

Infozine No. 28

The magazine for users of scientific information

Editorial

The year of AI

Since OpenAI came on the scene with ChatGPT, AI chatbots based on Large Language Models (LLMs) are being used by more and more people for a variety of purposes. And there are more and more tools for researchers to help them better use and find scientific literature. A critical compilation of these tools, originally planned and already started by Andrej Kilian, would have taken more than eight pages of Infozine alone - on the other hand, the development is simply too fast. This text will therefore appear elsewhere, but you will find an incomplete compilation of the tools on page 2. As an alternative, one page of the Infozine was created entirely with AI: The text and images on page 5 were generated with ChatGPT 4. Until recently, the Infozine editor used the Wonder app as the tool of choice for images, but it has become clear that DALL-E, for example, has improved significantly and that Midjourney clearly provides the better image to illustrate the term text-mining compared to Wonder.

We wish you all a relaxing holiday season, a happy and restful transition into the year 2024, and much fun reading the 28th issue.

Your Chemistry | Biology | Pharmacy Information Center

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PubPharm

Users of PubMed or Embase should check out PubPharm (www.pubpharm.de), a freely accessible biomedical literature search engine maintained by the Fachinformationsdienst (Specialized Information Service) Pharmacy at the Technical University of Braunschweig. Using natural language processing, PubPharm searches for information from MEDLINE, journal articles, preprints, dissertations, conference abstracts, clinical trials, and patents. In the following, we focus on the powerful features unique to PubPharm.



The functionality “Drug Overviews” creates a Drug-Target-Disease Network. For each connection in the network, the number of co-occurrences of two terms is given. The initial drug name is connected in red to other drugs that often co-occur with the diseases associated with the initial search term. The diseases are shown in the green outer layer with the clinical phase in the bracket. In blue, associations between the drug and its targets are shown. The network can help explore well-established connections. Gaps in the network may indicate gaps in the literature and could serve as potential starting points for future research. Clicking on any connection will take you to the “Narrative Service”. The “Narrative Service” allows you to search according to the way one query term affects another. This influence is a directional association such as “induces”, “decreases”, “inhibits”, “treats”, and “interacts”. Such highly specific searches are unavailable in Embase and PubMed. Moreover, one can use placeholders, e.g., “Ivermectin treats Disease,” to list all diseases that can be treated with Ivermectin according to frequency.

A simple search mask lets you perform text-based searches for generic names, diseases, or genes. In the search results, the title, source type, links to full text, and Altmetric information for each publication are displayed. You can find the abstract, bibliographic information, and keywords in the document details. The control panel to the right of the hit list also provides suggestions of related substances, diseases, and genes frequently associated with your search term. These analyses result from semantic mapping, a specialty of PubPharm. For instance, searching for the compound Vemurafenib yields a selection of other kinase inhibitors as related compounds.

Many standard functions like truncation/wildcards, phrase search, proximity operators, and Boolean operators (AND, OR, NOT) are available, as is structure search, which is based on the content of PubChem and DrugBank. Queries are created via drawing, SMILES, InChI, or name-to-structure. Substructure or similarity searches are also possible.

News from the ETH Library (1)

ETH Zurich's new web archive is live – with full-text search

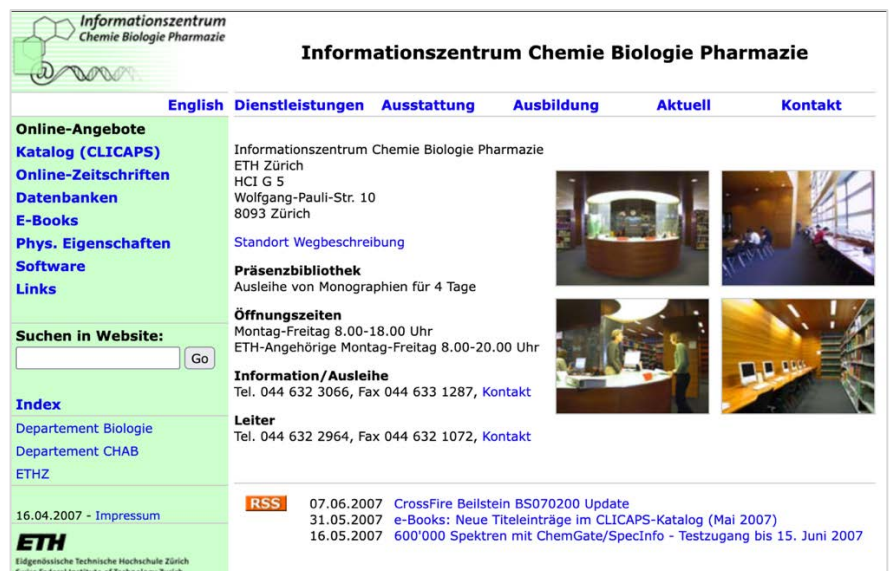
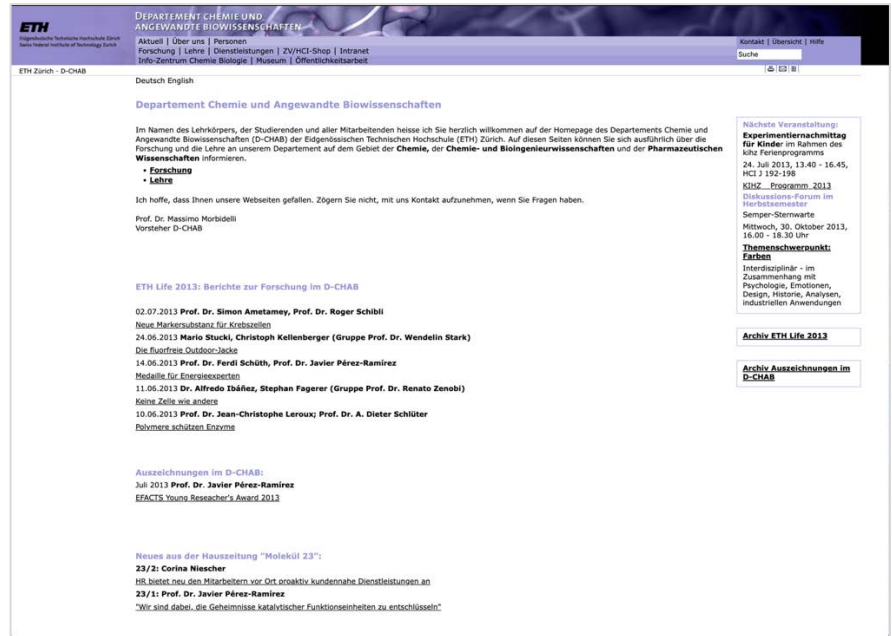
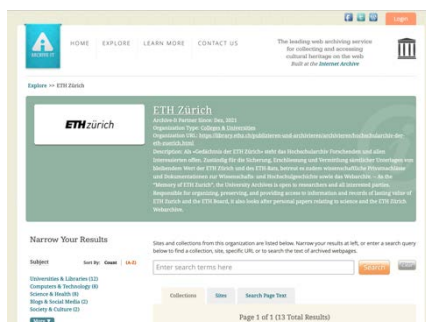
The ETH Zurich Web Archive – an important source for the history of science – has been completely overhauled. It now goes back to 1997 and its content is fully text-indexed and, as of 2017, curated and structured.

The new Web Archive offers something remarkable: around eight hundred URLs, subdomains and websites of ETH Zurich chairs, organizational units, research groups and more are archived by the University Archive at least once a year. The current volume of data now amounts to 4.8 terabytes.

The Web Archive documents ETH Zurich's web presence as a historical source. It stores the ETH websites and makes them accessible to the public in the long term.

The **new platform** is much more than just a collection of web data: Thanks to the full-text indexing of all content, researchers and other users can now search the web archive using a full-text search. Researchers can cite the web pages with a Digital Object Identifier (DOI). The PDF files attached to the web pages are also archived and used in the full-text search. The web archive is integrated into the University Archive database. In addition, the metadata is also contained in swisscovery. These links simplify research work. The **Archive-It** web archiving service based in the USA serves as the platform.

With the help of the Web Archive it is possible to see, for example, what the D-CHAB or the Information Center websites looked like 10 years ago and what information and services were available there.



AI tools for working with scientific literature

Research Rabbit <https://www.researchrabbit.ai/>

Reimagine Research: We're rethinking everything: literature search, alerts, and more

Elicit <https://elicit.com/>

Analyze research papers at superhuman speed. Automate time-consuming research tasks like summarizing papers, extracting data, and synthesizing your findings.

SciSummary <https://scisummary.com/>

Use AI to summarize scientific articles in seconds

Scholarcy <https://www.scholarcy.com/>

The AI-powered article summarizer

assistant by scite <https://scite.ai/assistant>

Ask simple questions and get reliable answers from the full-texts of millions of research articles

floatz please see page 6.

News from the ETH Library (2)

Cite Them Right

Cite Them Right is an online tool based on the book *Cite them right* by Richard Pears and Graham Shields. It provides detailed instructions and examples on how to correctly do in-text citations and references for many different sources ranging from books, websites to AI-generated content in Harvard, APA, MLA, MHRA, Chicago, Oscola, Vancouver and IEEE referencing style. (Fig 1.)

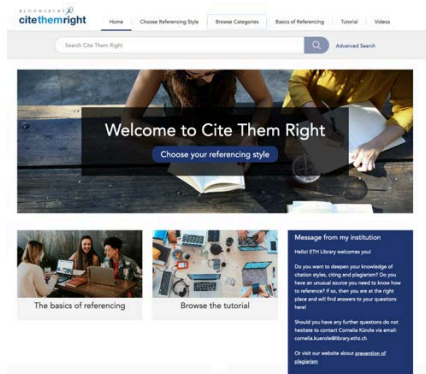


Fig. 1

When using Cite Them Right, you first need to select the referencing style and then the type of source you wish to cite (Fig. 2, Fig. 3).

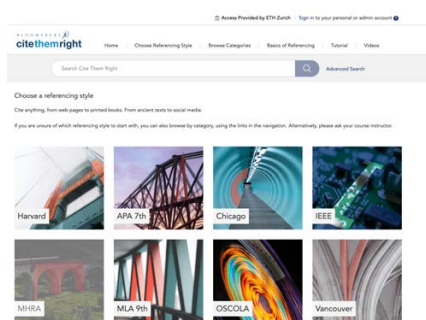


Fig. 2

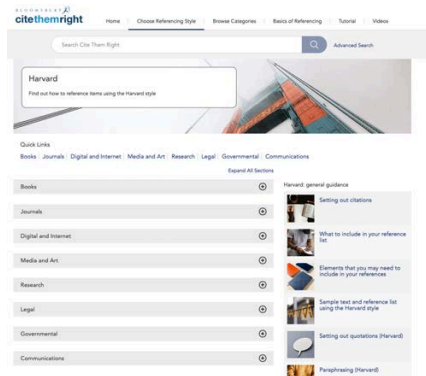


Fig. 3

Cite Them Right will show you how to format the in-text citation and the corresponding reference entry correctly, e.g. in the case of AI-generated material (Fig. 4).

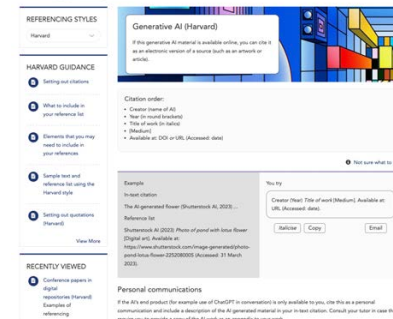


Fig. 4

The platform also includes many videos and a comprehensive tutorial explaining the principles of referencing and plagiarism for each of the eight referencing styles (Fig. 5).

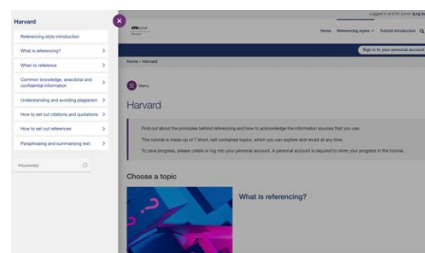


Fig. 5

Orbis and Orbis-IP – combining patent and company data

Since fall 2023, two new databases **Orbis** und **Orbis-IP**, both from Bureau van Dijk, have been available at ETH Zurich. **Orbis** contains comprehensive information on companies from around the world including company financials, corporate ownership structures, stock data, M&A deals etc.

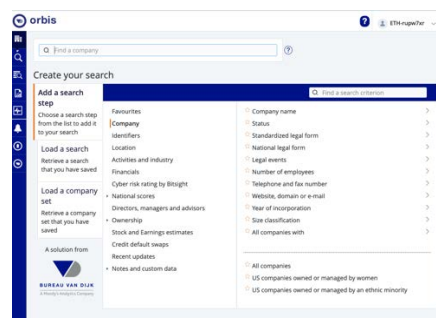


Fig. 1

It includes over 100 different search criteria and tools to compare, analyze and visualize company information (Fig. 1).

Orbis Intellectual Property (Orbis-IP) is a resource for intellectual property research and strategy. It currently tracks more than 110 million patents and links patent information to companies and corporate groups worldwide using the Orbis database. With Orbis-IP you can query patents, litigations and companies to access information on patent ownership, competitors, patent commercialization, innovation trends and stagnant technologies (Fig. 2). It also contains a set of data visualization tools to analyze the patents or companies of interest (Fig. 3).

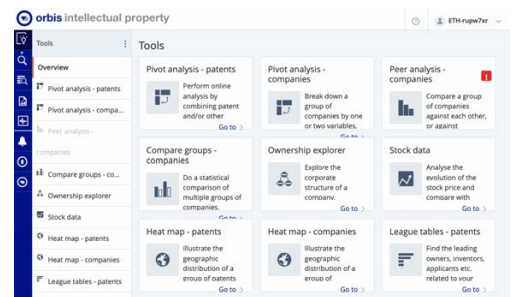


Fig. 2

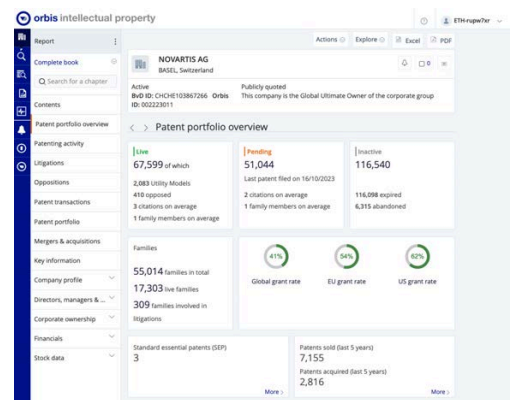


Fig. 3

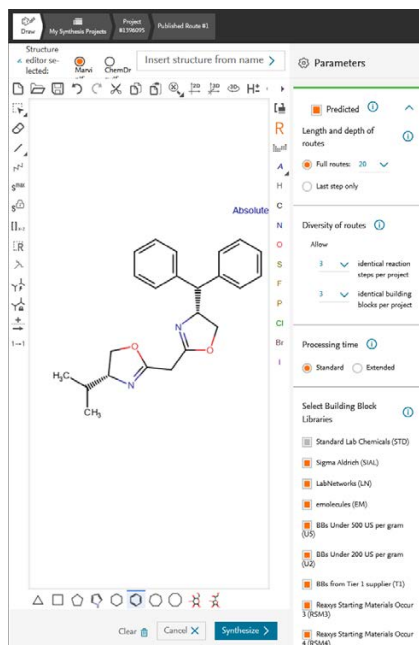
Both databases, Orbis and Orbis-IP, allow for very detailed searches. You can find information on this by clicking on the question mark in the top right-hand corner of each database.

Links to the databases (ETH network only)

Orbis <https://orbis-r1.bvdinfo.com/>
Orbis-IP <https://orbisip.bvdinfo.com/IP>

News from Reaxys

Have you already tried Reaxys' new features: [Predictive Synthesis Planner](#) and [Medicinal Chemistry Data](#)?

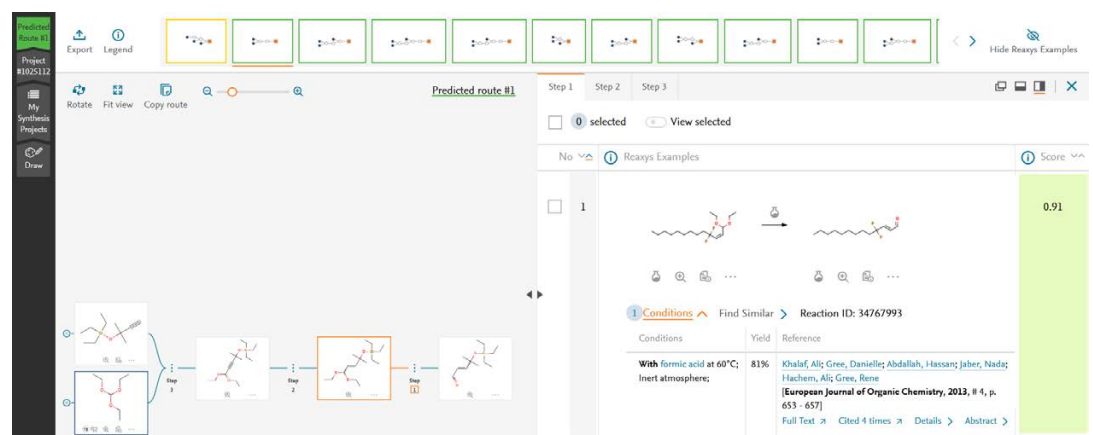
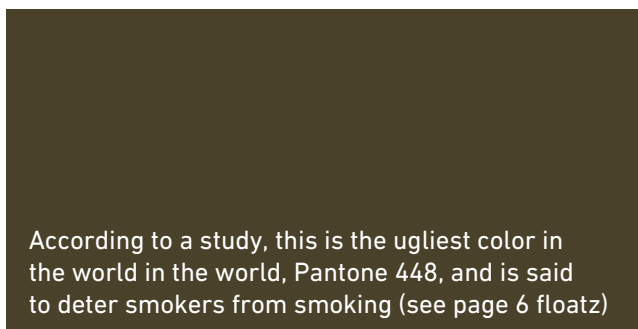


Reaxys's Synthesis Planner has been redesigned to simplify the process of creating multistep syntheses. It still allows access to published literature on compounds, but now also has new predictive capabilities. These enable users to apply known transformations to unknown target molecules, discover one-step disconnections, and design multiple synthetic routes to commercial starting materials. Users can even specify the manufacturers of these starting materials to some extent. Additionally, the planner offers options for adjusting flexibility and processing time, also known as "creativity."

The Synthesis Planner can be useful for researchers seeking to quickly explore literature in order to find a path to their desired target. It can also assist experienced chemists in discovering and evaluating new, unconventional disconnections for compounds that have yet to be created. The predictive algorithms are most effective for flat medicinal chemistry-type molecules that feature numerous aryl and heteroaryl components. However, for polycyclic bridged systems that are present in many natural products, the suggestions should be approached with caution, as predicted behavior may not always manifest in reality. It is important to note that if a multistep sequence fails or provides no meaningful suggestions, iterating through a series of one-step disconnections may still yield valuable results.

Reaxys Medicinal Chemistry provides biomedical data for many Reaxys compounds. These can be accessed from the substance hit list via either **Targets** or **Bioactivity**. Activities are bundled according to *in vitro*, *in vivo*, and *toxicity/safety*. Furthermore, the new functionality to visualize bioactivity might prove particularly useful for compounds covering a wide range of targets and activities – the visual overview can assist in getting an overview more quickly.

Tools and fields for more specific searches can be found in **Query Builder**: There is a new section of search fields called **Target and Bioactivity**. Thirty different criteria allow you to specifically retrieve substances or publications containing data on cell lines, substance effects, or bioassay results.



App Tip

TextShuttle

TextShuttle <https://textshuttle.com> is actually not an app but a web tool. The free translation tool made in Switzerland with the unique feature of translating to and from all four official Swiss languages, including Swiss German (dialects of Zurich and Bern under *Sprachform*) and Romansh. English is also supported.

textshuttle.

Englisch (erkannt)

I am

not Swiss

Rätoromanisch

Jau sun

betg Svizzer

It is not only useful for students and researchers from abroad but also for natives who can use it to improve fluency in all national languages. However, support of rare regional vocabulary is limited (e. g. "Gumälstock" is translated but not "Horämänel").

With the English translation of Mani Matters "Zündhölzli" you can understand the content, but there are a few minor errors. For privacy reasons, all data is stored and processed in Switzerland and not shared with third parties under any circumstances. Fifteen additional languages are available in the business version.

Chemistry and camaraderie:

A tale of friendship, ranks, and romance at ETH Zurich's hilltop haven

Perched atop the Höggerberg campus, with sweeping views of Zurich and the shimmering Lake Zurich below, the Chemistry | Biology | Pharmacy Information Center was a haven for the eager minds of ETH Zurich students. As the first light of dawn crept over the hill, a line of students would form each morning, awaiting the familiar sight of Alexandra Schätzlein, whose keys heralded the start of another day of discovery.



In this scholarly retreat, four friends – Anna, Ben, Carla, and David – found joy in the little moments between the pages of their textbooks.



Theirs was a friendship stitched together with gentle humor and the whispers of a burgeoning love story between Ben and Carla.



One crisp morning, Anna, known for her clever chemistry tricks, decided to create an effervescent reaction in Ben's drink. With a drop of a special solution, his water fizzled and popped, releasing tiny heart-shaped bubbles to the delight of all.

The library, nestled on the hillside, became a silent witness to their escapades, offering a serene backdrop to the laughter and lightness that filled its air. It was here, amid the rolling mists and the golden light of dawn, that Ben and Carla's friendship



deepened, blooming like the alpine flowers after the snow melts. Carla, with a twinkle in her eye, carefully crafted capsules filled with notes for David. Expecting his usual witty health tips like "An apple a day keeps the failed exams away," written by Carla, causing a ripple of giggles around the study table. David, who could always be found behind a screen, programmed a humorous error message to pop up on Carla's computer. "Error 404: Study notes not found. Please take a break with Ben," it read, nudging her towards the love they all saw blooming.

deepened, blooming like the alpine flowers after the snow melts. As the end of the semester drew near, the library's wooden alcoves and quiet corners were suffused with more than just the stress of upcoming exams. They were alive with the promise of new love, echoing with the gentle teasing of friends, and resonant with the spirit of youth and learning that the Höggerberg campus had come to cherish.

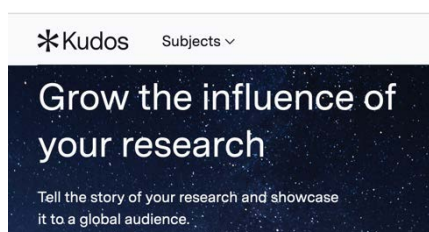
Text and image created entirely with ChatGPT4



Support for science communication

50 free paper summaries

For many researchers, it is no longer enough to publish their research results in a specialist journal and thus make them available to the community. Although publication ensures that the results become known in the immediate community, researchers often want to reach researchers from other disciplines and therefore have to explain the content of the publication. This requires much time and researchers often find it difficult to explain their own paper in simple terms.



Kudos (<https://www.growkudos.com/>) supports researchers in making their publication better known by helping them to explain and categorize their results using a structured process. This explanatory publication can also be enriched with images and videos and is published on Kudos (see Figure 1 top right). The link can then be shared via various channels. Many publishers and journals already work with Kudos and enable their authors to share generally understandable summaries of their articles via the platform. In many cases, this is not used because the authors are not familiar with Kudos and therefore ignore journals' invitations. Of course, it also takes time to create this summary of an article. Today, AI tools such as ChatGPT can help with this step. Kudos now offers members of ETH Zurich to use AI to summarize the publication appropriately for a publication on Kudos. The Chemistry | Biology | Pharmacy Information Center has received 50 free summaries from Kudos. If you would like to take advantage of this offer, please contact [Oliver Renn](#), stating your name and the DOI of the publications. The free abstracts will be allocated on a first-come, first-served basis. Further information can be found [here](#). If you would like to register with Kudos as an ETH Zurich researcher, please use this [link](#).



Fig. 1 Storytelling with Kudos

Extended access to floatz

Free trial access

floatz (<https://floatz.ai/>) enables researchers to find precise and relevant information by using a novel AI architecture. floatz was founded in 2023 by Gabriele Zirpoli and Alexandru Paunoiu, both graduates of ETH Zurich. The Chemistry | Biology | Pharmacy Information Center tested floatz early on and then implemented a test phase for several users until mid-December 2023. The test phase has now been extended until mid-March 2024 and the circle of potential users has also been expanded. If you are interested in using the tool free of charge, please contact Oliver Renn as soon as possible. You will then receive a free, personal log-in. Free access is only available to ETH members and students.

And this is how floatz works:

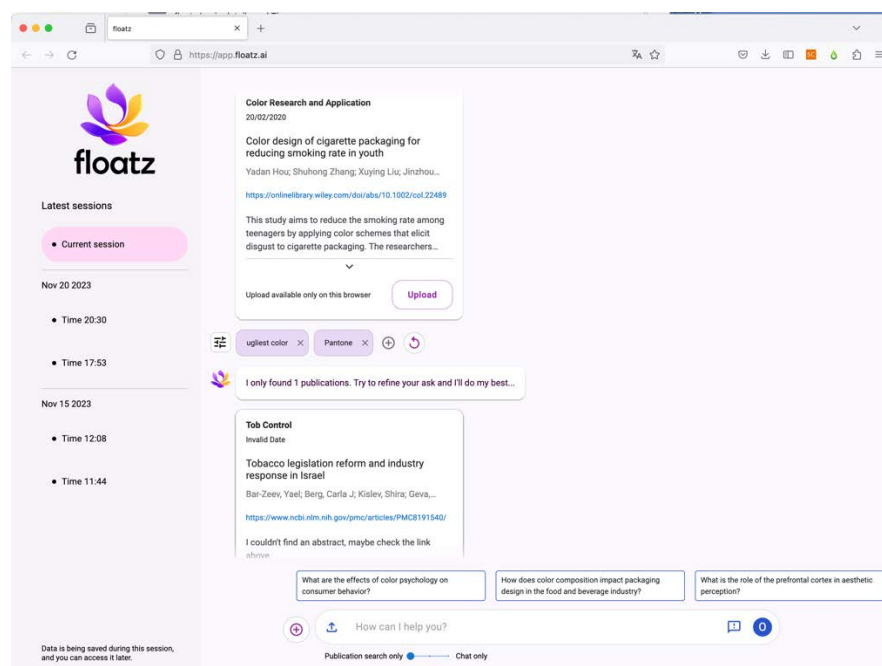
You can write: "Find me 5 publications on the topic [...]".

If the results are not good enough, you can write: "Publications X and Y are not relevant to me, I wonder why?"

Use the suggestions created by floatz to continue the conversation or ask for another sentence: "Find me 3 more publications on the above topic, taking into account my feedback."

Load a publication and talk about its content: Click on Chat (or Upload if the publication is not directly available).

In our test, floatz found the publication that describes the ugliest color in the world. More about the alleged ugliest color in the world on page 4.



News from the Information Center team

Irina Ganz, our new apprentice

In this edition of the Infazine, we would like to introduce you to our new apprentice. **Irina Ganz** (☎ 2 30 67, irina.ganz@lernende.ethz.ch) started her apprenticeship as an Information & Documentation Specialist in summer 2023 and will complete it in summer 2026. You can already meet Irina at the Infodesk. She also has a number of internships coming up soon, so that she can learn about all facets of the profession. She also attends vocational school and BMS. In her free time, Irina enjoys reading books, singing in a choir and attending Cevi.



and permanently part of the team at the Chemistry | Biology | Pharmacy Information Center, however, with a reduced workload from originally 100% to 50%. Alexandra Schätzlein is a graduate chemist. After completing her chemistry studies in Würzburg, she joined the University of Cologne as a research assistant. This was followed by a two-year stay in Israel before she moved to Switzerland with her family. There she worked for several years as a teacher of mathematics and science at a private school in Aargau. Since November 2020, she was employed at the ETH Zurich Physics Library.



Farewell from the information center: Andrej Kilian

Information Specialist **Andrej Kilian** (☎ 3 42 58, andrej.kilian@chem.ethz.ch) is leaving the Information Center at the end of February 2024. Since November 2021, he has been jointly responsible for running the Infodesk and was therefore known to many users. In addition, he was involved in the Coffee Lectures, took care of the maintenance of the media inventory and the catalog, did all kinds of literature searches



and much more, including, for example, supplier accounting. From March 2024, he will take over the management of the library and archive at the Kunsthau Zürich. We are very sorry to see him leave us and wish him every success and all the best in this new role.

New at the Infodesk: Alexandra Schätzlein

You can see the library team member **Alexandra Schätzlein** (☎ 3 69 25, schaetzlein@chem.ethz.ch), at the Infodesk since summer 2022, when she joined us as a temporary replacement due to illness. Now she is also officially

Course SIRMLS

Nach After a break in 2022, the lecture with the long name *Scientific Information Retrieval & Management in Life Sciences and Chemistry* was held again in the fall semester 2023. In addition to Dr. Oliver Renn, who designed this lecture for doctoral students in 2015, Dr. Jozica Dolenc, Dr. Leo Betschart and now also Dr. Gina Cannarozzi, all from the Information Center, were engaged. 120 students from seven departments registered for this lecture, which ended shortly before Christmas with the lecture on outreach. A suitable image was created for each lecture using the AI app Wonder. All 12 lecture units (for the fifth unit, the group was divided into beginners and advanced students) can be found on the poster below.

ETH zürich infozentrum
Chemie | Biologie | Pharmazie

ETH zürich Scientific Information Retrieval and Management in Life Sciences and Chemistry
1. The World of Scientific Publishing (I) (27.9.2023)
Dr. Oliver Renn, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

ETH zürich Scientific Information Retrieval and Management in Life Sciences and Chemistry
2. The World of Scientific Publishing (II) (4.10.2023)
New and recent Developments – Outlook
Dr. Oliver Renn, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

ETH zürich Scientific Information Retrieval and Management in Life Sciences and Chemistry
3. Searching and retrieving scientific information using search engines and literature databases (11.10.2023)
Dr. Oliver Renn, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

ETH zürich Scientific Information Retrieval and Management in Life Sciences and Chemistry
4. Searching and retrieving scientific information using subject-specific databases in life sciences (18.10.2023)
Dr. Oliver Renn, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

ETH zürich Scientific Information Retrieval and Management in Life Sciences and Chemistry
5. Searching and retrieving scientific information using subject-specific databases in chemistry (I) Introductory Session (25.10.2023)
Dr. Oliver Renn, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

ETH zürich Scientific Information Retrieval and Management in Life Sciences and Chemistry
5. Searching and retrieving scientific information using subject-specific databases in chemistry (I) Advanced Session (24.10.2023)
Dr. Leo Betschart, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

ETH zürich Scientific Information Retrieval and Management in Life Sciences and Chemistry
6. Searching and retrieving scientific information using subject-specific databases in chemistry (2) Introductory Session (25.10.2023)
Dr. Leo Betschart, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

ETH zürich Scientific Information Retrieval and Management in Life Sciences and Chemistry
7. Tools for analyzing & managing scientific information & knowledge (8.11.2023)
Dr. Oliver Renn, Dr. Jozica Dolenc, Dr. Leo Betschart, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

ETH zürich Scientific Information Retrieval and Management in Life Sciences and Chemistry
8. Patents (15.11.2023)
Dr. Oliver Renn, Dr. Jozica Dolenc, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

ETH zürich Scientific Information Retrieval and Management in Life Sciences and Chemistry
9. Text Mining (22.11.2023)
Dr. Oliver Renn, Dr. Jozica Dolenc, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

ETH zürich Scientific Information Retrieval and Management in Life Sciences and Chemistry
10. Visualization (29.11.2023)
Dr. Oliver Renn, Dr. Jozica Dolenc, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

ETH zürich Scientific Information Retrieval and Management in Life Sciences and Chemistry
11. Scientific Writing and Good Scientific Practice (6.12.2023)
Dr. Oliver Renn, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

ETH zürich Scientific Information Retrieval and Management in Life Sciences and Chemistry
12. Communicating & analyzing the impact of (your) science (13.12.2023)
Dr. Oliver Renn, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

Course Scientific Information Retrieval and Management in Life Sciences and Chemistry 2023
For doctoral students of ETH Zurich and University of Zurich

www.infozentrum.ethz.ch

