

URSULA LUDACKA

SKILLS & ABILITIES

Programming

- Python: data/image processing, visualization of data with various libraries (HyperSpy, Matplotlib, Pandas, PyTorch, PyXem)

Languages

- German (native)
- English (fluent)
- Norwegian (fluent)

EDUCATION & CAREER

POST-DOCTORAL FELLOW, NTNU, DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING, TRONDHEIM, NORWAY

Since 09/2020

- Research on ferroelectric materials for nanoelectronic applications
- Transmission Electron Microscope (TEM) applications
- Scanning Probe Microscope applications
- Data processing of experimental data via Python
- Faculty representative of temporary employees (since 2022)

TECHNICAL EXPERT FOR TRANSMISSION ELECTRON MICROSCOPES, UNIVERSITY OF ANTWERP, EMAT, BELGIUM

04/2019 – 08/2020

- Maintenance of 6 TEMs
- Research on various material systems (lysozyme molecules under cryo-conditions, (S)TEM of polymorph lead (II) phthalocyanine (PbPc) organic molecules)
- Supervision and training of users on the TEMs

PHD, UNIVERSITY OF VIENNA, AUSTRIA

02/2015 – 02/2020

Project title: "Ex Situ and In Situ investigations on 2D Materials Using TEM methods"

- Research on low dimensional materials Co-supervision of MSc candidates
- Maintenance of 1 TEM
- Supervision of laboratory courses

MSC, UNIVERSITY OF VIENNA, AUSTRIA

10/2010 – 02/2015

Project title: “SAXS and WAXS Investigations on the Cellulose of Picea Abies – The Influence of Thermal Treatment on the Microfibril Angle “

BSC, UNIVERSITY OF VIENNA, AUSTRIA

09/2007 – 10/2010

Project title: “SAXS In Situ Straining Experiments of Rat Tail Tendon – Possibilities and Limits of Laboratory SAXS Instruments“

STUDENT ASSISTANT AT THE INSTITUTE FOR QUANTUM OPTICS

04/2008 – 08/2008

- Assistance with experimental setups – alignment of optical benches

DEHNER GARDENCENTER GMBH & CO KG

07/2005 – 07/2012

- Customer service for landscaping and floristics

TECHNICAL UNIVERSITY, VIENNA, AUSTRIA

01/2002 – 10/2005

- Study of Physics (not finished, but restarted in 2007)

PUBLICATIONS

1. M. E. Pérez-Ojeda, E. Castro, C. Kröckel, M. A. Lucherelli, U. Ludacka, J. Kotakoski, K. Werbach, H. Peterlik, M. Melle-Franco, J. C. Chacón-Torres, F. Hauke, L. Echegoyen, A. Hirsch, G. Abellán. Carbon Nano-onions: Potassium Intercalation and Reductive Covalent Functionalization. *J. Am. Chem. Soc.* 143. 45, 18997-19007 (2021). DOI: 10.1021/jacs.1c07604
2. U. Ludacka, M. R. A. Monazam, C. Rentenberger, M. Friedrich, U. Stefanelli, J. C. Meyer and J. Kotakoski. In-Situ Control of Graphene Ripples and Strain in the Electron Microscope. *Npj 2D Materials and Applications*. 25. 1-6 (2018). DOI: 10.1038/s41699-018-0069-z
3. T. Susi, J. Madsen, U. Ludacka, J. J. Mortensen, T. J. Pennycook, Z. Lee, J. Kotakoski, U. Kaiser and J. C. Meyer. Efficient First-Principles Simulation of Electron Scattering Factors for Transmission Electron Microscopy. *Ultramicroscopy*. 197. 16–22 (2018). DOI: 10.1016/j.ultramic.2018.11.002
4. R. Kozubek, M. Tripathi, M. Ghorbani-Asl, S. Kretschmer, L. Madauß, E. Pollmann, M. O’Brien, N. McEvoy, U. Ludacka, T. Susi, G. S. Duesberg, R. A. Wilhelm, A. V. Krasheninnikov, J. Kotakoski, and M. Schleberger. Perforating Freestanding Molybdenum Disulfide Monolayers with Highly Charged Ions. *J. Phys. Chem. Lett.* 10. 904–910 (2019). DOI: 10.1021/acs.jpcclett.8b03666
5. M. R. A. Monazam, U. Ludacka, H.-P. Komsa, J. Kotakoski. Substitutional Si Impurities in Monolayer Hexagonal Boron Nitride. *APL*. 115. 071604 (2019). DOI: 10.1063/1.5112375
6. M. Sojkova, K. Vegso, N. Mrkyvkova, J. Hagara, P. Hutar, A. Rosova, M. Caplovicova, U. Ludacka, V. Skákalová, E. Majkova, P. Siffalovic, M. Hulman. Tuning the Orientation of Few-Layer MoS₂ Films using One-Zone Sulfurization. *RSC Adv.* 9. 29645-29651 (2019). DOI: 10.1039/C9RA06770A

7. R. Singh, D. Scheinecker, U. Ludacka, J. Kotakoski. Corrugations in Free-Standing Graphene. *Nanomaterials*. 12. 3562 (2022). DOI: 10.3390/nano12203562.
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CONFERENCES

- 04/09 – 09/09/2022 – DPG Meeting 2022 – Talk
 - 23/05 – 25/05/2022 – 2022 MRS online Spring Meeting – Talk
 - 18/11/2021 – QUOROM-5 online meeting – Poster
 - 11/02 – 14/02/2019 – TRNM 2019, Levi, Finland – Poster
 - 27/08 – 29/08/2018 – ELMINA 2018, Belgrade, Serbia – Poster
 - 25/06 – 29/06/2018 – SCANDEM 2018, Copenhagen, Denmark – Talk
 - 13/03 – 15/03/2018 – ImagineNano2018, Bilbao, Spain – Talk
 - 13/02 – 18/02/2017 – TRNM 2017, Levi, Finland – Poster
 - 02/05 – 05/05/2016 – EMRS 2016, Lille, France – Poster
 - 13/02 – 10/02/2016 – IWEPNM 2016, Kirchberg, Tirol, Austria – Poster
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INTERESTS

- Road biking in summer – an active member of Stiftsstadens sykkelklubb (SSK)
 - Skiing in winter (classic, skating, downhill)
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REFERENCES

- Prof. Dennis Gerhard Meier – dennis.meier@ntnu.no
- Prof. Jani Kotakoski - jani.kotakoski@univie.ac.at
- Prof. Timothy J. Pennycook - timothy.pennycook@uantwerpen.be