

## **Session Program**

**30 August 2021 to 3 September 2021**



## **Joint Annual Meeting of ÖPG and SPS 2021**

### ***Poster Session***

University of Innsbruck  
Technikerstr. 25, Viktor-Franz-Hess-Haus, AT-6020 Innsbruck

## Tuesday 31 August

19:00

### Poster Session: Applied Physics and Plasma Physics

Poster Session | Location: Hall

#### **【631】 Hyperfine effects in the vibrational spectroscopy of $\text{Cl}^-(\text{H}_2)$ and $\text{Cl}^-(\text{D}_2)$ complexes**

**Speaker**

Franziska Dahlmann

#### **【632】 Planar probe measurements of the low temperature plasmas sheath under a magnetic field of 0.5 T**

**Speaker**

Paul Hirt

#### **【633】 Hysteresis in the drift wave turbulence to zonal flow bifurcation in magnetised plasma**

**Speaker**

Mr Franz Ferdinand Locker

#### **【634】 Approximate non-Boussinesq polarisation models for plasma turbulence**

**Speaker**

Mr Pradeep Somu Balasubramanian

#### **【635】 Propagation of thermal plasma blobs in inhomogeneous magnetic fields**

**Speaker**

Mr Guillermo Wenceslao Zarate Segura

#### **【636】 ASACUSA's low energy proton source for matter studies**

**Speaker**

Andreas Lanz

#### **【637】 Ion molecule reaction dynamics of the radical anion $\text{O}^-$ with $\text{CH}_3\text{I}$ .**

**Speaker**

Atilay Ayasli

#### **【638】 Towards detection of $\text{FeH}^+$ in the interstellar medium: infrared photodissociation spectroscopy of $\text{Ar}_2\text{FeH}^+$**

**Speaker**

Shan Jin

#### **【639】 Proton Transfer Reactions of $\text{N}_2\text{H}^+$ and $\text{ArH}^+$**

**Speaker**

Maximilian Münt

#### **【640】 Single Molecule Force Spectroscopy of Polyethylene Glycol Using Acid Chloride Anchors**

**Speaker**

Manuel Rainer

20:30

19:00

**[641] Interaction between three fireballs in low temperature plasma****Speaker**

Prof. Roman Schrittwieser

**[642] Gas-phase photodetachment and photodissociation rates of dAMP<sup>-</sup> in cryogenic 16-pole wire trap****Speaker**

Salvi Mohandas

**Poster Session: Atomic Physics and Quantum Optics****Poster Session** | **Location:** Hall**[451] Ternary reactions and cluster formation of Cl<sup>-</sup> with H<sub>2</sub>****Speaker**

Christine M. Lochmann

**[452] A setup for coincidence measurements of ion-molecule reactive scattering****Speaker**

Dr Arnab Khan

**[453] Towards the Threshold Photodetachment Spectroscopic studies of C<sub>2</sub><sup>-</sup> and C<sub>2</sub>H<sup>-</sup>****Speaker**

Ms Sruthi Purushu Melath

**[454] Quantum dynamics of nano-rings of dipole-coupled emitters****Speaker**

Verena Scheil

**[455] Dissipative phase transition of optomechanical systems****Speaker**

Ms Fatemeh Bibak

**[456] The NewLand experiment: a novel approach to dipolar physics with ultracold dysprosium atoms****Speaker**

Gregor Anich

**[457] Engineering ultracold molecules under a microscope****Speaker**

Charly Beulenkamp

**[458] Precision spectroscopy and coherent manipulation of single trapped N<sub>2</sub><sup>+</sup> molecules****Speaker**

Mr Mikolaj Franciszek Roguski

**[459] Quantum-Assisted Molecule Metrology****Speaker**

Philipp Rieser

**[460] Optimal quantum control of mechanical motion at room temperature: ground-state cooling**

<p><b>Speaker</b> Mrs Constanze Bach</p>
<p><b>[461] Stationary optomechanical entanglement between a mechanical oscillator and its measurement apparatus</b></p> <p><b>Speaker</b> Klemens Winkler</p>
<p><b>[462] Polarization rotation in an electromagnetically induced transparent atomic medium</b></p> <p><b>Speaker</b> Dr Arpita Das</p>
<p><b>[463] Positron Production and Cooling for Antihydrogen Production</b></p> <p><b>Speaker</b> Dr Volkhard Maeckel</p>
<p><b>[464] Stable High Power deep-UV Enhancement Cavity for Muonium Precision Spectroscopy</b></p> <p><b>Speaker</b> Lucas de Sousa Borges</p>
<p><b>[465] Novel Single-Side-Band Stabilization based on Dual Frequency Modulation</b></p> <p><b>Speaker</b> Sebastian Wald</p>
<p><b>[466] Towards the next generation of spatial mode interference laser locking</b></p> <p><b>Speaker</b> Fritz Diorico</p>
<p><b>[467] Investigation of Near-Infrared Induced Spatial THz Modulation in High Resistivity Silicon</b></p> <p><b>Speaker</b> Dominik Winter</p>
<p><b>[468] Milligram-scale mechanical pendulums: towards the quantum regime</b></p> <p><b>Speaker</b> Pere Rosselló</p>
<p><b>[469] Mott transition in a cavity-boson system: A quantitative comparison between theory and experiment</b></p> <p><b>Speaker</b> Rui Lin</p>
<p><b>[470] Controlling ion motion by manipulating its own fluorescence</b></p> <p><b>Speaker</b> Yannick Weiser</p>
<p><b>[471] Exotic matter production with anions</b></p> <p><b>Speaker</b> Dr Giovanni Cerchiari</p>
<p><b>[472] High precision laser frequency offset stabilization using a hybrid frequency discriminator</b></p>

**Speaker**

Vyacheslav Li

**[473] Magneto-mechanical coupling between a macroscopic cantilever and a superconducting cavity****Speaker**

Lukas Deeg

**[474] Electronic transitions in Rb<sub>2</sub><sup>+</sup> dimers solvated in helium****Speaker**

Ms Elham Ghavidel

20:30

19:00

**Poster Session: Biophysics, Medical Physics and Soft Matter****Poster Session** | **Location:** Hall**[721] Studying Pharmaceutical Nanoparticles by Atomic Force Microscopy****Speaker**

Mr Henrik Siboni

**[722] Direct holographic measurement of torque and individual forces with optical tweezers****Speaker**

Franziska Strasser

**[723] Embedding biomolecules in helium nanodroplets - Development of an experimental setup****Speaker**

Elisabeth Gruber

**[724] Model based pixel crosstalk compensation in LCoS SLMs****Speaker**

Simon Moser

**[725] 4D printing - Moisture induced shape changing behavior of FDM (Fused Deposition Modeling) 3D printed objects using wood filaments****Speaker**

Dr Maurizio Musso

**[726] Single Molecule Force Spectroscopy of Disulfide Bonds****Speaker**

Simone Schirra

**[727] Recent advances in MicroScint beam profiler technology****Speaker**

Mrs Veronica Leccese

20:30

19:00

**Poster Session: FAKT - TASK****Poster Session** | **Location:** Hall**[3001] Nuclear Excitation by Electron Capture in Excited Ions****Speaker**

Mr Simone Gargiulo

**[3002] Analysis of Window-function Modulated Radio Frequency Pulses for the n2EDM experiment****Speaker**

Cornelis Doorenbos

**[3003] Progress towards a positron trap at SMI****Speaker**

Alina Weiser

**[3004] Engaging Physics Tutoring: Easy to prepare, fun to teach.****Speaker**

Manuel Zeyen

**[3005] A Wien filter for the ILIAMS facility at VERA****Speaker**

Johannes Gruber

**[3006] CRIRES high-resolution near-infrared spectroscopy of diffuse interstellar bands****Speaker**

Alexander Ebenbichler

**[3007] Novel Optical Time Projection Chamber for Neutrino Experiments****Speaker**

Mr Robert Amarinei

**[3008]  $SL(2, \mathbb{R})$  charges on the light cone****Speaker**

Dr Wolfgang Wieland

20:30

19:00

**Poster Session: KOND**

Poster Session | Location: Hall

**[171] Topologically fragile flat bands through adatom superlattice engineering on graphene****Speaker**

Anastasiia Skurativska

**[172] Deposition and imaging of Ar layers on graphite with electron diffraction****Speaker**

Paolo Usai

**[173] Quench dynamics of nodal loops****Speaker**

Ka Rin Sim

**[174] Breakdown of induced  $p \pm i p$  pairing in a superconductor-semiconductor hybrid****Speaker**

Duc Phan

**[175] Multi-wavelength Raman spectroscopy of poly(furfuryl alcohol)**

**Speaker**

Dr Maurizio E. Musso

**[176] Photo-induced structural dynamics in Magnetite****Speaker**

Benoit Truc

**[177] Material Analysis for Mid-IR Dielectric Loaded Plasmonic Waveguides and Their Application in Chemical Sensing****Speaker**

Ismail Cem Doganlar

**[178] Epi-down Bonded Quantum Cascade Patch Antenna Array Laser****Speaker**

Marie Ertl

**[179] Modelling, fabrication and characterization of low-density polyethylene based plasmonic waveguides for mid-IR photonic networks****Speaker**

Dr Hanh Hoang

**[180] Continuous-Wave Ring Interband Cascade Lasers for Spectroscopic Sensing****Speaker**

Rolf Szedlak

**[181] Engineering the spectral bandwidth of quantum cascade laser frequency combs****Speaker**

Maximilian Beiser

**[182] Femtosecond pulses from a mid-infrared quantum cascade laser****Speaker**

Philipp Täschler

**[183] Shaping terahertz frequency combs at room temperature: photomixing reloaded****Speaker**

Dominik Theiner

**[184] Resonantly Amplified Terahertz Quantum Cascade Detector****Speaker**

Paolo Micheletti

**[185] Comb Operation In Terahertz Quantum Cascade Ring Lasers****Speaker**

Michael Jaidl

**[186] Electronic instabilities of the kagome metals AV<sub>3</sub>Sb<sub>5</sub>****Speaker**

Michael Denner

**[187] Cross-dimensional universality classes in static and periodically driven Kitaev models**

**Speaker**  
Albert Gasull

**[188] Ultrafast Light-Induced Lifshitz Transition in High T<sub>c</sub> superconductor Cuprates.**

**Speaker**  
Lukas Hellbrück

**[189] Electrochemical radiofrequency STM study of transition metal corroles**

**Speaker**  
Abhishek Kumar

**[190] Beating speed limits for Abrikosov vortices in superconducting thin films via edge-barrier engineering**

**Speaker**  
Barbora Budinská

**[191] Spin waves in direct-write 3D nano-architectures**

**Speaker**  
Sebastian Lamb-Camarena

**[192] Local-probe based electrical characterization of a multiphase intermetallic gamma-TiAl based alloy**

**Speaker**  
Markus Kratzer

**[193] Stability and meta-stability of CZTS solar cells under illumination and thermal treatment**

**Speaker**  
Wisnu Ananda

**[194] High-throughput GW Calculations**

**Speaker**  
Florian Ellinger

20:30

19:00

**Poster Session: Quantum Information and Quantum Computing**

**Poster Session** | **Location:** Hall

**[561] Quantum cryptography with highly entangled photons from GaAs quantum dots**

**Speaker**  
Christian Schimpf

**[562] Integrating cold atomic quantum simulators into Qiskit**

**Speaker**  
Laurin Fischer

**[563] Tensor and polynomial decompositions: making invariance and positivity explicit**

**Speaker**  
Andreas Klingler

**[566] Cause and effect relations in interventional models**



**Speaker**

Eleftherios-Ermis Tselentis

**[567] Compact On-chip Vacuum Gap Transmon Qubits on Suspended SOI Membrane****Speaker**

Martin Zemlicka

**[568] Local Transformations of Multiple Multipartite States****Speaker**

David Gunn

**[569] Entanglement transformations in permutation symmetric classes****Speaker**

Cornelia Spee

**[570] State transformations within entanglement classes containing permutation-symmetric states: 3- & 4-Qutrit Cases****Speaker**

Nicky Li

**[571] Party-local Clifford transformations of graph states****Speaker**

Tristan Kraft

**[572] Reassessing the computational advantage of quantum-controlled ordering of gates****Speaker**

Martin Johannes Renner

**[573] Global vs local bath in superconducting waveguide QED experiments****Speaker**

Alekssei Sharafiev

**[574] Fluorescence detection of the position and variance operators.****Speaker**

Giovanni Cerchiari

**[575] Towards quantum simulations with two-dimensional ion crystals****Speaker**

Dr Matthias Bock

20:30

19:00

**Poster Session: Surfaces, Interfaces and Thin Films**

Poster Session | Location: Hall

**[251] EFFIE - Effizientere, biobasierte und recyclebare Stretchfolie****Speaker**

Maja Vasiljevic

**[252] Mechanisms for direct wafer bonding of CVD dielectrics****Speaker**

Nikolaus Rauch

**[253] Controlled Manipulation of Single Molecules on an Ag(111) Surface****Speaker**

Julia Lanz

**[254] The role of an AlN stopping barrier on the structure and properties of Ga $\delta$ FeN / Al<sub>0.1</sub>Ga<sub>0.9</sub>N heterostructures****Speaker**

Mr Aleksander Brozyniak

**[255] A cellulose based dual-tone photoresist patterned via deep X-ray lithography****Speaker**

Mr Miltscho Andreev

**[256] Surface structures of La<sub>0.8</sub>Sr<sub>0.2</sub>MnO<sub>3</sub>(110) and La<sub>0.8</sub>Sr<sub>0.2</sub>MnO<sub>3</sub>(001)****Speaker**

Michael Brunthaler

**[257] Surface tension measurement of pure water in vacuum****Speaker**

Paul Ryan

**[258] Vienna Package for TensErLEED II: A Versatile Setup for Acquisition of LEED I(V) Data****Speaker**

Florian Dörr

**[259] Interaction of cobalt with the KTaO<sub>3</sub>(001) surface****Speaker**

Aji Alexander

**[260] In Situ Spectroscopy beamline at the Swiss Light Source****Speaker**

Zbynek Novotny

**[261] Perovskite surfaces measured by diffraction: Does a (1x1) diffraction pattern correspond to (1x1) arrangement?****Speaker**

Tomáš Dolák

**[262] Gate-dependent polarity switching in high-quality 2D material single-crystal nanoribbon networks****Speaker**

Mr Muhammad Awais Aslam

**[263] On the further development of Nb<sub>3</sub>Sn SRF cavities: The investigation of Ta thin films as a diffusion barrier****Speaker**

Bernd Michael Stechauner

**[264] In-situ TEM annealing experiments on epitaxial GeSn thin films.****Speaker**

Ms Kari Martinez

## Thursday 2 September

13:00

14:30

### Poster Session: Poster Session and Lunchbuffet

Poster Session | Location: Hall