



V.I. Vernadsky
Crimean Federal University

FIRST ANNOUNCEMENT
2th International Conference
«DIGITAL SINGULAR OPTICS»
(DSO2021)
Yalta, Hotel «Levant»



Samara National
Research University

Dear colleagues, V.I. Vernadsky Crimean Federal University (Russia) together with Academician S.P. Korolev Samara National Research University invite You to participate in the International Conference, which will take place on the Black Sea coast on **September 6-10, 2021** on the base of Hotel «Levant» in Yalta, Russia

The purpose of the conference is to discuss the new digital approaches and achievements in the area of singular optics; its advances in the development of multifunctional systems and devices, as well as in transmission, storage and information processing in fiber-optic networks. The approaches of singular optics (including fiber and nonlinear optics and their applications) promote the improvement of optical digital technology. That is why this conference is a unique opportunity to shed light on new standards and digital concepts concerning the physics of phase and vector singularities. The conference plans to present the latest achievements in the field of trapping, transportation and structuring of microparticles in nanotechnological processes, the use of singular beams in optical cryptography, in optical transmission and information processing systems, as well as conceptual problems associated with key issues in information optics.

What is DSO'2021?

DSO`2020 is an international conference for scientists and engineers, researchers and consultants, theoreticians and practitioners in the fields of advanced optical researches, namely, singular optics and related sciences. Namely, the conference focuses into the latest achievements in the field of trapping, transporting and structuring the microparticles in nano-technological processes, application of singular beams in the optical cryptography, optical systems that transmit and process information, as well as fundamental problems concerned with generation and sorting of optical vortices in complex singular beams

SECTIONS:

• SINGULAR OPTICS

Fundamentals of singular optics; Principles of quantum singular optics; Propagation of singular beams in free space, crystals, optical fibers; Optics of Polarization Singularities; Spin-orbit interaction in laser beams; The vortex-division multiplexing systems in a communication medium; Optical vortices in turbulent environments; Singular near-field optics; Sensors of physical quantities based on optical vortices.

• DIFFRACTION OPTICS, OPTICAL TECHNOLOGY

Diffraction optics; Digital singular optics; Nanophotonics and optics of nanostructures; Digital signals and images processing; Optical communication based on singular beams; Microscopy and adaptive optics of singular beams; Biomedical and industrial applications.

• INFORMATIONAL OPTICS

Mathematical techniques in the pattern recognition theory; Optical techniques for obtaining and processing images; Information processing based on optical vortices; Geographic Information Technologies; Information encryption, decryption and protection, including quantum cryptography; Methods of digital singular optics; Hyper-spectral data analysis; Numerical methods of computer optics; Information technology and nanotechnology.

• HOLOGRAPHY, COHERENT OPTICS AND PHOTONICS

Theoretical methods of optical holography and analysis of the properties of holograms; Digital image processing; New methods of holographic and speckle interferometry; Speckle correlation methods; Visual holography (physical and digital methods); Holographic technologies in biology and medicine; Application of coherent - optical methods in the diagnosis of deformations, damages and residual life; Hologram optical elements; Photo materials, media for hologram registration; Security hologram technology; Holography and education; Luminescent materials and technologies; Photonics of Advanced Materials; Spectroscopy of quantum dots and single molecules; Optical properties of metamaterials.

PROGRAMME COMMITTEE:

Prof. A.V. Volyar (Russia) - **Chair**
Prof., Academician RF AS V.A. Soifer (Russia) -
Co-Chair

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Prof. V.G. Shvedov (Australia)
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Prof. A.P. Vladimirov (Russia)
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IMPORTANT DATES:

2021.02.01 - the beginning of the abstracts submission.
2021.07.20 - end of the abstracts submission.
2020.07.22 - announcement of the accepted reports list.
2020.08.20 - the end of the prepayment and the registration fee.
2020.09.06 - the beginning of the conference.

OFFICIAL LANGUAGES:

The official languages of the conference are Russian and English.

ARRANGEMENT FEE:

Registration Fee: US\$ 350

(The registration fee includes: typesetting and payment for printing of the abstracts, information materials, rental of premises and transport, hotel reservations, coffee breaks and other organizational expenses)

THESES:

1. Title of the report
2. List of authors, organization
3. Speaker's email
4. Section Name
5. Select the type of report "oral report" or "poster report"
6. The text of the application must contain no more than 1000 words

Abstracts are sent to the email address:

orgcom@singular-optics.org (until 2021.07.20).

Please send the information by May 1: Authors, Title of the report, Organization.

CONTACT INFORMATION:

With any questions you can contact by e-mail: orgcom@singular-optics.org (Yuriy Egorov)

CONFERENCE SITE: www.singular-optics.org

PUBLICATION:

Conference materials will be recommended to Computer Optics journal
<http://computeroptics.smr.ru/>