USD14 Conference Program

LIGHT CONVERSION

mks | Spectra-Physics

scientaomicron

SPECSGROUP

KMLABS LEADING IN ULTRAFAST

MONTANA INSTRUMENTS COLD SCIENCE MADE SIMPLE

ICAM-I2CAM Institute for Complex Adaptive Matter

Swiss Terahertz

GORDON AND BETTY MOORE FOUNDATION

PFEIFFER VACUUM+FAB SOLUTIONS

SURFACE CONCEPT

The University of Texas at Austin Texas Quantum Institute

Monday, June 1

Breakfast (7:30 – 8:45)

Welcome and Introduction from the Organizing Committee (8:50 – 9:00)

Excitons and Charge Transfer I (9:00 – 12:20)
Session Chair: Xiaoyang Zhu, Colubmia University, USA.

1. **9:00 – 9:40** Ermin Malic , Philipps-Universität Marburg, Germany. *Optics and dynamics of excitons and trions in 2D materials.*
2. **9:40 – 10:20** Hrvoje Petek, University of Pittsburgh, USA. *Have you seen a PHz clock in your mirror this morning?*

   10:20 – 10:40 Coffee Break.

3. **10:40 – 11:20** Stefan Mathias, Universität Göttingen, Germany. *Tracking exciton wavefunctions to unravel energy and charge transfer in 2D-organic and moiré materials.*
4. **11:20 – 12:00** Oleg V. Prezhdo, University of New Mexico, USA. *Quantum Dynamics of Charge Carriers in Optoelectronic Materials and Interfaces.*
5. **12:00 – 12:20** Marcel Theilen, Universität Regensburg, Germany. *Time-resolved photoemission orbital tomography of molecular excitations at surfaces.*

Lunch (12:20 – 14:00)

Spatio-Temporal Dynamics I (14:00 – 16:00)
Session Chair: Hrvoje Petek, University of Pittsburgh, USA.

6. **14:00 – 14:40** Zhi-Heng Loh, Nanyang Technological University, Singapore. *Time-Resolved Photoemission Electron Microscopy of Two-Dimensional Materials.*
7. **14:40 – 15:20** Sarah B. King, University of Chicago, USA. *Ultrafast Plasmon Polariton Dynamics of $MoOCl_2$.*
8. **15:20 – 16:00** Martin Wolf, Fritz Haber Institute, Germany. *THz-induced Metastability and Ultrafast Dynamics of Local Charge Order in TaS_2 probed by THz-STM.*

   16:00 – 16:20 Coffee Break.

Ultrafast Surface Dynamics at User Facilties with Panel Discussion (16:20-18:00)
Session Chair: Thomas K. Allison, Stony Brook University, USA.

9. G. Coslovich, SLAC National Accelerator Laboratory, USA. *Condensed Matter Research at the LCLS via Ultrafast X-ray Scattering.*
10. T. J. Ronningen, NSF NeXUS, Ohio State University, USA. *NSF NEXUS capabilities for ultrafast surface studies.*
11. Charlotte E. Sanders, Central Laser Facility, United Kingdom. *UK Artemis: Pump-probe photoemission spectroscopy with small spot size and access to the full 3D Brillouin zone.*
12. Markus Scholz, FLASH, DESY, Germany. *Investigation of Quantum Materials at FEL.*
13. Haidan Wen, Argonne National Laboratory, USA. *Tracking Collective Dynamics at interface and surfaces by x-ray and THz techniques.*

Dinner (18:00 – 19:40)

Poster Session I (19:40 – 21:00)

Tuesday, June 2

Breakfast (7:30 – 8:45)

Quantum Materials (9:00 - 12:20)
Session Chair: Prakriti Joshi, Stony Brook University, USA.

14. **9:00 – 9:40** Liuyan Zhao, University of Michigan, USA. *Second order nonlinear responses in even-layer CrSBr.*
15. **9:40 – 10:20** Feng Wang, University of California, Berkeley, USA. *Terahertz spectroscopy of a zero-field Wigner crystal.*

    10:20 – 10:40 Coffee Break.

16. **10:40 – 11:20** Hui Deng, University of Michigan, USA. *Polariton Chern Bands in 2D Material-Photonic Crystals.*
17. **11:20 – 12:00** Martin Aeschlimann, RPTU University Kaiserslautern-Landau, Germany. *New Spin Functionalities on ultrafast Timescale in d-wave Altermagnets.*
18. **12:00 – 12:20** Vincent Eggers. *Subcycle momentum microscopy of Landau-Zener-Majorana transitions in lightwave-driven graphene.*

Group Picture (12:20-12:40)

Lunch (12:40-14:00)

Spatio-Temporal Dynamics II (14:00-18:00)
Session Chair: Martin Wolf, Fritz Haber Institute, Germany.

19. **14:00 – 14:40** Rupert Huber, Universität Regensburg, Germany. *Subcycle videography of strong-field controlled electrons at surfaces.*
20. **14:40 – 15:20** Vidya Madhavan, University of Illinois, Urbana-Champaign, USA *Measuring Collective Modes With a Multimodal Ultrafast STM.*
21. **15:20 – 16:00** Yimei Zhu, Brookhaven National Laboratory, USA. *Probing Magnon and Phonon Dynamics with Fast Electrons.*

    16:00 – 16:40 Coffee Break.

22. **16:40 – 17:20** Sebastian Loth, Universität Stuttgart, Germany. *Accessing ultrafast structural and electronic phase dynamics at the atomic scale.*
23. **17:20 – 18:00** Saw Wai Hla, Ohio University, USA. *Single Atom X-ray Spectroscopy.*

Dinner (18:00 – 19:40)

Poster Session II (19:40 – 21:00)

Wednesday, June 3

Breakfast (7:30 – 8:45)

Floquet Engineering (9:00 – 12:20)
Session Chair: Alfred Zong, Stanford University, USA.

24. **9:00 – 9:40** Fahad Mahmood, University of Illinois, Urban-Champaign, USA. *Dynamic magneto-chiral instability in photoexcited tellurium.*
25. **9:40 – 10:20** Samuel Beaulieu, CELIA, Université de Bordeaux, France. *Floquet Engineering in Valleytronic Materials.*

    10:20 – 10:40 Coffee Break.

26. **10:40 – 11:20** Christian Heide, University of Central Florida, USA. *Lightwave electronics in quantum materials.*
27. **11:20 – 12:00** Marcel Reutzel, Philipps-Universität Marburg, Germany. *Observation of Floquet states in graphene.*
28. **12:00 – 12:20** Haoyu Xia, Massachusetts Institute of Technology, USA. *Discovery of 3D Floquet-Bloch Bands.*

Lunch (12:20-14:00)

Business Meeting (13:40-14:00)

Conference Break (14:00-19:00)

Banquet + Poster Award Announcements (19:00-21:00)

Thursday, June 4

Breakfast (7:30 – 8:45)

Excitons and Charge Transfer II (9:00-12:20)
Session Chair: Alice Kunin, Princeton University, USA.

29. **9:00 – 9:40** Libai Huang, Purdue University, USA. *Imaging Exciton Transport and Quantum Interactions with Ultrafast Microscopy.*
30. **9:40 – 10:20** Vinod M. Menon, City College of New York, USA. *Coherent Exciton–Magnon–Photon Interaction in van der Waals Magnetic Semiconductors.*

    10:20 – 10:40 Coffee Break.

31. **10:40 – 11:20** Diana Y. Qiu, Yale University, USA. *Many-body effects in photoemission and nonlinear optics of 2D materials.*
32. **11:20 – 12:00** Geoffrey M. Diederich, University of Maryland, Baltimore County, USA. *Exciton Dressing by Extreme Magnon Nonlinearities.*
33. **12:00 – 12:20** Jianwei Ding, Stony Brook University, USA. *Directly probing non-equilibrium dynamics of momentum-indirect dark interlayer excitons.*

Lunch (12:20-14:00)

Near-Field Optics (Thursday 14:00-18:00)
Session Chair: Ulrich Höfer, Philips Universität Marburg, Germany.

34. **14:00 – 14:40** James W. McIver, Columbia University, USA. *Cavity electrodynamics of van der Waals heterostructures.*
35. **14:40 – 15:20** Shuolong Yang, University of Chicago, USA. *On-Chip Hybrid System for Cavity-Driven Floquet States.*
36. **15:20 – 15:40** Alexander von Hoegen, Ohio State University, USA. *Imaging a terahertz superfluid plasmon in a two-dimensional superconductor.*

    15:40 – 16:20 Coffee Break.
37. **16:20 – 17:00** Xiaoji Xu, Stony Brook University, USA. *Polariton Conversion in isotope-enriched hexagonal BN revealed by AFM-2DIR.*
38. **17:00 – 17:40** Roland Kawakami, Ohio State University, USA. *Ultrafast Light-Induced Magnetoelectric Effect in van der Waals Magnetic Semiconductor Heterostructures.*
39. **17:40 – 18:00** Gyula Halasi, Extreme Light Infrastructure ERIC - ALPS Facility, Hungary. *Attosecond K-space and Time-Resolved Momentum Microscopy of Graphite(0001) at the Extreme Light Infrastructure.*

    Dinner (18:00 – 19:40)

    Poster Prize Session (19:40 – 21:00)
    Session Chair: Benjamin Stadtmüller, University of Augsburg.

    Ultrafast Surface Dynamics 2028 in Taiwan

    Batyr Ilyas, UC Berkeley and LBNL, *Gate-Tunable Atomically Resolved Light Emission in a Monolayer Semiconductor*

    Chuhang Liu, Stony Brook University / Brookhaven National Laboratory, *Imaging GHz Magnon Dynamics with Ultrafast Electron Microscopy*

    Selina Nöcker, Ludwig-Maximilians-Universität München, *Probing broken time-reversal symmetry in 2D materials with tailored-light photocurrent generation*

    Zongqi Shen, MIT, *Trefoil Floquet Engineering of Electronic Polarization*

    Yifan Su, Columbia University, *Terahertz plasmonics at the graphene/$NiPS_3$ interface tuned by antiferromagnetic order*

Friday, June 5

Breakfast (7:30 – 8:45)

Nonequilibrium Dynamics (9:00-11:20)
Session Chair: Martin Aeschlimann.

40. **9:00 – 9:40** Michael Bauer, Christian-Albrechts-Universität zu Kiel. *Ultrafast Optoelectronic Gating and Band-Gap Renormalization in Bilayer Graphene.*
41. **9:40 – 10:00** Tobias Held, RPTU University Kaiserslautern-Landau. *Delayed Lattice Heating by Mode-Selective Electron–Phonon Coupling.*
42. **10:00 – 10:20** Felix Kurtz, Max Planck Institute for Multidisciplinary Sciences, Göttingen, Germany. *Non-thermal phonon dynamics of various layered materials.*

    10:20 – 10:40 Coffee Break.

43. **10:40 – 11:20** Fabio Boschini, INRS, Montreal, Canada. *Dynamic Competition Between Superconductivity and Pseudogap in the Dark Electronic Side of Cuprates.*

Closing Remarks + Box Lunch Pickup (11:20 – 12:00)

Departure (12:00)
Bus departs at 12:00 PM sharp!