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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

Eliška Skládalová
Beáta Soperová

October 15, 2025

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 Goals

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- Understand what types of sources there are and how to evaluate their quality
- Be able to build a search strategy for academic resources
- Understand where to search
- Be able to create a system for organizing your resources
- Learn to cite effectively

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What is your academic affiliation?

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What level of study are you at?

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What is your research field?

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1. Navigating Scientific Resources

Understanding the Landscape

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What is scientific information?

- Every document, a set of recorded information that is important for research, including informal resources.

Examples of scientific information

Type of resources	Examples	Characteristics
Peer-reviewed	Articles (but!), academic publications	High credibility
Grey literature, pre-prints	Dissertations, reports	Without reviews but often good quality
Open and informal communication	Lectures, academic blogs, podcasts…	Fast and accessible (but!)

Once you understand what types of information exist, the next step is to plan **how** to find the right ones — in other words, to build your search strategy.

Developing a Search Strategy

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What is a search strategy?

- A systematic approach for how you search, select sources, and refine queries to effectively find relevant information.

Why do you need an (effective) one?
To search effectively means to be able to find information sources that are:

- Highly relevant (to my task/information need)
- Comprehensive (or as comprehensive as I need them to be)
- High-quality (scientific: expert authors, peer review, etc.)
- Usable (available, under the right license, etc.)

…as quickly (time management) and reliably (system) as possible.

The search strategy depends on the tool and search engine.

From Your Task to Search Plan

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How do I tell WHAT to search for, WHERE and HOW?

1. WHAT IS YOUR TASK?

- Studying for an exam?
- Starting research?
- Writing up results?

2. WHAT specific information do you need?

- Looking for a research gap?
- Fact checking?
- Getting an overview?
- State of the art?

3. WHAT type of source?

- Handbook? Textbook?
- (Systematic) literature review?
- Research article?
- Conference proceedings?
- Monograph?
- Technical standards?
- Patents?

4. Searching

- WHERE? = Tools & collections.
- HOW? = Tools & search strategies.

What comes after:

5. Organizing & storing your sources

6. Information retrieval

- Reading strategies
- Reading for writing (guide)
- Use of sources = citation

WHAT to look for when evaluating a scholarly source…

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1. Relevance: Be guided by YOUR task.

Example: Even a high-quality article can be **irrelevant** to your research question.

2. Quality depends not only on *who published the document*, but also on:

- **Authorship & expertise:** who wrote it?
- Purpose & audience: what for?
- Methodology & transparency: how?
- Peer review & editorial process: any checks?

Example: a well-defended dissertation with a rigorous methodology might be **better** for your task than a highly cited article that does not directly address your research question.

Where to Search: Tools & Collections

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- **General Search Engines:** Google Scholar, Lens.org
- **Search & Discovery Tools at NTK**
  - Library Discovery Tools (NTK, chemTK, CTU discovery tools)
- **AI-driven Tools**
  a. Elicit, Scite_, Consensus, ResearchRabbit, Litmaps
  b. Semantic Scholar, Connected Papers

= These search tools give you access to various collections.

- **Databases**
  - Subscription-based Platforms (IEEE Xplore, ScienceDirect, SpringerLink)
  - Open Access Platforms (DOAJ (journals), CORE (articles), PubMed Central)
  - Subject-specific Databases (PubMed (biomedicine), arXiv (physics, math, CS), SSRN (social sciences)
- **Citation & Impact Databases**
  - Web of Science, Scopus, Dimensions, OpenAlex
- **Preprints & Repositories**
  a. Preprint servers: arXiv, bioRxiv, medRxiv, SocArXiv
  b. Academic networks: ResearchGate, Academia.edu
  c. Institutional repositories

Learn more:

Webinar:
Searching and Evaluating on Web of Science & Scopus
(19 November 2025)

Tips and Tricks: NTK Resources

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Searching @ NTK

Electronic Resources

Most of these eResources can be accessed outside the library. To search a specific database, select *via NTK*. To search all eResources at once, use the *Search Our Collections* box above.

Use filters to find resources relevant to a particular subject, in a particular format, or by language.

Title	Access	Description
Academic Search Ultimate	via NTK	Description
AccessScience	via NTK	Description
Accuris Engineering Workbench (former IHS)	via NTK	Description
ACM Digital Library Open	via NTK	Description
ACS (American Chemical Society)	Open access	Description
American Institute of Physics - Complete	via NTK	Description
Anopress IT New content	via NTK	Description

Search and Filters

Type to filter

RESOURCE TYPE
CONTENT TYPE
SUBJECTS
ACCESS
CONTENT LANGUAGE

Member of CZECH eLIB

Contacts

eResources Acquisition
eiz@techlib.cz

eResources Administration
eservices@techlib.cz

See also

- Subject Guides
- eBook Search
- Journal Search
- Remote Access
- Access & Privileges
- Interlibrary Loan and Document Delivery
- Suggest a purchase
- Reference and Research Help
- Library Rules
- Catalog

Getting Full Texts Off-Campus

! Need to be logged in

2

An Investigation into **Academic Stress** and **Coping Strategies** o…

by Ra, Young An; Shin, Kahyen

Peer-Reviewed
Open Access
15 Pages

Quick Look

Behavioral sciences , 03/2025, Volume 15, Issue 3

This study aimed to increase the understanding of **academic stress** and **coping strategies** of third culture kids (TCKs...

Journal Article PDF

Full Text Online More Options

Citations Cites

Related Articles

Where to Search: Google Scholar and Library Links

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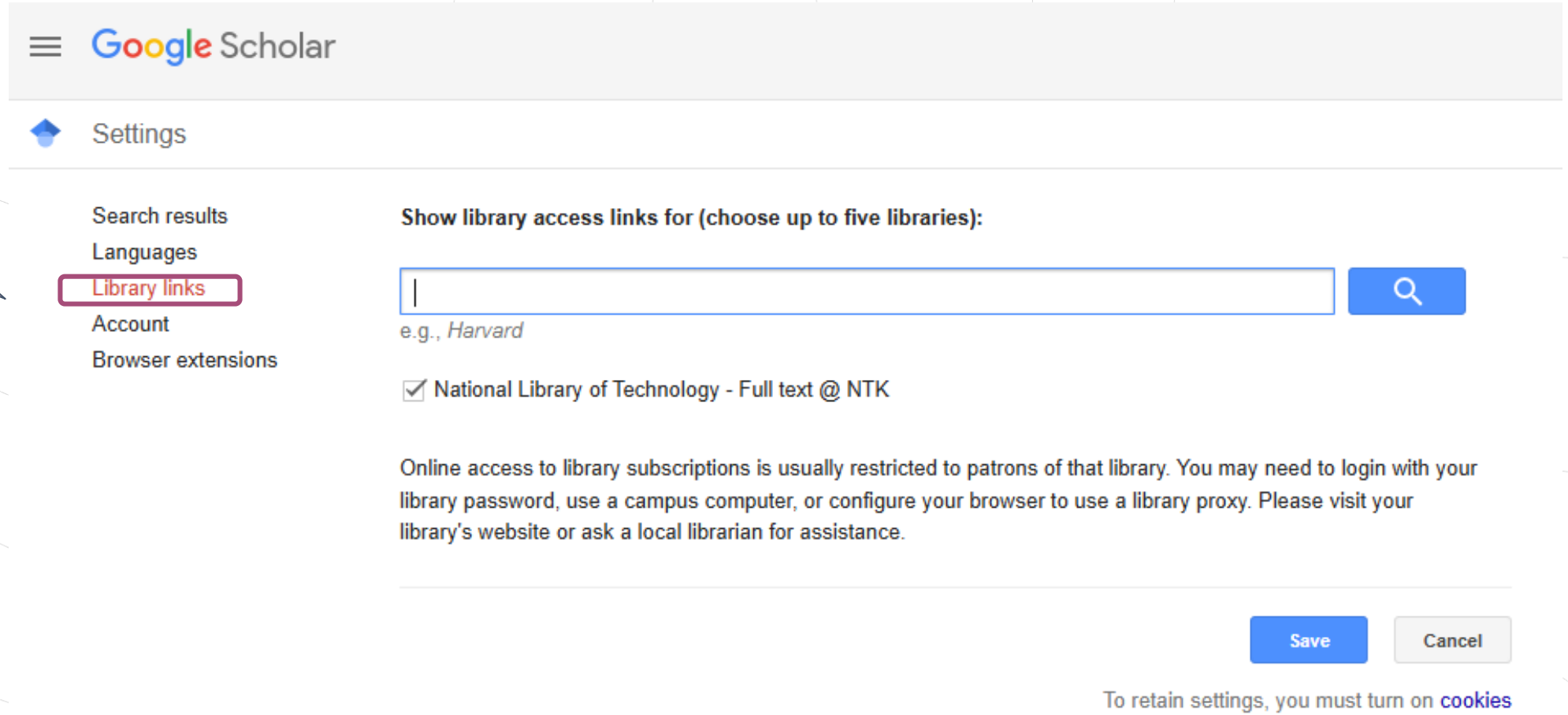
Settings => Library links => choose your institution or library



Google Scholar Button

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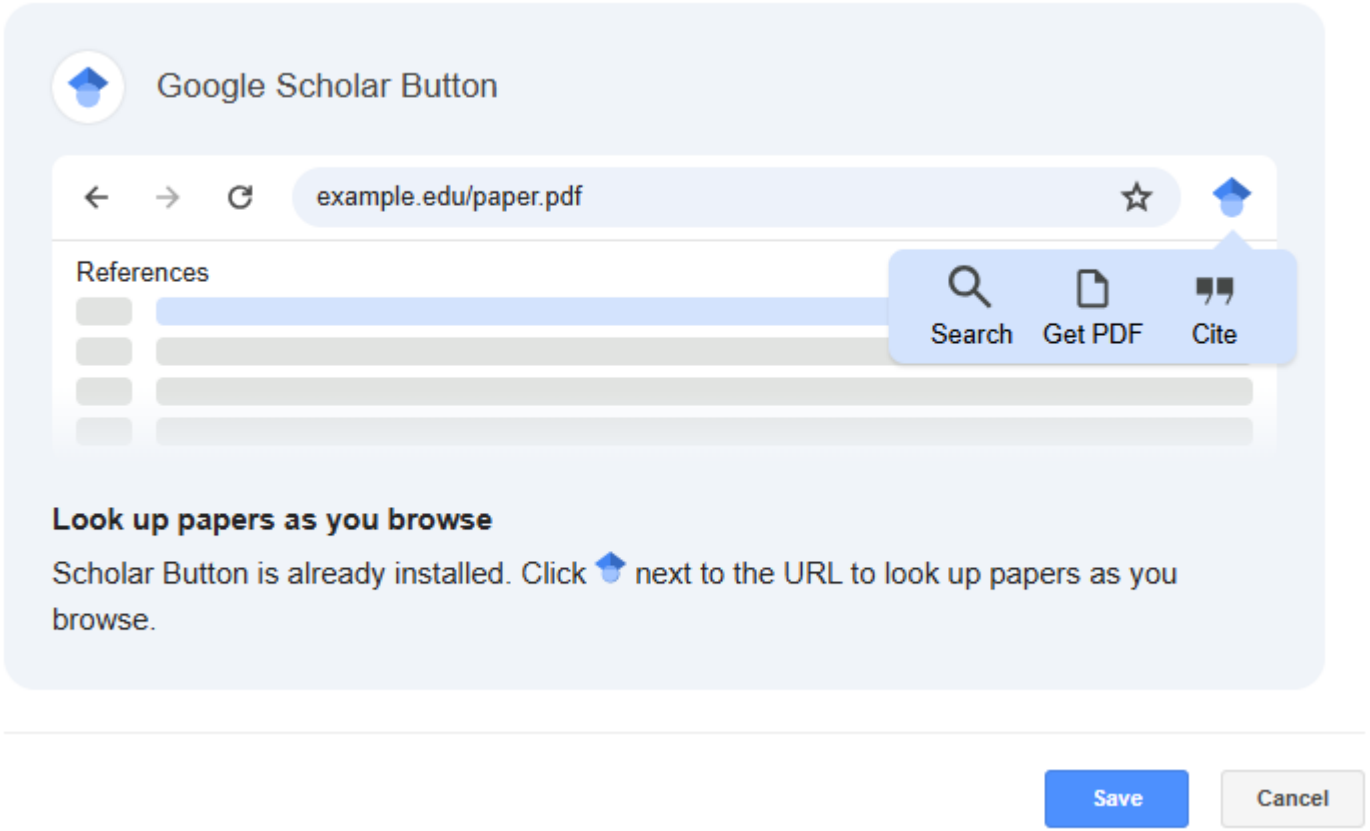
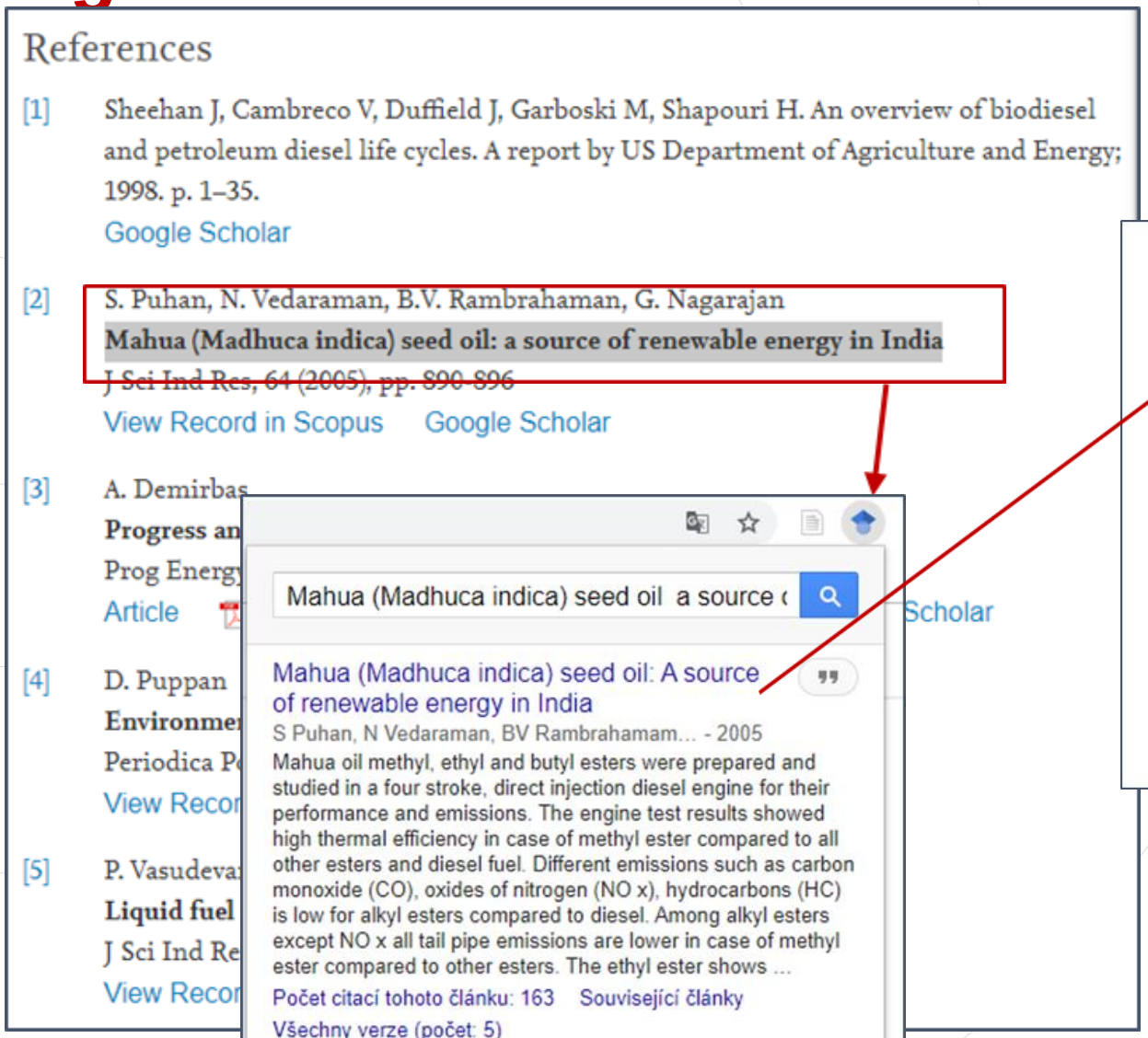
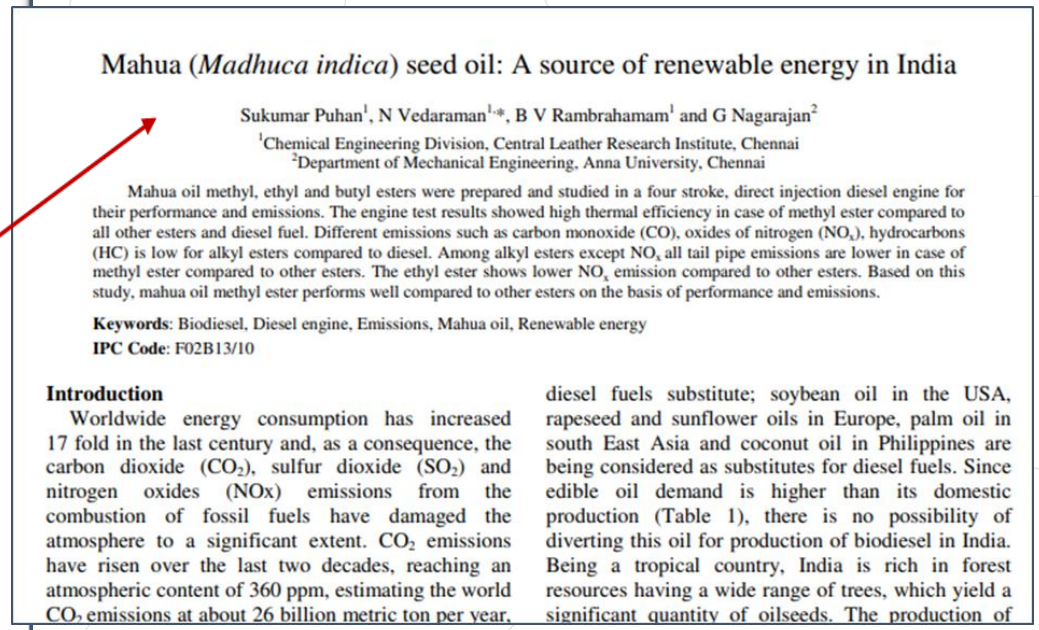
- Extension
- Lets you search Google Scholar without leaving the page you're on



Google Scholar Button





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

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How to Search: Implementing a Search Strategy

Do you use operators while searching?
Which ones?

How to Search with Keywords

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1. Keywords – to capture core ideas or concepts

- What to do when you don't know the topic very well as yet?
  - AI, discipline-specific thesaurus/dictionary (MeSH, IEEE Thesaurus, Mathematics Subject Classification)

Operators may work differently across various platforms.

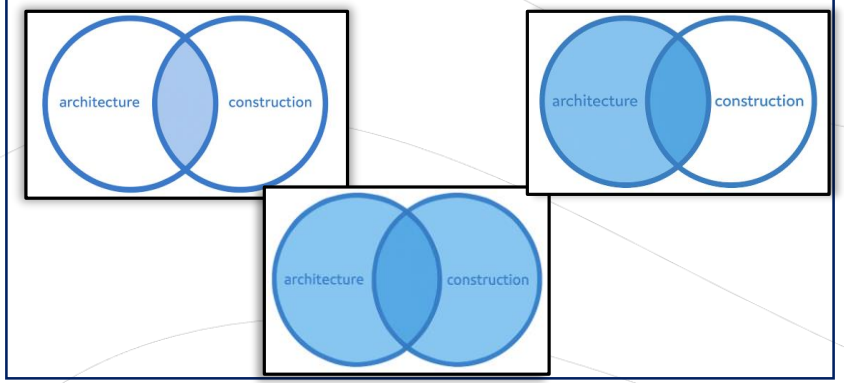
- Web Of Science, Scopus, Google Scholar

2. Combining keywords into queries

- Using Boolean operators to connect keywords

Boolean operators

And Or Not



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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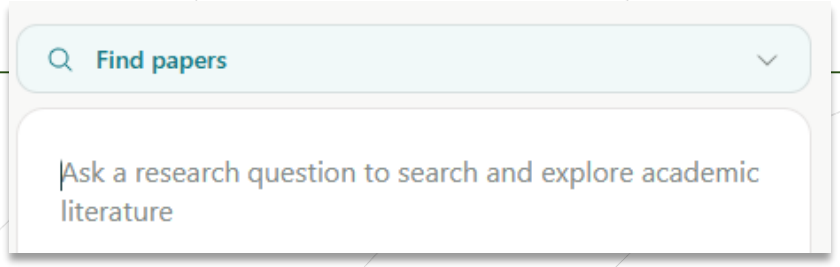
Keyword Search

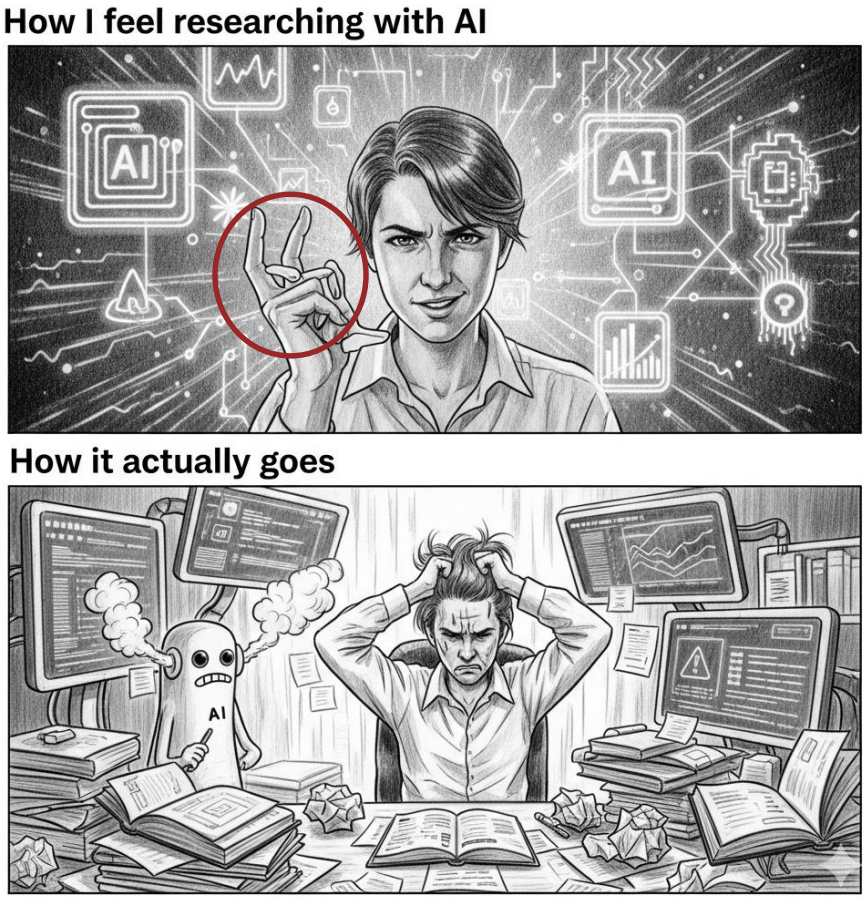
- Matches exact words in your query
- Sensitive to wording
- Need to understand Boolean operators

Semantic search

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



AI-Driven Tools



(Gemini. 2.5 Flash. Gemini.google.com. 27.08.2025. Prompt: Create pencil-drawn, funny and original meme on researching with ai.

AI-Driven Search Tools

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Why not to use chatbots (Gemini, ChatGPT, Copilot) for searching academic resources?

a. Lack of transparency!
b. Incomplete coverage: chatbots don't have direct access to subscription databases
c. Outdated information
d. They do not distinguish between peer-reviewed studies and blog posts or grey literature.
e. Ethical and copyright concerns

If not chatbots, then what?
Depends on your task/need…

AI Essentials For Academia – webinar (November 12)

Literature Discovery & Visualization Tools	Research Assistants
ResearchRabbit (free)	Elicit (freemium)
Litmaps (freemium)	Consensus (freemium)
Inciteful (free)	Scite.ai (freemium)
Open Knowledge Maps (free)	NotebookLM (freemium)

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What should you be careful about?

- Check for supported databases

AI cannot replace *traditional* methods yet!

Scite

scite_

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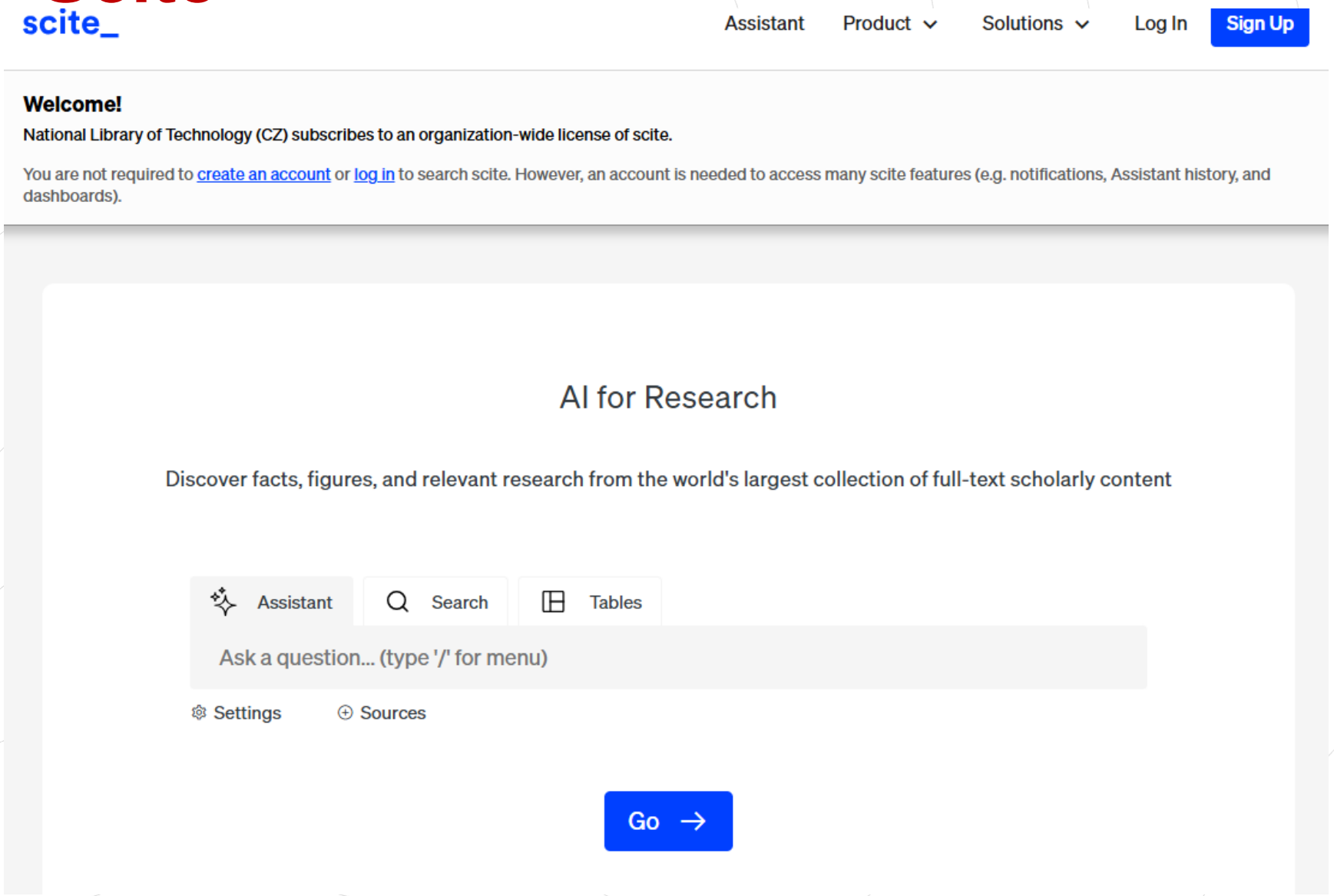
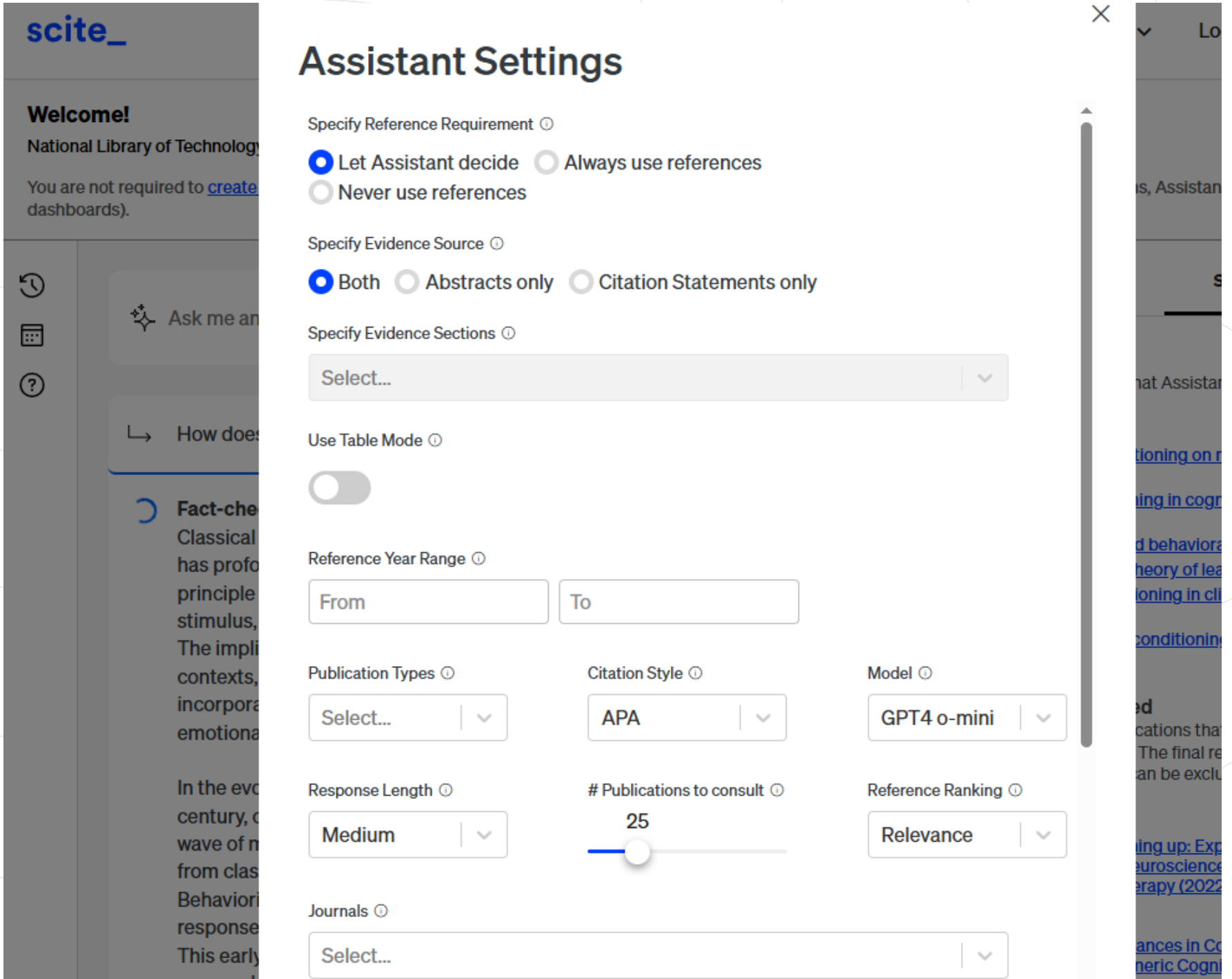


If you are registered with NTK, you have free access to Scite.ai.



2. Reading and Organizing Sources

Reading Strategies

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1. **Read the abstract/conclusion first** (on your own, or ask AI for help)
2. **Decide on relevance**
3. **Read other sections/chapters**
4. **Highlight & take notes**
   - Electronic notes right in PDF
   - In separate file
   - Manually on printed documents
5. **Be systematic**

Acaricidal activity of essential oil nanoemulsion against the African red mite (*Eutetranychus africanus*)

Thanaporn Doungnapa[1*], Jarongsak Pumnuan[1], and Ammorn Insung[1]

[1]King Mongkut's Institute of Technology Ladkrabang, Faculty of Agricultural Technology, Department of Plant Production Technology, Bangkok 10520, Thailand. *Corresponding author (k.thanapornmilk@gmail.com).

Received: 1 October 2020; Accepted: 12 January 2021; doi:10.4067/S0718-58392021000200228

ABSTRACT

The African red mite (*Eutetranychus africanus* [Tucker]) is an important pest species of some economic plants. The objective of the present study was to evaluate the effectiveness of nanoemulsions consisting of citronella grass, lemongrass, clove, and cinnamon essential oils and their main chemical compounds against the African red mite; their toxicity, egg-laying inhibition, and repellent effect on the mite were determined. Essential oil nanoemulsions (nEOs) were prepared by mixing the essential oils with different surfactants and co-surfactants. Approximately 10 to 15 female mites were transferred to treated leaves placed on soaked cotton and kept in a Petri dish. Mite mortality and number of eggs laid were checked after 24 h. As for the repellency test, the selected test consisted of dipping a half leaf into the nEOs, while the other half leaf was dipped in a control (water). The repellency rate was evaluated after 24 h. Results revealed that citronella grass nEOs exhibited a highly toxic effect on the mite and only a 0.6% concentration caused 100% mite mortality. Geraniol, one of the main chemical compounds of citronella grass, represented the highest egg-laying inhibition at a 0.2% concentration with a mean of 0.1 egg compared with 4.7 eggs in the control. Furthermore, nEOs from citronella grass at a 0.1% concentration were extremely repellent against the mite with 95% repellency after 24 h. Therefore, the citronella grass essential oil nanoemulsion is appropriate for use to effectively control the African red mite.

For discussion

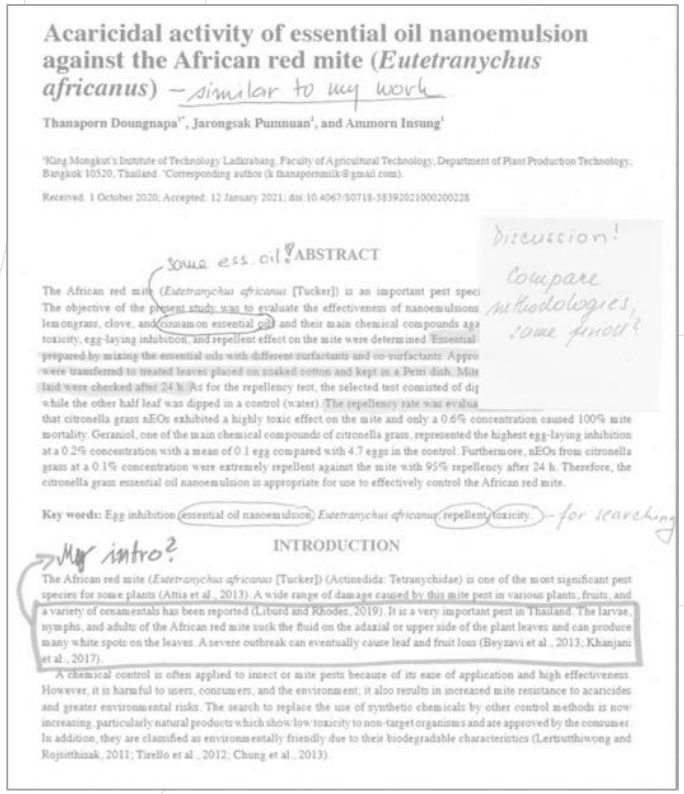
Key words: Egg inhibition, essential oil nanoemulsion, *Eutetranychus africanus*, repellent, toxicity.

INTRODUCTION

The African red mite (*Eutetranychus africanus* [Tucker]) (Actinedida: Tetranychidae) is one of the most significant pest species for some plants (Attia et al., 2013). A wide range of damage caused by this mite pest in various plants, fruits, and a variety of ornamentals has been reported (Liburd and Rhodes, 2019). It is a very important pest in Thailand. The larvae, nymphs, and adults of the African red mite suck the fluid on the adaxial or upper side of the plant leaves and can produce many white spots on the leaves. A severe outbreak can eventually cause leaf and fruit loss (Beyzavi et al., 2013; Khanjani et al., 2017).

A chemical control is often applied to insect or mite pests because of its ease of application and high effectiveness. However, it is harmful to users, consumers, and the environment; it also results in increased mite resistance to acaricides and greater environmental risks. The search to replace the use of synthetic chemicals by other control methods is now increasing, particularly natural products which show low toxicity to non-target organisms and are approved by the consumer. In addition, they are classified as environmentally friendly due to their biodegradable characteristics (Lertsutthiwong and Rojsitthisak, 2011; Tirello et al., 2012; Chung et al., 2013).

Example of electronic notes



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some ess. oil? ABSTRACT

discussion! Compare methodologies, some ideas?

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My intro?

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Example of written notes

Create your own system.

Reading Strategies

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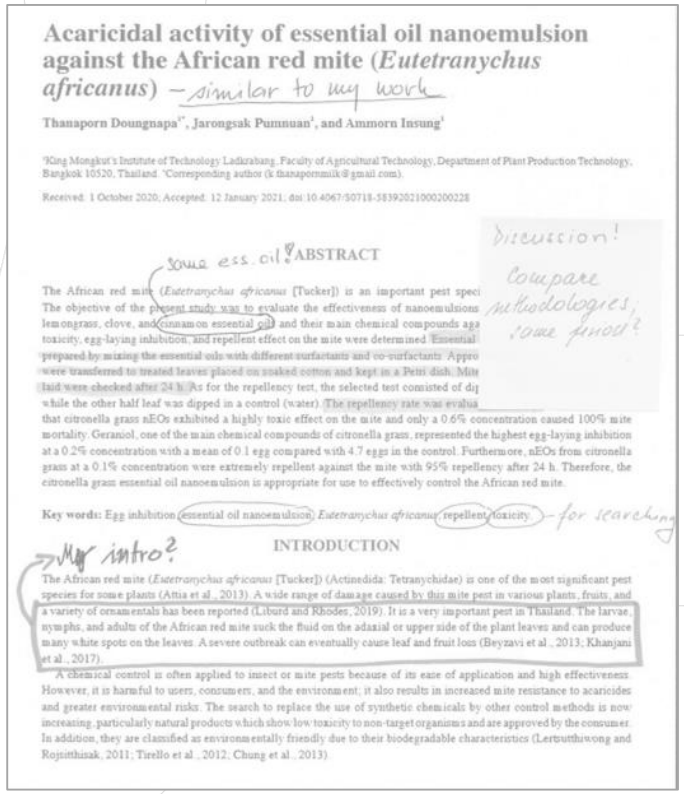

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Thanaporn Doungnapa[1*], Jarongsak Pumnuan[1], and Ammorn Insung[1]

Discussion! Compare methodologies, some ideas?

some ess. oil ABSTRACT

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My intro?

INTRODUCTION

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Acaricidal activity of essential oil nanoemulsion against the African red mite (*Eutetranychus africanus*)

Thanaporn Doungnapa[1*], Jarongsak Pumnuan[1], and Ammorn Insung[1]

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Received: 1 October 2020; Accepted: 12 January 2021; doi:10.4067/S0718-58392021000200228

ABSTRACT

The African red mite (*Eutetranychus africanus* [Tucker]) is an important pest species of some economic plants. The objective of the present study was to evaluate the effectiveness of nanoemulsions consisting of citronella grass, lemongrass, clove, and cinnamon essential oils and their main chemical compounds against the African red mite; their toxicity, egg-laying inhibition, and repellent effect on the mite were determined. Essential oil nanoemulsions (nEOs) were prepared by mixing the essential oils with different surfactants and co-surfactants. Approximately 10 to 15 female mites were transferred to treated leaves placed on soaked cotton and kept in a Petri dish. Mite mortality and number of eggs laid were checked after 24 h. As for the repellency test, the selected test consisted of dipping a half leaf into the nEOs, while the other half leaf was dipped in a control (water). The repellency rate was evaluated after 24 h. Results revealed that citronella grass nEOs exhibited a highly toxic effect on the mite and only a 0.6% concentration caused 100% mite mortality. Geraniol, one of the main chemical compounds of citronella grass, represented the highest egg-laying inhibition at a 0.2% concentration with a mean of 0.1 egg compared with 4.7 eggs in the control. Furthermore, nEOs from citronella grass at a 0.1% concentration were extremely repellent against the mite with 95% repellency after 24 h. Therefore, the citronella grass essential oil nanoemulsion is appropriate for use to effectively control the African red mite.

For discussion

Key words: Egg inhibition, essential oil nanoemulsion, *Eutetranychus africanus*, repellent, toxicity.

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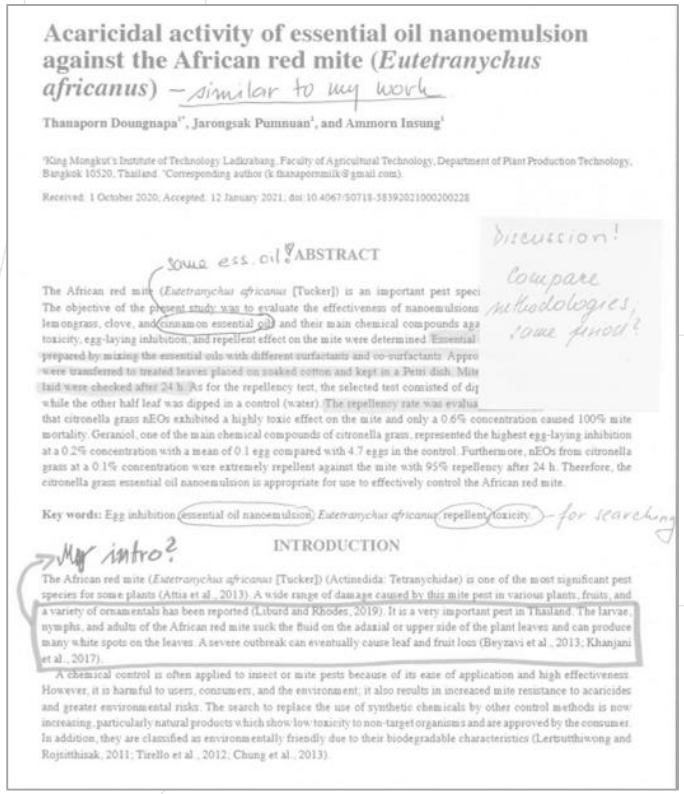

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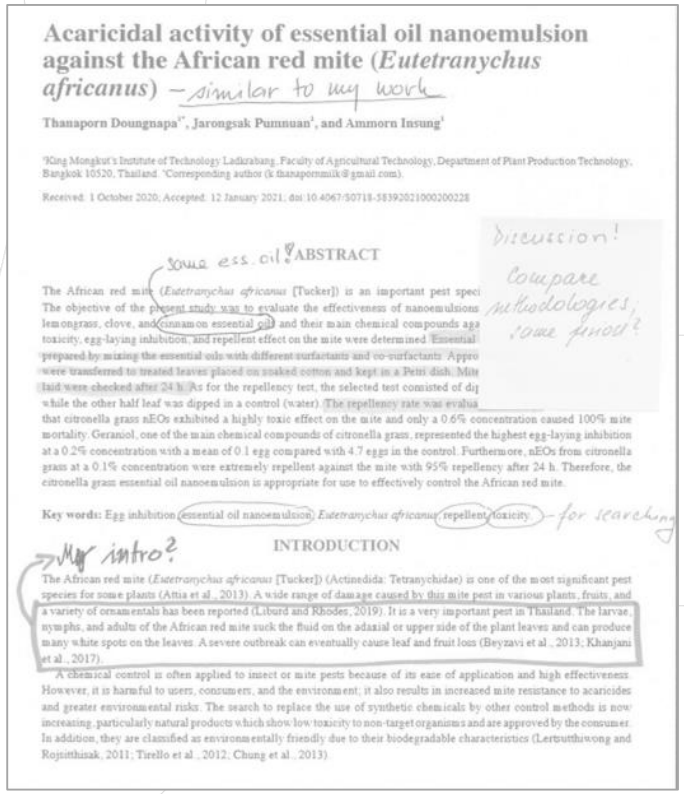

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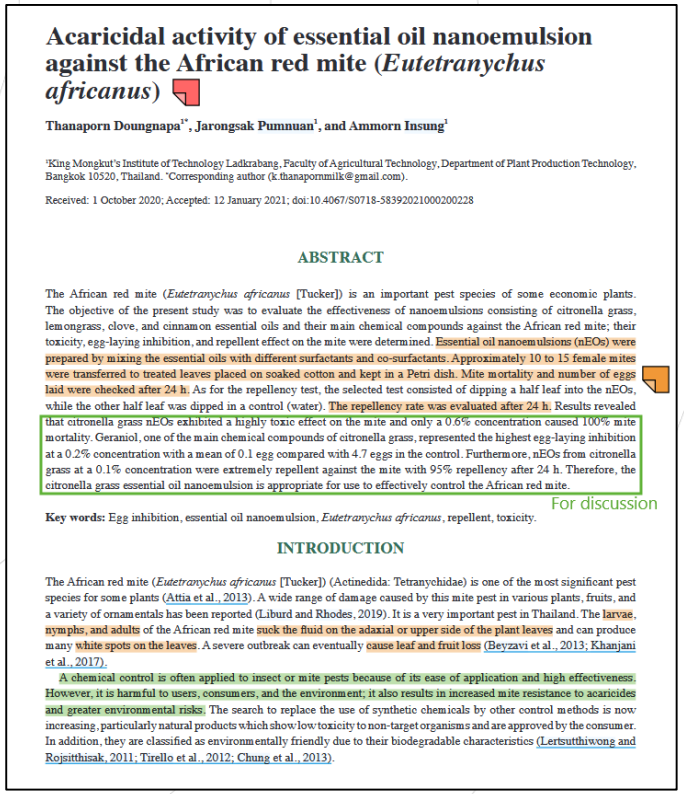

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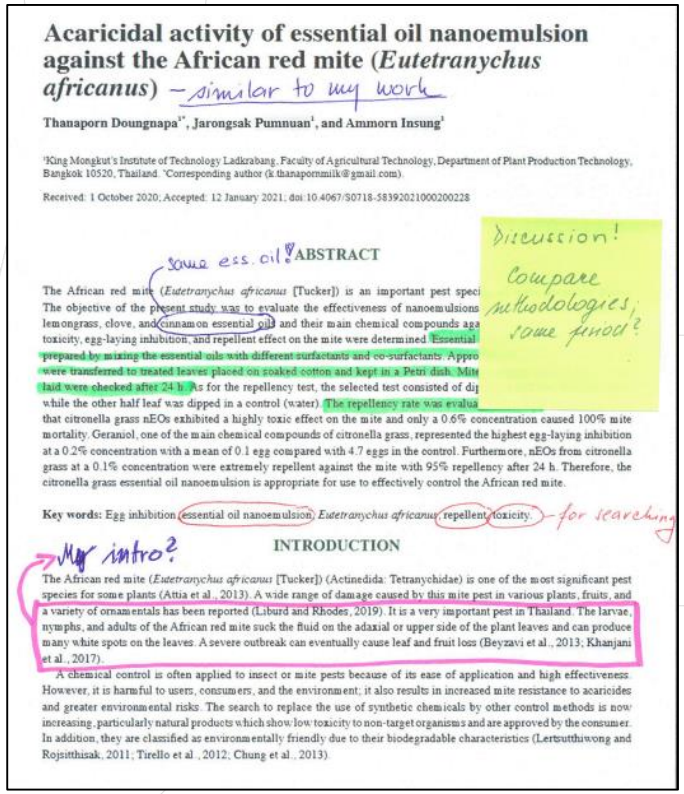

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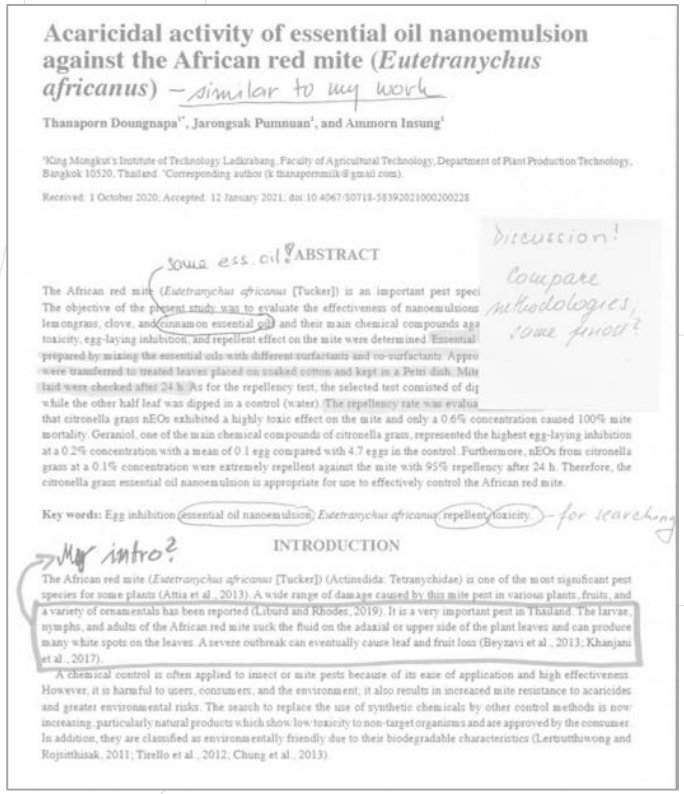

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The African red mite (*Eutetranychus africanus* [Tucker]) is an important pest species of some economic plants. The objective of the present study was to evaluate the effectiveness of nanoemulsions consisting of citronella grass, lemongrass, clove, and cinnamon essential oils and their main chemical compounds against the African red mite; their toxicity, egg-laying inhibition, and repellent effect on the mite were determined. Essential oil nanoemulsions (nEOs) were prepared by mixing the essential oils with different surfactants and co-surfactants. Approximately 10 to 15 female mites were transferred to treated leaves placed on soaked cotton and kept in a Petri dish. Mite mortality and number of eggs laid were checked after 24 h. As for the repellency test, the selected test consisted of dipping a half leaf into the nEOs, while the other half leaf was dipped in a control (water). The repellency rate was evaluated after 24 h. Results revealed that citronella grass nEOs exhibited a highly toxic effect on the mite and only a 0.6% concentration caused 100% mite mortality. Geraniol, one of the main chemical compounds of citronella grass, represented the highest egg-laying inhibition at a 0.2% concentration with a mean of 0.1 egg compared with 4.7 eggs in the control. Furthermore, nEOs from citronella grass at a 0.1% concentration were extremely repellent against the mite with 95% repellency after 24 h. Therefore, the citronella grass essential oil nanoemulsion is appropriate for use to effectively control the African red mite.

For discussion

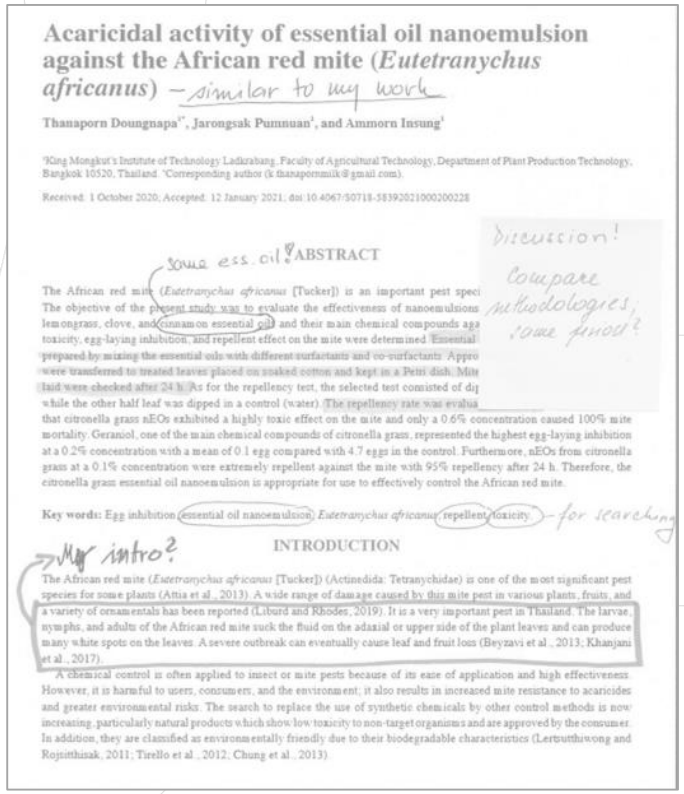
Key words: Egg inhibition, essential oil nanoemulsion, *Eutetranychus africanus*, repellent, toxicity.

INTRODUCTION

The African red mite (*Eutetranychus africanus* [Tucker]) (Actinedida: Tetranychidae) is one of the most significant pest species for some plants (Attia et al., 2013). A wide range of damage caused by this mite pest in various plants, fruits, and a variety of ornamentals has been reported (Liburd and Rhodes, 2019). It is a very important pest in Thailand. The larvae, nymphs, and adults of the African red mite suck the fluid on the adaxial or upper side of the plant leaves and can produce many white spots on the leaves. A severe outbreak can eventually cause leaf and fruit loss (Beyzavi et al., 2013; Khanjani et al., 2017).

A chemical control is often applied to insect or mite pests because of its ease of application and high effectiveness. However, it is harmful to users, consumers, and the environment; it also results in increased mite resistance to acaricides and greater environmental risks. The search to replace the use of synthetic chemicals by other control methods is now increasing, particularly natural products which show low toxicity to non-target organisms and are approved by the consumer. In addition, they are classified as environmentally friendly due to their biodegradable characteristics (Lertsutthiwong and Rojsitthisak, 2011; Tirello et al., 2012; Chung et al., 2013).

Example of electronic notes



Acaricidal activity of essential oil nanoemulsion against the African red mite (*Eutetranychus africanus*) – similar to my work

Thanaporn Doungnapa[1*], Jarongsak Pumnuan[1], and Ammorn Insung[1]

[1]King Mongkut's Institute of Technology Ladkrabang, Faculty of Agricultural Technology, Department of Plant Production Technology, Bangkok 10520, Thailand. *Corresponding author (k.thanapornmilk@gmail.com).

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some ess. oil? ABSTRACT

discussion! Compare methodologies, some ideas?

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Key words: Egg inhibition, essential oil nanoemulsion, *Eutetranychus africanus*, repellent, toxicity. – for searching

My intro?

INTRODUCTION

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Example of written notes

Create your own system.

Reading Strategies

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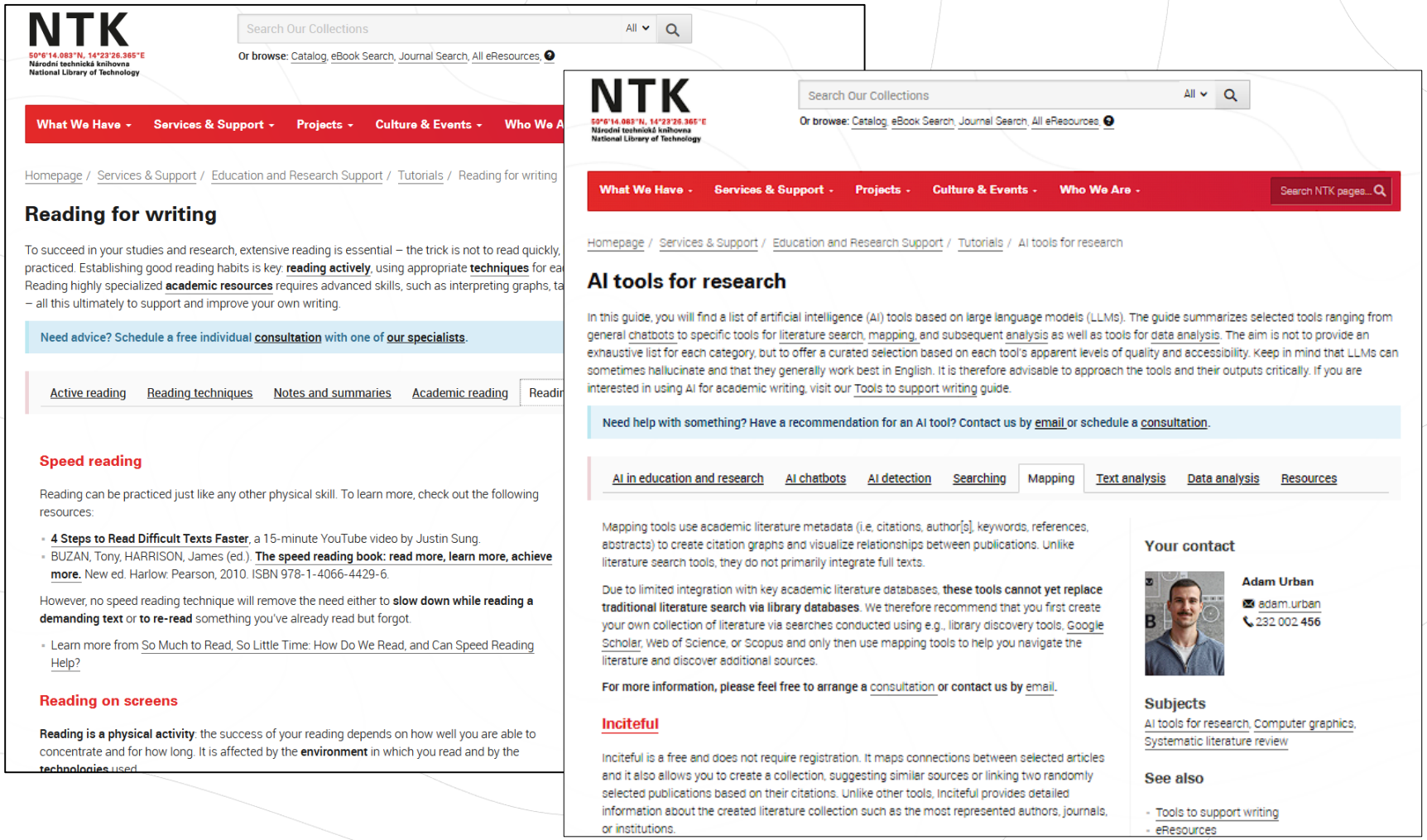

Organizing Your Sources

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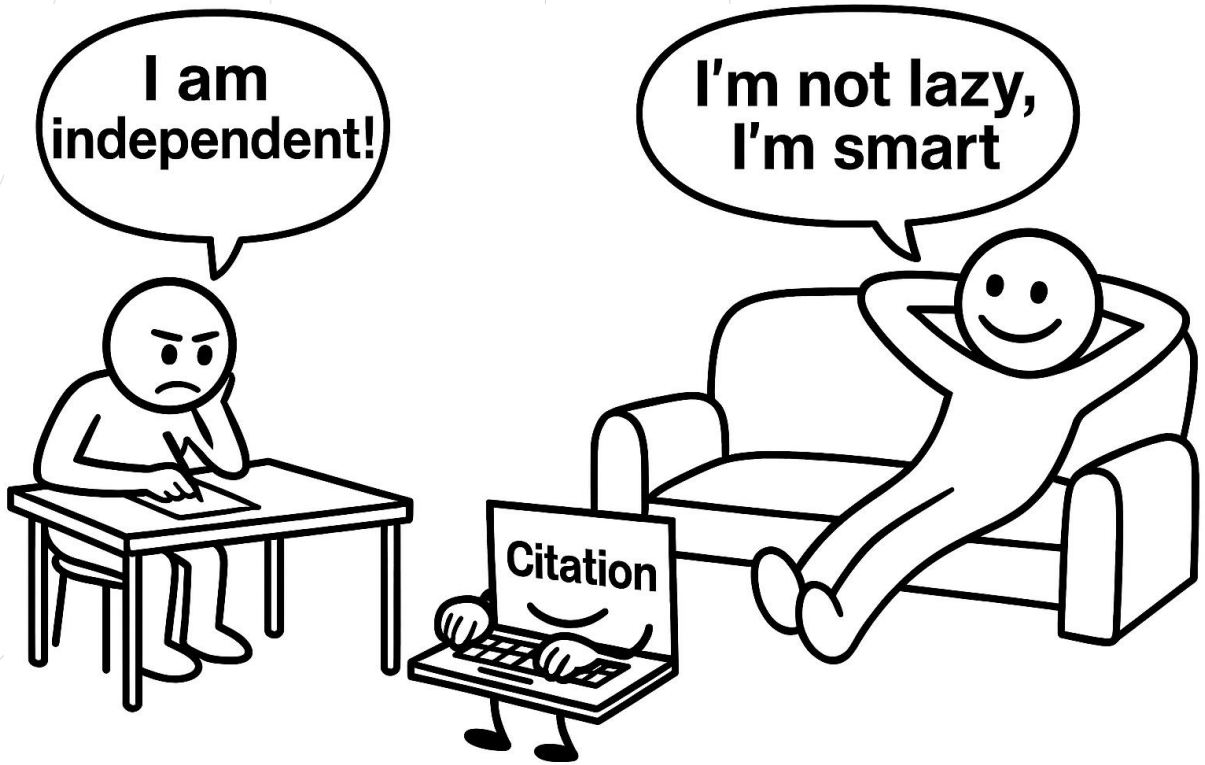
Little organization

- Manual saving of documents
- Folders with PDF or HTML files
- Manual in-text citing
- Separate file with a manually created reference list

More organization

- E-documents downloaded to a citation manager
- Sorted into citation manager folders
- In-text citing by citation manager plugin
- Automatically generated reference list



(OpenAI. Microsoft Copilot.. 18.08.2025. Prompt: Two simple pictogram-style characters—one sitting at a table writing and thinking with a speech bubble saying "I am independent!", and the other relaxing on a couch saying "I'm not lazy, I'm smart." with a laptop turned toward the figure on the couch, typing on its own and on its screen is the word "Citation".)

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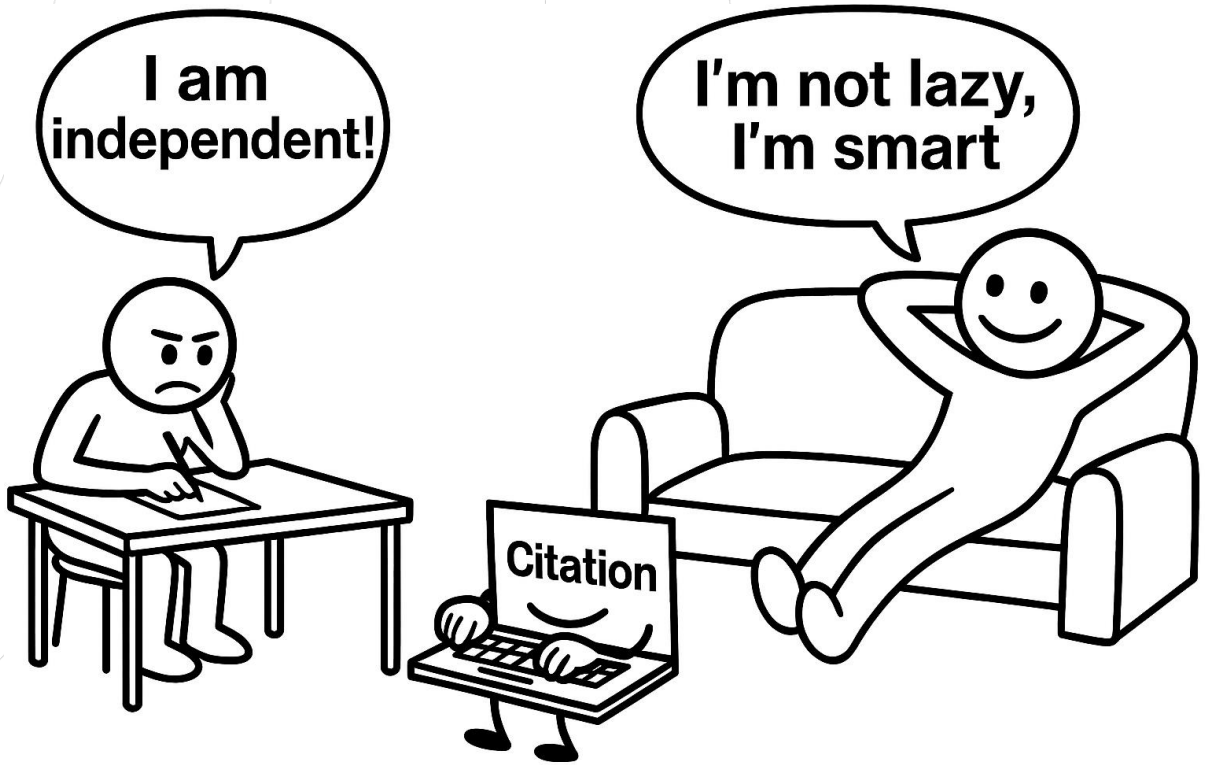

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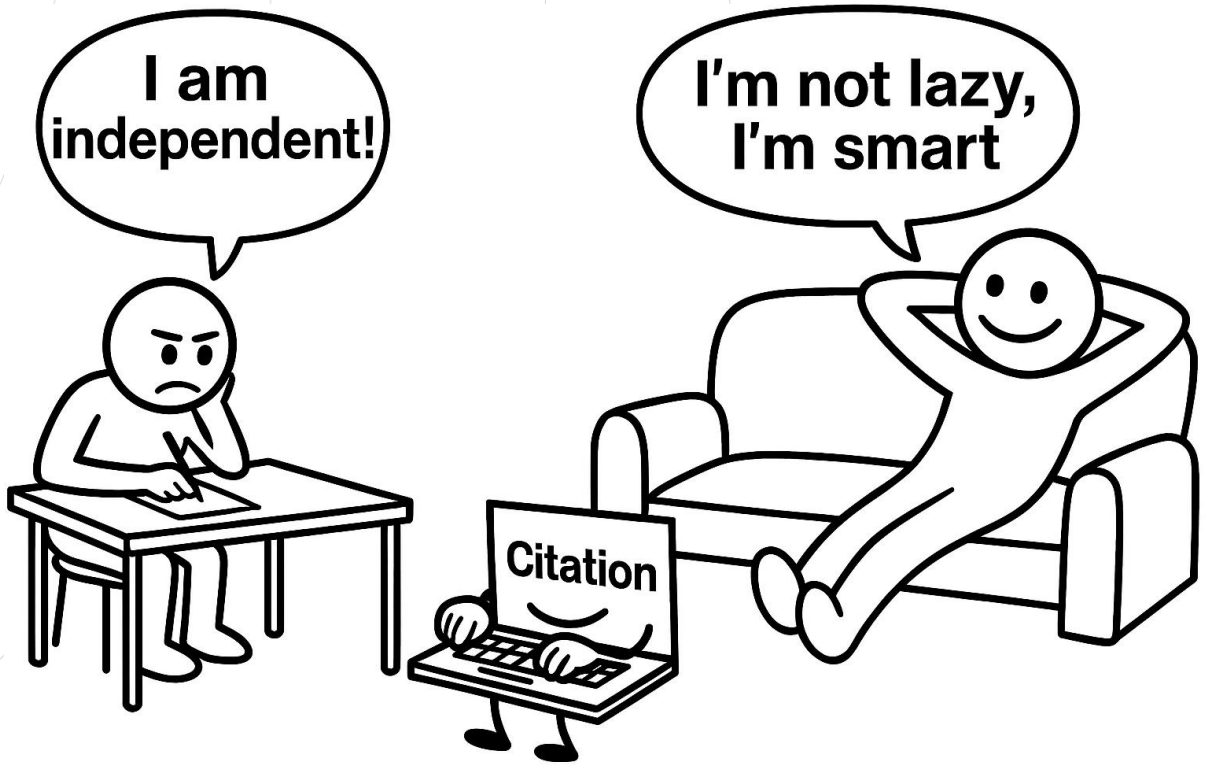

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Organizing Sources: PROs and CONs

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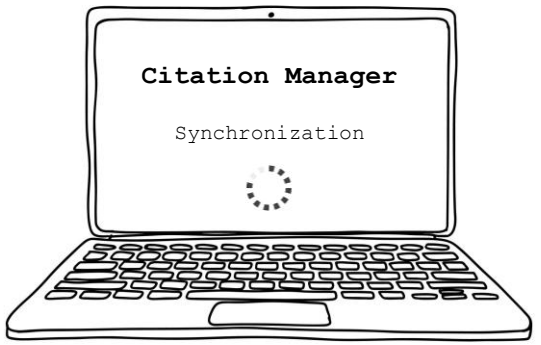
+ No system errors, only handwritten mistakes
- Higher risk of data loss
- Higher demands on hard storage capacity
- Changes to in-text citations must be manually updated in the reference list
- Any handwritten mistakes must be manually changed record by record

More

- System errors in the automatically generated reference list
+ Lower risk of accidental deletion of data (cloud storage)
+ Automatic synchronization of changes in in-text citations
+ Automatic synchronization of changes in citation manager



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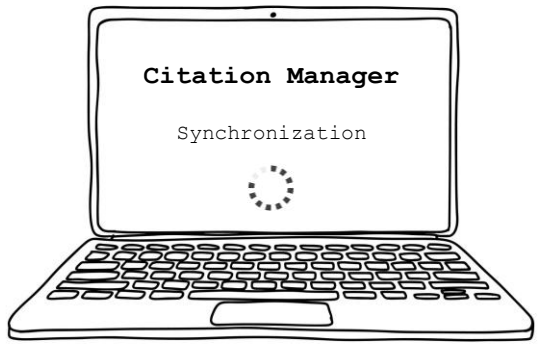

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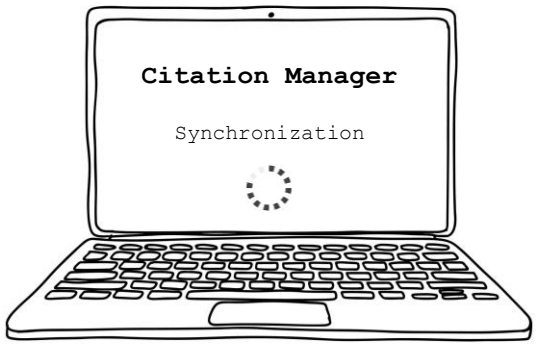

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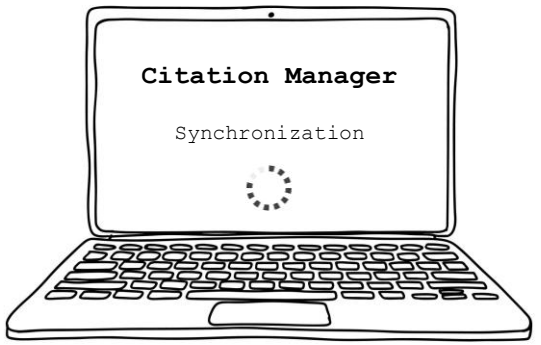

Citation Managers

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

- *Zotero*
- *CitacePRO*
- *Mendeley*
- *Citavi*
- *JabRef*
- *EndNote*

Do you have experience with any citation managers?

If you have any experience with a citation manager, which one is it?

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Citing: Before You Start

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Citation Method = how to cite in the text and refer to the reference list

- (author, date) method – *Harvard system*
- [numerical] method – *Vancouver method*
- *footnotes method*

Citation Style = determines the order of citations in the reference list and the detailed specification of the source cited source

- APA (American Psychological Association)
- MLA (Modern Language Association)
- Standard ISO ČSN 690
- …

Learn more from our guide Citation Management

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Citing: the Golden Rules

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- **Consistency:** once you have a method and style, stick with them no matter what type of source you are citing
- **Accuracy:** the source must be traceable based on the citation; if in doubt, provide more detailed info
- **Transparence:** cite what you have actually seen; do not pass off secondary citations as primary ones
- **Checking:** double-check all your citations for completeness and accuracy

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Searching for High-Quality Journals and Conferences

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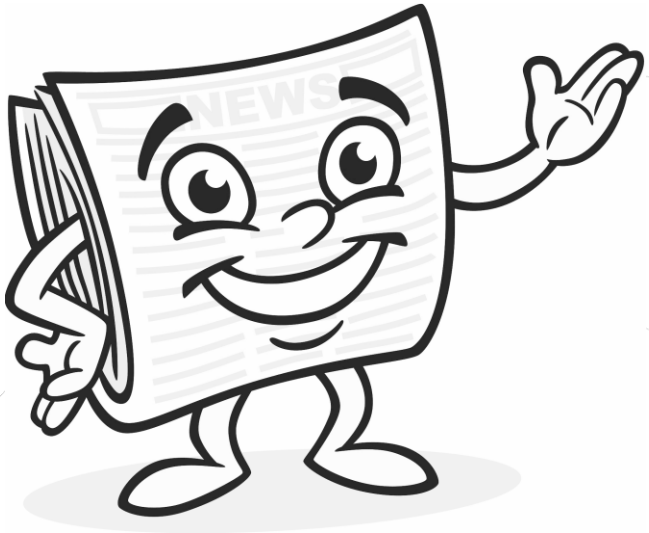
- Ask your mentor, peers, other authors…
- Check where other authors publish their work: start with your reference list!
- Use citation and analytics databases to identify reliable journals and conferences:
  - Web of Science, Scopus, Inspec Analytics
- Try recommender services:
  - Elsevier JournalFinder, WoS Manuscript Matcher



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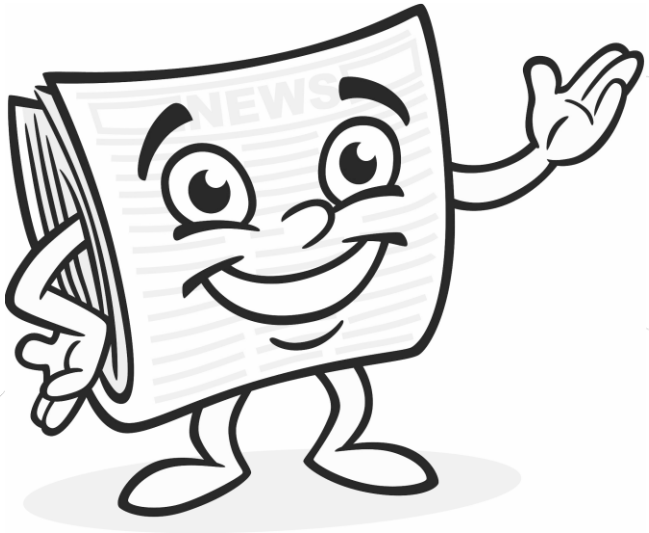

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- **NTK Guide to Predatory Journals**

Image generated by AI, Microsoft Copilot, the prompt: 'A simple pictogram-style journal with eyes and sharp teeth on its front cover. The journal is white, and the background is also white. A diagonal sherpa crosses the journal, with the full phrase "Fake Impact" written clearly on the sherpa. No other elements or colors are present..' (Generated on August 27, 2025)

Searching for High-Quality Journals and Conferences

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My First Scientific Article

November 5

Searching and Evaluating on Web of Science & Scopus

November 19

You should be able to:

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- Recognize different types of scientific sources and evaluate their quality.
- Use databases and discovery tools to find relevant resources.
- Apply systematic reading strategies to assess relevance.
- Organize and manage sources with citation managers.
- Cite accurately and consistently, following proper methods and styles.

Get Assistance

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❑ Schedule a consultation

- LaTeX support, Bibliometric services, and other

❑ Attend a webinar

- Kick Start Your Research Career with NTK: Webinars for Early Career Researchers

❑ Explore by yourself

- STEMskiller: comprehensive skills set map for early career researchers
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Questions?

Contacts

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