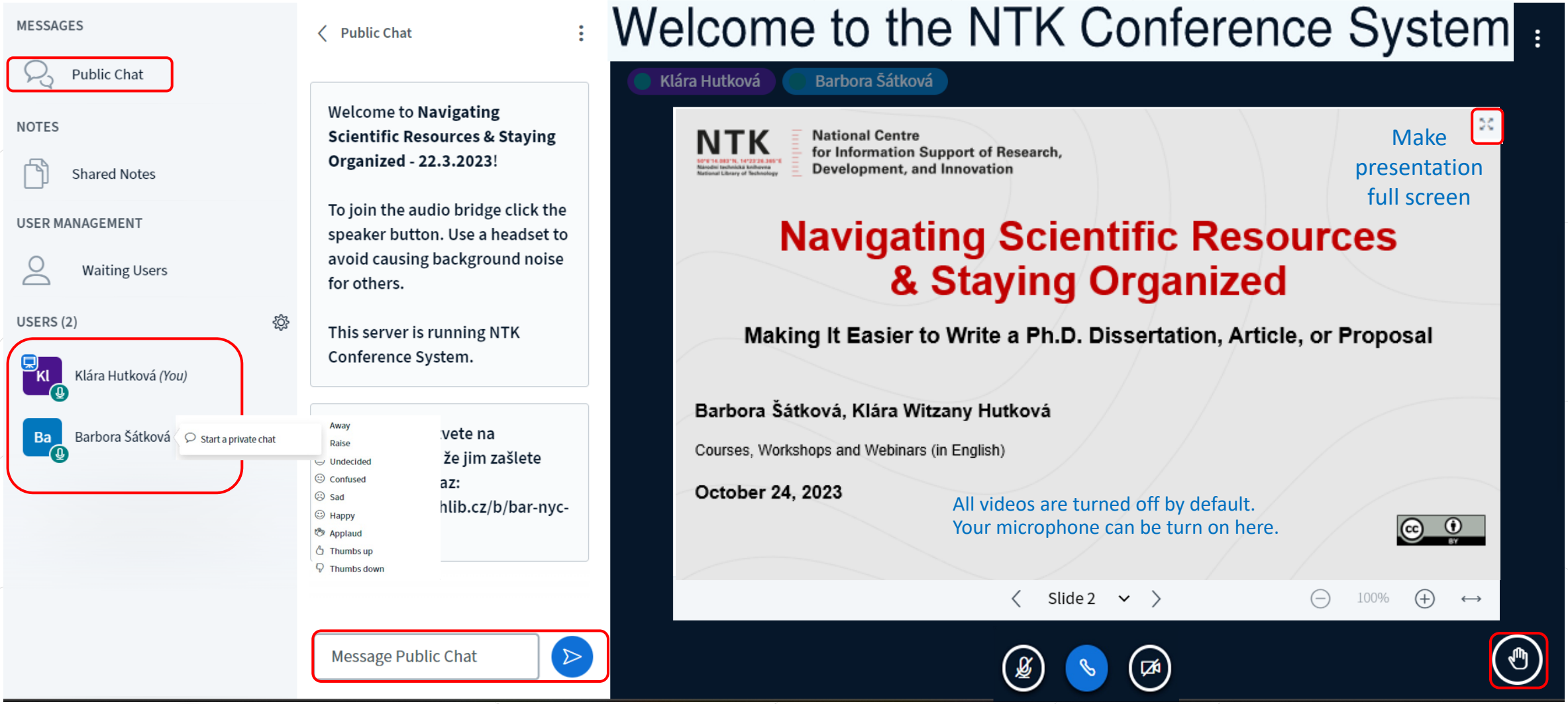
Navigating Scientific Resources & Staying Organized

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology



NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

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

Navigating Scientific Resources & Staying Organized

Making It Easier to Write a Ph.D. Dissertation, Article, or Proposal

Barbora Šátková, Klára Witzany Hutková

Courses, Workshops and Webinars (in English)

October 24, 2023

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.

Which University Are You from?

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

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

Agenda

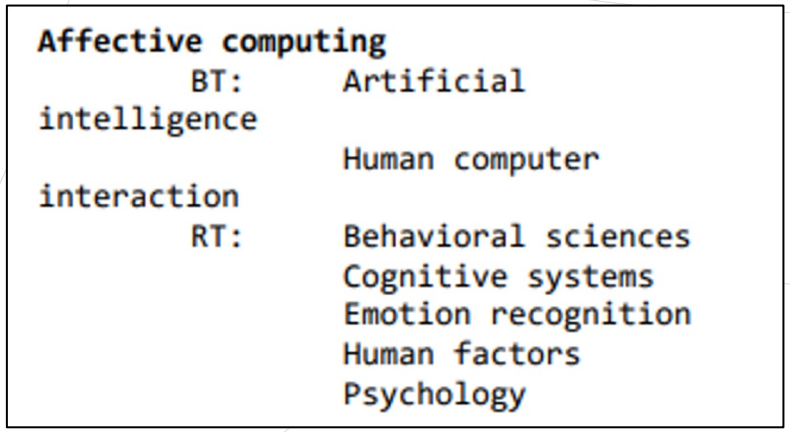
1. Searching: Introduction
2. Google Scholar
3. Library Resources & Full Text Access
4. Types of Sources
5. Reading & Organizing Sources
6. Publishing and Presenting of the Outputs

1. SEARCHING: INTRODUCTION

Keywords (for Searching)

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

- Which keywords in your subject area are used by other authors?
- Is there a thesaurus/dictionary for your field?
  - MeSH (Medical Subject Headings)
  - IEEE Thesaurus and Taxonomy
  - Mathematics Subject Classification
  - The Transportation Research Thesaurus
  - INSPEC Thesaurus (after login)
- Other useful tools:
  - Wikipedia (translation of terms, fact checking,...)
  - Google Scholar



Which of These Techniques Do You Use Most Often when Searching?

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

A. AND, OR, NOT/-

B. Phrase searching (“”)

C. Truncation (*/?/…)

D. Advanced search & filters (search engine tools)

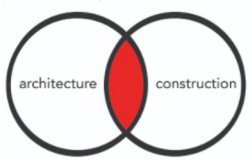
E. Combination of the above

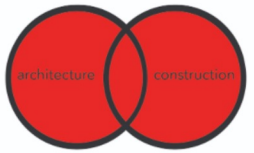
F. None of the above

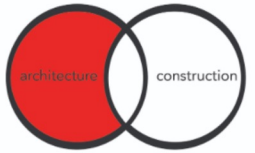
Database Search Tips

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

- AND, OR, NOT/-







- Phrase searching “”
- Truncation *
- Filters
- Advanced search
  - (author, title, abstract, full text, other)

➔ More database tips

Where Do You Go First when Searching for Information Related to Your Writing?

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

A. Google

B. Google Scholar

C. University Library Searching Tool (“Discovery”)

D. Web of Science or Scopus search

E. Article databases (Elsevier, Nature, EBSCO, Springer, IEEE, ScienceDirect, and others provided by libraries) or open access full-text and pre-print collections (such as arXiv, PubMed, ResearchGate, repositories)

Search Tools for Scientific Resources

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

- **Search engines**
  - Google Scholar
  - Library discovery tool (NTK, chemTK, CTU)

    ...searching through multiple databases and collections mentioned below

- **Article/book databases**
  - Paid databases (eg. IEEE, ScienceDirect, see library subscribed databases)
  - Open databases and journals (eg. DOAJ, PubMed Central and others)

- **Preprint collections** on servers as arXiv, ResearchGate, Academia.edu or institutional repositories

- **Citation databases** Web of Science and Scopus (no full text, but links to full text)

& **P2P servers** as Sci-Hub, LibGen, Ulož.to

2. GOOGLE SCHOLAR

Library Links

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

Google Scholar

&

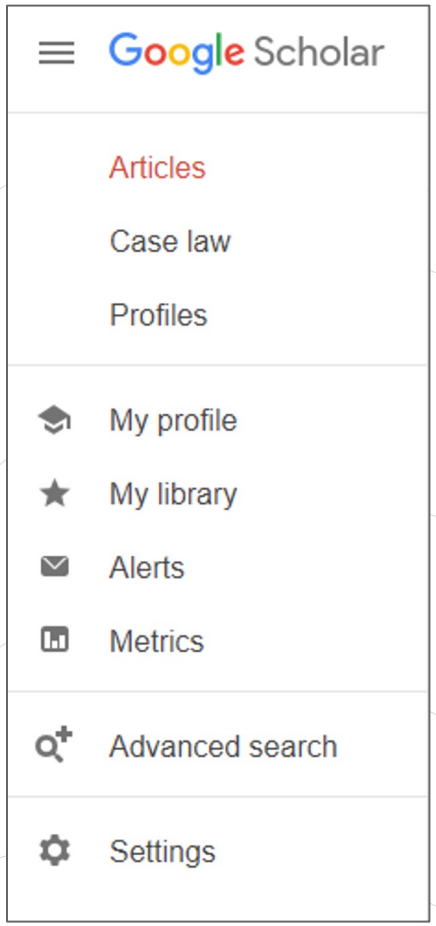
NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

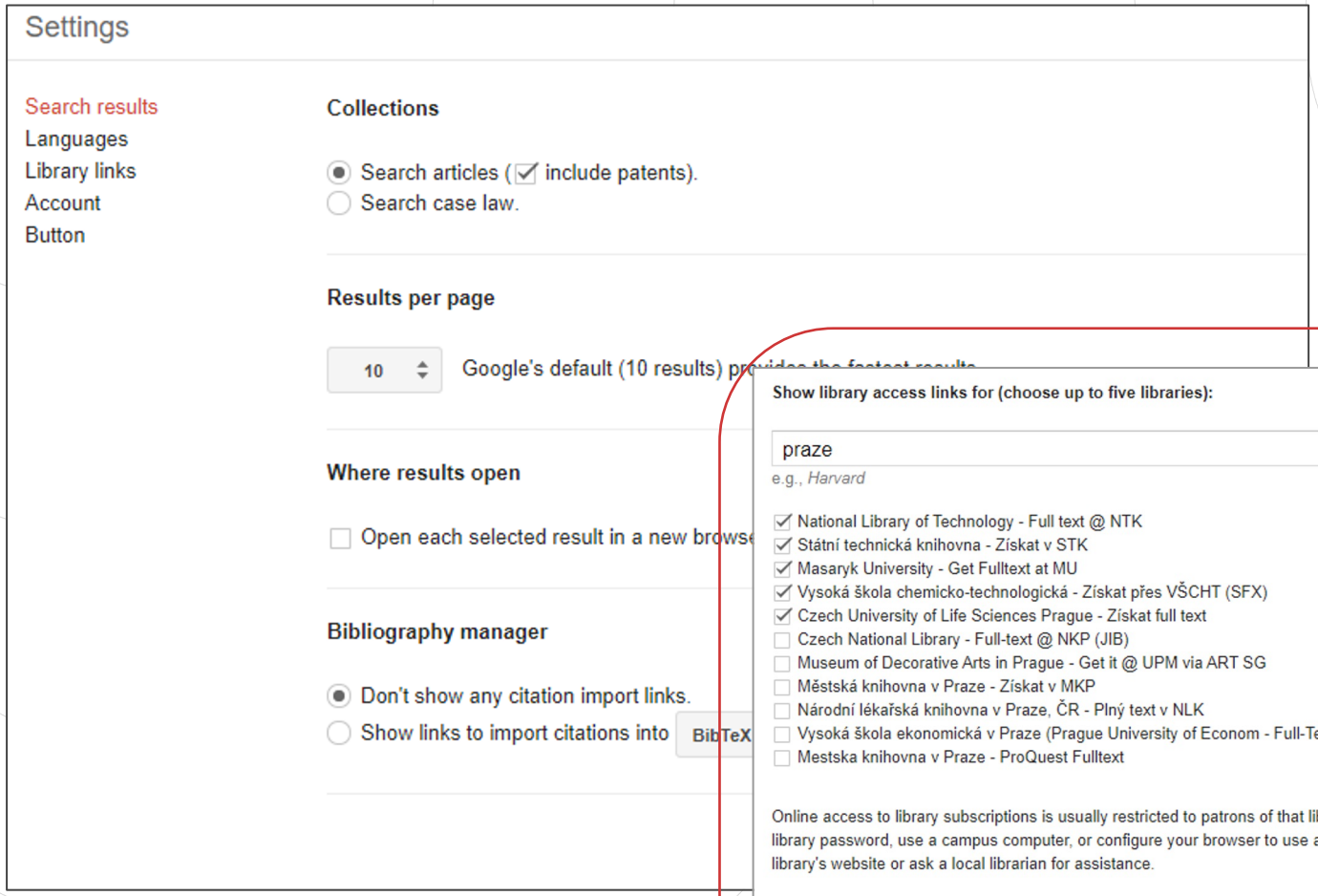
- CTU is currently not fully integrated with Google Scholar

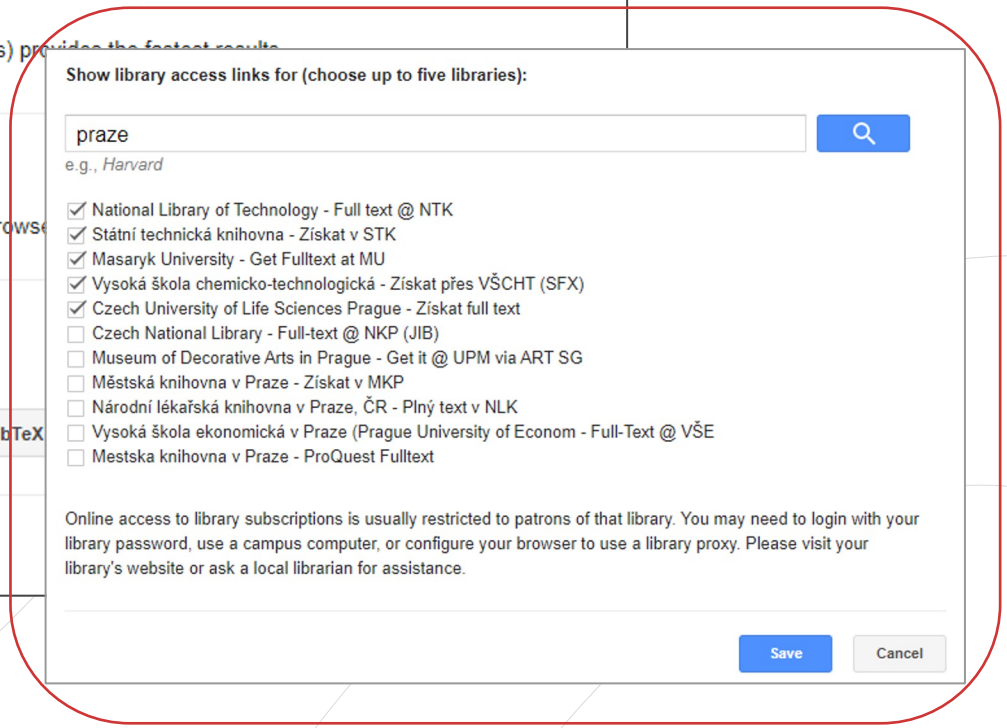
Library Links Setting

Google Scholar & NTK

50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology



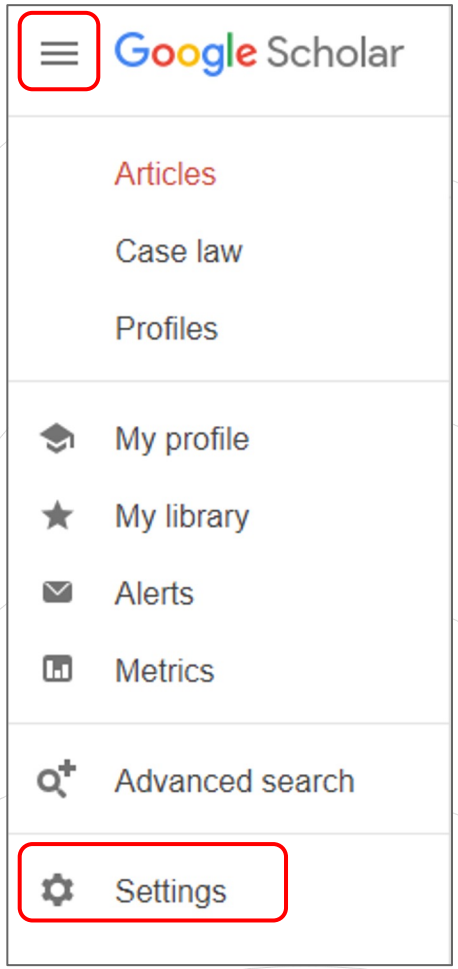


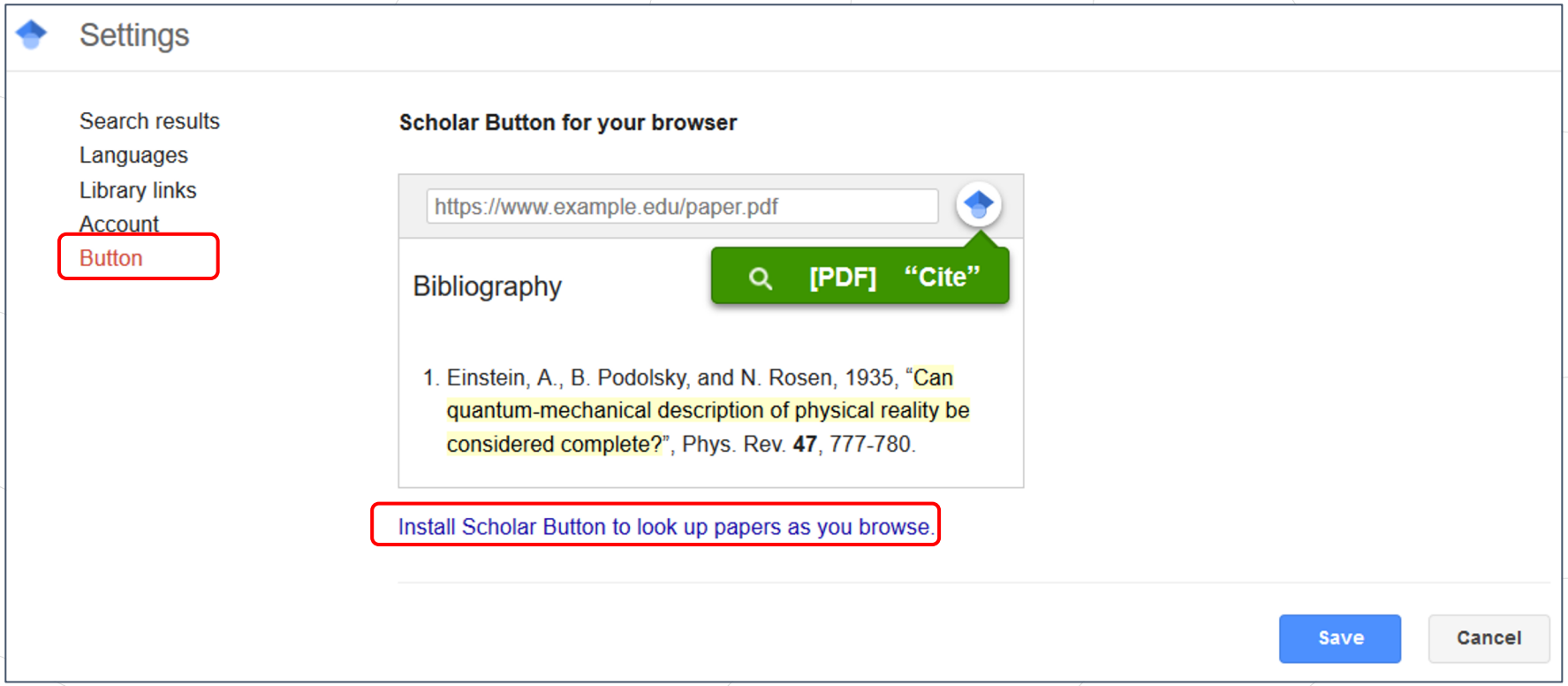


Google Scholar Button

Browser extension (Chrome, Firefox, Opera)

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

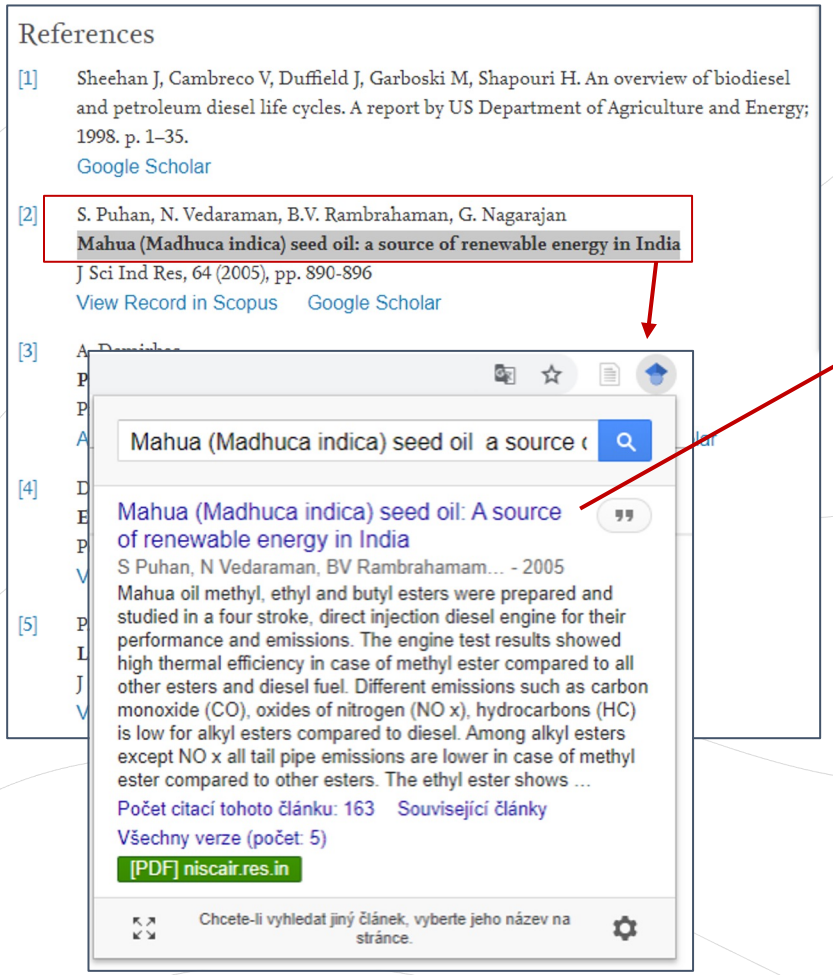


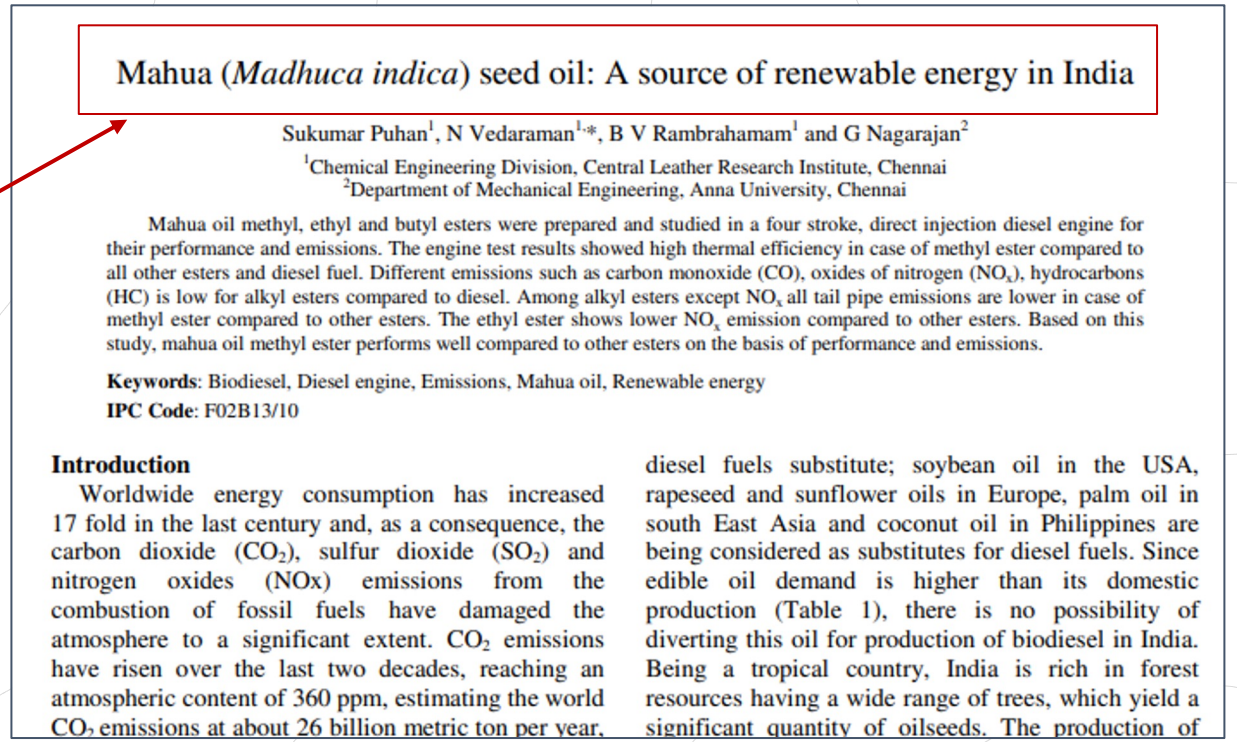


Google Scholar Button

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

Quick access to **full text** & citations download





Mahua (*Madhuca indica*) seed oil: A source of renewable energy in India

Sukumar Puhan[1], N Vedaraman[1,*], B V Rambrahamam[1] and G Nagarajan[2]

[1]Chemical Engineering Division, Central Leather Research Institute, Chennai
[2]Department of Mechanical Engineering, Anna University, Chennai

Mahua oil methyl, ethyl and butyl esters were prepared and studied in a four stroke, direct injection diesel engine for their performance and emissions. The engine test results showed high thermal efficiency in case of methyl ester compared to all other esters and diesel fuel. Different emissions such as carbon monoxide (CO), oxides of nitrogen (NO_x), hydrocarbons (HC) is low for alkyl esters compared to diesel. Among alkyl esters except NO_x all tail pipe emissions are lower in case of methyl ester compared to other esters. The ethyl ester shows lower NO_x emission compared to other esters. Based on this study, mahua oil methyl ester performs well compared to other esters on the basis of performance and emissions.

Keywords: Biodiesel, Diesel engine, Emissions, Mahua oil, Renewable energy
IPC Code: F02B13/10

Introduction

Worldwide energy consumption has increased 17 fold in the last century and, as a consequence, the carbon dioxide (CO_2), sulfur dioxide (SO_2) and nitrogen oxides (NOx) emissions from the combustion of fossil fuels have damaged the atmosphere to a significant extent. CO_2 emissions have risen over the last two decades, reaching an atmospheric content of 360 ppm, estimating the world CO_2 emissions at about 26 billion metric ton per year,

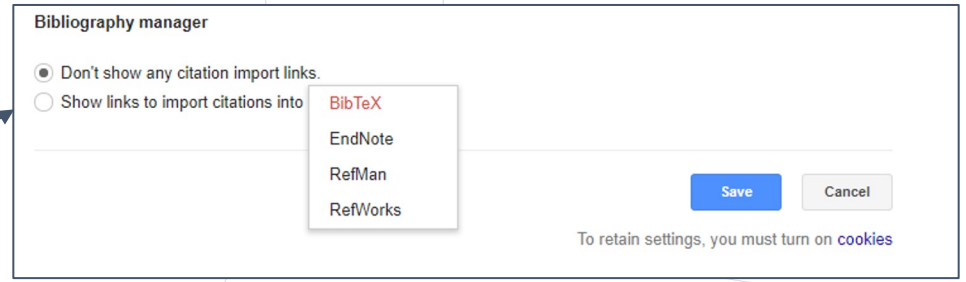
diesel fuels substitute; soybean oil in the USA, rapeseed and sunflower oils in Europe, palm oil in south East Asia and coconut oil in Philippines are being considered as substitutes for diesel fuels. Since edible oil demand is higher than its domestic production (Table 1), there is no possibility of diverting this oil for production of biodiesel in India. Being a tropical country, India is rich in forest resources having a wide range of trees, which yield a significant quantity of oilseeds. The production of

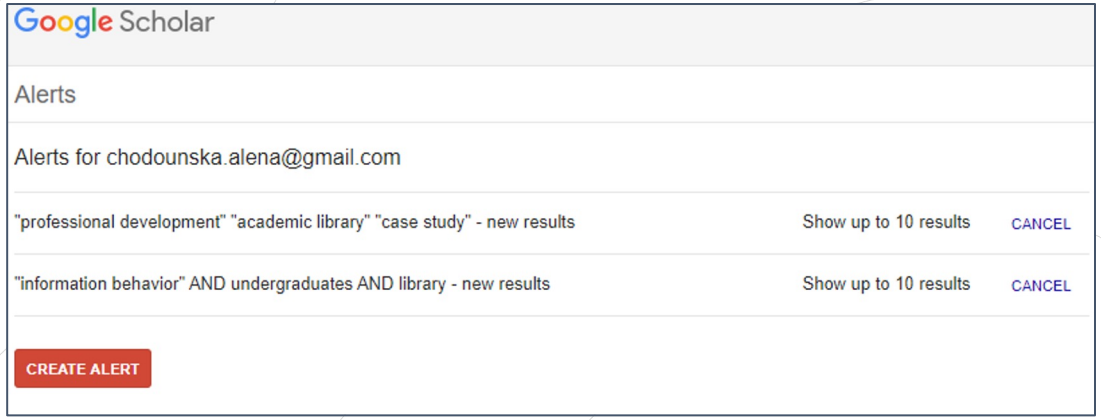
Google Scholar

Tips & Tricks

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

- Library links
- Citation management tools
- Google Scholar Button
- Google Scholar Alerts
- Google Scholar Account
  - GS author profile
  - My library

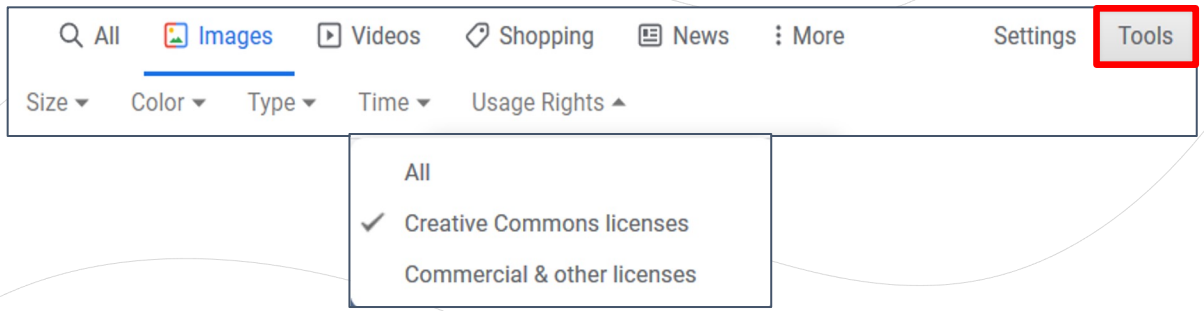




Google Tips & Tricks

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

- Find the **name of the person** you are citing (especially when you are writing in Czech)
- Find pictures under **open licence**

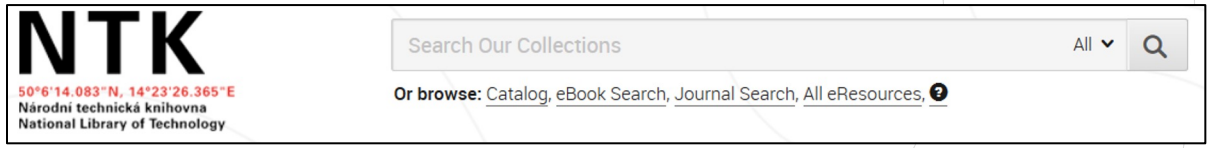


site:cvut.cz dissertation (all pages with keyword “dissertation“ on domain “cvut.cz”)

➔ More Tips & Tricks on Google

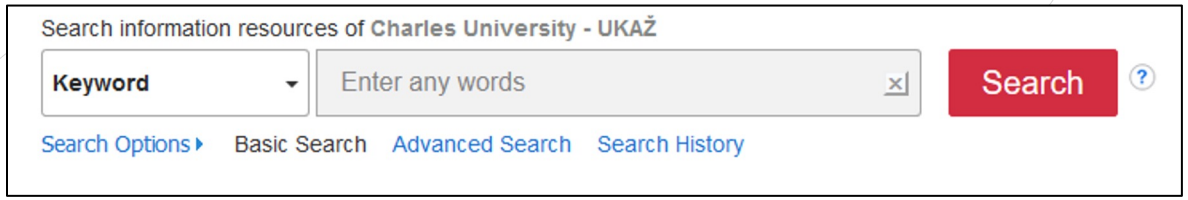
3. LIBRARY RESOURCES & FULL-TEXT ACCESS

Library Discovery Tools

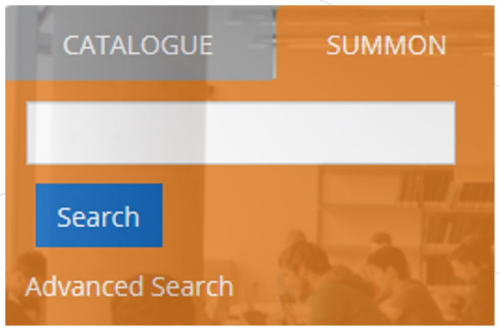


https://www.techlib.cz/en/

https://www.chemtk.cz/en/



https://ukaz.cuni.cz



http://knihovna.cvut.cz/en/#summon

- **One box** for searching across **all journals** and **books** (both electronic and print) provided by the library (items from databases like IEEE, ScienceDirect, EBSCO, ProQuest, and more)

- Advanced searching options
- Advanced filtering
- Library print collection included

Log in for off-campus access to full text

Discovery = search all databases from one field

List of all databases (eResources) and eJournals & eBooks

Quick access to main databases including Web of Science and Scopus

www.techlib.cz/en/

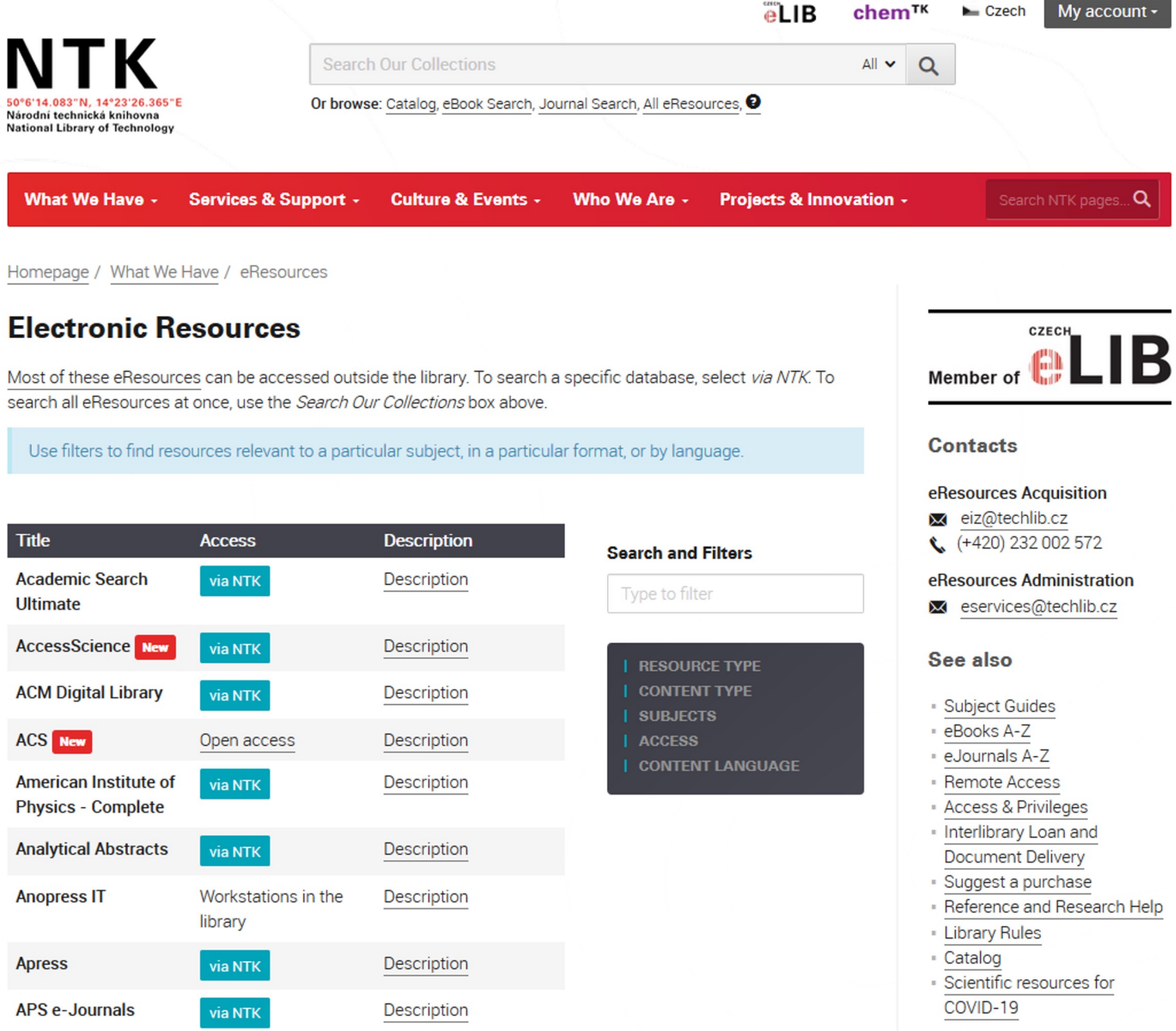
Searching @ NTK

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

- NTK discovery tool
- Browse/find eBooks and eJournals
- Specific databases and electronic collections
- Access to full text
- Document delivery/interlibrary loan

Electronic resources accessible from home

Direct Access to Databases and Collections Provided by NTK



https://www.techlib.cz/en/2883-eresources

Getting Full Text (when Sci-Hub is down) ;-)

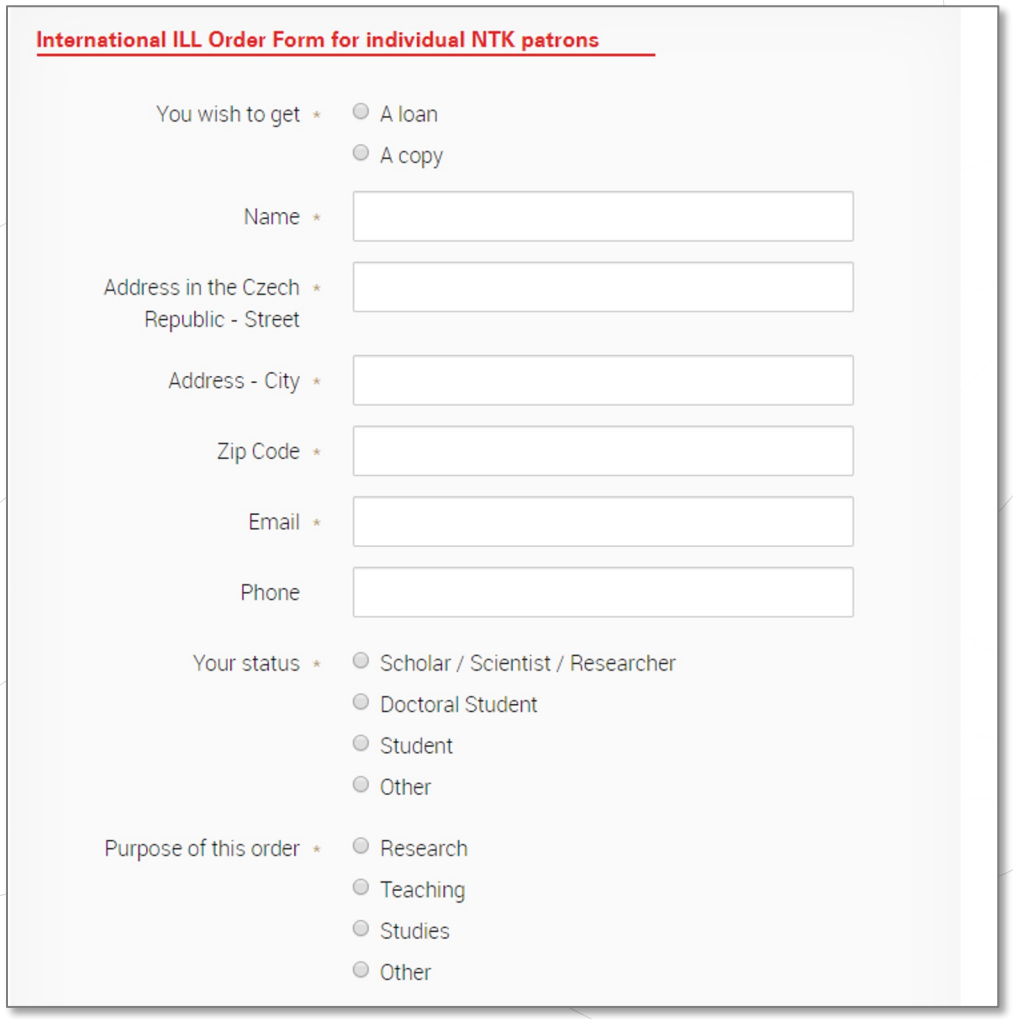
NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

1. Always make sure you are logged onto the library website for **off-campus access**
2. Activate Library links on Google Scholar
3. Use tools on library web page

eJournals	eArticles	eBooks
Journal Search • Search for journal title or ISSN	Discovery tool • "Phrase search" of article title • Supplement with name of one author for better accuracy	Discovery tool • "Phrase search" of book title • Supplement with name of one author for better accuracy eBook Search • Search for book title, ISBN, or author

Getting Full Text: Other Options

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology



International ILL Order Form for individual NTK patrons

You wish to get *
- A loan
- A copy

Name *

Address in the Czech Republic - Street *

Address - City *

Zip Code *

Email *

Phone

Your status *
- Scholar / Scientist / Researcher
- Doctoral Student
- Student
- Other

Purpose of this order *
- Research
- Teaching
- Studies
- Other

https://www.techlib.cz/en/83429-international-ill-order-form

For materials that are not available online:

- Use ILL form (Interlibrary Loan)
- Ask for assistance: info@techlib.cz

Searching with new AI tools

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

Searching

Searching NTK Resources
Web of Science & Scopus
Google Scholar
AI tools for research

Overview of AI search tools, chatbots, text analyzers and detectors

Summarise the state of the art for research on greywater treatment in membrane reactors.

Sources

A state-of-the-art-review on grey water... researchgate · 1	A state-of-the-art-review on grey water... academia · 2	Membrane Technologies in Wastewater Treatment... mdpi · 3	Membrane-Based Processes Used in... mdpi · 4
Greywater Characteristics, Treatment Systems,... nih · 5	Performance and energetic analysis of... sciencedirect · 6		

perplexity

Answer

Greywater treatment using membrane reactors is an emerging technology that has gained popularity in recent years. Here is a summary of the state of the art for research on greywater treatment in membrane reactors:

- Membrane technology has emerged as a favorite choice for reclaiming water from different wastewater streams for re-use [3].
- Membrane-based technology in greywater reclamation has been reviewed, and it has been found that membrane filtration and oxidation processes are effective in treating greywater [4].
- Compact submerged membrane sequencing batch reactors (SM-SBR) have been used for greywater treatment, and their performance has been evaluated [4].

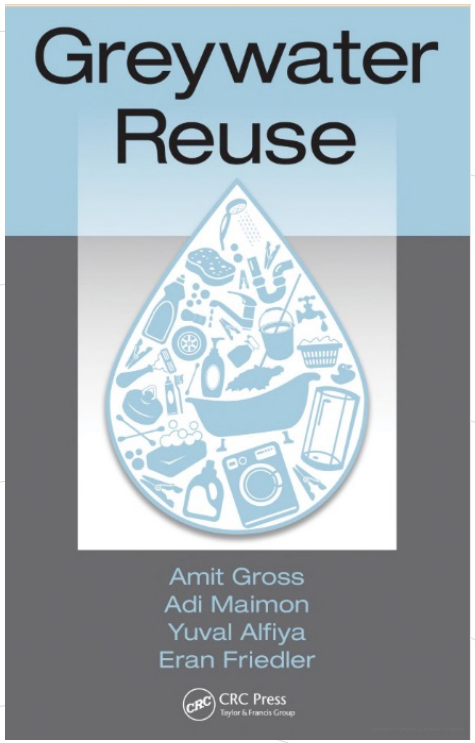
www.https://www.techlib.cz/en/2719-tutorials

4. TYPES OF SOURCES

Handbooks, Textbooks, & Encyclopedias

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

- To get familiar with **terminology** and **context** for a new project



Contents

Preface xi
Authors xiii
Introduction xv

Chapter 1 Greywater Characteristics 1
1.1 Introduction 1
1.2 Greywater Characteristics 3
1.2.1 Physical Characteristics 3
1.2.1.1 Temperature 3
1.2.1.2 Color 8
1.2.1.3 Odor 8
1.2.1.4 Solids and Turbidity 8
1.2.2 Chemical Characteristics 9
1.2.2.1 Salinity and Electrical Conductivity 9
1.2.2.2 Metals 12
1.2.2.3 pH and Alkalinity 12
1.2.2.4 Organic Matter 13
1.2.2.5 Nutrients: Nitrogen and Phosphorus 16
1.2.2.6 Ratio between Nitrogen, Phosphorus, and Organic Matter 18
1.2.2.7 Xenobiotic Organic Compounds 19
1.2.3 Microbial Characteristics 26
1.2.3.1 Indicator Bacteria 27
1.3 Sources of Greywater 28
1.3.1 Washing Machines 28
1.3.2 Baths and Showers 28
1.3.3 Washbasins 30
1.3.4 Kitchen Sinks and Dishwashers 30
1.3.5 Combining Flows 38
1.3.6 Evaluating the Amount of Greywater and Potential for Water Saving 40
1.4 Diurnal Pattern of Greywater Flows 40
1.5 Diurnal Changes in Greywater Characteristics 41
1.5.1 Diurnal Changes in Organic Matter Content 41
1.5.2 Diurnal Changes in Content of Nutrients: Phosphorus and Ammonia 42
1.5.3 Diurnal Changes in Salt Contribution 43
1.5.4 Diurnal and Seasonal Changes in Concentration of Microorganisms 43
1.6 Synthetic Greywater 44
1.7 Summary 44

Chapter 2 Greywater Treatment 47
2.1 Challenges in Treating Greywater 47
2.2 Treatment Principles 47
2.2.1 Physical Treatment 47
2.2.1.1 Sedimentation 47
2.2.1.2 Filtration 50
2.2.2 Chemical Treatment 52
2.2.2.1 Coagulation and Flocculation 52
2.2.3 Biological Treatment 55
2.2.3.1 Suspended Growth 60
2.2.3.2 Treatment Processes with Substrate-Attached Growth 60
2.2.3.3 Oxidation–Reduction Reactions 60

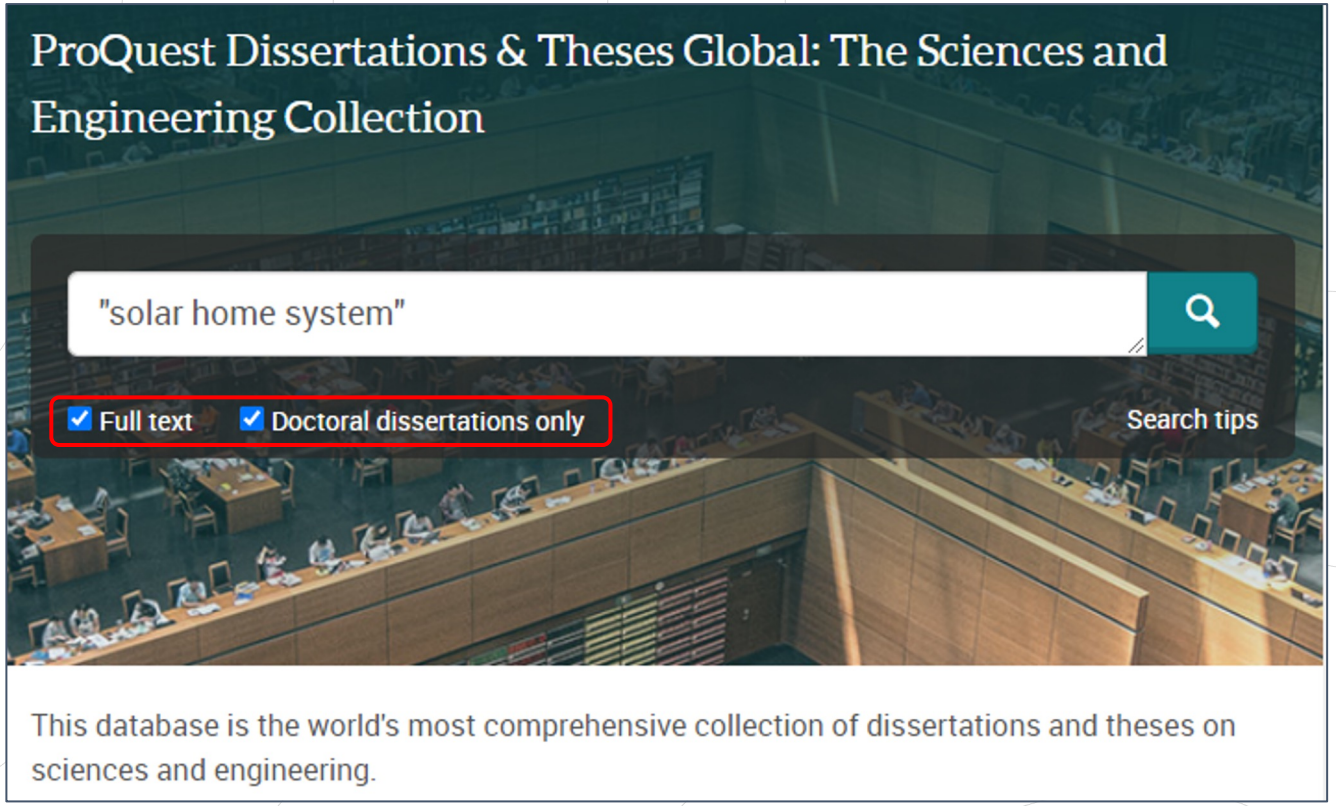
GROSS, Amit et al. *Greywater reuse*. London; New York; Boca Raton: CRC Press, Taylor & Francis Group, 2015. ISBN 9781482255041;1482255049;

➔ greywater AND (handbook OR text book OR encyclopedias OR dictionary)

Dissertations

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

- Get inspired by others' approaches to similar dissertation topics, formatting, and structure
- List of sources
- Discuss the choice of sample theses with mentor
- Avoid plagiarism



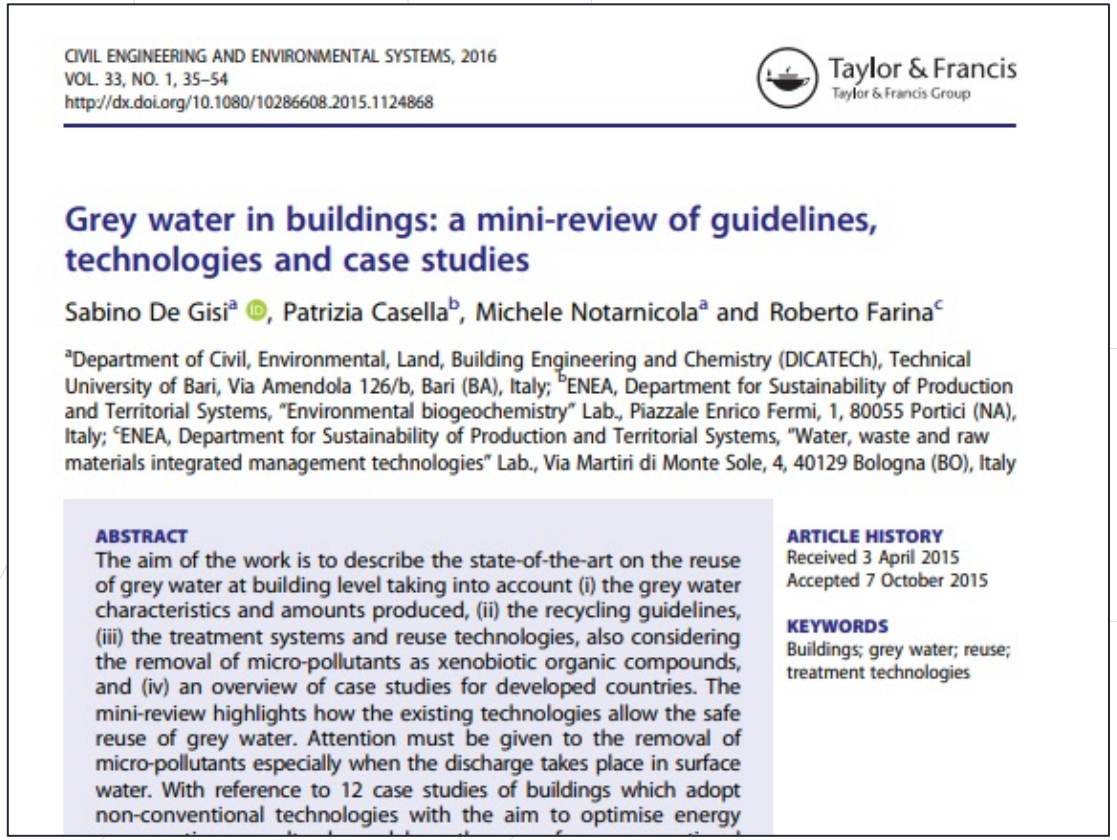
➔ Czech institutional repositories (CTU, UCT, CU, Grey literature)
➔ International repositories, ProQuest Theses (via NTK)

Review Articles

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

- Type of scholarly articles that provide summary and analysis of previous research on a specific topic/problem/question
- Efficient way to gain an overview of existing research and current state-of-the-art
- A comprehensive lists of relevant sources
- Review/Systematic Review, Meta-Research, Meta-Analysis

➔ (greywater OR "grey water") AND (review OR meta-analysis OR meta-research)
➔ Use a filter (available e.g., in Scopus, Web of Science, Google Scholar, Semantic Scholar)



CIVIL ENGINEERING AND ENVIRONMENTAL SYSTEMS, 2016
VOL. 33, NO. 1, 35–54
http://dx.doi.org/10.1080/10286608.2015.1124868

Taylor & Francis
Taylor & Francis Group

Grey water in buildings: a mini-review of guidelines, technologies and case studies

Sabino De Gisi[a], Patrizia Casella[b], Michele Notarnicola[a] and Roberto Farina[c]

[a]Department of Civil, Environmental, Land, Building Engineering and Chemistry (DICATECh), Technical University of Bari, Via Amendola 126/b, Bari (BA), Italy; [b]ENEA, Department for Sustainability of Production and Territorial Systems, "Environmental biogeochemistry" Lab., Piazzale Enrico Fermi, 1, 80055 Portici (NA), Italy; [c]ENEA, Department for Sustainability of Production and Territorial Systems, "Water, waste and raw materials integrated management technologies" Lab., Via Martiri di Monte Sole, 4, 40129 Bologna (BO), Italy

ABSTRACT
The aim of the work is to describe the state-of-the-art on the reuse of grey water at building level taking into account (i) the grey water characteristics and amounts produced, (ii) the recycling guidelines, (iii) the treatment systems and reuse technologies, also considering the removal of micro-pollutants as xenobiotic organic compounds, and (iv) an overview of case studies for developed countries. The mini-review highlights how the existing technologies allow the safe reuse of grey water. Attention must be given to the removal of micro-pollutants especially when the discharge takes place in surface water. With reference to 12 case studies of buildings which adopt non-conventional technologies with the aim to optimise energy

ARTICLE HISTORY
Received 3 April 2015
Accepted 7 October 2015

KEYWORDS
Buildings; grey water; reuse; treatment technologies

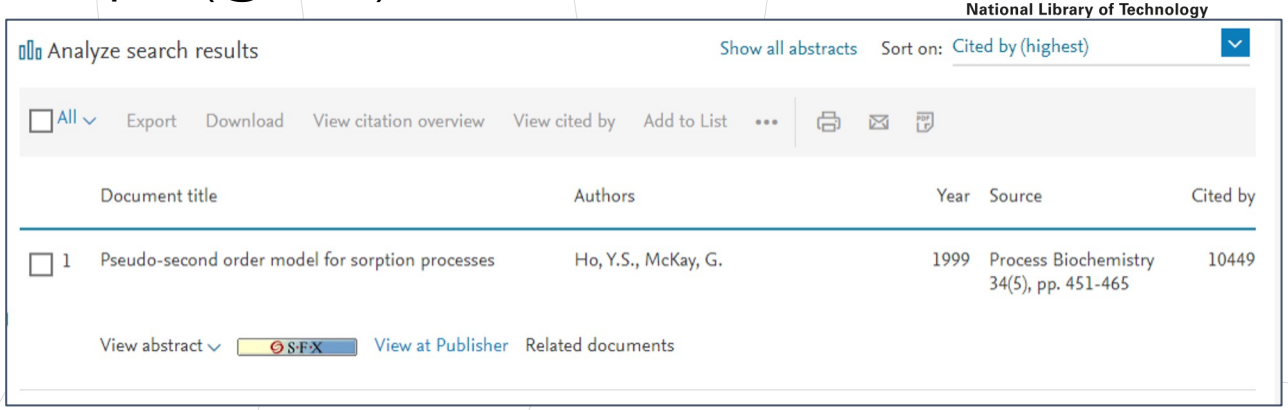
DE GISI, Sabino et al. Grey water in buildings: a mini-review of guidelines, technologies and case studies. *Civil engineering and environmental systems*. 2016, vol. 33, no. 1, pp. 35–54 [cit. 2022-10-10]. Available: https://doi.org/10.1080/10286608.2015.1124868

Seminal Articles

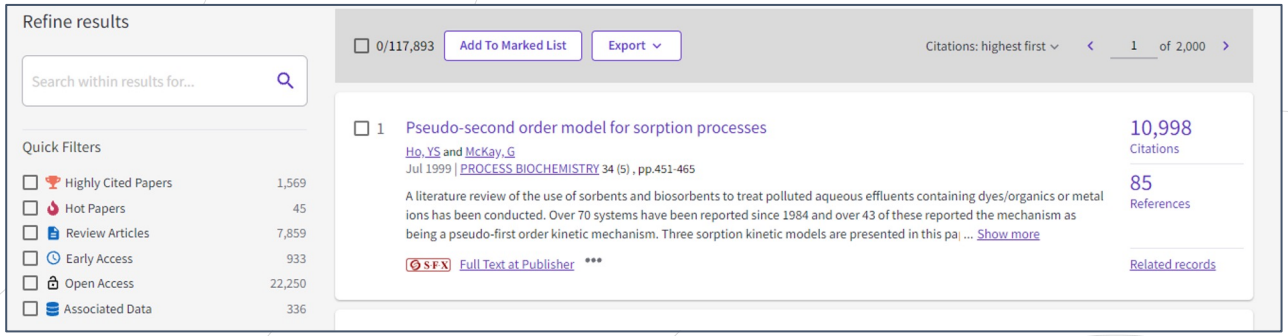
- **Core articles** for specific fields, usually providing some groundbreaking information
- Can usually be identified by the high number of citations
- Via **citation databases** (reliable journals and proceedings)

➔ *("waste water" OR "grey water") sorted via number of citations in Web of Science or Scopus*

Scopus (@ NTK)



Web of Science (@ NTK)



Chaudhuri, L. (n.d.). Seminal Works. EdD Executive Leadership *https://resources.library.lemoyne.edu/guides/EdD/Systematic-Review/Seminal-Works*

➔ Learn more about Citation Databases on our website

Seminal Articles (2)

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

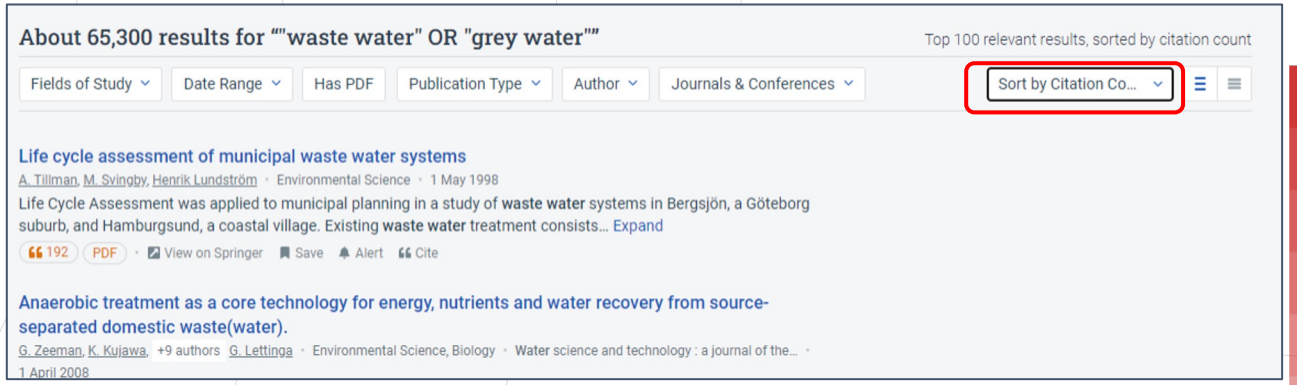
Other **search engines for academic resources** that enable sorting results by number of citations:

- Semantic Scholar (a free search engine developed by the Allen Institute for AI)
- Dimensions (a commercial scholarly search platform, the free version includes searching in publications and datasets only)

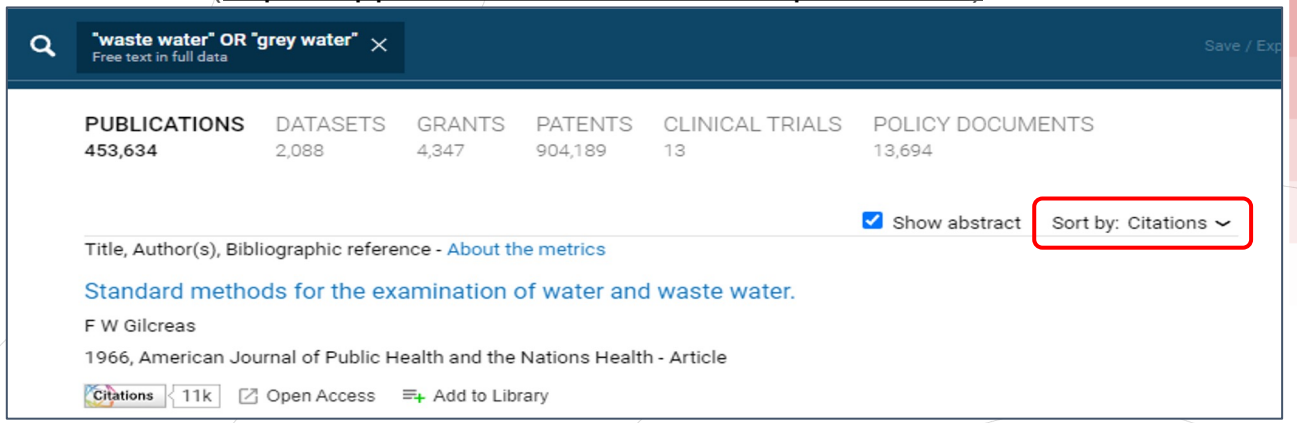
Consider:

- Number of citations vs. time
- Difference: citation count in different tools (different set of content for analysis)

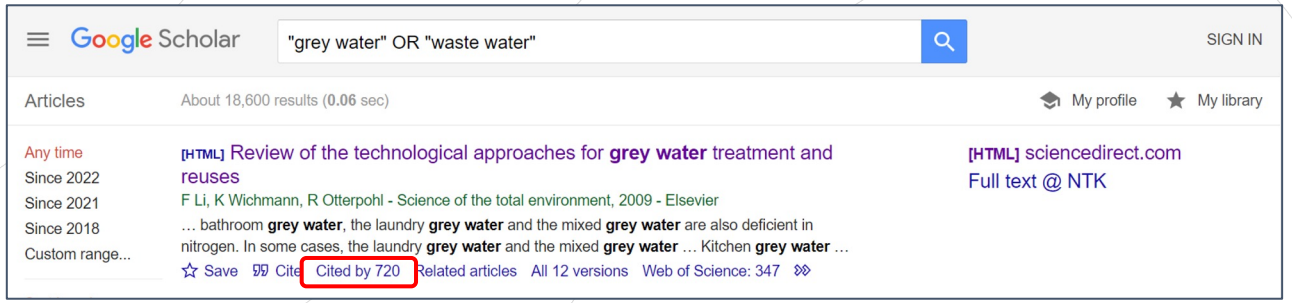
Semantic Scholar (https://www.semanticscholar.org/)



Dimensions (https://app.dimensions.ai/discover/publication)



Google Scholar – number of citation, but does not enable sorting



How Do You Stay Aware of Recent Research Trends?

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

A. Automatic alerts (email, RSS feeds) from a database or search engine (e.g., Google Scholar)

B. Via social media (ResearchGate, Twitter, and so on)

C. Checking a particular journal or website on a regular basis

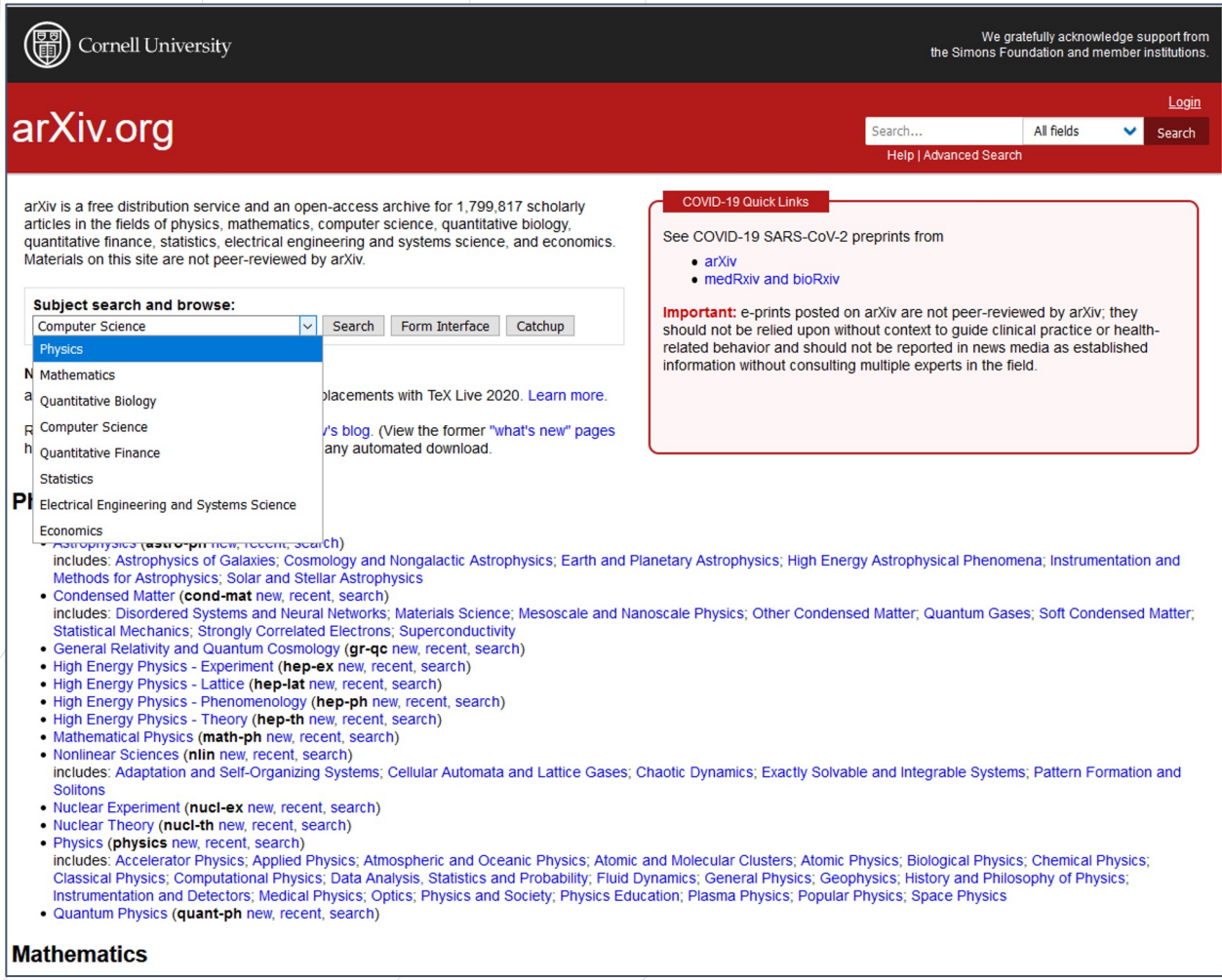
D. Receiving a newsletter from an institution or website

E. Other (chat)

The Most Up-to-date, State-of-the-art Search

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

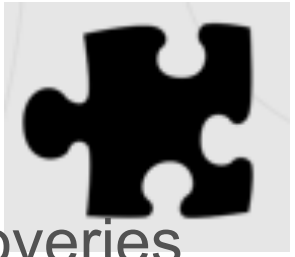
- Follow key scholars and institutions in your research field
- Preprint servers (arXiv, bioRxiv, others): articles published before peer review
- Conference papers, conference proceeding books
- Informal exploration of early-stage ideas: blogs, social networks, lectures



https://arxiv.org/

5. READING & ORGANIZING SOURCES

Reading: Smart, Careful, Mindful



- Essential part of keeping up-to-date with current research (new discoveries, leading authors, context of one‘s own research)
- Prerequisites for writing (writing habits in the field, argumentation, citing)

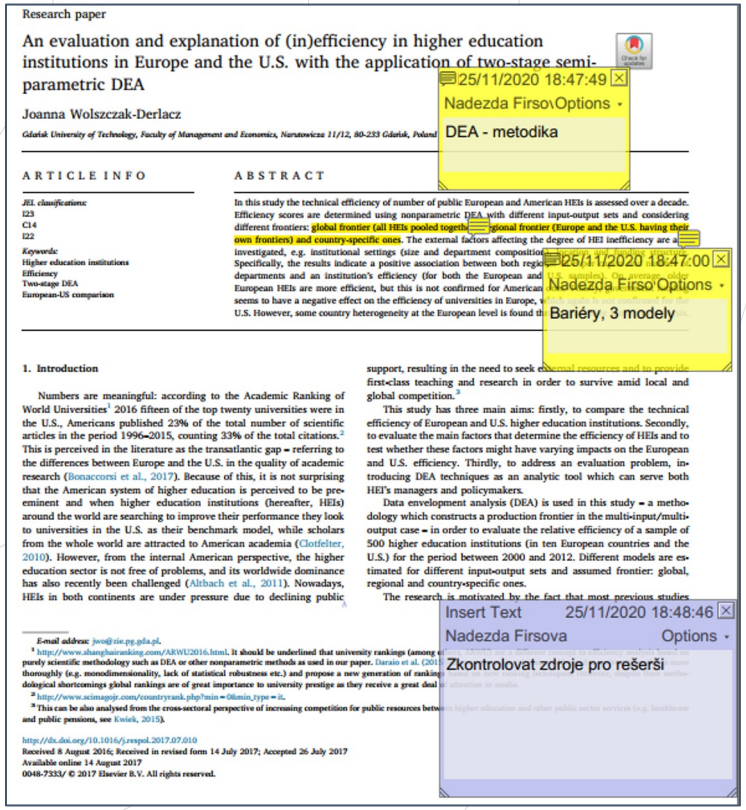
TIPS

- Be smart and picky; focus on abstract, conclusion, and specific issues before deciding to read the whole paper carefully
- Make notes from the very beginning; it will save your time later
- Managing sources: create your own system to organize materials and thoughts, be systematic

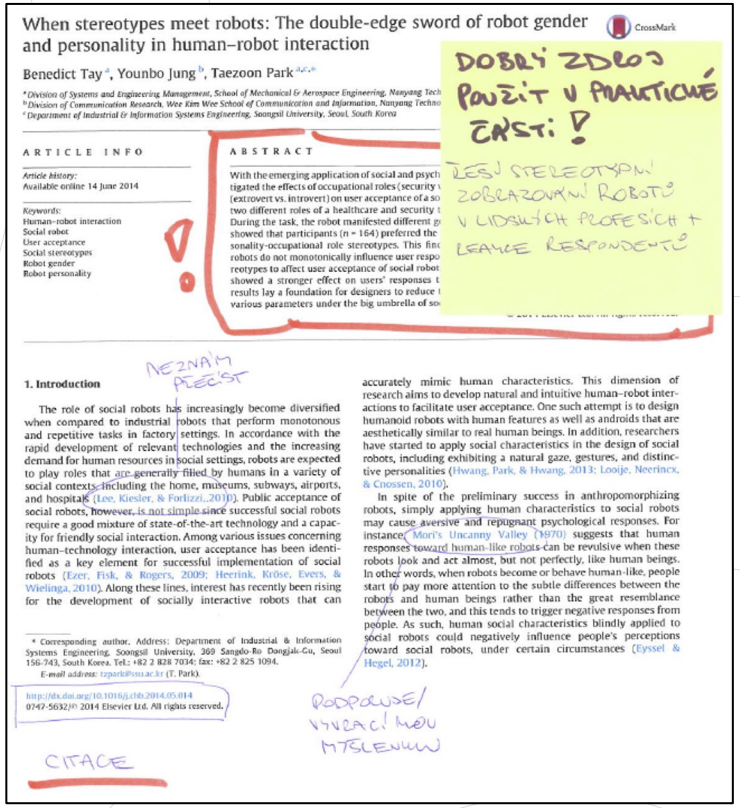
Managing Sources – Tips & Tricks

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

- Notes (electronic vs. written): important information, relationship to your work (methodology, contradictory or confirmatory conclusions, and so on)
- Folders, tags, or ranking system to differentiate between documents
- Citation management tools



Example of electronic notes



Example of written notes

Citation Management Tools

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

- Download and manage citations
- Create personal library
- Insert tags and notes
- Collaboration
- Generation of reference list
- Integrate with word processing software tools for easy insertion of citations into documents

Zotero

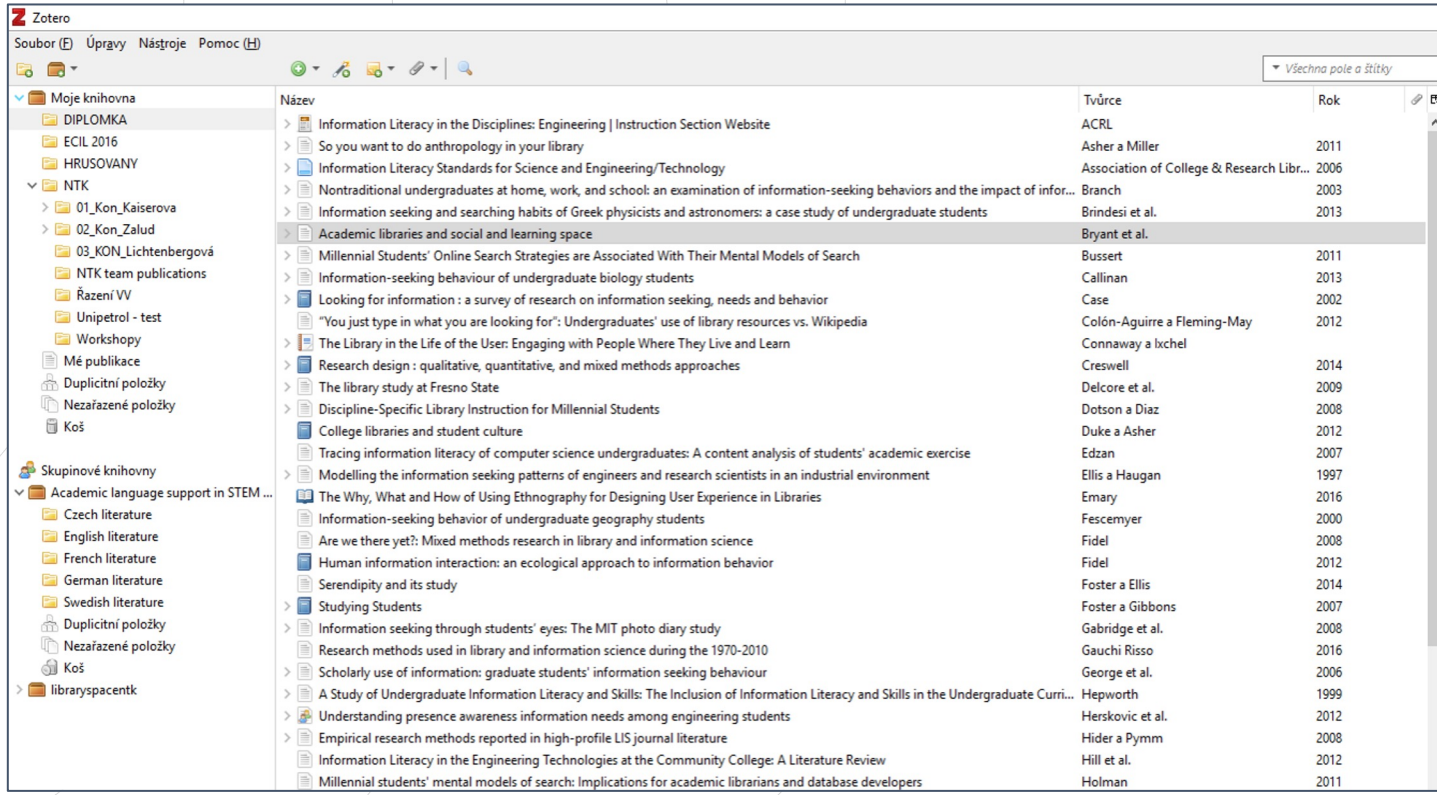
CitacePRO

Mendeley

Citavi

JabRef (integrated with LaTeX)

EndNote (subscription for UCT students)



Use them, but don't trust them absolutely!

6. PUBLISHING AND PRESENTING RESEARCH OUTPUTS

Have You Ever Published in a Scientific Journal or Conference Proceedings?

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

A. Yes, as the first author

B. Yes, as a co-author

C. Not at all

Searching High-quality Journals and Conferences

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

- Ask your mentor and/or peers
- Use citation and analytical databases to identify reliable journals and conferences:

  Web of Science, Scopus, Inspec Analytics
- Try recommender services such as Elsevier JournalFinder, WoS Manuscript Matcher
- Review the quality & reputation (journal metrics, editorial board, conference organizers, mentor recommendations), peer-review process and author services provided; read tips about avoiding predatory and questionable conferences
- Consider relevance of the conference to your field as well as its intended audience
- Open Access, Open Data
- Article processing charge (APC) and other costs and benefits
- Learn whether you can submit the same content to multiple journals or conferences at the same time (or not)

Searching High-quality Journals and Conferences

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

Eaton, S.E. (2018). Avoiding predatory journals and questionable conferences: A resource guide. *University of Calgary*. https://files.eric.ed.gov/fulltext/ED579189.pdf

Palmer, J. C. (2016). Navigating your first academic conference. *Psychological Science Agenda*. https://www.apa.org/science/about/psa/2016/10/academic-conference

Northcentral University Library (2021). *Research Process: Scholarly Publication.* https://ncu.libguides.com/researchprocess/scholarlypublication

Berkeley Library. (n.d.) *Scholarly Publishing.* https://www.lib.berkeley.edu/scholarly-communication/publishing

UNC University Libraries. (2021). Measure Your Research Impact: Where to Publish. https://guides.lib.unc.edu/measure-impact/publish

Summary

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

- Activate **Library links on Google Scholar**
- Always make sure you are logged into the library web for **off-campus access to full-text articles**
- Contact your librarian for materials that are hard-to-find
- Make notes and create your own system to organize materials from the very beginning of a project
- Use citation managers, but don’t trust them absolutely
- Critically consider journals and conferences and be aware of the publishing and conference submission process

Get Assistance

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

1) Schedule a consultation

- Please don't be shy; our team includes doctoral students who know, the issues you face
- LaTeX support, Bibliometric services

2) Attend a webinar

3) Explore by yourself

- STEMskiller: comprehensive skills set map for early career researchers
- Tutorials: NTK instructional materials and recordings, further resources
- Subject guides

Contacts

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

Barbora Šátková
barbora.satkova@techlib.cz

Klára Witzany Hutková
klara.witzanyhutkova@techlib.cz

Thank you

Questions?