

2024 MAX IV

35TH USER MEETING

FASM and MAX IV warmly invite you
to the next MAX IV User Meeting
15–17 January 2024
at Scandic Star Hotel in Lund, Sweden



More science stories at a glance

Explore more research conducted at MAX IV!
Read our Highlights Report 2022 (PDF)
by scanning the QR code or visit
maxiv.lu.se/science/reports



The graphic identity of the 35th User Meeting has been composed with inspiration from the chitin distribution in a mantis shrimp sample mapped by μ XRD at the DanMAX beamline at MAX IV.

Monday Plenary

| Introduction | Room: Theatre |
|--|------------------|
| 13:00 Welcome <i>Viktor Öwall, Lund University (SE)</i> | |
| 13:05 "Current state and perspective of Swedish large scale research infrastructure" <i>Lisbeth Olsson, Vetenskapsrådet (SE)</i> | |
| 13:15 MAX IV status and overview <i>Olof "Charlie" Karis, Director</i> | |
| 13:50 Accelerator status <i>Pedro Tavares, Accelerator Director</i> | |
| 14:15 Keynote: SOLEIL, SOLEIL II, MAX IV and LEAPS <i>Jean Daillant, Synchrotron SOLEIL (FR)</i> | |
| 15:00 Coffee break | |
| 15:30 Alfa Laval – Collaboration with scientific experts accelerates our success <i>Magnus Fredriksson, Alfa Laval (SE)</i> <i>Filip Lenrik, Lund University (SE)</i> <i>Stephen Hall, Lund University (SE)</i> | |
| 16:00 Science status and developments <i>Marjolain Thunnissen, Life Science Director</i> <i>Aymeric Robert, Physical Science Director</i> | |
| 17:00 FASM – Annual meeting | |
| 17:30 Poster session with refreshments: Student poster competition and beamline posters | |

Tuesday Industry session

| Experiences and lessons learned | Room: Future |
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| 10:00 Fika | |
| 10:30 Presentations and open discussion <i>Alfa Laval, TetraPak, SKF, ...</i> | |
| 12:00 Lunch | |

Dinner

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| 18:30 - 22:00 Dinner! <i>For everyone with the additional dinner registration, dining will take place at Scandic Hotel</i> |
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Having trouble making out the print?
See the full User Meeting programme on our website by scanning this QR-code.

Tuesday Scientific parallel sessions

| General life science at MAX IV | Room: Knowledge |
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| 8:30 "Exploring Correlated Atom Displacements in Protein Crystals through Femtosecond X-ray Snapshots and their Impact on Biomedical Sciences" <i>Gergely Katona, University of Gothenburg (SE)</i> | |
| 8:50 "Developing fixed-target instrumentation for time-resolved crystallography at the SwissFEL Crystallina experimental station" <i>Michal Kepa, Paul Scherrer Institut (CH)</i> | |
| 9:10 "Time-resolved serial crystallography with JUNGFRÄU detector and JungfrauX data acquisition system" <i>Filip Leonarski, Paul Scherrer Institut (CH)</i> | |
| 9:30 "Opportunities for Serial Crystallography at MAX IV" <i>Monika Bjelcic, MAX IV (SE)</i> | |
| 10:00 Coffee break | |
| 10:30 "Time-resolved X-ray crystallography on membrane proteins: Watching ions moving in time and space" <i>Przemysław Nogły, Jagiellonian University (PL)</i> | |
| 11:00 "Wired life – insights into unique enzymes from cable bacteria" <i>Thomas Boesen, Aarhus University (DK)</i> | |
| 11:20 "Kinetic properties of liquid-liquid phase separation on the prion-like protein Sc Ent-5" <i>Lucas Defelipe, European Molecular Biology Laboratory Hamburg (DE)</i> | |
| 11:50 Wrap up and discussion | |
| 12:00 Lunch | |
| 13:15 TBA <i>James Everett, Keele University (UK)</i> | |
| 14:00 "Mapping uranium biodistribution in the nematodes <i>Caenorhabditis elegans</i> using nano-XRF analysis" <i>Lisa Rosssbach, Norwegian University of Life Sciences (NO)</i> | |
| 14:20 "Unravelling Fe S and Zn pathophysiology of Idiopathic Pulmonary Fibrosis" <i>Bryan Falcones, Lund University (SE)</i> | |
| 14:40 "Biomaterial structure of lizard osteoderm capping tissue" <i>Adrian Rodriguez, Århus University (DK)</i> | |
| 15:00 Coffee break | |
| 15:30 "SAXS mapping of structural components with relevance for the rupture of atherosclerotic plaques to prevent strokes and heart attacks" <i>Martin Bech, Lund University (SE)</i> | |
| 15:50 TBA <i>Tuomas Mansikkala, University of Oulu (FI)</i> | |
| 16:10 "Time-resolved studies using Balder" <i>Kewei Zhao, Princeton University (US)</i> | |
| 16:30 TBA <i>Susanna Törnroth-Horsefield, Lund University (SE)</i> | |
| 16:50 Qim <i>Anders Bjornholm Dahl, Technical University of Denmark (DK)</i> | |
| 17:10 Protein production platform <i>Malin Backström, University of Gothenburg (SE)</i> | |

Tuesday

Scientific parallel sessions

| Advanced Materials for a Sustainable Future | Room: Theatre |
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| 08:50 | Keynote: TBA <i>Kristiina Oksman, Luleå University of Technology (SE)</i> |
| 09:20 | Wise management <i>Olle Eriksson, Uppsala University (SE)</i> |
| 09:30 | TBA <i>Jon Otto Fossum, Norwegian University of Science and Technology (NO)</i> |
| 09:50 | Coffee break |
| 10:20 | Keynote: TBA <i>Tejs Vegge, Technical University of Denmark (DK)</i> |
| 11:00 | TBA <i>Maria Hahlin, Uppsala University (SE)</i> |
| 11:20 | TBA <i>Roland Kadar, Chalmers University of Technology (SE)</i> |
| 11:40 | "Designing materials on the nanoscale – insights from in situ studies of material formation" <i>Kirsten Jensen, University of Copenhagen (DK)</i> |
| 12:00 | Lunch |
| 13:00 | "In operando studies of electrocatalytic reactions" <i>Nina Lock, Aarhus University (DK)</i> |
| 13:20 | TBA <i>Lindsey Merte, Malmö University (SE)</i> |
| 13:40 | TBA <i>Ute Cappel, Uppsala University (SE)</i> |
| 14:00 | CDRs <i>MAX IV Staff (SE)</i> |
| 14:30 | Coffee break |
| 15:00 | Keynote: "Industrial catalysis in the (X-ray) spotlight" <i>Thomas Sheppard, Karlsruhe Institute of Technology (DE)</i> |
| 15:30 | TBA <i>Rainer Timm, Lund University (SE)</i> |
| 15:50 | "Spectromicroscopic insights into bonding at boundaries: cases in photocatalysts and advanced steels" <i>Wei Cao, Oulu University (FI)</i> |
| 16:10 | "Sintering in Second – New Approach to Sustainable Magnets" <i>Mogens Christensen, Aarhus University (DK)</i> |
| 16:30 | "XAS a key for Safe Secondary Use of Residual Waste Streams" <i>Jenny Rissler, Lund University & RISE (SE)</i> |
| 16:50 | "The Oxygen Evolution Drives Passivity Breakdown of Ni-Cr-Mo Alloys" <i>Alfred Larsson, Lund University (SE)</i> |

| Spectroscopy at MAX IV | Room: Brainstorming |
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| 08:30 | "Surface sensitive spectroscopic corrosion and electrocatalysis studies" <i>Edvin Lundgen, Lund University (SE)</i> |
| 09:00 | "ALD nucleation of copper films" <i>Marcin Sikora, University of Science and Technology (PL)</i> |
| 09:20 | "Pb-intercalated epitaxial graphene on SiC" <i>Bharti Matta, MPI Solid State Research (DE)</i> |
| 09:40 | "Atomically Sharp and High-Density Sb Doping in Si for use in Quantum Devices" <i>Simon Cooil, University of Oslo (NO)</i> |
| 10:00 | Coffee break |
| 10:30 | "Luminescence spectroscopy of Sc-containing complex oxides at FinEstBeAMS" <i>Dmitry Spasskiy, University of Tartu (EE)</i> |
| 10:50 | "A new sample delivery system for studies of in-flight aerosol and free nanoparticles" <i>Calle Preger, Lund University (SE)</i> |
| 11:10 | "Magnetic bottle: Multi-electron coincidence spectroscopy on gases, clusters, and liquids at MAX IV" <i>Andreas Hans, University of Kassel (DE)</i> |
| 11:30 | "The Veritas swing arm waves goodbye to the dipole approximation: RIXS on the oxygen molecule, but on what atom?" <i>Jan-Erik Rubensson, Uppsala University (SE)</i> |
| 11:50 | "Intense Chemical Reactivity on Aerosol Particle Surfaces" <i>Xiangrui Kong, University of Gothenburg (SE)</i> |
| 12:10 | Lunch |

| Coherent methods and the new CXI branchline | Room: Brainstorming |
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| 13:00 | "Understanding complex phase transition pathways using coherent soft X-ray Scattering" <i>Sujoy Roy, Berkeley Lab (US)</i> |
| 13:45 | "The new SoftIMAX-CXI branch and a new end-station" <i>Jörg Schwenke, MAX IV (SE)</i> |
| 14:10 | "Bragg Ptychography: why bother?" <i>Gerardina Carbone, MAX IV (SE)</i> |
| 14:30 | Coffee break |
| 15:00 | "Soft X-ray photon correlations and full-field imaging of quantum materials" <i>Martin Beye, Stockholm University (SE)</i> |
| 15:30 | TBA <i>Michael Schneider, Max Born Institute (DE)</i> |
| 16:00 | "Imaging opportunities at diffraction-limited storage rings" <i>Pablo Perez, Division of Synchrotron Radiation Research, Lund University (SE)</i> |
| 16:30 | "X-ray Photon Correlation Spectroscopy of soft-matter system" <i>Foivos Perakis, Stockholm University (SE)</i> |
| 17:00 | "Imaging Ferroic Order with Soft X-ray Ptychography" <i>Tim Butcher, Paul Scherrer Institut (CH)</i> |

| Plenary | Room: Theatre | Beamline visits | Location: MAX IV |
|---------|---|-----------------|---|
| 09:00 | Science Talk: "Does complying with international fuel regulations make ships mobile weather modification machines?" <i>Marcin Sikora, University of Science and Technology (PL)</i> | 13:15 | Bus transfer to MAX IV |
| 09:30 | Science Talk: "Real-time observations reveal new opportunities on the ultrafast time scales in nanostructured quantum materials" <i>Maciej Lorenc, CNRS, University of Rennes (FR)</i> | 13:30 | Balder: <i>The team meets Balder users to demonstrate recent advances in instrumentation, control and data flow, discuss future plans and collect users' wishes.</i> |
| 10:00 | Coffee break | 13:30 | FemtoMAX user session: <i>Beamline update, Linac update and future perspectives, user highlight, ultrafast spectroscopy at FemtoMAX and open discussion.</i> |
| 10:40 | Pfeiffer-Vacuum: "Energy-efficient vacuum applications with our new HiScroll" <i>Dirk Budelmann</i> | 13:30 | HIPPIE: <i>Updating the APXPS users of MAX IV on the latest improvements, developments, and future plans of the SPECIES-APXPS and HIPPIE instruments. The session will be hybrid. Onsite participants are welcome to join a beamline tour.</i> |
| 10:50 | Smaract – Your Partner for High Precision in Positioning, Automation and Metrology <i>Philipp Berger</i> | 13:30 | Facility & Beamline visits (choose one): – ForMAX / CoSAXS – NanoMAX / DanMAX – BioMAX / MicroMAX – MAXPEEM / SoftiMAX – FlexPES / FinestBeAMS – VERITAS / SPECIES RIXS |
| 11:00 | "Roadmap process for new instrumentation" (general introduction) <i>Yngve Cerenius, Deputy Director</i> | | |
| 11:15 | "Status and conceptual design for a future beamline for imaging in life science" <i>Marjolijn Thunnissen, Life Science Director</i> | | |
| 11:30 | "Status WISE and beamlines supporting materials science" <i>Aymeric Robert, Physical Science Director</i> | | |
| 11:40 | "Conceptual design for a future spectroscopy beamline supporting materials science" <i>Andrey Shavorskiy, MAX IV (SE)</i> | | |
| 12:50 | "Conceptual design for a future imaging beamline supporting materials science" <i>Rajmund Mokso, Lund University (SE)</i> | | |
| 12:00 | "Conceptual design for a future diffraction beamline supporting materials science" <i>Stefan Carlson, MAX IV (SE)</i> | | |
| 12:15 | Lunch | | |

The afternoon sessions will take place at MAX IV. We provide Bus transfer from Scandic to MAX IV (requires pre-registration). There will be no Bus back to the Scandic.

MAX IV is conveniently connected with the city centre and central station by the tram. Single ride tickets for the tram can be easily purchased with any contactless credit card or Google / Apple pay on mobile phones by blipping at the terminals inside the tram (and bus).

