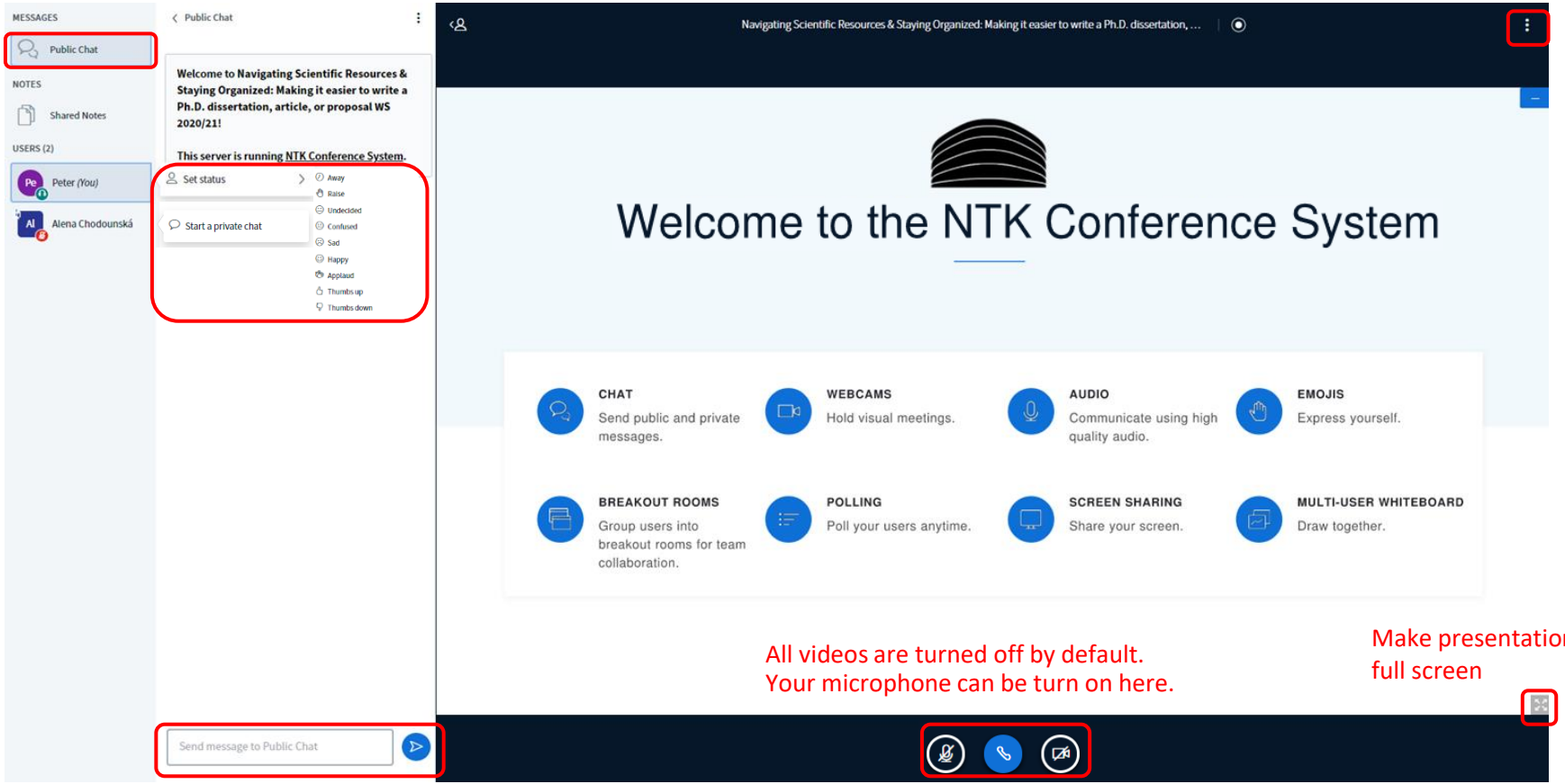
# Introduction to Web of Science & Scopus

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# Introduction to Web of Science & Scopus

Alena Chodounská, Vladimír Blažek
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.

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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**.**

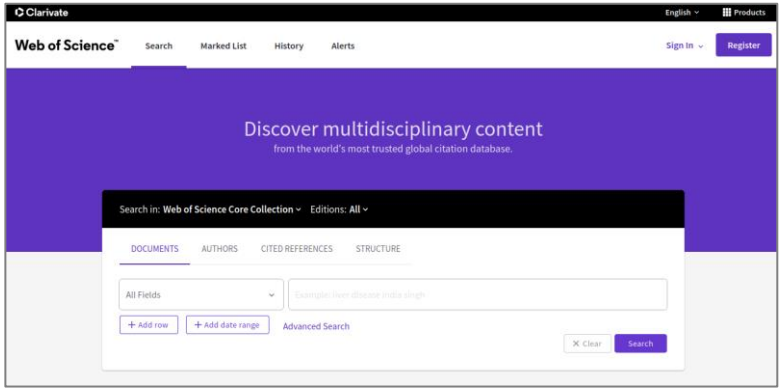
Citation metrics are important if you choose a career in academia, and they are also used to evaluate scientific institutions around the world.

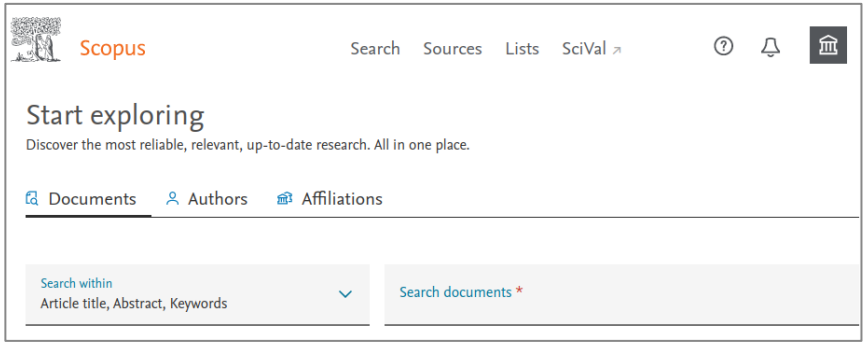
# How can citation databases help you?

- 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

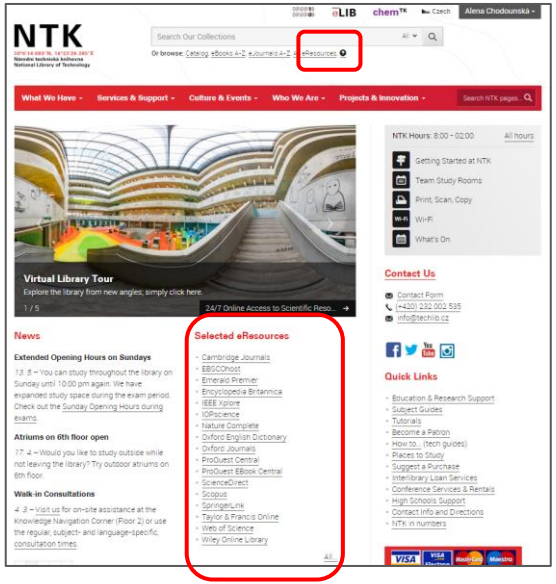
- Metrics: learning about the different kinds of metrics may be confusing at first
- Delay in indexing (up to 6 months after publication)
- No full texts, but links to full texts (abstracts are available)
- Beware of potential biases
  - Uncritical acceptance of the assumptions, reasoning, conclusions 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

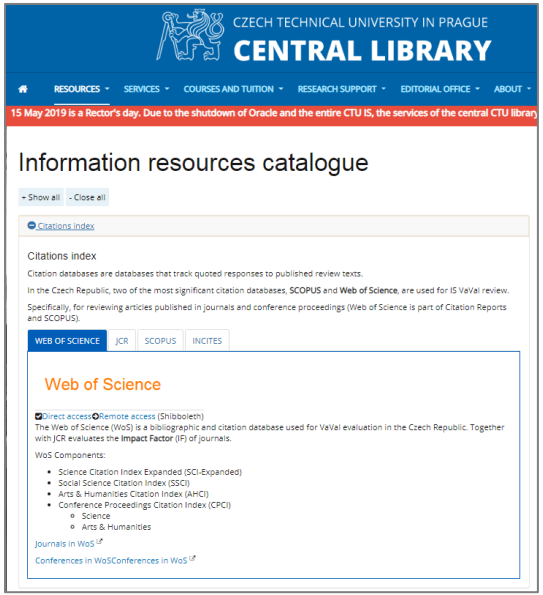
# Access to WoS & Scopus

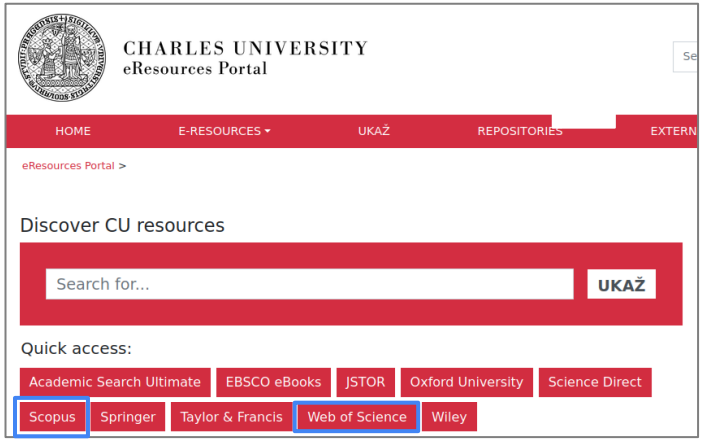
- Subscribed to via NTK and university libraries
- You have direct access within your university network (in your office or classrooms)
- For **off-campus access,** check with your library:
  - NTK, CTU, UCT & IOCB, Charles Univ., CZU

- 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]

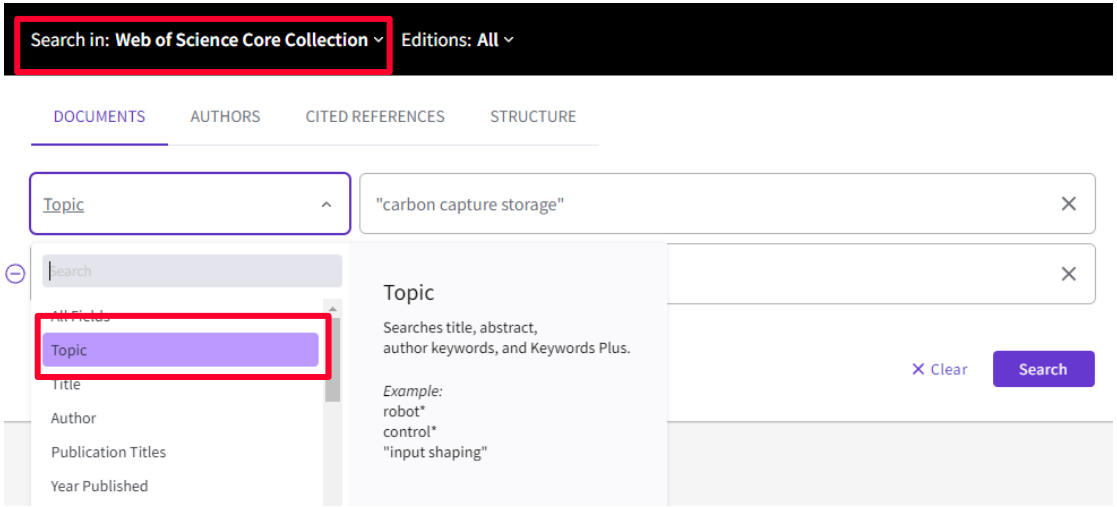
[CTU Central Library]

[Charles University Resources]

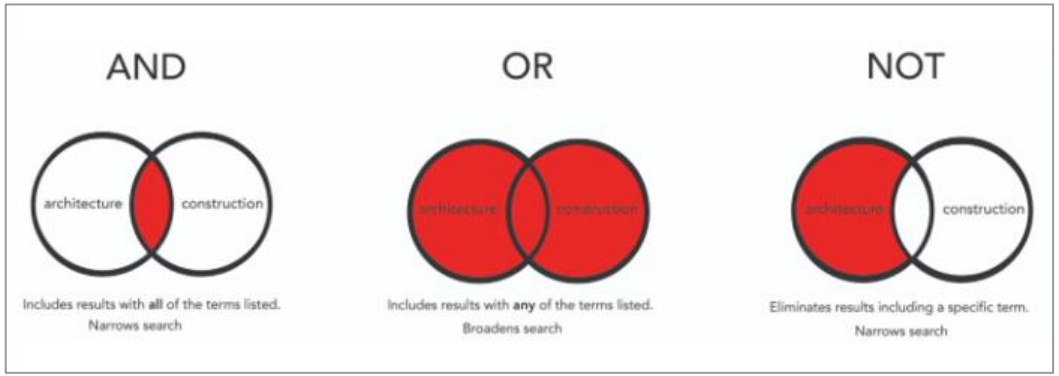
# 2. Searching by topic in citation databases

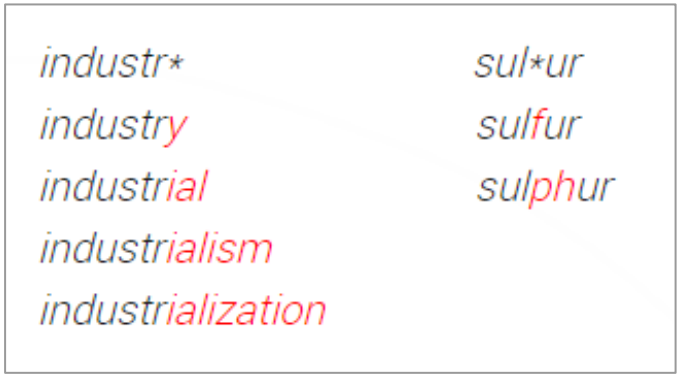
# Finding scholarly literature

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



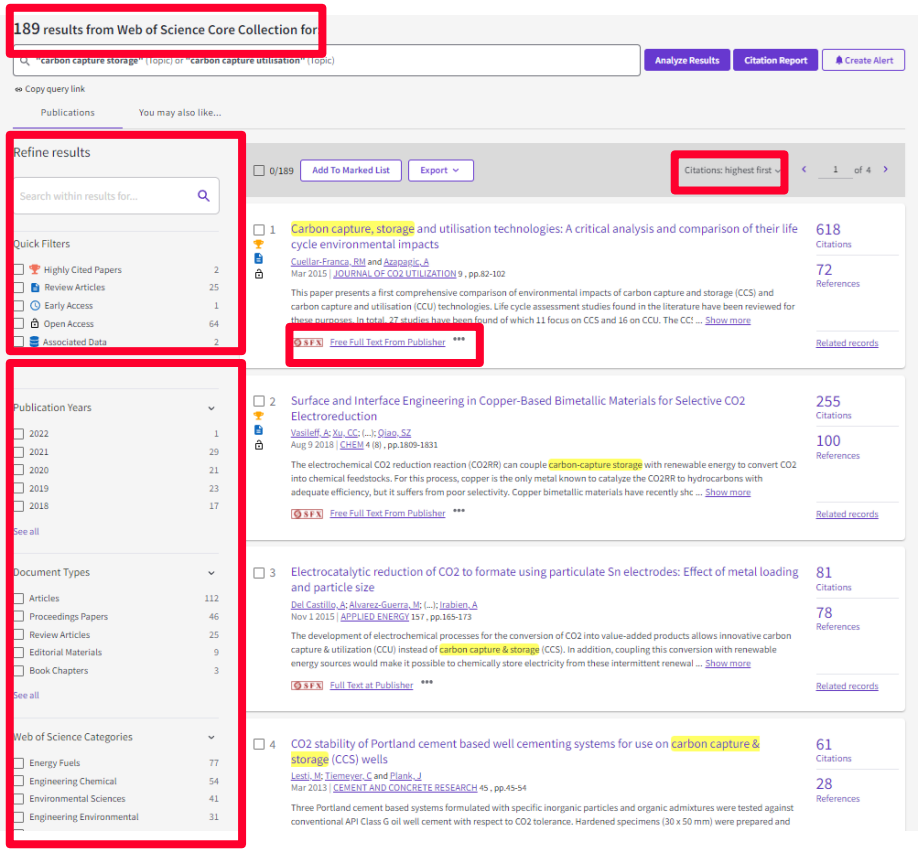
# Database searching tips

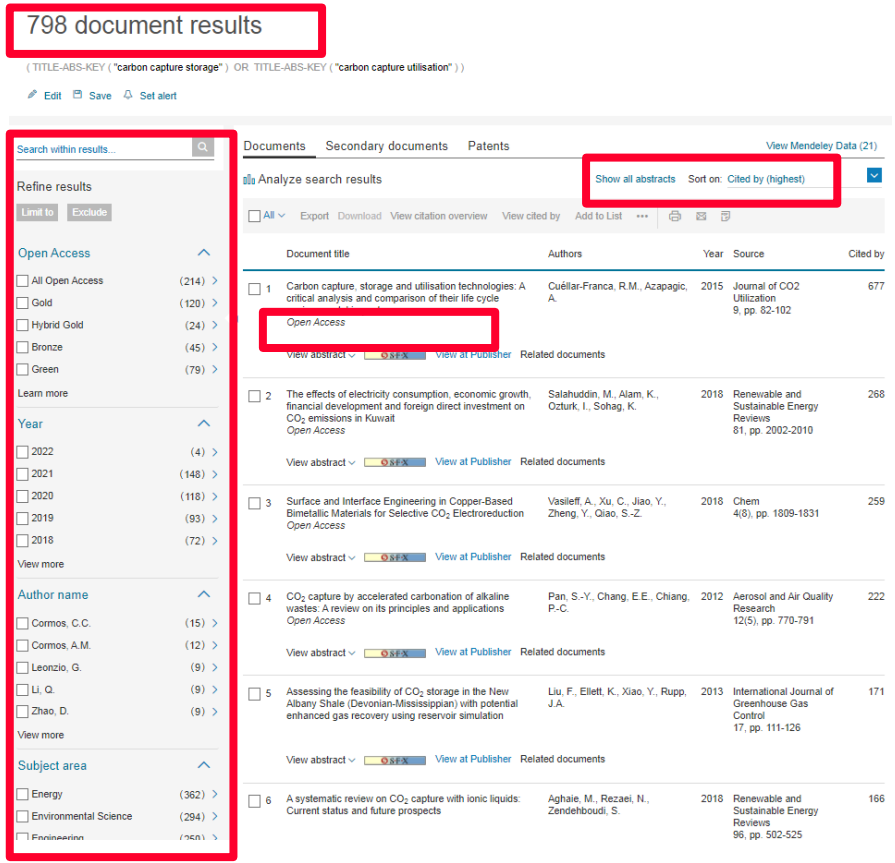




See more database searching tips: https://libguides.mit.edu/c.php?g=175963&p=1158594

# Managing results




Web of Science




Scopus

# Getting full text

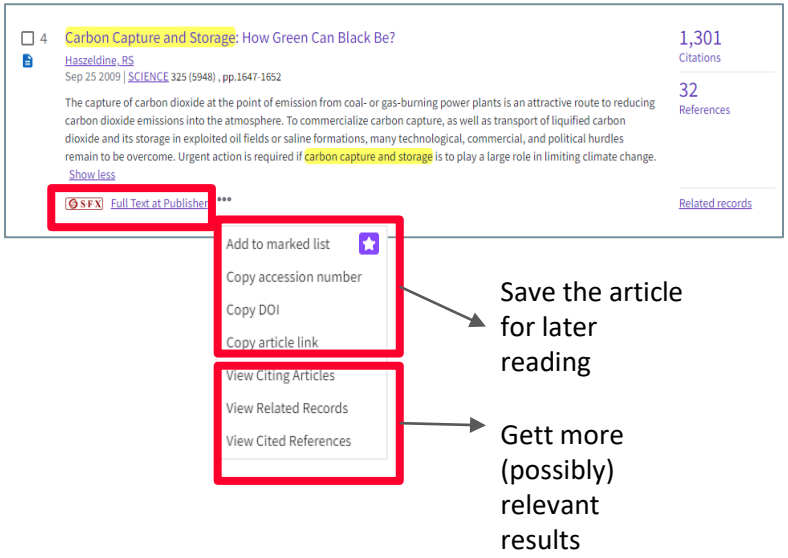
| Web of Science | Scopus |
|---|---|
| **S-F-X**<br>● Redirect link to resources subscribed to by your library.<br>● You can be asked to choose your institution with NTK access (NTK, UCT Prague, or IOCB). See the picture below. | **S-F-X**<br>● Redirect link to resources subscribed to by your library.<br>● You can be asked to choose your institution with NTK access (NTK, UCT Prague, IOCB). See the picture. |
| **Free Full Text From Publisher**<br>● Direct “publisher link” to open access resources. (Search the article title in Google Scholar if the link is broken) | **View at Publisher**<br>● Direct “publisher link” to the article published in both open access and subscription resources. Search for the title of the article in Google Scholar or contact your library for assistance. |
| **Full Text at Publisher**<br>● Direct “publisher link” to the article. It will work just for articles subscribed to by your library. (Use library document delivery services if the link is broken) | |

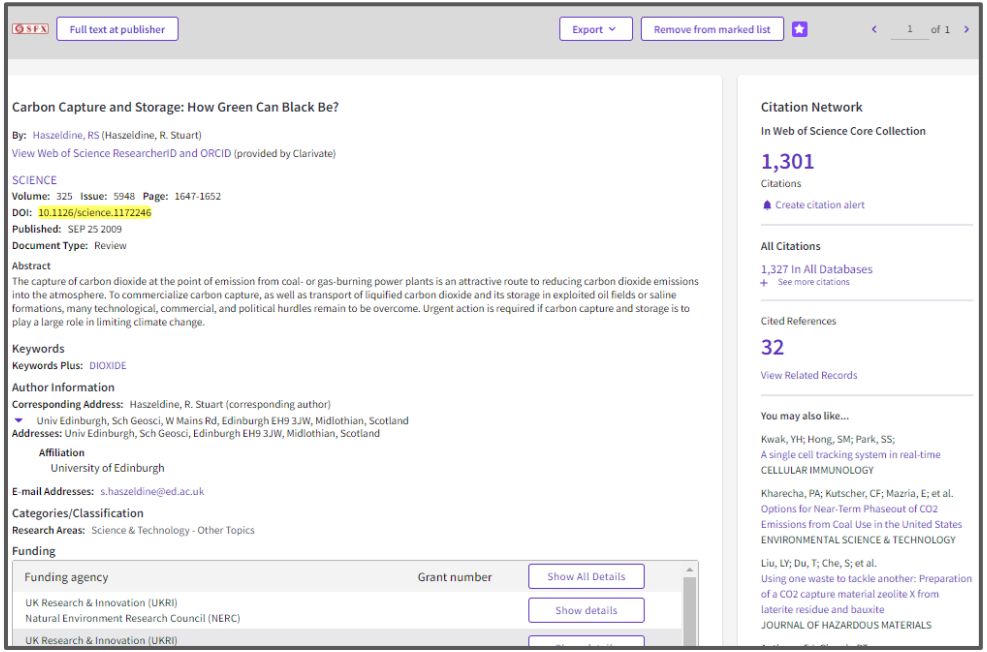

1. Choose your institution

2. Follow the link

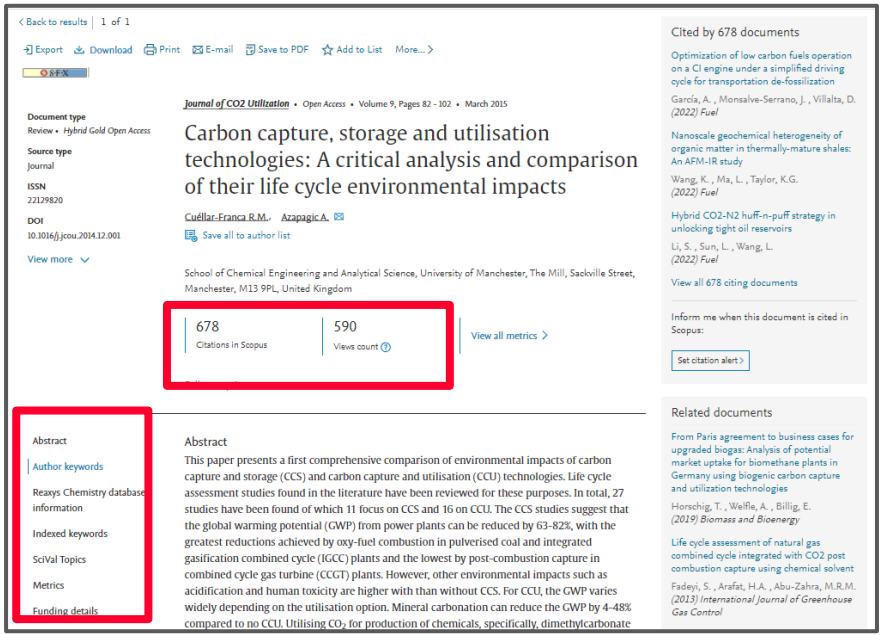
Be aware of possible access embargoes

# Article details (WoS)



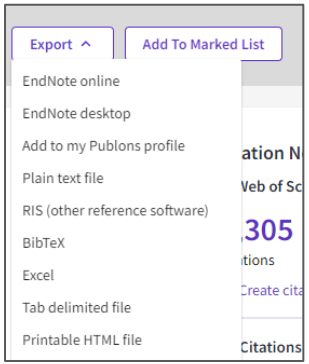
# Article details (Scopus)

# Integration with reference management tools

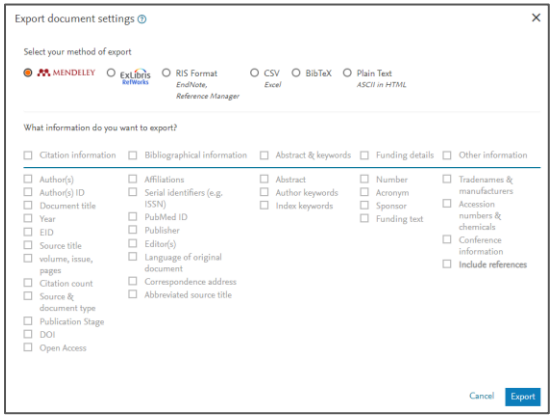
**Web of Science**

- 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)

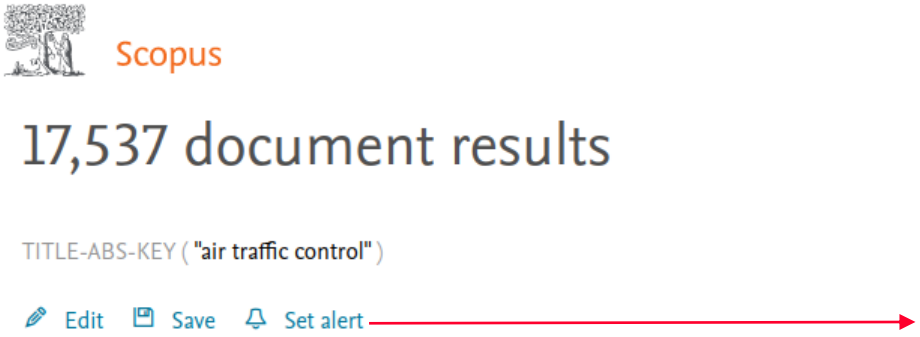


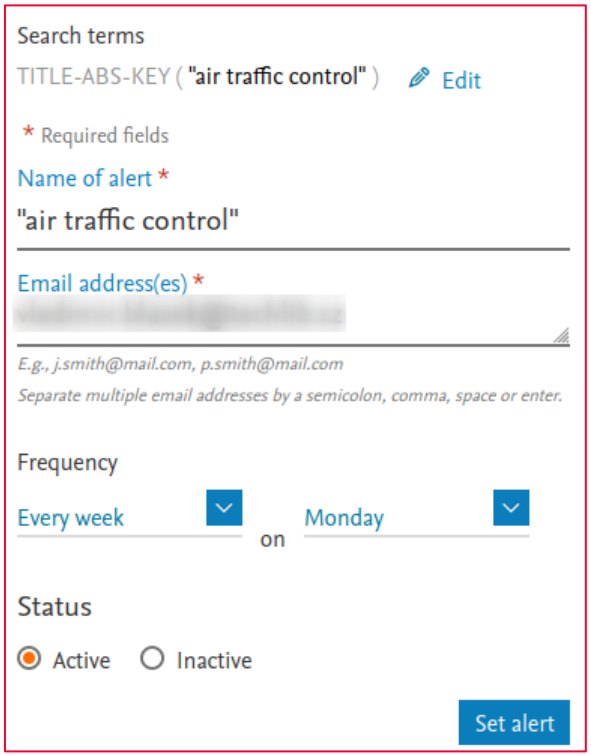
# Personal accounts

Creating personal accounts enables you to:

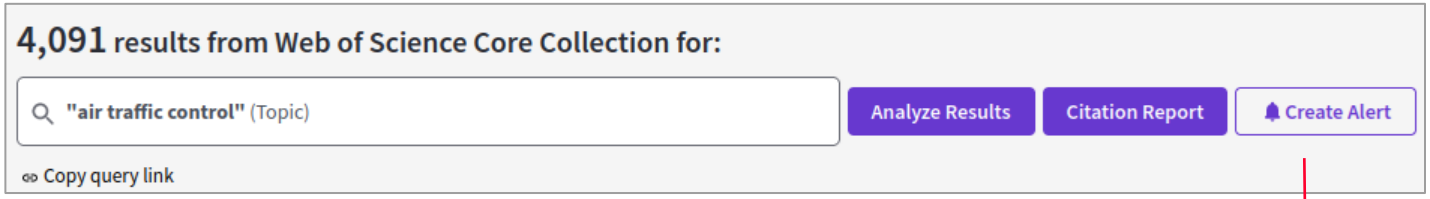
- **Save** your search history and lists of documents
- **Create alerts** for each search

# Setting search alerts: Scopus

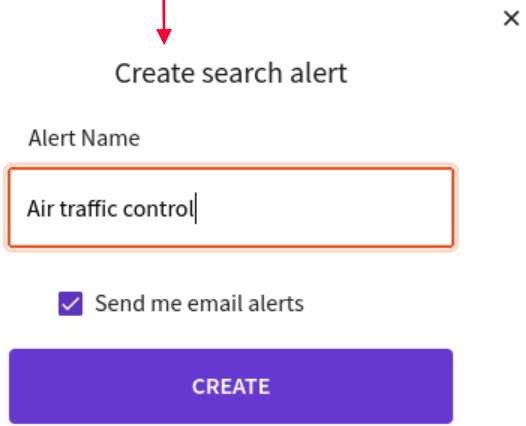


# Setting search alerts: WoS




- You can create alerts for any 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]

$$\mathrm{IF}_{2017} = \frac{\mathrm{Citations}_{2016} + \mathrm{Citations}_{2015}}{\mathrm{Publications}_{2016} + \mathrm{Publications}_{2015}} = \frac{32389 + 41701}{880 + 902} = 41.577$$

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.

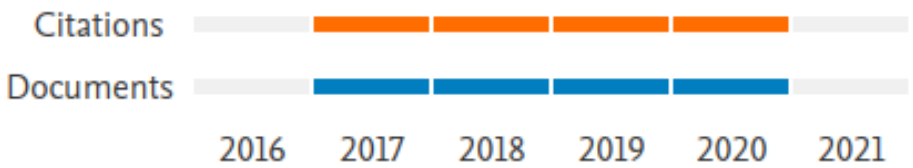



Image source: https://www.scopus.com/sources.uri?zone=TopNavBar&origin=searchbasic

# CiteScore (Scopus) vs. WoS impact factor

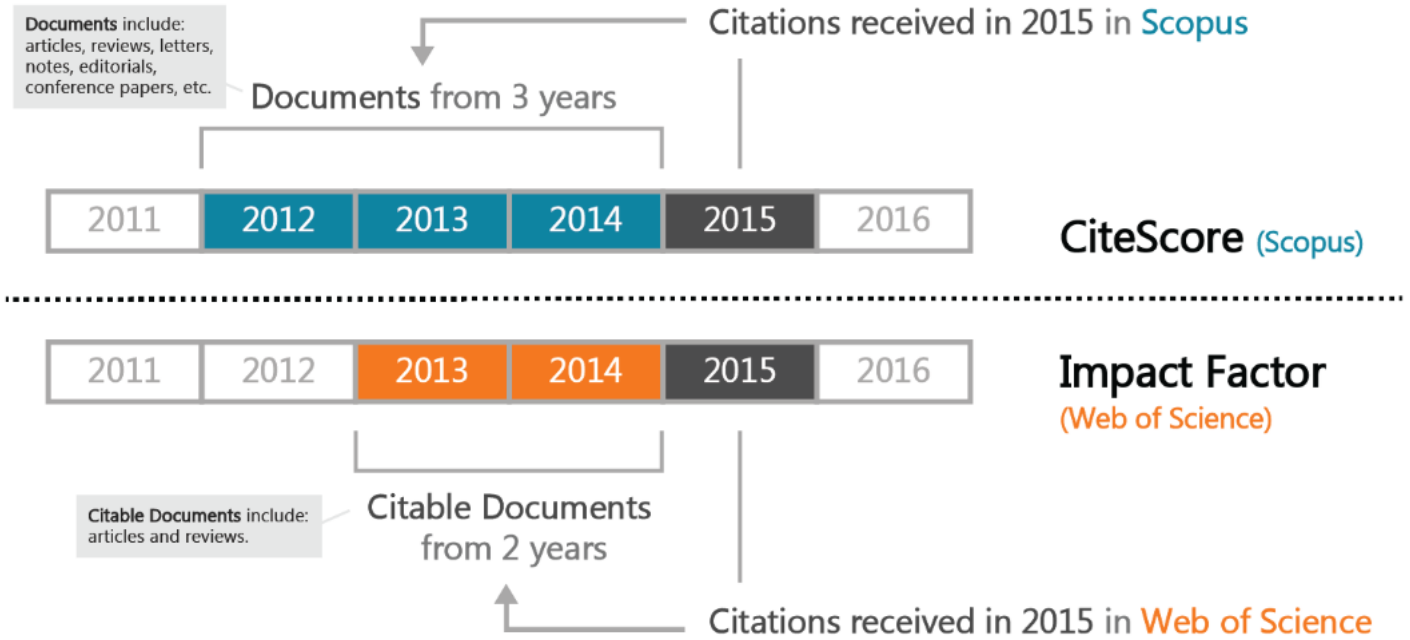
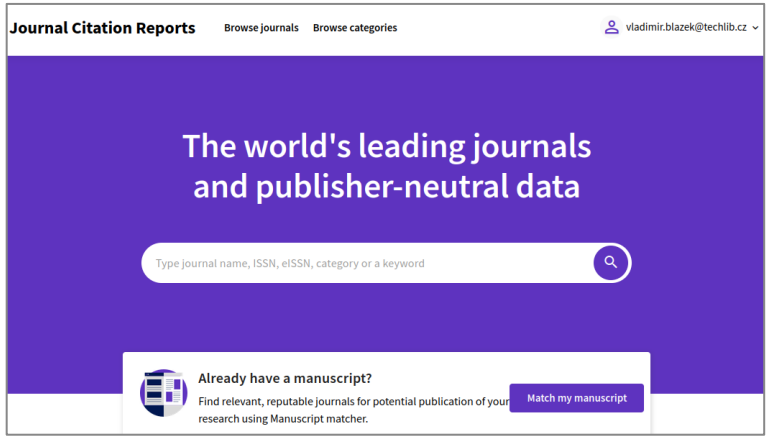



Image source: https://libguides.fau.edu/scholarlycommunication/impact

# 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***

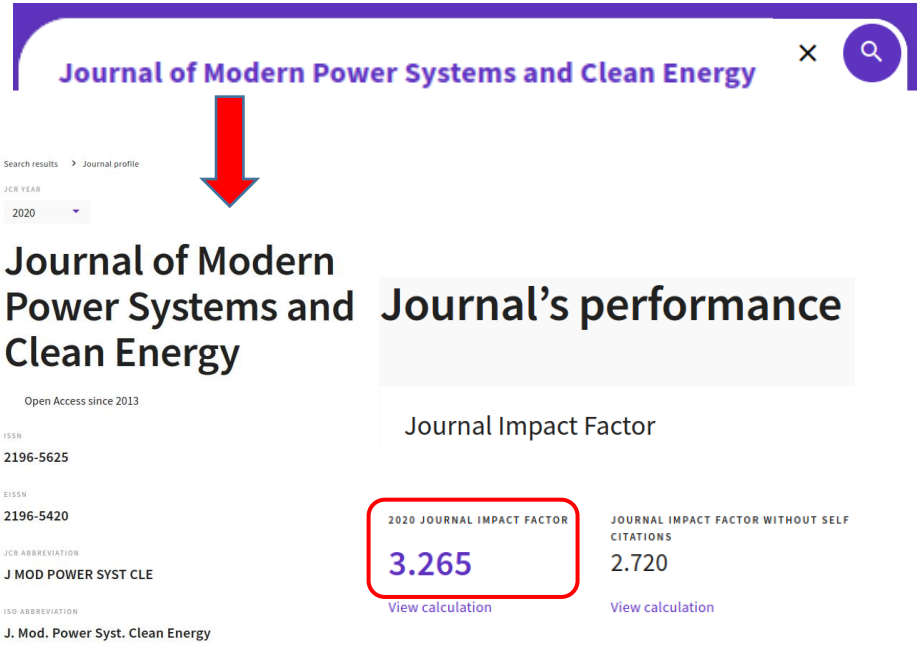
- **Journal Citation Report** for WoS impact factor
- **Source** for Scopus CiteScore



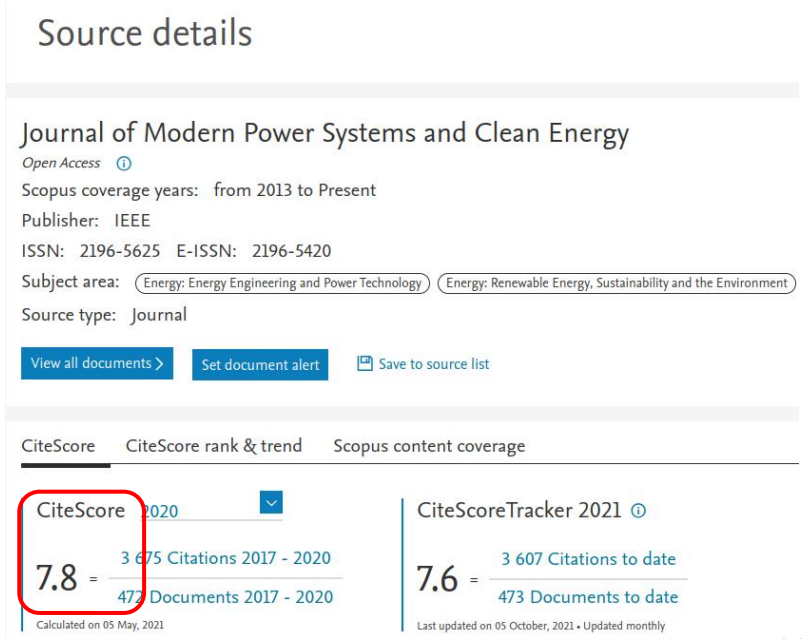

# Checking impact factor/CiteScore

***Journal of Modern Power Systems and Clean Energy***

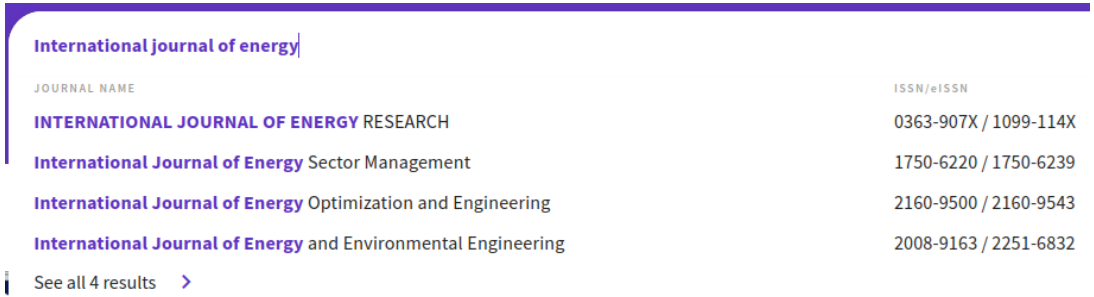
Web of Science™




Scopus



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

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View calculation

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Emerging journal

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Emerging journal

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EISSN
2251-6832

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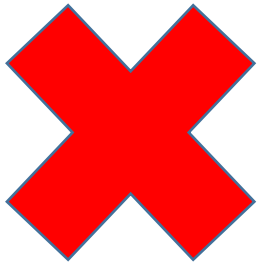
ISO ABBREVIATION
Int. J. Energy Environ. Eng.

Emerging journal

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



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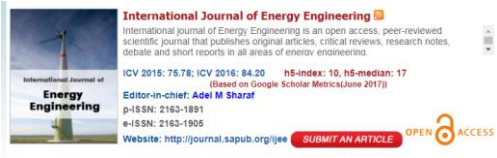



**Link**: http://www.sapub.org/journal/aimsandscope.aspx?journalid=1005
**Publisher**: Scientific & Academic Publishing (SAP)
**ISSN**: 2163-1905
**WoS** JCR: **NO**
**Scopus** Sources: **NO**
**Beall's** archive: **YES**

## 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 | h = 7 |
| 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 | |

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

## PROF. ING. TOMÁŠ POLCAR, PH.D.

Full Professors

**E-mail:**
polcatom@fel.cvut.cz

**Phone:**
+420224357598

**Room:**
Praha, Jugoslávských partyzánů , B-162
Praha, Resslova 9, E-s134

**Oddělení:**
Advanced Materials Group

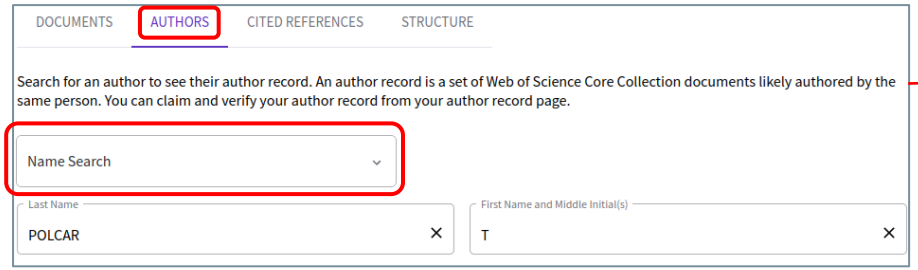
**ORCID:**
http://orcid.org/0000-0002-0863-6287

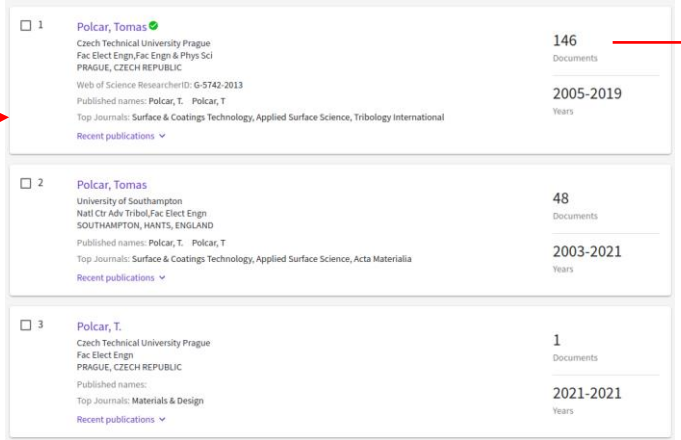
https://usermap.cvut.cz/profile/577dec31-a2d6-4eda-a02e-c9b1c370447b?lang=en

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

# Author search: WoS


**195 results**
Including all articles authored by people with the name “Polcar T“, regardless of field

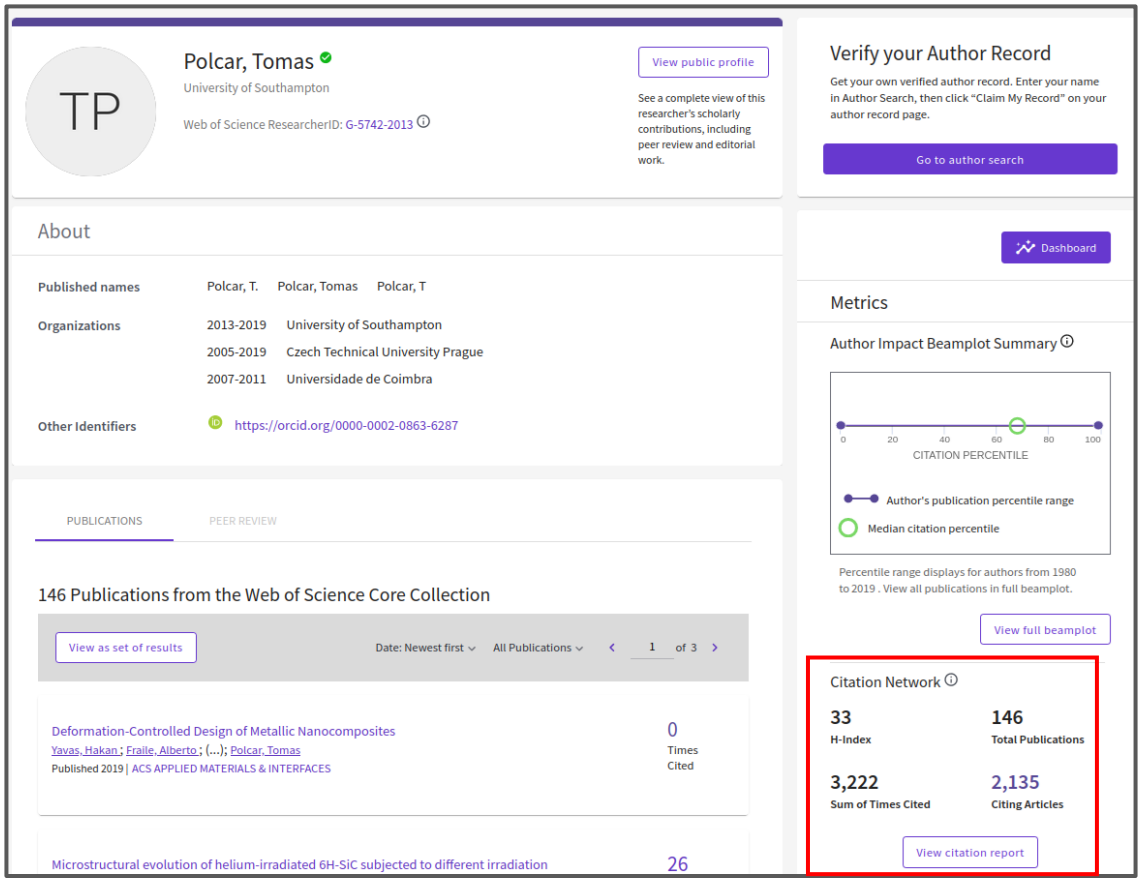



**146 records**
*Author profile* based on analysis of records (name, field, affiliation, and so on)

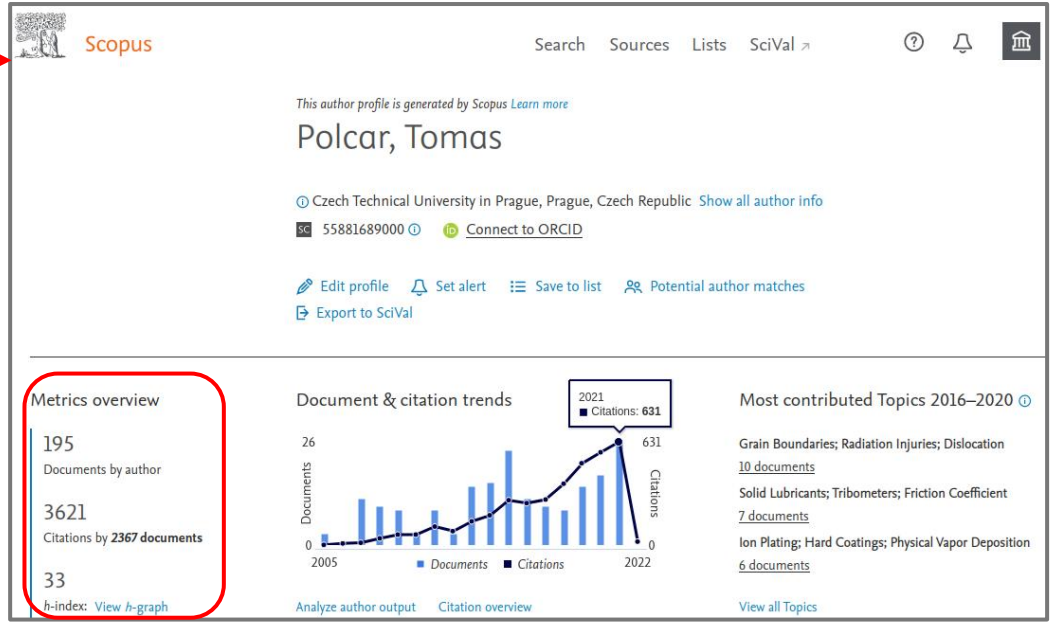

**146 records**
Including all articles connected to Prof. Polcar via his ResearcherID

# Author search: WoS



# Author search: Scopus





# Google Scholar metrics

## Milan Jirásek

FOLLOW

Czech Technical University in Prague
Verified email at fsv.cvut.cz - Homepage

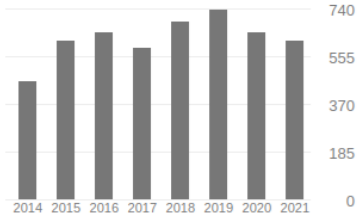
Fracture Failure Plasticity Damage Creep

GET MY OWN PROFILE

| TITLE | CITED BY | YEAR |
|---|---|---|
| Nonlocal integral formulations of plasticity and damage: survey of progress<br>ZP Bažant, M Jirásek<br>Journal of engineering mechanics 128 (11), 1119-1149 | 1327 | 2002 |
| Inelastic Analysis of Structures<br>M Jirasek, ZP Bazant<br>Wiley | 1004 | 2002 |
| Comparative study on finite elements with embedded discontinuities<br>M Jirásek<br>Computer methods in applied mechanics and engineering 188 (1-3), 307-330 | 565 | 2000 |
| Damage-plastic model for concrete failure<br>P Grassl, M Jirásek<br>International journal of solids and structures 43 (22-23), 7166-7196 | 538 | 2006 |
| Nonlocal models for damage and fracture: comparison of approaches<br>M Jirasek<br>International Journal of Solids and Structures 35 (31-32), 4133-4145 | 451 | 1998 |
| Comparison of integral-type nonlocal plasticity models for strain-softening materials<br>M Jirásek, S Rolshoven<br>International journal of engineering science 41 (13-14), 1553-1602 | 270 | 2003 |
| Meso-scale approach to modelling the fracture process zone of concrete subjected to uniaxial tension | 239 | 2010 |

Cited by VIEW ALL

| | All | Since 2016 |
|---|---|---|
| Citations | 9257 | 3934 |
| h-index | 43 | 31 |
| i10-index | 80 | 56 |




Public access VIEW ALL

2 articles 4 articles

not available available

Based on funding mandates

# 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

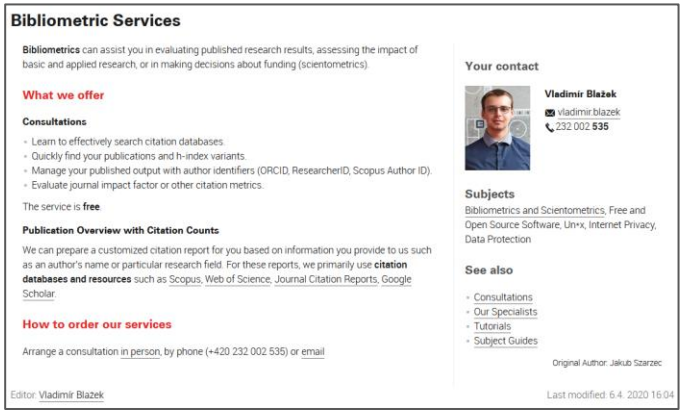
Contribute to our effort:

- Provide peer review for annotations
- Propose high-quality open resources in English

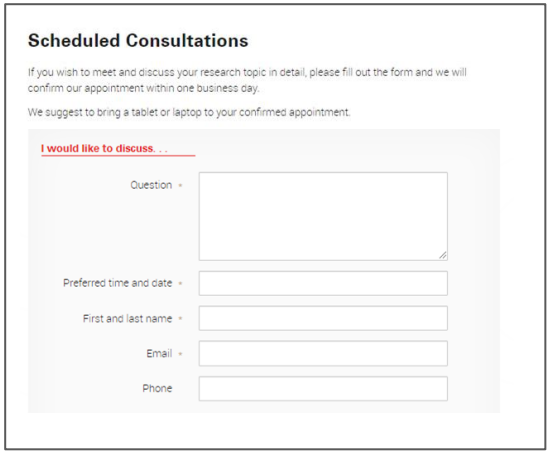
# Our team is ready to help you

- Finding and working with scholarly literature
- Learning more about scholarly communications
- Getting full texts of hard-to-access papers
- Informal peer discussion about academic careers and life as a doctoral student, with other doctoral students

- www.techlib.cz
- info@techlib.cz




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




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

# Contacts


## Alena Chodounská

alena.chodounska@techlib.cz

tel. + 420 773 850 851

## Vladimír Blažek

vladimir.blazek@techlib.cz

tel. +420 775 883 511


# Thank you

## Questions?