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National Centre
for Information Support of Research,
Development, and Innovation

Searching and Evaluating in Web of Science & Scopus

Nadezda Firsova

18 March 2026

The project National Centre for Information Support of Research, Development and Innovation with the identification code MS2101 is implemented with the support of the Ministry of Education, Youth and Sports.

Learning Objectives

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Learn how to use Web of Science/Scopus effectively

- ❑ to search for and evaluate scholarly sources,
- ❑ to understand the citation metrics,
- ❑ to manage your own researcher profile and check out other researchers.

Nadezda Firsova

- Ing. Economics and Management, CZU Prague
- PhD Economics and Management, CZU Prague
- NTK Information Specialist
- Library Guides:
  - Author Identifiers and Profiles
  - Economics and Management

Bibliographic & Citation Databases

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- **Bibliographic databases** as secondary sources are indexing, analyzing, and summarizing primary sources and allow the target searching for the most relevant literature.
- **Citation databases** use the **citation analysis** as one of the ways of measuring the impact of a researchers in their field.

Bibliographic record includes metadata such as the title, author(s), keywords, abstract, journal title, year of publication… + a link to the full text: **BUT not the full text in the record!**

Citation databases include a list of references for the bibliographic record and count the number of citations received by the article, journal, author.

How Can Citation Databases Help You?

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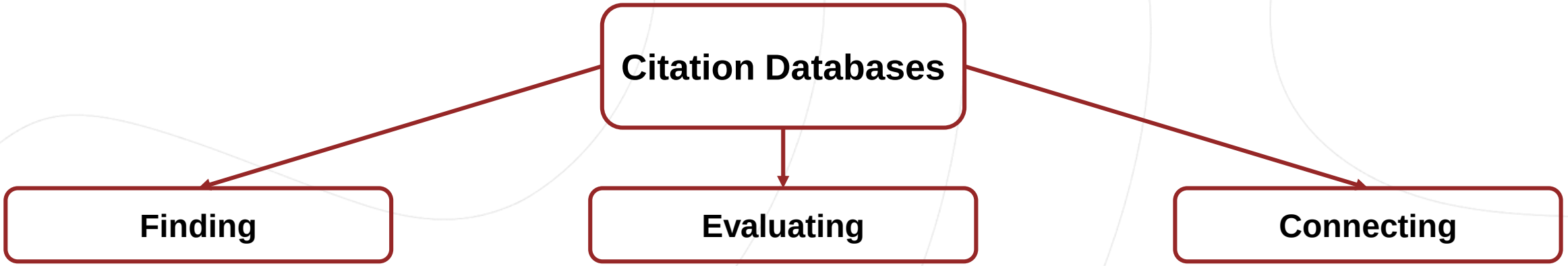

- ❑ Searching for literature
- ❑ Identifying research gaps and state-of-the art
- ❑ Collecting data for Systematic Literature Review
- ❑ Finding journals and/or researchers in the field

- ❑ Evaluating research quality and impact: bibliometrics vs. altmetrics
- ❑ Evaluating and comparing researchers
- ❑ Identifying journals for publication
- ❑ Collecting data for a formal evaluation

- ❑ Understanding scholarly connections & networks
- ❑ Managing researcher identity and maintaining researcher profiles
- ❑ Integrating with research workflow

How to Choose Your Database

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Choose the database that **meets your needs/requirements:**

- **Multidisciplinary** (e.g., Web of Science, Scopus, OpenAlex) and **field-specific databases** (e.g., ACS publications, LISTA): be informed about their **strengths and weaknesses**
- Be aware of: **coverage, content policy and selection criteria**, **types of metrics**, **biases**
- **Don’t rely only on citation databases**: not enough for a comprehensive literature search (depends on the aim); quality research can be found in other places as well.

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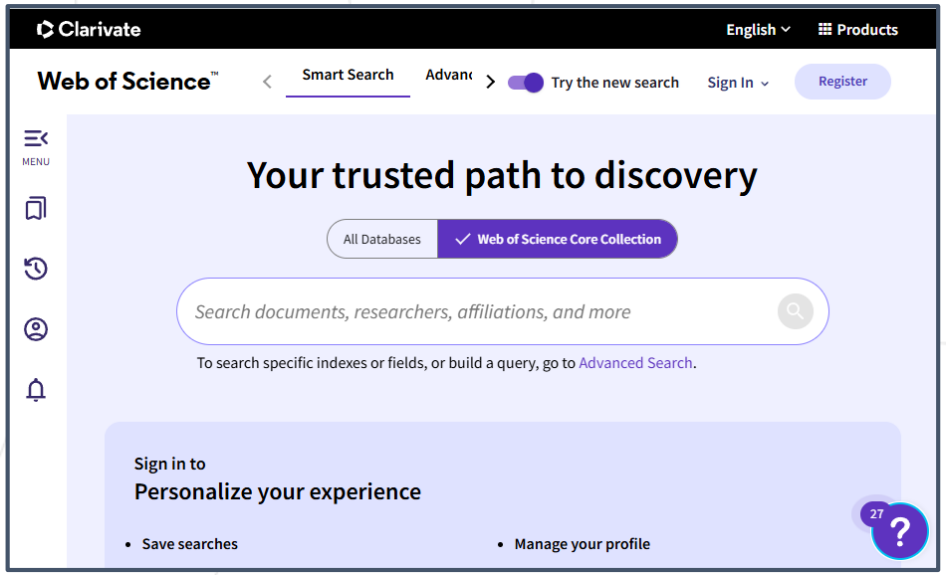
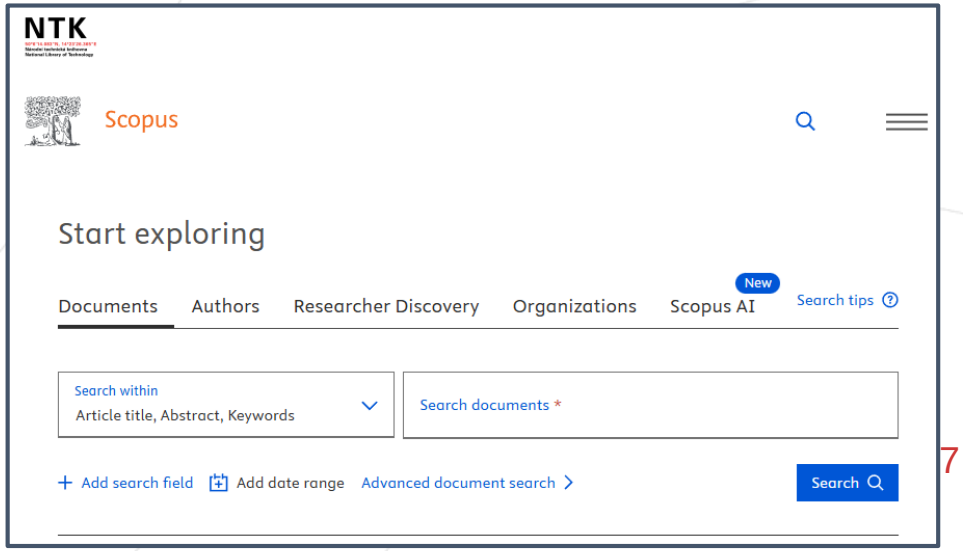
1. Searching for Literature in WoS/Scopus

Web of Science & Scopus

- **Subscription-based**, access via your library/institution: NTK, CTU, UCT & IOCB, Charles University, CZU
- Used for **assessing research performance**: see The Methodology for Evaluating Research Organizations in the Czech Republic (Metodika M17+)
- **No full texts**, but abstracts and links to full texts
- **Delay in indexing** (up to 6 months after publication)
- **Peer-reviewed** scholarly literature; rigorous content policy and selection criteria





Web of Science & Scopus

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Web of Science, WoS (Clarivate)

Coverage with references: 1900 to the present

Total records: 95+ million (Core Collection)

Journals: 22+ thousand (Core Collection)

Document types: article, book, conference proceedings, preprint, thesis, dataset, report and other

Collections: WoS Core Collection, ProQuest Dissertations & Theses Citation Index, Research Commons and other

Author profile: ResearcherID

Scopus (Elsevier)

Coverage with references: 1970 to the present

Total records: 102.6+ million

Journals: 29+ thousand

Document types: articles book, conference contribution, report, preprints and other

Author profile: Scopus ID

Web of Science journal evaluation process and selection criteria

Scopus Content Policy & Selection

Despite constant development, Scopus has been more focused on the HSS whereas WoS focuses more on the natural sciences.

WoS & Scopus vs. Google Scholar

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Can we consider Google Scholar as an alternative citation database?

NTK Google Scholar Guide

❑ WoS & Scopus

- Citation analysis
- Created and supported databases
- Rigorous and clear selection criteria for sources; a journal can be excluded from the database!
- Delay in indexing
- Limited coverage for non-English publications
- Biases in selection criteria
- Full-text link to the publisher

❑ Google Scholar

- Citation analysis; often less reliable data and poor bibliometric analysis
- Specialized search engine; inclusive and automated approach; quicker indexing
- Lack of transparency on including sources
- Also duplicates, errors in metadata, non-scientific or poor quality content
- Multi-language content
- Different ways to get the full text

Depends on the task: Google Scholar can be great for getting access to full texts but not for citation impact analysis or choosing a journal. **Use it consciously and be aware of its limitations.**

Citation Databases Searching Tips

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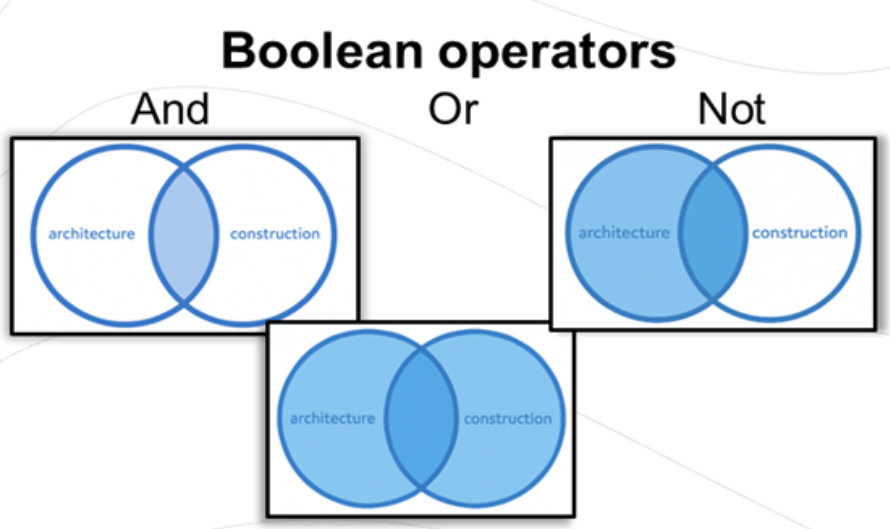
Apply the same search strategy you have already used – keyword searches using operators.
Learn more about navigating scientific resources effectively.

- ❑ Use of keywords, advanced searching (WoS, Scopus Advanced Search, Scopus Quick Reference Guide)
- ❑ Semantic search: Smart Search on WoS, Quick Search on Scopus (Beta)
- ❑ Using filters to adjust results
- ❑ **Register for a personal account** to manage preferences, download search results, create alerts, and stay up-to-date (WoS, Scopus).



Phrase searching

" climate change "

analyzing **climate change**

Truncation

*

Educ* => education, educator, educational, or educate.

Proximity searching

NEAR/n

WITHIN/n; w/n

Wildcards

? Organi?e => organise, organize

reali#e => realise, realize

Keyword Search & Semantic Search

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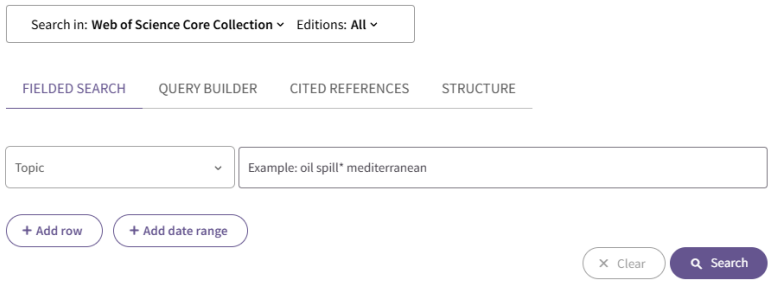
Keyword Search

- ❑ Matches exact words in your query
- ❑ Sensitive to wording
- ❑ Need to understand Boolean operators



Semantic Search

- ❑ Tries to “understand” meaning (AI-driven)
- ❑ Handles synonyms and related concepts
- ❑ May produce less controllable results

WoS Searching and Managing Results

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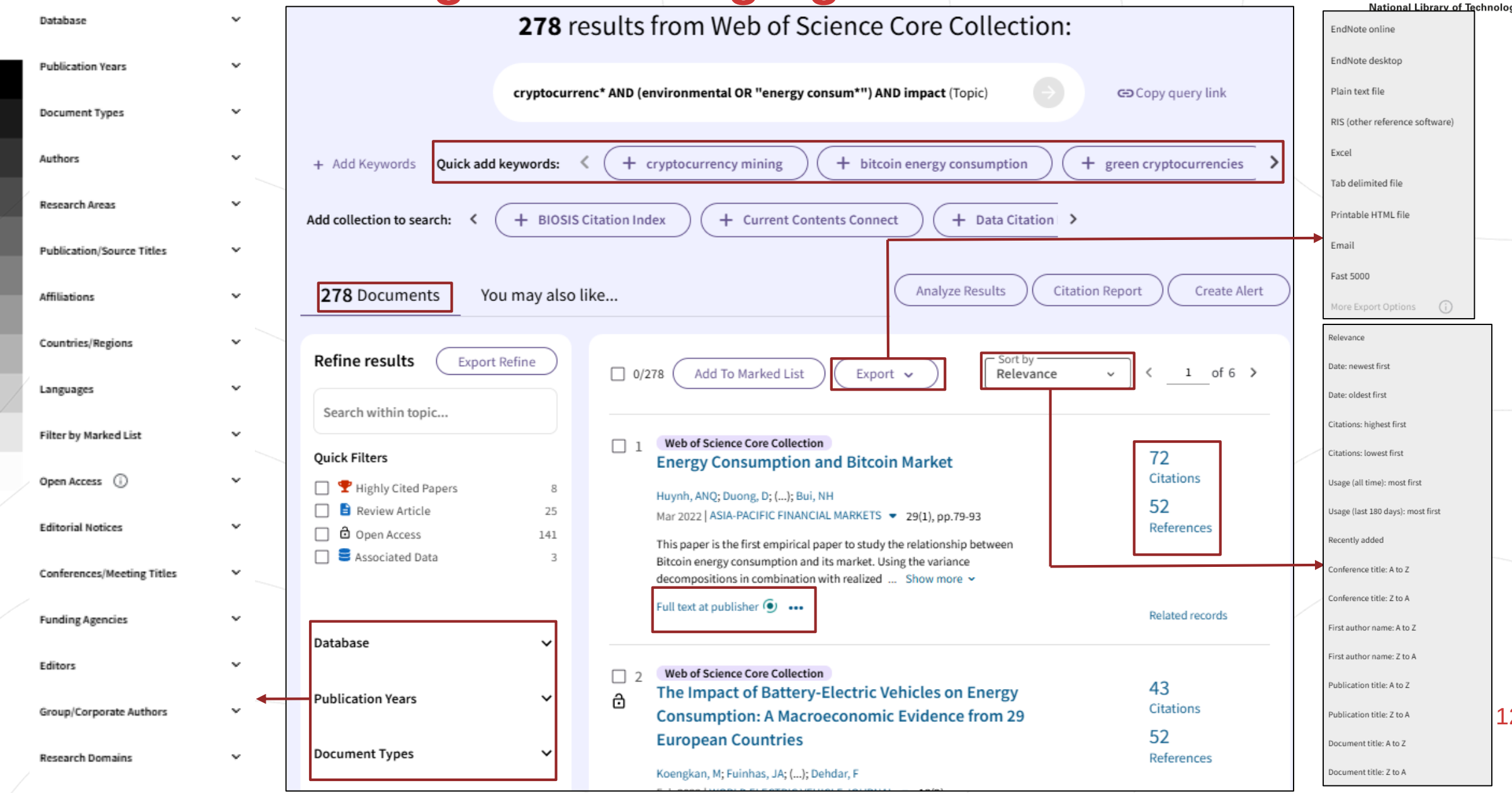
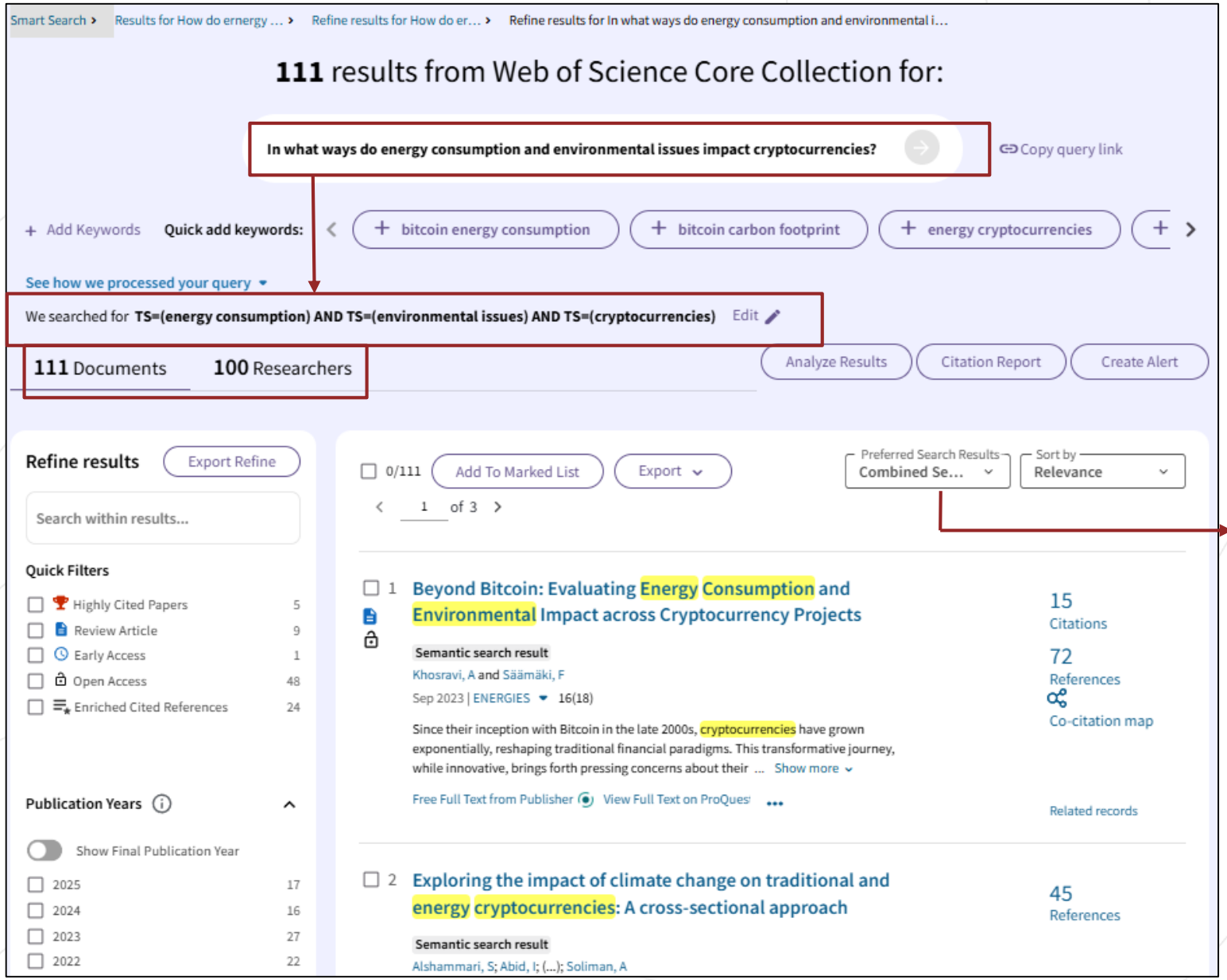
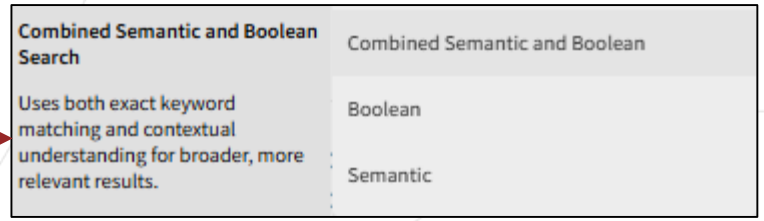


WoS Smart Search



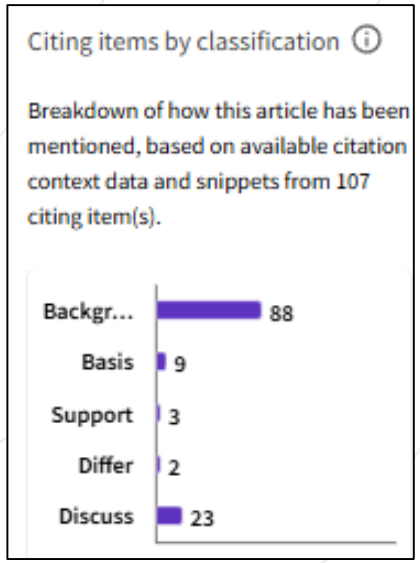
- Ask in natural language
- WoS transforms the question into a KW search query
- Relevant researchers



- Combined: 111
- Boolean: 13
- Semantic: 100

WoS Article Details

Get more possibly relevant results



Scopus Searching and Managing Results

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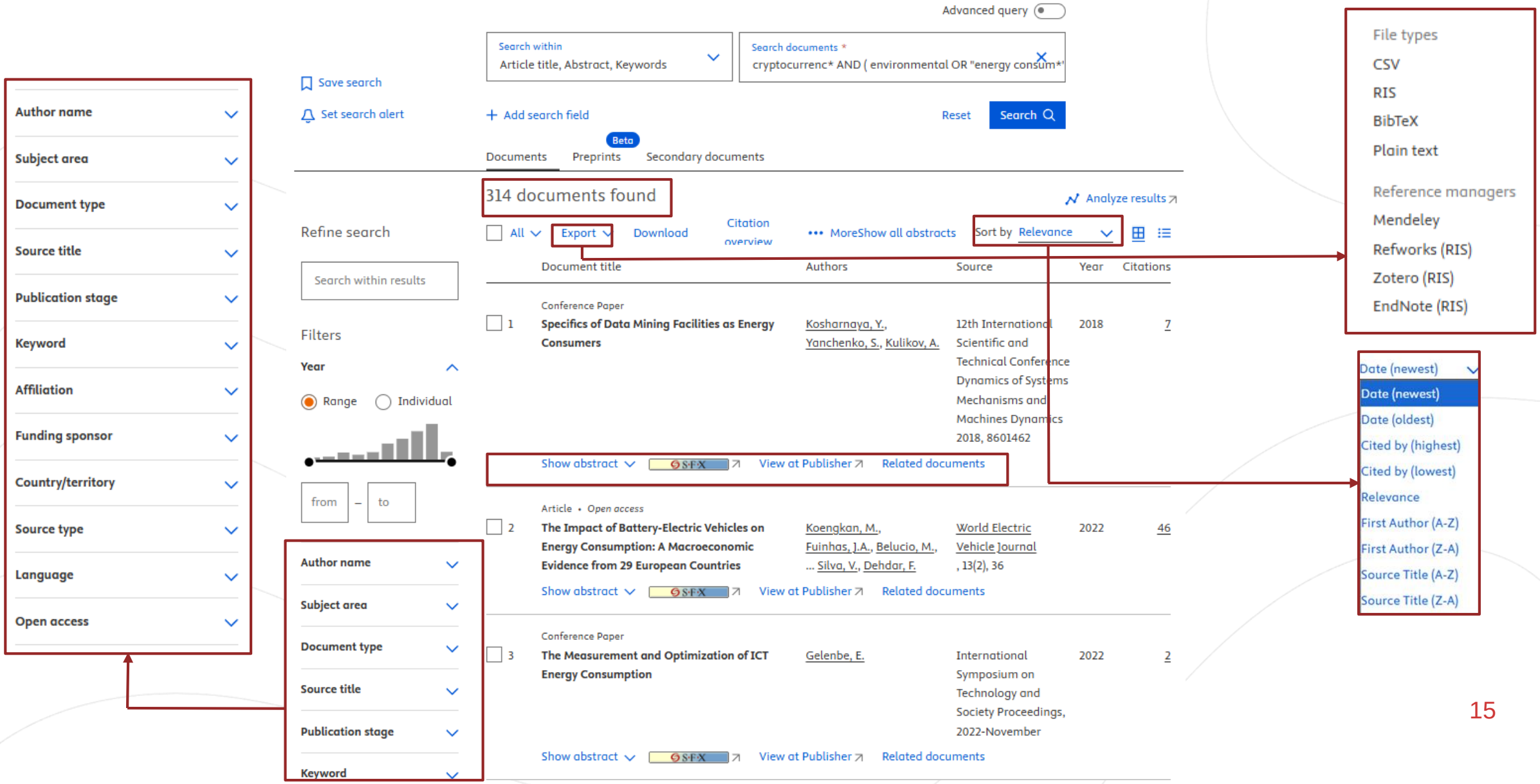

Scopus Article Details

Article • *Open access*

6 **Policy assessments for the carbon emission flows and sustainability of Bitcoin blockchain operation in China** — Jiang, S., Li, Y., Lu, Q., ... Xiong, Y., Wang, S. — Nature Communications, 12(1), 1938 — 2021 — 244

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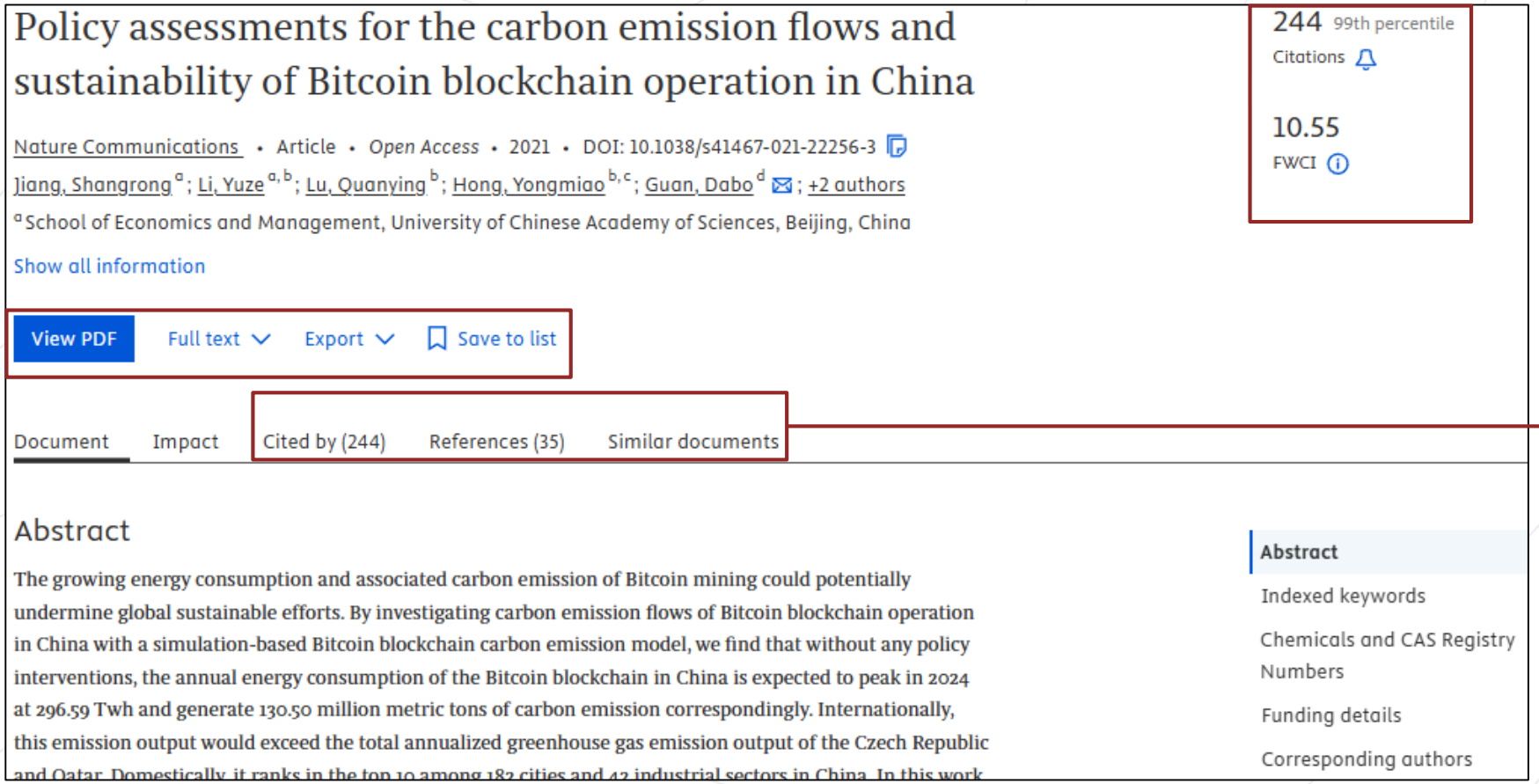

Policy assessments for the carbon emission flows and sustainability of Bitcoin blockchain operation in China

Nature Communications • Article • *Open Access* • 2021 • DOI: 10.1038/s41467-021-22256-3

Jiang, Shangrong[a]; Li, Yuze[a,b]; Lu, Quanying[b]; Hong, Yongmiao[b,c]; Guan, Dabo[d]; +2 authors

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Document | Impact | Cited by (244) | References (35) | Similar documents

Abstract

The growing energy consumption and associated carbon emission of Bitcoin mining could potentially undermine global sustainable efforts. By investigating carbon emission flows of Bitcoin blockchain operation in China with a simulation-based Bitcoin blockchain carbon emission model, we find that without any policy interventions, the annual energy consumption of the Bitcoin blockchain in China is expected to peak in 2024 at 296.59 Twh and generate 130.50 million metric tons of carbon emission correspondingly. Internationally, this emission output would exceed the total annualized greenhouse gas emission output of the Czech Republic and Qatar. Domestically, it ranks in the top 10 among 182 cities and 42 industrial sectors in China. In this work

Abstract
Indexed keywords
Chemicals and CAS Registry Numbers
Funding details
Corresponding authors

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Getting Full Texts

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Web of Science

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WoS & Scopus: AI Tools

NOT in the standard subscription!

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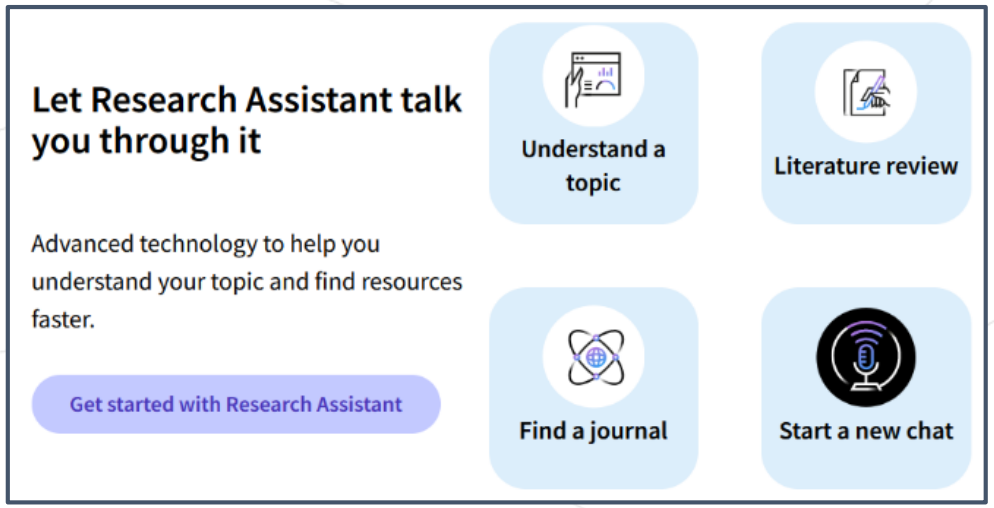
❑ WoS

- Smart Search (semantic searching)
- Research Assistant
- AI agents: topic explorer, literature review (identification of research gaps, hypotheses), journal matching
- Pre-trained Large Language Models in a Retrieval Augmented Generation architecture



❑ Scopus

- Scopus AI (Scopus AI LibGuide)
- Topic summary, Expanded summary, Deep Research
- RAG Fusion model; Copilot

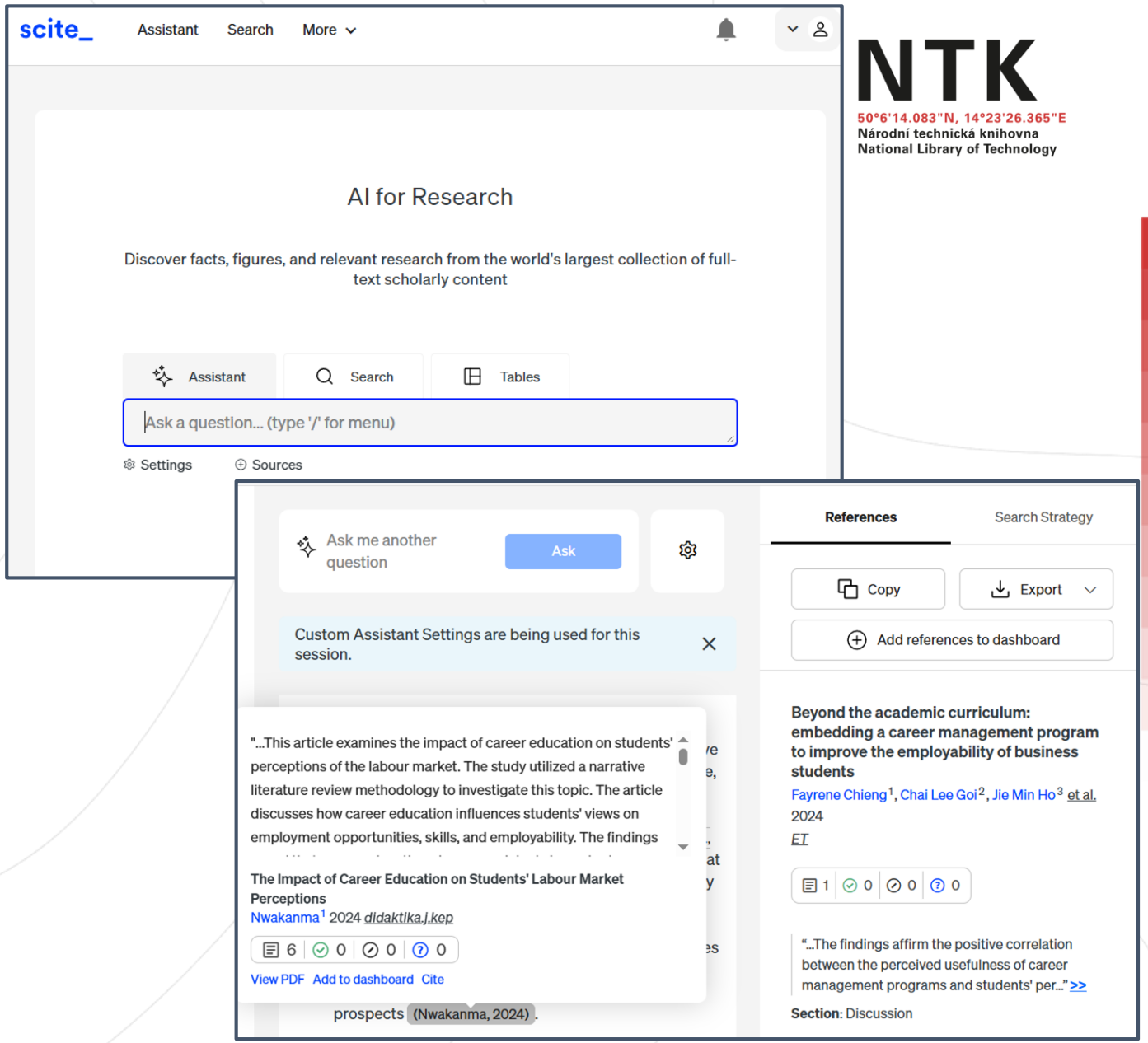
AI tools cannot replace traditional comprehensive searching yet, but they can complement it. Learn more => AI Essentials for Academia NTK Webinar on April 15.

Scite_

- Scite_ is a subscription-based AI-driven database.
- Registered NTK patrons can use Scite_!
- Citations are classified as either neutral, supportive, or disputing, and also distinguished from self-citations.
- Keyword-based or AI-assisted searching

Discover more AI Tools for Research

- Displaying a specific paraphrased section from the source used
- Tables to extract and structure data from peer-reviewed literature



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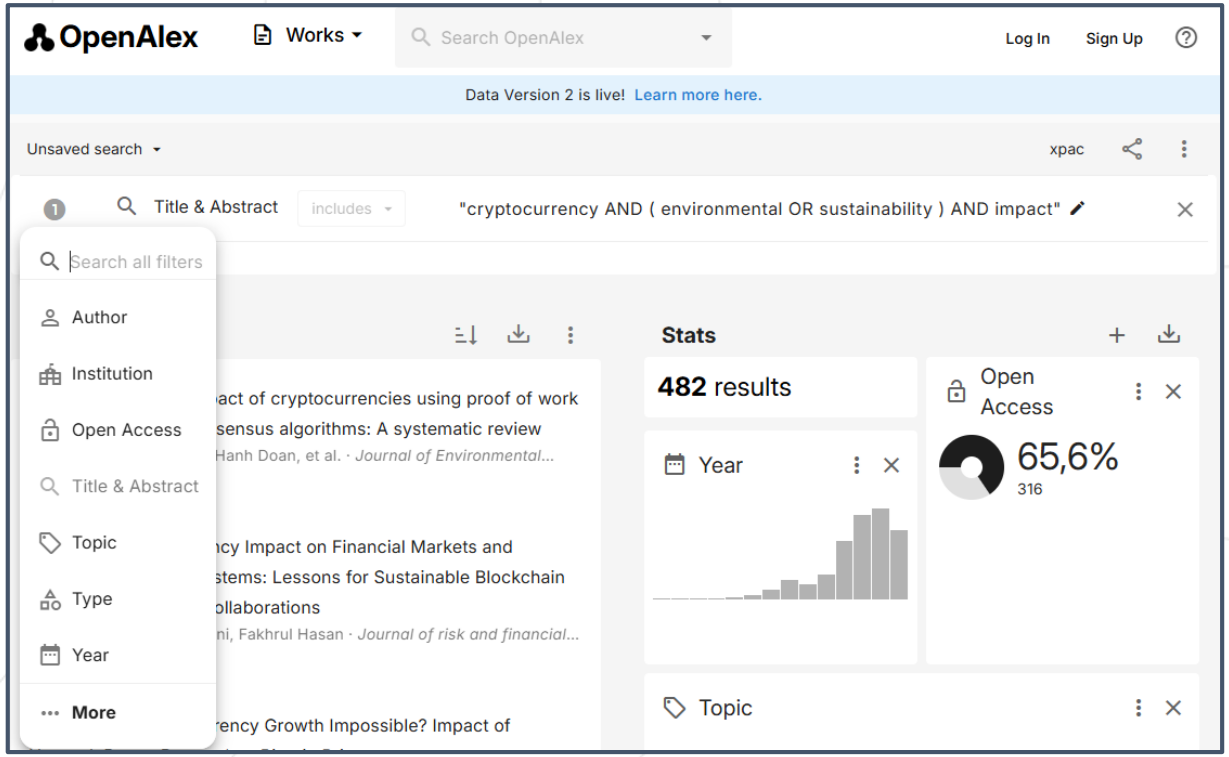
OpenAlex

- ❑ OpenAlex is open, community-driven indexed database; alternative to proprietary databases
- ❑ Ethical and transparent approach, comprehensive coverage, interoperability, transparent data model, updates
- ❑ Lack of citation accuracy and metadata quality
- ❑ Very promising but still in development



Learn more: Reference coverage analysis of OpenAlex compared to Web of Science and Scopus

2. Citation Metrics on WoS and Scopus

Citation Metrics

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Assess the performance or impact of research by analyzing how the output has been cited.

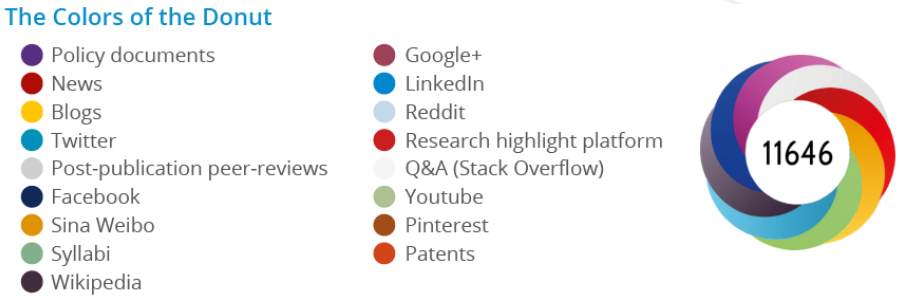
What are citation metrics?

Metrics Toolkit
(last update 2021)

ACRL Scholarly Communication Toolkit
Measuring the Impact of Research

Altmetric Scores

Levels of Analysis:
- ❑ Individual journals
- ❑ Individual articles/outputs
- ❑ Individual output
- ❑ Outputs of all authors associated with an institution



Metrics	Author Level	Journal Level	Article Level
h-index	X	X	
Journal Impact Factor		X	
SCImago Journal Rank		X	
Altmetrics	X	X	X

Principles of Using Research Metrics

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Every metric has its strengths and weaknesses – be aware of them.

Metrics have proliferated and impact our way of assessing scientific performance, but using only quantitative approach can damage the scientific landscape.

Learn more about responsible research assessment.

- ❑ Do not rely on just one metric: combine them to reduce the possibility of inadvertent favoritism or penalization.
- ❑ Compare “apples with apples”, not “apples with oranges”: do not mix scores from different metrics, different subjects, or different sources of data/databases.
- ❑ Be aware of and use qualitative assessment: put the data in context.

San Francisco Declaration on Research Assessment (DORA)
Metodika M17+ (English version here): still valid for evaluating 2024 research outputs (2025?)
Metodika 2025+ (no official English version available as yet, being finalized)

The Leiden Manifesto for Research Metrics

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In 2015, five experts led by Diana Hicks, professor in the School of Public Policy at Georgia Institute of Technology, and Paul Wouters, director of CWTS at Leiden University, have proposed 10 principles for the measurement of research performance and published in the Nature as **the Leiden Manifesto for Research Metrics**.

1. Quantitative evaluation should support qualitative, expert assessment.
2. Measure performance against the research missions of the institution, group, or researcher.
3. Protect excellence in locally relevant research.
4. Keep data collection and analytical processes open, transparent, and simple.
5. Allow those evaluated to verify data and analysis.
6. Account for variation by field in publication and citation practices.
7. Base assessment of individual researchers on a qualitative judgement of their portfolio.
8. Avoid misplaced concreteness and false precision.
9. Recognize the systemic effects of assessment and indicators.
10. Scrutinize indicators regularly and update them.

Hicks, D., Wouters, P., Waltman, L. et al. (2015). Bibliometrics: The Leiden Manifesto for research metrics. *Nature* 520, 429–431

Key Metrics in WoS/Scopus

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Web of Science

Web of Science Training Portal

Scopus

Scopus Tutorials, How SJR is calculated

Journal Level Metrics

- **Journal Impact Factor (JIF)**
- **Journal Citation Indicator (JCI),** subject-weighted
- **Eigenfactor Score**
- **Article Influence Score (AIS)**

- **CiteScore**
- **SCImago Journal Rank (SJR)**
- **Source Normalized Impact per Paper (SNIP)**

Researcher Level Metrics

- **h-index**
- **Sum of Time Cited (total citations)**
- **Verified Peer Reviews/Editor Records**

- **h-index**
- **Citation Overview**

Quartile and percentile of a scientific journal:

First decile (D1) = top 10%

First quartile (Q1) = top 25%, and on it goes: Q2, Q3, Q4

Evaluating Journals and Using Citation Metrics

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- ❑ Metrics fit for purpose?
- ❑ Subject-specific citation customs: fast x slow disciplines.
- ❑ Quality changes over time.

“Searching for and Evaluating Journals and Conferences” webinar: April 1

- Why not limit yourself to the Web of Science and Scopus
- What kind of metrics to use and how to evaluate and compare journals
- How to search for and evaluate conferences
- How to recognize problematic outlets or even outright predators

https://www.techlib.cz/en/85227

3. Author Search, Metrics & Profiles

Searching for Authors in WoS

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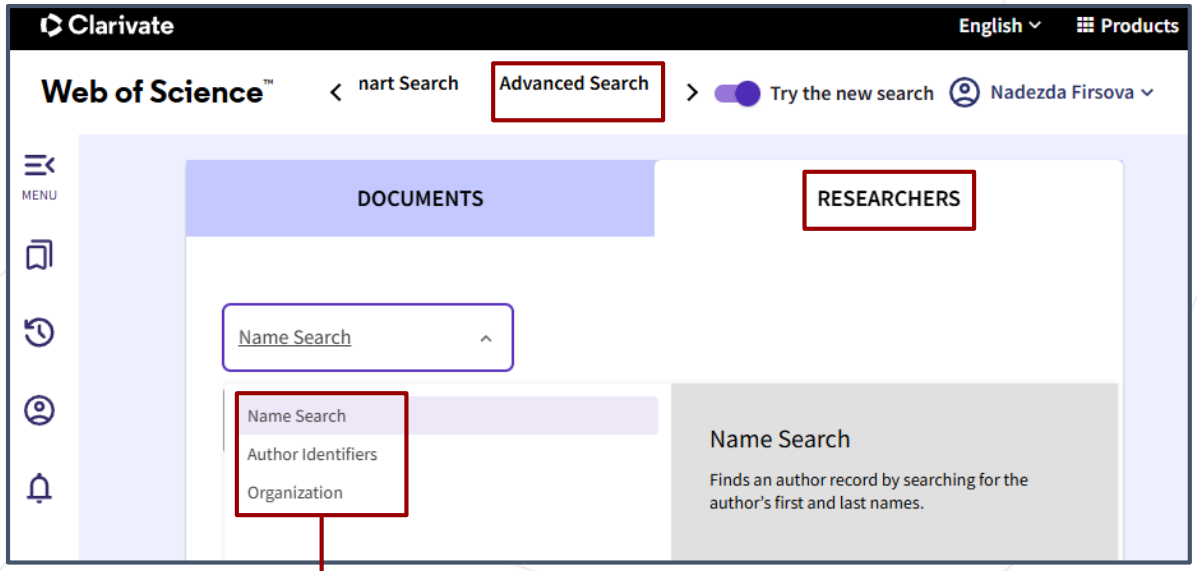

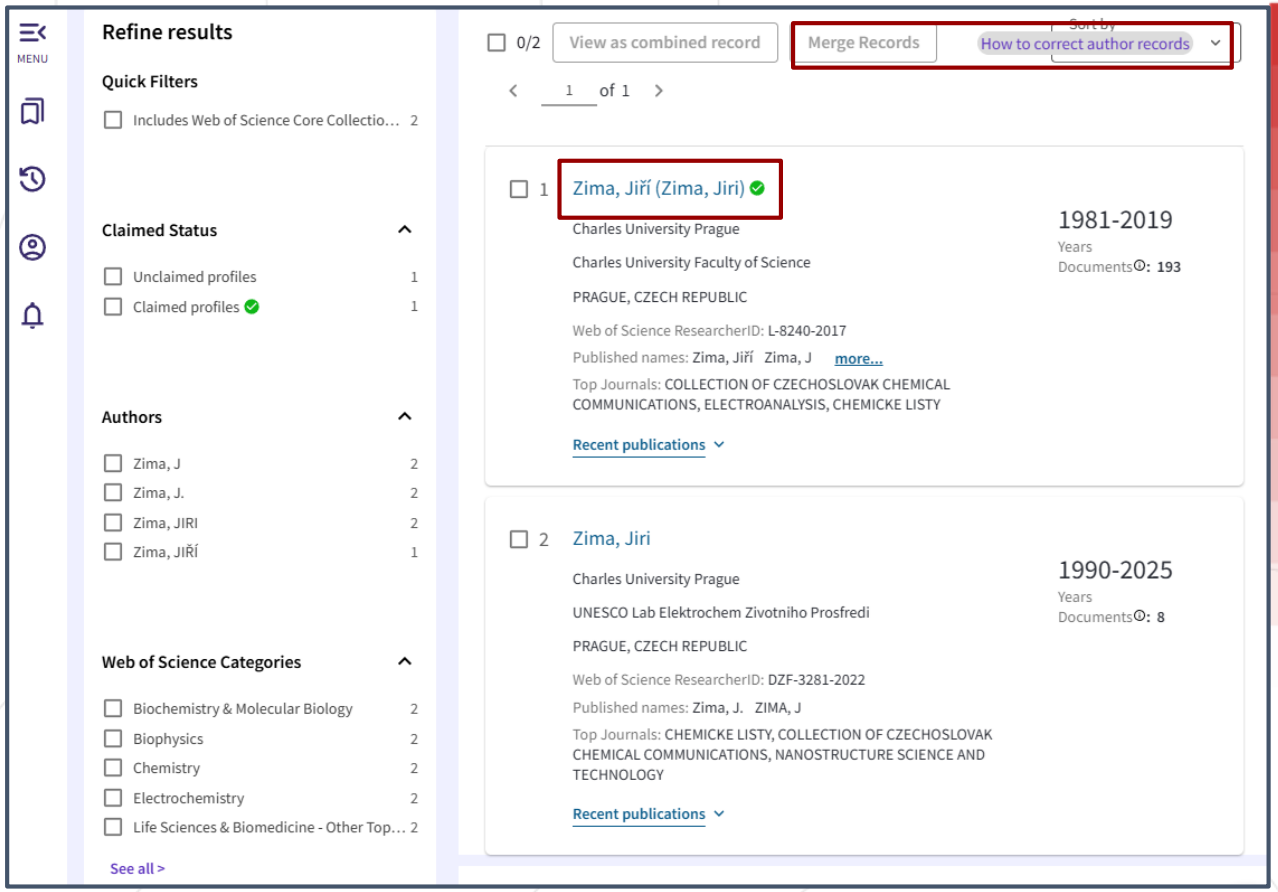

- **Name search** – beware of spelling, affiliations, different forms of name
- **Author Identifiers** – the best option to find a particular person; WoS ResearcherID or ORCID iD
- **Organization** – tracking authors from a particular institution

Searching for Authors in Scopus

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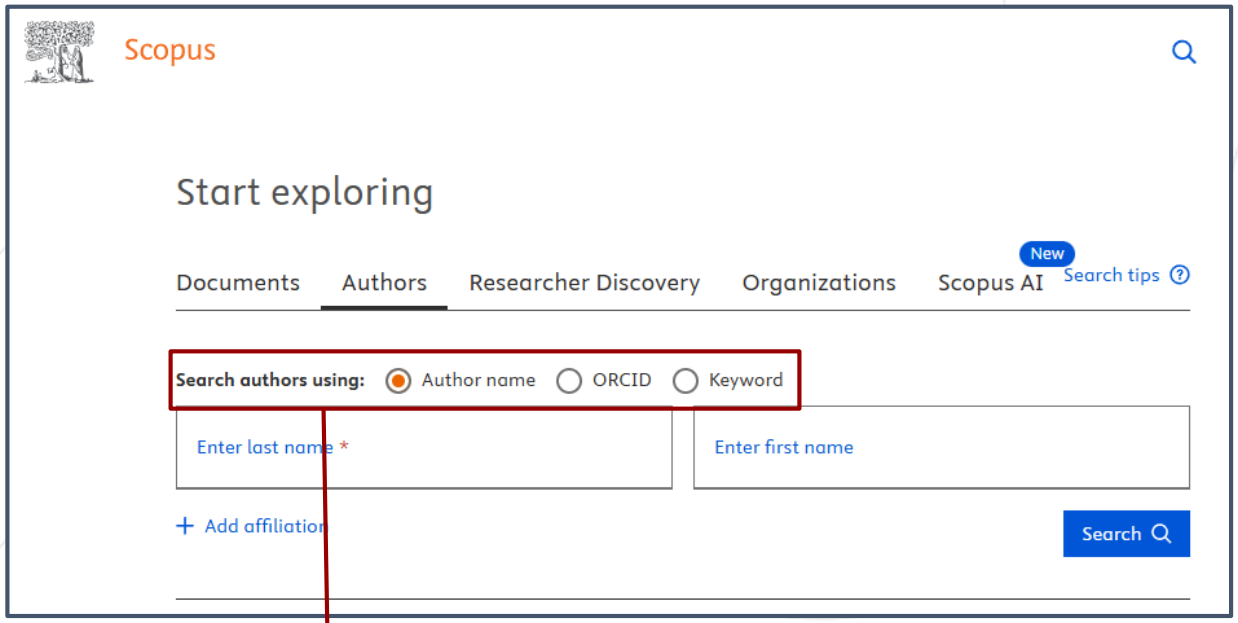

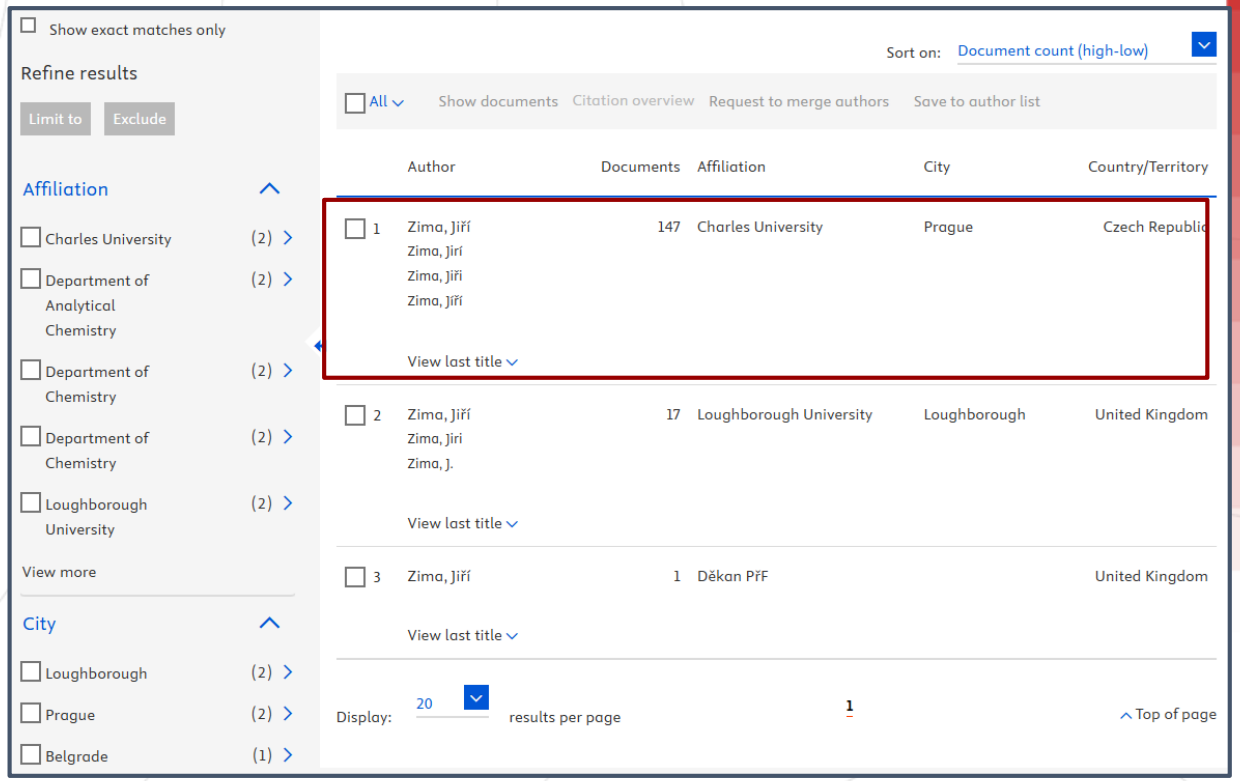

- **Author Name** – beware of spelling, affiliations, different forms of name
- **ORCID** – the best option to find a particular person via ORCID iD
- **Keyword** – searching with keywords that relate to a research area, topic, or interest

h-index

- One of the key metrics for individual authors
- h-index was developed by J.E. Hirsch in 2005
- It reflects the productivity of authors based on their publication and citation records.
- Calculation is based on citation records in a particular database – use the one required.
- Pros: More complex view of a researcher's performance, not influenced by one highly-cited paper
- Cons: Depends on a field and the half-life of citations

Learn more:
Brief overview of author-level metrics
Clarivate "Academia & Government": Highly Cited Researchers

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/

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.

Web of Science: h-index information

Author Identifiers and Profiles

- ❑ Author identifiers are used to clearly and permanently identify people involved in research and/or the academic publication process.
- ❑ Some identifiers also provide an online professional profile.
- ❑ Be aware of duplicate profiles!
- ❑ ORCID iD
  - Persistent and internationally recognized personal identifier
  - Well integrated into research and publication process; allows you to track all research activities and research outputs
  - ORCID iD for researchers

Image source: https://info.orcid.org/researchers/

Learn more: Author Identifiers and Profiles

Web of Science ResearcherID

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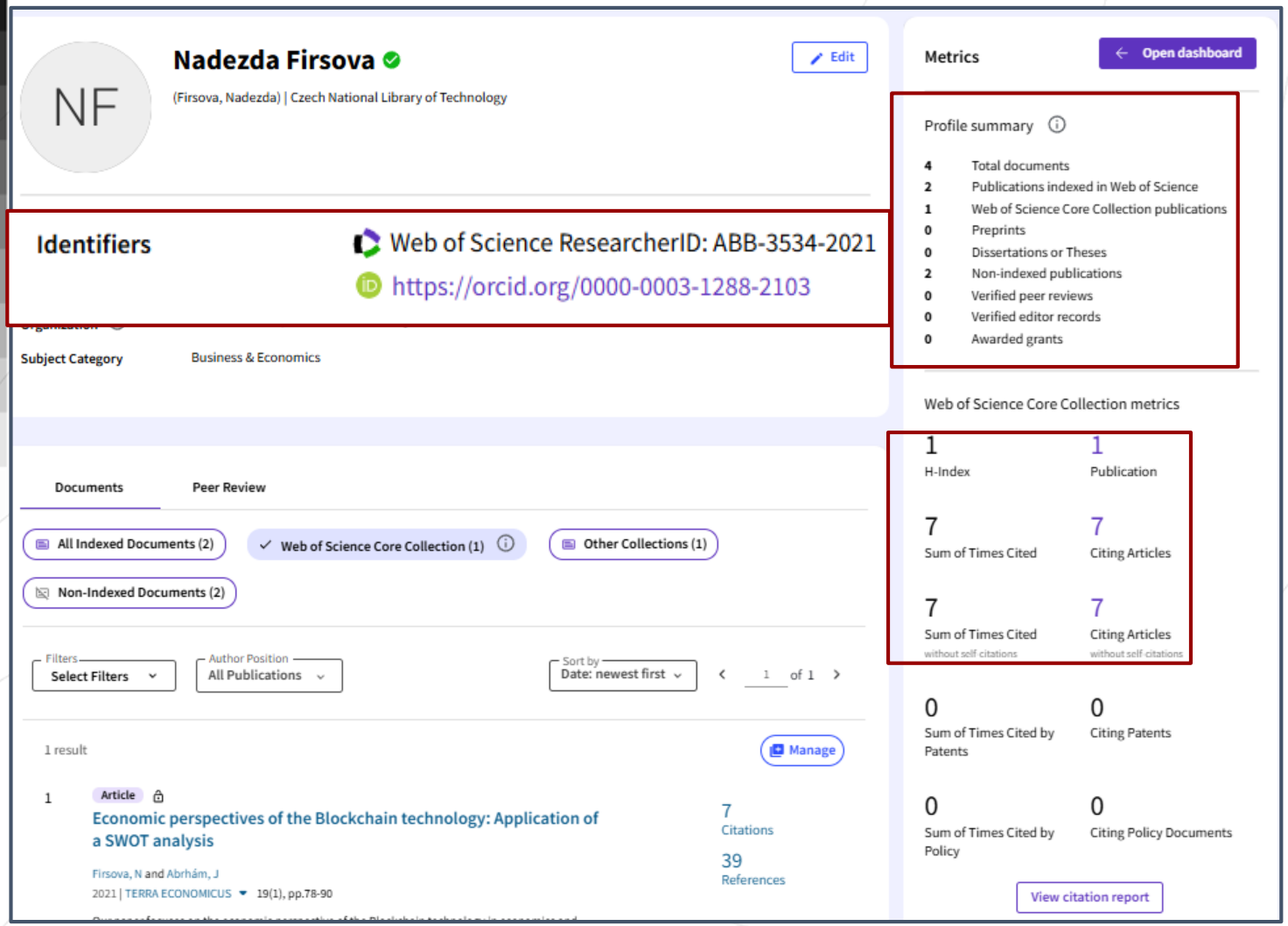
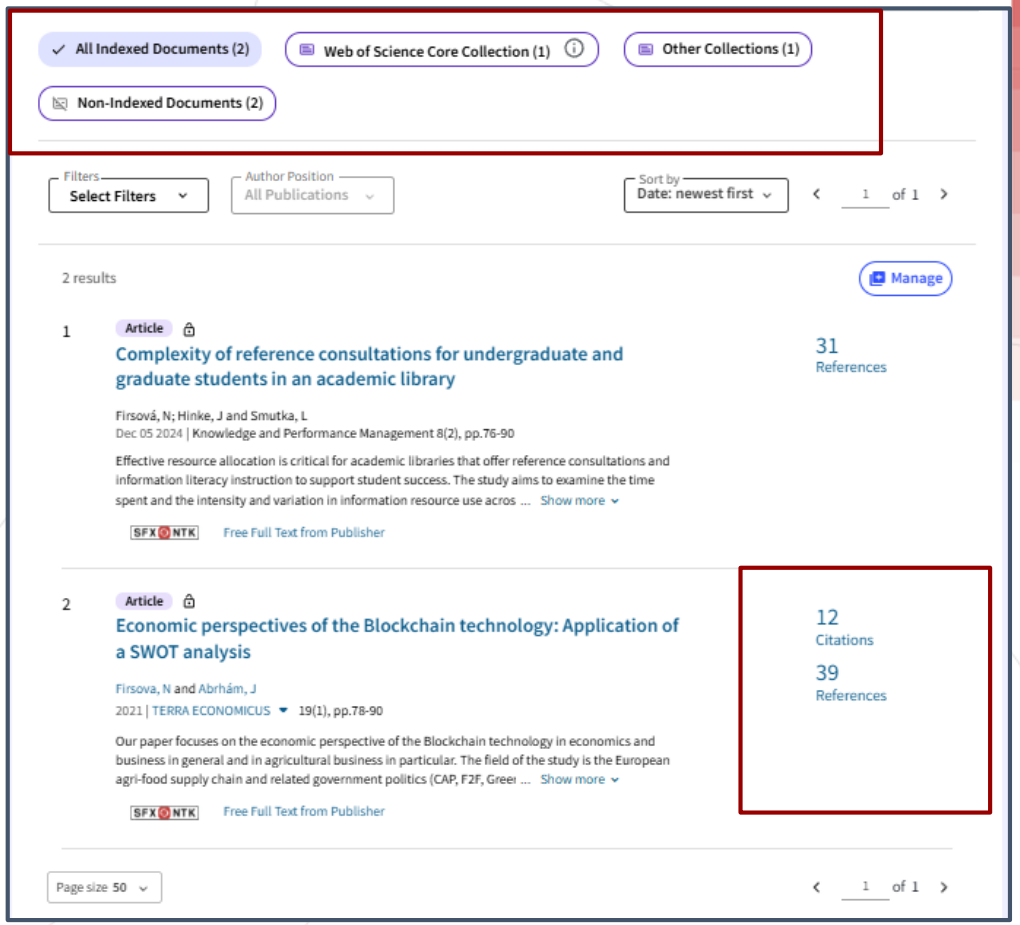
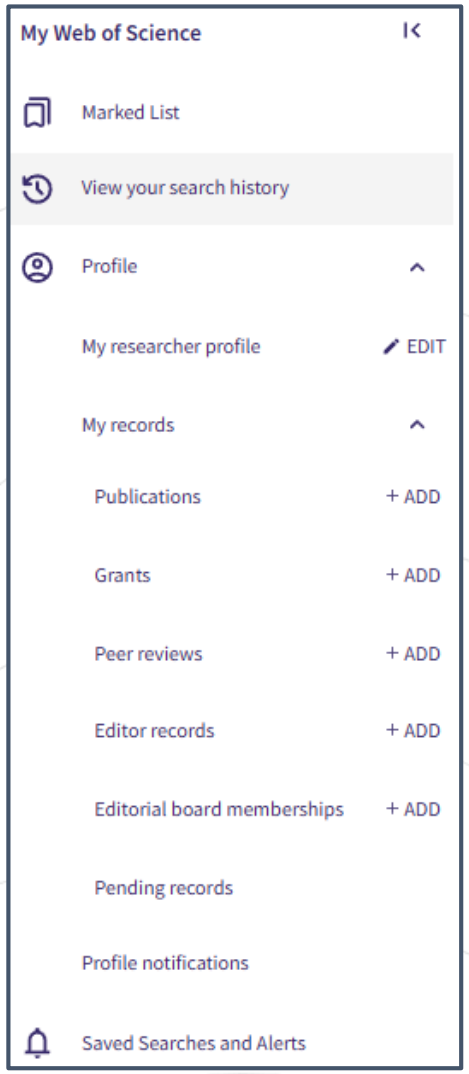
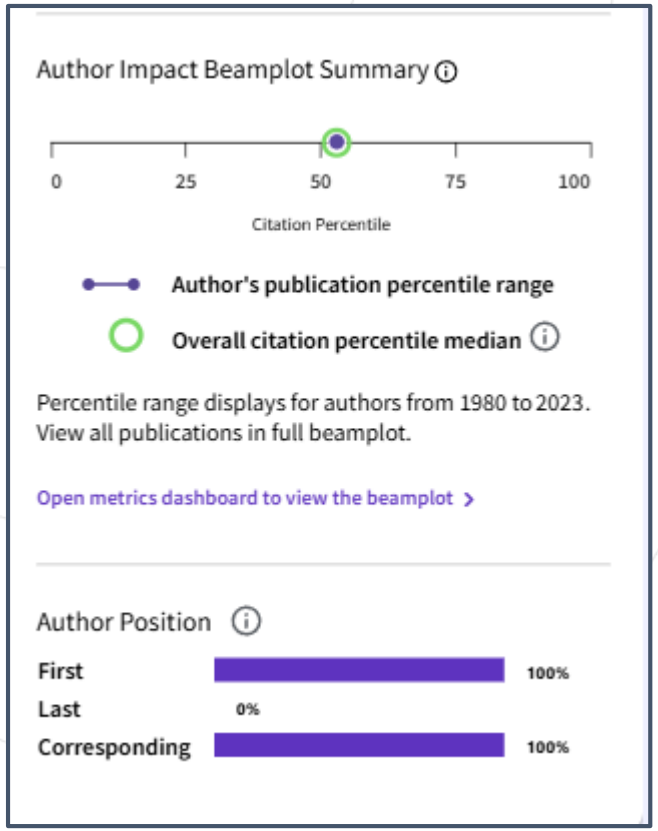
ResearcherID lists publications indexed in WoS; researchers can add other publications indexed outside of WoS manually or via integration with ORCID.

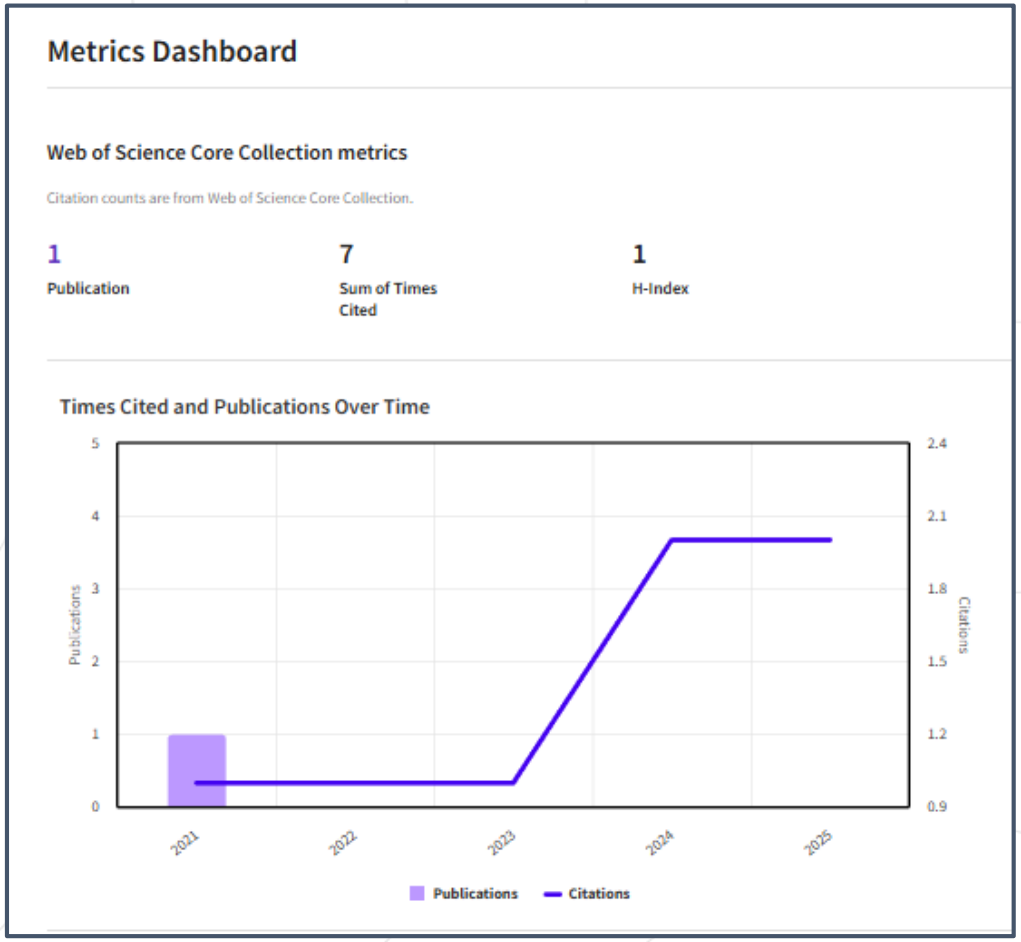




Web of Science ResearcherID







Scopus ID

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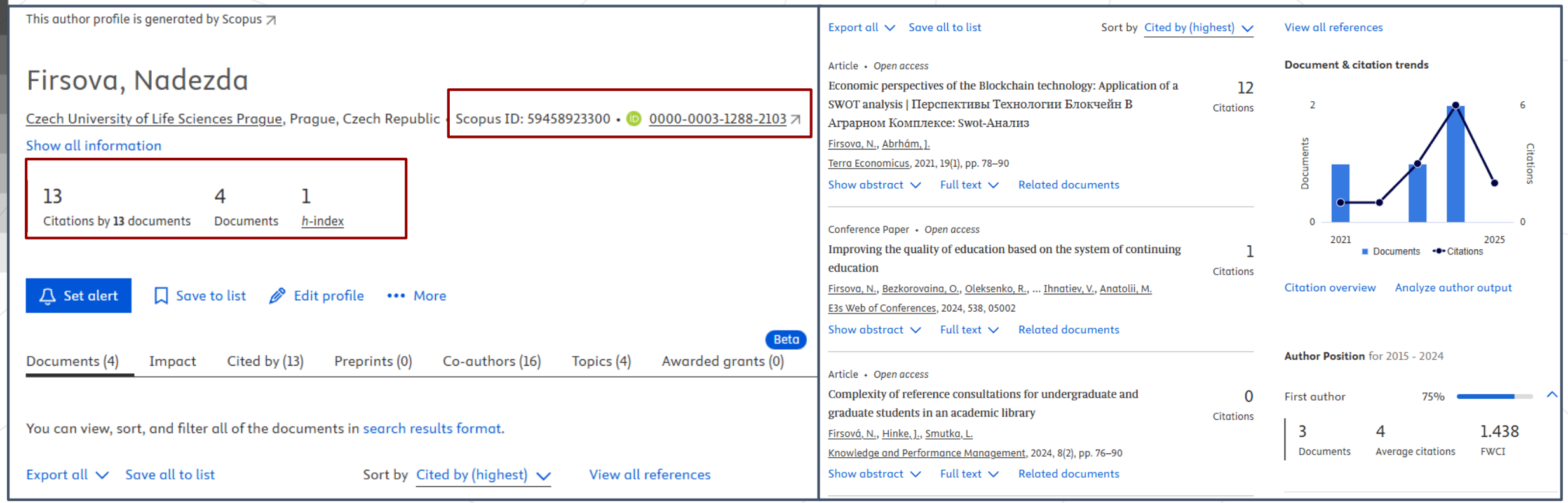
Scopus ID lists publications indexed in Scopus only!



Common Issues: Duplicate Profiles

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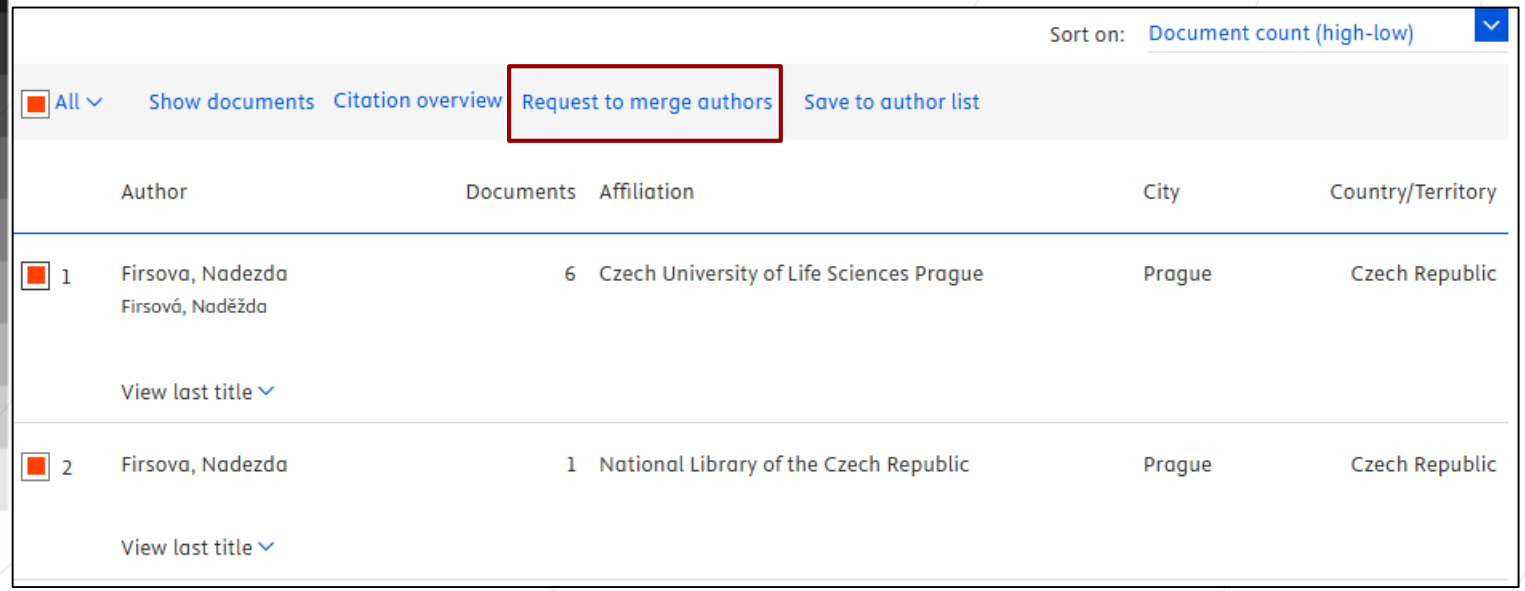
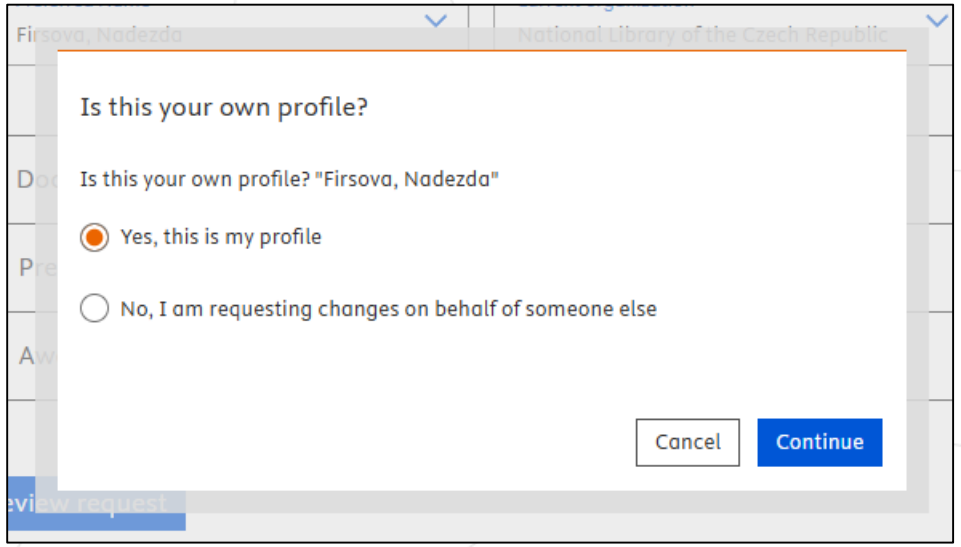
When publishing, check your profiles. Any duplicates? => Merge profiles.





1. Check the potential duplicates.
2. Request to merge authors and declare your connection with the author.
3. Choose which account you'd like to keep.
4. Support Center will check the request and make the change (sometimes it takes time).

Learning outcomes

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By now you should have a clear idea how to use Web of Science/Scopus effectively

- ❑ to search for and evaluate scholarly sources,
- ❑ to understand types of citation metrics and why they are important,
- ❑ to manage your own researcher profile and check out other researchers.

Get Assistance

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- ❑ **Schedule an individual consultation.**
- ❑ **Attend webinars and check materials on the NTK Moodle.**

- ❑ **Explore by yourself:**
- STEMskiller: comprehensive skills set map for early career researchers
- Tutorials: NTK instructional materials and recordings, further resources

Stay ahead in your research journey! **Subscribe to our newsletter for updates** on academic resources, writing support, publishing, research evaluation, and training opportunities.

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Thank you for your attention.

Questions?

Contact:

nadezda.firsova@techlib.cz