

4th CENIDE Conference 2025

May 19–21, 2025

Kardinal-Schulte-Haus, Overather Str. 51, 51429 Bergisch Gladbach
<https://tagen.erzbistum-koeln.de/ksh>



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Conference Program

	Monday, May 19	Tuesday, May 20	Wednesday, May 21
08:00–08:30		Breakfast	Breakfast
08:30–09:00			
09:00–09:30	Arrival and Registration	E: Postdoc Session (3 talks)	D: New Topics Impulse Presentations
09:30–10:00			
10:00–10:30	Welcome and CENIDE Overview Talk	Coffee Break	Coffee Break
10:30–11:00	E: Postdoc Talks (6 talks)	B: Research Data Management Best Practice Examples	D: New Topics Workshops
11:00–11:30		Keynote Talk AI	
11:30–12:00			Awards, Closing Remarks
12:00–12:30		Lunch	
12:30–13:00	Lunch	Lunch	
13:00–13:30			
13:30–14:00		Walking and Talking	
14:00–14:30	A.1: Future of CENIDE Introduction		Departure
14:30–15:00	A.1: Future of CENIDE Discussion (PIs, Postdocs)		C: AI Tool for Research Impulse Presentations
15:00–15:30	A.2: Early Career Forum (ECR)		
15:30–16:00		C: AI Tool for Research Mini-Workshops	
16:00–16:30			
16:30–17:00	Coffee Break		
17:00–17:30	A.1+2: Summary		
17:30–18:00	Poster Session I	Poster Session II	
18:00–18:30			
18:30–19:00			
19:00–19:30	Dinner	Dinner	
19:30–20:00			
20:00–20:30	Keynote Talk Good Scientific Practice	Open Session	
20:30–21:00			
21:00	Get-Together with Drinks	Get-Together with Drinks	

Monday, May 19, 2025

09:00–10:00 Arrival and Registration and Coffee

10:00–10:30 *Welcome and CENIDE Overview Talk*
Tobias Teckentrup

Session E: Postdoc Talks

Chair: Nicolas Wöhl

10:30–10:50 *Laser Absorption Spectroscopy of Gas-Phase Species in Reactive Flows*
Peter Fjodorow, Mechanical Engineering

10:50–11:10 *Sub-picosecond Photo-induced Displacive Phase Transition in Sb₂Te (Group 2) Phase-Change Material*
Zhipeng Huang, Experimental Physics – **CENIDE Early Career Fellow**

11:10–11:30 *Martensitic Phase Transformations in Shape Memory Materials: The Role of Electrons and Hydrogen*
Klara Lünser, Mechanical Engineering

11:30–11:50 *Topological Materials for Unconventional Computing – Towards Scalable, Fast, and Energy-efficient Systems*
Atreya Majumdar, Theoretical Physics

11:50–12:10 *Small Particles, Big Potential: The Power of Laser-Generated Nanoparticles in 3D Printing*
Anna Ziefuß, Chemistry

12:30–14:00 Lunch

Session A.1: Future of CENIDE

Session A.2: Early Career Forum

14:00–14:30 A.1 The Future of CENIDE: Introduction (Plenum)
Sebastian Schlücker, Chemistry, Scientific Director CENIDE

14:30–16:30 A.1 The Future of CENIDE – Discussion (parallel)
Manuel Gruber, Gabi Schierner, Sebastian Schlücker, Karsten Seidl
Moderation: Niels Kasties

14:30–16:30 A.2 Early Career Forum (parallel)
Miriana Vadala, Anna Ziefuß, Simon Kresman

16:30–17:00 Coffee Break

17:00–17:30 Summary A.1 and A.2 in Plenum

Poster Session

17:30–19:00 Poster Session I (presentation of posters with odd numbers)

19:00–20:00 Dinner

Invited Key Note Talk I

Chair: Tobias Teckentrup

20:00–21:00 *Good Scientific Practice*
Axel Lorke

21:00 Get-Together with Drinks

Tuesday, May 20, 2025

08:00–09:00 Breakfast

Session E: Postdoc Talks

Chair: Miriana Vadala

09:00–09:20 *Miniaturized Electromagnetic Systems in the THz Range*
Lisa Liborius, Electrical Engineering

09:20–09:40 *Additive Manufacturing of Bulk Metallic Glasses*
Jan Wegner, Mechanical Engineering

09:40–10:00 *Approaches To Improving Scalable Red Light-emitting Devices Based on 2D Materials*
Tobiloba Fabunmi, Electrical Engineering

10:00–10:30 Coffee Break

Session B: Research Data Management Best Practice Examples

Chair: Gabi Schierning

10:30–10:50 *Basic Features, Prerequisites, Principles, and Obligations for RDM and RDM in CRC/TRR 196*
Stephanie Rehwald, UDE Research Data Services

10:50–11:10 *RDM in CRC/TRR 247*
Victor Dudarev, RUB

11:10–11:30 *RDM in a Research Group*
Doris Segets, Mechanical Engineering

Keynote Talk II

Chair: Sebastian Schlücker

11:30–12:30 *AI: A Computer Science Perspective*
Gregor Schiele, Computer Science

12:30–13:30 Lunch

13:30–15:00 Walking and Talking

Session C: AI as a Tool for Research

Chair: Nils Weimann

15:00–15:20 *Large Language Models*
Holger Gollan, ZIM

15:20–15:40 *Image processing and evaluation*
Einar Kruis, Electrical Engineering

15:40–16:00 *Machine Learning*
Benjamin Geisler, University of Florida, USA (formerly UDE)

**16:00–17:30 Mini Workshops (3 x 30 min)
+ Coffee Break**

Poster Session

17:30–19:00 Poster Session II (presentation of posters with even numbers)

19:00–20:00 Dinner

Open Session

Chair: Tobias Teckentrup

20:00–20:20 *Future of the Study Program NanoEngineering*
Gerd Bacher, Electrical Engineering

20:20–20:40 UA Ruhr Latin America Office
Matthias Epple, Chemistry

21:00 Get-Together with Drinks

Wednesday, May 21, 2025

08:00–09:00 Breakfast

Session D: New Topics

Chair: Marika Schleberger

09:00–09:20 *Terahertz Technology – Enabling Microscopic Wireless Systems and Material Sensing*
Nils Weimann, Electrical Engineering

09:20–09:40 *Hydrogen – Production, Interaction, Application*
Gabi Schierning, Mechanical Engineering
Harry Hoster, Mechanical Engineering
Doris Segets, Mechanical Engineering

09:40–10:10 Coffee Break

10:10–10:55 Workshop: *Terahertz Technology – Enabling Microscopic Wireless Systems and Material Sensing*

Nils Weimann, Electrical Engineering

Pooya Alibeigloo, Electrical Engineering

Jonas Watermann, Electrical Engineering

10:55–11:40 Workshop: *Hydrogen – Production, Interaction, Application*

Gabi Schierning, Mechanical Engineering

Sabrina Disch, Chemistry

Harry Hoster, Mechanical Engineering

Doris Segets, Mechanical Engineering

11:40–12:00 Award Ceremony and Closing Remarks

12:00–14:00 Lunch

14:00–14:30 Departure

Poster

#	Last Name	First Name	Title
1	Abts	Jonathan	MOVPE Growth of As/P Materials for High Frequency Electronic Devices
2	Adaköy	Ilyas	Mass Spectrometric Investigation of Surface Effects in a CVD Reactor with 3D-Printed Honeycomb Structures
3	Altayan	Mhd mazen	lignocellulosic biomaterials for water treatment application
4	Awulachew	Shinie	Oxygen Evolution Reaction over Hematite with Different Hydroxylated Surface Coverage: DFT + U + VASPsol
5	Benson	Niels	Printable Ceramic Materials and Graphene for THz applications
6	Berndt	Niklas	Iron oxide nanocubes with varying sizes towards self-organization
7	Beryani Nezafat	Negin	Topological transport features in Cobalt-decorated n-type Bi ₂ Te ₃
8	Daniel	Leon	Mechanism of Oleic Acid-Mediated Sulfur Vacancy Healing in Monolayer WS ₂
9	Dubey	Astita	High throughput screening from binary combinatorial library of lead-free halide perovskites for Photocatalysis
10	Faridi	Shohreh	Trends in Competing Oxygen and Chlorine Evolution Reactions over MXenes
11	Frank	Carolin	In-situ Raman spectroscopy of ion-induced defects in graphene
12	Geisler	Benjamin	Design and Discovery of Novel Superconductors: Bilayer Nickelates and High Critical Magnetic Field Materials
13	Haag	Adrian	Co-Creation Lab Product Innovations – Shaping Ideas via Additive Manufacturing
14	Izadi	Sepideh	Electrical transport characterization of (Co,Fe,Ni) ₉ S ₈ and (Co,Fe,Ni) ₉ (S,Se) ₈ catalyst materials
15	Kamminga	Paul	Tuning Atomistic Disorder in Nanoparticles
16	Kandappanthodi	Chithra	Temperature driven phase transitions and dielectric response of perovskite like molecular ferroelectric TMCM-MnCl ₃
17	Kanu	Gaurav	Magnetic interaction domains in nanostructured NdFeB explored by magnetic SANS
18	Khalique	Abdul	Investigating Resistive switching phenomenon in facile one-step flame synthesized nanostructured C-TiO ₂ films.
19	Khan	Ali Raza	Additively Manufactured 3D Ni Electrodes: Unlocking New Possibilities in Energy Conversion and Electrosynthesis
20	Kharsah	Osamah	Towards the growth of cm-scale high-quality TMDCs via CVD
21	Kostka	Kathrin	Inflammatory effects of synthetic silica fibers

#	Last Name	First Name	Title
22	Krisam	Marc Marcel	Pulsed laser melting of gold microparticles in liquids: Investigation of fluence and cumulative pulses effects on sphere formation.
23	Kunzmann	Alexander	Synthesis and characterization of WO ₃ -x single crystals
24	Ladole	Atharva Harshawardhan	Silicon nitride nanoparticles synthesized in a hot-wall reactor for battery applications
25	Loewenich	Moritz	Materials Engineering to Improve Silicon Based Anodes: a-SiC _x
26	Lünser	Klara	Electronic instabilities in phase transitions
27	Meinert	Christina	Metal Surface Roughening by Remote Nitrogen Plasma Treatment
28	Mohri	Khadijeh	Portable multi-camera setup for 3D tomographic imaging of industrial-scale high-temperature combustion processes
29	Olean-Oliveira	Andre	Electrochemical Pathways for Hydrogen Peroxide Production on Carbon Electrodes: Impact of Surface Defects, Functional Groups, and Alkali Cation Effect
30	Plitt	David	Plasma-Induced Optically Active Defects in Hexagonal Boron Nitride
31	Renard	Théo	Mg-based Thermoelectric Materials for Space Applications
32	Sandra Merin	Sebastian	Designing Polymer-Based Delivery Systems for Hydrophobic Phthalocyanine Photosensitizers: Impact of Hydrophilic-Hydrophobic Balance in Polymer on Photobiological Outcomes
33	Schwarz	Nico	Two-color resonant excitation to study the Auger effect in a single photon emitter
34	Singh	Diwakar	How a Nitrogen-Rich Environment Impacts the Mechanistic Complexity and Selectivity of the Nitrogen Reduction Reaction over Mo ₂ C MXene
35	Teoh	Jeffrey	lignocellulosic biomaterials for water treatment application
36	Vadala	Miriana	Radial and unidirectional freeze casting of ZrO ₂ as possible targets for the production of isotopes at CERN
37	Watermann	Jonas	Resonant tunneling diode based Sensors and THz Sources
38	Winter	Aileen	Biological Effects of Synthetic and Natural Mineral Fibers on Cells
39	Wöhrle	Hendrik	Image Segmentation for Optimized Welding
40	Zhang	Hao	Fabrication of THz Electronic Devices with 100 kV Electron Beam Lithography

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General Information and Organization

Conference Language: English

Postdoc Talks: 15 + 5 minutes

Impulse Presentations: 12 + 8 minutes

Postdoc Presentation Award:

The best talk will be awarded with the Postdoc Presentation Award (100 Euro).

Jury members: Kai Exner
Manuel Gruber
Doris Segets

Best Poster Award:

In total three Best Poster Awards (100 Euro each) are awarded, two with the classical criteria of (possible) networking within CENIDE, quality and presentation of results and one dedicated to the poster with the most interesting AI aspect.

Jury Members: Andrea Eschenlohr
Paul Geller
Fatih Özcan
Nils Weimann
Nicolas Wöhrle
Anna Ziefuß

W-LAN name: KSH_Gast
W-LAN password: KSH-Online

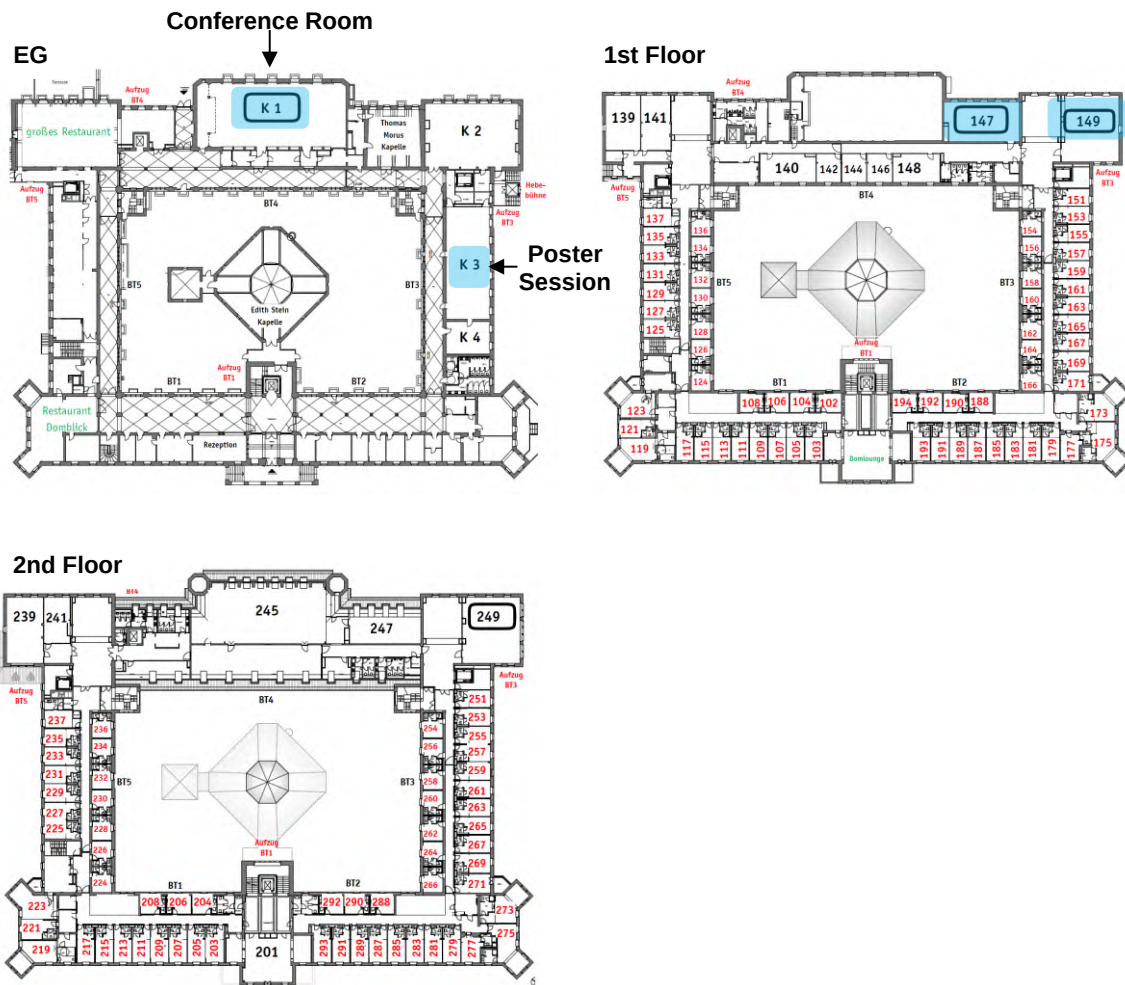
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Sabrina Disch, Andrea Eschenlohr, Pia Franke, Lisa Liborius, Fatih Özcan, Marika Schleberger, Tobias Teckentrup, Nils Weimann, Nicolas Wöhrle

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Floor Plan:



Walking and Talking Route:

https://www.komoot.com/de-de/tour/2244158180?share_token=aCzM3aRUZwn1iCJvhLcrUB4WfvtPpQcBUlg7RGdpEEGz5odgO2&ref=wtd

