Anton Putintsev

SUMMARY

Senior Researcher in hybrid photonics and quantum optics laboratory with a focus on real-time control of polaritonic states and optical computing technologies. Proven leadership in R&D, grant-winning innovation, and high-impact publications (PRL, Nature Comms). Passionate about scientific research, innovation, and the development of future technologies.

EDUCATION

SKOLTECH
Philosophy Doctor, Physics
Thesis defence: November 2022 | Moscow, Russia

LOMONOSOV MSU
MS Physics/Astrophysics
Grad. June 2018 | Moscow, Russia

TOHOKU UNIVERSITY
Internship
July 2016 - August 2016 | Sendai, Japan

SKILLS & COMPETENCIES

- Data structures, algorithms, big data, ML (python, C++, SQL, LabView)
- Quantum optics; Bose gases; diffractive, geometric, and nonlinear optics; ultrafast pump/probe techniques; Spatial Light Modulators (SLM); Fourier optics; holography; image processing; optical processing; all-optical logic; optical memory devices
- Russian (native), English (fluent, C1), Japanese (N5)

AWARDS & ACHIEVEMENTS

- Raised a funding of 40k$ as principal Investigator (PI) of the RSF project #25-72-00149 | 2025
- "Young Scientist" award, "Sintez" | 2021
- Speaker at GYSS in Singapore | 2020

WORK EXPERIENCE

SKOLTECH | Senior Research Engineer
December 2022 - present | Moscow, Russia

Key achievements

- Lead a R&D team in developing state-of-the-art polaritonic devices and quantum optics research | now
- Demonstrated proof-of-concept operation of a universal polariton logic NOR gate | 2024
- Demonstrated a novel approach for real-time manipulations of polariton BEC at room temperate | 2023
- Delivered a funding of 300k$ as co-investigator (Co-I) of the RSF project #23-72-00059 | 2023-2026

Key responsibilities

- R&D of organic micro-optical devices, designing/building/automation of advanced optical experiments, and building robust, scalable, data acquisition pipelines and real-time processing of high-throughput experimental data (python, C, C++, LabView)
- Presenting scientific achievements, writing papers, patenting

PUBLICATIONS

- M. Misko✦ & A. D. Putintsev✦, D. A. Sannikov, A. V. Zasedatelev, U. Scherf, and P. G. Lagoudakis, "Temporal bandwidth of consecutive polariton condensation", *Phys. Rev. B* 111, L161403 (2025) DOI **Letter**
- M. D. Kolker, I. I. Krasionov, A. D. Putintsev, E. D. Grayfer, T. Cookson, D. Tatarinov, A. P. Pushkarev, D. A. Sannikov, and P. G. Lagoudakis, "Room temperature broadband polariton lasing from a $CsPbBr_3$ perovskite plate", *Adv. Optical Mater.* 2402543 (2025) DOI
- A. D. Putintsev✦, A. V. Zasedatelev, V. Shishkov, M. Misko, D. A. Sannikov, E. Andrianov, Y. Lozovik, U. Scherf, and P. G. Lagoudakis, "Photon statistics of organic polariton condensates", *Phys. Rev. B* 110, 045125 (2024) DOI
- D. Sannikov, A. V. Baranikov, A. D. Putintsev, M. Misko, A. V. Zasedatelev, U. Scherf, and P. G. Lagoudakis, "Room temperature, cascadable, all-optical polariton universal gates", ***Nat. Commun.*** 15, 5362 (2024) DOI
- A. D. Putintsev✦, K. E. McGhee, D. A. Sannikov, A.V. Zasedatelev, J. D. Töpfer, T. Jessewitsch, U. Scherf, D. G. Lidzey, and P. G. Lagoudakis, "Controlling the spatial profile and energy landscape of organic polariton condensates in double-dye cavities", *Phys. Rev. Lett.* 131, 186902 (2023) DOI **Editor's Suggestion**
- K. E. McGhee, A. D. Putintsev, R. Jayaprakash, K. Georgiou, M. E. O'Kane, R C. Kilbride, E. J. Cassella, M. Cavazzini, D. A. Sannikov, P. G. Lagoudakis, and D. G. Lidzey, "Polariton condensation in an organic microcavity utilising a hybrid metal-DBR mirror", *Sci. Rep.* 11, 20879 (2021) DOI
- A. D. Putintsev✦, A. Zasedatelev, K. E. McGhee, T. Cookson, D. Sannikov, K. Georgiou, D. G. Lidzey, and P. G. Lagoudakis, "Nano-second exciton-polariton lasing in organic microcavities", *Appl. Phys. Lett.* 117, 123302 (2020) DOI **Editor's Choice**