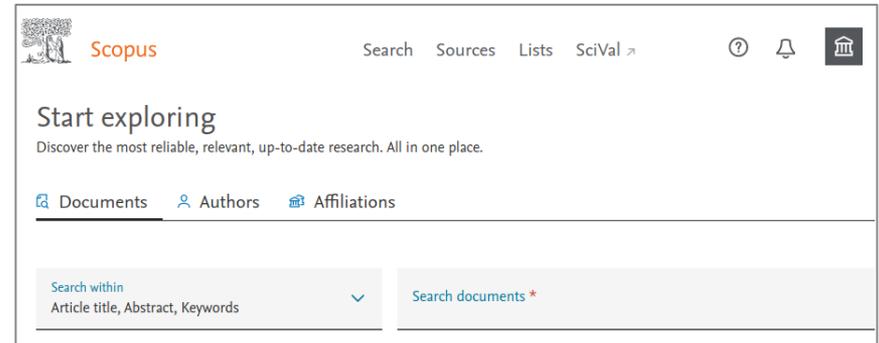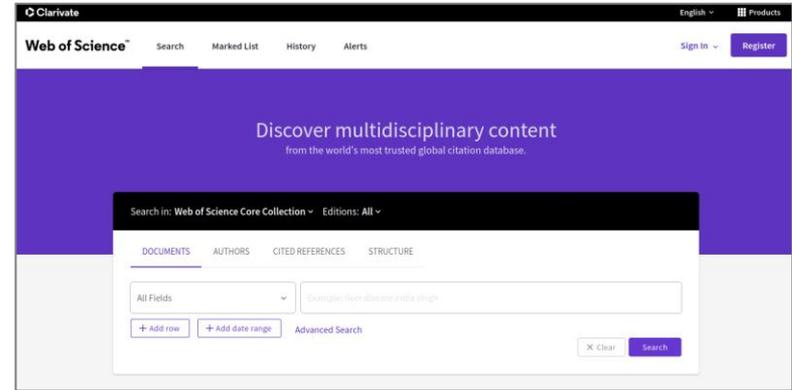
How do you use citation databases? (if you use them)

A. Searching for peer-reviewed resources

B. Checking journal metrics (impact factor, citation scores)

C. Getting author metrics (h-index counts)

D. Other (+ comment in chat)

E. I don't, that's why I'm here

Comparison

| Features	WoS	Scopus
Developer/Producer	Clarivate Analytics	Elsevier
Coverage	1900 to present	1970 to present
Author identifier	Assigned automatically and edited manually via Publons	Auto-generated Scopus Author ID
Alerts service	Yes	Yes
Export citations	Yes	Yes
Citation analysis	Yes	Yes
Main journal metrics	Journal Impact Factor	CiteScore
Author metrics	h-index	h-index

Limitations/risks

- Metrics: learning about the different kinds of metrics may be confusing at first

- Delay in indexing (up to 6 months after publication)

- No full texts, but links to full texts (abstracts are available)

- Beware of potential biases
  - Uncritical acceptance of the assumptions, reasoning, conclusions of indexed papers
  - An overly negative attitude ("the paper is not good") for papers with low numbers of citations or in journals not in WOS or Scopus

- Don't rely only on citation databases. Not enough for a comprehensive literature search; quality research can be found in other places as well

Access to WoS & Scopus

- Subscribed to via NTK and university libraries
- You have direct access within your university network (in your office or classrooms)
- For **off-campus access,** check with your library:
  - NTK, CTU, UCT & IOCB, Charles Univ., CZU

- The list of journals (including citation metrics) is open to all
  - Scopus sources
  - Web of Science Master Journal List (for access to impact factor information, registration is required)

Access via:

National Library of Technology

CTU Central Library

Charles University Resources

2. Searching by topic in citation databases

Finding scholarly literature

CASE STUDY #1: I need to find high quality sources for my dissertation about technologies for **carbon capture and utilization**

Database searching tips

| Topic | ⌄ | "carbon capture storage" | ✕ |

| ⊖ | Or ⌄ | Topic | ⌄ | "carbon capture utilisation" | ✕ |

AND — architecture / construction — Includes results with **all** of the terms listed. Narrows search

OR — architecture / construction — Includes results with **any** of the terms listed. Broadens search

NOT — architecture / construction — Eliminates results including a specific term. Narrows search
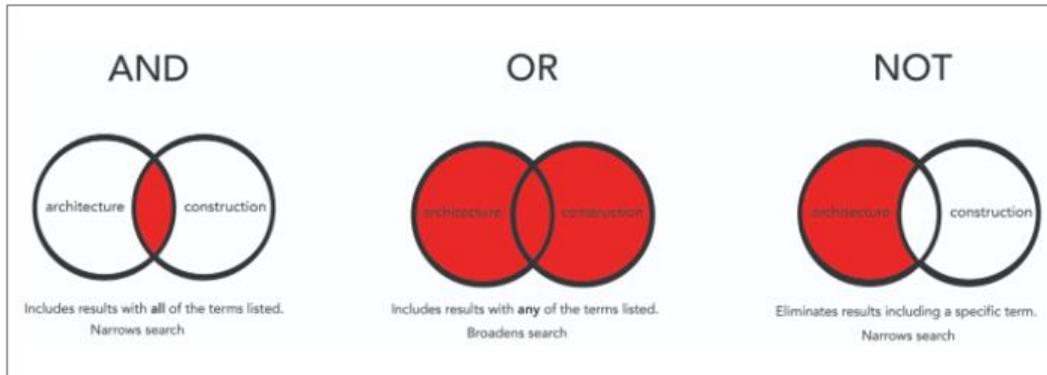
industr*
industry
industrial
industrialism
industrialization

sul*ur
sulfur
sulphur

See more database searching tips:

Integration with reference management tools

Web of Science
- Supports direct download of citations (and PDFs) to **EndNote**
- You can also save citations via the browser extension for your favorite reference management tools (e.g., Zotero or Mendeley) or you can export selected citations to an RIS file (that can be opened by other reference management tools)
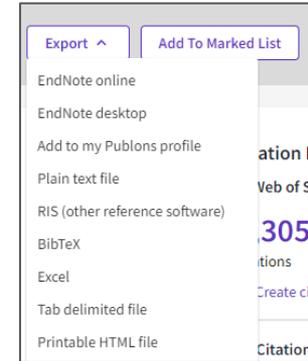
SCOPUS
- Supports direct download of citations (and PDFs) to **Mendeley** and **RefWork**
- You can also save citations via the browser extension for your favorite reference management tools (e.g., Zotero or EndNote) or you can export citations to an RIS file (that can be opened by other reference management tools)
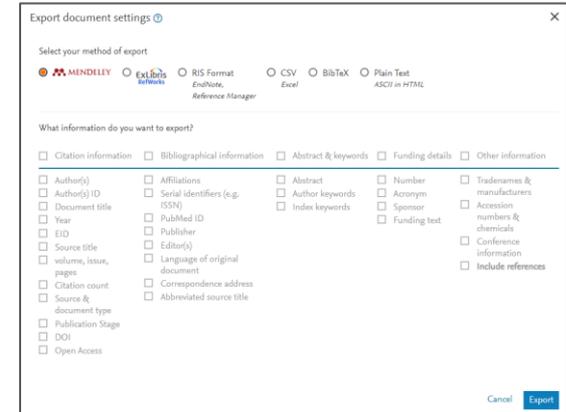
Personal accounts

Creating personal accounts enables you to:

- **Save** your search history and lists of documents
- **Create alerts** for each search

3. Searching for journals

What are journal metrics?

- Measurements of quality/impact of a journal

- They assist in quantifying the importance of a journal

Journal metrics

Web of Science's Journal Citation Reports:
- Journal Impact Factor

Scopus sources:
- CiteScore

Impact factor (WoS)

"The impact factor is a measure of the frequency with which the 'average article' in a journal has been cited in a particular year or period."

*"The impact factor of a journal is calculated by dividing the number of current year citations to the source items published in that journal during the **previous two years**."*[1]

$$IF_{2017} = \frac{Citations_{2016} + Citations_{2015}}{Publications_{2016} + Publications_{2015}} = \frac{32389 + 41701}{880 + 902} = 41.577$$

Image source: https://en.wikipedia.org/wiki/Impact_factor

1) Garfield E. (1994, June 20), The Impact Factor. Originally published in the *Current Contents*, Available also at: https://clarivate.com/webofsciencegroup/essays/impact-factor/

CiteScore (Scopus)

CiteScore 2020 methodology

CiteScore 2020 counts the citations received in 2017-2020 to articles, reviews, conference papers, book chapters and data papers published in 2017-2020, and divides this by the number of publications published in 2017-2020.

CiteScore (Scopus) vs. WoS impact factor
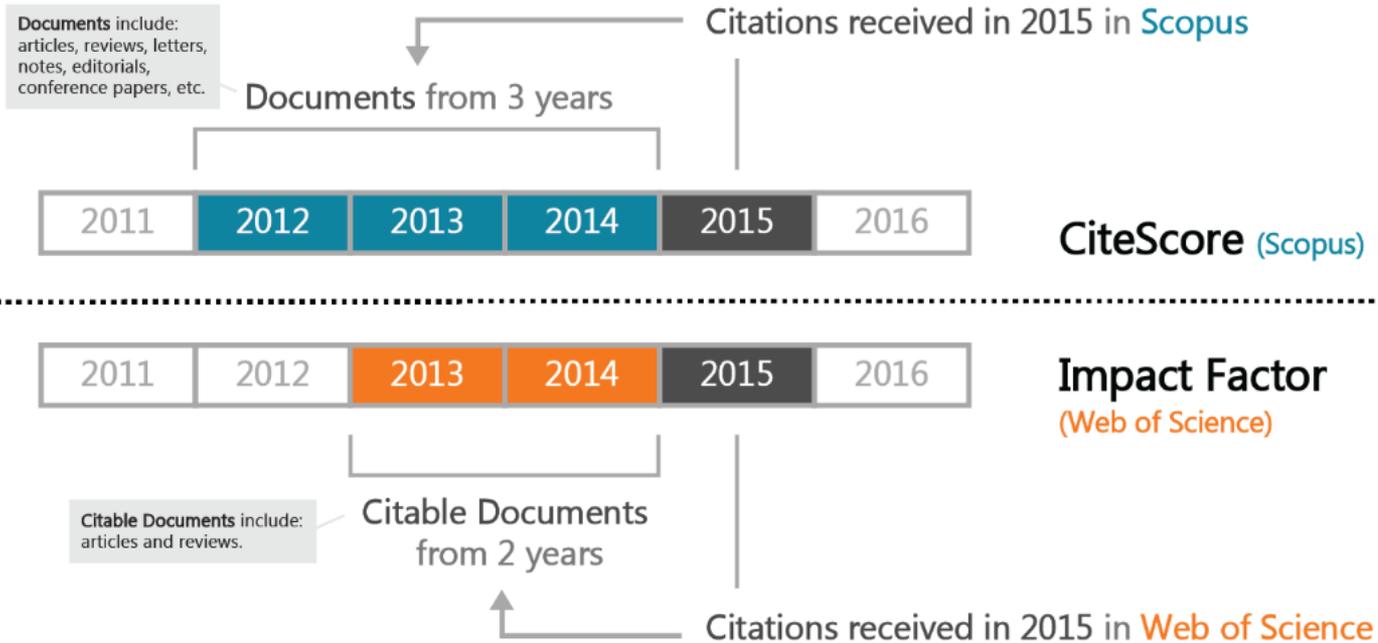
Checking impact factor/CiteScore

CASE STUDY #2: I need to check the quality and reliability of the **_Journal of Modern Power Systems and Clean Energy_**

- **Journal Citation Report** for WoS impact factor
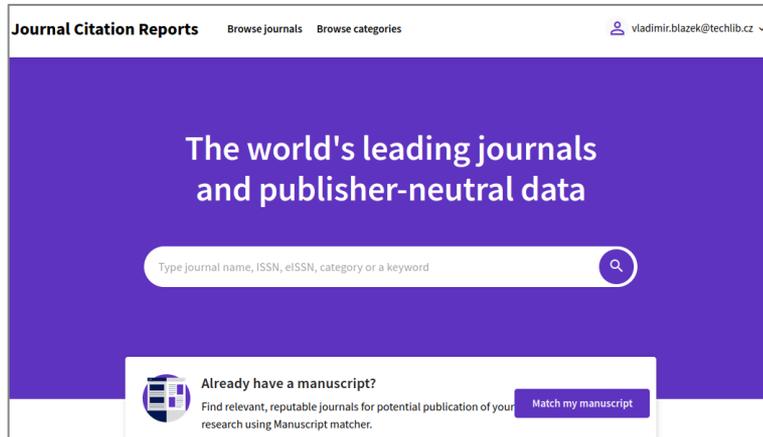
- **Source** for Scopus CiteScore

Journal Citation Reports — Browse journals — Browse categories — vladimir.blazek@techlib.cz

The world's leading journals and publisher-neutral data

Type journal name, ISSN, eISSN, category or a keyword

Already have a manuscript?
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Sources

Subject area — Enter subject area

International journal of energy|

JOURNAL NAME	ISSN/eISSN
INTERNATIONAL JOURNAL OF ENERGY RESEARCH	0363-907X / 1099-114X
International Journal of Energy Sector Management	1750-6220 / 1750-6239
International Journal of Energy Optimization and Engineering	2160-9500 / 2160-9543
International Journal of Energy and Environmental Engineering	2008-9163 / 2251-6832

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5.164

View calculation

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EISSN
1750-6239

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INT J ENERGY SECT MA

ISO ABBREVIATION
Int. J. Energy Sect. Manag.

Emerging journal

International Journal of Energy Optimization and Engineering

ISSN
2160-9500

EISSN
2160-9543

JCR ABBREVIATION
INT J ENERGY OPTIM E

ISO ABBREVIATION
Int. J. Energy Optim. Eng.

Emerging journal

International Journal of Energy and Environmental Engineering

ISSN
2008-9163

EISSN
2251-6832

JCR ABBREVIATION
INT J ENERGY ENVIR E

ISO ABBREVIATION
Int. J. Energy Environ. Eng.

Emerging journal

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CASE STUDY #3: I need to check the quality and reliability of the *International Journal of Energy Engineering*
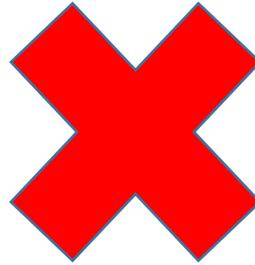
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29

International Journal of Energy **Engineering**
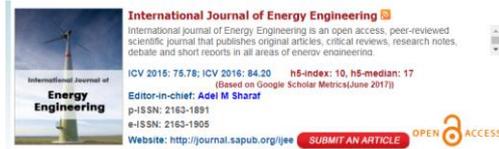
Link:
http://www.sapub.org/journal/aimsandscope.aspx?journalid=1005
Publisher: Scientific & Academic Publishing (SAP)

ISSN:	2163-1905
WoS JCR:	**NO**
Scopus Sources:	**NO**
Beall's archive:	**YES**

International Journal of Energy **Research**

Link:
https://onlinelibrary.wiley.com/journal/1099114x

Publisher: John Wiley & Sons Ltd.

ISSN:	1099-114X
WoS JCR:	**YES** (2017-IF 3.009)
Scopus Sources:	**YES** (2017-CS 2.72)
Beall's archive:	**NO**

Tracking a specific journal

- Be careful: one word or one letter can make a great difference
- Ulrichsweb: check journal details and ISSNs
- Beall's archive of potential predatory publishers and journals
  - Beware! The original list has not been updated since 2016
  - There are successors to Jeffrey Beall, but they prefer to remain anonymous

4. Searching for authors & *h*-index counts

Why use author identifiers?

- Names are sometimes confusing; there are different ways to write/transliterate them
- Names are not unique
- People can change their names

- Author identifiers give you the ability to reliably distinguish two authors with the same name or to track one author across multiple databases

Author identifiers

Features	ResearcherID (Publons)	Scopus Author Identifier	ORCID (Open Researcher & Contributor ID)
How to get author identifier?	Author identifier will be created automatically with your first publication in WoS. You can then claim the profile with Publons and manage it similarly to ORCID.	Author identifier will be generated automatically if you have at least one publication in Scopus. You can edit author profiles (Edit profile tool) or use Author Feedback Wizard or Support. Merging profiles is possible on the results page.	Create your profile at orcid.org. You can join all your author IDs in ORCID.
How to link your publication with your ID?	Manage via Publons: You can import your citations from Web of Science, ORCID, via DOI or add them manually.	Imported automatically from Scopus, add manually in Edit profile.	You can import from many platforms (WoS, Scopus, arXiv) or add manually.
Supporting platforms	Web of Science	Scopus	Open non-profit initiative

- Link all papers published under different variants of your name
- Distinguish papers written by other authors with the same name
- Create your author profiles

h-index

"The h-index is based on a list of publications ranked in descending order by the Times Cited. The value of h is equal to the number of papers (N) in the list that have N or more citations. (...)

A researcher (or a set of papers) has an h-index of N if he/she has published N papers that have N or more citations each. The h-index is based on Times Cited data from the database. It will not include citations from non-indexed resources." [1]

Paper	Number of citations
Paper 1	101
Paper 2	86
Paper 3	77
Paper 4	56
Paper 5	16
Paper 6	12
Paper 7	8
Paper 8	4
Paper 9	4
Paper 10	1

h = 7

Image source: https://toptipbio.com/h-index-how-to-calculate-yours/

1) Clarivate Analytics (2019, February 5), *Web of Science: h-index information*. Available at: https://support.clarivate.com/ScientificandAcademicResearch/s/article/Web-of-Science-h-index-information?language=en_US

h-index: potential traps

- The source or records for analysis:
  - Web of Science **vs.** Scopus **vs.** Google Scholar
- The number and accuracy of records in a dataset:
  - Basic search **vs.** ORCID search **vs.** author profile
- Exclude self-citations of selected author **vs.** exclude self-citations of all co-authors

Tracking an author in WoS

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https://usermap.cvut.cz/profile/577dec31-a2d6-4eda-a02e-c9b1c370447b?lang=en

CASE STUDY #4: I want to find papers by **Prof. Tomáš Polcar** (and check his h-index)

5. Summary

Summary of advantages

- **Contain high-quality, peer-reviewed articles**
- You can use the number of citations to identify seminal articles
- Searching for authors and evaluating them
- Searching for journals and their metrics
- Creating alerts to track new trends

Keep in mind

- **Access to full texts** can be problematic

- To make your research more comprehensive, also **use other search tools** (e.g., Google Scholar, an academic library discovery system)

- **Delay** in indexing sometimes (up to 6 months after publication for some journals)

Image source: By sci-hub.tw/misc/img/raven_1.png Derivative of the "Ominous" raven screenprint by Kate McLelland (2011), Fair use, https://en.wikipedia.org/w/index.php?curid=48743375

6. Getting assistance

STEMskiller

https://www.techlib.cz/en/84109-stemskiller

SKILL SET MAP FOR MENTORS OF EARLY CAREER RESEARCHERS

Definitions, annotations, and links to high-quality open educational resources in English useful in guiding students towards excellence. [Read more...]

Competencies are grouped into four areas, with subsections:

1. Research and scholarship
2. Learning, teaching, and supervising
3. Career management
4. Engagement, involvement, collaboration, transdisciplinarity, and inquisitiveness

You can also browse topics A-Z

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https://www.techlib.cz/en/83534-bibliometric-services

https://www.techlib.cz/en/83401-scheduled-consultations

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Thank you

Questions?