Trends in Polaritonics: KPZ, Perovskites and GPE Simulations

Schedule

Thursday 30th May		
Time	**Speaker**	**Title**
9.00 - 9.30	**Welcome, sign-in and Intro**	
9.30 - 10.15	Léonie Canet	The many facets of KPZ universality and its signatures in 1D and 2D exciton-polariton systems under incoherent pumping
10.15 - 11.00	Alexander Povolotsky	The KPZ-to-Tilted-Interface transition in the asymmetric avalanche process
11.00 - 11.15	**coffee break**	
11.15 - 12.00	Marzena Szymanska	Driven-dissipative superfluids: a compact Kardar-Parisi-Zhang dynamics of the phase
12.00 - 12.45	Tingge Gao	Exciton polaritons in liquid crystal microcavity based on perovskite
12.45 - 13.45	**Lunch**	
13.45 - 14.30	Qing Zhang	Fabrication and low-threshold exciton-polariton condenstation of perovskite microcavities
14.30 - 15.15	Anatoly Pushkarev	Synthesis of planar quasi-2D perovskite structures and dynamics of their optical properties
15.15 - 15.45	**coffee break**	
15.45 - 16.30	Mikhail Masharin	Non-equilibrium BEC in perovskite metasurface
16.30 - 17.00	Daria Khmelevskaia	Polariton nanolasers based on halide perovskite [Student talk]
17.00 - 17.30	Anna Samsonova	Low-Temperature Refractive Index Dispersion in MAPbI3 Halide Perovskite Single Crystal [Student talk]

6pm – 9pm Dinner for all in person participants at Food market.

Friday 31st May		
Time	**Speaker**	**Title**
9.30 - 10.15	Anton Nalitov	Few-mode approximation: solving ODGPE with pen and paper
10.15 - 11.00	Ivan Amelio	Coherence of unconventional non-equilibrium systems
11.00 - 11.15	**coffee break**	
11.15 - 12.00	Paul Eastham	GPEs, coupled oscillators, and KPZ equations: connections and differences
12.00 - 12.45	Alexey Yulin	Polariton solitons and the importance of the upper polariton branch
12.45 - 13.45	**Lunch**	
13.45 - 14.30	Igor Chestnov	Non-Hermitian phenomena in polariton systems: from principles to realizations
14.30 - 15.15	Michiel Wouters	Vortices in polariton and photon condensates
15.15 - 15.45	**coffee break**	
15.45 - 16.30	Vladimir Gladilin	Noise-induced transition from superfluid to vortex state in two-dimensional nonequilibrium polariton condensates
16.30 - 17.15	Sergey Gavrilov	Relative-phase domain walls in driven polariton fluids
17.15 - 17.45	All Speakers and Attendees	ROUND TABLE involving invited speakers

Posters will be discussed during breaks and available for both days.

МФТИ

Skoltech
Skolkovo Institute of Science and Technology

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Clover 2024

RQC Russian Quantum Center

ITMO UNIVERSITY

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Настоящая работа поддержана Программой «Клевер»: Совместные проекты Сколтеха, МФТИ и ИТМО.

Low-Temperature Refractive Index Dispersion in MAPbI3 Halide Perovskite Single Crystal

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The refractive index is one of the main optical parameters of any semiconductor media, including halide perovskites. To model devices, such as laser cavities, it is important to know not only the absolute value of the refractive index, but also its spectral behavior -- the dispersion. In this work, the refractive index dispersion $n(E)$ in the $MAPbI_3$ ($MA^+ = CH_3NH_3^+$) halide perovskite single crystal is determined in the temperature range from 4 to 88 K by studying the interference of light in a microcavity. It has been shown that in the most practically important transparency region of the material, the dispersion of the refractive index is determined not only by the excitonic transition located nearby, but also by higher-lying interband transitions.

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