Workshop:

Advanced Polarization Technologies in Biomedicine and Material Science VIII

Chair:

Dmitry A. Zimnyakov,

Yuri Gagarin State Technical University of Saratov; Institute of Precise Mechanics and Control of RAS, Russia

Secretaries:

Anna A. Isaeva,

Elena A. Isaeva,

Yuri Gagarin State Technical University of Saratov, Russia

Program Committee:

Robert R. Alfano,
CCNY, USA

Stefan Andersson-Engels,
TyndallNationalInstitute, Cork, Ireland

Oleg V. Angelsky,
Chernivtsi National University, Ukraine

Claude Boccara,
ESPCI, France

Steven L. Jacques,
Oregon Health Sciences Univ., USA

Alexander P. Sviridov,
Inst. of Laser and Information Technologies RAS, Russia

Valery V. Tuchin,
Saratov State University, Institute of Precision Mechanics and Control RAS, Tomsk State University, Russia

Alexander G. Ushenko
Chernivtsi National University, Ukraine

Lihong Wang,
California Institute of Technology, CA, USA

The main goals of the Conference are:

- to present the recent results and achievements in the area of light polarization probes of random media;

- to discuss the fundamental aspects of polarized coherent and non-coherent light propagation in scattering and absorbing media with complex structure;

- to discuss the possible applications of spectral-polarization and coherence-domain techniques for morphological and functional diagnostics in biomedicine and for characterization of micro- and nanostructured dispersive media and composite materials in material science;

- to involve young scientists and student to the active and creative work in the fields of fundamental and applied optics, laser physics, and photonics.

Topics

The scientific program will include but is not restricted to the following topic areas:

- fundamentals of polarized light propagation in random media and interrelations between the coherence and polarization properties of light waves – traditional approaches and new sights;
- basic principles and applications of singular optics and theory of optical vortices;
- polarized light in biomedicine – from simple devices to sophisticated applications;
- design and practical use of polarization-based probes and sensors in various areas of modern science and technology;
- double refraction, optically active, and chiral homogeneous and heterogeneous natural and artificial media;
- resonant light-matter interactions at nanometer scale and their manifestations in polarization properties of scattered light;
- analytical and numerical approaches to simulation of polarized light propagation in multiple scattering random media.