

# Magdalena Lederbauer

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## EDUCATION

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**ETH Zurich** 2023 – 2025 (expected)  
*MSc Chemistry* Zurich, Switzerland

- Focus Digital Chemistry, Inorganic Chemistry, Chemical Engineering
- Selected into the **Excellence Scholarship & Opportunity Program** (ESOP) awarded to top 2% students

**ETH Zurich** 2020 – 2023  
*BSc Chemistry* Zurich, Switzerland

- Graduated with distinction (average 5.82/6.00)
- Received the **Excellence Scholarship** for studies abroad, awarded to top three students in Lower Austria
- Selected as Fellow of the **Swiss Academic Study Foundation** (Schweizerische Studienstiftung)

## RESEARCH AND WORK EXPERIENCE

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**2023** **Digital Chemistry Laboratory, ETH Zurich, Research Project** Zurich, Switzerland  
Supervisors: Prof. Dr. **Kjell Jorner**, Vignesh Ram Somnath (with Prof. Dr. **Andreas Krause**)  
Multi-Scale Representations for Predicting Surface Reactivity of Molecules

**2022–23** **Energy Systems Process Engineering Group, ETH Zurich, Research Project** Zurich, Switzerland  
Supervisors: Prof. Dr. **André Bardow**, Benedikt Winter  
Predicting Molecular Properties and Phase Diagrams with a SMILES-to-Property-Transformer

**2023** **Copéret Group, ETH Zurich, Research Project** Zurich, Switzerland  
Supervisors: Prof. Dr. **Christophe Copéret**, Dr. Zachariah Berkson  
Decoding Solid-State NMR Descriptors using Machine Learning

**2020** **Leopold-Franzens-Universität, Internship** Innsbruck, Austria  
Supervisors: Prof. Dr. **Hubert Huppertz**, Dr. Freia Ruegenberg  
Synthesis of narrowband luminescent materials for Solid State Lighting applications

**2019** **Technical University of Vienna, Internship** Vienna, Austria  
Supervisors: Prof. Dr. **Katharina Schröder**, Dr. Aitor Sainz Martinez  
Synthesis and applications of ionic liquids comprising alkylmethylimidazolium-cations

## SELECTED AWARDS

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**2020** **Silver Medal**, *International Chemistry Olympiad*  
**2020** **Best MINT school research project**, *Institute of Science and Technology (ISTA)*  
**2020** **Agnes-Ruis Prize for best experimental school research project**, *Austrian Chemists' Society*  
**2020** **Best Chemistry school research project**, *Dr. Hans-Riegel-Fachpreise (DACH-area)*  
**2019** **Silver Medal**, *International Chemistry Olympiad*  
**2019** **Silver Medal**, *International Mendeleev Chemistry Olympiad*  
**2018** **Bronze Medal**, *International Chemistry Olympiad*

## OUTREACH

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### International Olympiads (IChO)

- Exam Author for the 55th IChO 2023 in Switzerland: drafted, created and corrected 340+ exams (2021-2023)
- Contributed chapter for the book "10 Things You Must Know About IChO" (2023)
- Mentor in Organic and Physical Chemistry for the Austrian National Chemistry Olympiad (2021)

### Women in Natural Sciences at ETH Zurich (WiNS)

- Association representing all female researchers in Chemistry, Chemical Engineering, Biology, Physics and Material Science at ETHZ
- Webmaster (since 2022) and first-ever Student Representative (2021-2022): building website and backend from the bottom-up

### Young Swiss Chemical Society (youngSCS)

- National University Representative of ETHZ (2021-2023)
- Delegate at the International Younger Chemists' Network (IYCN) (2023-2024)
- Co-created the first-ever Swiss-wide mentoring program in Chemistry (2023-2024)

### Mentoring

- Mentor at the first-ever mentoring program of WiNS for undergraduate students at ETHZ (2023-2024)
- Leading a team of five teaching assistants: creating course contents, lecture script, exercise classes for 180+ undergraduate students (2023)

## TALKS

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- 10/2023**    **Panel Discussion**, *One of four invited speakers about Postgraduate Studies at the 1<sup>st</sup> International Online Conference of the IYCN*
- 08/2023**    **Poster Presentation**, *presenting my semester project "Decoding Solid-State NMR Descriptors using Machine Learning" at the SCS Fall Meeting (annual conference of the Swiss Chemical Society) as the youngest member of the group*
- 04/2019**    **First Prize**, *Students' Competition of the University of Vienna, Topic "How Can We Save Our Climate?"*
- 04/2018**    **Second Prize and Audience Award**, *Students' Competition of the University of Vienna, Topic "Health Out Of The Lab"*

## TEACHING

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- 2023**        **Inorganic Chemistry I**, *Head Teaching Assistant*
- 2022**        **Inorganic Chemistry I**, *Teaching Assistant*
- 2022**        **Physical Chemistry I - Thermodynamics**, *Teaching Assistant*
- 2021**        **General Inorganic Chemistry I**, *Teaching Assistant*
- 2018-21**    **European Science Olympiad**, *Mentor (Organic Chemistry)*

## SKILLS

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**Programming** : Python, C++, R, Git, L<sup>A</sup>T<sub>E</sub>X

**Machine Learning** : Courses at ETH Zurich (Algorithms and Programming in Chemistry, Machine Learning and Chemometrics), research projects (Deep Learning, NLP, Graphs)

**Libraries** : PyTorch, PyTorch Geometric, Tensorflow, SciKit, RDKit

**Languages** : German (Native), English (Fluent), French (Conversant)