



NC-AFM 2026 Conference

The 27th International Conference on
Non-Contact Atomic Force Microscopy

Innsbruck, Austria

August 3–7, 2026

Short Program

1 Conference Schedule

	Monday, 03 Aug	Tuesday, 04 Aug	Wednesday, 05 Aug	Thursday, 06 Aug	Friday, 07 Aug	
08:00 – 09:00	REGISTRATION					
09:00 – 09:20	TECHNICAL SYMPOSIUM	Amogh Kinikar	Alexander Schwarz	Akash Gupta	Mong-Wen Gu	
09:20 – 09:40		Ye Liu	Aris Lafranca	Shuyu Huang	Orlando Jose Silveira Junior	
09:40 – 10:00		Lisanne Sellies	Yuuki Adachi	Jay Weymouth	Ondřej Krejčí	
10:00 – 10:20		Yuejian Zhang	Susanne Baumann	Sophia Schweiss	Martin Ondráček	
10:20 – 10:40		COFFEE BREAK			J. G. Vilhena	COFFEE BREAK
10:40 – 11:00				Mengxi Liu		
11:00 – 11:20	TECHNICAL SYMPOSIUM	Mithun Manikadan	Jascha Repp	EXCURSIONS	Ruben Perez	
11:20 – 11:40		Manuel González Lastre	Christian Loppacher		Tobias Dickbreder	
11:40 – 12:00		Prokop Hapala	Indranil Mal		Sarah Tobisch	
12:00 – 12:20		Farzin Irandoost	Antoine Hinaut		Ulrike Diebold	
12:20 – 14:00	LUNCH				EXCURSIONS	CLOSING REMARKS
14:00 – 14:20	OPENING REMARKS	Rémy Pawlak	Peter Grutter			
14:20 – 14:40	Yoichi Miyahara	Jie Huang	Yuto Nishiwaki			
14:40 – 15:00	Brian Kiraly	Daniel Rothhardt	Yasuhiro Sugawara			
15:00 – 15:20	Ryota Fukuzawa	Jonas Heggemann	Vijayalaxmi Sankeshwar			
15:20 – 16:00	COFFEE BREAK					
16:00 – 16:20	Leo Gross	Jing Guo	Daniel Martin-Jimenez			
16:20 – 16:40	Xinnan Peng	Paul Laubrock	Omur Dagdeviren			
16:40 – 17:00	Shijing Tan	Davoud Pourzadeh	Udo Schwarz			
17:00 – 17:20	Percy Zahl	Jara Trujillo-Mulero	Daniel Ebeling			
17:20 – 17:40	WELCOME RECEPTION (from 17:20)	Barbara Hissa				
17:40 – 18:00		POSTER SESSION (17:40–20:00)	POSTER SESSION (17:40–20:00)	CONFERENCE DINNER (from 18:00)		
18:00 – later						

2 Session Schedule

Monday August 3rd, 2026

- 14:00 Welcome
- 14:20 Nanoscale Measurements of Charge and Work Function
- 16:00 Single-Molecule Studies

Tuesday August 4th, 2026

- 9:00 On-Surface Synthesis
- 11:00 Theory and Machine Learning 1
- 14:00 Structure and Growth of Interfacial Systems
- 16:00 Atomic-Structure Characterisation
- 17:20 Open-Access Publishing
- 17:30 Poster Session A

Wednesday August 5th, 2026

- 9:00 Magnetism
- 11:00 Characterisation of Molecular Systems
- 14:00 Novel Instrumentation and Techniques
- 16:00 High-Resolution Force Mapping
- 17:20 Poster Session B

Thursday August 6th, 2026

- 9:00 Lateral Forces, Friction, and Energy Dissipation

Friday August 7th, 2026

- 9:00 Theory and Machine Learning 2
- 11:00 Mineral and Oxides Surfaces
- 12:20 Closing Remarks

3 Oral contributions

Monday August 3rd, 2026

14:00 **Welcome**

Nanoscale Measurements of Charge and Work Function

Chair **Thilo Glatzel**

14:20 **Yoichi Miyahara**, Scanning single-electron box probe for force-detected charge and potential sensing

14:40 **Brian Kiraly**, KPFM Imaging of Coulomb Confinement in Atomically Engineered Quantum Dots

15:00 **Ryota Fukuzawa**, Kelvin probe force microscopy with dual-bias modulation for frequency response analysis of surface band bending in semiconductors

15:20-16:00 **Coffee Break**

Monday August 3rd, 2026

Single-Molecules Studies

Chair **Jay Weymouth**

16:00 **Leo Gross**, A molecule with half-Möbius topology

16:20 **Xinnan Peng**, Breaking Peierls' theorem in polyacetylene chains via lattice-topology design

16:40 **Shijing Tan**, Interpolating delocalized topological solitons in single conjugated polymers

17:00 **Percy Zahl**, A hybrid workflow for molecular identification: Application to complex extraterrestrial organic mixtures

Tuesday August 4th, 2026

On-Surface Synthesis

Chair **Daniel Rothhardt**

- 9:00 **Amogh Kinikar**, On-surface synthesis of edge extended zigzag graphene nanoribbons
- 9:20 **Ye Liu**, On-surface synthesis of a free-base [3]triangulene-fused porphyrin and its chirality-dependent electronic configuration
- 9:40 **Lisanne Sellies**, On-surface synthesis and aromaticity of large cyclocarbons
- 10:00 **Yuejian Zhang**, Experimental realization of a two-dimensional clathrate hydrate

Tuesday August 4th, 2026

Theory and Machine Learning 1

Chair **Martin Ondráček**

- 11:00 **Mithun Manikadan**, Which Molecules Make Good AFM Tips?
- 11:20 **Manuel González Lastre**, MAD-SURF: a general machine-learning interatomic potential for molecular adsorption on metal surfaces
- 11:40 **Prokop Hapala**, High-throughput integrated SPM simulation platform FireCore
- 12:00 **Farzin Irandoost**, Tip recognition in NC-AFM images in liquid via pattern analysis and machine learning

Tuesday August 4th, 2026

Structure and Growth of Interfacial Systems

Chair **Tobias Dickbreder**

- 14:00 **Rémy Pawlak**, Revealing the Atomic Structure of Blue Phosphorus Phases on Au(111) with Non-Contact Atomic Force Microscopy
- 14:20 **Jie Huang**, High-Resolution AFM and Simulation of THF Clathrate Hydrate Growth and Structure
- 14:40 **Daniel Rothhardt**, From Dehalogenation to Stoichiometric NiBr₂ through Ordered Non-Stoichiometric Phases on Au(111)

15:00 **Jonas Heggemann**, Ice structures on $\text{CaF}_2(111)$ and $\text{BaF}_2(111)$ surfaces

Tuesday August 4th, 2026

Atomic-Structure Characterisation

Chair **Philipp Rahe**

16:00 **Jing Guo**, Visualizing alkali metal aggregation-induced coordination in CO_2 activation on copper

16:20 **Paul Laubrock**, Chiral water structures on dolomite(104) surfaces

16:40 **Davoud Pourzadeh**, Atomic-Scale Characterization of Annealing Effects on Hydrogenated Diamond (100) Surface with Non-Contact Atomic Force Microscopy

17:00 **Jara Trujillo-Mulero**, Resolving Graphene Defects at the Single-Bond with NCAFM

Open-Access Publishing

Chair **Jan Balajka**

17:20 **Barbara Hissa**, A true open-access route: how to go diamond in the nanoscience field?

Wednesday August 5th, 2026

Magnetism

Chair **Nadine Hauptmann**

- 9:00 **Alexander Schwarz**, Magnetically Sensitive Force Microscopy - What to Do Next?
- 9:20 **Aris Lafranca**, Magnetic Susceptibility Imaging of a 2D van der Waals Magnet with Nanowire Magnetic Force Microscopy
- 9:40 **Yuuki Adachi**, Probing a Single Co Atom on MgO Using Magnetic Exchange Force Microscopy
- 10:00 **Susanne Baumann**, Time-resolved energy transfer between a single magnetic adatom and the AFM cantilever

Wednesday August 5th, 2026

Characterisation of Molecular Systems

Chair **Shigeki Kawai**

- 11:00 **Jascha Repp**, Atomic-scale sensing of photoexcitation processes
- 11:20 **Christian Loppacher**, Reversible Radical Formation of Naphthalene Diimide Adsorbed on KCl in the Monolayer Regime
- 11:40 **Indranil Mal**, Framework for simulation of coupled excitons in molecular aggregates
- 12:00 **Antoine Hinaut**, Solution synthesized macrocycles: Investigation with AFM in UHV after electrospray deposition

Wednesday August 5th, 2026

Novel Instrumentation and Techniques

Chair **Christian Loppacher**

- 14:00 **Peter Grutter**, AFM excess noise measures electrochemical reaction rates
- 14:20 **Yuto Nishiwaki**, Long-Range Order and Superstructure on Molten Metal/Solid Interfaces Imaged by Three-Dimensional Force Spectroscopy
- 14:40 **Yasuhiro Sugawara**, Nanosecond measurement of charge emission from interface states to bulk states in Si by pump-probe heterodyne FM-KPFM

15:00 **Vijayalaxmi Sankeshwar**, Low-Temperature Beam Deflection Atomic Force Microscope

Wednesday August 5th, 2026

High-Resolution Force Mapping

Chair **Harry Mönig**

16:00 **Daniel Martin-Jimenez**, Bimodal atomic force microscopy with a torsional eigenmode for highly accurate imaging of grain orientation in organic thin films

16:20 **Omur Dagdeviren**, Quantifying the Site-Resolved Energy Landscape of Au(111) Herringbone Reconstruction via Three-Dimensional Non-contact Atomic Force Microscopy

16:40 **Udo Schwarz**, Expanding 3D-AFM To Enable the Mapping of Quantitative Molecule-Molecule Reactivity Landscapes

17:00 **Daniel Ebeling**, Probing weak chemical interactions of metal surface atoms with CO-terminated AFM tips identifies molecular adsorption sites

Thursday August 6th, 2026

Lateral Forces, Friction, and Energy Dissipation

Chair **Peter Grutter**

- 9:00 **Akash Gupta**, Mechanical detection of sub-band mobilities of two dimensional electron gas on reduced SrTiO₃ surface
- 9:20 **Shuyu Huang**, Vibration-induced dynamic superlubricity on MoS₂/Au(111) under ultra-high vacuum
- 9:40 **Jay Weymouth**, A direct measurement of weak lateral trapping over a C₆ ring
- 10:00 **Sophia Schweiss**, Atomic scale energy dissipation over copper oxide studied with lateral force microscopy
- 10:20 **J. G. Vilhena**, Quantifying Irreversibility (Dissipation) in Single-Molecule Nanomanipulation
- 10:40 **Mengxi Liu**, Interplay of Backbone Rigidity and Side-Group Flexibility in One-Dimensional Structural Superlubricity

Friday August 7th, 2026

Theory and Machine Learning 2

Chair **Prokop Hapala**

- 9:00 **Mong-Wen Gu**, Configuration monitoring of a molecular junction and its applications
- 9:20 **Orlando Jose Silveira Junior**, Automated structure discovery for Tip Enhanced Raman Spectroscopy
- 9:40 **Ondřej Krejčí**, Accelerating Atomic Configuration Identification on Reconstructed Surfaces with Machine Learning
- 10:00 **Martin Ondráček**, Atomic-scale Kelvin probe force microscopy on Ho atoms on the MgO surface

Friday August 7th, 2026

Mineral and Oxides Surfaces

Chair **Franz Giessibl**

- 11:00 **Ruben Perez**, Atomic-scale reactivity of the CeO₂(100) surface reconstructions by scanning probe microscopy
- 11:20 **Tobias Dickbreder**, K-feldspar microcline (001): Atomic structure of nanoscopic feldspar islands
- 11:40 **Sarah Tobisch**, Cooperative CO₂ adsorption on In₂O₃
- 12:00 **Ulrike Diebold**, Mineral Surfaces– Opportunities and Challenges for ncAFM
- 12:20 **Closing Remarks**

4 Posters

Poster Session A

Candidates for the Student Poster Award

- P1 **Yukun Zhang**, Beyond Imaging: Atomic-resolution Scanning Probe Microscopy Uncovers Nanometer-scale Substrate-mediated Interactions in CO/Cu(111)
- P3 **Walburga Freyja Bischofberger**, Annealing-Induced Morphological and Photophysical Changes of PTCDA on NaCl/Ag(111)
- P5 **Antonia Köhler**, Implementation of a Setup for Three-Dimensional Atomic Force Microscopy under Electrochemical Conditions
- P7 **Mona Mona**, Atomic-Scale Identification of Surface Reconstructions on LaAlO₃ (001) and (111)
- P9 **Sreehari Sreekumar**, Temperature and Electric Field Dependent Migration of Polarons in Hematite Fe₂O₃
- P11 **Hsiang-Ling Chuang**, Hadamard-Enhanced AFM Imaging of Ligand-Triggered Membrane Raft Dynamics in Live MCF-7 Cells
- P13 **Henry Rodriguez**, Force to Spin a Molecular Rotor
- P15 **Nazanin Poursheikhali**, Atomic scale characterization of the reconstructed anatase TiO₂(001) surface using non-contact atomic force microscopy
- P17 **Sandhya Anchamkudy**, SQDM Investigation of Orientation-Dependent Electrostatics in Single PTCDA Molecules
- P19 **Lisanne Sellies**, Excited-state spectroscopy of individual molecules by means of atomic force microscopy
- P21 **Benjamin Scheffel**, Exploring the Binding Configurations of Functional 3D Molecules Chemisorbed on Si(100)
- P23 **Fabian Schulz**, Characterization of interfacial charge transfer between graphene nanoribbons and a 2D ferromagnet by STM/ncAFM
- P25 **Zuned Ahmed**, Playing 'Hide & Seek' at Atomic-scale
- P27 **Yasuo Cho**, Non-Contact Writing and Reading in Ultra-High Density Ferroelectric HDD Based on NC-SNDM

- P29 **Franz J. Giessibl**, A Commercial Version of Orpheus II Using Si Cantilevers and qPlus Sensors
- P31 **Qitang Fan**, Intercalation-based decoupling method for graphene nanoribbons on metal surfaces
- P33 **David Kugler**, Atomically Resolved Imaging of Crystal and Adsorbed Water on Gypsum (010) Surface
- P35 **Aji Alexander**, Investigating the growth mechanism of KBr on glass by nc-AFM.
- P37 **Ing-Shouh Hwang**, Comparative Study of Alkane Derived and Gas Hydrate Stripe Structures on HOPG
- P39 **Alice Kern**, Surface Structure of Cu₂O(110)
- P41 **Olga Artemyeva**, Chemical reactivity of Pd (111) surface
- P43 **Fabian Stilp**, Ring Features of Single Adatoms Investigated with a CO Tip
- P45 **Callum Hayward**, On the origin of divergences in quantitative lateral force recovery in bimodal NC-AFM
- P47 **Ryota Fukuzawa**, AC voltage measurement in atomic force microscope potentiometry
- P49 **Jonathan Hein**, On-Surface Synthesis of Kagome Metal-Organic Frameworks
- P51 **Christoph S. Setescak**, High Resolution Imaging of KBr with CO Functionalized Tips
- P53 **Rick Kort**, Understanding how Electrochemical Atomic Force Microscopy Can Reveal the Potential of Zero Charge
- P55 **Himani Malik**, Towards the Largest Starphene: [22]Starphene
- P57 **Milan Koci**, Fast SPM simulation with complex molecular attachment
- P59 **Johanna Schnorrenberg**, Automatic tip functionalization with CO on Ag(111) using machine learning
- P61 **Philipp Rahe**, Upcycling a commercial scan controller for scanning probe microscopy with the GXSM4 OpenSource system
- P63 **Gilbert Lamtecson Pado**, Noncontact AFM Potentiometry for Nanoscale Potential Imaging via Distance-Derivative Capacitance Analysis

P65 **Thilo Glatzel**, Kelvin Probe Force Microscopy of Mixed Monolayer Doping of Silicon

P67 **Toyoko Arai**, Challenge toward high-resolution infrared spectroscopy based on frequency modulation AFM

P69 **Yuta Okabe**, Spectral response of a tuning-fork sensor to a pulsed infrared irradiation detected via a dissipation channel of FM-AFM

Poster Session B

Candidates for the Student Poster Award

- P2 **Rajan Adhikari**, R10: From Bits to Bonds–An Advanced SPM Platform
- P4 **Kim Noelle Dreier**, No Indication for a Reconstruction of Silver Iodide (0001) in Various Liquids
- P6 **Florian Schneider**, Chiral multilayer structures on dolomite (10.4)
- P8 **Matthias Zeilerbauer**, Investigation of well-defined donor-acceptor interfaces by non-contact atomic force microscopy and photoluminescence
- P10 **Jinhui Guo**, Simulations of the optical near-field enhancement for tip-enhanced photoexcitation on non-conductive layers
- P12 **Marie Luigs**, Atomic-scale insights into the selenite incorporation mechanism at the calcite-water interface
- P14 **Lorena Niggli**, Nanowire magnetic force microscopy for imaging vdW magnets in the 2D limit
- P16 **Noah Wulforst**, Self-Assembly of Benzoic Acid Derivatives on Calcite (10.4)
- P18 **Benjamin Achatz**, Implementation of Dissipation-based Kelvin Probe Force Microscopy for Quartz Tuning Fork Sensors
- P20 **Janine Lorenz**, Quantitative imaging of the surface potential of a single PTCDA molecule on Pb(111)
- P22 **Marco Thaler**, From Inert Nitrogen to Reactive Metal Nitrene: An On-Surface Route to N-Heterocycles
- P24 **Marion A. van Midden Mavrič**, Upgrading an STM to STM/ncAFM using a qPlus sensor
- P26 **Martin Setvin**, AFM Imaging of Electrochemically Grown Metal Sulphides
- P28 **Llorenç Albons Caldentey**, Unravelling the ferroelectric behaviour and atomic structure of cleaved BaTiO₃(001) surfaces with nc-AFM and PFM.
- P30 **Faith Lewis**, Structural Insights into Metal Coordination on Au(111) Supported Melem Networks

- P32 **Massimiliano Labardi**, Relaxation Kinetics of Thin Film Ultrastable Glasses via Frequency-Modulated Kelvin Probe Force Microscopy
- P34 **Zheng Rong Guo**, Development of a High-Bandwidth Low-Noise AFM with Optical Beam-Deflection Detection and Photothermal Excitation
- P36 **Harry Mönig**, Tip functionalization with oxygen-terminated copper probes
- P38 **Fabian Fleidl**, Probing Interfacial Water organization on In_2O_3
- P40 **Furkan Ruhi Özyigit**, First steps with a qPlus-based ultrafast mid-infrared AFM
- P42 **Ajay Kumar**, Modeling and Measurement of Distance-Dependent Electrostatic Interactions on Pb Islands
- P44 **Haruka Tsuji**, Development of UHV-LT qPlus AFM/STM System for On-Surface Synthesis @ NIMS
- P46 **Callum Hayward**, Quantifying lateral and normal threshold forces during room-temperature manipulation of C_{60} on $\text{Si}(100)\text{-}2\times 1$
- P48 **Nadine Hauptmann**, Influence of the surface corrugation to the charge density wave contrast of 2H-NbSe_2 in SPM images
- P50 **Martin Kronberger**, Automated, reproducible conditioning of SPM tips
- P52 **Ing-Shouh Hwang**, Laser Annealing for Reliable Preparation of Noble Metal-Covered $\text{W}(111)$ Single-Atom Tips in UHV
- P54 **Viktoria Waidbacher**, Adsorption of Phthalocyanine on Indium Oxide: Influence of the Metal Ions
- P56 **Freddie Carlisle**, Invasive and non-invasive probes of sub-K molecular diffusion
- P58 **Tzu-Chao Hung**, Adsorption geometry determination of three-dimensional molecular architectures
- P60 **Nikhil Seeja Sivakumar**, Metallic Longitudinal Electrostatic Screening in a Type-I Superconductor
- P62 **Voni Fulitasari**, Molecular Resolution Imaging of Trisodium Citrate Cluster on $\text{NaCl}(001)$ in Air Using Frequency Modulation Atomic Force Microscope
- P64 **Oliver Phillips**, Force-Based Characterisation of Bond Formation in Coupled Artificial Atoms

P66 **Lucas Andreas Scheibel**, Force Microscopy at the Electrified Solid-Liquid Interface with Tip Apex Modification

P68 **Philipp Rahe**, qAFM: A Python toolbox for quantitative analysis in NC-AFM