

# ALPIN 2023

11./12. September 2023 in Chemnitz



## Program Monday, 11.09.2023

Preliminary: 10.08.2023

Time	Agenda
12:00	Arrival, registration, light lunch
13:00	Welcome and introduction TUC/ENAS
13:40	<b>Shiyang He</b> (Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden) Precise Interface Engineering for High Thermoelectric Performance in CuNi Alloys Using Powder ALD
14:05	<b>Kalle Niiranen</b> (Beneq) Sponsor presentation Beneq
14:20	<b>Julia Cipo</b> (Fraunhofer ISIT) LiPON on porous electrodes
14:35	<b>Ludwig Marth</b> (SENTECH) Atomic Layer Technology by SENTECH Instruments
14:50	<b>Martin Klapper</b> (TU Chemnitz) Atomic layer deposition on carbon fibers with titanium phosphate
15:05	Coffee break & Poster session
15:40	<b>Jean-Pierre Glauber</b> (Ruhr-Universität Bochum) Recent advancements in rare earth oxide thin films via ALD based on water assisted processes
16:05	<b>Hagen Bryja</b> (FHR Anlagenbau) ALD development activities at FHR
16:20	<b>Estelle Jozwiak</b> (Humboldt-Universität zu Berlin) Nickel-Iron-Oxide As A Highly Active Catalyst Toward OER Using Atomic Layer Deposition
16:35	<b>David Anderson</b> (memsstar) Comparison of Self-Assembled-Monolayer (SAM) Films: Conventional Fluorinated and Non Fluorinated Alternative SAM Films – differences and applicative performance
16:50	<b>Philipp Wellmann</b> (Universität Leipzig) Blocking Layer Buildup and Disintegration in the Area-Selective Atomic Layer Deposition of Al <sub>2</sub> O <sub>3</sub> on Silicon Oxide with Silane-based Inhibitors - a DFT Study
17:05	Coffee break & Poster session
17:30	Virtual lab tour
18:15	Free time & Transit to Gewölbegänge
19:00	Evening event at Gewölbegänge

## Program Tuesday, 12.09.2023

Preliminary: 10.08.2023

Time	Agenda
09:00	Arrival
09:15	<b>Florian Preischel</b> (Ruhr-Universität Bochum) Processing of 2D silica via ALD for selective gas separation membranes
09:40	<b>Mario Ziegler</b> (Leibniz Institute of Photonic Technology Jena) Ultra-thin NbN films by PE-ALD for second generation quantum devices
09:55	<b>Florian Eweiner</b> (Heraeus) Facilitating precious metal deposition: The role of Heraeus in the Ruthenium value chain
10:10	<b>Robert Zierold</b> (Universität Hamburg) (PE)ALD of insulating and superconducting materials as a prerequisite for thin-film-based SRF cavities
10:25	<b>Oliver Briel</b> (Dockweiler Chemicals) Dock Chemicals – update on product pipeline and strategic perspective
10:45	Coffee break & Poster session
11:05	<b>Martin Knaut</b> (TU Dresden) ALD film growth and sticking coefficients
11:20	<b>Ralf Tonner-Zech</b> (Universität Leipzig) Density functional theory helps reveal area-selective deposition on metal/semiconductor substrate patterns
11:35	<b>Xiao Hu</b> (TU Chemnitz) Atomistic Simulation of Copper Atomic Layer Etching
11:50	Coffee break & Poster session
12:10	<b>Nils Boysen</b> (Fraunhofer IMS) Recent Developments in Processing 2D Materials and Metals via ALD for Functional Applications
12:25	<b>Daniel Schlamm</b> (SEMPA) Advanced Gas- and Chemical Supply Systems
12:40	<b>Ivo Utke</b> (Empa) In-situ Raman investigations of TiO <sub>2</sub> ALD on carbon nanotubes
12:55	Student award
13:00	Closing & Departure

### Information for authors (presentation and poster)

To ensure a smooth transit between presentations, we kindly ask all speakers to hand in their presentation until 07.09.2023.

To further enhance knowledge exchange and discussion in the ALPIN network, we kindly ask you to provide your slides or poster for sharing with all registered participants. The material will be made available on the ALPIN website in a password-protected area. This is voluntary.

## Poster presentations

- P1. **Franziska Beyer** (Fraunhofer IISB/ Fraunhofer THM) - Morphological and electrical characterization of AlGa<sub>N</sub>/Ga<sub>N</sub> heterostructures modified by atomic layer etching
- P2. **Madeleine Bischoff** (TU Chemnitz) - Atomic layer deposition of titanium phosphate on carbon fibers using tris(trimethylsilyl) phosphate, titanium isopropoxide and water
- P3. **Claudia Bock** (Ruhr-Universität Bochum) - Low-temperature ALD and ALE processes for advanced integration of 2D materials in an industrial scale
- P4. **Werner Goedel** (TU Chemnitz) - ALD coating onto bundles of technical fibres
- P5. **Philipp Häussermann** (TU Bergakademie Freiberg) - Bayesian optimization for thermal ALD-TiO<sub>2</sub> carrier selective and passivating contacts
- P6. **Niklas Huster** (Ruhr-Universität Bochum) - Unearthing new precursors for Ru metal deposition: from developmental chemistry to applications
- P7. **Camilla Minzoni** (Empa) - Early-stage Growth Study of Cu Metal ALD Thin Films
- P8. **Philip Klement** (Universität Gießen) - Broadband Anti-Reflective Coatings on Plastic Optics Using Graded Refractive Index Alumina by Atomic Layer Deposition
- P9. **Rahel-Manuela Neubieser** (Fraunhofer IMS) - ALD Activities at Fraunhofer IMS: Tools, Materials and Applications
- P10. **Jorit Obenlünenschloß** (Ruhr-Universität Bochum) - Challenges in precursor chemistry for metal ALD: Alternative precursor systems and processes
- P11. **Ingmar Ratschinski** (TU Bergakademie Freiberg) - Modulation-Doped Silicon Nanowires via Aluminum-Induced Acceptor States in SiO<sub>2</sub> using ALD-AlO<sub>x</sub> Monolayers
- P12. **Ingmar Ratschinski** (TU Bergakademie Freiberg) - Influence of Process Parameters on the Crystallinity of Ga<sub>2</sub>O<sub>3</sub> produced by Atomic Layer Deposition (ALD)
- P13. **Marcel Schmickler** (Ruhr-Universität Bochum) - Understanding ligand diversity for rare earth based complexes: From precursors to materials
- P14. **Dongho Shin** (Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden) - Stacking sulfide based 2D materials using ALD
- P15. **Martin Wilken** (Ruhr-Universität Bochum) - Strategies to tune physico-chemical properties of precursors for transition metal chalcogenide thin film deposition
- P16. **Jun Yang** (Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden) - ALD Sb<sub>2</sub>Te<sub>3</sub> Films and Heterostructure : Thermoelectric and Optoelectronic Properties
- P17. **Mathias Franz** (Fraunhofer ENAS) - Development of a cobalt atomic layer deposition process using Co<sub>2</sub>(CO)<sub>8</sub> as precursor
- P18. **Bodo Kalkofen** (Max-Planck-Institut für Mikrostrukturphysik) - BRIC<sup>KS</sup> - A Modular Precursor Supply System for ALD or CVD

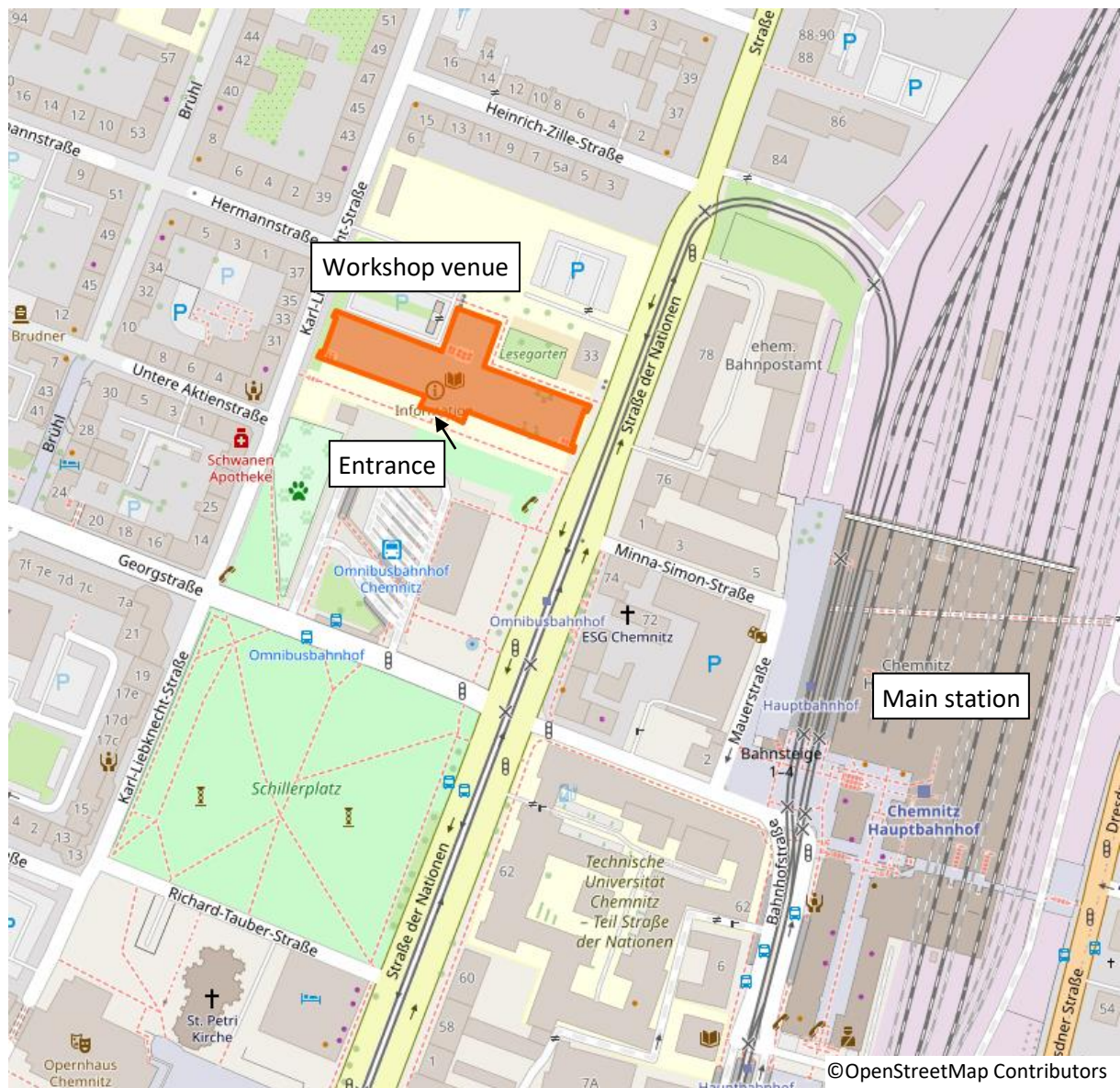
## Workshop venue

The workshop takes place at the Alte Aktienspinnerei - the University library of the Technical University of Chemnitz. It is located close to Chemnitz main station.

Address: Alte Aktienspinnerei, Straße der Nationen 33, 09111 Chemnitz

Coordinates: 50.84139, 12.92688

## Map



## Evening event

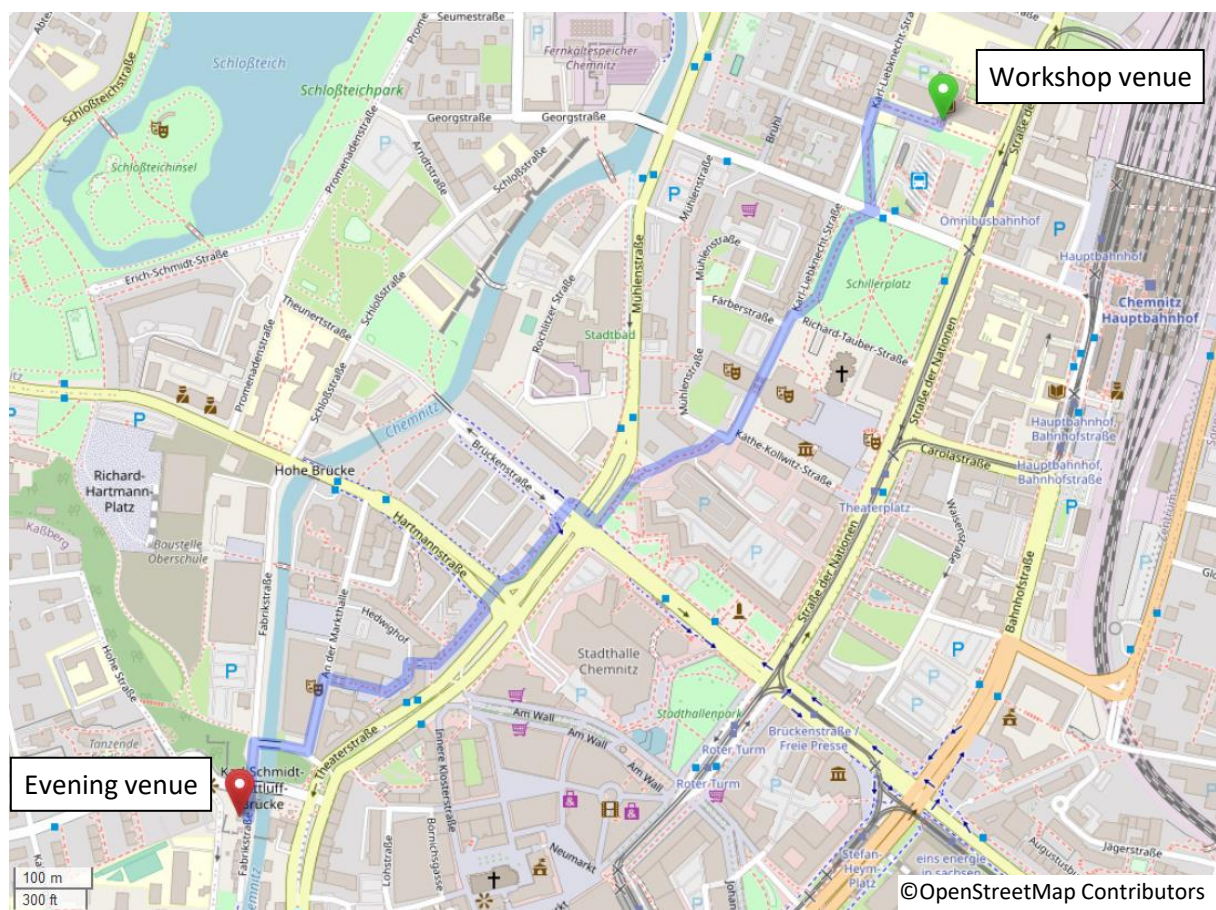
The evening event will take place in the Chemnitzer Gewölbegänge. Built in the 16<sup>th</sup> century, the Gewölbegänge are originally created as large vaults to store beer. Nowadays they provide a unique evening location. We recommend closed footgear.

The Gewölbegänge are reachable by foot from the workshop venue in 20 minutes. A guided walk to the evening location starts at 18:30 at the main entrance of the Aktienspinnerei.

Address: Chemnitzer Gewölbegänge, Fabrikstraße 6, 09111 Chemnitz

Coordinates: 50.83371, 12.91451

Map:



## Contact

The organizing team looks forward to welcoming you in Chemnitz. If you have any questions, do not hesitate to contact us at [alpin@enas.fraunhofer.de](mailto:alpin@enas.fraunhofer.de).

### ALPIN-Team

Martin Knaut

### Local organizing committee TU Chemnitz & Fraunhofer ENAS

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