

## Ֆիզիկայի գիտահետազոտական ինստիտուտ

Ֆոտոնիկայի և արհեստական բանականության լաբորատորիա  
Առաջատար գիտական աշխատող

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### **A Dynamic Analysis of Toron Formation in Chiral Nematic Liquid Crystals Using a Polarization Holographic Microscope**

Tikhon V. Reztsov, Aleksey V. Chernykh, Tetiana Orlova, Nikolay V. Petrov

Polymers MDPI 2025 1849

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### **Polarization-controlled orbital angular momentum of light passing through a cholesteric spherulite**

A. N. Shalev, A. A. Misura, A. O. Georgieva, A. V. Chernykh, N. V. Petrov, T. Orlova, I. S. Lobanov, E. V. Aksenova, V. M. Uzdin, A. D. Kiselev

Optics Letters 2025 4866-4869

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### **Rewritable Binary Recording of the Photon Spin State in Chiral Liquid Crystals**

Nicolas Bruni, Charles Loussert, Mushegh Rafayelyan, Tetiana Orlova, Delphine Coursault,

Etienne Brasselet

Physical Review Letters 2025 223804

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### **Fine Tuning of the Rotational Speed of Light-Driven, Second-Generation Molecular Motors by Fluorine Substitution**

Ivan Tambovtsev, Yorick L. A. Schmerwitz, Gianluca Levi, Darina D. Darmoroz, Pavel V. Nesterov, Tetiana Orlova, Hannes Jónsson

Journal of Physical Chemistry Letters 2025 4014 - 4020

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### **Microsecond-scale observation of phase transition and diffusion in 5CB liquid crystal at the molecular level**

N. Kasapenko, T. Orlova, N. Kondratyuk

Journal of Chemical Physics 2025 154901

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### **Light-Induced Heating of Microsized Nematic Volumes**

Dmitrii Shcherbinin, Denis A. Glukharev, Semyon Rudyi, Anastasiia Piven, Tetiana Orlova, Izabela Sliwa,

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### **Light-induced isotropic pen for generation of topological solitons and hopfion-toron**

**transition in frustrated chiral nematic films**

Sergey A. Shvetsov, Darina D. Darmoroz, Alexey Vasil'ev, Tetiana Orlova, Igor S. Lobanov,

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Chaos, Solitons and Fractals 2025 116905

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**On-Demand Photopatterned Twisted Nematics for Generation of Polychromatic Vector Fields**

Edvard Grigoryan, Hayk H. Harutyunyan, Hrayr Hakobyan, Sergey A. Shvetsov, Tetiana Orlova,

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Maxim G. Stepanov, Anastasiia O. Piven, Timur A. Aliev, Tetiana Orlova, Mushegh S. Rafayelyan,

Ekaterina V. Skorb

Journal of Chemical Information and Modeling 2025 11064-11078

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**Large Supramolecular Patterns in Photoactive Chiral Liquid Crystals for Light-Controllable Soft Micromechanical Systems**

Darina Darmoroz, Tetiana Orlova, Anastasiia Piven

Small Structures 2025 e202500506

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**Machine learning methods for liquid crystal research: phases, textures, defects and physical properties**

Anastasiia Piven, Darina Darmoroz, Ekaterina Skorb, Tetiana Orlova

Soft Matter 2024 1380 - 1391

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**Topological Learning for the Classification of Disorder: An Application to the Design of Metasurfaces**

Tristan Madeleine, Nina Podoliak, Oleksandr Buchnev, Ingrid Membrillo Solis, Tetiana Orlova,

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ACS Nano 2024 630–640

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**Reactions of 5-(Trialkyl)silylpent-1-en-4-yn-3-ones with Hydrazines: Original Synthetic Routes to Luminescent Substances Containing Azole Motifs**

Ivan S. Odin, Kareem V. Gordon, Radik N. Itakhunov, Dmitry M. Gusev, Sergey A. Sokov,

Anna V. Vologzhanina, Stanislav A. Grabovskiy, Ilya M. Sosnin, Anton I. Ukolov, Olga I. Orlova,

Vladimir A. Lazarenko, Pavel V. Dorovatovskii, Darina D. Darmoroz, Anastasiia O. Piven, Tetiana Orlova,

Alexander A. Golovanov

SYNTHESIS 2024 243-266

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**МЕТОД ОПТИЧЕСКОЙ МОЛЕКУЛЯРНОЙ ГЕНЕРАЦИИ ЛОКАЛИЗОВАННЫХ ХИРАЛЬНЫХ**

## **СТРУКТУР В ФОТОАКТИВНЫХ ЖИДКОКРИСТАЛЛИЧЕСКИХ ПЛЕНКАХ**

Д. Д. ДАРМОРОЗ, А. О. ПИВЕНЬ, Т. ОРЛОВА

Известия высших учебных заведений. Приборостроение 2023 306 - 312

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Tetiana Orlova, Anastasiia Piven, Darina Darmoroz, Timur Aliev, Tamer Mahmoud Tamer Abdel Razik,

Anton Boitsev, Natalia Grafeeva, Ekaterina Skorb

Digital Discovery 2023 298-315

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### **Optical nonlinearity of a dual-frequency nematic liquid crystal via temperature-mediated mapping of dielectric anisotropy**

S. A. Shvetsov, T. Orlova, A. V. Emelyanenko, A. S. Zolot'ko, H. L. Ong

Optics Express 2022 47909-47920

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### **Optical Imaging and Analytical Design of Localized Topological Structures in Chiral Liquid Crystals**

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Symmetry 2022 2476

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### **Nanoparticle-Induced Property Changes in Nematic Liquid Crystals**

Nicolas Brouckaert, Nina Podoliak, Tetiana Orlova, Denitsa Bankova, Angela F. De Fazio,

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Nanomaterials 2022 341

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Journal of Physical Chemistry B 2022 3161 - 3169

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### **Tracking the time evolution of soft matter systems via topological structural heterogeneity**

Ingrid Membrillo Solis, Tetiana Orlova, Karolina Bednarska, Piotr Lesiak, Tomasz R. Woliński,

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Communications Materials 2022 1

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