

## WORKSHOP PROGRAM

24 August:

- 8:00-8:50 Registration
- 8:50-9:00 Welcome words, Yuri Kivshar
- Plenary Session I**
- 9:00-9:40 Turytsin Sergei: Ultra-long fiber lasers: source of light and communication medium
- 9:40-11:50 **Session 1: "Nonlinear Fiber Optics and Optical communications"**  
**Chair: Victor Kozlov**
- 9:40-10:00 Sysoliatin Alexej: Fiber design for stable continuum generation at high repetition rate
- 10:00-10:20 Fatome Julien: Light-by-light polarization control and its application in optical communications
- 10:20-10:40 Finot Christophe: The Perigrine soliton in nonlinear fiber optics
- 10:40-11:00 Genty Goery: On the interpretation of rogue wave statistics in nonlinear fiber optics
- 11:00-11:20 Roberto Morandotti: Novel integrated devices for all optical frequency conversion
- 11:20-11:50 COFFEE BREAK
- 11:50-13:50 **Session 2: "Dynamics of semiconductor and solid-state lasers"**  
**Chair: Andrei Vladimirov**
- 11:50-12:10 Elena Obraztsova: Graphene saturable absorbers for solid-state lasers
- 12:10-12:30 Mindaugas Radzinunas: Broadening of mode-locking pulses in quantum-dot semiconductor lasers: simulation, analysis and experiments
- 12:30-12:50 Eugene Avrutin: The unusual dynamics of Fabry-Perot semiconductor lasers frequency-swept by means of fast-tunable intracavity filters
- 12:50-13:10 Stephane Barland: Ring semiconductor lasers and directional bistability: an alternative mechanism for localized light emission?
- 13:10-13:30 Tatyana Habruseva: Dynamics of optically injected quantum-dot mode-locked lasers
- 13:30-13:50 Kathy Luedge: Nonlinear dynamics of microscopically modeled quantum dot laser devices
- 13:50-14:50 LUNCH BREAK
- 14:50-16:50 **Session 3 "Polaritons and solitons"**  
**Chair: Yuri Kivshar**
- 14:50-15:10 Alexander Alodjants: Critical properties of polaritons in atomic gases and band-gap microstructures
- 15:10-15:30 Dmitry Skryabin: Making solitons and vortices with half-light half-matter
- 15:30-15:50 Dmitri Krizhanoskii: Direct observation of bright polaritonsolitons in time-resolved measurements
- 15:50-16:10 Oleg Egorov: Formation of breathing polaritonsolitons in semiconductor microcavities

- 16:10-16:30      Giovanna Tissoni: Semiconductor laser solitons and their applications
- 16:30-16:50      Albert Ferrando: Existence and stability of soliton-plasmon (soliplasmon) bound states
- 16:50-17:20      COFFEE BREAK
- 17:20-18:40      **Session 4: "Dissipative solitons"**  
**Chair: Nikolay N. Rosanov**
- 17:20-17:40      Philippe Grelu: Dissipative soliton resonances in laser systems: latest developments
- 17:40-18:00      Yaroslav Kartashov: Dissipative solitons supported by localized gain
- 18:00-18:20      **Session 5: Nonlinear Photonics**  
**Chair: Nikolay N. Rosanov**
- 18:00-18:20      Cornelia Denz: From nondiffracting to complex periodic phase vortex and intensity helix lattices

25 August:

- 9:00-9:30      Plenary session II:**  
Nikolai Rosanov: Parametric Doppler effect for optical waves and pulses
- 9:30-12:20      Session 6: "Plasmonics and metamaterials"**  
**Chair: Dmitry Skryabin**
- 9:30-9:50      Yuri Kivshar: Recent advances in nonlinear photonics and plasmonics
- 9:50-10:10      Pavel Belov: Spatial dispersion in metal-dielectric nanostructures
- 10:10-10:30      Alexei Krasavin: Plasmon amplification and nonlinear plasmonic waveguides
- 10:30-10:50      Sergei Vergeles: Surface plasmon modes in a metallic nanocylinder array
- 10:50-11:10      Piotr Vorobief: Surface plasmon resonance between two metallic grains
- 11:10-11:30      Andrei Maimistov: Three wave interaction in negative refractive index materials with quadratic nonlinearity
- 11:30-11:50      Ildar Gabitov: Meta-atoms: a new step in metamaterial design
- 11:50-12:20      COFFEE BREAK
- 12:20-14:20      Session 7: "Spatial and temporal patterns and exotic beams"**  
**Chair: Ekaterina Efremova**
- 12:20-12:40      Vladimir Bordo: Fabry-Perot modes of cylindrical nanocavities
- 12:40-13:00      Ray-Kuang Lee: Crescent waves in optical cavities
- 13:00-13:20      Edik Rafailov: Conical refraction laser
- 13:20-13:40      Kestutis Staliunas: Faraday patterns in nonlinear fiber resonators
- 13:40-14:00      Alex Szameit: Two-dimensional X-waves in waveguide arrays
- 14:00-14:20      Alexei Tolstik: Dynamic holography of singular light beams
- 14:20-15:20      LUNCH BREAK
- 15:20-17:20      Session 8: "Solitons"**  
**Chair: Yuri Kivshar**
- 15:20-15:40      Anton Desyatnikov: Multi-vortex solitons in periodic lattices and waveguide arrays

- 15:40-16:00 Svetlana Gurevich: Destabilization of localized structures induced by delayed feedback
- 16:00-16:20 Sara Lombardo: Velocity-locked dark solitons of the 3WRI
- 16:20-16:40 Boris Mantsyzov: Pulse compression and soliton propagation under diffraction-induced pulse splitting in photonic crystal
- 16:40-17:00 Anatoly P. Sukhorukov: Effects of the collision of optical pulses in nonlinear media
- 17:00-17:20 Antonio Degasperis: Spectral methods in optical wave interactions
- 19:00-23:00 WELCOME PARTY

26 August:

**9:00-9:40 Plenary session III:**

Eugene Polzik: Quantum Optical Interface

**9:40-11:00 Session 9: "Femtosecond optics and few-cycle pulses"**

**Chair: Ekaterina Efremova**

9:40-10:00 Alina Manshina: Femtosecond laser writing in bulk chalcogenide glasses

10:00-10:20 Sergey Kozlov: Features of self-action of single-cycle optical pulses

10:20-10:40 Olga Kosareva: Higher-order Kerr effect in femtosecond laser filamentation

10:40-11:00 Nickolai Zhavoronkov: Microfocus hard X-ray source for femtosecond science

11:00-11:30 COFFEE BREAK

**11:30-13:10 Session 10: "Nonlinear optics and new materials"**

**Chair: Igor Mashek**

11:30-11:50 Elen Tolstik: (1+1)D light self-trapping due to thermal defocusing in polymers based on plexiglass

11:50-12:10 Ihar Babushkin: A broadband supercontinuum from THz to near infrared generated by ionization of noble gases with femtosecond laser pulses

12:10-12:30 Alexey Kalachev: Superradiance from materials with low refractive index

12:30-12:50 Aleksandr Aleksandrovsky: Nonlinear photonic crystals of strontium tetraborate

12:50-13:10 Marek Trippenbach: A new class of compact entities in three component BECs

13:10-14:40 LUNCH BREAK

**14:40-15:50 Session 11: "Young scientists presentations"**

**Chair: Artyom Ivanov**

14:40-14:45 V. Arnautov: Long-living memory cell in quantum dots

14:45-14:50 Rostislav Arkhipov: Lasing without inversion in terms of features spatial-temporal dynamics of radiation propagation in two-level extended optically dense medium

14:50-14:55 Sergey Belan: A hybrid plasmonic waveguide

14:55-15:00 A. Gusev: Peculiarities of inverted Lamb dip in two-isotope laser

15:00-15:05 Ilya Kolesnikov: Luminescence properties of nanocrystalline YVO<sub>4</sub>:Eu<sup>3+</sup> and Y<sub>2</sub>O<sub>3</sub>:Eu<sup>3+</sup>

15:05-15:10 Zhaxylyk Kudyshev: Nonlinear positive-negative index couplers: the effect of phase mismatch

- 15:10-15:15 Margarita Lesik: Laser-induced effects of structure modifications in chalcogenide system As-S-Se
- 15:15-15:20 Ekaterina Ostroukhova: The third harmonic generation for backward waves
- 15:20-15:25 Vladimir Parfenyev: *Theory of a spaser-based nanolaser*
- 15:25-15:30 Anastasiya Povolozkaya: Laser-induced deposition of hetero-metallic structures from photosensitivity complexes on dielectrics substrates
- 15:30-15:35 E. Sedov: Phase transition and stabilities of polariton crystals beyond low excitation density limit
- 15:35-15:40 A. Komar: Reflection, guided propagation, and discrete diffraction of laser beams in spatially structured liquid crystals
- 15:40-15:45 S. Suchkov: Amplification of linear and nonlinear waves in waveguide arrays including PT-symmetric couplers with energy gain and loss
- 15:45-15:50 A. Sheremet: Cooperative scattering of light by a dense atomic system with degenerate structure of the ground state
- 15:50-16:20 COFFEE BREAK
- 16:20-18:00 POSTER SESSION**
- FINAL