How to find resources for engineering disciplines and physical sciences
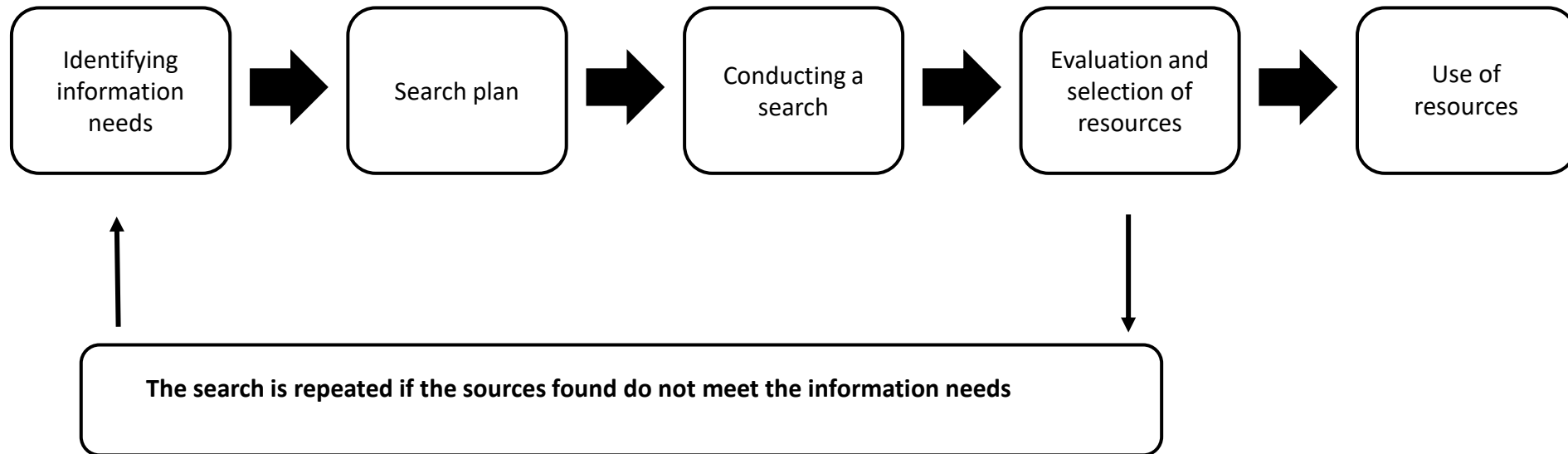
The Library of Kaunas University of Technology
biblioteka@ktu.lt

ktu
1922

Aim

To introduce you to:

❑ information search strategy;

❑ the choice of keywords and projecting an effective inquiry;

❑ the search of information in library catalogue;

❑ the search of information in KTU virtual library;

❑ the search of e-books;

❑ the search of articles online;

❑ the search of patents and standards;

❑ the search of information in open access resources.

Stages in the search for information

Identifying information needs → Search plan → Conducting a search → Evaluation and selection of resources → Use of resources

The search is repeated if the sources found do not meet the information needs

# Identifying information needs

Before beginning to write scientific work:

- ✓ conduct information search;
- ✓ look for the information in encyclopedias, reference books and dictionaries;
- ✓ look through books, scientific articles (carry out search in databases).

Collected information should help you:

- ✓ to reveal wider and narrower spheres of the topic;
- ✓ to describe the aim and problem;
- ✓ to find concepts, terms and their synonyms, which while looking for information could be used as keywords.

Search plan

Before carrying out a search of information, answer these questions:

✓ How recent does the information need to be?

✓ What type of information sources do you need?

✓ What sort of information sources do you need?

✓ What format of information is necessary?

✓ Which languages will you use for the search?

✓ How much information do you need?

✓ How much time will you devote to research?
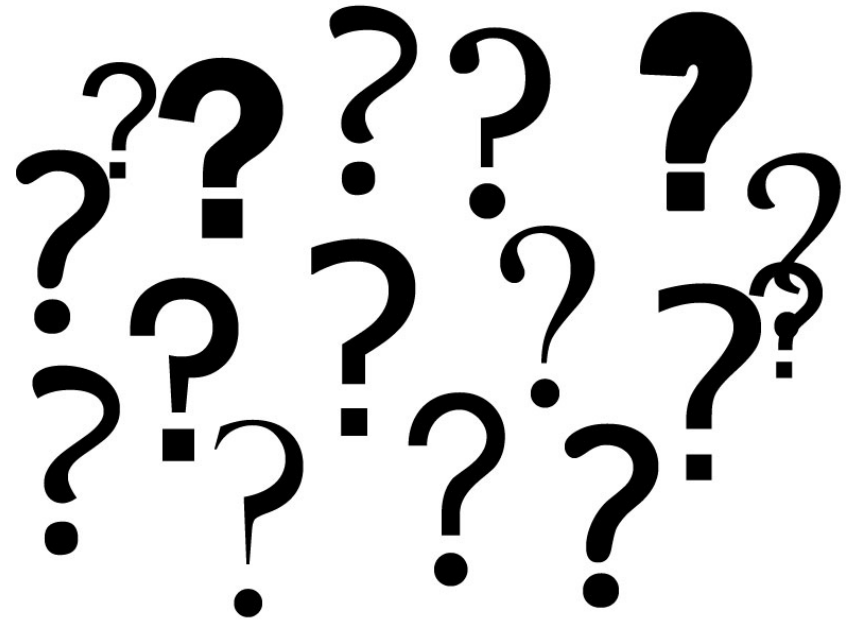
Searching for information (Boolean operators)

✓ State the essence of information search in one or two sentences, highlight the specifics of the topic;

✓ identify keywords and distinguish main concepts and terms;

✓ select synonyms and different forms of the words, alternative terms;

✓ use logical operators (Boolean logic) (AND, OR, NOT, * , „ " , ?).

Choosing the keywords
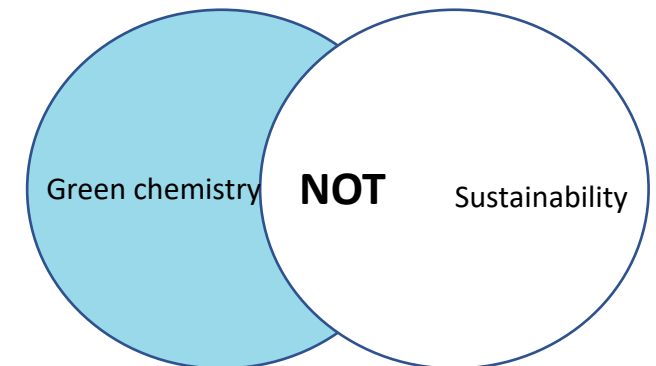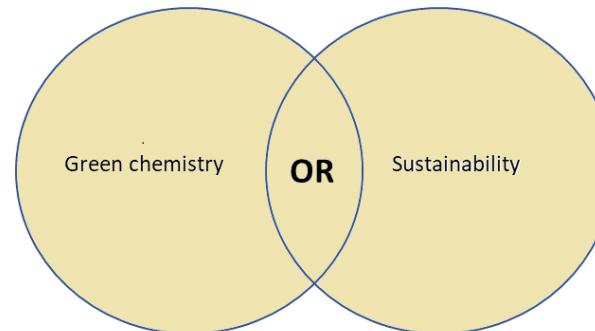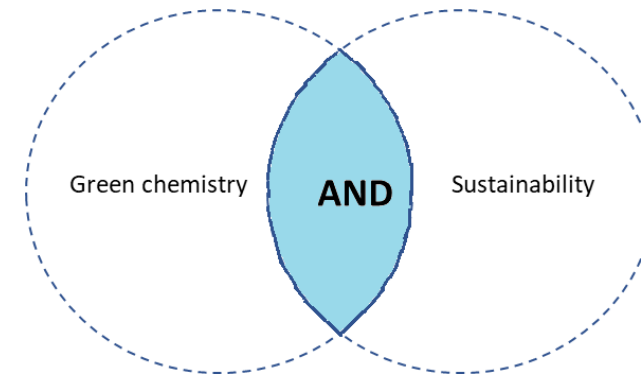
Various information publications:

encyclopedias, reference books, dictionaries

➢ dictionaries and encyclopedias available online:

- ✓ AccessScience
- ✓ Dictionary.com
- ✓ Encyclopedia.com
- ✓ Online Translation Tools
- ✓ Reference.com
- ✓ Word Web Online

Thesauri (general or specific field dictionaries, which show meaningful connections between words):

- ✓ Thesaurus.com
- ✓ EUROVOC – the translations of terms in four languages, topic by topic and alphabetical dictionary
- ✓ Merriam-Webster
- ✓ UNESCO Thesaurus
- ✓ Academic Search Complete (through EBSCO) the list of terms related to the subject
- ✓ IEEE Approved Indexing Keyword List
- ✓ LiDA Dataverse repository
- ✓ Free Dictionary

Dictionary.com   Thesaurus.com
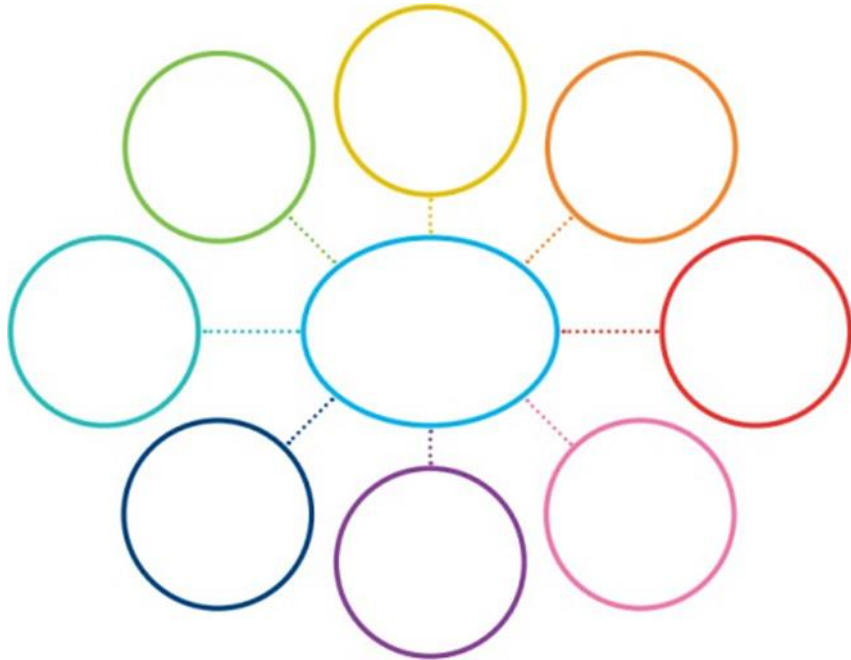
Mind map

Mind mapping software tools:

- [Coggle](#)
- [Mind Manager (Mindjet)](#)
- [MindNode](#)
- [XMind](#)

Mind map helps to understand content, see connections among different objects, develop idea, theme, identify possible main concepts / search terms.

Advice

- ✓ It is very important to keep balance between quantity and quality.
- ✓ There is no right solution, best search tool or the only keyword.
- ✓ You can change your search strategy. Write down selected keywords, search tools, etc.
- ✓ Save the relevant documents and information about them and make notes.
- ✓ You can always ask a librarian for advice.

Choosing a search tool

- ✓ library e-catalogues and virtual libraries;
- ✓ institutional publication ETD (Electronic Thesis or Dissertation) databases;
- ✓ databases;
- ✓ subscribed databases;
- ✓ open access resources;
- ✓ specialised search sėstoms.

Google ?????

Selection of resources

Revision of the search

The aspects of information quality:
- ✓ reliability
- ✓ the authorship of the resource;
- ✓ resource;
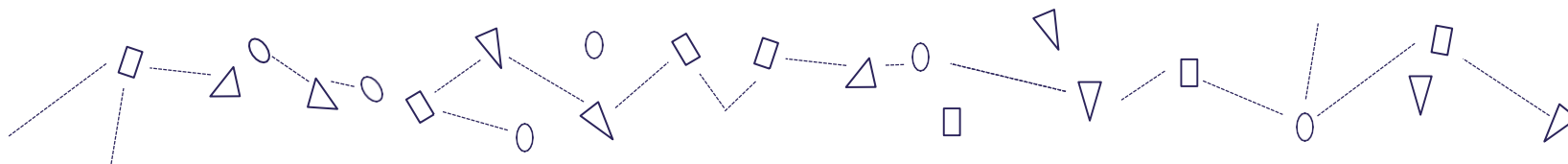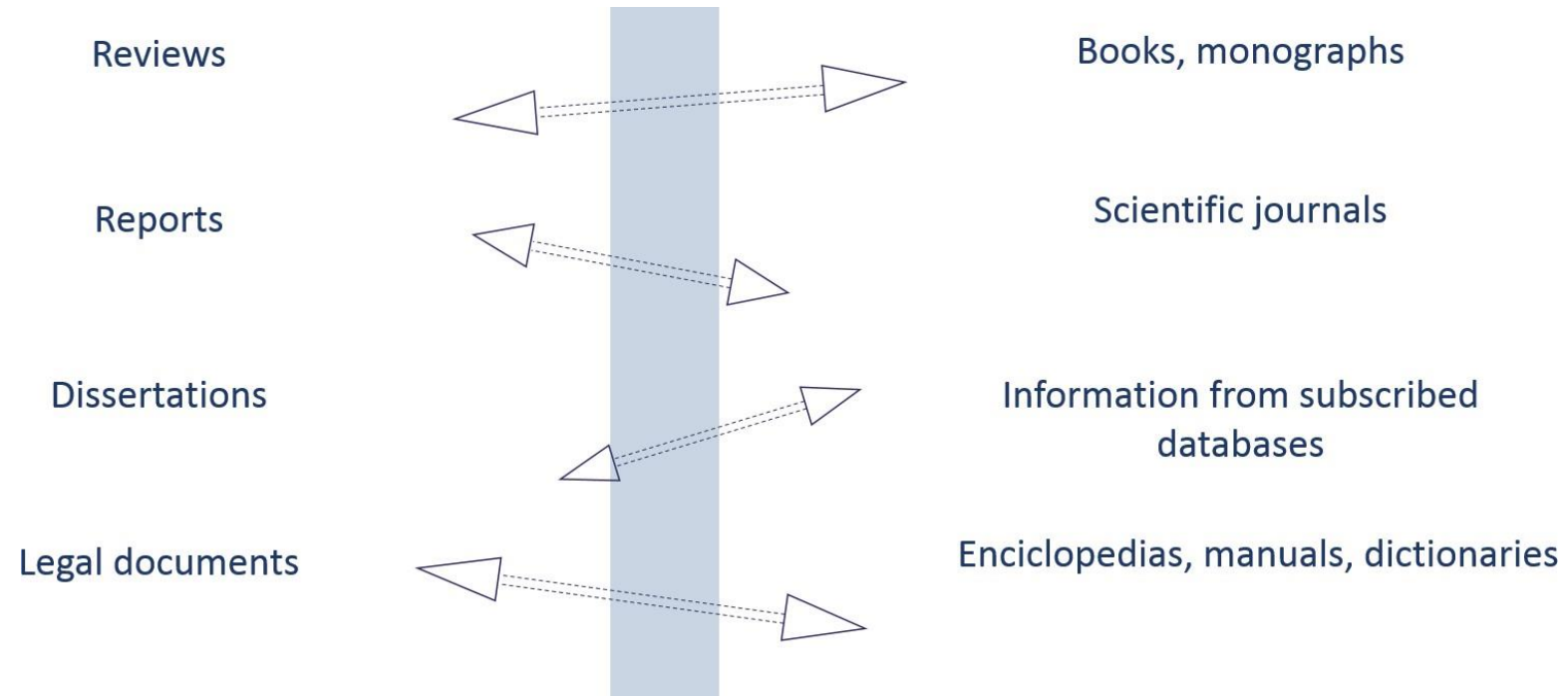- ✓ newness;
- ✓ publisher;
- ✓ sources cited.

The search is the process that may be repeated. If the results of the search do not satisfy, it is advised:
- ✓ to look through the spelling of the keywords;
- ✓ to check other keywords;
- ✓ to evaluate the suitability of the chosen tool;
- ✓ to repeat the search from the first step.

Variety of information resources

Interactive resources

- ✓ Blogs
- ✓ Wiki
- ✓ Social networks
- ✓ Alerts
- ✓ Social links sharing programs
- ✓ Content sharing platforms

Open access resources

- ✓ Open access journals
- ✓ Open access repositories
- ✓ CC documents

Traditional resources

- ✓ Books
- ✓ Articles
- ✓ Conference proceedings
- ✓ Patents, standards
- ✓ Dissertations and thesis
- ✓ Online resources
- ✓ Other unpublished resources
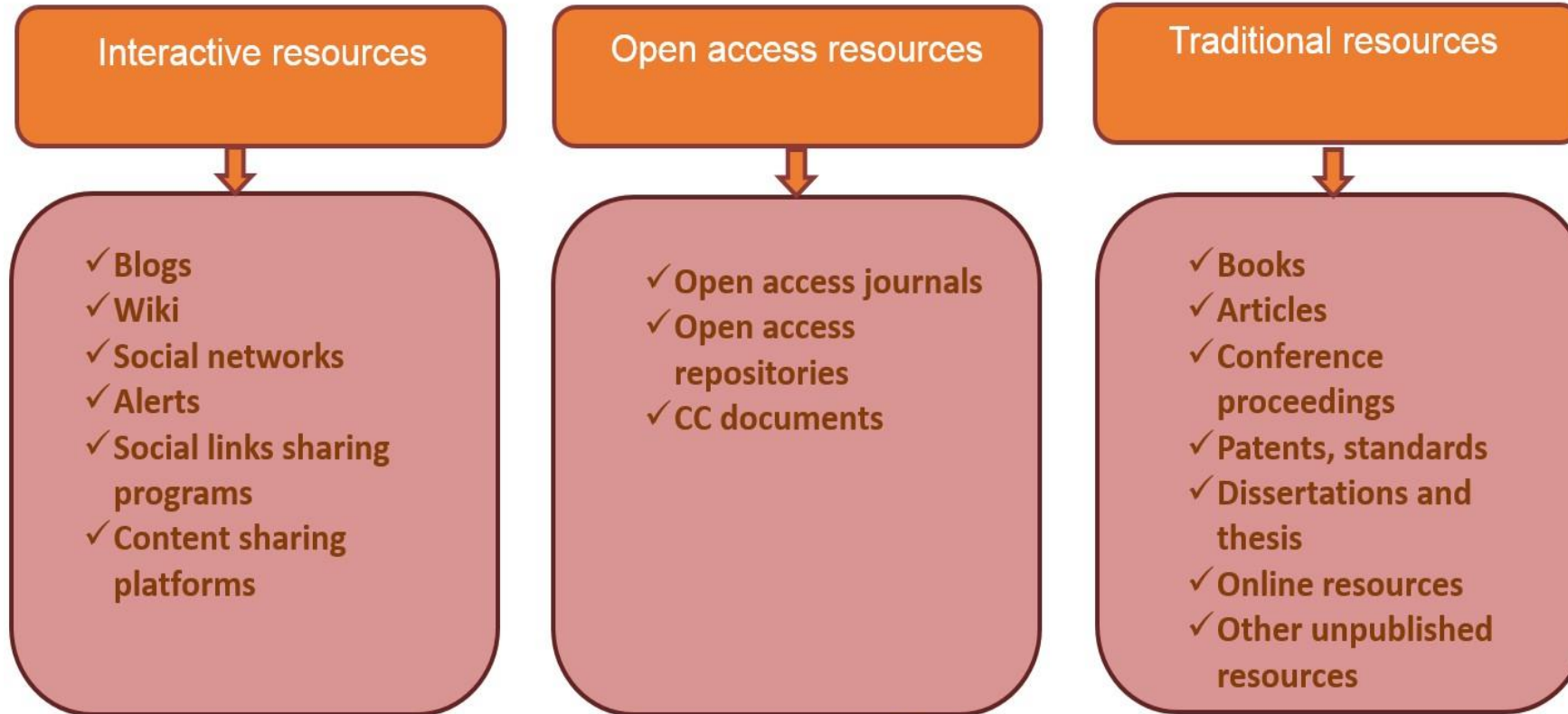
Which resources can be used?

Reviews

Books, monographs

Reports

Scientific journals

Dissertations

Information from subscribed databases

Legal documents

Enciclopedias, manuals, dictionaries

Where to begin the information search?

The library offers:

➢ KTU library catalogue biblioteka.ktu.edu

➢ KTU virtual library vb.ktu.edu

➢ Subscribed databases
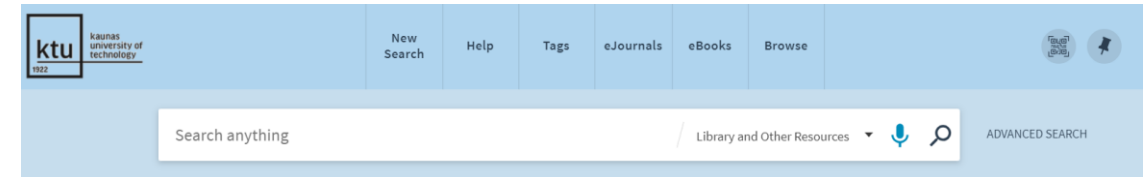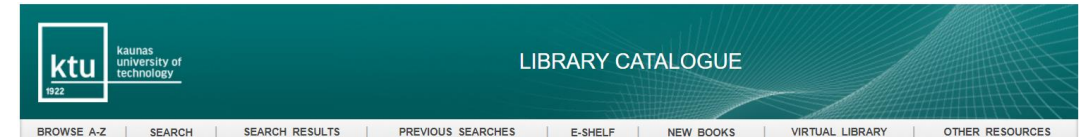
➢ Open access resources

Search in KTU Virtual Library   ktu

Search based on one slot principle where information needs to be typed in to find all resources of KTU library

Filters of search results

Tweak my results

Availability ∧
- ☐ Available in the Library (44)
- ☐ Full Text Online (422,684)
- ☐ Peer-reviewed Journals (396,586)
- ☐ Open Access

Creation / Issued Date ∧

From	To	
☐ 1800	2025	Refine

Language ∧
- ☐ Arabic (14)
- ☐ Chinese (447)
- ☐ Croatian (28)
- ☐ Dutch (52)
- ☐ English (414,586)

Show More

Resource Type ∧
- ☐ Articles (411,217)
- ☐ Audio/Videos (1)
- ☐ Bachelor's Theses (19)
- ☐ Books (1,772)
- ☐ Conference Proceedings (1,495)
- ☐ Datasets (2)
- ☐ Doctoral Theses (109)
- ☐ Magazine Articles (1,491)
- ☐ Master's Theses (275)
- ☐ Newsletter Articles (10)

Show More

Journal Title ∧
- ☐ 12th Conference Advanced materials and technologies and European doctorate in physics and chemistry of advanced materials, 27-31 August 2010, Palanga, Lithuania : book of abstracts of the joint international summer school-conference (1)
- ☐ Acs Sustainable Chemistry & Engineering (14,158)

ktu — kaunas university of technology — 1922

| New Search | Help | Tags | eJournals | eBooks | Browse |

Green Chemistry   ✕ / Library and Other Resources ▾ 🎤 🔍

Topic ∧
- ☐ 3d Printing (373)
- ☐ 3D printing (6)
- ☐ Adsorbcija (7)
- ☐ Adsorption (10,114)
- ☐ aggregation-induced emission enhancement (5)

Show More

New Records ∧
- ☐ New From Last 3 Month (7,784)
- ☐ New From Last Month (1,768)
- ☐ New From Last Week (218)

Library Collection and Other Resources ∧
- ☐ KTU Dissertations and Dissertation Summaries (Archive) (1)
- ☐ KTU Library e-Resources (2)
- ☐ KTU Panevėžys Faculty Library Catalogue (2)
- ☐ KTU Rare Books (1475-1945) (10)

CLEAR   **APPLY FILTERS**
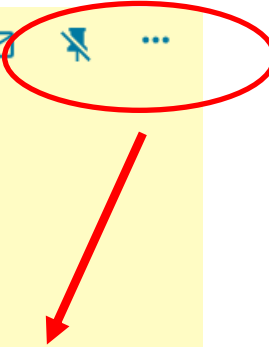
Saving the search results

For more information on quotation and bibliographical reference tools, click the link which will lead you to information trainings on referencing tools on library webpage: [Library – trainings](#)

Subscribed Databases

Resources - Library | KTU

Access to subscribed databases

The subscribed databases can be accessed via KTU computer networks. If you want to use the databases at home (not from the computers of KTU network), you can choose among the following:
- Remote access (*EZproxy*). Using remote access, KTU members can log in using a unanimous username and password.
- KTU Virtual Library.

The users are allowed to:

- use electronic resources for studies or research without infringement of copyright laws

- use electronic resources (download/print/copy to an external hard drive) only for personal usage and in small quantities. In case user downloads too many resources his IP address might be blocked by database providers.

Users are forbidden:

- to use the software that allows to download and save information on the computer.
- to upload the information from the subscribed databases online; to share the information with the third parties or to use the information for commercial purposes.
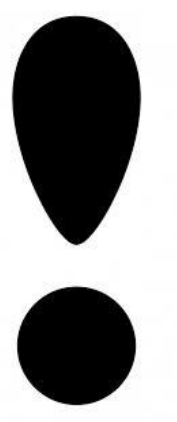
The search of books in databases
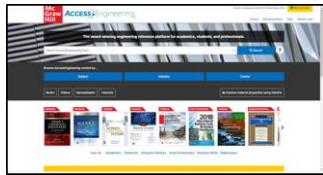
AccessEngineering: engineering science e-books from the fields of electronics, mechanics, building, environment engineering, energetics, industry, business and communication.

eBook Academic Collection (EBSCO Publishing): database of e-books with various topics.

eBook Open Access (OA) Collection (EBSCO Publishing): This is the set of books of various disciplines, created in collaboration with university press and open resource publishers. It gives access to more than 2,500 e-books on various topics.

ProQuest Ebook Central (previously called *Academic Complete*): more than 200 thousand books of technological, physical, biomedical, social and humanity sciences.

ScienceDirect E-Books: full collection of e-books of various scientific fields.

Springer LINK E-Books: these books can also be found in library catalogue.

Wiley Online eBooks: access to e-books on the topics related to finances, marketing, engineering, physics, informatics, chemistry and other sciences.

The search of articles in databases

Academic Search Ultimate (*EBSCO Publishing*): a database with various topics, which gives access to resources in astronomy, anthropology, biomedicine, engineering, health, law, mathematics, pharmacology, women studies, zoology and other topics. The access is given to full text scientific journals, reports, books, video, etc.

Emerald Premier eJournals Collection: full text journals in social and engineering sciences.

ScienceDirect Journals: more than 2,000 full text scientific journals from various fields of science. Subscribed content is marked by a green square.

Springer LINK Journals: scientific journals of publishing houses *Springer Verlag* and *Kluwer Academic Spmic Press* on various topics.

Taylor & Francis: scientific journals published by *Taylor & Francis* publishing group on various topics. Access from 1997 until now.

Wiley Online Library: access to *Wiley* publishing house journals. Access to 483 journals until 2013, as well as SSH (Social Science and Humanities 370 journals) and STM (Science Technology Medicine 417 journals).

Nature: access to four subscribed, highly-regarded, weekly journals on physical and engineering sciences (access is granted to the volumes from 2006 till now).
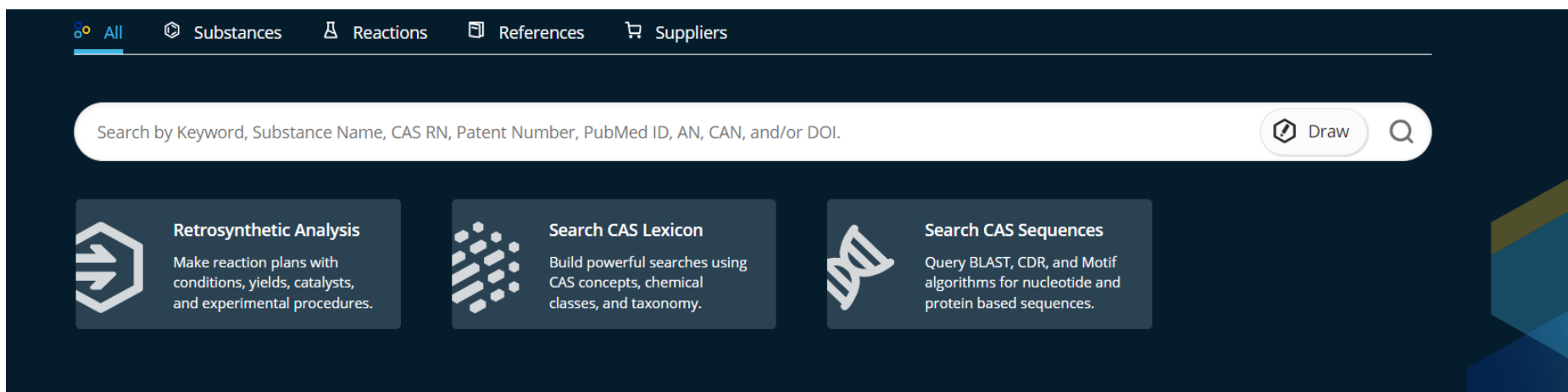
The search of articles in specialized databases

IEEE Xplore: journals, conference material, standards and other printed material published by Institute of Electrical and Electronics Engineers (IEEE) and Institution of Electrical Engineers (IEE) since 1988 and individual printed material since 1950. Topics: electrical engineering, electronics, engineering, technologies, etc.

Reaxys: a unique web-based chemistry database consisting of deeply excerpted compounds and related factual properties, reaction and synthesis information as well as bibliographic data, navigated and displayed via an actionable interface.

SciFinder-n: database of chemistry, which provides information about materials, including their chemical reactions, chemical names, properties, comercial availability and regulation, chemical reactions, patents (*PatentPak*) Read more.

IOP science: the publishing house of the Institute of Physics (IOP) publishes journals on physics and physical sciences.

The search in open access resources

Google books http://books.google.com: full text books read just online, they cannot be downloaded, printed or saved.

DOAB (*Directory of Open Access Books*) http://www.doabooks.org: open access resource to the catalogue of books.

InTech Open http://www.intechopen.com/books: the publishing house of technological, physical, medicine and other science books with open access.

DOAJ (*Directory of Open Access Journals*) http://www.doaj.org: open access journal catalogue. The journals included in this catalogue ensure free access to full text articles. This catalogue includes more than 13,000 journals.

HighWire Press https://portal.highwire.org/lists/allsites.dtl: is created and supervised by Stanford University in the USA. Open Access journals marked as free.

The search for articles in open access resources

National repository: The Lithuanian Academic Electronic Library (eLABa).

ArXiv.org http://arxiv.org: designated to physical sciences (physics, mathematics, informatics, etc.), but you can also find documents suitable for engineering sciences.

BioMed Central http://www.biomedcentral.com: open access journals of medicine, biology, biomedical engineering and biotechnology, e.g. BioMedical Engineering OnLine, Biotechnology for Biofuels, BMC Biotechnology, Journal of Biological Engineering, Journal of Biomedical Science, Journal of Nanobiotechnology, etc.

CiteSeerX http://citeseerx.ist.psu.edu: information resource of computers and information sciences, which is suitable for informatics, electrical and electronics engineering and other fields.

PLoS Public Library of Science http://www.plos.org: open access journals of biomedical sciences, where the information suitable for biotechnological field could be found.

The search engines of scientific information

ktu

Google Scholar : a worldwide scientific information search engine.

Reviewed resources (articles, dissertations, books, summaries, etc.)

from different fields of studies.

Dimensions: a scientific information search engine.

Open access resources are marked by "Open Access".

BASE: scientific information search engine.
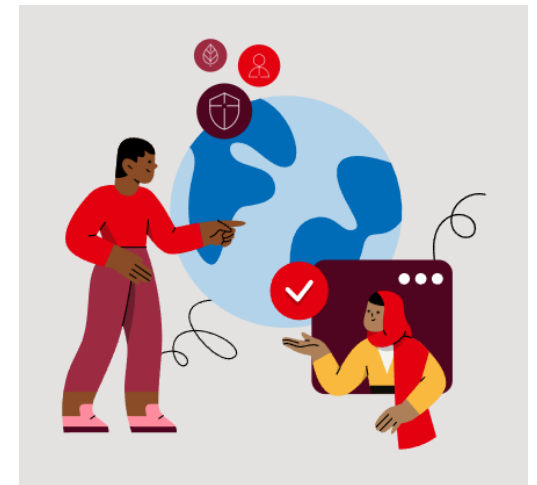
Open access resources are marked by "Open Access".

Core (Connecting Repositories): the world's most voluminous search engines

which provides an open access to scientific documents from repositories and to a collection of journals.

WorldWideScience: a global science gateway comprised of

national and international scientific databases and portals.
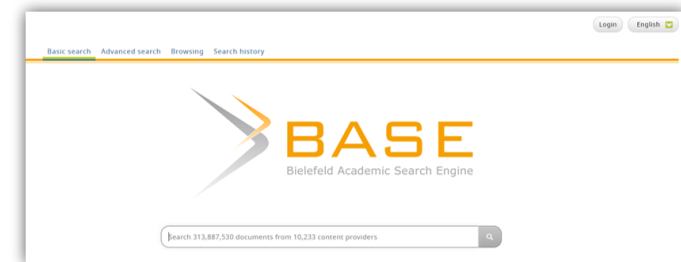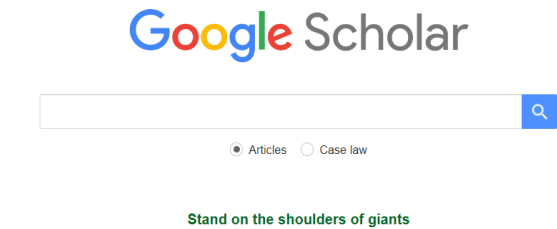
The search of standards

❑ [Lithuanian Standards Board (LST) Standards Catalogue](#) is accessed through KTU Virtual library or Library Catalogue.

❑ The International Organization for Standardization (ISO) http://www.iso.org

❑ European technical standardization system:

   ✓ The European Committee for Electrotechnical Standardization (CENELEC) https://www.cencenelec.eu/about-cenelec/

   ✓ The European Committee for Standardization (CEN) https://www.cencenelec.eu/about-cen/

   ✓ The European Telecommunications Standards Institute (ETSI) http://www.etsi.org

Information search and artificial intelligence

! There are various programs which use AI to look for articles, e.g.: *Semantic Scholar, Elicit, Litmaps, research Rabbit, Keenious, etc.*, yet they are not licensed by Kaunas University of Technology and their use is your own responsibility.

Advice
If you know something about the topic you are researching and you can evaluate the content generated by AI, you can, for example:

✓ to ask AI to offer you keywords which are related to your topic;
✓ to get new views about the topic.

Attention! Don't forget to evaluate the resources!
Even though with the help of AI you found the resource which really exists (webpage, article, etc.), it can be unsuitable to use.

Help

Final Degree Projects

Final Degree Projects: similarity check in the Turnitin system and uploading to eLABa repository

Slides "Final Degree Projects: How to do Check Similarity in the Turnitin System and Upload it to eLABa repository"

Library training

Training schedule / registration

Training sessions, learning materials / Video

Library trainings in Moodle

Registration

Registration for Consultation

Register for Guided tours

Work room reservations

Resources

Subscribed databases

Free trial databases

KTU Study Modules Literature

Lithuanian Academic Electronic Library eLABa

KTU research journals

Information for users using subscription databases

Access to the subscribed databases from home
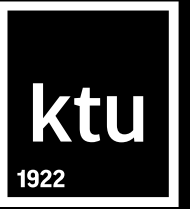
What is allowed / not allowed in databases

Useful

Reference management tools

Software installed on library computers

Hi! How can we help you?

How to find resources for engineering disciplines and physical sciences

The Library of Kaunas University of Technology
biblioteka@ktu.lt

ktu
1922

THE HUMAN SIDE OF TECHNOLOGY