

JAN BALAJKA

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CURRICULUM VITAE

[Website](#) | [Google Scholar](#) | [ORCID](#) | [Web of Science](#)

PROFESSIONAL EXPERIENCE AND EDUCATION

- 2020 – Assistant Professor, Vienna University of Technology, Austria
- 2019 – 2020 Postdoctoral Associate, Cornell University, Ithaca, NY, USA (advisor: Melissa A. Hines)
- 2018 Ph.D. in physics, TU Wien, Austria (advisor: Ulrike Diebold)

RESEARCH INTERESTS

- Oxide, hydroxide and mineral surfaces
- Scanning probe microscopy (STM/AFM)
- Solid-liquid interfaces
- Heterogeneous ice nucleation
- Carbon capture and mineralization

AWARDS

- 2019 Loschmidt Prize, Physical Chemistry Society, Austria
- 2013 Dean's Prize, Brno University of Technology, Czech Republic

SELECTED PUBLICATIONS

1. Johanna I. Hütner, Andrea Conti, David Kugler, Florian Mittendorfer, Georg Kresse, Michael Schmid Ulrike Diebold, Jan Balajka*
Stoichiometric reconstruction of the $\text{Al}_2\text{O}_3(0001)$ surface
Science 385, 6714, 1241–1244 (2024), [10.1126/science.adq4744](https://doi.org/10.1126/science.adq4744)
2. Jan Balajka, Melissa A. Hines, William J. I. DeBenedetti, Mojmir Komora, Jiri Pavelec, Michael Schmid, Ulrike Diebold
High affinity adsorption leads to molecularly ordered interfaces on TiO_2 in air and solution
Science 361, 6404, 786–789 (2018), [10.1126/science.aat6752](https://doi.org/10.1126/science.aat6752)
3. Jan Balajka, Jiri Pavelec, Mojmir Komora, Michael Schmid, Ulrike Diebold
Apparatus for dosing liquid water in ultrahigh vacuum
Review of Scientific Instruments 89, 8, 83906 (2018), [10.1063/1.5046846](https://doi.org/10.1063/1.5046846)

4. Jan Balajka, Ulrich Aschauer, Stijn F. L. Mertens, Annabella Selloni, Michael Schmid, Ulrike Diebold
Surface structure of TiO₂ rutile (011) exposed to liquid water
Journal of Physical Chemistry C 121, 47, 26424–26431 (2017), [10.1021/acs.jpcc.7b09674](https://doi.org/10.1021/acs.jpcc.7b09674)

5. Giada Franceschi, Ulrike Diebold, Jan Balajka
Atomic structure of oxide surfaces in aqueous environment (review chapter), edited by David E. Starr and Hendrik Bluhm
Encyclopedia of Solid-Liquid Interfaces (First Edition), 200-209, Elsevier 2023, (eds. Klaus Wandelt and Gianlorenzo Bussetti) [10.1016/B978-0-323-85669-0.00078-7](https://doi.org/10.1016/B978-0-323-85669-0.00078-7)

INVITED AND DISTINGUISHED TALKS

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| 2024/08/20 | Invited seminar at the University of Illinois Chicago (UIC), Department of Chemistry, Chicago, IL, USA (host: Nan Jiang) |
| 2024/06/05 | Invited talk at Marcus Wallenberg Symposium MOWiiE - Metal-Oxide/Water Interactions in Electrochemistry: Theory Meets Experiment in Uppsala, Sweden |
| 2024/03/21 | Post-deadline talk at DPG 2024 - German Physical Society annual meeting in Berlin, Germany |
| 2023/11/15 | Invited talk at Operando SPM 2023 - 1st International Conference on Nanoscale Catalysis and Energy Conversion in Berlin, Germany (organized by Christopher S. Kley and Florian Johann) |
| 2023/11/03 | Invited seminar at Pacific Northwest National Laboratory (PNNL), Richland, WA, USA (hosts: Zdenek Dohnálek and Zbyněk Novotný) |
| 2023/07/03 | Invited attendee talk at ZCAM Metal-Oxide Ultrathin Films and Nanostructures: Meets Theory in Zaragoza, Spain |
| 2023/06/19 | Hot topic talk at Cluster Meeting 2023 in Prague, Czech Republic |
| 2022/09/01 | Invited seminar at Uppsala University, Sweden (host: Chao Zhang) |

COMMUNITY ENGAGEMENT

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| 2026 | Organizer of NC-AFM 2026 - <i>The 27th International Conference on Non-Contact Atomic Force Microscopy</i> in Innsbruck, Austria, with Andrea Auer, Laerte Patera (both University Innsbruck, Austria) and Martin Setvin (Charles University Prague, Czech Republic) |
| 2024 | Organizer of a Marcus Wallenberg Symposium MOWiiE - <i>Metal-Oxide/Water Interactions in Electrochemistry: Theory Meets Experiment</i> in Uppsala, Sweden, with Chao Zhang (Uppsala University), Veronica Augustyn (North Carolina State University, USA), and Evert Jan Meijer (University of Amsterdam, The Netherlands) |

- 2023 Organizer of mini-symposium on *Atomic-scale mineral-water interfaces* within 36th European Conference of Surface Science (ECOSS) in Łódź, Poland, with Johannes Lützenkirchen (KIT) and Chao Zhang (Uppsala University)
- 2023 Reviewer of abstracts for ECOSS-36, in Łódź, Poland, organized by Pawel Kowalczyk
- 2023 Reviewer for Deutsche Forschungsgemeinschaft (DFG) funding agency, Germany
- 2022 Committee member of Franz Viehböck Young Investigator Award, Austria
- 2022 Expert referee for Ph.D. stipend applications, Studienstiftung, Germany
- 2021 Co-organizer of 18th IUVESTA Summer School on *Physics at Nanoscale* (hybrid due to Covid-19)
- 2020 Committee member of Franz Viehböck Young Investigator Award, Austria

Peer reviewer for various journals

Nature Materials, Nature Communications, JACS, Angewandte Chemie, Acc. Chem. Res, Nano Letters, Chem (Cell), Physical Review Letters, J. Phys. Chem. Letters, J. Phys. Chem. C, Phys. Chem. Chem. Phys., Surface Science, Langmuir, Topics in Catalysis, Beilstein Journal of Nanotechnology, J. Phys. Condens. Matter

MENTORING

Graduate Students

- 2021 – Johanna Hütner
Winner of 2024 Morton M. Traum Award of the American Vacuum Society
- 2023 – David Kugler
- 2022 – Andrea Conti (co-supervisor, computational modeling)
- 2023 – Aishwarya Sudhama (co-supervisor, supervisor: Chao Zhang, Uppsala University, Sweden)
- 2024 Soumyajit Rajak (visiting student from University of Illinois in Chicago, Nan Jiang's lab)

Master Students

- 2025 Jan Vymazal (Erasmus Internship)
- 2022 David Kugler (Erasmus Internship)
- 2022 Dominik Hruza (Erasmus Internship)

Bachelor Students

- 2024 Arseniy Shukhov
- 2023 Milena Zehetner
- 2021 Sophie Wrathall

Co-supervision of several other graduate students and postdocs

TEACHING & SCIENCE OUTREACH

- 2024 Undergraduate Physics Laboratory Exercises 3, TU Wien, Austria
- 2023 Surface Physics Lecture (substitute for U. Diebold), TU Wien, Austria
- 2023 Undergraduate Physics Laboratory Exercises 1, TU Wien, Austria
- 2022 Undergraduate Physics Laboratory Exercises 3, TU Wien, Austria
- 2021 Undergraduate Physics Laboratory Exercises 2, TU Wien, Austria
- 2019 Columbia University, New York, NY, USA

Educational activities within Cornell & Columbia STEM Workshop for elementary and middle-school teachers

- 2019 Harlem Promise Academy, New York, NY, USA

Educational activities within Cornell & Columbia STEM Workshop for 7th-grade students

PERSONAL BACKGROUND

Born May 21st, 1989, Hustopece, Czech Republic

Citizenship: Czech Republic