

Posters at the Light & Materials Synergy Day 2023

Poster session 17:00 – 18:30

- 17:00 – 17:45 Even numbered posters
- 17:45 – 18:30 Odd-numbered posters

#	Poster title	Research area	Presenter	Organisation
Nya Fest (1 – 48)				
1	Electron gas in a time-periodic potential field	Other (Non-equilibrium Green's function)	Ayan Pal	Mathematical Physics
3	Indium droplet mitigation on InAs surface via metal contacts	Other (Surface Science)	Sandra Benter	Synchrotron Radiation Research
4	Measurement of Ultrashort Laser Pulses With a Time-Dependent Polarization State Using the D-Scan Technique	Other (Ultrafast Optics)	Daniel Diaz Rivas	Atomic Physics
5	Toward XUV-XUV pump-probe spectroscopy	Other (Atomic & Molecular spectroscopy)	Vénus Poulain	Atomic Physics
6	A high-connectivity rare-earth quantum computer can be only tens of nanometers in size	Quantum Physics & Technology	Adam Kinos	Atomic Physics
7	A minimal quantum-dot based Kitaev chain with only local superconducting proximity effect	Quantum Physics & Technology	William Samuelson	Solid State Physics
8	Beating signals in CdSe quantum dots measured by low-temperature 2D spectroscopy	Quantum Physics & Technology	Albin Hedse	Chemical Physics
9	Bi-induced nanostructures and species on InSb surfaces	Quantum Physics & Technology	Rohit Yadav	Synchrotron Radiation Research
11	Controlled Growth of Free-Standing Metal Halide Perovskite Nanowire Arrays	Quantum Physics & Technology	Ziyun Huang	Synchrotron Radiation Research
13	Crystal-phase dependent Josephson coupling in InAs/InAsSb core-shell nanowires	Quantum Physics & Technology	Markus Aspegren	Solid State Physics
15	Detection of individual microwave photons using cavity-coupled quantum dots	Quantum Physics & Technology	Subhomoy Haldar	Solid State Physics
18	Dynamics of Photoinduced Charge Transfer Processes in Fe(II) and Fe(III) Photosensitizers.	Quantum Physics & Technology	Pavel Chabera	Chemical Physics
20	Electrons at work: heat engines and thermodynamic uncertainty relations	Quantum Physics & Technology	Simon Wozny	Solid State Physics
21	Frequency stabilization of lasers using slow light	Quantum Physics & Technology	Marcus Linden	Atomic Physics
23	Investigating Reflectometry Response of a Quantum Dot for Performing Fast Information Readout	Quantum Physics & Technology	Harald Havir	Solid State Physics
24	Manipulating photoionization in the few-cycle regime	Quantum Physics & Technology	Nedjma Ouahione	Atomic Physics

#	Poster title	Research area	Presenter	Organisation
25	Measuring the quantum state of a photoelectron	Quantum Physics & Technology	Mattias Ammitzböll	Atomic Physics
27	Micro-cavity length stabilization for fluorescence applications using higher order spatial modes	Quantum Physics & Technology	Abdullah Abdelatif	Atomic Physics
30	Microwave power harvesting using a resonator-coupled double quantum dot photodiode	Quantum Physics & Technology	Drilon Zenelaj	Mathematical Physics
33	Modification of the excitation energy transfer by optical microcavity	Quantum Physics & Technology	Fan Wu	Chemical Physics
34	Nanowire charge qubit strongly coupled to a high-impedance resonator	Quantum Physics & Technology	Antti Ranni	Solid State Physics
36	Perfect Zeeman anisotropy in quantum ring orbitals with strong spin-orbit interaction	Quantum Physics & Technology	Claes Thelander	Solid State Physics
37	Protection of poor man's Majoranas in interacting quantum dots	Quantum Physics & Technology	Viktor Svensson	Solid State Physics
39	Quantum-inspired Multidimensional Spectroscopy and Quantum Computing	Quantum Physics & Technology	Zhengjun Wang	MPSD
40	Quasiparticle Poisoning Effect on Electron Transport Through a Majorana Wire	Quantum Physics & Technology	Florinda Viñas Boström	Solid State Physics; TU Braunschweig
41	Renormalization groups for open quantum systems	Quantum Physics & Technology	Konstantin Nestmann	Solid State Physics
43	Steady-state entanglement production in a quantum thermal machine with continuous feedback control	Quantum Physics & Technology	Björn Annby-Andersson	Mathematical physics
44	Superfluorescence from Perovskite Nanocrystals: Open Questions and Perspectives	Quantum Physics & Technology	Lorenzo Tallarini	Chemical Physics
45	Tuning Perovskite Nanocrystal Superlattices for Superradiance in the Presence of Disorder	Quantum Physics & Technology	Dmitry Baranov	Chemical Physics
46	Laser Technology for Attosecond Science	Quantum Physics & Technology	Ann-Kathrin Raab	Atomic Physics
47	Transport-based fusion that distinguishes between Majorana and Andreev bound states	Quantum Physics & Technology	Maximilian Nitsch	Solid State Physics
48	Ultrafast Laser sources for High Harmonic Generation	Quantum Physics & Technology	Saga Westerberg	Atomic Physics
Lilla Salen (49 – 80)				
49	Distinguishing Signal from Plasma Emission in Laser-Based Imaging Measurements of Plasma	Climate & Environment	Jonas Ravelid	Combustion Physics
50	Earth-abundant photochemical reduction of CO ₂ for the production of fuels	Climate & Environment	Clara García Mateos	Centre for Analysis and Synthesis

#	Poster title	Research area	Presenter	Organisation
51	Exploring Insect Stratification & Diversity Across Tai Forest Canopy, Côte d'Ivoire	Climate & Environment	Hampus Månefjord Meng Li	Combustion Physics
52	Light interaction of soot	Climate & Environment	Kim Cuong Le	Combustion Physics
53	Momentum imaging of molecules: initiating isomerization and dissociation	Climate & Environment	Stacey Sørensen	Synchrotron Radiation Research
54	Synchrotron light meets molecular beams, liquid jets, aerosol beams - opportunities for climate & materials related research at MAX IV	Climate & Environment	Noelle Walsh	MAX IV Laboratory
55	FRAME for ultrafast videography and multispectral imaging	Other (Optical diagnostics technology)	Vassily Kornienko	Combustion Physics
56	interferometric time-resolved imaging of the near-field dynamics in Ag NWs excited by SWIR pulses	Other (Light-matter interaction)	Nelia Zaiats	Synchrotron Radiation Research
57	A focused very high energy electron beam for fractionated stereotactic radiotherapy	Medicine & Light	Olle Lundh	Atomic Physics
58	Diffuse fluorescence tomography for photodynamic therapy of tumours	Medicine & Light	Stefan Susnjar	Atomic Physics; SpectraCure
59	Tissue-in-a-pit: an infection-on-a-chip, microfluidic system to mimic host-pathogen interactions	NanoLund seedling project	Elham Akbari	Solid State Physics
60	Combinational Techniques for the sorting of Clusters and singlets/doublets of Group A Streptococcus (GAS) using Deterministic Lateral Displacement (DLD) and Filter Membrane-Sonication	Medicine & Light	Elham Akbari	Solid State Physics
61	Aerosol-based nanowires can become the next generation of cheap optical biosensors	Medicine & Light	Julia Valderas Gutierrez	Solid State Physics
62	An assay to determine stepping of artificial motor proteins	Medicine & Light	Patrik Nilsson	Solid State Physics
63	Characterization of microfluidic cancer-cell sorting	Medicine & Light	Esra Yilmaz	Solid State Physics
64	Semiconductor nanowires for biosensing	Medicine & Light NanoLund seedling project	Ivan Unksov	Solid State Physics
65	Enhancing Cell Counting in Cleared Mouse Brain Tissue Using Structured Illumination Light-Sheet Microscopy: Leveraging SILMAS Data and Neural Networks	Medicine & Light	David Frantz	Combustion Physics
66	Epigenetic modification of beta cells using nanostraw electroporation	Medicine & Light	Frida Ekstrand	Solid State Physics
67	Lightguiding nanowires for single molecule detection with TIRF-level sensitivity	Medicine & Light	Rubina Davtyan	Solid State Physics
68	Microfluidic mixing with viscoelastic waves	Medicine & Light	Enrico Turato	Solid State Physics
69	Nanowires to study cell dormancy	Medicine & Light	Therese Johansson	Solid State Physics
70	Optical Investigations of Nano-LEDs Based on Micron Sized III Nitride Platelets	Medicine & Light	Anders Gustafsson	Solid State Physics
72	Solving problems using Network-based biocomputation	Medicine & Light	Pradheebha Surendiran	Solid State Physics

#	Poster title	Research area	Presenter	Organisation
73	Time resolved multi-projection x-ray imaging - volumetric information without rotation	Medicine & Light	Julia Rogalinski	Synchrotron Radiation Research
74	Tm ³⁺ doped LiNbO ₃ and LaF ₃ crystals for deep tissue optical imaging	Medicine & Light	Akvile Zabaliute-Karaliune Maria Ruchkina	Atomic Physics Deep Light Vision
75 - 80	Infrastructures within Light & Materials	Infrastructures & facilities		
Sångsalen (81 – 112)				
81	Novel Thin Film Coating Approach via Spark-Ablation.	NanoLund seedling project	Mehran Sedrpooshan	Synchrotron Radiation Research
82	Engineered Magnetic Self-Assemblies for Sensing Applications	Energy	Mehran Sedrpooshan	Synchrotron Radiation Research
83	Vertical MOSFETs using a “semiconductor-last” approach based on Template-Assisted Selective Epitaxy	Energy NanoLund seedling project	Patrik Olausson	Electromagnetics and Nanoelectronics
84	Applications of THz ellipsometry (tentative)	Energy	Steffen Richter	Solid State Physics
85	Bromide-Iodide Perovskites: A Story of Segregation and Solar Cell Efficiency	Energy	Klara Suchan	Synchrotron Radiation Research
86	Catalytic Ignition and Bridging the Materials Gap using Polycrystals and Optical Techniques	Energy	Johan Zetterberg	Combustion Physics
87	Combined optical-and laser-based operando diagnostics of heterogeneous model catalysts	Energy	Lisa Rämisch	Combustion Physics
88	Combining two-photon photoemission and transient absorption spectroscopy to resolve hot carrier cooling in 2D perovskite single crystals	Energy	Weihua Lin	Chemical Physics
90	Diffusion-Bonding Printed Circuit Heat Exchangers for future energy applications; challenges due to process-induced microstructural changes	Energy	Isac Lazar	Synchrotron Radiation Research
91	Engineering organic-inorganic metal halide perovskites for piezoelectric applications	Energy	Yong Li	Chemical Physics
92	Frequency-swept 120-170 GHz Electron Paramagnetic Resonance by Spectroscopic Ellipsometry	Energy	Viktor Rindert	Solid State Physics
93	Gassy particles	Energy	Linnéa Jönsson	Solid State Physics
94	Greener synthesis of inorganic materials in non-halogenated solvents and their applications	Energy	Krishnaiah Damarla	Centre for Analysis and Synthesis
95	High Turnover Photocatalytic Hydrogen Formation with an Fe(III) N-Heterocyclic Carbene Photosensitiser	Energy	Aleksandra Ilic	Centre for Analysis and Synthesis
96	Interferometric Quantum Control (IQC) by fs/ns Rotational Coherent anti-Stokes Raman Spectroscopy	Energy	Meena Raveesh	Combustion Physics
97	Iron N-heterocyclic Carbene Complexes with Push-Pull Functionality for DSSCs.	Energy	Samuel Persson	Centre for Analysis and Synthesis

#	Poster title	Research area	Presenter	Organisation
99	Machine learning analyses of intensity modulation two-photon microscopy provides high-resolution mapping of trap states and their dynamics in perovskite microcrystals	Energy	Qi Shi	Chemical Physics
100	Multi-dimensional modelling	Energy	Jens Uhlig	Chemical Physics
101	New Photoredox Catalysis driven by Iron carbene complexes – utilizing the power of two photons in one catalytic cycle	Energy	Jesper Schwarz	Centre for Analysis and Synthesis
102	Optical characterization of excitonic dynamics at the type-II polytype interface of InP platelets	Other (Light-matter interaction)	Asmita Jash	Solid State Physics
103	Optimizing the quasi-equilibrium state of hot carriers in all-inorganic lead halide perovskite nanocrystals through Mn doping: fundamental dynamics and device perspectives	Energy	Kaibo Zheng	Chemical Physics
104	Plasma diagnostics	Energy	Andreas Ehn	Combustion Physics
105	Processing and Anion Exchange for Heterostructured CsPb(Br _{1-x} Cl _x) ₃ Perovskite Nanowires	Energy	Nils Lamers	Synchrotron Radiation Research
106	Pronounced Room-Temperature Vibrational Coherence Coupled to Electronic Transitions in Cs ₂ Au ₂ Br ₆	Energy	Sankaran Ramesh	Chemical Physics
107	Quantum Photoelectrochemistry of Solar Energy Conversion on the Nanoscale	Energy	Petter Persson	Computational Chemistry
108	Strain and Energy Band Engineering in thick AlGa _N Drift Layers for High Power Vertical Transistors	Energy	Adamantia Logotheti	Solid State Physics
109	Sustainable high efficiency multi-junction nanowire solar cells	Energy	Mariia Shcherbakova	Solid State Physics
110	Synthesis and Understanding of Novel Lead-Free Halide Perovskite Nanocrystals for Light-Emitting Applications	Energy	Maning Liu	Centre for Analysis and Synthesis
111	Throughput Optimisation of spark discharge generator by CFD and particle tracing modelling supported by experimental studies on several chamber configurations	Energy	Marie Bermeo	Solid State Physics
112	Vertical silicon nanowire synthesis by Talbot Displacement Lithography for solar harvesting	Energy	Axl Eriksson	Chemical Physics