



Program of LALS-2024

18TH INTERNATIONAL CONFERENCE ON LASER APPLICATIONS IN LIFE SCIENCES

<https://lals.sciencesconf.org>



11-14 October 2024
Muğla, Turkey

Dear Participants,

On behalf of the Organizing Committee, we invite you to attend the “18th International Conference on Laser Applications in Life Science” (LALS-2024).



The conference is held from October 11-14, 2024, at the Convention Centre of the Liberty Hotels Lykia/Oludeniz in Muğla, Turkey.

The aim of LALS-2024 is to provide a global platform for researchers, engineers, and physicians to present and discuss recent optical techniques and innovations aimed at applications in life science. We hope to bring together professionals and scientists from various areas of life sciences to introduce novel biophotonics methods to healthcare professionals, encourage knowledge exchange, and promote the establishment of cooperation ventures. The scientific program will include plenary and invited talks, and we will also offer a wide range of social programs such as boat cruises and visits to historical places.

We welcome companies and institutions to showcase their state-of-the-art products and equipment in the conference area.

We look forward to your participation in LALS-2024 and meeting you at the conference.

Best regards,

Conference chair,

Prof., Dr. Kirill Larin (University of Houston, USA)





**18th International conference
on Laser Applications in Life Sciences**
11-14 October 2024, Muğla (Turkey)

Conference Chair

Kirill Larin (University of Houston, USA)

International Advisory Board

Name	Affiliation	Countries
Bizheva Kostadinka	University of Waterloo	Canada
Blondel Walter	University of Lorraine / CRAN, Nancy	France
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Chikishev Andrey	M.V. Lomonosov Moscow State University, Moscow	Russia
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Meglinski Igor	Aston University	UK
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Oliveira Luis	Polytechnic of Porto – School of Engineering (ISEP)	Portugal
Popov Alexey	VTT Technical Research Centre of Finland, Oulu	Finland
Popp Juergen	Institute of Physical Chemistry	Germany
Priezzhev Alexander	M.V. Lomonosov Moscow State University, Moscow	Russia
Rueck Angelika	Ulm University	Germany
Schneckenburger Herbert	Aalen University	Germany
Shirshin Evgeny	M.V. Lomonosov Moscow State University, Moscow	Russia
Tuchin Valery	Saratov State University, Saratov	Russia
Zalevsky Zeev	Bar-Ilan University / Faculty of Engineering	Israel
Zhu Dan	Huazhong University of Science and Technology, Wuhan	China



**18th International Conference
on Laser Applications in Life Sciences**
11-14 October 2022, Muğla (Turkey)

Program at a glance

Rooms (see the schematic below on the page 7): Yunus Emre 2 and Ibni Sina

Thursday, 10 October 2024			
08:00 - 19:00	Registration		
DAY 1: Friday, 11 October 2024			
08:00 - 19:00	Registration		
09:00 - 9:10	Opening ceremony		
9:10 - 09:55	Plenary session 1 (Yunus Emre 2): Wolfgang DREXLER Chair: Alexander PRIEZZHEV		
10:00 - 10:40	Fluorescence - 1 (Yunus Emre 2) - Chair: Dan ZHU	10:00 - 11:00	Nanobiophotonics (Ibni Sina) - Chair: Kostadinka BIZHEVA
10:00 - 10:20	Maxim DARVIN (Invited)	10:00 - 10:20	Dmitry GORIN (Invited)
10:20 - 10:40	Liu XIAOLONG (Invited)	10:20 - 10:40	Michel MEUNIER (Invited)
		10:40 - 11:00	Anna ORLOVA (Invited)
11:00-11:30	Coffee break		
11:30 - 12:40	Fluorescence - 2 (Yunus Emre 2) - Chair: Evgeny SHIRSHIN	11:30 - 13:05	Laser tissue interaction / modification & PDT - 1 (Ibni Sina) - Chair: Olga CONDE
11:30 - 11:50	Irene GEORGAKOUDI (Invited)	11:30 - 11:50	Viacheslav ARTYUSHENKO (Invited)
11:50 - 12:10	Aleksander LANIN (Invited)	11:50 - 12:10	Ilya YAROSLAVSKY (Invited)
12:10 - 12:25	Aleksei KALMYKOV (Oral)	12:10 - 12:30	Elina GENINA (Invited)
12:25 - 12:40	Anastasia KOMAROVA (Oral)	12:30 - 12:50	Irina YANINA (Invited)
		12:50 - 13:05	Christos BOUTOPOULOS (Oral)
13:00 - 14:30	Lunch		

14:30 - 16:20	OCT & OCE & Brillouin - 1 (Yunus Emre 2) - Chair: Irina LARINA	14:30 - 15:50	Optical microscopy & tomography (Ibni Sina) - Chair: Kirill ZAYTSEV
14:30 - 14:50	Adrian PODOLEANU (Invited)	14:30 - 14:50	Karsten KOENIG (Invited)
14:50 - 15:10	Brecken BLACKBURN (Invited)	14:50 - 15:10	Herbert SCHNECKENBURGER (Invited)
15:10 - 15:30	Michael PIRCHER (Invited)	15:10 - 15:30	Hui MA (Invited)
15:30 - 15:50	Yoshiaki YASUNO (Invited)	15:30 - 15:50	Liang GAO (Invited)
15:50 - 16:05	Ksenia ACHKASOVA (Oral)		
16:05 - 16:20	Alejandro MARTINEZ (Oral)		
16:00 - 16:30	Coffee break		
16:30 - 18:45	OCT & OCE & Brillouin- 2 (Yunus Emre 2) - Chair: Kirill LARIN	16:30 - 18:40	Emerging technologies and applications - 1 (Ibni Sina) - Chair: Karsten KOENIG
16:30 - 16:50	Robert ZAWADZKI (Invited)	16:30 - 16:50	Yulia SVENSKAYA (Invited)
16:50 - 17:10	Kostadinka BIZHEVA (Invited)	16:50 - 17:10	Sergei SOKOLOVSKI (Invited)
17:10 - 17:30	Johannes de BOER (Invited)	17:10 - 17:30	Xiaoyu WENG (Invited)
17:30 - 17:50	Grigory GELIKONOV (Invited)	17:30 - 17:50	David MAYERICH (Invited)
17:50 - 18:10	Brendan KENNEDY (Invited)	17:50 - 18:05	Elena ZHARKIKH (Oral)
18:10- 18:30	Rainer LEITGEB (Invited)	18:05 - 18:20	Christos BOUTOPOULOS (Oral)
18:30- 18:45	Salavat AGLYAMOV (Oral)	18:20 - 18:40	H. Cumhuri TEKIN (Invited)
19:00 - 22:00	Conference dinner		

DAY 2: Saturday, 12 October 2024

08:00 - 19:00	Registration		
09:00 - 09:45	Plenary session 2 (Yunus Emre 2): Daniel RAZANSKY Chair: Kirill LARIN		
09:50 - 11:05	Optical imaging - 1 (Yunus Emre 2) - Chair: Valery TUCHIN	09:50 - 11:05	Emerging technologies and applications - 2 (Ibni Sina) - Chair: Hui MA
09:50 - 10:10	Anna YAROSLAVSKY (Invited)	09:50 - 10:10	Hatice CEYLAN KOYDEMIR (Invited)
10:10 - 10:30	Martin LEAHY (Invited)	10:10 - 10:30	Susana MARCOS (Invited)
10:30 - 10:50	Konstantin SOKOLOV (Invited)	10:30 - 10:50	Xiangwei ZHAO (Invited)

18th International Conference on Laser Applications in Life Sciences

10:50 - 11:05	Ekaterina BRYANSKAYA (Oral)	10:50 - 11:05	Alexey KURNIKOV (Oral)
11:05 - 11:30	Coffee break		
11:30 - 13:10	Optical measurements - 1 (Yunus Emre 2) - Chair: Herbert SCHNECKENBURGER	11:30 - 12:50	Optical sensing & Artificial intelligence (Ibni Sina) - Chair: Martin LEAHY
11:30 - 11:50	Seemantini K. NADKARNI (Invited)	11:30 - 11:50	Olga M. CONDE (Invited)
11:50 - 12:10	Alexander PRIEZZHEV (Invited)	11:50 - 12:10	Lev PERELMAN (Invited)
12:10 - 12:30	Andrey DUNAEV (Invited)	12:10 - 12:30	Chunxiang XU (Invited)
12:30 - 12:50	Andrei LUGOVTSOV (Invited)	12:30 - 12:50	Yury KISTENEV (Invited)
12:50 - 13:10	Sehyun SHIN (Invited)		
13:20 - 13:30	Group photo		
13:30 - 14:30	Lunch		
13:15 - 18:30	Social program: THE BOAT CRUISE		

DAY 3: Sunday, 13 October 2024			
08:00 - 19:00	Registration		
09:00 - 09:45	Plenary session 3 (Yunus Emre 2): Laura MARCU Chair: Valery TUCHIN		
09:50 - 10:50	Optical clearing (Yunus Emre 2) - Chair: Yury KISTENEV	09:50 - 11:00	Optical measurements - 2 (Ibni Sina) - Chair: Seemantini K. NADKARNI
09:50 - 10:10	Valery TUCHIN (Invited)	09:50 - 10:10	Anita MAHADEVAN-JANSEN (Invited)
10:10 - 10:30	Dan ZHU (Invited)	10:10 - 10:30	Stefan ANDERSSON-ENGELS (Invited)
10:30 - 10:50	Luis OLIVEIRA (Invited)	10:30 - 10:45	Maria PINHEIRO (Oral)
		10:45 - 11:00	Anastasiia SURKOVA (Oral)
11:00 - 11:30	Coffee break		
11:30 - 13:30	Laser tissue interaction / modification & PDT - 2 (Yunus Emre 2) - Chair: Luis OLIVEIRA	11:30 - 12:50	Optical imaging - 2 (Ibni Sina) - Chair: Stefan ANDERSSON-ENGELS
11:30 - 11:50	Evgeny SHIRSHIN (Invited)	11:30 - 11:50	Irina LARINA (Invited)
11:50 - 12:10	Irina DOLGANOVA (Invited)	11:50 - 12:10	Frédérique VANHOLSBECK (Invited)
12:10 - 12:30	Kirill ZAYTSEV (Invited)	12:10 - 12:30	Audrey BOWDEN (Invited)
12:30 - 12:50	E. Duco JANSEN (Invited)	12:30 - 12:50	Peter TÖRÖK (Invited)

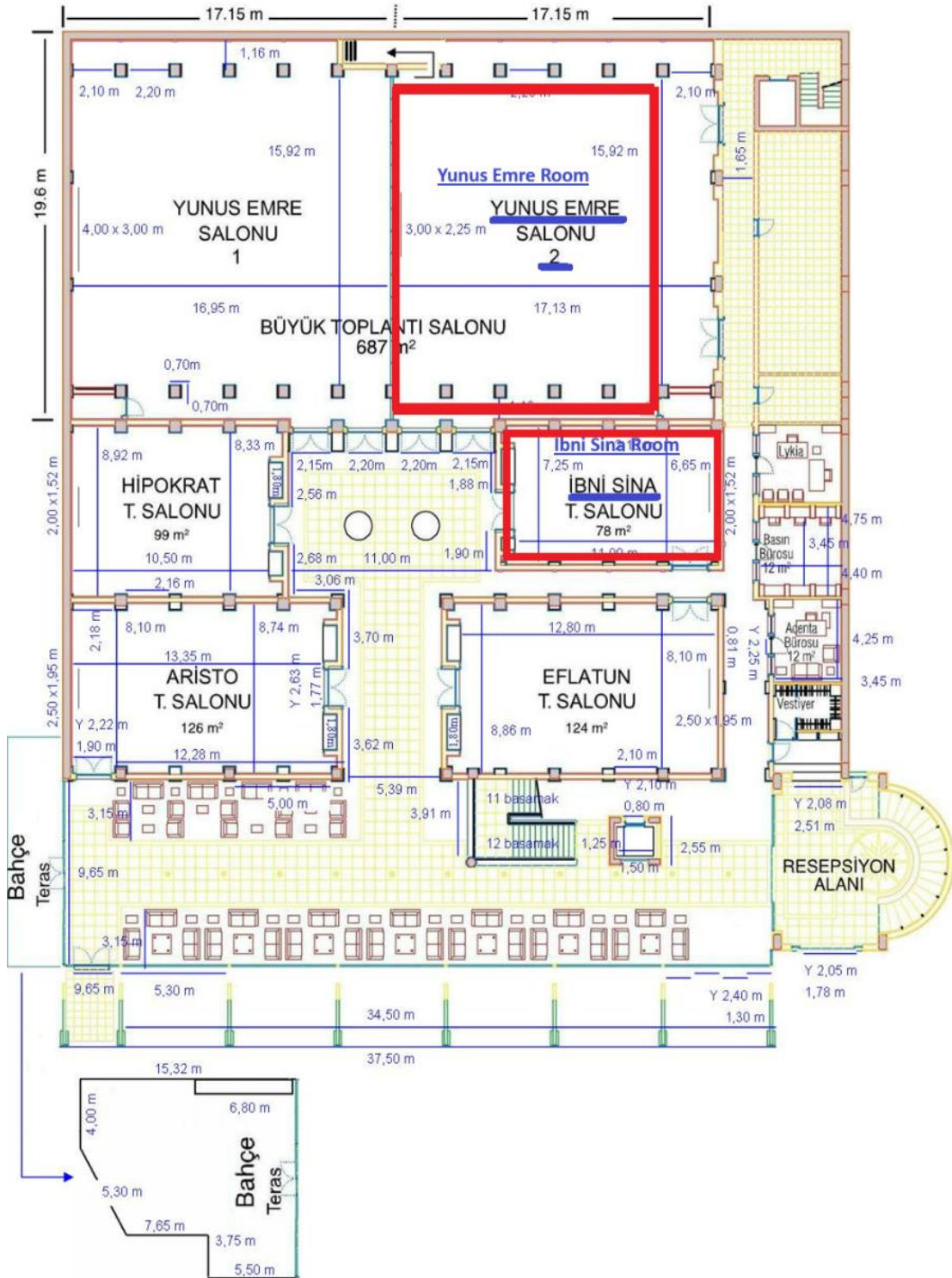
12:50 - 13:10	Oleg VASYUTINSKII (Invited)		
13:10 - 13:30	Michael JENKINS (Invited)		
13:00- 14:30	Lunch		
14:30 - 16:05	Laser spectroscopy / Raman / Brillouin (Yunus Emre 2) - Chair: Maxim DARVIN	14:30 - 15:45	Optical imaging - 3 (Ibni Sina) - Chair: Andrey DUNAEV
14:30 - 14:50	Daniel COTE (Invited)	14:30 - 14:50	Adrian RÜHM (Invited)
14:50 - 15:10	Ivan BRATCHENKO (Invited)	14:50 - 15:10	Viktor DREMIN (Invited)
15:10 - 15:30	Jitao ZHANG (Invited)	15:10 - 15:30	Pavel SUBOCHEV (Invited)
15:30 - 15:50	Olga CHERKASOVA (Invited)	15:30 - 15:45	Svetlana RODIMOVA (Oral)
15:50 - 16:05	Lyudmila BRATCHENKO (Oral)		
16:00 - 16:30	Coffee break		
16:30 - 18:00	Poster session - Chairs: Kirill LARIN, Alexander PRIEZZHEV		
16:30 - 17:00	Brief presentations of the posters (5 min each, Yunus Emre 2). The list of presenters below		
17:00 - 18:00	Posters (Coffee break area)		
19:00 - 22:00	IAB meeting (for members)		

DAY 4: Monday, 14 October 2024	
08:00 - 12:00	Registration
10:00 - 11:00	Closing and Young Researcher Award Ceremony, Scientific Panel Discussion (Yunus Emre 2)
12:00 - 13:30	Lunch
13:15 - 18:30	Social program: GHOST TOWN & BLUE LAGOON

List of poster presenters

Vadim GENIN
Oleg VASYUTINSKII
Anna GLYAVINA
Roman KORNEV
Dmitry MYAGKOV
Sergei SOKOLOVSKI
Anastasiia S.-GLUSHKOVSKAIA

Scheme of "Yunus Emre 2" and "Ibni Sina" rooms



Sessions Program

Date and Time	October 11 (Friday) / 9:10 - 09:55
Place	Yunus Emre 2
Session Title	Plenary session 1
Session Chair	Alexander PRIEZZHEV (Russia)

Time	9:10 - 09:55
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[Plenary] Multimodal optical endoscopy

Wolfgang DREXLER

Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria

Date and Time	October 11 (Friday) / 10:00 - 10:40
Place	Yunus Emre 2
Session Title	Fluorescence - 1
Session Chair	Dan ZHU (China)

Time	10:00 - 10:20
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[Invited] Non-invasive in vivo imaging of the multi-colored tattoo inks in the skin using two-photon excited fluorescence lifetime imaging

Maxim DARVIN

Independent researcher, Berlin, Germany

Time	10:20 - 10:40
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[Invited] NIR-II fluorescence functional imaging of immune cells in cancer immunotherapy

Liu XIAOLONG

Mengchao Hepatobiliary Hospital of Fujian Medical University, Fuzhou, China

Coffee Break	11:00 - 11:30
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Date and Time	October 11 (Friday) / 10:00 - 11:00
Place	Ibni Sina
Session Title	Nanobiophotonics
Session Chair	Kostadinka BIZHEVA (Canada)

Time	10:00 - 10:20
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[Invited] Where does photonics meet acoustics and nanostructured materials for biomedical applications?

Dmitry GORIN

Skolkovo Institute of Science and Technology, Moscow, Russia

Time	10:20 - 10:40
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[Invited] Pulsed laser trigger released of gene and drug from lipid nanoparticles

Michel MEUNIER

Polytechnique Montreal, Montreal, Canada

Time	10:40 - 11:00
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[Invited] Nanostructures for multi-response selective volatile organic compound sensing

Anna ORLOVA

ITMO University, Saint-Petersburg, Russia

Coffee Break

11:00 - 11:30

Date and Time	October 11 (Friday) / 11:30 - 12:40
Place	Yunus Emre 2
Session Title	Fluorescence - 2
Session Chair	Evgeny SHIRSHIN (Russia)

Time	11:30 - 11:50
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[Invited] Multi-modal label-free optical imaging of metabolic function: from mitochondria to humans

Irene GEORGAKOUDI

Dartmouth College and Tufts University, USA

Time	11:50 - 12:10
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[Invited] Multimodal nonlinear microscopy of ratiometric fluorescent sensor-proteins in vivo

Aleksander LANIN

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

Time 12:10 - 12:25

[Oral] Optical methods for detecting single biomolecules: visualization, sensing, sequencing of DNA molecules

Aleksei KALMYKOV

Institute of Spectroscopy RAS, Troitsk, Russia

Time 12:25 - 12:40

[Oral] Simultaneous assessment of oxygen and metabolic status in tumor models using FLIM and PLIM technologies

Anastasia KOMAROVA

Privolzhsky Research Medical University and Lobachevsky State University of Nizhny Novgorod, Russia

Lunch 13:00 - 14:30

Date and Time	October 11 (Friday) / 11:30 - 13:05
Place	Ibni Sina
Session Title	Laser tissue interaction / modification & PDT - 1
Session Chair	Olga CONDE (Spain)

Time 11:30 - 11:50

[Invited] Advanced fiber spectroscopy for life science applications

Viacheslav ARTYUSHENKO

Art photonics GmbH, Berlin, Germany

Time 11:50 - 12:10

[Invited] Fractional laser treatment of cartilage: review of recent ex vivo and clinical data

Ilya YAROSLAVSKY

IPG Medical, IPG Photonics, Marlborough, USA

Time 12:10 - 12:30

[Invited] Combined photodynamic/photothermal therapy of model cholangiocarcinoma using indocyanine green and gold nanorods

Elina GENINA

Saratov State University, Saratov, Russia

Time 12:30 - 12:50

[Invited] Phase transition monitoring in adipose tissue by multimodal approach

Irina YANINA

Saratov State University, Saratov, Russia

Time 12:50 - 13:05

[Oral] NIR photothermal immunotherapy of melanoma

Christos BOUTOPOULOS

Institute of Biomedical Engineering, University of Montreal, Montreal, Quebec, Canada

Lunch 13:00 - 14:30

Date and Time	October 11 (Friday) / 14:30 - 16:20
Place	Yunus Emre 2
Session Title	OCT & OCE & Brillouin - 1
Session Chair	Irina LARINA (USA)

Time 14:30 - 14:50

[Invited] Master slave optical coherence tomography for ultra fast swept sources

Adrian PODOLEANU

University of Kent, Canterbury, United Kingdom

Time 14:50 - 15:10

[Invited] Non-perturbative optical methods of assessing corneal mechanical properties

Brecken BLACKBURN

Case Western Reserve University, Cleveland, USA

Time 15:10 - 15:30

[Invited] Applications and challenges of clinical adaptive optics optical coherence tomography

Michael PIRCHER

Medical University of Vienna, Vienna, Austria

Time 15:30 - 15:50

[Invited] Computational augmentation of optical coherence tomography contrasts for label-free tissue dynamics and property imaging

Yoshiaki YASUNO

University of Tsukuba, Tsukuba, Japan

Time 15:50 - 16:05

[Oral] Detection of radiation-induced changes in the white matter of the rat brain based on attenuation coefficient estimation from optical coherence tomography data

Ksenia ACHKASOVA

Research Institute of Experimental Oncology and Biomedical Technologies, Privozhsky Research Medical University, Nizhny Novgorod, Russia

Time 16:05- 16:20

[Oral] 40 MHz time stretch Swept Source OCT imaging and fast measurements

Alejandro MARTINEZ

University of Kent, United Kingdom

Coffee Break 16:00 - 16:30

Date and Time	October 11 (Friday) / 14:30 - 15:50
Place	Ibni Sina
Session Title	Optical microscopy & tomography
Session Chair	Kirill ZAYTSEV (Russia)

Time 14:30 - 14:50

[Invited] Ultracompact multimodal femtosecond fiber multiphoton tomograph

Karsten KOENIG

Saarland University, Saarbrücken, Germany

Time 14:50 - 15:10

[Invited] Axial tomography in live cell microscopy

Herbert SCHNECKENBURGER

University of Aalen, Aalen, Germany

Time 15:10 - 15:30

[Invited] Mueller matrix microscopy for digital pathology

Hui MA

Shenzhen International Graduate School and Tsinghua University, Shenzhen and Beijing, China

Time 15:30 - 15:50

[Invited] Breaking the speed barrier: high-speed light-field microscopy for kilohertz to terahertz 3D Imaging

Liang GAO

UCLA, Los Angeles, USA

Coffee Break 16:00 - 16:30

Date and Time	October 11 (Friday) / 16:30 - 18:45
Place	Yunus Emre 2
Session Title	OCT & OCE & Brillouin- 2
Session Chair	Kirill LARIN (USA)

Time	16:30 - 16:50
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[Invited] Development of FF-SS-OCT systems for structural and bleach-induced functional retinal imaging

Robert ZAWADZKI

University of California, Davis, USA

Time	16:50 - 17:10
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[Invited] Progress on imaging neurovascular coupling in the retina

Kostadinka BIZHEVA

University of Waterloo, Waterloo, Canada

Time	17:10 - 17:30
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[Invited] Structural and molecular imaging in vivo: PS-OCT and Immuno-OCT

Johannes de BOER

Vrije University Amsterdam, Amsterdam, Netherlands

Time	17:30 - 17:50
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[Invited] Non-obvious features imaging in OCT

Grigory GELIKONOV

Institute of Applied Physics of Russian Academy of Sciences, Nizhny Novgorod, Russia

Time	17:50 - 18:10
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[Invited] Revealing the micro-scale mechanics of cancer using optical coherence elastography

Brendan KENNEDY

University of Western Australia, Australia

Time	18:10- 18:30
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[Invited] Clinical translation of Low-cost Swept Source OCT - how low can you go?

Rainer LEITGEB

Medical University of Vienna, Vienna, Austria

Time	18:30 - 18:45
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[Oral] Optical Methods in Elastography of Ocular Tissues

Salavat AGLYAMOV

Department of Mechanical Engineering, University of Houston, USA

Conference Dinner	19:00 - 22:00
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Date and Time	October 11 (Friday) / 16:30 - 18:40
Place	Ibni Sina
Session Title	Emerging technologies and applications - 1
Session Chair	Karsten KOENIG (Germany)

Time	16:30 - 16:50
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[Invited] Optical monitoring of intrafollicular drug delivery by means of vaterite carriers

Yulia SVENSKAYA

Saratov State University, Saratov, Russia

Time	16:50 - 17:10
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[Invited] Photonic 3D printing of human tissue models for disease research and treatment

Sergei SOKOLOVSKI

Aston Institute of Photonic Technologies, Birmingham, UK

Time	17:10 - 17:30
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[Invited] Research on some fundamental problems in classical optics

Xiaoyu WENG

Shenzhen University, Shenzhen, China

Time	17:30 - 17:50
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[Invited] Milling microscopy: a platform for large-scale sub-cellular 3D histology

David MAYERICH

University of Houston, Houston, USA

Time	17:50 - 18:05
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[Oral] Wearable laser Doppler flowmetry for the study of blood microcirculation peculiarities in the forehead skin in patients in the remote post-COVID period

Elena ZHARKIKH

Research and Development Center of Biomedical Photonics, Orel State University, Russia

Time	18:05 - 18:20
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[Oral] Laser-assisted drop-on-demand bioprinting for in-situ corneal repair

Christos BOUTOPOULOS

Institute of Biomedical Engineering, University of Montreal, Montreal, Quebec, Canada

Time	18:20 - 18:40
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[Invited] Advanced image-based techniques in miniaturized devices for biosensing applications

H. Cumhur TEKIN

Izmir Institute of Technology, Izmir, Turkey

Conference Dinner	19:00 - 22:00
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Date and Time October 12 (Saturday) / 9:00 - 09:45
Place Yunus Emre 2
Session Title **Plenary session 2**
Session Chair Kirill LARIN (USA)

Time 9:00 - 09:45

[Plenary] Ultrafast optoacoustic imaging in biology and the clinics

Daniel RAZANSKY

Faculty of Medicine, University of Zurich and the Department of Information Technologies and Electrical Engineering of ETH Zurich, Zürich, Switzerland

Date and Time October 12 (Saturday) / 9:50 - 11:05
Place Yunus Emre 2
Session Title **Optical imaging - 1**
Session Chair Valery TUCHIN (Russia)

Time 9:50 - 10:10

[Invited] AI assisted rapid quantitative optical cytopathology of cancer

Anna YAROSLAVSKY

University of Massachusetts, Lowell, USA

Time 10:10 - 10:30

[Invited] Photoacoustic tracking of stem cells

Martin LEAHY

University of Galway, Galway, Ireland

Time 10:30 - 10:50

[Invited] Clinically translatable molecular photoacoustic imaging

Konstantin SOKOLOV

MD Anderson, Houston, USA

Time 10:50 - 11:05

[Oral] Complex application of fluorescence imaging and digital diaphanoscopy methods for screening pathological conditions of the oral mucosa and the maxillary sinus tissues

Ekaterina BRYANSKAYA

Research and Development Center of Biomedical Photonics, Orel State University, Russia

Coffee Break 11:05 - 11:30

Date and Time October 12 (Saturday) / 9:50 - 11:05
Place Ibni Sina
Session Title **Emerging technologies and applications - 2**
Session Chair Hui MA (China)

Time 9:50 - 10:10

[Invited] Engineering biomedical sensing technologies to advance human health

Hatice CEYLAN KOYDEMIR

Texas A&M University, USA

Time 10:10 - 10:30

[Invited] Novel photo-activated treatments in ophthalmology

Susana MARCOS

University of Rochester, Rochester, USA

Time 10:30 - 10:50

[Invited] Plasmonic materials based biomedical applications

Xiangwei ZHAO

Southeast University, Nanjing, China

Time 10:50 - 11:05

[Oral] Advances in scanning optoacoustic angiography: leveraging highly sensitive wideband PVDF-TrFE piezopolymer detectors to enhancing tumor imaging

Alexey KURNIKOV

Institute of Applied Physics RAS, Nizhny Novgorod, Russia

Coffee Break 11:05 - 11:30

Date and Time October 12 (Saturday) / 11:30 - 13:10
Place Yunus Emre 2
Session Title **Optical measurements - 1**
Session Chair Herbert SCHNECKENBURGER (Germany)

Time 11:30 - 11:50

[Invited] Investigating the mechanopathology of soft tissues

Seemantini K. NADKARNI

Harvard Medical School, Boston, USA

Time 11:50 - 12:10

[Invited] Correlation of endothelium function with optically measured blood microcirculation parameters in healthy volunteers and patients suffering from cardiac diseases

Alexander PRIEZZHEV

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

Time 12:10 - 12:30

[Invited] Biophotonics methods for study the functional state of microcirculatory-tissue systems during long-term isolation in the ground model of a space station and in space flight conditions

Andrey DUNAEV

Research and Development Center of Biomedical Photonics, Orel State University, Orel, Russia

Time 12:30 - 12:50

[Invited] Laser aggregometry of red blood cells in a microfluidic channel covered with cultured endothelial cells

Andrei LUGOVTSOV

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

Time 12:50 - 13:10

[Invited] The role of red blood cells as biomarkers in human aging and a potential route for reverse-aging

Sehyun SHIN

Korea University, Seoul, South Korea

Group Photo 13:20 - 13:30

Lunch 13:30 - 14:30

Social program: THE BOAT CRUISE 13:15 - 18:30

Date and Time	October 12 (Saturday) / 11:30 - 12:50
Place	Ibni Sina
Session Title	Optical sensing & Artificial intelligence
Session Chair	Martin LEAHY (Ireland)

Time 11:30 - 11:50

[Invited] Explainable AI (XAI) applied to laser applications in life sciences

Olga M. CONDE

University of Cantabria, Santander, Spain

Time 11:50 - 12:10

[Invited] Multispectral light scattering imaging for precancer detection and cell analysis

Lev PERELMAN

Harvard University, Cambridge, USA

Time 12:10 - 12:30

[Invited] Microcavity enhanced SERS biosensing

Chunxiang XU

Southeast University, Nanjing, China

Time	12:30 - 12:50
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[Invited] Qualitative and quantitative analysis of gas samples THz and IR absorption spectra for medical and ecological applications

Yury KISTENEV

Tomsk State University, Tomsk, Russia

Group Photo	13:20 - 13:30
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Lunch	13:30 – 14:30
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Social program: THE BOAT CRUISE	13:15 - 18:30
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Date and Time	October 13 (Sunday) / 9:00 - 9:45
Place	Yunus Emre 2
Session Title	Plenary session 3
Session Chairs	Valery TUCHIN (Russia)

Time	9:00 - 09:45
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[Plenary] Fluorescence lifetime imaging in clinical interventions

Laura MARCU

Biomedical Engineering and Neurological Surgery, University of California Davis, California, USA

Date and Time	October 13 (Sunday) / 9:50 - 10:50
Place	Yunus Emre 2
Session Title	Optical clearing
Session Chair	Yury KISTENEV (Russia)

Time	9:50 - 10:10
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[Invited] Imaging, spectroscopy and therapy enhanced by tissue optical clearing

Valery TUCHIN

Saratov State University, Saratov, Russia

Time	10:10 - 10:30
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[Invited] Tissue optical clearing imaging: from in vitro to in vivo

Dan ZHU

Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan, China

Time 10:30 - 10:50

[Invited] Characterization of UV transparency windows in tissues as a function of glycerol osmolarity

Luis OLIVEIRA

Polytechnic of Porto – School of Engineering (ISEP), Porto, Portugal

Coffee Break 11:00 - 11:30

Date and Time	October 13 (Sunday) / 9:50 - 11:00
Place	Yunus Emre 2
Session Title	Optical measurements - 2
Session Chair	Seemantini K. NADKARNI (USA)

Time 9:50 - 10:10

[Invited] Clinical implementation of near-infrared autofluorescence (NIRAF) for guiding endocrine neck surgery

Anita MAHADEVAN-JANSEN

Vanderbilt University, Nashville, USA

Time 10:10 - 10:30

[Invited] Photon Time-of-Flight Sensing for Color-Bias-Free Pulse Oxymetry

Stefan ANDERSSON-ENGELS

Tyndall National Institute, Cork, Ireland

Time 10:30 - 10:45

[Oral] Tissue Composition Analysis: An Intuitive Application for the Broadband Absorption Spectra Reconstruction

Maria PINHEIRO

Centre of Telecommunications and Multimedia, Institute for Systems and Computer Engineering, Technology and Science, Porto, Portugal

Time 10:45 - 11:00

[Oral] Moisture quantification of allogeneic tissues by fiber-optic NIR spectroscopy

Anastasiia SURKOVA

International Laboratory “Hybrid Nanostructures for Biomedicine”, ITMO University, Russia

Coffee Break 11:00 - 11:30

Date and Time	October 13 (Sunday) / 11:30 - 13:30
Place	Yunus Emre 2
Session Title	Laser tissue interaction / modification & PDT - 2
Session Chair	Luis OLIVEIRA (Portugal)

Time	11:30 - 11:50
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[Invited] Surgery guidance with optical spectroscopy: from bench to bedside

Evgeny SHIRSHIN

Lomonosov Moscow State University, Moscow, Russia

Time	11:50 - 12:10
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[Invited] Application of NIR microsecond laser pulses for tissue coagulation and resection. Current results and perspective

Irina DOLGANOVA

Osipyan Institute of Solid State Physics of RAS, Chernogolovka, Russia

Time	12:10 - 12:30
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[Invited] Terahertz-wave -- turbid tissue interactions

Kirill ZAYTSEV

Prokhorov General Physics Institute, Russian Academy of Sciences, Moscow, Russia

Time	12:30 - 12:50
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[Invited] Characterization of a combined fluorescence and spatial frequency domain imaging system to monitor photodynamic therapy dosimetry

E. Duco JANSEN

Vanderbilt University, Nashville, USA

Time	12:50 - 13:10
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[Invited] Photodynamics of molecular probes in solutions, cells and on organic surfaces

Oleg VASYUTINSKII

Ioffe Physical-Technical Institute of Russian Academy of Sciences, Saint Petersburg, Russia

Time	13:10 - 13:30
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[Invited] tSNIP transient selective neural inhibition via photobiomodulation

Michael JENKINS

Case Western Reserve University, Cleveland, USA

Lunch	13:10 – 14:30
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Date and Time October 13 (Sunday) / 11:30 - 12:50
Place Yunus Emre 2
Session Title **Optical imaging - 2**
Session Chair Stefan ANDERSSON-ENGELS (Ireland)

Time 11:30 - 11:50

[Invited] Dynamic imaging and optogenetic control of mammalian embryonic cardiogenesis

Irina LARINA

Baylor College of Medicine, Houston, USA

Time 11:50 - 12:10

[Invited] Multimodal imaging platform to study cartilage degeneration using compression-based depth-resolved polarisation-sensitive optical coherence tomography and vibrational spectroscopy

Frédérique VANHOLSBECK

University of Auckland, Auckland, New Zealand

Time 12:10 - 12:30

[Invited] Portable fNIRS for measuring brain activity anytime, anywhere

Audrey BOWDEN

Vanderbilt University, Nashville, USA

Time 12:30 - 12:50

[Invited] Limitations of Brillouin elastography in biological samples

Peter TÖRÖK

Nanyang Technological University, Singapore

Lunch 13:10 – 14:30

Date and Time October 13 (Sunday) / 14:30 - 16:05
Place Yunus Emre 2
Session Title **Laser spectroscopy / Raman / Brillouin**
Session Chair Maxim DARVIN (Germany)

Time 14:30 - 14:50

[Invited] Novel Raman approaches for the neurosurgical guidance

Daniel COTE

Université Laval and CERVO Brain Research Center, Québec, Canada

Time 14:50 - 15:10

[Invited] Raman spectroscopy and machine learning in the prognosis of patients with coronary heart disease complicated by chronic heart failure

Ivan BRATCHENKO

Samara National Research University, Samara, Russia

Time 15:10 - 15:30

[Invited] Non-contact biomechanical imaging of cell and tissue using optical Brillouin microscopy

Jitao ZHANG

Wayne State University, Detroit, USA

Time 15:30 - 15:50

[Invited] Terahertz spectroscopy of body fluids for glioma diagnostics

Olga CHERKASOVA

Institute of Automation and Electrometry, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

Time 15:50 - 16:05

[Oral] Avoiding overestimation in multivariate analysis of Raman spectra for biomedical applications

Lyudmila BRATCHENKO

Samara National Research University, Samara, Russia

Coffee Break

16:05 - 16:30

Date and Time	October 13 (Sunday) / 14:30 - 15:45
Place	Yunus Emre 2
Session Title	Optical imaging - 3
Session Chair	Andrey DUNAEV (Russia)

Time 14:30 - 14:50

[Invited] Pre-clinical and clinical investigations on Hyperspectral-Imaging

Adrian RÜHM

LMU Munich, Munich, Germany

Time 14:50 - 15:10

[Invited] Hyperspectral imaging of intestinal ischemia supported by machine learning

Viktor DREMIN

Orel State University, Orel, Russia

Time 15:10 - 15:30

[Invited] Revolutionizing vascular diagnostics: the role of wideband ultrasound detectors in laser optoacoustic angiography

Pavel SUBOCHEV

Institute of Applied Physics RAS, Nizhny Novgorod, Russia

Time 15:30 - 15:45

[Oral] Optical criteria of the pathological liver during the regeneration

Svetlana RODIMOVA

Privolzhsky Research Medical University, Nizhny Novgorod, Russia

Coffee Break

16:05 - 16:30

Date and Time	October 13 (Sunday) / 16:30 - 18:00
Session Title	Poster session
Session Chairs	Kirill LARIN (USA), Alexander PRIEZZHEV (Russia)

Brief presentations of the posters (5 min each, Yunus Emre 2))	16:30 - 17:00
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- Vadim GENIN** (Saratov State University, Saratov, Russia), *Diffuse reflectance spectra changes after photodynamic therapy of rat model tumors with and without optical clearing*
- Oleg VASYUTINSKII** (Ioffe Institute, Russian Academy of Sciences, Moscow, Russia), *Excited-states relaxation in FAD excited states: the role of conformations*
- Anna GLYAVINA** (Department of Radiophysical Methods in Medicine, Institute of Applied Physics Russian Academy of Sciences, Nizhny Novgorod, Russia), *In vivo study of vascularization and oxygenation of tumor xenografts under the influence of the antiangiogenic drug axitinib*
- Roman KORNEV** (G.G. Devyat'kh Institute of Chemistry of High-Purity Substances of RAS, Nizhny Novgorod, Russia), *Laser generation of reactive oxygen and nitrogen species to influence physiological and metabolic parameters of human blood in vitro*
- Dmitry MYAGKOV** (Saratov State University, laboratory "Smart Sleep", Saratov, Russia), *Mouse phenotyping technology to evaluate the effectiveness of phototherapy in mice with Alzheimer's disease*
- Sergei SOKOLOVSKI** (Aston Institute of Photonics Technologies, Aston University, Birmingham, UK), *Overcome cross-border barriers to health data integration, access, FAIRification, and pre-processing*
- Anastasiia SEMYACHKINA-GLUSHKOVSKAIA** (Saratov State University, laboratory "Smart Sleep", Saratov, Russia), *Automated system for analyzing the effectiveness of photobiomodulation of lymphatic removal of beta-amyloid from tissues of the aging brain*

Posters (Coffee break area)	17:00 - 18:00
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IAB meeting (for members)	19:00 - 22:00
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Date and Time	October 14 (Monday) / 10:00 - 11:00
Place	Yunus Emre 2

Closing and Young Researcher Award Ceremony, Scientific Panel Discussion	10:00 – 11:00
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Lunch	12:00 - 13:30
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Social program: GHOST TOWN & BLUE LAGOON	13:15 - 18:30
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