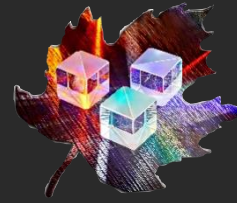


# SARATOV FALL MEETING XXV

27 SEPTEMBER – 1 OCTOBER, 2021, Saratov, Russia



## Invited Speakers



ESTIMATION OF THE SPECTRAL  
OPTICAL PROPERTIES OF RABBIT  
PANCREAS AND BRAIN CORTEX FROM  
THE UV TO NIR

**Luís Oliveira**

Polytechnic of Porto - School of  
Engineering, Portugal



RAMAN SPECTROSCOPY FOR LIVE EARLY MAMMALIAN  
EMBRYOS: OPTIMIZATION OF EXPERIMENTAL  
CONDITIONS AND SELECTION OF THE ESTIMATION  
CRITERIA

**Elena Perevedentseva**

National Dong Hwa University, Hualien, Taiwan, P.N.  
Lebedev Physics Institute of Rus. Acad. Sci., Moscow,  
Russia



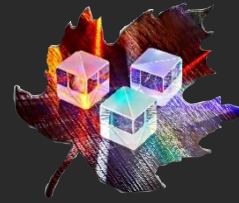
FLUORESCENCE GUIDED PROCEDURES  
AND PHOTODYNAMIC THERAPY IN  
NEUROSURGERY

**Ronald Sroka**

LIFE-Center at Department of Urology  
at Hospital of University of Munich,  
Munich, Germany

# SARATOV FALL MEETING XXV

27 SEPTEMBER – 1 OCTOBER, 2021, Saratov, Russia



## Invited Speakers



**NOVEL DESIGNS AND INGAAS-BASED MATERIALS FOR EFFICIENT THZ DETECTION**

**Dmitry S. Ponomarev**

Institute of Ultra High Frequency Semiconductor Electronics of RAS, Moscow, Russia



**PHOTONIC AND ACOUSTIC TOOLS FOR THERANOSTICS**

**Dmitry A. Gorin**

Skolkovo Institute of Science and Technology, Skoltech, Moscow, Russia



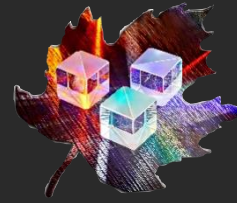
**IDENTIFICATION OF NON-COMMUNICABLE DISEASES WITH RAMAN-BASED OPTICAL AND LIQUID BIOPSY**

**Ivan A. Bratchenko**

Samara National Research University, Samara, Russia

# SARATOV FALL MEETING XXV

27 SEPTEMBER – 1 OCTOBER, 2021, Saratov, Russia



## Invited Speakers



APPLICATION OF OPTICAL COHERENCE  
ELASTOGRAPHY TO CHARACTERIZE  
ELASTIC PROPERTIES OF HUMAN  
PERICARDIUM SAMPLES USED FOR  
FABRICATION OF CARDIAC-VALVE  
PROSTHESES

**Vladimir Y. Zaitsev**

Institute of Applied Physics RAS, Nizhniy  
Novgorod, Russia



BREATHOMICS USING LASER PHOTO-  
ACOUSTIC SPECTROSCOPY AND MACHINE  
LEARNING

**Yury V. Kistenev**

Tomsk State University, Tomsk, Russia



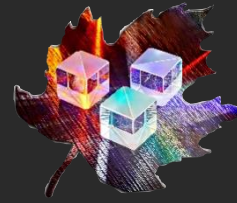
INTRAMOLECULAR H-BOND  
DYNAMICS INVESTIGATED BY THZ  
HIGH-RESOLUTION SPECTROSCOPY

**Arnaud Cuisset**

LPCA, Laboratoire de Physico-Chimie  
de l'Atmosphère, Université du Littoral  
Côte d'Opale, Dunkerque, France

# SARATOV FALL MEETING XXV

27 SEPTEMBER – 1 OCTOBER, 2021, Saratov, Russia



## Invited Speakers



BIOPHOTONICS STUDY OF CELLS  
INTERACTION IN BLOOD UNDER  
NORMAL AND PATHOLOGICAL  
CONDITIONS

**Alexander V. Priezzhev**

M.V. Lomonosov Moscow State  
University, Moscow, Russia



MICRORHEOLOGIC AND MICROCIRCULATION  
PARAMETERS OF BLOOD CHARACTERISTIC OF  
PATIENTS SUFFERING FROM  
CARDIOVASCULAR DISEASES

**Andrei E. Lugovtsov**

M.V. Lomonosov Moscow State University,  
Moscow, Russia



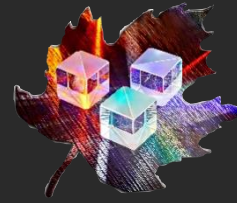
FUNCTIONAL NEAR-INFRARED  
SPECTROSCOPY BRAIN RESEARCH IN  
CLINICAL SETTING

**Teemu Myllylä**

Research Unit of Medical Imaging, Physics  
and Technology, University of Oulu, Finland

# SARATOV FALL MEETING XXV

27 SEPTEMBER – 1 OCTOBER, 2021, Saratov, Russia



## Invited Speakers



**FROM MILLIMETERS TO NANOMETERS –  
REDUCING THE SCALE IN MICROSCOPY**

**Herbert Schneckenburger**

Aalen University, Aalen, Germany



**THE BIOLOGICAL EFFECTS OF THZ RADIATION**

**Olga P. Cherkasova**

Institute of Laser Physics SB RAS, Russia  
Institute on Laser and Information Technologies -  
Branch of the Federal Scientific Research Centre  
"Crystallography and Photonics" of RAS, Russia



**PROSPECTS OF TERAHERTZ TECHNOLOGY  
IN DIAGNOSIS OF HUMAN BRAIN  
TUMORS**

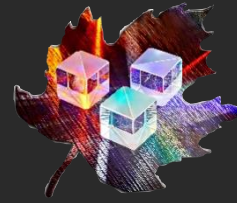
**Kirill I. Zaytsev**

Prokhorov General Physics Institute of  
RAS, Russia; Bauman Moscow State  
Technical University, Russia; Institute for  
Regenerative Medicine, Sechenov  
University, Russia



# SARATOV FALL MEETING XXV

27 SEPTEMBER – 1 OCTOBER, 2021, Saratov, Russia



## Invited Speakers



**SAPPHIRE SHAPED CRYSTALS FOR  
OPTICAL DIAGNOSIS, THERAPY AND  
SURGERY OF TISSUES**

**Irina N. Dolganova**

Institute of Solid State Physics of RAS,  
Russia; Institute for Regenerative  
Medicine, Sechenov University, Russia  
Bauman Moscow State Technical  
University, Russia



**APPLICATIONS OF THE SHAPED SAPPHIRE IN THZ-  
WAVE DELIVERY AND SUPER-RESOLUTION  
IMAGING**

**Gleb M. Katyba**

Institute of Solid State Physics of RAS, Russia;  
Prokhorov General Physics Institute of RAS, Russia;  
Bauman Moscow State Technical University, Russia



**TERAHERTZ AND OPTICAL  
PROPERTIES OF CARBON NANOTUBES  
AND THEIR HETEROSTRUCTURES**

**Maria G Burdanova**

Center for Photonics and 2D Materials,  
Moscow Institute of Physics and  
Technology, Dolgoprudny, Russia;  
Department of Physics, University of  
Warwick

# SARATOV FALL MEETING XXV

27 SEPTEMBER – 1 OCTOBER, 2021, Saratov, Russia



## Invited Speakers



### BIODEGRADATION: A NOVEL CHALLENGE FOR BIOPHOTONICS

**Peter S. Timashev**

Institute for Regenerative Medicine, Sechenov University, Russia; Department of Polymers and Composites, N.N. Semenov Institute of Chemical Physics of RAS, Russia; Institute of Photonic Technologies, Research Center "Crystallography and Photonics" of RAS, Russia



### MID-IR SOLID-STATE LASER SOURCES FOR MEDICAL APPLICATIONS

**Mikhail K Tarabrin**

Bauman Moscow State Technical University, Russia; P.N. Lebedev Physical Institute of RAS, Russia; Novosibirsk State University, Novosibirsk



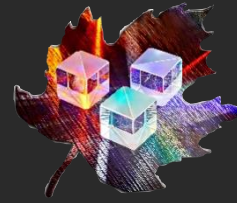
### STANDARD OF UP-CONVERSION LUMINESCENCE BASED ON BARIUM FLUORIDE DOPED YTTERBIUM AND ERBIUM

**Sergey Kuznetsov**

Prokhorov General Physics Institute of RAS, Russia

# SARATOV FALL MEETING XXV

27 SEPTEMBER – 1 OCTOBER, 2021, Saratov, Russia



## Invited Speakers



**VISUALIZATION OF THE 3D SUB-MICRON  
STRUCTURE OF BIOMEDICAL OBJECTS  
WITH NANO-SENSITIVITY TO STRUCTURAL  
ALTERATIONS**

**Sergey A. Alexandrov**

National University of Ireland in Galway,  
Ireland



**NON-INVASIVE      HYPERSPECTRAL      MULTI-  
DISTANCE MEASUREMENTS OF CEREBRAL  
RESPONSE TO BREATH HOLDING IN ADULT  
HUMANS**

**Vladislav Toronov**

Ryerson University and Institute of Biomedical  
Engineering, Science and Technology (iBEST), Li  
Ka-Shing Knowledge Institute, Toronto, Canada



**METHODOLOGY OF MICROCIRCULATORY-  
TISSUE SYSTEMS MULTIMODAL OPTICAL  
DIAGNOSTICS**

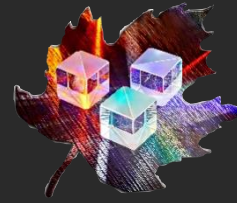
**Andrey Dunaev,**

Orel State University, Russia



# SARATOV FALL MEETING XXV

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## Invited Speakers



**PHOTODYNAMIC INACTIVATION OF DORMANT FORMS OF NON-SPORULATING BACTERIA DUE TO ENDOGENOUS PORPHYRINS**

**Alexander P. Savitsky**

Federal Research Centre 'Fundamentals of Biotechnology' of the Russian Academy of Sciences, A. N. Bach Institute of Biochemistry, Moscow, Russia



**RAPID *IN VIVO* RAMAN SPECTROSCOPY FOR NON-INVASIVE SKIN CANCER DETECTION**

**Haishan Zeng**

University of British Columbia, Vancouver, BC, Canada



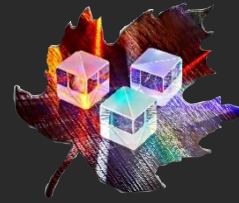
**BIOMEDICAL OPTOACOUSTICS: FROM IDEA TO IMAGING AND THERAPY**

**Rinat O. Esenaliev**

University of Texas Medical Branch, Galveston, Texas, USA

# SARATOV FALL MEETING XXV

27 SEPTEMBER – 1 OCTOBER, 2021, Saratov, Russia



## Invited Speakers



**YIN AND YANG OF NANOPARTICLES ON  
THE EXAMPLE OF QUANTUM DOTS  
APPLICATION IN BIOMEDICAL RESEARCH**

**Elena Kornilova**

Institute of Cytology RAS, St.Petersburg,  
Russia



**MESOSCOPIC EARLY-PHOTON FLUORESCENCE  
MOLECULAR LIFETIME TOMOGRAPHY: FIRST  
EXPERIMENTAL RESULTS**

**Alexander B. Konovalov**

Federal State Unitary Enterprise "Russian Federal  
Nuclear Center – Zababakhin All-Russia Research  
Institute of Technical Physics," Snezhinsk; Bach  
Institute of Biochemistry, Research Center of  
Biotechnology of the Russian Academy of Science,  
Moscow, Russia



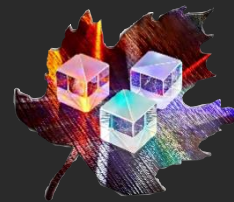
**COMPUTATIONAL OPTICAL CLEARING: A  
NEW TOOL FOR MEASURING HIDDEN  
CHROMOPHORES IN SKIN ESTIMATE  
HIDDEN CHROMOPHORE CONTENT**

**Mohammad Ali Ansari**

Laser and Plasma Research Institute,  
Shahid Beheshti University, Tehran, Iran

# SARATOV FALL MEETING XXV

27 SEPTEMBER – 1 OCTOBER, 2021, Saratov, Russia



## Invited Speakers



**STUDYING ALTERNATING-SIGN STRAIN  
FIELDS DURING OPTICAL CLEARING OF  
BIOLOGICAL TISSUES BY OPTICAL  
COHERENCE ELASTOGRAPHY**

**Yulia A. Alexandrovskaya**

Institute of Photon Technologies, Federal  
Scientific Research Center  
“Crystallography and Photonics”, Russian  
Academy of Sciences, Troitsk, Moscow,  
Russia



**DUAL-WAVELENGTH FLUORESCENCE MONITORING  
OF PHOTODYNAMIC THERAPY: FROM ANALYTICAL  
MODELS TO IN VIVO STUDIES**

**Mikhail Yu. Kirillin**

Institute of Applied Physics RAS, Nizhny Novgorod,  
Russia



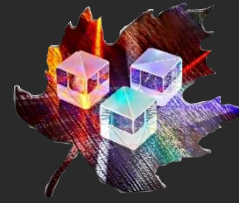
**IN VIVO MEASUREMENT OF DNA IN  
THE SKIN USING CONFOCAL RAMAN  
MICROSPECTROSCOPY:  
DETERMINATION OF THE STRATUM  
CORNEUM THICKNESS AND  
SUPERFICIAL MICROBIOME**

**Maxim E. Darvin**

Charité – Universitätsmedizin Berlin,  
Germany

# SARATOV FALL MEETING XXV

27 SEPTEMBER – 1 OCTOBER, 2021, Saratov, Russia



## Invited Speakers



OPTICAL COHERENCE TOMOGRAPHY  
FOR OTITIS MEDIA DIAGNOSTICS

**Pavel A. Shilyagin**

Institute of Applied Physics of RAS,  
Nizhny Novgorod, Russia



RIGOROUS FULL-WAVE DESCRIPTION OF OCT-  
SCAN FORMATION BASED ON BALLISTIC  
SCATTERING OF ARBITRARY-PROFILE BEAMS FOR  
SIMULATION OF MULTIMODAL OCT

**Lev A. Matveev**

Federal research center Institute of Applied  
Physics of the Russian Academy of Sciences,  
Nizhny Novgorod, Russia



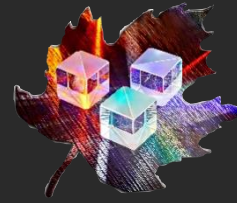
«SMART ARDOR»: SELECTIVE LOW-  
POWER IR-LASER ACTIVATION OF  
CONFORMATIONAL DNA  
TRANSFORMATIONS IN BACTERIA FOR  
DESINFECTION AND STERILIZATION

**Sergey I. Kudryashov**

Lebedev Physical Institute, Russian  
Academy of Sciences; V.M. Gorbатов  
Federal Scientific Center for Food  
Systems, Russian Academy of Sciences,  
Moscow, Russia

# SARATOV FALL MEETING XXV

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## Invited Speakers



**LASER ABLATION AND  
FRAGMENTATION OF NANO- AND  
MICROSTRUCTURED SILICON TOWARDS  
DESIGNING NANOPARTICLES FOR  
BIOPHOTONICS**

**Stanislav V. Zaboltnov**

Lomonosov Moscow State University,  
Faculty of Physics, Moscow, Russia



**THE PROPAGATION OF OPTICAL RADIATION AND  
THERMAL FIELD IN CELL CULTURE MEDIA**

**Viktor Dremine**

R&D Center of Biomedical Photonics, Orel State  
University, Orel, Russia; College of Engineering and  
Physical Sciences, Aston University, Birmingham, UK



**NON-TRADITIONAL FLUOROPHORES IN  
THE HUMAN ORGANISM, THEIR  
ORIGIN AND APPLICATIONS**

**Evgeny Shirshin**

M.V. Lomonosov Moscow State  
University, Moscow, Russia



# SARATOV FALL MEETING XXV

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## Invited Speakers



**ASPECT IMAGING COMPACT:  
ADVANTAGES OF THE COMPACT  
PERMANENT PRECLINICAL MRI**

**Kobi Katsobashvili**

Aspect Imaging LTD., Shoham, Israel



**DYNAMICS AND HEATING OF THE HIGH-POWER  
PULSE-PUMPED QUANTUM-CASCADE LASERS**

**Grigorii Sokolovskii**

A.F. Ioffe Physico-Technical Institute of the RAS,  
St. Petersburg, Russia



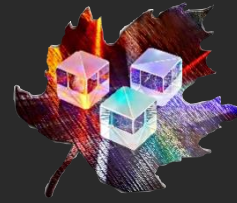
**CEREBRAL MICROCIRCULATION  
HETEROGENEITY AT INTRACRANIAL  
HYPERTENSION**

**Denis E. Bragin**

Lovelace Biomedical Research Institute,  
University of New Mexico School of  
Medicine, Albuquerque, USA

# SARATOV FALL MEETING XXV

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## Invited Speakers



OPTICAL COHERENCE TOMOGRAPHY  
ANGIOGRAPHY AND ITS APPLICATIONS

**Ruikang Wang**

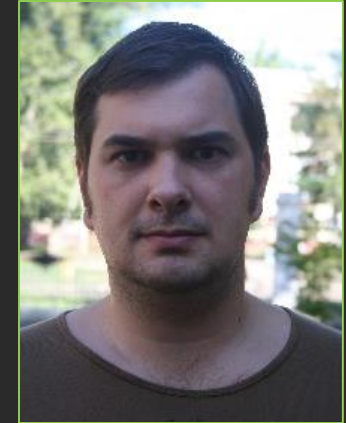
University of Washington, Seattle, USA



A MULTIMODAL APPROACH TO NON-  
INVASIVE DIAGNOSIS OF BASAL CELL  
CARCINOMA: A PILOT STUDY

**Elina A. Genina**

Saratov State University, Saratov; National  
Research Tomsk State University, Tomsk, Russia



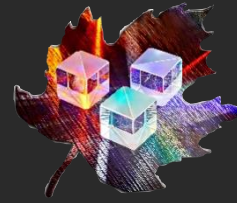
GAP-ENHANCED RAMAN TAGS FOR  
ANALYTICAL AND IMAGING  
APPLICATIONS

**Boris N. Khlebtsov**

Institute of Biochemistry and Physiology of  
Plants and Microorganisms, Saratov,  
Russia

# SARATOV FALL MEETING XXV

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## Invited Speakers



FIBER PHOTONICS FOR BIOMED  
APPLICATIONS IN 0.3-16 $\mu$ M RANGE

**Viacheslav Artyushenko**

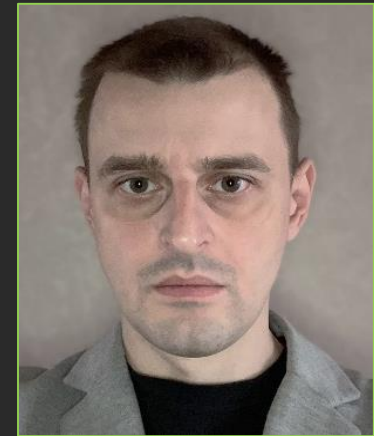
art photonics GmbH, Berlin, Germany



TRITOM - A MULTIMODALITY IMAGING PLATFORM  
FOR VOLUMETRIC MOLECULAR ASSESSMENT OF  
MURINE MODELS

**Sergey Ermilov**

PhotoSound Technologies, Inc., USA



SPECIALIZED FLUORESCENCE  
MICROSCOPY FOR HIGH-  
RESOLUTION IMAGING OF LARGE  
BIOLOGICAL SAMPLES

**Alexander Sychevskij,**

Biocommerce Ltd., Russia