OECS 17 Program

30.08-02.09 Dortmund online

Monday 30.08

9:00-9:10 Conference opening

9:15-10:45 Quantum dots & nanostructures

Chair Evgeny Chekhovich

9:15 I-01	**Jonathan Finley (invited)** TU Munich	Direct optical transitions of direct gap Ge and Si/Ge hexagonal nanowires
9:45 O-01	Clemens Spinnler University of Basel	Radiative Auger emission from charged excitons
10:00 O-02	Doris Reiter University of Münster	Higher excited excitons in quantum dots interacting with structured light
10:15 O-03	Lingjie Du Nanjing University	Observation of flat bands in tunable semiconductor artificial graphene
10:30 O-04	Masha Vladimirova University of Montpelier	Complexity of dipolar exciton Mott transition in GaN/(AlGa)N nanostructures

10:45-11:20 Coffee break

11:20-13:20 Coherent phenomena, quantum optics

Chair Marc Aßmann

11:20 O-06	Nadia Antoniadis University of Basel	Strong non-reciprocal and non-linear transport of photons mediated by a single quantum emitter
11:35 O-07	Zhe Xian Koong Heriot-Watt University Edinburgh	Coherent Control of Cooperative Photon Emission from Indistinguishable Quantum Emitters
11:50 O-08	Gian-Marco Schnüriger ETH Zürich	Quantum correlation of confined dipolar-polaritons
12:05 O-09	Tamsin Cookson University of Southampton	Giant vorticity in geometrically frustrated polariton condensates
12:20 O-10	Alexey Scherbakov TU Dortmund	Nonlinear photoelasticity of polaritons and coherent phonons in a short period GaAs/AlAs superlattice
12:35 O-11	Matthias Weiß University of Münster	Resonance fluorescence dynamics of an acoustically modulated quantum dot
12:50 I-02	**Steve Cundiff (invited)** University of Michigan	Coherent exciton interactions in a $MoSe_2/WSe_2$ heterostructure

13:20-15:00 Lunch break

15:00-17:00 2D Materials

Chair Alexander Tartakovskii

15:00 K-1	**Bernhard Urbaszek (keynote)** CNRS Toulouse	Atomically thin semiconductors for photonics and spintronics
15:45 O-12	Anvar Baimuratov LMU Munich	Exciton g-factors in transition metal dichalcogenides
16:00 O-13	Lei Ren LPCNO_INSA-CNRS Toulouse	Measurement of conduction and valence bands g-factors in a transition metal dichalcogenide monolayer
16:15 O-14	Piotr Kapuściński Laboratoire National des Champs Magnétiques Intenses, Grenoble	Excited states of dark excitons and spin-orbit splitting of the conduction band in tungsten diselenide monolayer
16:30 I-03	**Scott Crooker (invited)** Los Alamos National Laboratory	Electrons, holes, and excitons in monolayer semiconductors: Insights from (really) high magnetic fields

17:00-17:20 Coffee break

17:20-19:05 2D Materials

Chair Scott Crooker

17:20 I-04	**Atac Imamoglu (invited)** ETH Zurich	Strongly correlated electrons in atomically thin semiconductors
17:50 O-15	David Snoke University of Pittsburgh	Charged bosons in bilayer van der Waals structures
18:05 O-16	Andreas Stier Walter Schottky Institut, TU München	Manybody enhanced spin-valley effects in monolayer MoS2
18:20 O-17	Andrea Bergschneider ETH Zurich	Exploring polaron physics in monolayer transition metal dichalcogenides
18:35 I-05	**Tony Heinz (invited)** Stanford University	Probing excitons in 2D materials in momentum space

Tuesday 31.08

9:00-11:00 2D Materials

Chair Mikhail Glazov

9:00 I-06	**Marina Semina (invited)** Ioffe Institute, St-Petersburg	Excitons and trions in 2D semiconductor heterostructures
9:30 O-18	Steffen Michaelis de Vasconcellos University of Münster	Excited and dark states of charged excitons in 2D semiconductors
9:45 O-19	Wojciech Pacuski University of Warsaw	Narrow excitonic lines and large-scale homogeneity of transition metal dichalcogenides grown by MBE on hBN
10:00 O-20	Puneet Murthy ETH Zurich	Electrically controlled quantum confinement of neutral excitons in 2D semiconductors
10:15 O-21	Cedric Robert LPCNO_INSA-CNRS Toulouse	Spin/Valley pumping of resident electrons in WSe_2 and WS_2 monolayers
10:30 O-22	Livio Ciorciaro Institut für Quantenelektronik, ETH Zürich	Optical Measurements of Magnetic Proximity Effect in $MoSe_2/CrBr_3$ Heterostructures
10:45 O-23	Thomas Lyons The University of Sheffield	Giant effective trion-polariton Zeeman splitting realized by spin-selective strong light-matter coupling

11:00-11:20 Coffee break

11:20-13:20 Colloidal (organic) materials

Chair Alex Greilich

11:20 I-07	**Anna Rodina (invited)** Ioffe Institute, St-Petersburg	Spin structure of exciton complexes in colloidal nanostructures
11:50 O-24	Donghai Feng East China Normal University	Spin coherence in colloidal nanocrystals
12:05 O-25	Elena Shornikova TU Dortmund	Exciton binding energy in CdSe colloidal nanoplatelets addressed by one- and two-photon absorption
12:20 O-26	Olga Smirnova Ioffe Institute, St-Petersburg	Optical alignment of excitons in ensemble of colloidal CdSe/CdS nanoplatelets
12:35 O-27	Marco Dusel Universität Würzburg	Room temperature organic exciton-polariton condensate and topological polariton laser in a lattice
12:50 O-28	Roman Babunts Ioffe Institute, St-Petersburg	Identification of ligands in CdSe/CdMnS core-shell nanoplatelets by electron-nuclear double resonance of Mn^{2+}
13:05 O-29	Anastasia Golinskaya Lomonosov Moscow State University, Moscow	Photoluminescence and nonlinear transmission peculiarities of the CdTe/CdSe nano-tetrapods

13:20-15:00 Lunch break

Chair Dmitri Yakovlev

15:00-15:45 Perovskites

15:00 K-2	**Alexander Efros (keynote)** NRL Washington	Excitons in perovskites and colloidal nanocrystals

15:45-16:00 Coffee break

16:00-18:00 Perovskites

Chair Dmitri Yakovlev

16:00 I-08	**Paulina Plochocka (invited)** CNRS Toulouse	Excitons and phonons in 2D perovskites
16:30 O-30	Karolina Łempicka University of Warsaw	Strong light-matter coupling in liquid crystal microcavity with two-dimensional perovskite at room temperature
16:45 O-31	Vasilii Belykh Lebedev Physical Institute, Moscow	Microsecond longitudinal spin relaxation of carriers in perovskite $CsPbCl_3$ nanocrystals
17:00 O-32	Mateusz Dyksik Wroclaw University of Science and Technology	Brightening of dark excitons in 2D perovskites by in-plane magnetic field
17:15 O-33	Erik Kirstein TU Dortmund	Landé factors of electrons and holes in lead-based perovskite semiconductors
17:30 O-34	Ivan Avdeev Ioffe Institute, St-Petersburg	Excitons in cubic $CsPbI_3$ perovskite nanocrystals: a tight-binding study
17:45 O-35	Michał Baranowski Wroclaw University of Science and Technologyi	Exciton fine structure in perovskite compounds

18:00-20:00 Poster Session I

Wednesday 01.09

9:00-11:00 Exciton-polaritons & microcavities

Chair Alexander Poddubny

9:00 I-09	**Jean-Michel Gérard (invited)** CEA/IRIG Grenoble	Tailoring the properties of quantum dot-micropillars by ultrafast optical injection of free carriers
9:30 O-36	Paul Walker University of Sheffield	Few-photon all-optical phase rotation in a quantum-well micropillar cavity
9:45 O-37	Alexander Kuznetsov Paul-Drude-Institut für Festkörperelektronik Berlin	Electrically driven GHz optomechanics with confined microcavity exciton-polaritons
10:00 O-38	Hamza Abudayyeh The Racah Institute of Physics, Jerusalem	Overcoming the rate-directionality tradeoff: a room-temperature ultrabright quantum light source
10:15 O-39	Rafał Mirek University of Warsaw	Neuromorphic binarized polariton networks
10:30 O-40	Natasha Tomm University of Basel	A bright and fast source of coherent single photons
10:45 O-41	Vladimir Kulakovskii Institute of Solid State Physics, Chernogolovka	Ultrafast acoustic switching of spin states of an optically pumped cavity polariton system

11:00-11:20 Coffee break

11:20-13:20 Exciton-polaritons & microcavities

Chair Jean-Michel Gérard

11:20 I-10	**Simone de Liberato (invited)** University of Southampton	Tuning excitonic properties by engineering the electromagnetic environment
11:50 O-42	Johannes Beierlein Julius-Maximilians Universität Würzburg	From classical to topological effects of exciton-polariton condensates in waveguide arrays
12:05 O-43	Dąbrówka Biegańska Wrocław University of Science and Technology	Elementary excitations of exciton-polariton condensates in a synthetic gauge field
12:20 O-44	Sergei Gavrilov Institute of Solid State Physics Chernogolovka	Phase multistability as a cause of topological excitations in a driven polariton fluid
12:35 O-45	Charly Leblanc CNRS and University Clermont Auvergne	Quantum metric and wavepackets at exceptional points in non-Hermitian systems
12:50 O-46	Alexander Palatnik Technische Universität Dresden	Planar topological laser
13:05 O-47	Darius Urbonas IBM Research Europe – Zurich	Tunable exciton-polariton condensation in a two-dimensional Lieb lattice at room temperature

13:20- 15:00 Lunch break

15:00-17:00 Rydberg Excitons & Publishing in Nature Nanotechnology

Chair Marina Semina

15:00 I-11	**Andreas Farenbruch (invited)** TU Dortmund University	Second harmonic generation spectroscopy of dark and bright Rydberg excitons in Cu_2O
15:30 I-12	**Alexander Poddubny (invited)** Ioffe Institute, St-Petersburg	Topological spin phases of Rydberg excitons
16:00 O-48	Sai Kiran Rajendran University of St Andrews	Confined Rydberg states in Cu_2O nanoparticles
16:15 O-49	Israel Bar-Joseph Weizmann Institute of Science	Evaporative cooling of an exciton condensate
16:30 I-13	**Fabio Pulizzi (invited)** Nature Nanotechnology, London, UK	Publishing in Nature Nanotechnology, an editor's insight

17:00-17:20 Coffee break

17:20-19:20 Poster Session II

Thursday 02.09

10:00-11:45 Quantum dot devices & Spins related phenomena

Chair Ilya Akimov

10:00 I-14	**Evgeny Chekhovich (invited)** University of Sheffield	Two-qubit quantum processor using nuclear spins in an optically active GaAs/AlGaAs quantum dot
10:30 O-50	George Gillard University of Sheffield	Achieving long collective coherence of nuclear spins coupled to quantum dot electron spin
10:45 O-51	Dmitry Smirnov Ioffe Institute, St-Petersburg	Current induced spin polarization of hole in quantum dot via chiral bound state in continuum
11:00 O-52	Nikita Leppenen Ioffe Institute, St- Petersburg	Quantum Zeno and anti-Zeno effects under optical measurement of electron spins in quantum dots
11:15 O-53	Hubert Krenner University of Münster	Surface acoustic wave control of a photonic qubit
11:30 O-54	Francesco Basso Basset Sapienza University of Rome	Entanglement-based quantum key distribution using the biexciton–exciton cascade from a coherently driven quantum dot

11:45-12:05 Coffee break

12:05-13:20 Spin related phenomena

Chair Anna Rodina

12:05 O-55	Michael Oestreich Leibniz Universität Hannover	Phosphorus donor electrons in isotopically purified ^{28}Si:P
12:20 O-56	Ina V. Kalitukha Ioffe Institute, St. Petersburg	Coexistence of short- and long-range ferromagnetic proximity effects in a Fe/(Cd,Mg)Te/CdTe quantum well hybrid structure
12:35 O-57	Dennis Kudlacik TU Dortmund	Spin structure of Frenkel excitons on Cu^{2+}-ions in the antiferromagnet CuB_2O_4 revealed by magneto-absorption spectroscopy
12:50 O-58	Harpreet Singh TU Dortmund	Spin-3/2 silicon vacancy centers in Silicon carbide
13:05 O-59	Eldar Stepanets-Khussein Institute of Solid State Physics, Chernogolovka	Time-resolved Kerr rotation as a probe of spin stiffness in spin-polarized and spin-depolarized states of two-dimensional electron system

13:20-15:00 Lunch break

15:00-17:00 2D Materials

Chair Bernhard Urbaszek

15:00 I-15	**Christian Schneider (invited)** University of Oldenburg	Novel and unconventional excitons in atomically thin crystals and their heterostructures
15:30 I-16	**Brian Gerardot (invited)** Heriot-Watt University, Edinburgh	Quantum light and strongly correlated electronic states in a Moiré heterostructure
16:00 O-60	Alexander Steinhoff Institute for Theoretical Physics, University of Bremen	Twist angle-dependent interlayer exciton lifetimes in van der Waals heterostructures
16:15 O-61	Mauro Brotons-Gisbert Heriot-Watt University, Edinburgh	Moiré-trapped interlayer trions in a charge-tunable $WSe_2/MoSe_2$ hetero-bilayer
16:30 I-17	**Kin Fai Mak (invited)** Cornell University	Dipolar excitonic insulator in atomic double layers

17:00-17:20 Coffee break

17:20-19:05 2D Materials

Chair Christian Schneider

17:20 I-18	**Alexander Tartakovskii (invited)** University of Sheffield	Tunable van der Waals nano-photonics
17:50 O-62	Carlos Anton Solanas Carl von Ossietzky Universität Oldenburg	Condensation and spatial coherence of exciton-polaritons in a $MoSe_2$ monolayer-microcavity
18:05 O-63	Eva Schöll Paderborn University	Resonance fluorescence from waveguide-coupled strain-localized two-dimensional quantum emitters
18:20 O-64	Matthias Florian Institute for Theoretical Physics, University of Bremen	Strain-localized exciton states in WSe_2 nanostructures - comparison of microscopic theory with nano-optical imaging and spectroscopy
18:35 O-65	Iris Niehues University of Münster	Strain tuning of the Stokes shift in 2D semiconductors
18:50 O-66	Leo Yu Stanford University	Site-controlled quantum emitters in monolayer $MoSe_2$

19:05-19:20 Closing the Conference