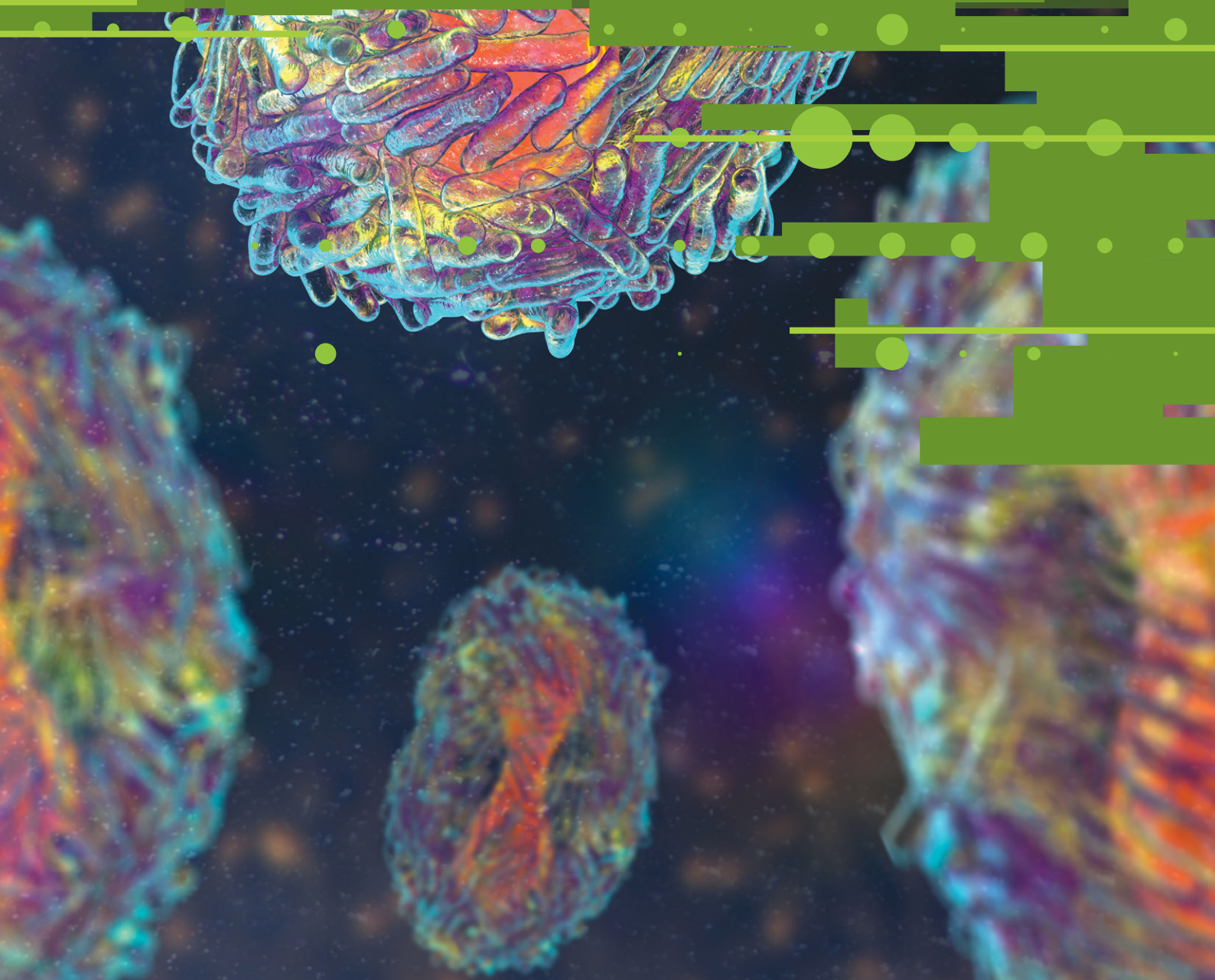


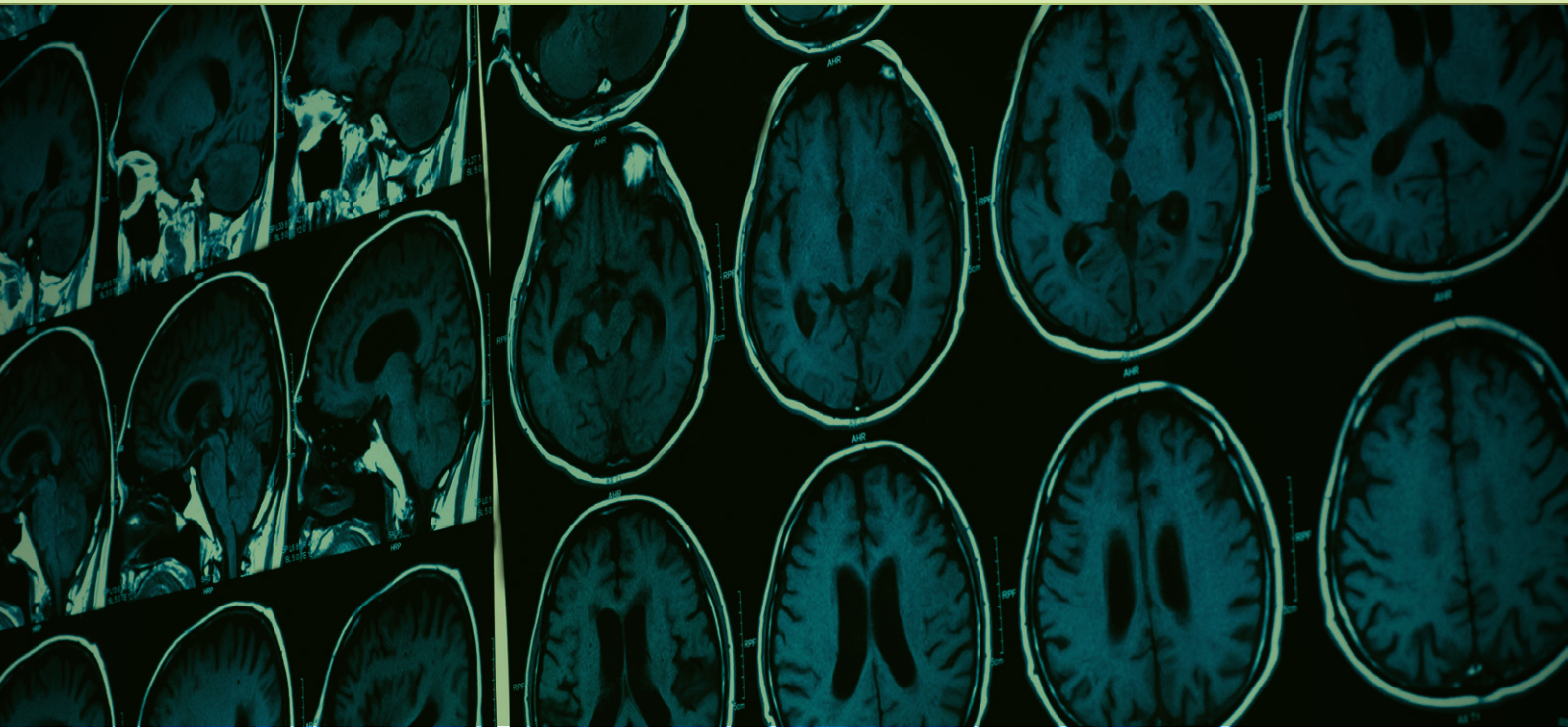
EUROPEAN CONFERENCES ON
**BIOMEDICAL
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TECHNICAL
PROGRAMME

25-29 June 2023
Munich, Germany

www.spie.org/ebo





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EUROPEAN CONFERENCES ON
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Experience the energy of the European Conferences on Biomedical Optics

Facility Maps—PAGES 2-3

Plenary Presentations—PAGE 4

Hear presentations about breakthrough discoveries and new approaches given by leading speakers from across the globe.

Special Events—PAGE 5

Poster events, workshops, and panel discussions - connect with colleagues on topics critical to your work and interest areas.

Technical Conference Overview—PAGES 6-11

Connect with your colleagues at various events and receptions offered onsite.

General Information—PAGES 7 AND 9

GENERAL AND PROGRAMME CHAIRS



Ronald Sroka,
General Chair
Ludwig-
Maximilians-
Univ. München
(Germany)



Alex Vitkin
General Chair
Ontario Cancer Institute
(Canada)



Hamid Dehghani
Programme Chair
Univ. of
Birmingham
(United Kingdom)



Wang-Yuhl William Oh
Programme Chair
Korea Advanced
Institute of Science &
Technology (Republic
of Korea)



Peter T. C. So
Programme Chair
Massachusetts
Institute of
Technology
(United States)

CONFERENCE 12627—PAGE 13

Translational Biophotonics: Diagnostics and Therapeutics

Chairs: Zhiwei Huang, Lothar D. Lilge

25-29 June 2023 | Room 11 ICM Ground Floor

CONFERENCE 12628—PAGE 23

Diffuse Optical Spectroscopy and Imaging

Chairs: Davide Contini, Yoko Hoshi,
Thomas D. O'Sullivan

25-28 June 2023 | Room 5 ICM Ground Floor

CONFERENCE 12629—PAGE 32

Emerging Technologies for Cell and Tissue Characterization

Chairs: Seemantini K. Nadkarni,
Giuliano Scarcelli

28-29 June 2023 | Room 22a ICM Second Floor

CONFERENCE 12630—PAGE 35

Advances in Microscopic Imaging

Chairs: Emmanuel Beaurepaire,
Adela Ben-Yakar, YongKeun Park

28 June 2023 | Room 4 "Theodore Maiman"
B21 - Halle B2

CONFERENCE 12631—PAGE 39

Optoacoustic Methods and Applications in Biophotonics

Chairs: Chulhong Kim, Jan Laufer,
Vasilis Ntziachristos, Roger J. Zemp

25 - 26 June 2023 | Room 2 ICM Ground Floor
and Room 5 ICM Ground Floor

CONFERENCE 12632—PAGE 42

Optical Coherence Imaging Techniques and Imaging in Scattering Media

Chairs: Benjamin J. Vakoc, Maciej Wojtkowski,
Yoshiaki Yasuno

25 - 29 June 2023 | Room 3 ICM Ground Floor
and Room 4 "Theodore Maiman"
B21 - Halle B2 and Room 5 ICM Ground Floor

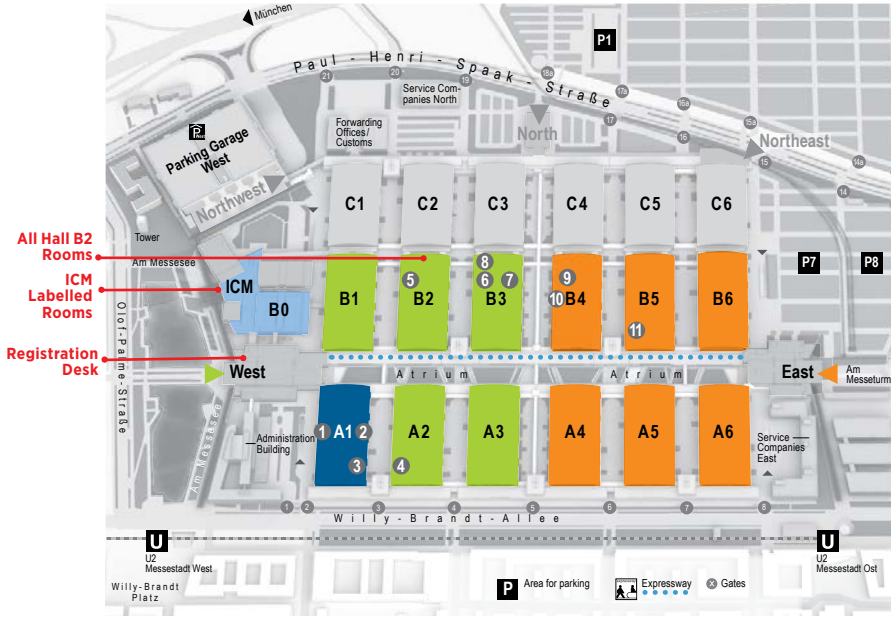
FACILITY MAPS



Fairgrounds map

June 27-30, 2023
Trade Fair Center Messe München

1 visit, 1 location,
3 leading trade fairs!



All Hall B2 Rooms
ICM Labelled Rooms
Registration Desk

World of LASER PHOTONICS 50 YEARS OF LASER

- A2** Lasers and optoelectronics, integrated photonics, optical information and communication
- A3** Lasers and laser systems for production engineering, sensors, test and measurement, optical measurement systems, imaging
- B1** Optics, manufacturing technology for optics
- B2** Lasers and optoelectronics, biophotonics and medical engineering
- B3** Lasers and laser systems for production engineering

World of QUANTUM

- A1** Laser systems, subsystems and components for quantum technology, quantum computing and simulation, quantum communication and cryptography, quantum sensing & imaging

automatica

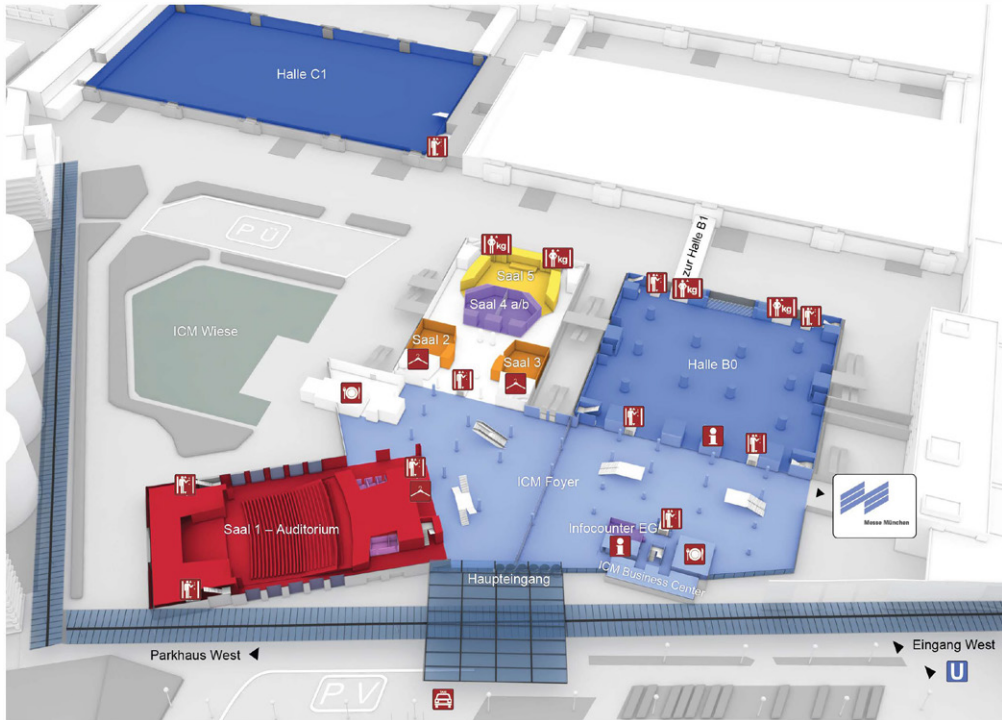
- B6** Industrial robots, drive technology, control systems technology and industrial communications, software and cloud computing
- B5** Machine vision, sensor technology, supply technology, industrial robots
- B4** Industrial robots (incl. collaborative, mobile), professional service robotics, Start-up Arena, career now
- A6** Assembly and handling technology
- A5** Assembly and handling technology, positioning systems
- A4** Machine vision, safety and security technology, supply technology, industrial robots (incl. collaborative, mobile), professional service robotics

Status: 05/2023

- 1** Forum World of QUANTUM
- 2** Forum Quantum Science & Industry
- 3** Qiskit Hackathon @ World of QUANTUM
- 4** Forum Lasers and Optics
- 5** Forum Biophotonics and Medical Applications
- 6** Forum Laser Materials Processing
- 7** Special Show: Photons in Production
- 8** Career Center & Job Board
- 9** Start-up Arena
- 10** career now
- 11** Vision Expert Huddles

ICM – Ground Floor

ICM – Internationales Congress Center München
ERDGESCHOSS










- U** U-Bahn (Messestadt West)
- Taxi**
- Garderobe**
- Information**
- Catering**
- Personenaufzug**
- Lastenaufzug**
- PÜ** Ü-Wagen Stellplatz
- PV** VIP Parkplatz
- Tagungsbüros**

ICM – Second Floor

ICM – Internationales Congress Center München
2. OBERGESCHOSS












-  U-Bahn (Messestadt West)
-  Taxi
-  Garderobe
-  Catering
-  Personenaufzug
-  Lastenaufzug
-  Ü-Wagen Stellplatz
-  VIP Parkplatz
-  Tagungsbüros

ICM – First Floor

ICM – Internationales Congress Center München
1. OBERGESCHOSS



-  U-Bahn (Messestadt West)
-  Taxi
-  Garderobe
-  Catering
-  Personenaufzug
-  Lastenaufzug
-  Ü-Wagen Stellplatz
-  VIP Parkplatz
-  Tagungsbüros
-  Erste Hilfe

FOR A SAFER MEETING

» Organisers will follow the latest published requirements and safe gathering protocols established in the location where each event occurs

» Event policies may change if local, state, or federal rules change prior to or during an event

SPECIAL EVENTS

Plenary Sessions

HEAR FROM THE BEST SPEAKERS IN THE INDUSTRY

Plenary sessions feature presentations from a wide range of leaders in the field, with a focus on developing research and visions of the future of biomedical applications.

ECBO Plenary

26 June 2023 • 14:00 - 15:30 | Room 5 ICM Ground Floor

SESSION CHAIRS:

Ronald Sroka, Ludwig-Maximilians-Univ. Munchen (Germany)
Hamid Dehghani, Univ. of Birmingham (United Kingdom)

14.00 - 14.05

Welcome and Opening Remarks

14.05 - 14.45

Fluorescence lifetime imaging of NAD(P)H and FAD to monitor immune cell metabolism and function



Melissa Skala
University of Wisconsin, Madison (USA)

We demonstrate optical redox ratio and fluorescence lifetime imaging microscopy of intrinsic metabolic co-factors NAD(P)H and FAD to quantify metabolic changes in human immune cells from peripheral blood. This approach is attractive because it does not require cell surface labels or transfection, enabling rapid assessment of single cell metabolism. Newly trained neural networks automatically segment single cells for analysis of heterogeneity within and between patients. Overall, this approach is attractive for both basic research and patient management in cancer and immunology.

14.45 - 15.25

Holotomography and artificial intelligence: label-free 3D imaging, classification, and inference of live cells and organoids



YongKeun Park,
KAIST (South Korea)

Holotomography (HT) is a powerful label-free imaging technique that enables high-resolution, three-dimensional quantitative phase imaging (QPI) of live cells and organoids through the use of refractive index (RI) distributions as intrinsic imaging contrast¹⁻³. Similar to X-ray computed tomography, HT acquires multiple two-dimensional holograms of a sample at various illumination angles, from which a 3D RI distribution of the sample is reconstructed by inversely solving the wave equation. By combining label-free and quantitative 3D imaging capabilities of HT with machine learning approaches, there is potential to provide synergistic capabilities in bioimaging and clinical diagnosis. In this presentation, we will discuss the potential benefits and challenges of combining QPI and artificial intelligence (AI) for various aspects of imaging and analysis, including segmentation, classification, and imaging inference³⁻⁶. We will also highlight recent advances in this field and provide insights on future research directions. Overall, the combination of QPI and AI holds great promise for advancing biomedical imaging and diagnostics.

15.25 - 15.30

Closing Remarks



World of Photonics Plenary

27 June 2023 • 14:00 - 15:30 | ICM, Saal 1

Laser-driven inertial confinement fusion, power source of the future?



Tammy Ma
Lawrence Livermore
National Laboratory (USA)



Constantin L. Haefner
Fraunhofer-Institute for
Laser Technology (Germany)

Fusion ignition has been achieved at the National Ignition Facility (NIF) at Lawrence Livermore National Laboratory. This experimental result, decades in the making, is a major scientific breakthrough for laser-driven inertial confinement fusion. This talk will present the experimental results and the many technological innovations that made this achievement possible, including advances in photonics. It will also place this achievement in the broader context of its significance to the scientific community. The implications of this achievement for future research in laser inertial confinement fusion as a sustainable and safe source of clean energy will also be discussed.



See full details and updates
at spie.org/ebo or on the
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Technical Events

Connect with your peers on topics critical to your work and interest area.

ECBO Hot Topics: Light for Life

25 June 2023 • 14:00 - 15:30 | Room 5 ICM Ground Floor

SESSION CHAIRS:

Wang-Yuhl William Oh, Korea Advanced Institute of Science & Technology (Republic of Korea)

Peter T. C. So, Massachusetts Institute of Technology (USA)

Hamid Dehghani, Univ. of Birmingham (United Kingdom)

This session, entitled Light for Life, will feature internationally renowned experts discussing the current status of their fields, emerging developments, and how these technologies are poised to improve the human condition.

14.00 - 14.15

Optoacoustic methods and applications in biophotonics

Jan Laufer, Martin-Luther-Univ. Halle-Wittenberg (Germany)

14.15 - 14.30

Optical coherence elastography

Kirill Larin, Univ. of Houston (USA)

14.30 - 14.45

Unveiling the future of diffuse optics: exploring the latest innovations and applications

Thomas O'Sullivan, Univ. of Notre Dame (USA)

14.45 - 15.00

In vivo dynamic OCT imaging within the fallopian tube: eggs, sperm, and cilia

Irina Larina, Baylor College of Medicine (USA)

15.00 - 15.30

ERC info session: what to expect for the WP24

Laura Lobato Bailon, European Research Council (Belgium)



Posters-Monday and Wednesday

26 June 2023 • 12:00 - 13:30 | ICM, Hall B0

28 June 2023 • 12:00 - 13:30 | ICM, Hall B0

Posters will be featured on Monday and Wednesday. Each day represents a different set of posters.

Poster authors: Please set up posters on the morning of your session before or during the morning coffee break. Plan to stand by your poster to discuss it with session attendees on the day of your session. Remove your poster following the poster session concludes as posters left on the boards will be discarded.

ECBO Closing Session and Awards

29 June 2023 • 14:00 - 15:30 | Room 5 ICM Ground Floor

SESSION CHAIRS:

Wang-Yuhl William Oh, Korea Advanced Institute of Science & Technology (Republic of Korea)

Peter T. C. So, Massachusetts Institute of Technology (USA)

Social and networking events

These live, interactive sessions give you the opportunity to network, learn, and discuss with optics and photonics professionals from around the world.



DiversiWiki

26 June 2023 • 10:00 - 15:00 | Foyer Room 1, 1st floor, ICM
RSVP [here](#) for additional information on the program.

Wikipedia is the fifth most visited site in the world. Still, only 18% of the 1.6 million biographies in the English Wikipedia are about women, and only 16% of those individuals are tagged as scientists. During this event, you will learn how to be a Wikipedia editor – or hone your skills if you already are one – as we edit, update or add articles on Wikipedia. Trainers will be on hand throughout the day to provide guidance and assistance. To help get you started, we will have a list of people and pages we have identified that you can use to edit or create. Join us when you can throughout the day to help:

1. Improve Diversity
2. Translate Pages
3. Simple Wiki

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Welcome Reception

26 June 2023 • 19:00 - 21:30 | Paulaner Bräuhaus

ECBO attendees are invited to relax, socialise, and enjoy light refreshments. Please remember to wear your conference registration badges. Dress is casual.

Lunch and Learn: Beaded Privilege

27 June 2023 • 12:30 - 13:30 | ICM

Held as part of the World of Photonics Diversity, Equity and Inclusion Programme, conference attendees are invited to join this free workshop. Please register on arrival at the SPIE registration desk, as numbers are limited

Bier & Brezel

27 June 2023 • 17:45 - 19:45 | ICM Main Foyer

SPIE invites all attendees to a Bier & Brezel reception. All registered congress attendees are welcome; please remember to wear your conference registration badges. Dress is casual.

TECHNICAL CONFERENCE OVERVIEW — PROGRAMME IS CURRENT AS OF 12 JUNE 2023

See full details and updates at spie.org/ebo or on the [SPIE App](#)

TIME	CONFERENCE 12627 Translational Biophotonics: Diagnostics and Therapeutics Chairs: Zhiwei Huang; Lothar D. Lilge Room 11 ICM Ground Floor	CONFERENCE 12628 Diffuse Optical Spectroscopy and Imaging Chairs: Davide Contini; Yoko Hoshi; Thomas D. O’Sullivan Room 5 ICM Ground Floor	CONFERENCE 12629 Emerging Technologies for Cell and Tissue Characterization Chairs: Seemantini K. Nadkarni; Giuliano Scarcelli Room 22a ICM Second Floor	CONFERENCE 12630 Advances in Microscopic Imaging Chairs: Emmanuel Beauré-paire; Adela Ben-Yakar; YongKeun Park Room 4 “Theodore Maiman” B21 - Halle B2
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SUNDAY 25 JUNE 2023

MORNING	08:15 - 10:00 SESSION 1: In Vivo Diagnostics	08:30 - 10:00 SESSION 1: Clinical and Preclinical Applications of Diffuse Optics I	08:30 - 10:00 SESSION 1: Light Material Interaction	
	10:00 - 10:30 • Coffee Break			
	10:30 - 12:00 SESSION 2: Raman-Based Diagnostics	11:30 - 12:00 SESSION 2: Clinical and Preclinical Applications of Diffuse Optics II	10:30 - 12:30 SESSION 2: Advanced Image Processing and Data Visualisation	
12:00 - 12:30 SESSION 3: Biophotonics in Food Science				
AFTERNOON	12:30 - 14:00 Lunch Break	12:00 - 14:00 Lunch Break	12:30 - 13:50 Lunch Break	
14:00 - 15:30 Room 5 ICM Ground Floor	ECBO HOT TOPICS: LIGHT FOR LIFE The European Conferences on Biomedical Optics will include a special Hot Topics session. This session, entitled Light for Life, will feature internationally renowned experts discussing the current status of their fields, emerging developments, and how these technologies are poised to improve the human condition.			
	15:30 - 16:00 Coffee Break	15:30 - 16:00 Coffee Break	15:30 - 16:00 Coffee Break	
	16:00 - 16:45 SESSION 4: Infectious Disease	16:00 - 17:00 SESSION 3: Cerebral Hemodynamics and Neural Activity I	16:00 - 17:40 SESSION 4: 3D Surfaces and Structural Analysis	

MONDAY 26 JUNE 2023

MORNING	09:00 - 10:00 SESSION 5: Smart Sensor and AI		08:30 - 10:00 SESSION 5: Multimodal Imaging and Spectroscopy	
	10:00 - 10:30 Coffee Break		10:00 - 10:30 Coffee Break	
	10:30 - 12:00 SESSION 6: Photodynamic Therapy I		10:30 - 11:50 SESSION 6: Applications to Art, Archaeology and Architecture	
	12:00 - 12:30 SESSION 7: Brain and Photonics I		11:50 - 12:40 SESSION 7: Poster Slam: Optics for Arts, Architecture, and Archaeology	
AFTERNOON 12:30 - 13:30 ICM, Hall B0	POSTERS-MONDAY — SEE ONLINE FOR FULL LIST OF POSTERS Poster authors: Please set up posters on the morning of your session before or during the morning coffee break. Plan to stand by your poster to discuss it with session attendees during the poster session. Remove your poster following the poster session concludes as posters left on the boards will be discarded.			
	12:30 - 13:30 Lunch Break			

GENERAL INFORMATION

Registration and badge pickup hours

Location: ICM Foyer West

Sunday 25 June	07:30-17:30
Monday 26 June	07:30-17:00
Tuesday 27 June	08:00-17:00
Wednesday 28 June	08:30-17:00
Thursday 29 June	08:30-16:30

ECBO CASHIER

Location: SPIE Registration desk

Open during registration hours

REGISTRATION PAYMENTS

If you are planning to register onsite, your credit card payment will be processed during registration. If you wish to pay with cash, register at the "Need to Register" stations, and you will be directed to the Cashier once you are ready to make the final payment.

If you have already registered and wish to add a course, workshop, or special event, you may do this online by signing in to your SPIE account.

RECEIPT AND CERTIFICATE OF ATTENDANCE

Preregistered attendees who need an SPIE-stamped receipt or attendees who need a Certificate of Attendance may obtain those at the Cashier.

BADGE CORRECTIONS

Badge corrections can be made at the Cashier. Please have your badge removed from the badge holder and marked with your changes before approaching the counter.

Speaker Check-in and Preview Station

Monday-Thursday, 08:00-17:00

All conference rooms have a computer workstation, projector, screen, lapel microphone, and laser pointer. All presenters are requested to come to Speaker Check-In with their memory devices or laptops to confirm their presentation display settings. The local AV supplier Neumann & Müller will assist you.

SPIE will record the audio plus screen content of all presentations; Recordings will be published on the SPIE Digital Library with author permission only.

SPIE Conference App and event information

This useful tool allows you to search and browse the programme, special events, participants, exhibitors, courses, and more. It is free and available for iPhone and Android phones. If you don't already have the app you can download it here: Download the SPIE App: <https://spie.org/spie-conference-app>

Internet access

Location: ICM Foyer areas

Complimentary wireless internet access will be available; connection speed depends on the number of users.

Luggage and coat check

Location: Foyer West, Level-1

Open during registration hours

Luggage, packages, and coat storage are available against charge. Please note opening hours.

CONFERENCE 12631 Optical Methods for Inspection, Characterization, and Imaging of Biomaterials VI Chairs: Chulhong Kim; Jan Laufer; Vasilis Ntziachristos; Roger J. Zemp Room 2 ICM Ground Floor and Room 5 ICM Ground Floor		CONFERENCE 12632 Optical Coherence Imaging Techniques and Imaging in Scattering Media Chairs: Benjamin J. Vakoc; Maciej Wojtkowski; Yoshiaki Yasuno Room 3 ICM Ground Floor, and Room 4 "Theodore Maiman" B21 - Halle B2, and Room 5 ICM Ground Floor	
08:00 - 10:00 SESSION 1: Methods and Technologies for PA Microscopy and Mesoscopy			
10:30 - 12:15 SESSION 2: Models and Algorithms		10:30 - 12:00 SESSION 1: Advances in Eye Imaging: New Methods	
12:15 - 14:00 Lunch/Exhibition Break		12:00 - 14:00 Lunch Break	
15:30 - 16:00 Coffee Break		15:30 - 16:00 Coffee Break	
16:00 - 17:15 SESSION 3: Functional and Molecular OA Imaging		16:00 - 17:15 SESSION 2: 09:00 - 10:00 Endoscopy and Catheter-Based Imaging	
08:30 - 10:00 SESSION 4: Novel Technologies for PA Detection and Imaging I		09:00 - 10:00 SESSION 3: Novel Hardware Approaches for Optical Coherence Imaging	
10:00 - 10:30 Coffee Break		10:00 - 10:30 Coffee Break	
10:30 - 12:00 SESSION 5: Novel Technologies for PA Detection and Imaging II		10:30 - 12:00 SESSION 4: Imaging Technologies for Clinical Applications	
		12:00 - 14:00 Lunch Break	

TECHNICAL CONFERENCE OVERVIEW — PROGRAMME IS CURRENT AS OF 12 JUNE 2023

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	Room 11 ICM Ground Floor	Room 5 ICM Ground Floor	Room 22a ICM Second Floor	Room 4 "Theodore Maiman" B21 - Halle B2
14:00 - 15:30 Room 5 ICM Ground Floor	ECBO PLENARY Fluorescence lifetime imaging of NAD(P)H and FAD to monitor immune cell metabolism and function Melissa Skala, University of Wisconsin, Madison (USA) Holotomography and artificial intelligence: label-free 3D imaging, classification, and inference of live cells and organoids, YongKeun Park, KAIST (South Korea)			
	15:30 - 16:00 Coffee Break	15:30 - 16:00 Coffee Break		
	16:00 - 17:15 SESSION 8: Brain and Photonics II	16:00 - 17:00 SESSION 4: Cerebral Hemodynamics and Neural Activity II		
TUESDAY 27 JUNE 2023				
MORNING	08:15 - 10:00 SESSION 9: Photodynamic Therapy II	08:15 - 10:00 SESSION 5: Cerebral Hemodynamics and Neural Activity III		
	10:00 - 10:30 • Coffee Break			
	10:30 - 11:45 SESSION 10: Photodynamic Therapy II	10:30 - 12:00 SESSION 6: Theory, Algorithms and Modeling I		
	11:45 - 12:30 SESSION 11: Biophotonics in Breast Cancer Detection			
AFTERNOON	12:30 - 14:00 • Lunch Break			
14:00 - 15:30 ICM, Saal 1	WORLD OF PHOTONICS PLENARY Laser-driven inertial confinement fusion, power source of the future? Tammy Ma, Livermore National Lab. (USA); Constantin L. Haefner, Fraunhofer-Institute for Laser Technology (Germany)			
	15:30 - 16:00 • Coffee Break			
	16:00 - 17:00 SESSION 12: Ophthalmology and Photonics	16:00 - 17:15 SESSION 7: Advances in Instrumentation and Technology I		
WEDNESDAY 28 JUNE 2023				
MORNING	08:30 - 10:00 SESSION 13: Optical Coherence and other Techniques	08:30 - 10:00 SESSION 8: Advances in Instrumentation and Technology II	08:30 - 10:00 SESSION 1: Polarization-Based Imaging	
	10:00 - 10:30 • Coffee Break			
	10:30 - 11:45 SESSION 14: Microscopy and other Diagnostic Techniques	10:30 - 11:45 SESSION 9: Advances in Instrumentation and Technology III	10:30 - 12:00 SESSION 2: Novel Methods	
		11:45 - 13:30 • Lunch Break		
		10:30 - 11:45 SESSION 10: Advances in Instrumentation and Technology IV		
		11:45 - 13:30 • Break		
		10:30 - 11:45 SESSION 11: Theory, Algorithms and Modeling II		

GENERAL INFORMATION

CONFERENCE 12631 Optical Methods for Inspection, Characterization, and Imaging of Biomaterials VI Chairs: Chulhong Kim; Jan Laufer; Vasilis Ntziachristos; Roger J. Zemp Room 2 ICM Ground Floor and Room 5 ICM Ground Floor	CONFERENCE 12632 Optical Coherence Imaging Techniques and Imaging in Scattering Media Chairs: Benjamin J. Vakoc; Maciej Wojtkowski; Yoshiaki Yasuno Room 3 ICM Ground Floor, and Room 4 "Theodore Maiman" B21 - Halle B2, and Room 5 ICM Ground Floor
	15:30 - 16:00 Coffee Break
	16:00 - 17:15 SESSION 5: Advances in Eye Imaging: Functional and Animal
	08:30 - 10:00 SESSION 6: Advances in Eye Imaging: Anterior Segment
	10:30 - 12:00 SESSION 7: Advances in Optical Coherence Imaging: Principles
	16:00 - 17:00 SESSION 8: Multimodal Imaging
	08:30 - 10:00 SESSION 9: Advances in Optical Coherence Imaging: New Methods
	10:30 - 12:00 SESSION 10: Cell and Tumor Imaging and Applications in Biology

Business Centre

Location: ICM Foyer

Open during registration hours

Services include copying and printing services at cost.

Riem Arcaden Shopping Centre amenities and services

The nearby Riem Arcaden Shopping centre is situated on the other side of the Messe West underground station and has a multitude of shops and services such as first aid stations, supermarkets, restaurants, banks, post office, charging stations. Core opening hours are 10:00 - 20:00 hrs. <https://www.riemarcaden.de/en>

Lost and Found

Location: SPIE Cashier

Found items will be kept at the SPIE Cashier in the Registration area during the meeting and available only during registration hours. After hours, Lost and Found will be given to the facility's security service.

Covid Testing

The nearest COVID testing facility is at:

Munich Central Station (Hauptbahnhof)

Schützenstrasse 8

D-80335 München

Email: service@coronatest.de

Cost ranges from EU 50 - EU 100 depending on type and urgency of test.

Food and beverage services

COFFEE BREAKS

Location: ICM Foyers

Complimentary coffee will be served twice daily at the ICM at the times indicated in the programme. Check individual listings for exact times and locations.

FOOD AND REFRESHMENTS FOR PURCHASE

The ICM has three permanent food-service operations in the foyer area: the ICM Bistro, ICM Bar, and ICM Café where guests can purchase food.

There is also the Am See restaurant located on the first floor above the registration in Entrance West. In good weather, a beer garden is operated in the courtyard between Halls A and C.

There are also a number of bars and restaurants located in the surrounding hotels as well as the Riem Arcaden shopping centre on the other side of the underground station Messestadt West.

RESTAURANTS

Places to eat and drink in Munich: Close to the Messe, there are restaurants in the Riem Arcaden area.

Furthermore, there are a host of restaurants in the city. Attendees are advised to use a site such as Trip Advisor to narrow down choices in their preferred area.



See full details and updates at spie.org/ebo or on the **SPIE App**

TECHNICAL CONFERENCE OVERVIEW — PROGRAMME IS CURRENT AS OF 12 JUNE 2023

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	CONFERENCE 12627 Translational Biophotonics: Diagnostics and Therapeutics Chairs: Zhiwei Huang; Lothar D. Lilge	CONFERENCE 12628 Diffuse Optical Spectroscopy and Imaging Chairs: Davide Contini; Yoko Hoshi; Thomas D. O'Sullivan	CONFERENCE 12629 Emerging Technologies for Cell and Tissue Characterization Chairs: Seemantini K. Nadkarni; Giuliano Scarcelli	CONFERENCE 12630 Advances in Microscopic Imaging Chairs: Emmanuel Beaurinaire; Adela Ben-Yakar; YongKeun Park
TIME	Room 11 ICM Ground Floor	Room 5 ICM Ground Floor	Room 22a ICM Second Floor	Room 4 "Theodore Maiman" B21 - Halle B2
AFTERNOON 12:30 - 13:30 ICM, Hall B0	POSTERS-WEDNESDAY — SEE ONLINE FOR FULL LIST OF POSTERS Poster authors: Please set up posters on the morning of your session before or during the morning coffee break. Plan to stand by your poster to discuss it with session attendees during the poster session. Remove your poster following poster session concludes as posters left on the boards will be discarded.			
			13:30 - 14:15 SESSION 3: Computational Methods	3:30 - 14:15 SESSION13: Advanced Multiphoton Imaging
			14:15 - 15:30 SESSION 4: Dealing with Highly Scattering Media	14:15 - 15:15 SESSION 2: Coherent Raman Techniques
				15:15 - 15:30 • Coffee Break
				15:30 - 16:45 SESSION 3: Wavefront Control and Adaptive Optics
THURSDAY 29 JUNE 2023				
MORNING	08:30 - 10:00 SESSION 15: Multispectra and Hyperspectral Diagnosis I		08:30 - 10:00 SESSION 5: Cell and Tissue Mechanics	08:45 - 10:00 SESSION 4: Fast Imaging Methods
	10:00 - 10:30 • Coffee Break			
	10:30 - 12:00 SESSION 16: Optical Sensors Translational Biophotonics		10:30 - 12:00 SESSION 6: Interferometry	10:30 - 11:45 SESSION 5: Phase and Polarization Imaging
AFTERNOON	12:00 - 13:45 • Lunch Break			11:45 - 13:30 • Lunch Break
	13:45 - 15:00 SESSION 17: Multispectra and Hyperspectral Diagnosis II			13:30 - 14:15 SESSION 6: Computational Imaging
				14:15 - 15:00 SESSION 7: Technological Advances
	15:00 - 15:30 • Break			
15:30 - 16:30 Room 5 ICM Ground Floor	ECBO CLOSING AND AWARDS Join us for closing remarks and presentation of the best paper awards.			

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CONFERENCE 12631 Optical Methods for Inspection, Characterization, and Imaging of Biomaterials VI Chairs: Chulhong Kim; Jan Laufer; Vasilis Ntziachristos; Roger J. Zemp Room 2 ICM Ground Floor and Room 5 ICM Ground Floor		CONFERENCE 12632 Optical Coherence Imaging Techniques and Imaging in Scattering Media Chairs: Benjamin J. Vakoc; Maciej Wojtkowski; Yoshiaki Yasuno Room 3 ICM Ground Floor, and Room 4 "Theodore Maiman" B21 - Halle B2, and Room 5 ICM Ground Floor	
g the			
		08:15 - 10:00 SESSION 11: Scattering and Wavefront Control	
		10:30 - 12:00 SESSION 12: Advances in Eye Imaging: Angiography	
		12:00 - 13:30 • Lunch Break	
		13:30 - 15:00 SESSION 13: Imaging for Medical Treatment and Therapies	

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TECHNICAL CONFERENCES

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Translational Biophotonics: Diagnostics and Therapeutics		Advances in Microscopic Imaging	
Chair(s): Zhiwei Huang; Lothar D. Lilge		Chair(s): Emmanuel Beaurepaire; Adela Ben-Yakar; YongKeun Park	
25 - 29 June 2023 Room 11 ICM Ground Floor		28 June 2023 Room 4 "Theodore Maiman" B21 - Halle B2	
CONFERENCE 12628	23	CONFERENCE 12631	39
Diffuse Optical Spectroscopy and Imaging		Optoacoustic Methods and Applications in Biophotonics	
Chair(s): Davide Contini; Yoko Hoshi; Thomas D. O'Sullivan		Chair(s): Chulhong Kim; Jan Laufer; Vasilis Ntziachristos;	
25 - 28 June 2023 Room 5 ICM Ground Floor		Roger J. Zemp	
CONFERENCE 12629	32	25 - 26 June 2023 Room 2 ICM Ground Floor and Room 5 ICM Ground Floor	
Emerging Technologies for Cell and Tissue Characterization		CONFERENCE 12632	42
Chair(s): Seemantini K. Nadkarni; Giuliano Scarcelli		Optical Coherence Imaging Techniques and Imaging in Scattering Media	
28 - 29 June 2023 Room 22a ICM Second Floor		Chair(s): Benjamin J. Vakoc; Maciej Wojtkowski; Yoshiaki Yasuno	
		25 - 29 June 2023 Room 3 ICM Ground Floor and Room 4 "Theodore Maiman" B21 - Halle B2 and Room 5 ICM Ground Floor	

CONFERENCE 12627

Translational Biophotonics: Diagnostics and Therapeutics

25 - 29 June 2023 | Room 11 ICM Ground Floorz

Conference Chairs: **Zhiwei Huang**, National Univ. of Singapore (Singapore); **Lothar D. Lilge**, Univ. Health Network (Canada)

Programme Committee: **Daniel S. Elson**, Imperial College London (United Kingdom); **Summer L. Gibbs**, Oregon Health & Science Univ. (United States); **Keisuke Goda**, The Univ. of Tokyo (Japan); **George S. D. Gordon**, The Univ. of Nottingham (United Kingdom); **Frédéric Leblond**, Polytechnique Montréal (Canada); **Igor Meglinski**, Univ. of Oulu (Finland); **Mark Niedre**, Northeastern Univ. (United States); **Daniel Razansky**, Univ. Zürich (Switzerland); **Michael G. Tanner**, Heriot-Watt Univ. (United Kingdom); **Paola Taroni**, Politecnico di Milano (Italy); **Gooitzen M. van Dam**, Univ. Medical Ctr. Groningen (Netherlands); **Yijing Xie**, King's College London (United Kingdom); **Ping Xue**, Tsinghua Univ. (China); **Shuhua Yue**, Beihang Univ. (China); **Haishan Zeng**, BC Cancer Research Ctr. (Canada)

SUNDAY 25 JUNE

SESSION 1: IN VIVO DIAGNOSTICS

25 June 2023 • 08:15 - 10:00 | Room 11 ICM Ground Floor
Session Chair: Lothar D. Lilge, Univ. Health Network (Canada)

12627-1 • 08:15 - 08:30 | Room 11 ICM Ground Floor

In vivo Raman spectroscopic study of suspected melanoma skin lesions and healthy skin

Author(s): Di Wu, Anatoly Fedorov Kuk, Leibniz Univ. Hannover (Germany); Steffen Emmert, Universitätsmedizin Rostock (Germany); Bernhard Roth, Leibniz Univ. Hannover (Germany)

12627-2 • 08:30 - 08:45 | Room 11 ICM Ground Floor

In-depth sensing of alterations in bone matrix and mineral density using inverse spatially offset Raman spectroscopy

Author(s): Hui Ma, Sanathana Konugolu Venkata Sekar, Tyndall National Institute (Ireland); Carrie O'Flynn, Patrick Henn, Univ. College Cork (Ireland); Stefan Andersson-Engels, Rekha Gautam, Tyndall National Institute (Ireland)

12627-3 • 08:45 - 09:00 | Room 11 ICM Ground Floor

Training deep learning algorithms with multispectral dataset of skin lesions for the improvement of skin cancer diagnosis

Author(s): Laura Rey-Barroso, Univ. Politècnica de Catalunya (Spain); Meritxell Vilaseca Ricart, Francisco Javier Burgos Fernández, Santiago Royo Royo, Centre for Sensors, Instruments and Systems Development, Technical University of Catalonia (Spain); Giovanni Pellacani, Università degli Studi di Modena e Reggio Emilia | UNIMO · Department of Dermatology (Italy); Sussana Puig, Josep Malvehy, Dermatology Service of the Clinic Hospital of Barcelona (Spain); Ilze Lihacova, Institute of Atomic Physics and Spectroscopy, University of Latvia (Latvia); Andrey Bondarenko, Faculty of Computer Science and Information Technology, Riga Technical University (Latvia)

12627-4 • 09:00 - 09:15 | Room 11 ICM Ground Floor

Multi-wavelength optoelectronic sensing system for real time and any time physiological monitoring and assessment

Author(s): Yasmin Elshar, Carelight Ltd. UK (United Kingdom); Sijung Hu, Loughborough Univ. (United Kingdom); Jiajin Hou, Carelight Ltd. UK (United Kingdom); Xiaoyu Zheng, Loughborough Univ. (United Kingdom); Vincent Dwyer, Carelight Ltd. UK (United Kingdom); Laura Barrett, Loughborough Univ. (United Kingdom)

12627-6 • 09:15 - 09:30 | Room 11 ICM Ground Floor

In-vitro screening of immune response with FTIR spectroscopy in a miRNA murine knock out model

Author(s): Aidan D. Meade, Mohd Rifqi Rafsanjani, Abigail Keogan, Ryan Muddiman, Technological Univ. Dublin (Ireland); Remsha Afzal, Claire McCoy, Royal College of Surgeons in Ireland (Ireland)

12627-115 • 09:30 - 09:45 | Room 11 ICM Ground Floor

Detection and identification by vibrational spectroscopy of myocardial biochemical alterations in heart failure with preserved ejection fraction

Author(s): Leonardo Pioppi, Univ. degli Studi di Perugia (Italy); Reza Parvan, Institute for Experimental Medical Research, Oslo Univ. Hospital (Norway), Univ. of Oslo (Norway); Alan Samrend, Gustavo Justo da Silva, Institute for Experimental Medical Research, Oslo Univ. Hospital (Norway), Univ. of Oslo (Norway); Marco Paolantoni, Univ. degli Studi di Perugia (Italy); Alessandro Cataliotti, Institute for Experimental Medical Research, Oslo Univ. Hospital (Norway), Univ. of Oslo (Norway); Paola Sassi, Univ. degli Studi di Perugia (Italy)

12627-71 • 09:45 - 10:00 | Room 11 ICM Ground Floor

Data fusion strategies for classification of auto-immune dysregulation with vibrational spectroscopy

Author(s): Aidan D. Meade, Mohd Rifqi Rafsanjani, Abigail Keogan, Ryan Muddiman, Technological Univ. Dublin (Ireland); Remsha Afzal, Claire McCoy, Royal College of Surgeons in Ireland (Ireland)

Coffee Break 10:00 - 10:30

SESSION 2: RAMAN-BASED DIAGNOSTICS

25 June 2023 • 10:30 - 12:00 | Room 11 ICM Ground Floor

Session Chairs: Zhiwei Huang, National Univ. of Singapore (Singapore), Shuhua Yue, Beihang Univ. (China), Paola Taroni, Politecnico di Milano (Italy)

12627-8 • 10:30 - 10:45 | Room 11 ICM Ground Floor

Biophotonics diagnostics of oral cancer using Raman spectroscopy

Author(s): Siddra Maryam, M. Daniyal Ghauri, Tyndall National Institute (Ireland); Edward Fahy, Cork Univ. Dental School & Hospital (Ireland); Sanathana Konugolu Venkata Sekar, Marcelo Saito Nogueira, Huihui Lu, Alida Russo, Tyndall National Institute (Ireland); Linda Feeley, Cork Univ. Hospital (Ireland); Richeal Ni Riordain, Cork Univ. Dental School & Hospital (Ireland); Patrick Sheahan, South Infirmary Victoria Univ. Hospital (Ireland); Ray Burke, Stefan Andersson-Engels, Kiang Wei Kho, Rekha Gautam, Tyndall National Institute (Ireland)

CONFERENCE 12627

12627-9 • 10:45 - 11:00 | Room 11 ICM Ground Floor

Fluorescence and Raman imaging of amyloid plaques reveals carotenoid accumulations

Author(s): Benjamin Lochocki, Advanced Research Ctr. for Nanolithography (Netherlands), Vrije Univ. Amsterdam (Netherlands); Loes Ettema, Vrije Univ. Amsterdam (Netherlands); Jeroen J. M. Hoozemans, Amsterdam UMC (Netherlands); Johannes F. de Boer, Freek Ariese, Vrije Univ. Amsterdam (Netherlands)

12627-10 • 11:00 - 11:15 | Room 11 ICM Ground Floor

Serum Raman spectroscopy in experimental carcinogenesis: explorations on role of tumour load

Author(s): Priyanka A. Jadhav, Aishwarya Naidu, Arti Hole, Arvind Ingle, Rukmini Govekar, C. Murali Krishna, Advanced Ctr. for Treatment, Research & Education in Cancer (India)

12627-11 • 11:15 - 11:30 | Room 11 ICM Ground Floor

NIR Raman spectroscopy setup compatible with fluorescence-guided surgery

Author(s): Hamed Abbasi, Lorraine Lauwerends, Tom C. Bakker Schut, Erasmus MC (Netherlands); Inês Santos, Univ. de Coimbra (Portugal); Peter J. Caspers, Jose A. U. Hardillo, Erasmus MC (Netherlands); Senada Koljenovic, Univ. Ziekenhuis Antwerpen (Belgium); Alexander L. Vahrmeijer, Leiden Univ. Medical Ctr. (Netherlands); Robert J. Baatenburg de Jong, Stijn Keereweer, Gerwin J. Puppels, Erasmus MC (Netherlands)

12627-12 • 11:30 - 11:45 | Room 11 ICM Ground Floor

Rapid fiberoptic Raman spectroscopy enables in vivo nasopharyngeal carcinoma grading at endoscopy

Author(s): Chi Shu, Wei Zheng, National Univ. of Singapore (Singapore); Kan Lin, National Univ. of Singapore (Singapore); Chwee Ming Lim, Singapore General Hospital (Singapore); Zhiwei Huang, National Univ. of Singapore (Singapore)

12627-7 • 11:45 - 12:00 | Room 11 ICM Ground Floor

CANCELED: Stimulated Raman scattering microscopy and Raman spectroscopy reveal the relationship between MGMT methylation and lipid accumulation in glioblastoma

Author(s): Nana Wang, Beihang Univ. (China); Jiejun Wang, Nan Ji, Beijing Tiantan Hospital (China); Shuhua Yue, Beihang Univ. (China)

SESSION 3: BIOPHOTONICS IN FOOD SCIENCE

25 June 2023 • 12:00 - 12:30 | Room 11 ICM Ground Floor

Session Chair: Zhiwei Huang,
National Univ. of Singapore (Singapore)

12627-13 • 12:00 - 12:15 | Room 11 ICM Ground Floor

Influence of vitamins and food on the fluorescence spectrum of human urine

Author(s): Praveen Chalissery, Christian Homann, Maximilian Eisel, Herbert Stepp, Adrian Rühm, Ronald Sroka, Laser-Forschungslabor, Laser- und Immunologie-Forschungs-Einrichtungen Zentrum, Ludwig-Maximilians-Univ. München (Germany)

12627-14 • 12:15 - 12:30 | Room 11 ICM Ground Floor

Fluorescence based detection of gaseous food spoilage indicators

Author(s): Alexander Altmann, Institute for Biomedical Optics, Univ. zu Lübeck (Germany); Mohammad Khodaygani, Martin Leucker, Institute for Software Engineering and Programming Languages, Univ. zu Lübeck (Germany); Christian Schell, Por-Lab, Porphyrin-Laboratories GmbH (Germany); Ramtin Rahmzadeh, Institute for Biomedical Optics, Univ. zu Lübeck (Germany)

Lunch Break 12:30 - 14:00

ECBO HOT TOPICS: LIGHT FOR LIFE

25 June 2023 • 14:00 - 15:30 | Room 5 ICM Ground Floor

The European Conferences on Biomedical Optics will include a special Hot Topics session. This session, entitled Light for Life, will feature internationally renowned experts discussing the current status of their fields, emerging developments, and how these technologies are poised to improve the human condition.

Coffee Break 15:30 - 16:00

SESSION 4: INFECTIOUS DISEASE

25 June 2023 • 16:00 - 16:45 | Room 11 ICM Ground Floor

Session Chair: Zhiwei Huang, National Univ. of Singapore (Singapore)

12627-15 • 16:00 - 16:15 | Room 11 ICM Ground Floor

Suppression of airborne viral epidemic spread by UVC light barriers

Author(s): Giovanni Agati, Istituto di Fisica Applicata "Nello Carrara" (Italy); Franco Fusi, Giacomo Insero, Univ. degli Studi di Firenze (Italy); Barbara Patrizi, Istituto Nazionale di Ottica (Italy); Angela Pirri, Istituto di Fisica Applicata "Nello Carrara" (Italy); Mauro Pistello, Univ. di Pisa (Italy); Simona Pollini, Ilaria Baccani, Sara Cuffari, Univ. degli Studi di Firenze (Italy), Azienda Ospedaliera Univ. Careggi (Italy); Paola Quaranta, Univ. di Pisa (Italy); Giovanni Romano, Univ. degli Studi di Firenze (Italy); Francesca Rossi, Giovanni Scirè, Istituto di Fisica Applicata "Nello Carrara" (Italy); Guido Toci, Matteo Vannini, Istituto Nazionale di Ottica (Italy)

12627-16 • 16:15 - 16:30 | Room 11 ICM Ground Floor

Are we asking the right question? Rethinking machine learning for label-free bacteria diagnostics

Author(s): Dushan N. Wadduwage, Harvard Univ. (United States); Yasith Jayawardana, Old Dominion Univ. (United States); Ramith Hettiarachchi, Harvard Univ. (United States); Nima Wickramasinghe, Univ. of Moratuwa (Sri Lanka)

12627-17 • 16:30 - 16:45 | Room 11 ICM Ground Floor

The effect of surface modifications for the aim of decreasing bacterial adhesion on titanium implants

Author(s): Armin Rahmani, Bahcesehir Univ. (Turkey); Ayşe Sena Sarp, Ayşe Işık, Murat Gülsoy, Ahmet Turan Talas, Bogaziçi Univ. (Turkey)

MONDAY 26 JUNE

SESSION 5: SMART SENSOR AND AI

26 June 2023 • 09:00 - 10:00 | Room 11 ICM Ground Floor

Session Chair: Chi Shu, Optical Bioimaging Lab. (Singapore)

12627-20 • 09:00 - 09:15 | Room 11 ICM Ground Floor

Towards a fast and accurate simulation framework for 3D spherical source localization in the near field of a coded aperture gamma camera

Author(s): Tobias Meißner, Saverio Pietrantonio, Mannheim Institute for Intelligent Systems in Medicine (Germany); Werner Nahm, Karlsruher Institut für Technologie (Germany); Jürgen W. Hesser, Mannheim Institute for Intelligent Systems in Medicine (Germany)

12627-22 • 09:15 - 09:30 | Room 11 ICM Ground Floor

Evaluation of convolutional neural networks as an alternative for the non-linear fitting for multiple exposure speckle imaging of blood flow

Author(s): Marc Chammas, Univ. Paris-Saclay (France); Chao-Yueh Yu, Chang Gung Univ. (Taiwan); Hiram Gurden, Univ. Paris Cité (France); Frédéric Pain, Lab. Charles Fabry (France); Hsin-Hon Lin, Chang Gung Univ. (Taiwan)

12627-24 • 09:30 - 09:45 | Room 11 ICM Ground Floor

Assessing the internal composition of the intervertebral disc with photoacoustic imaging: a numerical study

Author(s): Antoine Capart, Institut Fresnel (France); Roman Allais, Institut de Recherche sur les Phénomènes Hors Equilibre (France); Julien Wojak, Institut Fresnel (France); Olivier Boiron, Institut de Recherche sur les Phénomènes Hors Equilibre (France); Anabela Da Silva, Institut Fresnel (France)

12627-114 • 09:45 - 10:00 | Room 11 ICM Ground Floor

New models of innovation through collaboration: the translation journey of novel concepts in corneal refractive surgery

Author(s): Maron Dolling, ; Ying Wang, Wellman Ctr. for Photomedicine (United States); Badri Parshard, Wellman Ctr for Photomedicine - MGH (United States); Xiaolei Li, Massachusetts General Hospital (United States); Christian M. Wertheimer, Stefan A. Kassumeh, Wellman Ctr. for Photomedicine (United States); Mark Bischoff, Universitätsklinikum Ulm (Germany); Siegfried Priglinger, ; Conor L. Evans, R. Rox Anderson, Wellman Ctr. for Photomedicine (United States); Reginald Birngruber, Univ. zu Lübeck (Germany); Gabriela Apiou-Sbirlea, Wellman Ctr. for Photomedicine (United States)

Coffee Break 10:00 - 10:30

SESSION 6: PHOTODYNAMIC THERAPY I

26 June 2023 • 10:30 - 12:00 | Room 11 ICM Ground Floor
Session Chair: Lothar D. Lilge, Univ. Health Network (Canada)

12627-25 • 10:30 - 10:45 | Room 11 ICM Ground Floor

Investigation of UCNPs-mediated photodynamic therapy in live cancer cells with stimulated Raman scattering and transient absorption microscopy

Author(s): Le Xin, Zhiwei Huang, National Univ. of Singapore (Singapore)

12627-26 • 10:45 - 11:00 | Room 11 ICM Ground Floor

Studying the effect of photosensitizer heterogeneity and its spatial extent on personalized iPDT treatment planning solution

Author(s): Tina Saeidi, Univ. of Toronto, Princess Margaret Cancer Ctr. (Canada); Shuran Wang, Univ. of Toronto (Canada); Hectoralex Contreras, Univ. of Toronto, Princess Margaret Cancer Ctr. (Canada); Vaughn Betz, Univ. of Toronto (Canada); Lothar Lilge, Univ. of Toronto, Princess Margaret Cancer Ctr. (Canada)

12627-27 • 11:00 - 11:15 | Room 11 ICM Ground Floor

Anticancer effects of photodynamic therapy against colorectal multicellular tumour spheroids

Author(s): Nokuphila Simelane, Laser Research Ctr., Univ. of Johannesburg (South Africa); Heidi Abrahamse, Laser Research Ctr., University of Johannesburg (South Africa)

12627-28 • 11:15 - 11:30 | Room 11 ICM Ground Floor

Endoscopic devices to aid in cancer detection and inform photodynamic therapy

Author(s): Huang-Chiao Huang, Univ. of Maryland, College Park (United States)

12627-29 • 11:30 - 11:45 | Room 11 ICM Ground Floor

The phototoxic effect of zinc phthalocyanine on melanoma cells grown as a monolayer and three-dimensional multicellular spheroids

Author(s): Nkune Williams Nkune, Heidi Abrahamse, Laser Research Ctr., Univ. of Johannesburg (South Africa)

12627-30 • 11:45 - 12:00 | Room 11 ICM Ground Floor

Cell death mechanisms induced by green synthesized silver nanoparticles in combination with pheophorbide a-mediated photodynamic therapy against resistant MCF-7 cells overexpressed with p-glycoprotein

Author(s): Alexander Chota, Blassan P. George, Heidi Abrahamse, Laser Research Ctr., Univ. of Johannesburg (South Africa)

SESSION 7: BRAIN AND PHOTONICS I

26 June 2023 • 12:00 - 12:30 | Room 11 ICM Ground Floor
Session Chair: Michael G. Tanner, Heriot-Watt Univ. (United Kingdom)

12627-31 • 12:00 - 12:15 | Room 11 ICM Ground Floor

Microscope integrated realtime high density 4D MHz-OCT in neurosurgery: Depth and tissue resolving visual contrast channels and the challenge of fused presentation

Author(s): Wolfgang Draxinger, Paul Strenge, Univ. zu Lübeck (Germany); Maximilian Rixius, Medizinisches Laserzentrum Lübeck GmbH (Germany)

12627-32 • 12:15 - 12:30 | Room 11 ICM Ground Floor

SERS detection of neurotransmitters through gold nanoislands-decorated tapered optical fibers

Author(s): Di Zheng, Filippo Pisano, Liam Collard, Antonio Balena, Marco Pisanello, Barbara Spagnolo, Linda Piscopo, Cristian Ciraci, Massimo De Vittorio, Ferruccio Pisanello, Istituto Italiano di Tecnologia (Italy)

POSTER SESSION AND LUNCH BREAK

26 June 2023 • 12:30 - 13:30 | ICM, Hall BO

Posters will be featured on Monday.

Poster authors: Please set up posters on the morning of your Session before or during the morning coffee break. Plan to stand by your poster to discuss it with Session attendees during the poster session. Remove your poster following the poster Session concludes as posters left on the boards will be discarded.

12627-18 • 12:30 - 13:30 | ICM, Hall BO

Changes in blood flow oscillations associated with COVID-19 as measured by wearable laser Doppler flowmetry

Author(s): Elena V. Zharkikh, Yulia I. Loktionova, Orel State Univ. named after I.S. Turgenev (Russian Federation); Andrey A. Fedorovich, National Medical Research Ctr. for Therapy and Preventive Medicine (Russian Federation), Orel State Univ. named after I.S. Turgenev (Russian Federation); Alexander Y. Gorshkov, National Medical Research Ctr. for Therapy and Preventive Medicine (Russian Federation); Andrey V. Dunaev, Orel State Univ. named after I.S. Turgenev (Russian Federation); Viktor V. Dremin, Aston Univ. (United Kingdom)

12627-23 • 12:30 - 13:30 | ICM, Hall BO

Infantile hemangiomas evaluation based on hyperspectral imaging

Author(s): Valery Shupletsov, Ilya Gorunov, Orel State Univ. named after I.S. Turgenev (Russian Federation); Ma im Sergienko, Ivan Zhurilo, Kruglaya Scientific and Clinical Multidisciplinary Ctr. for Medical Care for Mothers and Children (Russian Federation); Elena Potapova, Orel State Univ. named after I.S. Turgenev (Russian Federation); Viktor V. Dremin, Aston Univ. (United Kingdom), Orel State Univ. named after I.S. Turgenev (Russian Federation)

CONFERENCE 12627

12627-64 • 12:30 - 13:30 | ICM, Hall B0

Differentiation of collagen-related skin diseases through polarimetry and fluorescence

Author(s): Tsanislava Genova, Institute of Electronics, BAS (Bulgaria); Deyan Ivanov, Lab. de Physique des Interfaces et des Couches Minces, CNRS, Ecole Polytechnique, Institut Polytechnique de Paris (France); Lidia Zaharieva, Victoria Mircheva, Institute of Electronics, BAS (Bulgaria); Tatiana Novikova, Razvigor Ossikovski, Lab. de Physique des Interfaces et des Couches Minces, CNRS, Ecole Polytechnique, Institut Polytechnique de Paris (France); Petranka Troyanova, Univ. Hospital "Tsaritsa Yoanna-ISUL" (Bulgaria)

12627-70 • 12:30 - 13:30 | ICM, Hall B0

Analysis of bacterial DNA by surface enhanced Raman spectroscopy

Author(s): Sathi Das, Indian Institute of Technology Delhi (India); Vrishty Kundu, Amity Institute of Renewable and Alternative Energy, Amity Univ. (India); Arijit Pal, Indian Institute of Technology Delhi (India); Kanchan Saxena, Amity Institute of Renewable and Alternative Energy, Amity Univ. (India); Vivekanandan Perumal, Dalip Singh Mehta, Indian Institute of Technology Delhi (India)

12627-87 • 12:30 - 13:30 | ICM, Hall B0

Personalized plasmonic photothermal therapy with a multimodal toolbox

Author(s): Clara Vilches, Pablo Fernández-Estebarena, Jordi Morales-Dalmau, Miguel Mireles, ICFO - Institut de Ciències Fotòniques (Spain); Mar Martínez-Lozano, Institut Català d'Oncologia (Spain); Institut d'Investigació Biomèdica de Bellvitge (Spain); Ignacio de Miguel, ICFO - Institut de Ciències Fotòniques (Spain); Oriol Casanovas, Institut Català d'Oncologia (Spain); Romain Quidant, ETH Zurich (Switzerland), ICREA - Institució Catalana de Recerca i Estudis Avançats (Spain); Turgut Durduran, ICFO - Institut de Ciències Fotòniques (Spain), ICREA - Institució Catalana de Recerca i Estudis Avançats (Spain)

12627-89 • 12:30 - 13:30 | ICM, Hall B0

Tissue indices for tissue properties extraction in head and neck tumors

Author(s): Črt Keber, Univ. of Ljubljana (Slovenia); Aljoša Krt, Univ. Medical Ctr. Ljubljana (Slovenia); Jošt Stergar, Jožef Stefan Institute (Slovenia), Univ. of Ljubljana (Slovenia); Urban Simončič, Univ. of Ljubljana (Slovenia), Jožef Stefan Institute (Slovenia); Aleš Grošelj, Univ. Medical Ctr. Ljubljana (Slovenia); Boštjan Markelc, Gregor Serša, Institute of Oncology Ljubljana (Slovenia); Matija Milanič, Univ. of Ljubljana (Slovenia)

12627-90 • 12:30 - 13:30 | ICM, Hall B0

An image-guided confocal Raman microspectroscopy probe for skin molecular analysis in vivo

Author(s): Léna Waszczuk, Lab. Charles Fabry (France), DAMAE Medical (France); Jonas Ogien, DAMAE Medical (France); Arnaud Dubois, Lab. Charles Fabry (France), DAMAE Medical (France)

12627-91 • 12:30 - 13:30 | ICM, Hall B0

Determination of the physiological state of cells by differences in FAD fluorescence intensity

Author(s): Angelina Dolgikh, Ekaterina O. Bryanskaya, Andrey Y. Vinokurov, Andrey V. Dunaev, Orel State Univ. named after I.S. Turgenev (Russian Federation); Viktor V. Dremine, Aston Univ. (United Kingdom)

12627-92 • 12:30 - 13:30 | ICM, Hall B0

Silicone loss during histological preparation of breast implant tissue from capsular contracture, visualised by stimulated Raman scattering microscopy

Author(s): Robert W. Schmidt, Vrije Univ. Amsterdam (Netherlands); Sander Woutersen, Univ. of Amsterdam (Netherlands); Freek Ariese, Vrije Univ. Amsterdam (Netherlands)

12627-93 • 12:30 - 13:30 | ICM, Hall B0

Plasmonic functional assay platform for measuring single cell growth through refractive index sensing

Author(s): Meryem Beyza Avci, Arif E. Cetin, Izmir Biomedicine and Genome Ctr. (Turkey); Seda Nur Topkaya, Izmir Katip Celebi Univ. (Turkey); Ozden Yalcin-Ozuyusal, Izmir Institute of Technology (Turkey); Ali Khademhosseini, Terasaki Institute for Biomedical Innovation (United States)

12627-94 • 12:30 - 13:30 | ICM, Hall B0

Low-cost and portable plasmonic biosensor for label-free detection of viruses in resource-limited settings

Author(s): Fatma Kurul, Arif E. Cetin, Izmir Biomedicine and Genome Ctr. (Turkey); Seda Nur Topkaya, Izmir Katip Celebi Univ. (Turkey); Zeynep A. Kocer, Izmir Biomedicine and Genome Ctr. (Turkey); Ziya A. Yazici, TOBB ETÜ (Turkey)

12627-95 • 12:30 - 13:30 | ICM, Hall B0

Numerical analysis of laser tissue vaporization by spatial light irradiation for control of photo-thermal interaction

Author(s): Yusuke Watanabe, Yu Shimojo, Takahiro Nishimura, Osaka Univ. (Japan); Kunio Awazu, Osaka Univ. (Japan), Global Ctr. for Medical Engineering and Informatics (Japan)

12627-96 • 12:30 - 13:30 | ICM, Hall B0

Characterization of lipid components in human cells by means of ATR FT-IR spectroscopy

Author(s): Bahar Faramarzi, Marianna Portaccio, Univ. degli Studi della Campania Luigi Vanvitelli (Italy); Ines Delfino, Univ. degli Studi della Toscana (Italy); Maria Lepore, Univ. degli Studi della Campania Luigi Vanvitelli (Italy)

12627-97 • 12:30 - 13:30 | ICM, Hall B0

Definition of parameters for Monte Carlo simulation of red reflex exams

Author(s): Jane Walter, Thomas Looi, The Hospital for Sick Children (SickKids) (Canada); Lothar Lilge, Univ. Health Network (Canada); Ashwin Mallipatna, The Hospital for Sick Children (SickKids) (Canada)

12627-98 • 12:30 - 13:30 | ICM, Hall B0

Optofluidic lab-on-chip for nucleic acid detection via G-quadruplex-based DNA-nanomachine

Author(s): Pavel Filatov, Daria A. Gorbenko, Alyona Palekhova, Daler R. Dadadzhyanov, Ilia Gorbenko, ITMO Univ. (Russian Federation); Dmitry Kolpashchikov, Univ. of Central Florida (United States)

12627-99 • 12:30 - 13:30 | ICM, Hall B0

Comparison of nonlinear properties of monomer and dimer of bacterial phytochrome from Deinococcus radiodurans

Author(s): Diana I. Galiakhmetova, Aleksandr S. Koviariov, Viktor V. Dremine, Aston Univ. (United Kingdom); Andrei A. Gorodetsky, Univ. of Birmingham (United Kingdom); Marios Maimaris, Imperial College London (United Kingdom); Dmitrii Stoliarov, Aston Univ. (United Kingdom); Mikhail Baloban, Vladislav V. Verkhusha, Albert Einstein College of Medicine (United States); Sergei G. Sokolovskii, Edik U. Rafailov, Aston Univ. (United Kingdom)

12627-100 • 12:30 - 13:30 | ICM, Hall B0

Modified optical fiber sensors for intravital monitoring

Author(s): Malhar Nagar, Politecnico di Torino (Italy); Marco Lai, Philips Research (Netherlands); Davide Janner, Politecnico di Torino (Italy)

12627-101 • 12:30 - 13:30 | ICM, Hall B0

Multispectral imaging for assessment of Fabry disease

Author(s): Alexey Lihachev, Emilija V. Plorina, Kristine Saulus, Univ. of Latvia (Latvia); Ainars Rudzitis, Pauls Stradiņš Clinical Univ. Hospital (Latvia); Norbert Kiss, Semmelweis Univ. (Hungary); Dmitrijs Bliznuks, Riga Technical Univ. (Latvia); Ilze Lihacova, Univ. of Latvia (Latvia)

12627-102 • 12:30 - 13:30 | ICM, Hall B0

Real-time polarization imaging for rapid detection of the location and orientation of nerve fiber bundles in white matter

Author(s): Alexander Anton, Werner Nahm, Karlsruher Institut für Technologie (Germany)

12627-103 • 12:30 - 13:30 | ICM, Hall B0

Raman spectroscopy of urine: an exploratory study on stratification of oral cancers and tobacco habitués

Author(s): Panchali Saha, Advanced Ctr. for Treatment, Research & Education in Cancer (India), Homi Bhabha National Institute (India); Arti Hole, Advanced Ctr. for Treatment, Research & Education in Cancer (India); Hemanth Noothalapati, Ajinkya Anjkar, Shimane Univ. (Japan); Vikram Gota, Pankaj Chaturvedi, C. Murali Krishna, Advanced Ctr. for Treatment, Research & Education in Cancer (India)

12627-104 • 12:30 - 13:30 | ICM, Hall B0

Nanoparticle-enabled laser tissue soldering

Author(s): Oscar Cipolato, Inge K. Herrmann, ETH Zurich (Switzerland), EMPA (Switzerland)

12627-106 • 12:30 - 13:30 | ICM, Hall B0

Refractive outcomes after femtosecond laser assisted cataract surgery

Author(s): Zane Jansone-Langina, Univ. of Latvia (Latvia); Andrei Solomatin, Maksims Solomatins, Igors Solomatins, The Dr. Solomatin Eye Ctr. (Latvia)

12627-107 • 12:30 - 13:30 | ICM, Hall B0

Investigation of relationship between parameters of blood microcirculation and gas analysis during hypo- and hyperventilation breathing yoga exercises

Author(s): Yulia I. Loktionova, Orel State Univ. named after I.S. Turgenev (Russian Federation); Artem Frolov, St. Petersburg Institute of Oriental Methods of Rehabilitation (Russian Federation); Elena V. Zharkikh, Orel State Univ. named after I.S. Turgenev (Russian Federation); Victor Sidorov, SPE LAZMA Ltd. (Russian Federation); Arina Tankanag, Institute of Biophysics of the Cell of the Russian Academy of Sciences (Russian Federation); Andrey V. Dunaev, Orel State Univ. named after I.S. Turgenev (Russian Federation); Viktor V. Dremin, Aston Univ. (United Kingdom)

12627-108 • 12:30 - 13:30 | ICM, Hall B0

Wide-field optical properties estimation of whole limbs in muscle dystrophy murine models via SFDI: a case study

Author(s): Verónica Mieites, José Alberto Gutiérrez-Gutiérrez, Arturo Pardo, Univ. de Cantabria (Spain); Xavier Suárez-Calvet, Hospital de la Santa Creu i Sant Pau (Spain); José Miguel López-Higuera, Univ. de Cantabria (Spain); Jordi Díaz-Manera, John Walton Muscular Dystrophy Research Ctr (United Kingdom); Olga M. Conde, Univ. de Cantabria (Spain)

12627-109 • 12:30 - 13:30 | ICM, Hall B0

An investigation on the Amide I band in vibrational spectra of gingival crevicular fluid during orthodontic treatments

Author(s): Carlo Camerlingo, Consiglio Nazionale delle Ricerche (Italy); Marianna Portaccio, Fabrizia d'Apuzzo, Ludovica Nucci, Letizia Perillo, Univ. degli Studi della Campania Luigi Vanvitelli (Italy); Ines Delfino, Univ. degli Studi della Tuscia (Italy); Maria Lepore, Univ. degli Studi della Campania Luigi Vanvitelli (Italy)

12627-110 • 12:30 - 13:30 | ICM, Hall B0

Towards a flexible polarimetric camera-on-tip miniature endoscope for 3x3 Mueller matrix measurements of biological tissue

Author(s): Lorenzo Niemitz, Simon T. Sorensen, Yineng Wang, Walter Messina, Ray Burke, Stefan Andersson-Engels, Tyndall National Institute (Ireland)

12627-111 • 12:30 - 13:30 | ICM, Hall B0

Study of lipid involvement in breast cancer by using vibrational imaging on tissue samples from normal and obese patients

Author(s): Pooja Mol Girish, HORIBA FRANCE SAS (France), Univ. de Reims Champagne-Ardenne (France); Sébastien Legendre, HORIBA FRANCE SAS (France); Catherine Muller, Lab. de Chimie de Coordination (France); Charlotte Vaysse, Institut Univ. du Cancer de Toulouse Oncopole (France); Emilie Buache, Nicolas Goffin, Olivier Piot, Univ. de Reims Champagne-Ardenne (France)

12627-118 • 12:30 - 13:30 | ICM, Hall B0

Photo Activation of Multi-Inhibitor Liposomes Creates a Response-rich Tumor Microenvironment, Remediate Desmoplasia and Doubles Overall Survival in Pancreatic Ductal Adenocarcinoma

Author(s): Shazia Bano, Wellman Ctr. for Photomedicine, Massachusetts General Hospital (United States), Harvard Medical School (United States)

12627-119 • 12:30 - 13:30 | ICM, Hall B0

A portable surface-enhanced Raman spectroscopy platform for biofluid analysis

Author(s): Sergio A. Quintero Moreno, Univ. Politécnica de Madrid (Spain), INL - International Iberian Nanotechnology Lab. (Portugal); Maria Relvas, INL - International Iberian Nanotechnology Lab. (Portugal); Alexandra Teixeira, INL - International Iberian Nanotechnology Lab. (Portugal), Life and Health Sciences Research Institute (Portugal), ICVS/3B's - PT Government Associate Lab. (Portugal); Sara Abalde Cela, Lorena Diéguez, INL - International Iberian Nanotechnology Lab. (Portugal)

12627-120 • 12:30 - 13:30 | ICM, Hall B0

Wide-field Raman spectral band imaging of tumor lesions in veterinary medicine

Author(s): Mindaugas Tamošiūnas, Univ. of Latvia (Latvia); Roberts Kadikis, Institute of Electronics and Computer Science (Latvia); Mikus Melderis, Univ. of Latvia (Latvia); Romans Maliks, Diana Duplevska, Institute of Electronics and Computer Science (Latvia); Daira Viškere, Univ. of Latvia (Latvia); Ilze Matisē-van Houtana, Blaž Cugmas, Institute of Atomic Physics and Spectroscopy (Latvia)

12627-121 • 12:30 - 13:30 | ICM, Hall B0

Quantitative morphological analysis of the T-tubular network of ventricular cardiomyocytes using novel image processing tools

Author(s): Konstantina Georgoula, Max-Delbrück-Ctr. für Molekulare Medizin in der Helmholtz-Gemeinschaft (Germany); Daniel Sage, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Paolo Annibale, Univ. of St. Andrews (United Kingdom), Max-Delbrück-Ctr. für Molekulare Medizin Berlin-Buch (Germany)

ECBO PLENARY

26 June 2023 • 14:00 - 15:30 | Room 5 ICM Ground Floor

This plenary Session features presentations by Melissa Skala and YongKeun Park.

Coffee Break 15:30 - 16:00

CONFERENCE 12627

SESSION 8: BRAIN AND PHOTONICS II

26 June 2023 • 16:00 - 17:15 | Room 11 ICM Ground Floor

Session Chair: Michael G. Tanner,
Heriot-Watt Univ. (United Kingdom)

12627-33 • 16:00 - 16:15 | Room 11 ICM Ground Floor

Autofluorescence based in vivo endoscopy for brain tumour diagnosis

Author(s): Jakob Dremel, Laboratory of Measurement and Sensor System Technique, TU Dresden (Germany), EKfZ Else-Kröner-Fresenius-Ctr., TU Dresden (Germany); Elias Scharf, Lab. of Measurement and Sensor System Technique, TU Dresden (Germany); Tijue Wang, Lab. of Measurement and Sensor System Technique, TU Dresden (Germany), Else-Kröner-Fresenius-Ctr., TU Dresden (Germany); Sven Richter, Universitätsklinikum Carl Gustav Carus Dresden (Germany), Else-Kröner-Fresenius-Ctr., TU Dresden (Germany); Ortrud Uckermann, Witold Polanski, Ilker Eyüpoglu, Universitätsklinikum Carl Gustav Carus Dresden (Germany), EKfZ Else-Kröner-Fresenius-Ctr., TU Dresden (Germany); Jürgen Czarske, Biomedical Computational Laser Systems, TU Dresden (Germany), EKfZ Else-Kröner-Fresenius-Ctr., TU Dresden (Germany); Robert Kuschmierz, TU Dresden (Germany), Biomedical Computational Laser Systems, TU Dresden (Germany), EKfZ Else-Kröner-Fresenius-Ctr., TU Dresden (Germany)

12627-34 • 16:15 - 16:30 | Room 11 ICM Ground Floor

Clinical evaluation of thulium laser/ultrasonic aspirator combination instrument during neurosurgical tumour resection

Author(s): Dirk Theisen-Kunde, Medizinisches Laserzentrum Lübeck GmbH (Germany); Jessica Kren, Universitätsklinikum Schleswig-Holstein (Germany); Alessa Hutfilz, Medizinisches Laserzentrum Lübeck GmbH (Germany); Matteo M. Bonsanto, Universitätsklinikum Schleswig-Holstein (Germany); Ralf Brinkmann, Medizinisches Laserzentrum Lübeck GmbH (Germany)

12627-35 • 16:30 - 16:45 | Room 11 ICM Ground Floor

Non-invasive optical neuromonitoring guidance of cardiopulmonary resuscitation

Author(s): Tiffany S. Ko, Ryan W. Morgan, Julia C. Slovis, Kumaran Senthil, Danielle Aronowitz, Rodrigo M. Forti, Nicolina R. Ranieri, Gerard Laurent, Bo Yun, Sarah Morton, Yuxi Lin, Katie Weeks, Nicholas J. Widmann, Brian R. White, Jennifer M. Lynch, Constantine D. Mavroudis, The Children's Hospital of Philadelphia (United States); Arjun G. Yodh, Univ. of Pennsylvania (United States); Daniel J. Licht, Todd J. Kilbaugh, Wesley B. Baker, The Children's Hospital of Philadelphia (United States)

12627-36 • 16:45 - 17:00 | Room 11 ICM Ground Floor

Wavelet analysis of laser speckle contrast reveals new feature space for transcranial assessment of cerebral blood flow

Author(s): Nadezhda Golubova, Elena Potapova, Evgeniya Seryogina, Orel State Univ. named after I.S. Turgenev (Russian Federation); Viktor V. Dremin, Aston Univ. (United Kingdom), Orel State Univ. named after I.S. Turgenev (Russian Federation)

12627-57 • 17:00 - 17:15 | Room 11 ICM Ground Floor

Spatially resolved plasmonic sensing at the tip of a multimode fiber

Author(s): Liam Collard, Filippo Pisano, Di Zheng, Antonio Balena, Istituto Italiano di Tecnologia (Italy); Linda Piscopo, Istituto Italiano di Tecnologia (Italy), Univ. del Salento (Italy); Muhammad Fayyaz Kashif, Marco Pisanello, Cristian Ciraci, Istituto Italiano di Tecnologia (Italy); Massimo De Vittorio, Istituto Italiano di Tecnologia (Italy), Univ. del Salento (Italy); Ferruccio Pisanello, Istituto Italiano di Tecnologia (Italy)

TUESDAY 27 JUNE

SESSION 9: PHOTODYNAMIC THERAPY II

27 June 2023 • 08:15 - 10:00 | Room 11 ICM Ground Floor

Session Chair: Lothar D. Lilge, Univ. Health Network (Canada)

12627-113 • 08:15 - 08:30 | Room 11 ICM Ground Floor

CANCELED: Antibiotic and photodynamic dual priming to overcome chemoresistance in Invitro heterotypic spheroids of pancreatic ductal adenocarcinoma

Author(s): Shazia Bano, Wellman Ctr. for Photomedicine (United States)

12627-37 • 08:30 - 08:45 | Room 11 ICM Ground Floor

Blue LED light affects mitochondria and modulates reactive oxygen species: preliminary in vitro results

Author(s): Giada Magni, Francesca Tatini, Istituto di Fisica Applicata "Nello Carrara" (Italy); Stefano Bacci, Univ. degli Studi di Firenze (Italy), Dept of Biology, University of Florence (Italy); Francesca Rossi, Istituto di Fisica Applicata "Nello Carrara" (Italy)

12627-38 • 08:45 - 09:00 | Room 11 ICM Ground Floor

Development of a protocol for whole-lung in vivo lung perfusion assisted photodynamic therapy for the treatment of lung metastases

Author(s): Khaled Ramadan, Tina Saeidi, Marcelo Cypel, Lothar Lilge, Univ. of Toronto (Canada)

12627-39 • 09:00 - 09:15 | Room 11 ICM Ground Floor

Analyses of protoporphyrin IX fluorescence photoswitching for prolonging the photodynamic diagnosis time of deeply located tumours

Author(s): Sochi Ogbonna, Osaka Univ. (Japan); William Y. York, National Institute on Aging (United States); Takahiro Nishimura, Hisanao Hazama, Kunio Awazu, Osaka Univ. (Japan)

12627-40 • 09:15 - 09:30 | Room 11 ICM Ground Floor

Detection of laser-induced singlet oxygen: current approaches and challenges

Author(s): Irina Novikova, Andrey Y. Vinokurov, Lyubov Eratova, Orel State Univ. named after I.S. Turgenev (Russian Federation); Edik U. Rafailov, Aston Univ. (United Kingdom); Viktor V. Dremin, Aston Univ. (United Kingdom), Orel State Univ. named after I.S. Turgenev (Russian Federation)

12627-41 • 09:30 - 09:45 | Room 11 ICM Ground Floor

Comparative characterization of SiCl₂Pc and its cyclodextrin complexes as photosensitizers in photodynamic therapy

Author(s): Eleni Georgiopoulou, Eleni Kavetsou, Eleni Alexandratou, Anastasia Detsi, Konstantinos Politopoulos, National Technical Univ. of Athens (Greece)

12627-42 • 09:45 - 10:00 | Room 11 ICM Ground Floor

Research of changes in the optical properties of cancer after PDT by refractometry and Raman spectroscopy

Author(s): Irina Y. Yanina, Ekaterina N. Lazareva, Anna A. Doronkina, Roman A. Anisimov, Maria V. Lomova, Saratov State Univ. (Russian Federation); Nikita A. Navolokin, Saratov State Medical Univ. (Russian Federation); Vyacheslav I. Kochubey, Saratov State Univ. (Russian Federation)

Coffee Break 10:00 - 10:30

SESSION 10: BRAIN AND PHOTONICS III

27 June 2023 • 10:30 - 11:45 | Room 11 ICM Ground Floor
Session Chair: Lothar D. Lilge, Univ. Health Network (Canada)

12627-43 • 10:30 - 10:45 | Room 11 ICM Ground Floor

Microvascular cerebral blood patterns reveal both the absolute values and “waves” of intracranial pressure

Author(s): Susanna Tagliabue, Veronika Parfentyeva, Jonas B. Fischer, ICFO - Institut de Ciències Fotòniques (Spain); Federica Maruccia, Katiuska Rosas, Vall d'Hebron Institut de Recerca (Spain); Ignacio Delgado Alvarez, Anna Rey-Perez, Vall d'Hebron Barcelona Hospital (Spain); Gemma Piella, Univ. Pompeu Fabra (Spain); Marcelino Bâguena, Paola Cano, Vall d'Hebron Barcelona Hospital (Spain); Carolina Fajardo Vega, ICFO - Institut de Ciències Fotòniques (Spain); Maria Antonia Poca, Vall d'Hebron Institut de Recerca (Spain); Turgut Durduran, Aykut Eken, ICFO - Institut de Ciències Fotòniques (Spain)

12627-45 • 10:45 - 11:00 | Room 11 ICM Ground Floor

Optical assessment of the response in cerebral metabolism to mean arterial pressure during the transition onto cardiopulmonary bypass

Author(s): Marianne Suwalski, Western Univ. (Canada); Daniel Milej, Lawson Health Research Institute (Canada); Ajay Rajaram, Boston Children's Hospital, Harvard Medical School (United States); Mamadou Diop, Western Univ. (Canada), Lawson Health Research Institute (Canada); John Murkin, London Health Sciences Ctr. (Canada); Jason Chui, London Health Sciences Ctr. (Canada), Western Univ. (Canada); Keith St. Lawrence, Western Univ. (Canada), Lawson Health Research Institute (Canada)

12627-47 • 11:00 - 11:15 | Room 11 ICM Ground Floor

Near-IR laser for transcranial treatment of glioblastoma in rats: dose efficiency and mechanisms

Author(s): Sergei G. Sokolovski, Aston Univ. (United Kingdom); Oxana V. Semyachkina-Glushkovskaya, Saratov State Univ. (Russian Federation); Edik U. Rafailov, Aston Univ. (United Kingdom)

12627-44 • 11:15 - 11:30 | Room 11 ICM Ground Floor

Separable spectral unmixing based on the learning of periodic absorbance changes: application to functional brain mapping using RGB imaging

Author(s): Charly Caredda, Jérémy E. Cohen, Laurent Mahieu-William, Raphaël Sablong, Michaël Sdika, CREATIS (France); Jacques Guyotat, Hospices Civils de Lyon (France); Bruno Montcel, CREATIS (France)

12627-46 • 11:30 - 11:45 | Room 11 ICM Ground Floor

Perspectives of laser speckle contrast imaging in neurosurgery

Author(s): Anton N. Konovalov, Burdenko Neurosurgery Institute (Russian Federation)

SESSION 11: BIOPHOTONICS IN BREAST CANCER DETECTION

27 June 2023 • 11:45 - 12:30 | Room 11 ICM Ground Floor
Session Chairs: Paola Taroni, Politecnico di Milano (Italy), Lothar D. Lilge, Univ. Health Network (Canada)

12627-48 • 11:45 - 12:00 | Room 11 ICM Ground Floor

Investigation of multispectral imaging classification routines for intraoperative margin assessment in breast conserving surgery

Author(s): Maria Leiloglou, Dhurka Shanthakumar, Ioannis Gkouzionis, Vadzim Chalau, Daniel R. Leff, Daniel S. Elson, Imperial College London (United Kingdom)

12627-49 • 12:00 - 12:15 | Room 11 ICM Ground Floor

Fibered-needle for label-free fluorescence analysis of breast masses: some hints and limitations

Author(s): René Farcy, Lab. Aimé Cotton (France); Christophe Tourasse, Ramsay Santé Hôpital Privé Jean Mermoz (France); Corinne Lapalce-Builhé, Gustave Roussy (France); Charlotte Benoit, Nodea Medical (France); Jean François Denier, Technipath Limonest (France); Marie Pierre Fontaine Aupart, Institut des Sciences Moléculaires d'Orsay (France)

12627-50 • 12:15 - 12:30 | Room 11 ICM Ground Floor

A classifier for dynamic thermal imaging

Author(s): Emirhan Tosun, Ömer Faruk Dinç, Berfin Arli, Serhat Tozburun, Izmir Biomedicine and Genome Ctr. (Turkey), Izmir International Biomedicine and Genome Institute, Dokuz Eylül Univ. (Turkey)

Lunch Break 12:30 - 14:00

WORLD OF PHOTONICS PLENARY

27 June 2023 • 14:00 - 15:30 |
Room 1 ICM Ground Floor-1st Floor

This plenary Session features a presentation by Tammy Ma and Constantin Haefner on laser-driven inertial confinement fusion.

Coffee Break 15:30 - 16:00

SESSION 12: OPHTHALMOLOGY AND PHOTONICS

27 June 2023 • 16:00 - 17:00 | Room 11 ICM Ground Floor
Session Chair: Lothar D. Lilge, Univ. Health Network (Canada)

12627-51 • 16:00 - 16:15 | Room 11 ICM Ground Floor

FreezEye tracker: precise and fast apparatus for eye movements measurements for medical diagnostics and cognitive research

Author(s): Szymon Tamborski, Michal Meina, Maciej M. Bartuzel, Nicolaus Copernicus Univ. (Poland); Krzysztof Dalasiński, Maciej Nowakowski, Inoko Vision sp. z o.o. (Poland); Krystian Wróbel, Joanna Gorgol, Nicolaus Copernicus Univ. (Poland); Anna Szkulmowska, Inoko Vision sp. z o.o. (Poland); Maciej Szkulmowski, Nicolaus Copernicus Univ. (Poland)

12627-52 • 16:15 - 16:30 | Room 11 ICM Ground Floor

Histologic findings following retinal pigment epithelium removal using 8 microsecond laser pulses

Author(s): Christian Burri, Berner Fachhochschule (Switzerland), Univ. of Bern (Switzerland); Boris Stanzel, Klaus Heimann Eye Research Institute, Augenklinik Sulzbach, Knappschaftsklinikum Saar GmbH (Germany); Anelia Schweri-Olac, Inselspital (Switzerland), Univ. of Bern (Switzerland); Sami Al-Nawaiseh, Universitätsklinikum Münster (Germany); Philip Wakili, Gerardo Farese, Klaus Heimann Eye Research Institute, Augenklinik Sulzbach, Knappschaftsklinikum Saar GmbH (Germany); Simon Salzmann, Berner Fachhochschule (Switzerland); Boris Považay, Berner Fachhochschule Technik und Informatik (Switzerland); Christoph Meier, Berner Fachhochschule (Switzerland); Martin Frenz, Univ. Bern (Switzerland); André Schulz, Klaus Heimann Eye Research Institute, Augenklinik Sulzbach, Knappschaftsklinikum Saar GmbH (Germany); Volker Enzmann, Inselspital (Switzerland), Univ. of Bern (Switzerland)

12627-53 • 16:30 - 16:45 | Room 11 ICM Ground Floor

Color vision sensitivity screening before and one week after cataract removal surgery

Author(s): Zane Jansone-Langina, Maris Ozolins, Univ. of Latvia (Latvia)

CONFERENCE 12627

12627-54 • 16:45 - 17:00 | Room 11 ICM Ground Floor

Comparison of acoustic transients with fringe washouts in OCT M-scans after RPE microsecond laser irradiation

Author(s): Christian Burri, Berner Fachhochschule (Switzerland), Univ. Bern (Switzerland); Mylène Amstutz, Leonie Hoffmann, Simon Salzmann, Christoph Meier, Berner Fachhochschule (Switzerland); Boris Považay, Berner Fachhochschule Technik und Informatik (Switzerland); Martin Frenz, Univ. Bern (Switzerland)

WEDNESDAY 28 JUNE 2023

SESSION 13: OPTICAL COHERENCE AND OTHER TECHNIQUES

28 June 2023 • 08:30 - 10:00 | Room 11 ICM Ground Floor
Session Chair: Lothar D. Lilge, Univ. Health Network (Canada)

12627-55 • 08:30 - 08:45 | Room 11 ICM Ground Floor

Advances of LC-OCT technology for diagnostic support in dermatology

Author(s): Flora Latriglia, DAMAE Medical (France), Lab. Charles Fabry, Univ. Paris-Saclay, CNRS (France); Jonas Ogie, Sébastien Fischman, Mélanie Pedrazzani, DAMAE Medical (France); Arnaud Dubois, DAMAE Medical (France), Lab. Charles Fabry, Univ. Paris-Saclay, CNRS (France)

12627-56 • 08:45 - 09:00 | Room 11 ICM Ground Floor

Towards a novel bi-functional bioresorbable micro-structured optical fiber for theranostic applications

Author(s): Jawad Talekkara Pandayil, LINKS Foundation (Italy), Politecnico di Torino (Italy); Seyed Hossein Mussavi Rizi, Sharon Russo, Politecnico di Torino (Italy); Nadia Giovanna Boetti, LINKS Foundation (Italy); Diego Pugliese, Davide Janner, Politecnico di Torino (Italy)

12627-58 • 09:00 - 09:15 | Room 11 ICM Ground Floor

Investigations on changes in MRI relaxation times compared to optical properties of porcine tissue and tissue phantoms

Author(s): Maximilian Aumiller, Asmerom Arazar, Laser-Forschungslabor, Laser- und Immunologie-Forschungseinrichtungen Zentrum, Ludwig-Maximilians-Univ. München (Germany); Olaf Dietrich, Ludwig-Maximilians-Univ. München (Germany); Ronald Sroka, Adrian Rühm, Laser-Forschungslabor, Laser- und Immunologie-Forschungseinrichtungen Zentrum, Ludwig-Maximilians-Univ. München (Germany)

12627-59 • 09:15 - 09:30 | Room 11 ICM Ground Floor

Comparison between optical coherence tomography and phase shifting profilometry for surface estimation

Author(s): José Alberto Gutiérrez-Gutiérrez, Verónica Mieites, Arturo Pardo, José Miguel López Higuera, Olga M. Conde, Univ. de Cantabria (Spain)

12627-60 • 09:30 - 09:45 | Room 11 ICM Ground Floor

Ex-vivo OCT on human bladder tissue after radical cystectomy with a newly designed MEMS based forward looking OCT probe

Author(s): Marinka Remmelink, Jorg R. Oddens, Jakko A. Nieuwenhuijzen, Patrick van der Voorn, Ton G. van Leeuwen, Theo M. de Reijke, Daniel M. de Bruin, Paul R. Bloemen, Amsterdam UMC (Netherlands)

12627-85 • 09:45 - 10:00 | Room 11 ICM Ground Floor

Optical coherence tomography angiography for chronic venous insufficiency and venous leg ulcer

Author(s): Giulia Rotunno, Politecnico di Torino (Italy); Julia Deinsberger, Medizinische Univ. Wien (Austria); Kristen Meiburger, Politecnico di Torino (Italy); Lisa Krainz, Lukasz Bugyi, Richard Haindl, Rainer Leitgeb, Benedikt Weber, Wolfgang Drexler, Mengyang Liu, Medizinische Univ. Wien (Austria)

Coffee Break 10:00 - 10:30

SESSION 14: MICROSCOPY AND OTHER DIAGNOSTIC TECHNIQUES

28 June 2023 • 10:30 - 11:45 | Room 11 ICM Ground Floor
Session Chairs: Zhiwei Huang, National Univ. of Singapore (Singapore), Shuhua Yue, Beihang Univ. (China)

12627-62 • 10:30 - 10:45 | Room 11 ICM Ground Floor

Multimodal vibrational and multiphoton nonlinear optical microscopy as a non-invasive tool to prevent human tumor recurrence

Author(s): Arianna Bresci, Francesco Manetti, Politecnico di Milano (Italy); Silvia Ghislanzoni, Fondazione IRCCS Istituto Nazionale dei Tumori (Italy); Federico Vernuccio, Salvatore Sorrentino, Chiara Ceconello, Politecnico di Milano (Italy); Renzo Vanna, CNR-Istituto di Fotonica e Nanotecnologie (Italy); Italia Bongarzone, Fondazione IRCCS Istituto Nazionale dei Tumori (Italy); Giulio Cerullo, Dario Polli, Politecnico di Milano (Italy), CNR-Istituto di Fotonica e Nanotecnologie (Italy)

12627-63 • 10:45 - 11:00 | Room 11 ICM Ground Floor

Fluorescence lifetime imaging microscopy (FLIM) of human middle ear tissue samples

Author(s): Paula Enzian, Birgit Lange, Medizinisches Laserzentrum Lübeck GmbH (Germany); Zuzana Penxová, Anke Leichte, Universitätsklinikum Schleswig-Holstein (Germany); Yoko Miura, Univ. zu Lübeck (Germany); Karl-Ludwig Bruchhage, Universitätsklinikum Schleswig-Holstein (Germany); Ralf Brinkmann, Medizinisches Laserzentrum Lübeck GmbH (Germany), Institut für Biomedizinische Optik, Univ. zu Lübeck (Germany)

12627-65 • 11:00 - 11:15 | Room 11 ICM Ground Floor

Investigation on the influence of the skin tone on hyperspectral imaging data interpretation for free flap surgery

Author(s): Ester Pachyn, Maximilian Aumiller, Laser-Forschungslabor, Laser- und Immunologie-Forschungseinrichtungen Zentrum, Ludwig-Maximilians-Univ. München (Germany); Alexander Buchner, Klinikum der Univ. München (Germany); Christian Freymüller, Matthäus Linek, Laser-Forschungslabor, Laser- und Immunologie-Forschungseinrichtungen Zentrum, Ludwig-Maximilians-Univ. München (Germany); Veronika Volgger, Klinikum der Univ. München (Germany); Ronald Sroka, Laser-Forschungslabor, Laser- und Immunologie-Forschungseinrichtungen Zentrum, Ludwig-Maximilians-Univ. München (Germany)

12627-66 • 11:15 - 11:30 | Room 11 ICM Ground Floor

Optical feedback for real-time monitoring of focal laser ablation

Author(s): Paul R. Bloemen, Mitra Almasian, Theo M. de Reijke, Ton G. van Leeuwen, Daniel M. de Bruin, Amsterdam UMC (Netherlands)

12627-67 • 11:30 - 11:45 | Room 11 ICM Ground Floor

An endoscopic approach to limit the depth of laser-induced thermal injury

Author(s): Merve Türker Burhan, Serhat Tozburun, Izmir Biomedicine and Genome Ctr. (Turkey), Izmir International Biomedicine and Genome Institute, Dokuz Eylül Univ. (Turkey)

12627-117 • 11:45 - 12:00 | Room 11 ICM Ground Floor

Using Brillouin and Raman microspectroscopy to diagnose musculoskeletal disorders: from characterizing healthy phenotypes to detecting human osteoarthritic lesions

Author(s): Martina Alunni Cardinali, Univ. degli Studi di Perugia (Italy); Marco Govoni, Dante Dallari, Leonardo Vivarelli, Reconstructive Orthopaedic Surgery and Innovative Techniques - Musculoskeletal Tissue Bank, IRCCS (Italy); Matilde Tschon, Silvia Brogini, Rizzoli Orthopaedic Institute (Italy); Maurizio Mattarelli, Silvia Caponi, Assunta Morresi, Paola Sassi, Daniele Fioretto, Univ. degli Studi di Perugia (Italy)

THURSDAY 29 JUNE 2023

SESSION 15: MULTISPECTRA AND HYPERSPECTRAL DIAGNOSIS I

29 June 2023 • 08:45 - 10:00 | Room 11 ICM Ground Floor
Session Chair: Lothar D. Lilge, Univ. Health Network (Canada)

12627-112 • 08:45 - 09:00 | Room 11 ICM Ground Floor

Label-free multimodal imaging of diabetic kidney disease

Author(s): Lingyan Shi, Anthony A. Fung, Univ. of California, San Diego (United States)

12627-69 • 09:00 - 09:15 | Room 11 ICM Ground Floor

Simultaneous fluorescence microscopy and spectroscopy of oral squamous cell carcinoma, oral dysplasia, and normal tissue

Author(s): Pramila Thapa, Sunil Bhatt, Priyanka Mann, Indian Institute of Technology Delhi (India); Vivek Nayyar, Deepika Mishra, All India Institute of Medical Sciences, New Delhi (India); Dalip Singh Mehta, Indian Institute of Technology Delhi (India)

12627-72 • 09:15 - 09:30 | Room 11 ICM Ground Floor

Time resolved photon counting CMOS SPAD arrays for clinical imaging and spectroscopy

Author(s): Michael G. Tanner, Heriot-Watt Univ. (United Kingdom)

12627-73 • 09:30 - 09:45 | Room 11 ICM Ground Floor

Anthropomorphic hybrid tissue-mimicking phantoms for validation of photodynamic therapy dosimetry

Author(s): M. Daniyal Ghauri, Tyndall National Institute (Ireland), Univ. College Cork (Ireland); Stefan Šušnjar, SpectraCure AB (Sweden), Lund Univ. (Sweden); Claudia Nunzia Guadagno, BioPixS (Ireland); Somdatta Bhattacharya, Tyndall National Institute (Ireland); Johannes Swartling, SpectraCure AB (Sweden); Rekha Gautam, Tyndall National Institute (Ireland); Sanathana Konugolu Venkata Sekar, Tyndall National Institute (Ireland), BioPixS (Ireland); Stefan Andersson-Engels, Tyndall National Institute (Ireland), BioPixS (Ireland), Univ. College Cork (Ireland)

12627-68 • 09:45 - 10:00 | Room 11 ICM Ground Floor

Non-contact monitoring of human respiration using infrared thermography

Author(s): Lalat Indu Giri, National Institute of Technology, Goa (India)

Coffee Break 10:00 - 10:30

SESSION 16: OPTICAL SENSORS TRANSLATIONAL BIOPHOTONICS

29 June 2023 • 10:30 - 12:00 | Room 11 ICM Ground Floor
Session Chair: Lothar D. Lilge, Univ. Health Network (Canada)

12627-74 • 10:30 - 10:45 | Room 11 ICM Ground Floor

Real-time temperature-control for cw retinal laser therapy in a clinical study

Author(s): Dirk Theisen-Kunde, Medizinisches Laserzentrum Lübeck GmbH (Germany); Claus von der Burchard, Christian-Albrechts-Univ. zu Kiel (Germany); Veit Danicke, Medizinisches Laserzentrum Lübeck GmbH (Germany); Jan Erik Fleger, Christian-Albrechts-Univ. zu Kiel (Germany); Christopher Kren, Medizinisches Laserzentrum Lübeck GmbH (Germany); Sebastian Wittmeier, Curefab Technologies GmbH (Germany); Johann Röider, Christian-Albrechts-Univ. zu Kiel (Germany); Ralf Brinkmann, Medizinisches Laserzentrum Lübeck GmbH (Germany)

12627-75 • 10:45 - 11:00 | Room 11 ICM Ground Floor

Control of the viability of three-dimensional cultured skins by photobiomodulation

Author(s): Yasuyuki Tsunoi, Hiromi Miyazaki, Satoko Kawauchi, Daizoh Saitoh, National Defense Medical College (Japan); Mitsuru Akashi, Osaka Univ. (Japan); Shunichi Sato, National Defense Medical College (Japan)

12627-76 • 11:00 - 11:15 | Room 11 ICM Ground Floor

N-acetyl-β-D-glucosaminidase activity assay for subclinical mastitis detection using three different nanoscale sensing approaches

Author(s): Giorgi Shtenberg, Agricultural Research Organization, Volcani Institute (Israel); Narsingh R. Nirala, Agricultural Research Organization, Volcani Institute (Israel)

12627-77 • 11:15 - 11:30 | Room 11 ICM Ground Floor

Smart standalone histopathology with polarized light relying on adaptive metamaterials

Author(s): Christopher A. Dirdal, Paul C. V. Thrane, SINTEF (Norway); Chao Meng, Univ. of Southern Denmark (Denmark); Alexander V. Bykov, Univ. of Oulu (Finland); Sergey I. Bozhevolnyi, Univ. of Southern Denmark (Denmark); Igor V. Meglinski, Univ. of Oulu (Finland)

12627-78 • 11:30 - 11:45 | Room 11 ICM Ground Floor

Design and concept of a miniaturized optical probe for guidance of bone cement removal in orthopedic surgery

Author(s): Celina L. Li, Simon T. Sørensen, Carl J. Fisher, Katarzyna Komolibus, Konstantin Grygoryev, Huihui Lu, Ray Burke, Stefan Andersson-Engels, Tyndall National Institute (Ireland)

12627-79 • 11:45 - 12:00 | Room 11 ICM Ground Floor

Optimization study of parameters for laser-induced thermal treatment of the esophageal mucosal layer

Author(s): Merve Türker Burhan, Izmir Biomedicine and Genome Ctr. (Turkey), Izmir International Biomedicine and Genome Institute, Dokuz Eylül Univ. (Turkey); Nevin Ersoy, Dokuz Eylül Üniv. (Turkey); Husnu Alper Bagriyanik, Izmir Biomedicine and Genome Ctr. (Turkey), Dokuz Eylül Üniv. (Turkey); Serhat Tozburun, Izmir Biomedicine and Genome Ctr. (Turkey), Izmir International Biomedicine and Genome Institute, Dokuz Eylül Üniv. (Turkey)

Lunch Break 12:00 - 13:45

CONFERENCE 12627

SESSION 17: MULTISPECTRA AND HYPERSPECTRAL DIAGNOSIS II

29 June 2023 • 13:45 - 15:00 | Room 11 ICM Ground Floor
Session Chair: Lothar D. Lilge, Univ. Health Network (Canada)

12627-80 • 13:45 - 14:00 | Room 11 ICM Ground Floor

A laparoscopic multispectral system to visualize tissue oxygenation

Author(s): Annekatrin Pfahl, Süleyman T. Polat, Hannes Köhler, ICCAS Innovation Ctr. Computer Assisted Surgery (Germany); Ines Gockel, Universitätsklinikum Leipzig (Germany); Claire Chalopin, ICCAS Innovation Ctr. Computer Assisted Surgery (Germany)

12627-82 • 14:00 - 14:15 | Room 11 ICM Ground Floor

Numerical analysis of LED based handheld transvaginal multispectral imaging probe for pre-cervical cancer diagnosis

Author(s): Arpitha Anantharaju, Jawaharlal Institute of Postgraduate Medical Education and Research (India); Alisha Rahaman, Savitribai Phule Pune Univ. (India); Uttam M. Pal, Indian Institute of Information Technology, Design and Manufacturing, Kanchepuram (India)

12627-83 • 14:15 - 14:30 | Room 11 ICM Ground Floor

The development and characterisation of solid tissue-mimicking phantoms based on quantum dots for multispectral fluorescence imaging system

Author(s): Yucheng Bian, Hélio M. Gil, Matthew Elliot, Graeme J. Stasiuk, Jonathan Shapey, Tom Vercauteren, Yijing Xie, King's College London (United Kingdom)

12627-84 • 14:30 - 14:45 | Room 11 ICM Ground Floor

Development of a novel, compact, and transportable multispectral imaging device for wound healing monitoring

Author(s): Marta Marradi, LENS - Lab. Europeo di Spettroscopie Non-Lineari (Italy), Univ. degli Studi di Firenze (Italy); Luca Giannoni, LENS - Lab Europeo di Spettroscopie Non-Lineari (Italy), Univ. degli Studi di Firenze (Italy); Marco Marchetti, Domenico Alfieri, Light4Tech Firenze S.r.l. (Italy); Lorenzo Targetti, Stefano Gasperini, EmoLED S.r.l. (Italy); Francesco Saverio Pavone, LENS - Lab. Europeo di Spettroscopie Non-Lineari (Italy), Univ. degli Studi di Firenze (Italy), Consiglio Nazionale delle Ricerche (Italy)

12627-116 • 14:45 - 15:00 | Room 11 ICM Ground Floor

Vibrational spectroscopy techniques for the study of cardiorenal syndrome in rat models

Author(s): Sara Stefani, Martina Alunni Cardinali, Univ. degli Studi di Perugia (Italy); Alessandro Cataliotti, Gustavo Jose Justo da Silva, Institute for Experimental Medical Research, Oslo Univ. Hospital (Norway), Univ. of Oslo (Norway); Reza Parvan, Institute for Experimental Medical Research, Oslo Univ. Hospital (Norway); Marco Paolantoni, Paola Sassi, Univ. degli Studi di Perugia (Italy)

Break 15:00 - 15:30

SESSION PS: ECBO CLOSING AND AWARDS

29 June 2023 • 15:30 - 16:30 | Room 5 ICM Ground Floor

Join us for closing remarks and presentation of the best paper awards.

Diffuse Optical Spectroscopy and Imaging

25 - 28 June 2023 | Room 5 ICM Ground Floor

Conference Chairs: **Davide Contini**, Politecnico di Milano (Italy); **Yoko Hoshi**, Hamamatsu Univ. School of Medicine (Japan); **Thomas D. O'Sullivan**, Univ. of Notre Dame (United States)

Programme Committee: **Caterina Amendola**, Politecnico di Milano (Italy); **Wesley B. Baker**, The Children's Hospital of Philadelphia (United States); **Nienke Bosschaart**, Univ. of Twente (Netherlands); **Regine Choe**, Univ. of Rochester (United States); **Jean-Marc Dinten**, MINATEC (France); **Adam T. Eggebrecht**, Washington Univ. School of Medicine in St. Louis (United States); **Dirk Grosebeck**, Physikalisch-Technische Bundesanstalt (Germany); **Shudong Jiang**, Thayer School of Engineering at Dartmouth (United States); **Jana M. Kainerstorfer**, Carnegie Mellon Univ. (United States); **Hiroshi Kawaguchi**, National Institute of Advanced Industrial Science and Technology (Japan); **Adam Liebert**, Nalecz Institute of Biocybernetics and Biomedical Engineering PAN (Poland); **Shinpei Okawa**, Hamamatsu Univ. School of Medicine (Japan); **Felix Scholkmann**, Univ. Bern (Switzerland); **Ilias Tachtsidis**, Univ. College London (United Kingdom); **Marta Zanoletti**, ICFO - Institut de Ciències Fotòniques (Spain)

SUNDAY 25 JUNE

SESSION 1: CLINICAL AND PRECLINICAL APPLICATIONS OF DIFFUSE OPTICS I

25 June 2023 • 08:30 - 10:00 | Room 5 ICM Ground Floor

Session Chairs: Thomas D. O'Sullivan, Univ. of Notre Dame (United States), Davide Contini, Politecnico di Milano (Italy)

12628-1 • 08:30 - 09:00 | Room 5 ICM Ground Floor

Non-invasive assessment of microvascular impairment in COVID-19 and general intensive care population using near-infrared spectroscopy: the HEMOCOV-19 trial (*Invited Paper*)

Author(s): Lorenzo Cortese, ICFO - Institut de Ciències Fotòniques (Spain); Laís Bacchin de Oliveira, Lillian Elisabete Bernardes Delazari, Hospital de Clínicas - UNICAMP (Brazil); Erin M. Buckley, Emory Univ. (United States); David R. Busch, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States); Alba Caballer, Parc Taulí Hospital Univ. (Spain); Verónica Carbajal Robles, Hospital General de México, "Dr. Eduardo Liceaga" (Mexico); Pedro Castro, Hospital Clínic de Barcelona (Spain); Ana Lúcia Cavallaro Barauna Lima, Hospital de Clínicas - UNICAMP (Brazil); Sreekanth Cheruku, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States); Luis Chiscano, Vall d'Hebron Barcelona Hospital (Spain); Christopher Choi, Siddharth Dave, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States); Lígia dos Santos Roceto Ratti, Antonio Luis Eiras Falcão, Hospital de Clínicas - UNICAMP (Brazil); Cristina Espinal, Parc Taulí Hospital Univ. (Spain); Sara Fernández, Hospital Clínic de Barcelona (Spain); Ricard Ferrer, Vall d'Hebron Barcelona Hospital (Spain); Francesc Font, Ctr. de Recerca Matemàtica (Spain); Rodrigo M. Forti, Instituto de Física "Gleb Wataghin" (Brazil); Marina García-de-Acilu, Vall d'Hebron Barcelona Hospital (Spain); Giacomo Grasselli, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico (Italy); Guillem Gruartmoner, Parc Taulí Hospital Univ. (Spain); Amedeo Guzzardella, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico (Italy); Iqra Jabeen, Ctr. de Recerca Matemàtica (Spain); Umut Karadeniz, ICFO - Institut de Ciències Fotòniques (Spain); Peiman Lahsaei, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States); Gabriela Lívio Emídio, Hospital de Clínicas - UNICAMP (Brazil); Judith Marin Corral, Institut Hospital del Mar d'Investigacions Mèdiques (Spain); Giovanni G. Martins, Instituto de Física "Gleb Wataghin" (Brazil); Ana Matas, Hospital Clínic de Barcelona (Spain); Rickson Mesquita, Instituto de Física "Gleb Wataghin" (Brazil); Abraham Mera, Vall d'Hebron Barcelona Hospital (Spain); Félix Jerandy Monte de Oca Hernández, Hospital General de México, "Dr. Eduardo Liceaga" (Mexico); Tim Myers, Ctr. de Recerca Matemàtica (Spain); Sara Nogales, Parc Taulí Hospital Univ. (Spain); DaiWai Olson, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States); Marco Pagliuzzi, ICFO - Institut de Ciències Fotòniques (Spain); Melvin Parada Guzmán, Hospital General de México, "Dr. Eduardo Liceaga" (Mexico); Francisco Parrilla-Gómez, Institut Hospital del Mar d'Investigacions Mèdiques (Spain); Albert Paytuví, Ctr. de Recerca Matemàtica (Spain); Argelia Pérez Pacheco, Hospital General de México, "Dr. Eduardo Liceaga" (Mexico); Puri Pérez Terán, Lucía Picazo Moreno, Institut Hospital del Mar d'Investigacions Mèdiques

(Spain); Diana Pineda Vásquez, Hospital General de México, "Dr. Eduardo Liceaga" (Mexico); Andrés Quiroga, ICFO - Institut de Ciències Fotòniques (Spain); Instituto de Física "Gleb Wataghin" (Brazil); Rosa María Quispe Siccha, Hospital General de México, "Dr. Eduardo Liceaga" (Mexico); David Romero, Ctr. de Recerca Matemàtica (Spain); Enrique Santillán Aguayo, Hospital General de México, "Dr. Eduardo Liceaga" (Mexico); Isabel Serra, Ctr. de Recerca Matemàtica (Spain); Raúl Serrano-Loyola, Hospital General de México, "Dr. Eduardo Liceaga" (Mexico); Adrián Téllez, Hospital Clínic de Barcelona (Spain); Leandro Utino Taniguchi, Hospital de Clínicas - UNICAMP (Brazil); Clara Vilà-Vilardell, Institut Hospital del Mar d'Investigacions Mèdiques (Spain); Maxwell Weinmann, Emory Univ. (United States); Alberto Zanella, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico (Italy); Marta Zanoletti, ICFO - Institut de Ciències Fotòniques (Spain); Jaume Mesquida Febrer, Parc Taulí Hospital Univ. (Spain); Turgut Durduran, ICFO - Institut de Ciències Fotòniques (Spain)

12628-2 • 09:00 - 09:15 | Room 5 ICM Ground Floor

Evaluation of hemodynamic and metabolic effects of blood flow restriction

Author(s): Manish Verma, Umut Karadeniz, Muhammad Atif Yaqub, ICFO - Institut de Ciències Fotòniques (Spain); Blai Ferrer-Uris, Albert Busquets, Nathan Mbuyamba, Sjors Arnold, Institut Nacional d'Educació Física de Catalunya (Spain); Turgut Durduran, ICFO - Institut de Ciències Fotòniques (Spain)

12628-3 • 09:15 - 09:30 | Room 5 ICM Ground Floor

Multiparametric evaluation of vascular occlusion test with hybrid diffuse optics

Author(s): Jacqueline Martínez García, Marta Zanoletti, ICFO - Institut de Ciències Fotòniques (Spain); Caterina Amendola, Politecnico di Milano (Italy); Mauro Buttafava, PIONIRS s.r.l. (Italy); Talyta Carteano, Asphalion s.l. (Spain); Davide Contini, Politecnico di Milano (Italy); Lorenzo Cortese, ICFO - Institut de Ciències Fotòniques (Spain); Luc Demarteau, SPLENDO (Netherlands); Lorenzo Frabasile, Politecnico di Milano (Italy); Diego Sanoja Garcia, Asphalion s.l. (Spain); Claudia Nunzia Guadagno, BioPixS (Ireland); Tijn Houtbeckers, SPLENDO (Netherlands); Umut Karadeniz, ICFO - Institut de Ciències Fotòniques (Spain); Michele Lacerenza, PIONIRS s.r.l. (Italy); Jaume Mesquida Febrer, Parc Taulí Hospital Univ. (Spain); Marco Pagliuzzi, Veronika Parfentyeva, ICFO - Institut de Ciències Fotòniques (Spain); Shahrzad Parsa, HemoPhotonics S.L. (Spain); Daniel Senciales Sánchez, ICFO - Institut de Ciències Fotòniques (Spain); Sanathana Konugolu Venkata Sekar, BioPixS (Ireland); Jakub Tomanik, SPLENDO (Netherlands); Alessandro M. Torricelli, CNR-Istituto di Fotonica e Nanotecnologie (Italy); Alberto Tosi, Politecnico di Milano (Italy); Tessa Wagenaar, SPLENDO (Netherlands); Udo M. Weigel, HemoPhotonics S.L. (Spain); Muhammad Atif Yaqub, ICFO - Institut de Ciències Fotòniques (Spain); Turgut Durduran, ICREA - Institució Catalana de Recerca i Estudis Avançats (Spain)

CONFERENCE 12628

12628-4 • 09:30 - 09:45 | Room 5 ICM Ground Floor

Non-invasive monitoring of microvascular health in critically ill patients by means of hybrid diffuse optics during vascular occlusion test

Author(s): Marta Zanoletti, ICFO - Institut de Ciències Fotòniques (Spain); Caterina Amendola, Politecnico di Milano (Italy); Mauro Buttafava, PIONIRS s.r.l. (Italy); Talyta Carteano, Asphalion s.l. (Spain); Davide Contini, Politecnico di Milano (Italy); Lorenzo Cortese, ICFO - Institut de Ciències Fotòniques (Spain); Luc Demarteau, SPLENDO (Netherlands); Lorenzo Frabasile, Politecnico di Milano (Italy); Jacqueline Martínez García, ICFO - Institut de Ciències Fotòniques (Spain); Diego Sanoja Garcia, Asphalion s.l. (Spain); Claudia Nunzia Guadagno, BioPixS (Ireland); Tijl Houtbeckers, SPLENDO (Netherlands); Umut Karadeniz, ICFO - Institut de Ciències Fotòniques (Spain); Michele Lacerenza, PIONIRS s.r.l. (Italy), Politecnico di Milano (Italy); Jaume Mesquida Febrer, Parc Taulí Hospital Univ. (Spain); Marco Pagliuzzi, Veronika Parfentyeva, ICFO - Institut de Ciències Fotòniques (Spain); Shahrzad Parsa, HemoPhotonics S.L. (Spain); Daniel Senciales Sánchez, ICFO - Institut de Ciències Fotòniques (Spain); Sanathana Konugolu Venkata Sekar, BioPixS (Ireland); Jakub Tomanik, SPLENDO (Netherlands); Alessandro M. Torricelli, Politecnico di Milano (Italy), CNR-Istituto di Fotonica e Nanotecnologie (Italy); Alberto Tosi, Politecnico di Milano (Italy); Tessa Wagenaar, SPLENDO (Netherlands); Udo M. Weigel, HemoPhotonics S.L. (Spain); Muhammad Atif Yaqub, ICFO - Institut de Ciències Fotòniques (Spain); Turgut Durduran, ICFO - Institut de Ciències Fotòniques (Spain), ICREA - Institució Catalana de Recerca i Estudis Avançats (Spain)

12628-5 • 09:45 - 10:00 | Room 5 ICM Ground Floor

Non-invasive monitoring of canine tissue hemodynamics undergoing a hyperbaric chamber treatment (HBO2) by time domain near infrared spectroscopy

Author(s): Lorenzo Frabasile, Politecnico di Milano (Italy); Michele Lacerenza, PIONIRS s.r.l. (Italy); Davide Contini, Politecnico di Milano (Italy); Mauro Buttafava, PIONIRS s.r.l. (Italy); Annalisa Ferri, Zampe Amore e Fisioterapia Srl (Italy); Michela Minero, Emanuela Dalla Costa, Univ. degli Studi di Milano (Italy); Alessandro M. Torricelli, Politecnico di Milano (Italy)

Coffee Break 10:00 - 10:30

SESSION 2: CLINICAL AND PRECLINICAL APPLICATIONS OF DIFFUSE OPTICS II

25 June 2023 • 10:30 - 12:00 | Room 5 ICM Ground Floor

Session Chairs: Rebecca Re, Politecnico di Milano (Italy), Lorenzo Cortese, ICFO - Institut de Ciències Fotòniques (Spain)

12628-6 • 10:30 - 10:45 | Room 5 ICM Ground Floor

Initial examples of the SOLUS multimodal potential

Author(s): Giulia Maffei, Antonio Pifferi, Alberto Dalla Mora, Laura Di Sieno, Rinaldo Cubeddu, Alberto Tosi, Enrico Conca, Politecnico di Milano (Italy); Andrea Giudice, Alessandro Ruggeri, Simone Tisa, Micro Photon Devices S.r.l. (Italy); Alexander Flocke, iC-Haus GmbH (Germany); Bogdan Rosinski, Vermon S.A. (France); Jean-Marc Dinten, Mathieu Perriollat, CEA-LETI (France); Christophe Fraschini, Jonathan Lavaud, SuperSonic Imagine (France); Simon Arridge, Giuseppe Di Sciacca, Univ. College London (United Kingdom); Andrea Farina, CNR-Istituto di Fotonica e Nanotecnologie (Italy); Pietro Panizza, Elena Venturini, Ospedale San Raffaele - Milano (Italy); Peter Gordebeke, European Institute for Biomedical Imaging Research (Austria); Paola Taroni, Politecnico di Milano (Italy)

12628-7 • 10:45 - 11:00 | Room 5 ICM Ground Floor

Evaluation of neoadjuvant chemotherapy-induced changes in contralateral healthy breast tissue through diffuse optical spectroscopy

Author(s): Nikhitha Mule, Ospedale San Raffaele - Milano (Italy), Politecnico di Milano (Italy); Giulia Maffei, Politecnico di Milano (Italy); Carolina Santangelo, Ospedale San Raffaele - Milano (Italy); Rinaldo Cubeddu, Politecnico di Milano (Italy); Antonio Pifferi, Politecnico di Milano (Italy), CNR-Istituto di Fotonica e Nanotecnologie (Italy); Pietro Panizza, Ospedale San Raffaele - Milano (Italy); Paola Taroni, Politecnico di Milano (Italy), CNR-Istituto di Fotonica e Nanotecnologie (Italy)

12628-8 • 11:00 - 11:15 | Room 5 ICM Ground Floor

Diffuse optical spectroscopic imaging of breast tissue composition changes during lactation

Author(s): Caitlin Coverstone, Thomas D. O'Sullivan, Ana Flavia de Almeida Barreto, Univ. of Notre Dame (United States); Johanna R. de Wolf, Nienke Bosschaart, Univ. Twente (Netherlands); Ola Abdalsalam, Alicia Wei, Univ. of Notre Dame (United States); Sjoukje Schoustra, Univ. Twente (Netherlands)

12628-9 • 11:15 - 11:30 | Room 5 ICM Ground Floor

Daily monitoring of CT26 murine tumor model using hyperspectral imaging and optical profilometry

Author(s): Tadej Tomani, Univ. of Ljubljana (Slovenia); Jošt Stergar, Univ. of Ljubljana (Slovenia), Jožef Stefan Institute (Slovenia); Boštjan Markelc, Tim Božič, Simona Kranjc Brezar, Gregor Serša, Institute of Oncology Ljubljana (Slovenia), Univ. of Ljubljana (Slovenia); Matija Milanic, Univ. of Ljubljana (Slovenia), Jožef Stefan Institute (Slovenia)

12628-10 • 11:30 - 11:45 | Room 5 ICM Ground Floor

Colorectal cancer surgical guidance by using diffuse reflectance spectroscopy

Author(s): Marcelo Saito Nogueira, Siddra Maryam, Michael Amisshah, Tyndall National Institute (Ireland); Shane Killeen, Micheal O'Riordain, Mercy Univ. Hospital (Ireland); Stefan Andersson-Engels, Tyndall National Institute (Ireland)

12628-11 • 11:45 - 12:00 | Room 5 ICM Ground Floor

Spectral feature exploration for lactate sensing using long wavelength near infrared spectroscopy lactate sensing for non-invasive continuous hypoxia assessment in intra-partum fetus

Author(s): Shree Krishnamoorthy, Huihui Lu, Walter Messina, Tyndall National Institute (Ireland); Fergus P. McCarthy, Cork Univ. Maternity Hospital (Ireland); Stefan Andersson-Engels, Ray Burke, Tyndall National Institute (Ireland)

Lunch Break 12:00 - 14:00

ECBO HOT TOPICS: LIGHT FOR LIFE

25 June 2023 • 14:00 - 15:30 | Room 5 ICM Ground Floor

The European Conferences on Biomedical Optics will include a special Hot Topics session. This session, entitled Light for Life, will feature internationally renowned experts discussing the current status of their fields, emerging developments, and how these technologies are poised to improve the human condition.

Coffee Break 15:30 - 16:00

SESSION 3: CEREBRAL HEMODYNAMICS AND NEURAL ACTIVITY I

25 June 2023 • 16:00 - 17:00 | Room 5 ICM Ground Floor

Session Chairs: Ilias Tachtsidis,

Univ. College London (United Kingdom),

Marta Zanoletti, ICFO - Institut de Ciències Fotòniques (Spain)

12628-12 • 16:00 - 16:15 | Room 5 ICM Ground Floor

Classification of brain injury severity using a hybrid broadband NIRS and DCS instrument with a machine learning approach

Author(s): Danai Bili, Frédéric Lange, Univ. College London (United Kingdom); Kelly Harvey Jones, Institute for Women's Health, Univ. College London (United Kingdom); Veronika Parfentyeva, ICREA - Institució Catalana de Recerca i Estudis Avançats (Spain); Turgut Durduran, ICFO - Institut de Ciències Fotòniques (Spain), ICREA - Institució Catalana de Recerca i Estudis Avançats (Spain); Nikki Robertson, Subhabrata Mitra, Institute for Women's Health, Univ. College London (United Kingdom); Ilias Tachtsidis, Univ. College London (United Kingdom)

12628-13 • 16:15 - 16:30 | Room 5 ICM Ground Floor

Diffuse optical metrics of intracranial hypertension in a pig model of hydrocephalus

Author(s): Wesley B. Baker, Rodrigo M. Forti, Pascal Heye, Kristina Heye, Nicolina R. Ranieri, Emilie J. Benson, Yuxi Lin, Kristen N. Andersen, Jharna Jahnavi, Jake Breimann, Hunter A. Gaudio, Jennifer M. Lynch, The Children's Hospital of Philadelphia (United States); Arjun G. Yodh, Univ. of Pennsylvania (United States); Daniel J. Licht, Brian R. White, Misun Hwang, Todd J. Kilbaugh, Tiffany S. Ko, The Children's Hospital of Philadelphia (United States)

12628-14 • 16:30 - 16:45 | Room 5 ICM Ground Floor

Cerebral hemodynamics monitoring during extracorporeal membrane oxygenation in piglets

Author(s): Caterina Amendola, Politecnico di Milano (Italy); Giacomo Cavallaro, Giacomo Amelio, Livia Provitera, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico (Italy); Genny Raffaeli, Fabio Mosca, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico (Italy), Univ. degli Studi di Milano (Italy); Lorenzo Spinelli, CNR-Istituto di Fotonica e Nanotecnologie (Italy); Alessandro M. Torricelli, Politecnico di Milano (Italy), CNR-Istituto di Fotonica e Nanotecnologie (Italy); Davide Contini, Politecnico di Milano (Italy)

12628-15 • 16:45 - 17:00 | Room 5 ICM Ground Floor

Optical monitoring of cerebral hemodynamics in a swine model of mild hypothermic cardiopulmonary bypass

Author(s): Emilie J. Benson, Univ. of Pennsylvania (United States); Danielle Aronowitz, Rodrigo M. Forti, Alec Lafontant, Nicolina R. Ranieri, Alistair Lewis, Jharna Jahnavi, Jake Breimann, Bo Yun, Gerard H. Laurent, Brian R. White, Daniel J. Licht, The Children's Hospital of Philadelphia (United States); Arjun G. Yodh, Univ. of Pennsylvania (United States); Todd J. Kilbaugh, Children's Hospital of Philadelphia (United States); Constantine D. Mavroudis, Wesley B. Baker, Tiffany S. Ko, The Children's Hospital of Philadelphia (United States)

MONDAY 26 JUNE

POSTER SESSION AND LUNCH BREAK

26 June 2023 • 12:30 - 13:30 | ICM, Hall B0

Posters will be featured on Monday.

Poster authors: Please set up posters on the morning of your Session before or during the morning coffee break. Plan to stand by your poster to discuss it with Session attendees during the poster session. Remove your poster following the poster Session concludes as posters left on the boards will be discarded.

12628-54 • 12:00 - 13:30 | ICM, Hall B0

Analytical photon measurement density functions in flat and spherical layered media

Author(s): Demián Augusto Vera, Héctor García, Guido Baez, María Waks-Serra, Nicolás Carbone, Daniela Iriarte, Juan Pomarico, Ctr. de Investigaciones en Física e Ingeniería del Centro de la Provincia de Buenos Aires (Argentina)

12628-55 • 12:00 - 13:30 | ICM, Hall B0

Use of derivative diffuse reflectance spectroscopy in CAM assay combined with multivariate analysis as an approach to detect features of vulnerable plaques

Author(s): Huihui Lu, Tyndall National Institute (Ireland); Claire O'Dowling, Tyndall National Institute (Ireland), Univ. College Cork (Ireland); Noel Caplice, Univ. College Cork (Ireland); Ray Burke, Stefan Andersson-Engels, Tyndall National Institute (Ireland)

12628-56 • 12:00 - 13:30 | ICM, Hall B0

NeuroDOTpy: a Python neuroimaging toolbox for DOT

Author(s): Emma Speh, Ari Segel, Yash Thacker, Dan Marcus, Muriah Wheelock, Adam T. Eggebrecht, Washington Univ. in St. Louis (United States)

12628-57 • 12:00 - 13:30 | ICM, Hall B0

CANCELED: Comparison of the performance of several data fusion methods for the classification of multimodal spectroscopic data collected from skin lesions

Author(s): Valentin Kupriyanov, Univ. de Lorraine (France), National Research Tomsk State Univ. (Russian Federation); Walter Blondel, Christian Daul, Marine Amouroux, Univ. de Lorraine (France); Yury Kistenev, National Research Tomsk State Univ. (Russian Federation)

12628-58 • 12:00 - 13:30 | ICM, Hall B0

Depth and structure information in fluorescence molecular tomography obtained from time resolved spectroscopy

Author(s): Fabian Rieder, Judith Reisdorf, Jan Laufer, Franz-Josef Schmitt, Martin-Luther-Univ. Halle-Wittenberg (Germany)

12628-59 • 12:00 - 13:30 | ICM, Hall B0

Geometrically tunable fast diffuse reflectance spectroscopy for a better understanding of photoplethysmography

Author(s): Guillaume Blanquer, Augustin Vernay, Pierre Blandin, Mathieu Perriollat, Univ. Grenoble Alpes, CEA-LETI (France)

12628-60 • 12:00 - 13:30 | ICM, Hall B0

Near infrared diffuse reflectance spectroscopy for fat quantification in non-alcoholic fatty liver disease

Author(s): Antoine Uzel, Michaël Sdika, CREATIS (France); Sophie Chopinet, Hôpital de la Timone (France); Olivier Lopez, Hôpital l'Archet (France); Bruno Montcel, CREATIS (France)

CONFERENCE 12628

12628-61 • 12:00 - 13:30 | ICM, Hall B0

Diffuse reflectance spectroscopy for tissue discrimination during in vivo upper gastrointestinal cancer surgery

Author(s): Ioannis Gkouzionis, Scarlet Nazarian, Ara Darzi, Nisha Patel, Christopher J. Peters, Daniel S. Elson, Imperial College London (United Kingdom)

12628-62 • 12:00 - 13:30 | ICM, Hall B0

Laser speckle contrast imaging of cerebral blood flow during carotid artery clamping

Author(s): Dmitry D. Stavtsev, Institute for Bionic Technologies and Engineering, I.M. Sechenov First Moscow State Medical Univ. (Russian Federation), Institute of Biomedical Systems, National Research Univ. of Electronic Technology (Russian Federation); Igor O. Kozlov, Institute for Bionic Technologies and Engineering, I.M. Sechenov First Moscow State Medical Univ. (Russian Federation); Anton N. Konovalov, Fyodor V. Grebenev, Burdenko Neurosurgery Institute (Russian Federation); Gennadii A. Piavchenko, I.M. Sechenov First Moscow State Medical Univ. (Russian Federation); Alexander Y. Gerasimenko, Dmitry V. Telyshev, Institute for Bionic Technologies and Engineering, I.M. Sechenov First Moscow State Medical Univ. (Russian Federation), Institute of Biomedical Systems, National Research Univ. of Electronic Technology (Russian Federation); Igor V. Meglinski, Univ. of Oulu (Finland), Aston Univ. (United Kingdom); Sergey L. Kuznetsov, I.M. Sechenov First Moscow State Medical Univ. (Russian Federation)

12628-64

Towards an image processing method for fluorescence quantification in mouse tissues using short-wave infrared fluorescence imaging

Author(s): Mohammadhossein Salimi, Umar Iqbal, Maria J. Moreno, Binbing Ling, National Research Council Canada (Canada)

12628-65 • 12:00 - 13:30 | ICM, Hall B0

TinyBrains device: a high-density hybrid diffuse optical tomographic monitoring system for infants with congenital heart defects

Author(s): Anurag Behera, Osman Melih Can, ICFO - Institut de Ciències Fotòniques (Spain); Marta Camprubí Camprubí, Joan Sánchez de Toledo, Hospital Sant Joan de Déu Barcelona (Spain); Moisés Domínguez, Thomas Fontaine, Seenel Imaging (France); Claudia Nunzia Guadagno, BioPixS (Ireland); Zixi Li, Univ. de Picardie Jules Verne (France); Alessandro Ippoliti, ICFO - Institut de Ciències Fotòniques (Spain); Sanathana Konugolu Venkata Sekar, BioPixS (Ireland); Claire Labbé, Jérémy Larrouquere, Seenel Imaging (France); Mahdi Mahmoudzadeh, Sahar Moghimi, Univ. de Picardie Jules Verne (France); Shahrzad Parsa, HemoPhotonics S.L. (Spain); Nishigandha Patil, ICFO - Institut de Ciències Fotòniques (Spain); Ali Rajabi Mashhadi, Fabrice Wallois, Univ. de Picardie Jules Verne (France); Udo M. Weigel, HemoPhotonics S.L. (Spain); Turgut Durduran, ICFO - Institut de Ciències Fotòniques (Spain), ICREA - Institució Catalana de Recerca i Estudis Avançats (Spain)

12628-66 • 12:00 - 13:30 | ICM, Hall B0

Light propagation in scattering media based on Maxwell's equations and on the radiative transfer equation

Author(s): Felix Ott, Dominik Reitzle, André Liemert, Alwin Kienle, Institut für Lasertechnologien in der Medizin und Messtechnik an der Univ. Ulm (Germany)

12628-67

Relationship between probe pair intervals of fNIRS and scalp-cortex correlation in frontal region of infants

Author(s): Yudai Yamauchi, Eiji Okada, Keio Univ. (Japan)

12628-68 • 12:00 - 13:30 | ICM, Hall B0

Theoretical computation of photon mean partial pathlengths in multilayered turbid media

Author(s): Demián Augusto Vera, Héctor García, Nicolás Carbone, María Waks-Serra, Daniela Iriarte, Juan Pomarico, Ctr. de Investigaciones en Física e Ingeniería del Centro de la Provincia de Buenos Aires (Argentina)

12628-70 • 12:00 - 13:30 | ICM, Hall B0

Laser speckle imaging-assisted disk diffusion test for early estimation of sterile zone radius

Author(s): Ilya Balmages, Univ. of Latvia (Latvia); Dmitrijs Bliznuks, Riga Technical Univ. (Latvia); Aigars Reinis, Svjatoslavs Kistkins, Pauls Stradins Clinical Univ. Hospital (Latvia); Emilija Vija Plorina, Alexey Lihachev, Ilze Lihacova, Univ. of Latvia (Latvia)

12628-71 • 12:00 - 13:30 | ICM, Hall B0

Monte Carlo modeling of photoacoustic guided technique in scattering media

Author(s): Joya Arisu, Naoto Yamamura, Keio Univ. (Japan); Keiichi Nakagawa, Shu Takagi, The Univ. of Tokyo (Japan); Eiji Okada, Keio Univ. (Japan)

12628-72 • 12:00 - 13:30 | ICM, Hall B0

Diffuse optical tomography setup using a nanosecond laser

Author(s): Meghdoot Mozumder, Jarkko Leskinen, Tanja Tarvainen, Univ. of Eastern Finland (Finland)

12628-73 • 12:00 - 13:30 | ICM, Hall B0

Real-time tissue feedback for spine surgery using a customized DRS probe

Author(s): Merle Losch, Jenny Dankelman, Technische Univ. Delft (Netherlands); Benno Hendriks, Philips Electronics Nederland B.V. (Netherlands)

12628-74 • 12:00 - 13:30 | ICM, Hall B0

Approaches for ultrasound light waveguiding in geometries with only single-sided access

Author(s): Maxim N. Cherkashin, Volodymyr Rohovets, Carsten Brenner, Georg Schmitz, Martin R. Hofmann, Ruhr-Univ. Bochum (Germany)

12628-75 • 12:00 - 13:30 | ICM, Hall B0

Development of an portable diffuse reflectance spectroscopy system between 850 and 1000nm

Author(s): Markus Wagner, Markus Zimmermann, Oliver Fugger, Florian Foschum, Alwin Kienle, Institut für Lasertechnologien in der Medizin und Messtechnik an der Univ. Ulm (Germany)

12628-76 • 12:00 - 13:30 | ICM, Hall B0

Digital modeling of a heterogeneous and dynamic brain phantom: application to the choice of an RGB camera for intraoperative functional brain mapping studies

Author(s): Charly Caredda, Laurent Mahieu-William, Raphaël Sablong, Michaël Sdika, CREATIS (France); Fabien C. Schneider, Ctr. Hospitalier Univ. de Saint-Étienne (France); Thiébaud Picart, Jacques Guyotat, Hospices Civils de Lyon (France); Bruno Montcel, CREATIS (France)

12628-77 • 12:00 - 13:30 | ICM, Hall B0

Beyond pile-up limits: a new approach to time correlated single photon counting

Author(s): Giulia Acconcia, Angela Bovolenta, Serena Farina, Ivan Rech, Politecnico di Milano (Italy)

12628-78 • 12:00 - 13:30 | ICM, Hall B0

Identifying chromophore fingerprints of brain tumor tissue on hyperspectral imaging using principal component analysis

Author(s): Ivan Ezhov, Technische Univ. München (Germany); Luca Giannoni, Univ. degli Studi di Firenze (Italy), LENS - Lab. Europeo di Spettroscopie Non-Lineari (Italy); Suprosanna Shit, Technische Univ. München (Germany); Frédéric Lange, Univ. College London (United Kingdom); Florian Köfler, Technische Univ. München (Germany); Bjoern Menze, Univ. Zürich (Switzerland); Ilias Tachtsidis, Univ. College London (United Kingdom); Daniel Rueckert, Technische Univ. München (Germany)

12628-79 • 12:00 - 13:30 | ICM, Hall B0

Laser speckle correlation microscopy system to image microvasculature perfusion

Author(s): Soumyajit Sarkar, Mohammad Zaffar, Hari M. Varma, Indian Institute of Technology Bombay (India)

12628-80 • 12:00 - 13:30 | ICM, Hall B0

Influence of the heterogeneity of extracerebral tissues on scalp-cortex correlation of fNIRS for infants

Author(s): Rinka Tachikawa, Eiji Okada, Keio Univ. (Japan)

12628-81 • 12:00 - 13:30 | ICM, Hall B0

Optical characterisation and study of ex vivo glioma tissue for hyperspectral imaging during neurosurgery

Author(s): Luca Giannoni, Univ. degli Studi di Firenze (Italy), LENS - Lab. Europeo di Spettroscopie Non-Lineari (Italy); Camilla Bonaudo, Univ. degli Studi di Firenze (Italy); Marta Marradi, Univ. degli Studi di Firenze (Italy), LENS - Lab. Europeo di Spettroscopie Non-Lineari (Italy); Alessandro Della Puppa, Univ. degli Studi di Firenze (Italy); Francesco S. Pavone, Univ. degli Studi di Firenze (Italy), LENS - Lab. Europeo di Spettroscopie Non-Lineari (Italy), Istituto Nazionale di Ottica (Italy)

12628-82 • 12:00 - 13:30 | ICM, Hall B0

Wavelength and illumination angle-dependent studies for vein imaging using OpticStudio

Author(s): Satya Prasanna Mallick, Indian Institute of Technology Hyderabad (India); Parishkrith A., Sri Sathya Sai Institute of Higher Learning (India); Haritha V., Indian Institute of Technology Hyderabad (India); Sai Muthukumar V., Sri Sathya Sai Institute of Higher Learning (India); Ram Gopal, Tata Institute of Fundamental Research (India); Vandana Sharma, Indian Institute of Technology Hyderabad (India)

12628-83 • 12:00 - 13:30 | ICM, Hall B0

Testing novel miniature NIR spectrometers for wearable broadband NIRS devices

Author(s): Musa Talati, Frédéric Lange, Ilias Tachtsidis, Univ. College London (United Kingdom)

12628-84 • 12:00 - 13:30 | ICM, Hall B0

A digital instrument simulator to optimize the development of a hyperspectral imaging system for neurosurgery

Author(s): Frédéric Lange, Univ. College London (United Kingdom); Luca Giannoni, Univ. degli Studi di Firenze (Italy), LENS - Lab. Europeo di Spettroscopie Non-Lineari (Italy); Fernand Fort, Charly Caredda, Bruno Montcel, Univ. de Lyon, Univ. Claude Bernard Lyon 1, Univ. Jean Monnet Saint-Etienne (France), Institut National des Sciences Appliquées de Lyon, CNRS (France), Inserm, CREATIS (France); Ilias Tachtsidis, Univ. College London (United Kingdom)

12628-85 • 12:00 - 13:30 | ICM, Hall B0

Accuracy of tissue oxygen saturation measurement with multidistance CW fNIRS: a phantom study

Author(s): Leila Motamed Jahromi, Physikalisch-Technische Bundesanstalt (Germany); Lin Yang, NIRx Medical Technologies, LLC (Germany); Dirk Grosenick, Physikalisch-Technische Bundesanstalt (Germany); Alexander von Lühmann, NIRx Medical Technologies, LLC (Germany)

12628-86 • 12:00 - 13:30 | ICM, Hall B0

Evaluation of muscle aging with TD NIRS and DCS

Author(s): Marco Nabacino, Caterina Amendola, Davide Contini, Politecnico di Milano (Italy); Lorenzo Spinelli, CNR-Istituto di Fotonica e Nanotecnologie (Italy); Alessandro M. Torricelli, Politecnico di Milano (Italy), CNR-Istituto di Fotonica e Nanotecnologie (Italy); Andrea Pilotto, Massimiliano Ansaldo, Simone Porcelli, Univ. degli Studi di Pavia (Italy); Fulvio Lauretani, Aida Hoxha, Marcello Maggio, Univ. degli Studi di Parma (Italy); Rebecca Re, Politecnico di Milano (Italy), CNR-Istituto di Fotonica e Nanotecnologie (Italy)

12628-87 • 12:00 - 13:30 | ICM, Hall B0

Experimental decorrelation requirement for robust estimation of fluorophores using multiple-wavelength excitation fluorescence spectroscopy

Author(s): Arthur Gautheron, Univ. de Lyon, Univ. Claude Bernard Lyon 1, Univ. Jean Monnet Saint-Etienne (France), Institut National des Sciences Appliquées de Lyon, INSERM (France), Institut d'Optique Graduate School, Lab. Hubert Curien, CNRS (France); Michaël Sdika, Univ. de Lyon, Univ. Claude Bernard Lyon 1, Univ. Jean Monnet Saint-Etienne (France), Institut National des Sciences Appliquées de Lyon, CNRS (France), Inserm, CREATIS (France); Jacques Guyotat, Thiébaud Picart, Hospices Civils de Lyon (France); Laure Alston, Laurent Mahieu-Wiliame, Univ. de Lyon, Univ. Claude Bernard Lyon 1, Univ. Jean Monnet Saint-Etienne (France), Institut National des Sciences Appliquées de Lyon, CNRS (France), Inserm, CREATIS (France); Mathieu Hébert, Univ. de Lyon, Univ. Jean Monnet Saint-Etienne (France), Institut d'Optique Graduate School, Lab. Hubert Curien, CNRS (France); Bruno Montcel, Univ. de Lyon, Univ. Claude Bernard Lyon 1, Univ. Jean Monnet Saint-Etienne (France), Institut National des Sciences Appliquées de Lyon, CNRS (France), Inserm, CREATIS (France)

12628-88 • 12:00 - 13:30 | ICM, Hall B0

Fibre optic probes for endoscopic measurement of uterine hypoxia

Author(s): Andrew Green, Katjana Ehrlich, Caitlin Tye, Heriot-Watt Univ. (United Kingdom); Jacqueline Maybin, MRC Ctr. for Reproductive Health, The Univ. of Edinburgh (United Kingdom); Michael Tanner, Heriot-Watt Univ. (United Kingdom)

12628-89 • 12:00 - 13:30 | ICM, Hall B0

QNIRS: quantitative near infrared spectroscopy

Author(s): Stanislaw Wojtkiewicz, Mateusz Zbik, Adam Linkowski, Michal Waskiewicz, Dominik Domanski, Hamid Dehghani, Piotr Sawosz, Brain Optics sp. z o.o. (Poland)

Relation between fluence rate and mean photons pathlengths: an alternative option for Monte Carlo-based-calculations of fluence

Author(s): Federico Tommasi, Univ. degli Studi di Firenze (Italy); Angelo Sassaroli, Tufts Univ. (United States); Lorenzo Fini, Stefano Cavaliere, Ernesto Pini, Univ. degli Studi di Firenze (Italy); Lorenzo Pattelli, Istituto Nazionale di Ricerca Metrologica (Italy); Fabrizio Martelli, Univ. degli Studi di Firenze (Italy)

12628-91 • 12:00 - 13:30 | ICM, Hall B0

Validation test of Monte Carlo codes employed in biomedical optics applications

Author(s): Federico Tommasi, Univ. degli Studi di Firenze (Italy); Angelo Sassaroli, Tufts Univ. (United States); Lorenzo Fini, Stefano Cavaliere, Fabrizio Martelli, Univ. degli Studi di Firenze (Italy)

12628-92 • 12:00 - 13:30 | ICM, Hall B0

Breast tumor detection using regularized deep-learning diffuse optical tomography

Author(s): Ganesh M. Balasubramaniam, Gokul Manavalan, Assaf S. Kadosh, Shlomi Arnon, Ben-Gurion Univ. of the Negev (Israel)

CONFERENCE 12628

12628-93 • 12:00 - 13:30 | ICM, Hall B0

A virtual comparison of different time domain diffuse optical spectroscopic techniques

Author(s): Sri Rama Pranav Kumar Lanka, Marcelo Saito Nogueira, Vanessa R. M. Rodrigues, Shree Krishnamoorthy, Katarzyna Komolibus, Rekha Gautam, Stefan Andersson-Engels, Sanathana Konugolu Venkata Sekar, Tyndall National Institute (Ireland)

12628-95 • 12:00 - 13:30 | ICM, Hall B0

Compact, multiwavelength, multidistance speckle contrast spectroscopy system for the assessment of tissue metabolism

Author(s): Andrés Quiroga, Manish Verma, Lisa Kobayashi-Frisk, Faruk Beslija, Sumana Chetia, Daniel Senciales Sánchez, ICFO - Institut de Ciències Fotòniques (Spain); David R. Busch, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States); Turgut Durduran, ICFO - Institut de Ciències Fotòniques (Spain)

12628-97 • 12:00 - 13:30 | ICM, Hall B0

A stochastic differential equation-based Monte Carlo simulation to model light propagation in dynamic turbid media.

Author(s): Soumyajit Sarkar, Murali K., Hari M. Varma, Indian Institute of Technology Bombay (India)

12628-98 • 12:00 - 13:30 | ICM, Hall B0

A deep learning approach to enhance the temporal resolution of laser speckle imaging system for blood flow measurement

Author(s): Sivakumar Panneer Selvam, Murali Krishnamoorthy, Soumyajit Sarkar, Sibi Raj Bhaskaran, Hari M. Varma, Indian Institute of Technology Bombay (India)

ECBO PLENARY

26 June 2023 • 14:00 - 15:30 | Room 5 ICM Ground Floor

This plenary Session features presentations by Melissa Skala and YongKeun Park.

Coffee Break 15:30 - 16:00

SESSION 4: CEREBRAL HEMODYNAMICS AND NEURAL ACTIVITY II

26 June 2023 • 16:00 - 17:00 | Room 5 ICM Ground Floor

Session Chairs: Wesley B. Baker, The Children's Hospital of Philadelphia (United States), Yoko Hoshi, Hamamatsu Univ. School of Medicine (Japan)

12628-16 • 16:00 - 16:15 | Room 5 ICM Ground Floor

Assessing TD fNIRS capability to detect hemodynamic oscillations in cerebral cortex

Author(s): Letizia Contini, Rebecca Re, Davide Contini, Alessandro M. Torricelli, Politecnico di Milano (Italy); Lorenzo Spinelli, Consiglio Nazionale delle Ricerche (Italy)

12628-17 • 16:15 - 16:30 | Room 5 ICM Ground Floor

Cerebral resting state oscillations study with TD fNIRS

Author(s): Rebecca Re, Letizia Contini, Davide Contini, Politecnico di Milano (Italy); Felipe Orihuela-Espina, Univ. of Birmingham (United Kingdom); Alessandro M. Torricelli, Politecnico di Milano (Italy); Lorenzo Spinelli, Consiglio Nazionale delle Ricerche (Italy)

12628-18 • 16:30 - 16:45 | Room 5 ICM Ground Floor

Spatiotemporal relationship between electrophysiology and hemodynamics during slow wave activity in the neocortex

Author(s): Sumana Chetia, Turgut Durduran, ICFO - Institut de Ciències Fotòniques (Spain); Maria V. Sanchez-Vives, Diana Casas-Torremocha, Alejandro Suarez-Perez, Institut d'Investigacions Biomèdiques Agustí Pi Sunyer (Spain)

12628-19 • 16:45 - 17:00 | Room 5 ICM Ground Floor

Scalp-based parcellation for longitudinal fNIRS studies

Author(s): Abigail L. Magee, Washington Univ. in St. Louis (United States); Laura Pirazzoli, Univ. of London (United Kingdom); Sara Sanchez-Alonso, Haskin Labs., Inc. (United States); Eileen F. Sullivan, Boston Children's Hospital (United States); Katherine L. Perdue, Harvard Medical School (United States); Benjamin Zinszer, Swarthmore College (United States); Vikranth R. Bejjanki, Hamilton College (United States); John E. Richards, Univ. of South Carolina (United States); Joseph P. Culver, Washington Univ. in St. Louis (United States); Richard N. Aslin, Yale Univ. (United States); Lauren L. Emberson, Princeton Univ. (United States); Adam T. Eggebrecht, Washington Univ. in St. Louis (United States)

TUESDAY 27 JUNE

SESSION 5: CEREBRAL HEMODYNAMICS AND NEURAL ACTIVITY III

27 June 2023 • 08:30 - 10:00 | Room 5 ICM Ground Floor

Session Chairs: Yoko Hoshi, Hamamatsu Univ. School of Medicine (Japan), Jana M. Kainerstorfer, Carnegie Mellon Univ. (United States)

12628-20 • 08:30 - 09:00 | Room 5 ICM Ground Floor

Whole-head high-density diffuse optical tomography in infants (*Invited Paper*)

Author(s): Liam H. Collins-Jones, Univ. College London (United Kingdom); Louisa Gossé, Birkbeck, Univ. of London (United Kingdom); Chiara Bulgarelli, Birkbeck, Univ. of London (United Kingdom); Univ. College London (United Kingdom); Maheen Siddiqui, Birkbeck, Univ. of London (United Kingdom); Borja Blanco, Univ. of Cambridge (United Kingdom); Ernesto Vidal-Rosas, Univ. College London (United Kingdom); Gowerlabs Ltd. (United Kingdom); Nida Duobaite, Reuben Nixon-Hill, Greg Smith, James Skipper, Tim Sargent, Gowerlabs Ltd. (United Kingdom); Samuel Powell, Gowerlabs Ltd. (United Kingdom); The Univ. of Nottingham (United Kingdom); Nicholas L. Everdell, Gowerlabs Ltd. (United Kingdom); Univ. College London (United Kingdom); Emily Jones, Birkbeck, Univ. of London (United Kingdom); Robert J. Cooper, Univ. College London (United Kingdom)

12628-21 • 09:00 - 09:15 | Room 5 ICM Ground Floor

Effects of red blood cell transfusion on neonatal cerebral hemodynamics: a TD-NIRS and DCS study

Author(s): Caterina Amendola, Politecnico di Milano (Italy); Tiziana Boggini, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico (Italy); Cesare Martinelli, Univ. degli Studi di Milano (Italy); Davide Contini, Politecnico di Milano (Italy); Lorenzo Spinelli, CNR-Istituto di Fotonica e Nanotecnologie (Italy); Agnese De Carli, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico (Italy); Fabio Mosca, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico (Italy); Univ. degli Studi di Milano (Italy); Udo M. Weigel, HemoPhotonics S.L. (Spain); Turgut Durduran, ICFO - Institut de Ciències Fotòniques (Spain); ICREA - Institutio Catalana de Recerca i Estudis Avançats (Spain); Bjørn Andresen, Rigshospitalet (Denmark); Alessandro M. Torricelli, Politecnico di Milano (Italy); CNR-Istituto di Fotonica e Nanotecnologie (Italy); Gorm Greisen, Rigshospitalet (Denmark); Monica Fumagalli, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico (Italy)

12628-22 • 09:15 - 09:30 | Room 5 ICM Ground Floor

Differential effects of hyperoxemia versus normoxemia on neurologic injury biomarkers in a neonatal swine model of cardiopulmonary bypass: preliminary results

Author(s): Nicolina R. Ranieri, Rodrigo M. Forti, Danielle I. Aronowitz, The Children's Hospital of Philadelphia (United States); Emilie J. Benson, The Children's Hospital of Philadelphia (United States), Univ. of Pennsylvania (United States); Jake Breimann, Bo Yun, Gerard Laurent, Madison Bowe, Jonathan Starr, Sarah Morton, Anthony M. Davis, Takayuki Sueishi, Yuxi Lin, Nicholas Fagan, Daniel J. Licht, Jennifer M. Lynch, The Children's Hospital of Philadelphia (United States); Arjun G. Yodh, Univ. of Pennsylvania (United States); Wesley B. Baker, Todd J. Kilbaugh, Tiffany S. Ko, Constantine D. Mavroudis, The Children's Hospital of Philadelphia (United States)

12628-23 • 09:30 - 09:45 | Room 5 ICM Ground Floor

Monitoring neural activity in infants: integration of functional diffuse correlation spectroscopy and electroencephalography

Author(s): Fen Zhang, ICFO - Institut de Ciències Fotòniques (Spain); Judit Ciarrusta, Univ. Pompeu Fabra (Spain); Ibtissam Ghailan, ICFO - Institut de Ciències Fotòniques (Spain); Judit Gervain, Univ. degli Studi di Padova (Italy), Lab. de Neurosciences Cognitives, CNRS (France), Univ. Paris Cité (France); Chiara Santolin, Univ. Pompeu Fabra (Spain); Daniel Senciales Sánchez, ICFO - Institut de Ciències Fotòniques (Spain); Konstantina Zacharakis, Univ. Pompeu Fabra (Spain); Aykut Eken, TOBB ETÜ (Turkey); Marco Pagliuzzi, ICFO - Institut de Ciències Fotòniques (Spain); Marc Colomer, The Univ. of Chicago (United States); Núria Sebastian-Gallés, Univ. Pompeu Fabra (Spain); Turgut Durduran, ICFO - Institut de Ciències Fotòniques (Spain), ICREA - Institució Catalana de Recerca i Estudis Avançats (Spain)

12628-24 • 09:45 - 10:00 | Room 5 ICM Ground Floor

Importance of depth-enhanced optical methods for measuring cerebral hemodynamics during transient hypotension

Author(s): Daniel Milej, Lawson Health Research Institute (Canada), Western Univ. (Canada); Leena N. Shoemaker, Jigneshkumar Mistry, Keith St. Lawrence, Western Univ. (Canada)

Coffee Break 10:00 - 10:30

SESSION 6: THEORY, ALGORITHMS AND MODELING I

27 June 2023 • 10:30 - 12:00 | Room 5 ICM Ground Floor

Session Chairs: Dirk Grosenick, Physikalisch-Technische Bundesanstalt (Germany), Federico Tommasi, Univ. degli Studi di Firenze (Italy)

12628-25 • 10:30 - 10:45 | Room 5 ICM Ground Floor

Evaluation of hyperspectral imaging measurements of changes in hemoglobin oxygenation and oxidation of cytochrome-c-oxidase using a liquid blood phantom

Author(s): Charly Caredda, CREATIS (France); Frédéric Lange, Ilias Tachtsidis, Univ. College London (United Kingdom); Bruno Montcel, CREATIS (France)

12628-26 • 10:45 - 11:00 | Room 5 ICM Ground Floor

Reconstruction of Raman spectra of two-layer diffusive media: model-based approach in time-domain

Author(s): Stefan Šušnjar, SpectraCure AB (Sweden), Lund Univ. (Sweden); Fabrizio Martelli, Univ. degli Studi di Firenze (Italy); Johannes Swartling, SpectraCure AB (Sweden); Nina Reistad, Lund Univ. (Sweden); Antonio Pifferi, Politecnico di Milano (Italy)

12628-27 • 11:00 - 11:15 | Room 5 ICM Ground Floor

Fourier-space evaluation of tissue order in animal models of peritonitis

Author(s): Jošt Stergar, Jožef Stefan Institute (Slovenia); Katja Lakota, Univ. Medical Ctr. Ljubljana (Slovenia); Martina Perše, Nika Kojc, Matija Milanic, Univ. of Ljubljana (Slovenia)

12628-28 • 11:15 - 11:30 | Room 5 ICM Ground Floor

Real-time absolute multi-parameter diffuse optical tomography with deep-learning

Author(s): Robin Dale, Hamid Dehghani, Felipe Orihuela-Espina, Univ. of Birmingham (United Kingdom); Thomas D. O'Sullivan, Scott Howard, Chris Campbell, Univ. of Notre Dame (United States)

12628-29 • 11:30 - 11:45 | Room 5 ICM Ground Floor

Infant head subsurface imaging using high-density diffuse optical tomography and machine learning

Author(s): Ganesh M. Balasubramaniam, Gokul Manavalan, Ben-Gurion Univ. of the Negev (Israel); Ami Hauptman, Sapir Academic College (Israel); Shlomi Arnon, Ben-Gurion Univ. of the Negev (Israel)

12628-30 • 11:45 - 12:00 | Room 5 ICM Ground Floor

Forward or backward? comparison of direct inversion and forward optimization techniques for DL-DOT

Author(s): Ben Wiesel, Shlomi Arnon, Ben-Gurion Univ. of the Negev (Israel)

Lunch Break 12:00 - 14:00

WORLD OF PHOTONICS PLENARY

27 June 2023 • 14:00 - 15:30 |
Room 1 ICM Ground Floor-1st Floor

This plenary Session features a presentation by Tammy Ma and Constantin Haefner on laser-driven inertial confinement fusion.

Coffee Break 15:30 - 16:00

SESSION 7: ADVANCES IN INSTRUMENTATION AND TECHNOLOGY I

27 June 2023 • 16:00 - 17:15 | Room 5 ICM Ground Floor

Session Chairs: Roy A. Stillwell, Caterina Amendola, Politecnico di Milano (Italy)

12628-31 • 16:00 - 16:30 | Room 5 ICM Ground Floor

Ultra-portable, fast and low-cost blood flow meter (Invited Paper)

Author(s): Manish Verma, Umud Karadeniz, Lisa Kobayashi-Frisk, Faruk Beslija, Sumana Chetia, Turgut Durduran, ICFO - Institut de Ciències Fotòniques (Spain)

12628-32 • 16:30 - 16:45 | Room 5 ICM Ground Floor

High density speckle contrast optical tomography system for in vivo imaging of deep tissue blood flow

Author(s): Faruk Beslija, Lisa Kobayashi Frisk, Manish Verma, ICFO - Institut de Ciències Fotòniques (Spain); Chen-Hao P. Lin, Washington Univ. in St. Louis (United States), Washington Univ. School of Medicine in St. Louis (United States); Nishigandha Patil, Sumana Chetia, ICFO - Institut de Ciències Fotòniques (Spain); Jason W. Trobaugh, Washington Univ. in St. Louis (United States); Joseph P. Culver, Washington Univ. in St. Louis (United States), Washington Univ. School of Medicine in St. Louis (United States); Turgut Durduran, ICFO - Institut de Ciències Fotòniques (Spain), ICREA - Institució Catalana de Recerca i Estudis Avançats (Spain)

CONFERENCE 12628

12628-33 • 16:45 - 17:00 | Room 5 ICM Ground Floor

Hybrid diffuse optical platform for the assessment of microvasculature health in the intensive care

Author(s): Marta Zanoletti, Muhammad Atif Yaqub, ICFO - Institut de Ciències Fotòniques (Spain); Caterina Amendola, Politecnico di Milano (Italy); Mauro Buttafava, PIONIRS s.r.l. (Italy); Talyta Carteano, Asphaltion s.l. (Spain); Davide Contini, Politecnico di Milano (Italy); Lorenzo Cortese, ICFO - Institut de Ciències Fotòniques (Spain); Luc Demarteau, SPLENDO (Netherlands); Lorenzo Frabasile, Politecnico di Milano (Italy); Jacqueline Martínez García, ICFO - Institut de Ciències Fotòniques (Spain); Diego Sanoja Garcia, Asphaltion s.l. (Spain); Claudia Nunzia Guadagno, BioPixS (Ireland); Tjil Houtbeckers, SPLENDO (Netherlands); Umut Karadeniz, ICFO - Institut de Ciències Fotòniques (Spain); Michele Lacerenza, PIONIRS s.r.l. (Italy); Politecnico di Milano (Italy); Jaume Mesquida Febrer, Parc Taulí Hospital Univ. (Spain); Marco Pagliazzi, Veronika Parfentyeva, ICFO - Institut de Ciències Fotòniques (Spain); Shahrzad Parsa, HemoPhotonics S.L. (Spain); Daniel Senciales Sánchez, ICFO - Institut de Ciències Fotòniques (Spain); Sanathana Konugolu Venkata Sekar, BioPixS (Ireland); Jakub Tomanik, SPLENDO (Netherlands); Alessandro M. Torricelli, Politecnico di Milano (Italy), CNR-Istituto di Fotonica e Nanotecnologie (Italy); Alberto Tosi, Politecnico di Milano (Italy); Tessa Wagenaar, SPLENDO (Netherlands); Udo M. Weigel, HemoPhotonics S.L. (Spain); Turgut Durduran, ICFO - Institut de Ciències Fotòniques (Spain), ICREA - Institutió Catalana de Recerca i Estudis Avançats (Spain)

12628-34 • 17:00 - 17:15 | Room 5 ICM Ground Floor

Time-gated diffuse correlation spectroscopy at 1064nm for neuromonitoring

Author(s): Ulas Sunar, Stony Brook Univ. (United States)

WEDNESDAY 28 JUNE

SESSION 8: ADVANCES IN INSTRUMENTATION AND TECHNOLOGY II

28 June 2023 • 08:30 - 10:00 | Room 5 ICM Ground Floor

Session Chairs: Ilias Tachtsidis, Univ. College London (United Kingdom), Laura Di Sieno, Politecnico di Milano (Italy)

12628-35 • 08:30 - 09:00 | Room 5 ICM Ground Floor

NearWave imager: the first entirely handheld real-time frequency-domain near-infrared spectroscopy imaging system (*Invited Paper*)

Author(s): Roy A. Stillwell, Adama G. Longoria, NearWave (United States); Karla A. González, Univ. of Notre Dame (United States); Eric W. Sheeder, NearWave (United States); Ana Flavia Borges de Almeida Barreto, Nicholas Ross, Thomas D. O'Sullivan, Univ. of Notre Dame (United States)

12628-36 • 09:00 - 09:15 | Room 5 ICM Ground Floor

Development and preliminary testing of a multi-wavelength wearable diffuse optical tomography system

Author(s): Georgina Leadley, Univ. of Cambridge (United Kingdom); Robert J. Cooper, Univ. College London (United Kingdom); Gemma M. Bale, Univ. of Cambridge (United Kingdom); Samuel Powell, The Univ. of Nottingham (United Kingdom); Nicholas L. Everdell, Hubin Zhao, Jeremy C. Hebden, Univ. College London (United Kingdom); Topun Austin, Univ. of Cambridge (United Kingdom)

12628-37 • 09:15 - 09:30 | Room 5 ICM Ground Floor

Time-multiplexing approach for fast time-domain near-infrared optical tomography combined with neural-network-enhanced image reconstruction

Author(s): Alexander Kalyanov, Meret Ackermann, Emanuele Russomanno, Martin Wolf, Jingjing Jiang, Univ. Zürich (Switzerland)

12628-38 • 09:30 - 09:45 | Room 5 ICM Ground Floor

Parallel interferometric near-infrared spectroscopy (PI-NIRS)

Author(s): Dawid Borycki, Institute of Physical Chemistry PAS (Poland); Saeed Samaei, Nalecz Institute of Biocybernetics and Biomedical Engineering PAN (Poland); Klaudia Nowacka, Institute of Physical Chemistry PAS (Poland)

12628-39 • 09:45 - 10:00 | Room 5 ICM Ground Floor

Experimental depth estimation of cancer invasion via circularly polarized light scattering

Author(s): Nozomi Nishizawa, Kitasato Univ. (Japan); Takahiro Kuchimaru, Jichi Medical Univ. (Japan)

Coffee Break 10:00 - 10:30

SESSION 9: ADVANCES IN INSTRUMENTATION AND TECHNOLOGY III

28 June 2023 • 10:30 - 11:45 | Room 5 ICM Ground Floor

Session Chair: Davide Contini, Politecnico di Milano (Italy)

12628-403 • 10:30 - 10:45 | Room 5 ICM Ground Floor

Towards time-domain diffuse optics with extreme photon rate

Author(s): Laura Di Sieno, Politecnico di Milano (Italy); Tuomo Talala, Univ. of Oulu (Finland); Elisabetta Avanzi, Politecnico di Milano (Italy); Ilkka Nissinen, Jan Nissinen, Univ. of Oulu (Finland); Alberto Dalla Mora, Politecnico di Milano (Italy)

12628-41 • 10:45 - 11:00 | Room 5 ICM Ground Floor

Time-domain diffuse correlation spectroscopy performance at different source-detector separation

Author(s): Neda Mogharari, Saeed Samaei, Stanislaw Wojtkiewicz, Adam Liebert, Michal Kacprzak, Nalecz Institute of Biocybernetics and Biomedical Engineering PAN (Poland)

12628-42 • 11:00 - 11:15 | Room 5 ICM Ground Floor

Massively parallelized diffuse correlation spectroscopy for label-free measurement of blood flow in human subjects

Author(s): Lucas A. Kreiss, Melissa M. Wu, Duke Univ. (United States); Michael A. Wayne, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Shiqi Xu, Paul McKee, Derrick Dwamena, Joakim Joensson, Scott Huettel, Duke Univ. (United States); Claudio E. Bruschini, Edoardo Charbon, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Roarke W. Horstmeyer, Duke Univ. (United States)

12628-43 • 11:15 - 11:30 | Room 5 ICM Ground Floor

Use of bioresorbable fibers for interstitial time-domain diffuse optical spectroscopy using fast-gating

Author(s): Sai Vamshi Krishna Damagatla, Politecnico di Milano (Italy); Nadia G. Boetti, LINKS Foundation (Italy); Laura Di Sieno, Politecnico di Milano (Italy); Diego Pugliese, Davide Janner, Politecnico di Torino (Italy); Alberto Dalla Mora, Antonio Pifferi, Politecnico di Milano (Italy)

12628-44 • 11:30 - 11:45 | Room 5 ICM Ground Floor

Three-dimensional NIR-II tumor blood vessels and bone imaging using rotational stereo vision in small animals

Author(s): Shih-Po Su, Huihua K. Chiang, National Yang-Ming Univ. (Taiwan)

Lunch Break 11:45 - 13:30

SESSION 10: ADVANCES IN INSTRUMENTATION AND TECHNOLOGY IV

28 June 2023 • 13:30 - 15:00 | Room 5 ICM Ground Floor

Session Chairs: Adam T. Eggebrecht, Washington Univ. School of Medicine in St. Louis (United States), Sanathana Konugolu Venkata Sekar, Irish Photonic Integration Ctr. (IPIC) (Ireland)

12628-45 • 13:30 - 14:00 | Room 5 ICM Ground Floor

Short and long-term photostability of 3D printed fluorescent phantoms for near-infrared diffuse optical imaging (*Invited Paper*)

Author(s): Sandra Schädel-Ebner, Physikalisch-Technische Bundesanstalt (Germany); Ole Hirsch, HAWK Hochschule für Angewandte Wissenschaft und Kunst (Germany); Thomas Gladytz, Max-Delbrück-Ctr. für Molekulare Medizin Berlin-Buch (Germany); Dirk Gutkelch, Physikalisch-Technische Bundesanstalt (Germany); Kai Licha, FEW Chemicals GmbH (Germany); Jörn Berger, Xiralite GmbH (Germany); Dirk Grosenick, Physikalisch-Technische Bundesanstalt (Germany)

12628-46 • 14:00 - 14:15 | Room 5 ICM Ground Floor

A microfluidic based cerebral perfusion phantom for laser speckle imaging in small animals

Author(s): Susweta Das, Ria Paul, Soumyajit Sarkar, Makrand Rakshe, Prasanna S. Gandhi, Hari M. Varma, Indian Institute of Technology Bombay (India)

12628-47 • 14:15 - 14:30 | Room 5 ICM Ground Floor

HyperProbe consortium: innovate tumour neurosurgery with innovative photonic solutions

Author(s): Luca Giannoni, Marta Marradi, Univ. degli Studi di Firenze (Italy), LENS - Lab. Europeo di Spettroscopia Non-Lineari (Italy); Marco Marchetti, Duccio Rossi Degl'Innocenti, EmoLED S.r.l. (Italy); Ivan Ezhov, Klinikum rechts der Isar der Technischen Univ. München (Germany); Charly Caredda, Arthur Gautheron, Fernand Fort, Univ. de Lyon, Univ. Claude Bernard Lyon 1, Univ. Jean Monnet Saint-Etienne (France), Institut National des Sciences Appliquées de Lyon, CNRS (France), Inserm, CREATIS (France); Fabien C. Schneider, Ctr. Hospitalier Univ. de Saint-Étienne (France); Moncef Berhouma, Ctr. Hospitalier Univ. de Dijon (France); Camilla Bonaudo, Univ. degli Studi di Firenze (Italy); Thiébaud Picart, Hospices Civils de Lyon (France); Frédéric Lange, Univ. College London (United Kingdom); Katharina Krischak, Peter Gordebeke, European Institute for Biomedical Imaging Research (Austria); Domenico Alfieri, EmoLED S.r.l. (Italy); Daniel Rueckert, Klinikum rechts der Isar der Technischen Univ. München (Germany), Imperial College London (United Kingdom); Bruno Montcel, Univ. de Lyon, Univ. Claude Bernard Lyon 1, Univ. Jean Monnet Saint-Etienne (France), Institut National des Sciences Appliquées de Lyon, CNRS (France), Inserm, CREATIS (France); Alessandro Della Puppa, Univ. degli Studi di Firenze (Italy); Jacques Guyotat, Hospices Civils de Lyon (France); Ilias Tachtsidis, Univ. College London (United Kingdom); Francesco S. Pavone, Univ. degli Studi di Firenze (Italy), LENS - Lab. Europeo di Spettroscopia Non-Lineari (Italy), Istituto Nazionale di Ottica (Italy)

12628-48 • 14:30 - 14:45 | Room 5 ICM Ground Floor

Automated focus tracking for non-aligned SLOT samples and tomographic jitter correction

Author(s): Hannes Benecke, Firas Almadani, Johannes Heske, Laser Zentrum Hannover e.V. (Germany); Tobias May, InSCREENeX GmbH (Germany); Sonja Johannsmeier, Tammo Ripken, Laser Zentrum Hannover e.V. (Germany)

12628-49 • 14:45 - 15:00 | Room 5 ICM Ground Floor

Simulation of light propagation through the maternal abdomen: towards transabdominal fetal pulse oximetry

Author(s): Jingyi Wu, Alexander Ruesch, Gopika Satish, Erin Anand, Carnegie Mellon Univ. (United States); Martin Debreczeny, Eric Johansson, Neil Ray, Raydiant Oximetry, Inc. (United States); Jana M. Kainerstorfer, Carnegie Mellon Univ. (United States)

Break 15:00 - 15:30

SESSION 11: THEORY, ALGORITHMS AND MODELING II

28 June 2023 • 15:30 - 16:45 | Room 5 ICM Ground Floor

Session Chairs: Davide Contini, Politecnico di Milano (Italy), Adam Liebert, Nalecz Institute of Biocybernetics and Biomedical Engineering PAN (Poland)

12628-50 • 15:30 - 15:45 | Room 5 ICM Ground Floor

The Role of Spatial Preprocessing in Deep Learning-Based DOT

Author(s): Ben Wiesel, Shlomi Arnon, Ben-Gurion Univ. of the Negev (Israel)

12628-51 • 15:45 - 16:00 | Room 5 ICM Ground Floor

Hybrid method for solving the radiative transport equation

Author(s): André Liemert, Dominik Reitzle, Alwin Kienle, Institut für Lasertechnologien in der Medizin und Messtechnik an der Univ. Ulm (Germany)

12628-52 • 16:00 - 16:15 | Room 5 ICM Ground Floor

Effects of matrix conditioning strategies on multifrequency high-density diffuse optical tomography

Author(s): Chengfeng Zhang, Weihao Fan, Adam T. Eggebrecht, Washington Univ. in St. Louis (United States)

12628-53 • 16:15 - 16:30 | Room 5 ICM Ground Floor

Solution of the radiative transport equation for the single scattered radiance of two-layered media

Author(s): Christian Blum, Philipp Hank, André Liemert, Simeon Geiger, Alwin Kienle, Institut für Lasertechnologien in der Medizin und Messtechnik an der Univ. Ulm (Germany)

28 June 2023 12628-96 • 16:30 - 16:45 | Room 5 ICM Ground Floor

Development of a tunable dynamical tissue phantom for laser speckle imaging of blood flow

Author(s): Soumyajit Sarkar, Murali K., Hari M. Varma, Indian Institute of Technology Bombay (India)

CONFERENCE 12629

Emerging Technologies for Cell and Tissue Characterization

28 - 29 June 2023 | Room 22a ICM Second Floor

Conference Chairs: **Seemantini K. Nadkarni**, Wellman Ctr. for Photomedicine (United States); **Giuliano Scarcelli**, Univ. of Maryland, College Park (United States)

Programme Committee: **Bakiye Imran Akca**, Vrije Univ. Amsterdam (Netherlands); **Silvia Caponi**, Istituto Officina dei Materiali (Italy); **Dirk J. Faber**, Amsterdam UMC (Netherlands); **Malte C. Gather**, Univ. of St. Andrews (Germany); **DongKyun Kang**, Wyant College of Optical Sciences (United States); **Venkataramanan Krishnaswamy**, Thayer School of Engineering at Dartmouth (United States); **Linbo Liu**, Nanyang Technological Univ. (Singapore); **Igor V. Meglinski**, Univ. of Oulu (Finland); **Guenther Paltauf**, Karl-Franzens-Univ. Graz (Austria); **Dvir Yelin**, Technion-Israel Institute of Technology (Israel); **Malte C. Gather**, Univ. of St. Andrews (United Kingdom); **Chulmin Joo**, Yonsei Univ. (Republic of Korea); **DongKyun Kang**, Wyant College of Optical Sciences (United States); **Sabine Kling**, ETH Zurich (Switzerland); **Liu Linbo**, Nanyang Technological Univ. (Singapore); **Guenther Paltauf**, Karl-Franzens-Univ. Graz (Austria); **Monika Ritsch-Marte**, Medizinische Univ. Innsbruck (Austria); **Dvir Yelin**, Technion-Israel Institute of Technology (Israel)

WEDNESDAY 28 JUNE

SESSION 1: POLARIZATION-BASED IMAGING

28 June 2023 • 08:30 - 10:00 | Room 22a ICM Second Floor

Session Chair: Seemantini K. Nadkarni, Wellman Ctr. for Photomedicine (United States)

12629-1 • 08:30 - 09:00 | Room 22a ICM Second Floor

Partial Mueller polarimetry for the complete optical diagnosis of biological tissue (*Invited Paper*)

Author(s): Tatiana Novikova, Lab. de Physique des Interfaces et des Couches Minces, CNRS (France), Ecole Polytechnique, Institut Polytechnique de Paris (France), Florida International Univ. (United States); Jessica C. Ramella-Roman, Herbert Wertheim College of Medicine, Florida International Univ. (United States); Leonard Felger, Inselspital, Univ. Bern (Switzerland); Romain Gros, Univ. Bern (Switzerland); Ekkehard Hewer, Ctr. Hospitalier Univ. Vaudois (Switzerland); Theoni Maragkou, Univ. Bern (Switzerland); Richard McKinley, Stefano Moriconi, Michael Murek, Inselspital, Univ. Bern (Switzerland); Angelo Pierangelo, Lab. de Physique des Interfaces et des Couches Minces, CNRS (France), Ecole Polytechnique, Institut Polytechnique de Paris (France); Omar Rodriguez-Nunez, Irena Zubak, Philippe Schucht, Inselspital, Univ. Bern (Switzerland)

12629-2 • 09:00 - 09:15 | Room 22a ICM Second Floor

Characterization of different thawing mechanisms of fibroblast cell-containing tissue models by Mueller polarimetry and statistical analysis

Author(s): Deyan Ivanov, Lab. de Physique des Interfaces et des Couches Minces (France); Anika Hoeppel, Universitätsklinikum Würzburg (Germany); Julian Schwebler, Fraunhofer-Institut für Silicatforschung ISC (Germany); Christian Lotz, Universitätsklinikum Würzburg (Germany), Fraunhofer-Institut für Silicatforschung ISC (Germany); Sofia Dembski, Fraunhofer-Institut für Silicatforschung ISC (Germany), Universitätsklinikum Würzburg (Germany); Razvigor Ossikovski, Tatiana Novikova, Lab. de Physique des Interfaces et des Couches Minces (France)

12629-3 • 09:15 - 09:30 | Room 22a ICM Second Floor

CANCELED: Optimization approach and feasibility study for snapshot wideband spectrally encoded Mueller imaging polarimetry

Author(s): Julien Fade, Institut Fresnel, CNRS (France), Aix-Marseille Univ. (France); Léa Ould-Ahmed, Valentin Espinas, Anabela Da Silva, Institut Fresnel (France)

12629-4 • 09:30 - 09:45 | Room 22a ICM Second Floor

CANCELED: A comprehensive model of depth-resolved polarization gating imaging

Author(s): Anabela Da Silva, Institut Fresnel (France), CNRS (France); Julien Fade, Institut Fresnel (France), Ecole Centrale de Marseille (France); Valentin Espinas, Institut Fresnel (France), Ecole Centrale de Marseille (France), Ctr. Européen de Recherche en Imagerie Médicale (France); Jana El Zaher, Ctr. Européen de Recherche en Imagerie Médicale (France), Ecole Centrale de Marseille (France); Laure Siozade, Institut Fresnel (France), Aix-Marseille Univ. (France), Ctr. Européen de Recherche en Imagerie Médicale (France); Carole Deumié, Institut Fresnel (France), Ecole Centrale de Marseille (France), Ctr. Européen de Recherche en Imagerie Médicale (France)

12629-33 • 09:15 - 09:45 | Room 22a ICM Second Floor

Multiplexed Brillouin microscopy

Author(s): Giuliano Scarcelli, Univ. of Maryland, College Park (United States)

12629-5 • 09:45 - 10:00 | Room 22a ICM Second Floor

Myocardium tissue alterations in acute cardiac attack and respiratory arrest evaluated by polarized light

Author(s): Egor A. Kuzmin, Arthur S. Balkivskiy, Tatiana G. Koryashkina, Natalia L. Kartashkina, Alexander N. Yatskovskiy, I.M. Sechenov First Moscow State Medical Univ. (Russian Federation); Igor V. Meglinski, Univ. of Oulu (Finland), Aston Univ. (United Kingdom); Gennadii A. Piavchenko, I.M. Sechenov First Moscow State Medical Univ. (Russian Federation)

Coffee Break 10:00 - 10:30

SESSION 2: NOVEL METHODS

28 June 2023 • 10:30 - 12:00 | Room 22a ICM Second Floor

Session Chair: Irina V. Kabakova, Univ. of Technology, Sydney (Australia)

12629-6 • 10:30 - 11:00 | Room 22a ICM Second Floor

Rapid stimulated Raman scattering tomography for 3D biomolecular imaging in tissue and cells (*Invited Paper*)

Author(s): Weiqi Wang, Zhiwei Huang, National Univ. of Singapore (Singapore)

12629-7 • 11:00 - 11:15 | Room 22a ICM Second Floor

Cell membrane permeabilization during trypsin proteolysis studied by terahertz attenuated total reflection

Author(s): Guilhem Gallot, Blandine Lordon, Ecole Polytechnique (France)

12629-8 • 11:15 - 11:30 | Room 22a ICM Second Floor

Electric field response of novel nanomaterials for the detection of neural electrical activity

Author(s): Toon Goris, Paul R. Stoddart, Swinburne Univ. of Technology (Australia); Blanca del Rosal Rabes, RMIT Univ. (Australia)

12629-9 • 11:30 - 11:45 | Room 22a ICM Second Floor

Real-time ultrashort laser pulse compression based on single-shot spectrogram

Author(s): Jui-Chi Chang, Shao-Wei Huang, Chia-Yuan Chang, National Cheng Kung Univ. (Taiwan)

12629-10 • 11:45 - 12:00 | Room 22a ICM Second Floor

Raman spectroscopy in in vitro cell cultures: understanding chemoresistance

Author(s): Parikshit J. Patel, Abhiram Natu, Arti R. Hole, Sanjay Gupta, Advanced Ctr. for Treatment, Research & Education in Cancer, Tata Memorial Ctr. (India); C. Murali Krishna, Advanced Ctr. for Treatment, Research & Education in Cancer (India)

POSTER SESSION AND LUNCH BREAK

28 June 2023 • 12:00 - 13:30 | ICM, Hall B0

Posters will be featured on Wednesday.

Poster authors: Please set up posters on the morning of your Session before or during the morning coffee break. Plan to stand by your poster to discuss it with Session attendees during the poster session. Remove your poster following the poster Session concludes as posters left on the boards will be discarded.

12629-28 • 12:00 - 13:30 | ICM, Hall B0

Toward cancer characterization using light backscattering spectroscopy and quantitative ultrasound

Author(s): Cyril Malinet, Pauline Muleki-Seya, CREATIS (France); Aurélie Dutour, Iveta Fajnorova, Ctr. de Recherche en Cancérologie de Lyon (France), Ctr. Léon-Bérard (France); Hervé Liebgott, Bruno Montcel, CREATIS (France)

12629-29 • 12:00 - 13:30 | ICM, Hall B0 A comparison of different methods for deep tissue elasticity characterization using optical coherence elastography

Author(s): Asha Parmar, Gargi Sharma, Kanwarpal Singh, Max-Planck-Institut für die Physik des Lichts (Germany)

12629-31 • 12:00 - 13:30 | ICM, Hall B0

Optimizing the classification of biological tissues using polarized data supported by machine learning

Author(s): Irene Estévez Caride, Mónica Canabal-Carbia, Carla Rodríguez, Juan Campos Coloma, Angel Lizana Tutusaus, Univ. Autònoma de Barcelona (Spain)

SESSION 3: COMPUTATIONAL METHODS

28 June 2023 • 13:30 - 14:15 | Room 22a ICM Second Floor

Session Chair: Igor V. Meglinski, Univ. of Oulu (United Kingdom)

12629-11 • 13:30 - 13:45 | Room 22a ICM Second Floor

Unleashing the power of high-throughput bright-field imaging for enhanced mesenchymal cell separation: a novel supervised clustering approach in vitro augmentation of healthy and stressful conditions

Author(s): Polat Goktas, Ricardo S. Carbajo, Univ. College Dublin (Ireland), Ctr. for Applied Data Analytics Research (Ireland)

12629-12 • 13:45 - 14:00 | Room 22a ICM Second Floor

Data analysis methods for the quantification of the morphology and dynamics of the retinal vessels

Author(s): Julia A. Kochańska, Patrycjusz Stremplewski, Marcin Sylwestrzak, Nicolaus Copernicus Univ. (Poland); Krzysztof Dalasiński, Inoko Vision sp. z o.o. (Poland); Edyta Dąbrowska, Jacek Wolf, Marcin Hellmann, Krzysztof Narkiewicz, Medical University of Gdańsk (Poland); Anna Szkulmowska, Inoko Vision sp. z o.o. (Poland); Maciej Szkulmowski, Nicolaus Copernicus Univ. (Poland)

12629-13 • 14:00 - 14:15 | Room 22a ICM Second Floor

Deep learning aided discrimination of stem cell-collagen types I and II using polarization-SHG multispectral imaging

Author(s): Anupama Nair, Shang-Yang Lu, Chun-Yu Lin, National Yang Ming Chiao Tung Univ. (Taiwan); Shu-Chun Chuang, Yi-Shan Lin, Chung-Hwan Chen, Kaohsiung Medical Univ. (Taiwan); Chi-Hsiang Lien, National United Univ. (Taiwan); Shean-Jen Chen, National Yang Ming Chiao Tung Univ. (Taiwan)

SESSION 4: DEALING WITH HIGHLY SCATTERING MEDIA

28 June 2023 • 14:15 - 15:30 | Room 22a ICM Second Floor

Session Chair: Guenther Paltauf, Karl-Franzens-Univ. Graz (Austria)

12629-14 • 14:15 - 14:45 | Room 22a ICM Second Floor

Direct measurements of diffusive samples by random lasing (Invited Paper)

Author(s): Federico Tommasi, Lorenzo Fini, Fabrizio Martelli, Stefano Cavaliere, Univ. degli Studi di Firenze (Italy)

12629-15 • 14:45 - 15:00 | Room 22a ICM Second Floor

Non-contact wide-field time of flight measurements in highly scattering media

Author(s): André Stefanov, Univ. Bern (Switzerland); Gijs Hannink, Univ. Twente (Netherlands); Pascal Tijkorte, Lynn Roth, Martin Frenz, Univ. Bern (Switzerland)

12629-16 • 15:00 - 15:15 | Room 22a ICM Second Floor

Three-dimensional reconstruction of subsurface absorbing structures in tissue phantoms from photothermal radiometric records

Author(s): Katja Arh, Tomaž Cvetko, Univ. of Ljubljana (Slovenia); Boris Majaron, Jožef Stefan Institute (Slovenia), Univ. of Ljubljana (Slovenia)

12629-17 • 15:15 - 15:30 | Room 22a ICM Second Floor

Age-related changes of dermal scattering coefficient assessed using a noninvasive optical technique

Author(s): Neža Golmajer Zima, Jožef Stefan Institute (Slovenia), Univ. of Ljubljana (Slovenia); Nina Verdel, Jožef Stefan Institute (Slovenia); Boris Majaron, Jožef Stefan Institute (Slovenia), Univ. of Ljubljana (Slovenia)

CONFERENCE 12629

THURSDAY 29 JUNE

SESSION 5: CELL AND TISSUE MECHANICS

29 June 2023 • 08:30 - 10:00 | Room 22a ICM Second Floor

Session Chair: Giuliano Scarcelli,
Univ. of Maryland, College Park (United States)

12629-18 • 08:30 - 09:00 | Room 22a ICM Second Floor

Stereoscopic optical palpation towards intraoperative breast cancer detection (*Invited Paper*)

Author(s): Qi Fang, Seokhyun Choi, Aiden Taba, Rowan W. Sanderson, Devina D. Lakhiani, Renate Zilkens, Imogen Boman, Kyle Newman, Harry Perkins Institute of Medical Research (Australia); Benjamin F. Dessauvague, The Univ. of Western Australia (Australia); Christobel M. Saunders, The Univ. of Melbourne (Australia); Brendan F. Kennedy, Harry Perkins Institute of Medical Research (Australia)

12629-19 • 09:00 - 09:15 | Room 22a ICM Second Floor

Three-dimensional characterization of cell spheroid elasticity using quantitative micro-elastography

Author(s): Matt Hepburn, Alireza Mowla, Jiayue Li, Samuel Maher, Danielle Vahala, Sebastian Amos, Farzan Navaeipour, Yu Suk Choi, Brendan F. Kennedy, The Univ. of Western Australia (Australia)

12629-20 • 09:15 - 09:30 | Room 22a ICM Second Floor

Air-jet based optical coherence elastography of brain tumor tissue: stiffness evaluation by structural histological analysis

Author(s): Nicolas Detrez, Medizinisches Laserzentrum Lübeck GmbH (Germany); Sazgar Burhan, Univ. zu Lübeck (Germany); Paul Strenge, Medizinisches Laserzentrum Lübeck GmbH (Germany); Jessica Kren, Universitätsklinikum Schleswig-Holstein (Germany); Christian Hagel, Universitätsklinikum Hamburg-Eppendorf (Germany); Matteo Mario Bonsanto, Universitätsklinikum Schleswig-Holstein (Germany); Dirk Theisen-Kunde, Medizinisches Laserzentrum Lübeck GmbH (Germany); Robert A. Huber, Univ. zu Lübeck (Germany), Medizinisches Laserzentrum Lübeck GmbH (Germany); Ralf Brinkmann, Medizinisches Laserzentrum Lübeck GmbH (Germany), Univ. zu Lübeck (Germany)

12629-21 • 09:30 - 09:45 | Room 22a ICM Second Floor

Quantification of internal crystalline lens deformation during compression using optical coherence elastography

Author(s): Vahoura Tahsini, Univ. Bern (Switzerland)

12629-22 • 09:45 - 10:00 | Room 22a ICM Second Floor

Spatial reorganization of F-actin in respiratory cells as measured by Brillouin microscopy

Author(s): Hadi Mahmodi, Univ. of Technology (Australia); Peta Bradbury, Respiratory Technology, Woolcock Institute of Medical Research (Australia); Aylin Cidem, Macquarie Medical School, Faculty of Medicine, Health and Human Sciences, Macquarie University (Australia); H. X. Ong, Daniela Traini, Macquarie Medical School (Australia); Irina V. Kabakova, Univ. of Technology, Sydney (Australia)

Coffee Break 10:00 - 10:30

SESSION 6: INTERFEROMETRY

29 June 2023 • 10:30 - 12:00 | Room 22a ICM Second Floor

Session Chair: Dirk J. Faber, Amsterdam UMC (Netherlands)

12629-23 • 10:30 - 11:00 | Room 22a ICM Second Floor

In vivo analysis of cilia function in the fallopian tube with dynamic optical coherence tomography (*Invited Paper*)

Author(s): Tian Xia, Baylor College of Medicine (United States); Shang Wang, Stevens Institute of Technology (United States); Irina V. Larina, Baylor College of Medicine (United States)

12629-24 • 11:00 - 11:15 | Room 22a ICM Second Floor

Digital inline holographic microscopy for fast, label-free detection of antimicrobial mechanism of action

Author(s): Zohreh Sedaghat, BIOASTER (France); Héloïse Botrel, BIOASTER (France), Thales LAS France SAS (France); Alexei Novoloaca, Mélanie Nehlich, Christophe Védrine, Sophie Dixneuf, BIOASTER (France)

12629-25 • 11:15 - 11:30 | Room 22a ICM Second Floor

Multi-range scanning laser ophthalmoscope for imaging the morphology and dynamics of the retinal vessels

Author(s): Maciej Szkulmowski, Patrycjusz Stremplewski, Julia A. Kochańska, Nicolaus Copernicus Univ. (Poland); Edyta Dąbrowska, Medical University of Gdańsk (Poland); Marcin Sylwestrzak, Nicolaus Copernicus Univ. (Poland); Krzysztof Dalasiński, Inoko Vision sp. z o.o. (Poland); Jacek Wolf, Marcin Hellmann, Krzysztof Narkiewicz, Medical University of Gdańsk (Poland); Anna Szkulmowska, Inoko Vision sp. z o.o. (Poland)

12629-26 • 11:30 - 11:45 | Room 22a ICM Second Floor

Seeing the end of the tunnel by mice disclosed by laser speckle contrast imaging

Author(s): Anton Y. Sdobnov, Univ. of Oulu (Finland); Vyacheslav Kalchenko, Weizmann Institute of Science (Israel); Gennadii A. Piavchenko, I.M. Sechenov First Moscow State Medical Univ. (Russian Federation); Alexander V. Bykov, Univ. of Oulu (Finland); Igor V. Meglinski, Univ. of Oulu (Finland), Aston Univ. (United Kingdom)

12629-27 • 11:45 - 12:00 | Room 22a ICM Second Floor

Metabolic and morphological evaluation of an artificial full-thickness skin model using a multimodal photonic system

Author(s): Arooj Arooj, Victor V. Dermin, Aston Univ. (United Kingdom); Ayman El-Tamer, Maria Surnina, Laser nanoFab GmbH (Germany); Céline Lancelot, StratiCell Ltd. (Belgium); Edik U. Rafailov, Sergei G. Sokolovsky, Aston Univ. (United Kingdom)

ECBO CLOSING AND AWARDS

29 June 2023 • 15:30 - 16:30 | Room 5 ICM Ground Floor

Join us for closing remarks and presentation of the best paper awards.

CONFERENCE 12630

Advances in Microscopic Imaging

28 June 2023 | Room 4 "Theodore Maiman" B21 - Halle B2

Conference Chairs: **Emmanuel Beaurepaire**, Ecole Polytechnique (France); **Adela Ben-Yakar**, The Univ. of Texas at Austin (United States); **YongKeun Park**, KAIST (Republic of Korea);

Programme Committee: **Paola Borri**, Cardiff Univ. (United Kingdom); **Paul J. Campagnola**, Univ. of Wisconsin-Madison (United States); **Laurent Cognet**, Univ. de Bordeaux (France); **Vincent R. Daria**, The Australian National Univ. (Australia); **Reto P. Fiolka**, The Univ. of Texas Southwestern Medical Ctr. at Dallas (United States); **Paul M. W. French**, Imperial College London (United Kingdom); **Irene Georgakoudi**, Tufts Univ. (United States); **Rainer Heintzmann**, Leibniz-Institut für Photonische Technologien e.V. (Germany); **Na Ji**, Univ. of California, Berkeley (United States); **Jonathan T.C. Liu**, Univ. of Washington (United States); **Gail McConnell**, Univ. of Strathclyde (United Kingdom); **Jerome Mertz**, Boston Univ. (United States); **U. Valentin Nägerl**, Univ. de Bordeaux (France); **Nozomi Nishimura**, Cornell Univ. (United States); **Dan Oron**, Weizmann Institute of Science (Israel); **Eirini I. Papagiakoumou**, Institut de la Vision (France); **Francesco Saverio Pavone**, LENS - Lab. Europeo di Spettroscopia Non-Lineari (Italy); **Shy Shoham**, NYU Langone Health (Israel); **Melissa C. Skala**, Morgridge Institute for Research (United States)

WEDNESDAY 28 JUNE

POSTER SESSION AND LUNCH BREAK

28 June 2023 • 12:00 - 13:30 | ICM, Hall B0

Posters will be featured on Wednesday.

Poster authors: Please set up posters on the morning of your Session before or during the morning coffee break. Plan to stand by your poster to discuss it with Session attendees during the poster session. Remove your poster following the poster Session concludes as posters left on the boards will be discarded.

12630-17 • 12:00 - 13:30 | ICM, Hall B0

Highly temporal phase stable common-path quantitative phase microscope

Author(s): Anuj Saxena, Indian Institute of Technology Delhi (India); Azeem Ahmad, Vishesh Dubey, Anowarul Habib, Balpreet Singh Ahluwalia, UiT The Arctic Univ. of Norway (Norway); Dalip Singh Mehta, Sathi Das, Indian Institute of Technology Delhi (India)

12630-26 • 12:00 - 13:30 | ICM, Hall B0

Small footprint SLIDE demonstrator for 40Hz volume rate multiphoton microscopy

Author(s): Dirk Theisen-Kunde, Medizinisches Laserzentrum Lübeck GmbH (Germany); Florian Sommer, Leibniz-Institut für Virologie (Germany); Veit Danicke, Lion Schützeck, Stefan Meyer, Christopher Kren, Maximilian Rixius, Medizinisches Laserzentrum Lübeck GmbH (Germany); Sebastian Karpf, Univ. zu Lübeck (Germany)

12630-27 • 12:00 - 13:30 | ICM, Hall B0

Fast hyperspectral mid-infrared microscopy by phase-contrast optothermal detection

Author(s): Tao Yuan, Ctr. for Translational Cancer Research, Technische Univ. München (Germany), Institute of Biological and Medical Imaging, Helmholtz Zentrum München GmbH (Germany); Francesca Gasparin, Vasilis Ntziachristos, Miguel A. Pleitez, Technische Univ. München (Germany), Helmholtz Zentrum München GmbH (Germany)

12630-28 • 12:00 - 13:30 | ICM, Hall B0

Single-particle spectroelectrochemistry: tuning chemical interfaces of adsorbate molecules and plasmonic nanoparticles by electrochemical potential

Author(s): Ramasamy Mukunthan, Ji Won Ha, Univ. of Ulsan (Republic of Korea)

12630-29 • 12:00 - 13:30 | ICM, Hall B0

1% supervised deep representation learning can detect abnormal tissue

Author(s): Dushan N. Wadduwage, Harvard Univ. (United States); Nirhoshan Sivaroopan, Hasindri Watawana, Chamuditha Jayanga, Chalani Ekanayake, Ranga P. Rodrigo, Chamira U. S. Edussooriya, Univ. of Moratuwa (Sri Lanka)

12630-30 • 12:00 - 13:30 | ICM, Hall B0

C-CLASS microscopy allows the detection of nanoscale changes in chromatin structure

Author(s): Mark F. Coughlan, Giuseppe Pettinato, Maria M. Glyavina, Xuejun Zhang, Liming Chen, Umar Khan, Paul K. Upputuri, Yuri N. Zakharov, Lei Zhang, Le Qiu, Lev T. Perelman, Ctr. for Advanced Biomedical Imaging and Photonics, Beth Israel Deaconess Medical Ctr., Harvard Univ. (United States)

12630-32 • 12:00 - 13:30 | ICM, Hall B0

Detection and classification of breast cancer utilizing polarimetric imaging system and machine learning

Author(s): Thi-Thu-Hien Pham, Vietnam National Univ. Ho Chi Minh City (Vietnam); Quoc-Hung Phan, National United Univ. (Taiwan)

12630-34 • 12:00 - 13:30 | ICM, Hall B0

White light phase-shifting interferometry using deep learning-based phase-shifter

Author(s): Sunil Bhatt, Indian Institute of Technology Delhi (India); Ankit Butola, UiT The Arctic Univ. of Norway (Norway); Pramila Thapa, Dalip Singh Mehta, Indian Institute of Technology Delhi (India)

12630-35 • 12:00 - 13:30 | ICM, Hall B0

Microstructured tissue phantom for microscopes and endoscopes

Author(s): Christian Freymüller, Laser- und Immunologie-Forschungs-Einrichtungen Zentrum (Germany); Stephan Ströbl, Matthias Domke, FH Vorarlberg (Austria); Maximilian Aumiller, Maximilian Eisel, Ronald Sroka, Adrian Rühm, Laser- und Immunologie-Forschungs-Einrichtungen Zentrum (Germany)

12630-36 • 12:00 - 13:30 | ICM, Hall B0

CANCELED: Optical design of plan PolyApochromat lens objectives for microscopes

Author(s): Dmitry N. Frolov, Olga A. Vinogradova, Alexey D. Frolov, Alexandr D. Pavliy, Labor-Microscopes (Russian Federation)

12630-37 • 12:00 - 13:30 | ICM, Hall B0

Simulating water as immersion medium for scanning laser optical tomography and correcting image artifacts due to refractive index mismatch

Author(s): Bjoern Ole Hill, Tammo Ripken, Laser Zentrum Hannover e.V. (Germany); Roland Lachmayer, Leibniz Univ. Hannover (Germany); Merve Wollweber, Laser Zentrum Hannover e.V. (Germany)

12630-38 • 12:00 - 13:30 | ICM, Hall B0

Chromatic confocal microscope: designing and development

Author(s): Muktesh Mohan, Gargi Sharma, Kanwarpal Singh, Max-Planck-Institut für die Physik des Lichts (Germany)

CONFERENCE 12630

12630-39 • 12:00 - 13:30 | ICM, Hall B

3D visualization of multicellular tumor spheroids in fluorescence microscopy

Author(s): Julia R. Alonso, Univ. de la República Uruguay (Uruguay)

12630-40 • 12:00 - 13:30 | ICM, Hall B0

CNN-assisted quantitative phase microscopy for biological cell imaging

Author(s): Igor A. Shevkunov, Meenakshisundaram Kandhavelu, Karen Eguiazarian, Tampere Univ. (Finland)

12630-41 • 12:00 - 13:30 | ICM, Hall B0

CANCELED: Water treated 3D printed polymer-based diffuser fabrication for diffuserCam microscopic imaging

Author(s): Samir Kumar Biswas, Sarvesh Thakur, Indian Institute of Science Education and Research Mohali (India)

12630-42 • 12:00 - 13:30 | ICM, Hall B0

Mueller matrix polarimetric imaging of whole-slide tissue samples

Author(s): Ariel Fernández, Univ. de la República Uruguay (Uruguay); Roman Demczyklo, Universidad de la República (Uruguay); Diego Silva, Universidad de la República Uruguay (Uruguay)

12630-43 • 12:00 - 13:30 | ICM, Hall B0

Label-free analysis of chemical and biological objects using resonant-wavelength images produced by hyperspectral SPR microscopy

Author(s): Ziwei Liu, Hongyi Tang, Chen Cai, Zhi-Mei Qi, Aerospace Information Research Institute (China)

12630-44 • 12:00 - 13:30 | ICM, Hall B0

Low-cost portable lens less digital holographic microscope for studying anemic RBCs

Author(s): Aswathy Vijay, Ashwini S. Galande, Renu John, Indian Institute of Technology Hyderabad (India)

12630-45 • 12:00 - 13:30 | ICM, Hall B0

Predicting dark-field images of H&E-stained esophageal specimens

Author(s): Berfin Arli, Izmir Biomedicine and Genome Ctr. (Turkey), Dokuz Eylül Üniv. (Turkey); Omer Faruk Dinc, Izmir Biomedicine and Genome Ctr. (Turkey), Dokuz Eylül Üniv. (Turkey); Merve Turker Burhan, Serhat Tozburun, Izmir Biomedicine and Genome Ctr. (Turkey), Dokuz Eylül Üniv. (Turkey)

12630-46 • 12:00 - 13:30 | ICM, Hall B0

AI classification for hepatitis B virus detection based on Mueller matrix imaging

Author(s): Van-Tung Nguyen, Quoc-Thinh Dinh, Quoc-Hung Phan, National United Univ. (Taiwan); Thi-Thu-Hien Pham, Vietnam National Univ. Ho Chi Minh City (Vietnam)

12630-48 • 12:00 - 13:30 | ICM, Hall B0

Phase contrast imaging to detect transparent cells in optic neuropathies

Author(s): Elena Gofas Salas, Institut de la Vision (France); Nathaniel Norberg, Ctr. Hospitalier National d'Ophthalmologie des Quinze Vingts (France); Céline Louapre, Paris Brain Institute (France), Sorbonne Univ. (France), Assistance Publique Hôpitaux de Paris (France); Ysoline Beigneux, Paris Brain Institute (France), Sorbonne Univ. (France), Assistance Publique Hôpitaux de Paris (France); Catherine Vignal Clermont, Ctr. Hospitalier National d'Ophthalmologie des Quinze Vingts (France), Hôpital Fondation Rothschild (France); Michel Paques, Ctr. Hospitalier National d'Ophthalmologie des Quinze Vingts (France); Kate Grieve, Institut de la Vision (France)

12630-49 • 12:00 - 13:30 | ICM, Hall B0

Fiber-conduit-based laser speckle contrast imaging device for point of care diagnostics

Author(s): Ria Paul, Susweta Das, Soumyajit Sarkar, Mohammad Zaffar, Hari M. Varma, Indian Institute of Technology Bombay (India)

SESSION 1: ADVANCED MULTIPHOTON IMAGING

28 June 2023 • 13:30 - 14:15 |

Room 4 "Theodore Maiman" B21 - Halle B2

Session Chair: Emmanuel Beaufreire, Ecole Polytechnique (France)

12630-1 • 13:30 - 14:00 | Room 4 "Theodore Maiman" B21 - Halle B2

Color TSFG microscopy of red blood cells and oxygenation (Invited Paper)

Author(s): Júlia Ferrer Ortas, Pierre Mahou, Sophie Escot, Chiara Stringari, Nicolas B. David, Lab. d'Optique et Biosciences, Institut National de la Santé et de la Recherche Médicale, Ecole Polytechnique, CNRS (France); Laure Bally-Cuif, Nicolas Dray, Institut Pasteur, CNRS (France); Willy Supatto, Emmanuel Beaufreire, Lab. d'Optique et Biosciences, Institut National de la Santé et de la Recherche Médicale, Ecole Polytechnique, CNRS (France)

12630-2 • 14:00 - 14:15 | Room 4 "Theodore Maiman" B21 - Halle B2

Clear and deep temporal focusing multiphoton microscopy imaging using deep prediction with PhyCell and ConvLSTM

Author(s): Hao-Chung Chi, Anupama Nair, National Yang Ming Chiao Tung Univ. (Taiwan); Yvonne Yuling Hu, National Cheng Kung Univ. (Taiwan); Feng-Chun Hsu, Chia-Wei Hsu, Chun-Yu Lin, Shean-Jen Chen, National Yang Ming Chiao Tung Univ. (Taiwan)

SESSION 2: COHERENT RAMAN TECHNIQUES

28 June 2023 • 14:15 - 15:15 |

Room 4 "Theodore Maiman" B21 - Halle B2

Session Chair: Emmanuel Beaufreire, Ecole Polytechnique (France)

12630-4 • 14:15 - 14:45 | Room 4 "Theodore Maiman" B21 - Halle B2

Broadband CARS microscopy in the entire Raman-active region of biological samples via supercontinuum generation in bulk media (Invited Paper)

Author(s): Federico Vernuccio, Chiara Ceconello, Arianna Bresci, Francesco Manetti, Salvatore Sorrentino, Politecnico di Milano (Italy); Renzo Vanna, CNR-Istituto di Fotonica e Nanotecnologie (Italy); Giulio Cerullo, Dario Polli, Politecnico di Milano (Italy), CNR-Istituto di Fotonica e Nanotecnologie (Italy)

12630-5 • 14:45 - 15:00 | Room 4 "Theodore Maiman" B21 - Halle B2

Bessel beam-enabled stimulated Raman scattering tomography for rapid z-scan free volumetric chemical imaging

Author(s): Shulang Lin, Zhiwei Huang, National Univ. of Singapore (Singapore)

12630-6 • 15:00 - 15:15 | Room 4 "Theodore Maiman" B21 - Halle B2

Steroid penetration through different tissue barriers visualized by phase-modulated stimulated Raman scattering microscopy

Author(s): Miyako Iritani, Terumasa Ito, Kazuhiko Misawa, Tokyo Univ. of Agriculture and Technology (Japan)

Coffee Break 15:15 - 15:30

SESSION 3: WAVEFRONT CONTROL AND ADAPTIVE OPTICS

28 June 2023 • 15:30 - 16:45 |
Room 4 "Theodore Maiman" B21 - Halle B2
Session Chair: Júlia Ferrer Ortas

12630-7 • 15:30 - 16:00 | Room 4 "Theodore Maiman" B21 - Halle B2

Random-access two-photon holographic optogenetic stimulation combined with brain-wide functional light-sheet imaging in larval zebrafish (*Invited Paper*)

Author(s): Antoine Hubert, Mattéo Dommanget-Kott, Sorbonne Univ. (France); Sébastien Wolf, Institut de biologie de l'Ecole Normale Supérieure (France); Thomas Panier, Georges Debrégeas, Volker Bormuth, Sorbonne Univ. (France)

12630-8

A novel adaptive optically illuminated device for in vivo imaging of fluorescently labeled specimens

Author(s): Mikis Mylonakis, Foundation for Research and Technology-Hellas (Greece); Evangelos Marakis, Athanasios D. Zacharopoulos, Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas (Greece); Maira Tampakaki, Institute of Computer Science, Foundation for Research and Technology-Hellas (Greece); Joseph Papamatheakis, Institute of Molecular Biology and Biotechnology, Foundation for Research and Technology-Hellas (Greece); Dimitrios G. Papazoglou, Univ. of Crete (Greece); Giannis Zacharakis, Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas (Greece)

12630-9 • 16:15 - 16:30 | Room 4 "Theodore Maiman" B21 - Halle B2

μ DM: a new wavefront modulator optimized for use in microscopy

Author(s): Fabrice Harms, Cynthia Veilly, Audrius Jasaitis, Pauline Treimany, Xavier Levecq, Algita Stankeviciute, Imagine Optic SA (France)

12630-10 • 16:30 - 16:45 | Room 4 "Theodore Maiman" B21 - Halle B2

3D micropatterned multiphoton stimulation via deep computer-generated holography with digital propagation matrix

Author(s): Shang-Yang Lu, Hao-Chung Chi, Liang-Wei Chen, Feng-Chun Hsu, Chun-Yu Lin, National Yang Ming Chiao Tung Univ. (Taiwan); Yvonne Yuling Hu, National Cheng Kung Univ. (Taiwan); Shean-Jen Chen, National Yang Ming Chiao Tung Univ. (Taiwan)

THURSDAY 29 JUNE

SESSION 4: FAST IMAGING METHODS

29 June 2023 • 08:45 - 10:00 |
Room 4 "Theodore Maiman" B21 - Halle B2
Session Chair: Antoine Hubert, Sorbonne Université (France)

12630-11 • 08:45 - 09:15 | Room 4 "Theodore Maiman" B21 - Halle B2

Kilohertz two-photon SLIDE microscopy using a newly developed 780nm excitation laser (*Invited Paper*)

Author(s): Tonio Kutscher, Christian Stock, Florian Sommer, Jonas Jurkevicius, Stefan Meyer, Anton Gruber, Annika Hunold, Moritz Wiggert, Christina Leonhardt, Philipp Lamming, Sebastian Karpf, Univ. zu Lübeck (Germany)

12630-12 • 09:15 - 09:30 |

Room 4 "Theodore Maiman" B21 - Halle B2

Fast frequency encoded microscopy for kilohertz imaging

Author(s): Pietro Ricci, Andrea Marchese, Univ. de Barcelona (Spain); Peter Saggau, Baylor College of Medicine (United States); Marti Duocastella, Univ. de Barcelona (Spain)

12630-13 • 09:30 - 09:45 |

Room 4 "Theodore Maiman" B21 - Halle B2

Fast hyperspectral confocal microscopy for microlaser-based cell tracking and biosensing

Author(s): Vera M. Titze, Univ. of St. Andrews (United Kingdom), Humboldt Ctr. for Nano- and Biophotonics, Univ. zu Köln (Germany); Soraya Caixeiro, Humboldt Ctr. for Nano- and Biophotonics, Univ. zu Köln (Germany); Vinh San Dinh, Univ. of St. Andrews (United Kingdom); Matthias König, Humboldt Ctr. for Nano- and Biophotonics (Germany); Matthias Rüksam, Nachiket Pathak, Carin M. Niessen, Univ. zu Köln (Germany); Marcel Schubert, Humboldt Ctr. for Nano- and Biophotonics, Univ. zu Köln (Germany), Univ. of St. Andrews (United Kingdom); Malte C. Gather, Univ. of St. Andrews (United Kingdom), Humboldt Ctr. for Nano- and Biophotonics, Univ. zu Köln (Germany)

12630-14 • 09:45 - 10:00 |

Room 4 "Theodore Maiman" B21 - Halle B2

Kilohertz multimodal SLIDE imaging in the visible

Author(s): Christian Stock, Tonio Kutscher, Philipp Lamming, Sebastian Karpf, Univ. zu Lübeck (Germany)

Coffee Break 10:00 - 10:30

SESSION 5: PHASE AND POLARIZATION IMAGING

29 June 2023 • 10:30 - 11:45 |
Room 4 "Theodore Maiman" B21 - Halle B2
Session Chair: Karsten Plamann, Ecole Nationale Supérieure de Techniques Avancées (France)

12630-15 • 10:30 - 10:45 | Room 4 "Theodore Maiman" B21 - Halle B2

Information technology for polarization-interference detection of changes in the soft matter polycrystalline structure of optically anisotropic biological layers

Author(s): Yuriy Ushenko, Chernivtsi National Univ. Y. Fedkovich (Ukraine); Liliya Trifonyuk, Rivne State Medical Ctr. (Ukraine); Iryna Soltys, Olexander V. Dubolazov, Olexander Ushenko, Olexander Salega, Yaroslav Struk, Chernivtsi National Univ. Y. Fedkovich (Ukraine); Jun Zheng, Chen Zhebo, Xianghua Lin, Zhejiang Univ. (China)

12630-16 • 10:45 - 11:00 | Room 4 "Theodore Maiman" B21 - Halle B2

ELFPIE: an error-laxity Fourier ptychographic iterative engine

Author(s): Shuhe Zhang, Maastricht Univ. (Netherlands); Jinhua Zhou, Anhui Medical Univ. (China); Tos M. Berendschot, Maastricht Univ. (Netherlands)

12630-18 • 11:00 - 11:15 | Room 4 "Theodore Maiman" B21 - Halle B2

Quantitative phase imaging in flow cytometry

Author(s): Pietro Ferraro, Istituto di Scienze Applicate e Sistemi Intelligenti "Eduardo Caianiello" (Italy)

12630-19 • 11:15 - 11:30 | Room 4 "Theodore Maiman" B21 - Halle B2

Detection and classification of urine components utilizing quantitative phase imaging and machine learning

Author(s): Marlene Kallass, Álvaro Barroso, Yussef Hanna, Steffi Ketelhut, Jürgen Schnekenburger, Björn Kemper, Westfälische Wilhelms-Univ. Münster (Germany)

CONFERENCE 12630

12630-20 • 11:30 - 11:45 | Room 4 "Theodore Maiman" B21 - Halle B2

Optical tweezer integrated with multimodal measurement system for cell classification

Author(s): Arun Anand, Sardar Patel Univ. (India); Subhash Utadiya, The Maharaja Sayajirao Univ. of Baroda (India); Bahram Javidi, Univ. of Connecticut (United States); Vani Chhaniwal, Nimit Patel, Chetna M. Patel, The Maharaja Sayajirao Univ. of Baroda (India); Timothy O'Connor, Univ. of Connecticut (United States); Kirit Lad, Sardar Patel Univ. (India)

Lunch Break 11:45 - 13:30

SESSION 6: COMPUTATIONAL IMAGING

29 June 2023 • 13:30 - 14:15 |

Room 4 "Theodore Maiman" B21 - Halle B2

Session Chair: Karsten Plamann, Ecole Nationale Supérieure de Techniques Avancées (France)

12630-21 • 13:30 - 14:00 |

Room 4 "Theodore Maiman" B21 - Halle B2

Beyond convolutional neural networks: in defence of transformers for computational imaging (*Invited Paper*)

Author(s): Dushan N. Wadduwage, Harvard Univ. (United States)

12630-22 • 14:00 - 14:15 | Room 4 "Theodore Maiman" B21 - Halle B2

Extending the limit of conventional structured illumination microscopy

Author(s): Ankit Butola, Sebastian Acuna, Daniel Henry Hansen, Krishna Agarwal, UiT The Arctic Univ. of Norway (Norway)

SESSION 7: TECHNOLOGICAL ADVANCES

29 June 2023 • 14:15 - 15:00 |

Room 4 "Theodore Maiman" B21 - Halle B2

Session Chair: Karsten Plamann, Ecole Nationale Supérieure de Techniques Avancées (France)

12630-23 • 14:15 - 14:30 | Room 4 "Theodore Maiman" B21 - Halle B2

Virtual histopathology with tissue metabolic indicators for cancer profiling

Author(s): Brendon S. Restall, Brendyn D. Cikaluk, Nathaniel J. Haven, Matthew T. Martell, Roger J. Zemp, Univ. of Alberta (Canada)

12630-24 • 14:30 - 14:45 | Room 4 "Theodore Maiman" B21 - Halle B2

OpenFrame: a low-cost, modular, sustainable, open microscopy platform including a novel optical autofocus system, with implementations of automated single molecule localisation microscopy and multibeam, multiphoton microscopy

Author(s): Jonathan Lightley, Sunil Kumar, Imperial College London (United Kingdom), The Francis Crick Institute (United Kingdom); MiQi Lim, William Flanagan, Frederik Görlitz, Imperial College London (United Kingdom); Edwin Garcia, Yuriy Alexandrov, Imperial College London (United Kingdom), The Francis Crick Institute (United Kingdom); Tomas Parrado, Callum Hollick, Cairn Research Ltd. (United Kingdom); Jan F. Evers, Michael Knopf, Cairn GmbH (Germany); Jeremy Graham, Cairn Research Ltd. (United Kingdom); Christopher Dunsby, Mark A. Neil, Paul M. W. French, Imperial College London (United Kingdom), The Francis Crick Institute (United Kingdom)

12630-25 • 14:45 - 15:00 | Room 4 "Theodore Maiman" B21 - Halle B2

Quantitative, reproducible fluorescence lifetime imaging made easy

Author(s): Uwe Ortmann, Matthias Patting, Maria Loidolt-Krueger, Ellen Schmeier, Marcus Sackrow, Fabio Barachati, Marcelle Koenig, Evangelos Sisamakos, Felix Koberling, Rainer Erdmann, PicoQuant GmbH (Germany)

Coffee Break 15:00 - 15:30

ECBO CLOSING AND AWARDS

29 June 2023 • 15:30 - 16:30 | Room 5 ICM Ground Floor

Join us for closing remarks and presentation of the best paper awards.

CONFERENCE 12631

Optoacoustic Methods and Applications in Biophotonics

25 - 26 June 2023 | Room 2 ICM Ground Floor and Room 5 ICM Ground Floor

Conference Chairs: **Chulhong Kim**, Pohang Univ. of Science and Technology (Republic of Korea); **Jan Laufer**, Martin-Luther-Univ. Halle-Wittenberg (Germany); **Vasilis Ntziachristos**, Technical Univ. Munich and Helmholtz Munich (Germany); **Roger J. Zemp**, Univ. of Alberta (Canada)

Programme Committee: **Muyinatu A. Lediju Bell**, Johns Hopkins Univ. (United States); **Emmanuel Bossy**, Lab. Interdisciplinaire de Physique (France); **Ben T. Cox**, Univ. College London (United Kingdom); **Stanislav Y. Emelianov**, Georgia Institute of Technology (United States); **Jan Grimm**, Memorial Sloan-Kettering Cancer Ctr. (United States); **Fabian Kiessling**, Uniklinik RWTH Aachen (Germany); **Michael C. Kolios**, Toronto Metropolitan Univ. (Canada); **Srirang Manohar**, Univ. Twente (Netherlands); **Alexander A. Oraevsky**, TomoWave Labs, Inc. (United States); **Guenther Paltauf**, Karl-Franzens-Univ. Graz (Austria); **Sheryl Roberts**, Wayne State Univ. (United States); **Amir Rosenthal**, Technion-Israel Institute of Technology (Israel); **Tanja Tarvainen**, Univ. of Eastern Finland (Finland); **Lihong V. Wang**, Caltech (United States); **Vladimir P. Zharov**, Univ. of Arkansas for Medical Sciences (United States)

SUNDAY 25 JUNE

SESSION 1: METHODS AND TECHNOLOGIES FOR PA MICROSCOPY AND MESOSCOPY

25 June 2023 • 08:30 - 10:00 | Room 2 ICM Ground Floor

Session Chairs: Chulhong Kim, Pohang Univ. of Science and Technology (Republic of Korea), Byullee Park, Caltech (United States)

12631-1 • 08:30 - 09:00 | Room 2 ICM Ground Floor

Utilizing a 10 million frames-per-second camera to investigate mechanisms responsible for laser pulse-induced reflectivity modulations in photoacoustic remote sensing (*Invited Paper*)

Author(s): Nathaniel J. M. Haven, Matthew T. Martell, Haoyang Li, James D. Hogan, Roger J. Zemp, Univ. of Alberta (Canada)

12631-2 • 09:00 - 09:15 | Room 2 ICM Ground Floor

DPSS-laser-based spectroscopic photoacoustic microscopy system with an arbitrary scanning pattern

Author(s): Lukas Bugyi, Medizinische Univ. Wien (Austria); Bernhard Wondra, Keith Oakes, Elforlight Ltd. (United Kingdom); Richard Haindl, Wolfgang Drexler, Mengyang Liu, Medizinische Univ. Wien (Austria)

12631-3 • 09:15 - 09:30 | Room 2 ICM Ground Floor

Rapid ultraviolet photoacoustic remote sensing microscopy of fresh tissue sections using voice-coil stage scanning

Author(s): Brendyn D. Cikaluk, Brendon S. Restall, Nathaniel J. M. Haven, Matthew T. Martell, Ewan A. McAllister, Roger J. Zemp, Univ. of Alberta (Canada)

12631-4 • 09:30 - 09:45 | Room 2 ICM Ground Floor

Enhancing the axial resolution of an optoacoustic microscopy imaging instrument by using a pico-second pulse duration laser

Author(s): Gianni Nteroli, Giulia Messa, Stella Koutsikou, Univ. of Kent (United Kingdom); Manoj Dasa, NKT Photonics A/S (Denmark); Antti Penttinen, Antti Härkönen, Mircea Guina, Tampere Univ. (Finland); Adrian Podoleanu, Adrian Bradu, Univ. of Kent (United Kingdom)

12631-5 • 09:45 - 10:00 | Room 2 ICM Ground Floor

Advances on label-free metabolic microscopy and analytical histology by mid-infrared optothermal and optoacoustic detection

Author(s): Miguel A. Pleitez, Tao Yuan, Francesca Gasparin, Myeongseop Kim, Constantin Berger, Ko Vito, Nasire Uluc, Helmholtz Zentrum München GmbH (Germany); Vasilis Ntziachristos, Technical University Munich and Helmholtz Munich (Germany)

Coffee Break 10:00 - 10:30

SESSION 2: MODELS AND ALGORITHMS

25 June 2023 • 10:30 - 12:15 | Room 2 ICM Ground Floor

Session Chairs: Chulhong Kim, Pohang Univ. of Science and Technology (Republic of Korea), Byullee Park, Sungkyunkwan Univ. (Republic of Korea)

12631-6 • 10:30 - 10:45 | Room 2 ICM Ground Floor

Deep learning in photoacoustic tomography utilizing variational autoencoders

Author(s): Teemu Sahlström, Tanja Tarvainen, Univ. of Eastern Finland (Finland)

12631-8 • 10:45 - 11:00 | Room 2 ICM Ground Floor

Estimation of photoacoustic spectra for normal and pathological red blood cells using a modified Green's function approach

Author(s): Ratan K. Saha, Ujjal Mandal, Indian Institute of Information Technology, Allahabad (India)

12631-9 • 11:00 - 11:15 | Room 2 ICM Ground Floor

Improvement of spatiotemporal resolution based on deep learning in 3D photoacoustic tomography

Author(s): Seongwook Choi, Jinge Yang, Soo Young Lee, Jiwoong Kim, Pohang Univ. of Science and Technology (Republic of Korea); Byullee Park, Sungkyunkwan Univ. (Republic of Korea); Seungchul Lee, Chulhong Kim, Pohang Univ. of Science and Technology (Republic of Korea)

12631-10 • 11:15 - 11:30 | Room 2 ICM Ground Floor

Photoacoustic ghost imaging using Hadamard pattern projection: reconstruction methods and noise considerations

Author(s): Guenther Paltauf, Paul Torke, Robert Nuster, Karl-Franzens-Univ. Graz (Austria)

12631-11 • 11:30 - 11:45 | Room 2 ICM Ground Floor

Ultraviolet photoacoustic remote sensing and scattering microscopy for CycleGAN-enabled realistic virtual histology

Author(s): Matthew T. Martell, Nathaniel J. M. Haven, Ewan A. McAllister, Brendon S. Restall, Brendyn D. Cikaluk, Rohan Mittal, Benjamin A. Adam, Nadia Giannakopoulos, Lashan Peiris, Sveta Silverman, Jean Deschenes, Xingyu Li, Roger J. Zemp, Univ. of Alberta (Canada)

12631-12 • 11:45 - 12:00 | Room 2 ICM Ground Floor

One-step estimation of spectral optical parameters in quantitative photoacoustic tomography

Author(s): Miika Suhonen, Aki Pulkkinen, Tanja Tarvainen, Univ. of Eastern Finland (Finland)

CONFERENCE 12631

12631-13 • 12:00 - 12:15 | Room 2 ICM Ground Floor

An automated and open-source analysis pipeline for assessment of multispectral raster-scan optoacoustic mesoscopy generated vascular networks

Author(s): Ben Mc Larney, Elana Apfelbaum, Magdalena Skubal, Juan Carlos Desmaras, Jin Cheng, Richard Kolesnick, Jan Grimm, Memorial Sloan-Kettering Cancer Ctr. (United States)

Lunch/Exhibition Break 12:15 - 14:00

ECBO HOT TOPICS: LIGHT FOR LIFE

25 June 2023 • 14:00 - 15:30 | Room 5 ICM Ground Floor

The European Conferences on Biomedical Optics will include a special Hot Topics session. This session, entitled Light for Life, will feature internationally renowned experts discussing the current status of their fields, emerging developments, and how these technologies are poised to improve the human condition.

Coffee Break 15:30 - 16:00

SESSION 3: FUNCTIONAL AND MOLECULAR OA IMAGING

25 June 2023 • 16:00 - 17:15 | Room 2 ICM Ground Floor

Session Chairs: Jan Laufer, Martin-Luther-Univ. Halle-Wittenberg (Germany), Thomas Kirchner, Martin-Luther-Univ. Halle-Wittenberg (Germany)

12631-14 • 16:00 - 16:15 | Room 2 ICM Ground Floor

A multi-transducer approach for human carotid plaque imaging

Author(s): Amir Gholampour, Camilo Cano, Marc van Sambeek, Richard Lopata, Hans-Martin Schawb, Min Wu, Technische Univ. Eindhoven (Netherlands)

12631-15 • 16:15 - 16:30 | Room 2 ICM Ground Floor

Ultrasound and photoacoustic image-guided micro-histotripsy for non-invasive surgery

Author(s): Joy Wang, Pradyumna Kedarisetti, Univ. of Alberta (Canada); Matthew G. Mallay, Jeremy A. Brown, Dalhousie Univ. (Canada); Frank R. Wuest, Roger J. Zemp, Univ. of Alberta (Canada)

12631-16 • 16:30 - 16:45 | Room 2 ICM Ground Floor

Fast raster-scan optoacoustic mesoscopy enables assessment of human melanoma microvasculature in vivo

Author(s): Hailong He, Helmholtz Zentrum München GmbH (Germany); Christine Schönmann, Ulf Darsow, Technische Univ. München (Germany); Juan Aguirre, Helmholtz Zentrum München GmbH (Germany); Vasilis Ntziachristos, Technical University Munich and Helmholtz Munich (Germany)

12631-17 • 16:45 - 17:00 | Room 2 ICM Ground Floor

Functional super-resolution imaging of the mouse brain with localization optoacoustic tomography (LOT)

Author(s): Xosé Luís Deán-Ben, Justin Robin, Daniil Nozdriukhin, Univ. Zürich (Switzerland); Ruiqing D. Ni, ETH Zurich (Switzerland); Jim Zhao, Chaim Glueck, Jeanne Droux, Univ. Zürich (Switzerland); Juan Sendon-Lago, Univ. de Santiago de Compostela (Spain); Zhenyue Chen, ETH Zurich (Switzerland); Quanyu Zhou, Bruno Weber, Susanne Wegener, Univ. Zürich (Switzerland); Anxo Vidal, Univ. de Santiago de Compostela (Spain); Michael Arand, Mohamad El Amki, Daniel Razansky, Univ. Zürich (Switzerland)

12631-18 • 17:00 - 17:15 | Room 2 ICM Ground Floor

Difference imaging of red fluorescent proteins using pump-probe excitation

Author(s): Farzin Ghane Golmohamadi, Hoang T. Phan, Amna Mehmood, Franz-Josef Schmitt, Jan Laufer, Martin-Luther-Univ. Halle-Wittenberg (Germany)

MONDAY 26 JUNE

SESSION 4: NOVEL TECHNOLOGIES FOR PA DETECTION AND IMAGING I

26 June 2023 • 08:30 - 10:00 | Room 5 ICM Ground Floor
Session Chair: Roger J. Zemp, Univ. of Alberta (Canada)

12631-19 • 08:30 - 09:00 | Room 5 ICM Ground Floor

Silicon photonics ultrahigh-resolution in vivo optoacoustic tomography (Invited Paper)

Author(s): Yoav Hazan, Ahia Levi, Michael Nagli, Amir Rosenthal, Technion-Israel Institute of Technology (Israel)

12631-20 • 09:00 - 09:15 | Room 5 ICM Ground Floor

Fast interrogation wavelength tuning for all-optical photoacoustic imaging

Author(s): Jérémy Saucourt, Antonin Moreau, Julien Lumeau, Hervé Rigneault, Thomas Chaigne, Institut Fresnel (France)

12631-21 • 09:15 - 09:30 | Room 5 ICM Ground Floor

All-optical multimode fibre photoacoustic endomicroscopy with scalable spatial resolution and field-of-view

Author(s): Tianrui Zhao, Truc Pham, Christian Baker, Michelle Ma, Sébastien Ourselin, Tom Vercauteren, King's College London (United Kingdom); Edward Z. Zhang, Paul C. Beard, Univ. College London (United Kingdom); Wenfeng Xia, King's College London (United Kingdom)

12631-22 • 09:30 - 09:45 | Room 5 ICM Ground Floor

Frequency wavelength multiplexed optoacoustic tomography

Author(s): Antonios Stylogiannis, Ludwig Prade, Sarah Glasl, Qutaiba Mustafa, Christian Zakian, Vasilis Ntziachristos, Institute of Biological and Medical Imaging, Helmholtz Zentrum München GmbH (Germany), Technische Univ. München (Germany)

12631-23 • 09:45 - 10:00 | Room 5 ICM Ground Floor

Transparent row-column CMUT arrays for volumetric photoacoustic imaging

Author(s): Mahyar Ghavami, Mohammad Rahim Sobhani, Roger J. Zemp, Univ. of Alberta (Canada)

Coffee Break 10:00 - 10:30

SESSION 5: NOVEL TECHNOLOGIES FOR PA DETECTION AND IMAGING II

26 June 2023 • 10:30 - 12:00 | Room 5 ICM Ground Floor
Session Chair: Roger J. Zemp, Univ. of Alberta (Canada)

12631-24 • 10:30 - 10:45 | Room 5 ICM Ground Floor

Photoacoustic tomography using a Fabry-Perot sensor with homogeneous optical thickness and wide-field camera-based detection

Author(s): Jan Sievers, Martin-Luther-Univ. Halle-Wittenberg (Germany); Claus Villringer, Technische Hochschule Wildau (Germany); Werner Lebek, Taravat Gilani, Jan Laufer, Martin-Luther-Univ. Halle-Wittenberg (Germany)

12631-25 • 10:45 - 11:00 | Room 5 ICM Ground Floor

Simultaneous laser ultrasound and optoacoustic imaging facilitated by a semi-transparent optoacoustic emitter

Author(s): Daniil Nozdriukhin, Sandeep Kumar Kalva, Daniel Razansky, Xosé Luís Deán-Ben, Univ. Zürich (Switzerland), ETH Zurich (Switzerland)

12631-26 • 11:00 - 11:15 | Room 5 ICM Ground Floor

Plano-concave optical sensors for transcranial photoacoustic measurements

Author(s): Thomas Kirchner, Martin-Luther-Univ. Halle-Wittenberg (Germany); Claus Villringer, Marko Gutke, Technische Hochschule Wildau (Germany); Jan Laufer, Martin-Luther-Univ. Halle-Wittenberg (Germany)

12631-27 • 11:15 - 11:30 | Room 5 ICM Ground Floor

Ultrasonic field mapping through a multimode optical fibre

Author(s): Benjamin Keenlyside, Univ. College London (United Kingdom); Dylan Marques, Univ. of Birmingham (United Kingdom); Nathaniel Redgewell, Maxim Cherkashin, Univ. College London (United Kingdom); David Phillips, University of Exeter (United Kingdom); Edward Zhang, Paul Beard, Univ. College London (United Kingdom); James Guggenheim, Univ. of Birmingham (United Kingdom)

12631-28 • 11:30 - 11:45 | Room 5 ICM Ground Floor

Miniature ultrasound detector arrays in silicon photonics using amplitude transmission monitoring

Author(s): Yoav Hazan, Michael Nagli, Ahiad Levi, Amir Rosenthal, Technion-Israel Institute of Technology (Israel)

12631-29 • 11:45 - 12:00 | Room 5 ICM Ground Floor

Interrogating Fabry-Perot ultrasound sensors with Bessel beams for photoacoustic imaging

Author(s): Dylan M. Marques, Univ. of Birmingham (United Kingdom); Oliver Sheppard, Edward Zhang, Paul Beard, Peter Munro, Univ. College London (United Kingdom); James Guggenheim, Univ. of Birmingham (United Kingdom)

POSTER SESSION AND LUNCH BREAK

26 June 2023 • 12:30 - 13:30 | ICM, Hall B0

Posters will be featured on Monday.

Poster authors: Please set up posters on the morning of your Session before or during the morning coffee break. Plan to stand by your poster to discuss it with Session attendees during the poster session. Remove your poster following the poster Session concludes as posters left on the boards will be discarded.

12631-30 • 12:00 - 13:30 | ICM, Hall B0

Bias-Sensitive 128x128 hand-held TOBE ultrasound probe based on electrostrictive PMN-PT for photoacoustic applications

Author(s): Mohammad Rahim Sobhani, Mahyar Ghavami, Roger J. Zemp, Univ. of Alberta (Canada)

12631-31 • 12:00 - 13:30 | ICM, Hall B0

On the Born series methods for solving inhomogeneous Helmholtz equation in biomedical photoacoustics

Author(s): Ujjal Mandal, Indian Institute of Information Technology, Allahabad (India); Jagpreet Singh, Indian Institute of Technology Ropar (India); Ratan K. Saha, Indian Institute of Information Technology, Allahabad (India)

12631-32 • 12:00 - 13:30 | ICM, Hall B0

Portable hand-held optoacoustic system for localizing blood vessels at intermediate depths

Author(s): Zohar Or, Ahiad Refael Levi, Yoav Hazan, Amir Rosenthal, Technion-Israel Institute of Technology (Israel)

12631-33 • 12:00 - 13:30 | ICM, Hall B0

Evaluation of fabrication methods for Fabry-Perot polymer film ultrasound sensors

Author(s): Werner Lebek, Frank Heyroth, Frank Syrowatka, Martin-Luther-Univ. Halle-Wittenberg (Germany); Claus Villringer, Technische Hochschule Wildau (Germany); Sylvia Goerlitz, Jan Laufer, Martin-Luther-Univ. Halle-Wittenberg (Germany)

12631-34 • 12:00 - 13:30 | ICM, Hall B0

Towards label-free analytical histology of unprocessed tissues by mid-infrared optoacoustic microscopy and spectroscopy

Author(s): Myeongseop Kim, Helmholtz Zentrum München GmbH (Germany), Technische Univ. München (Germany); Alexander Wolf, Institut für Pharmakologie und Toxikologie, Rheinische Friedrich-Wilhelms-Univ. Bonn (Germany); Constantin Berger, Institute of Biological and Medical Imaging, Helmholtz Zentrum München GmbH (Germany), Technische Univ. München (Germany); Vasilis Ntziachristos, Helmholtz Zentrum München GmbH (Germany), Technische Univ. München (Germany); Yongguo Li, Institut für Pharmakologie und Toxikologie, Rheinische Friedrich-Wilhelms-Univ. Bonn (Germany); Miguel A. Pleitez, Helmholtz Zentrum München GmbH (Germany), Technische Univ. München (Germany)

12631-35 • 12:00 - 13:30 | ICM, Hall B0

Miniaturised all-optical ultrasound probe for thrombus imaging

Author(s): Shaoyan Zhang, Univ. College London (United Kingdom); Chung S. Lim, Royal Free Hospital (United Kingdom); Edward Z. Zhang, Paul C. Beard, Adrien E. Desjardins, Richard J. Colchester, Univ. College London (United Kingdom)

12631-36 • 12:00 - 13:30 | ICM, Hall B0

Multispectral quantitative optoacoustic imaging for cancer research

Author(s): Jiao Li, Zhen Tian, Feng Gao, Tianjin Univ. (China)

12631-37 • 12:00 - 13:30 | ICM, Hall B0

Reconstruction methods for spatially resolved photoacoustic projection data

Author(s): Robert Nuster, Martin Niederwieser, Guenther Paltauf, Karl-Franzens-Univ. Graz (Austria)

ECBO PLENARY

26 June 2023 • 14:00 - 15:30 | Room 5 ICM Ground Floor

This plenary Session features presentations by Melissa Skala and YongKeun Park.

CONFERENCE 12632

Optical Coherence Imaging Techniques and Imaging in Scattering Media

25 - 29 June 2023 | Room 3 ICM Ground Floor and Room 4 "Theodore Maiman" B21 - Halle B2 and Room 5 ICM Ground Floor

Conference Chairs: **Benjamin J. Vakoc**, Wellman Ctr. for Photomedicine (United States); **Maciej Wojtkowski**, Institute of Physical Chemistry PAS (Poland); **Yoshiaki Yasuno**, Univ. of Tsukuba (Japan)

Programme Committee: **Peter E. Andersen**, DTU Fotonik (Denmark); **Kostadinka Bizheva**, Univ. of Waterloo (Canada); **Brett E. Bouma**, Wellman Ctr. for Photomedicine (United States); **Audrey K. Bowden**, Vanderbilt Univ. (United States); **Johannes F. de Boer**, Vrije Univ. Amsterdam (Netherlands); **Tae Joong Eom**, Pusan National Univ. (Republic of Korea); **James G. Fujimoto**, Massachusetts Institute of Technology (United States); **Katharine F. Grieve**, Institut de la Vision (France); **Robert A. Huber**, Univ. zu Lübeck (Germany); **Yali Jia**, Casey Eye Institute (United States); **Hsiang-Chieh Lee**, Graduate Institute of Photonics and Optoelectronics (Taiwan); **Rainer A. Leitgeb**, Medizinische Univ. Wien (Austria); **Adrian G. H. Podoleanu**, Univ. of Kent (United Kingdom); **Marinko V. Sarunic**, Univ. College London (United Kingdom); **Robert J. Zawadzki**, Univ. of California, Davis (United States)

SUNDAY 25 JUNE

SESSION 1: ADVANCES IN EYE IMAGING: NEW METHODS

25 June 2023 • 10:30 - 12:00 | Room 3 ICM Ground Floor

Session Chairs: Benjamin J. Vakoc, Wellman Ctr. for Photomedicine (United States), Yoshiaki Yasuno, Univ. of Tsukuba (Japan)

12632-1 • 10:30 - 11:00 | Room 3 ICM Ground Floor

Wide-field computational cellular-resolution imaging of the human retina using multi-MHz phase-stable SS-OCT (*Invited Paper*)

Author(s): ByungKun Lee, Sunhong Jeong, Joosung Lee, KAIST (Republic of Korea); Tae Shik Kim, Massachusetts General Hospital, Harvard Medical School (United States); Boy Braaf, Benjamin J. Vakoc, Massachusetts General Hospital, Harvard Medical School (United States); Wang-Yuhl Oh, KAIST (Republic of Korea)

12632-2 • 11:00 - 11:15 | Room 3 ICM Ground Floor

Spatio-temporal optical coherence tomography (STOC-T) for high-resolution structural and functional imaging of the human and mouse retina in vivo

Author(s): Dawid Borycki, International Ctr. for Translational Eye Research (Poland), Institute of Physical Chemistry (Poland); Piotr Wegrzyn, International Ctr. for Translational Eye Research (Poland); Egidijus Auksorius, International Ctr. for Translational Eye Research (Poland), Ctr. for Physical Sciences and Technology (Lithuania); Wiktor M. Kulesza, Slawomir Tomczewski, Kamil Liżewski, Andrea Curatolo, Maciej Wojtkowski, International Ctr. for Translational Eye Research (Poland)

12632-3 • 11:15 - 11:30 | Room 3 ICM Ground Floor

Progress on adaptive optics for multimodal OCT and confocal microscopy

Author(s): Thomas J. Smart, Arman Athwal, Univ. College London (United Kingdom); Guozheng Xu, Univ. of Cambridge (United Kingdom); Ringo Ng, Simon Fraser Univ. (Canada); Yuan Tian, Colin J. Chu, Univ. College London (United Kingdom); Marinko V. Sarunic, Univ. College London (United Kingdom), Simon Fraser Univ. (Canada)

12632-4 • 11:30 - 11:45 | Room 3 ICM Ground Floor

Melanin migration in retinitis pigmentosa evaluated by ultra-wide-field polarization diversity optical coherence tomography

Author(s): Yusi Miao, The Univ. of British Columbia (Canada); Shuibin Ni, Oregon Health & Science Univ. (United States); Jun Song, The Univ. of British Columbia (Canada); Yifan Jian, Oregon Health & Science Univ. (United States); Myeong Jin Ju, Tiffany Tse, The Univ. of British Columbia (Canada)

12632-5 • 11:45 - 12:00 | Room 3 ICM Ground Floor

Low-cost retinal imaging for disease progression monitoring at home

Author(s): Ryo Kubota, Kubota Vision Inc. (United States); Stefan Troller, Matthias Pfister, Helbling Technik Bern AG (Switzerland)

Lunch Break 12:00 - 14:00

ECBO HOT TOPICS: LIGHT FOR LIFE

25 June 2023 • 14:00 - 15:30 | Room 5 ICM Ground Floor

The European Conferences on Biomedical Optics will include a special Hot Topics session. This session, entitled Light for Life, will feature internationally renowned experts discussing the current status of their fields, emerging developments, and how these technologies are poised to improve the human condition.

Coffee Break 15:30 - 16:00

SESSION 2: ENDOSCOPY AND CATHETER-BASED IMAGING

25 June 2023 • 16:00 - 17:15 | Room 3 ICM Ground Floor

Session Chairs: Rainer A. Leitgeb, Medizinische Univ. Wien (Austria), Madita Göb, Univ. zu Lübeck (Germany)

12632-6 • 16:00 - 16:30 | Room 3 ICM Ground Floor

Dual-resolution endoscopic OCT in vivo for improved tissue scattering property characterization (*Invited Paper*)

Author(s): Taylor M. Cannon, Milen Shishkov, Ginger J. Schmidt, Martin Villiger, Brett E. Bouma, Néstor Uribe-Patarroyo, Wellman Ctr. for Photomedicine (United States)

12632-7 • 16:30 - 17:00 | Room 3 ICM Ground Floor

Multifunctional catheter-based optical coherence tomography system for oral cavity and endocervical canal imaging (*Invited Paper*)

Author(s): Meng-Shan Wu, Chuan-Bor Chueh, Tai-Ang Wang, Ting-Hao Chen, Ting-Yen Tsai, National Taiwan Univ. (Taiwan); Brett E. Bouma, Martin Villiger, Harvard Medical School (United States); Hsiang-Chieh Lee, National Taiwan Univ. (Taiwan)

12632-8 • 17:00 - 17:15 | Room 3 ICM Ground Floor

In vivo endoscopic polarization sensitive optical coherence tomography for the quantification of airway smooth muscle in severe asthma and healthy volunteers

Author(s): Tatiana Soldati, Margherita Vaselli, Vrije Univ. Amsterdam (Netherlands); Pieta C. Wijsman, Sofi M. Vassileva, Jouke T. Annema, Peter I. Bonta, Amsterdam UMC (Netherlands); Johannes F. de Boer, Vrije Univ. Amsterdam (Netherlands)

MONDAY 26 JUNE

SESSION 3: NOVEL HARDWARE APPROACHES FOR OPTICAL COHERENCE IMAGING

26 June 2023 • 09:00 - 10:00 |

Room 4 "Theodore Maiman" B21 - Halle B2

Session Chairs: Johannes F. de Boer, Vrije Univ. Amsterdam (Netherlands), Manuel Jorge M. Marques, Univ. of Kent (United Kingdom)

12632-9 • 09:00 - 09:15 | Room 4 "Theodore Maiman" B21 - Halle B2

Dual ultrahigh speed swept-source and time domain optical coherence tomography system using a time stretch laser and a KTN deflector

Author(s): Alejandro Martínez Jiménez, Univ. of Kent (United Kingdom); Sacha Grelet, Univ. of Kent (United Kingdom), NKT Photonics A/S (Denmark); Patrick Bowen Montague, NKT Photonics A/S (Denmark); Adrian Bradu, Adrian Podoleanu, Univ. of Kent (United Kingdom)

12632-11 • 09:15 - 09:30 |

Room 4 "Theodore Maiman" B21 - Halle B2

Quantifying fluorescent intensity signal from combined optical coherence tomography and near infrared fluorescence imaging

Author(s): Tyla Danskin, Rishi Harkhoe, Vrije Univ. Amsterdam (Netherlands); Andrea J. Sterkenburg, Wouter B. Nagengast, Univ. Medical Ctr. Groningen (Netherlands); Johannes F. de Boer, Vrije Univ. Amsterdam (Netherlands)

12632-12 • 09:30 - 09:45 |

Room 4 "Theodore Maiman" B21 - Halle B2

A fully akinetic FDML-like swept source for SS-OCT

Author(s): Rene Riha, Adrian Podoleanu, Univ. of Kent (United Kingdom)

12632-14 • 09:45 - 10:00 |

Room 4 "Theodore Maiman" B21 - Halle B2

Novel calibration method for optical coherence tomography instruments using multiple spectrometers

Author(s): Gianni Nteroli, Lucy Abbott, Univ. of Kent (United Kingdom); Rasmus D. Engelsholm, Patrick Bowen Montague, NKT Photonics A/S (Denmark); Adrian Podoleanu, Adrian Bradu, Univ. of Kent (United Kingdom)

Coffee Break 10:00 - 10:30

SESSION 4: IMAGING TECHNOLOGIES FOR CLINICAL APPLICATIONS

26 June 2023 • 10:30 - 12:00 |

Room 4 "Theodore Maiman" B21 - Halle B2

Session Chairs: Yali Jia, Casey Eye Institute (United States), Julien Camard, Univ. of Kent (United Kingdom)

12632-15 • 10:30 - 10:45 | Room 4 "Theodore Maiman" B21 - Halle B2

Combined line-field confocal optical coherence tomography (LC-OCT) and dermoscopy for in vivo human skin imaging

Author(s): Jonas Ogien, Olivier Levecq, Anthony Daures, DAMAE Medical (France); Arnaud Dubois, Lab. Charles Fabry, Institut d'Optique Graduate School, Univ. Paris-Saclay, CNRS (France)

12632-16 • 10:45 - 11:00 | Room 4 "Theodore Maiman" B21 - Halle B2

Morphologic analysis of the human tympanic membrane by polarization-sensitive OCT and polarized light microscopy

Author(s): Svea Steuer, TU Dresden (Germany); Joseph Morgenstern, TU Dresden (Germany), Universitätsklinikum Carl Gustav Carus Dresden (Germany); Anett Jannasch, Lars Kirsten, Edmund Koch, TU Dresden (Germany); Marcus Neudert, TU Dresden (Germany), Universitätsklinikum Carl Gustav Carus Dresden (Germany); Jonas Golde, TU Dresden (Germany)

12632-17 • 11:00 - 11:15 | Room 4 "Theodore Maiman" B21 - Halle B2

OCT-derived attenuation coefficient can differentiate between healthy and diabetic bone in a mouse model

Author(s): Gavrielle R. Untracht, Lasse Bo Mortensen, Technical Univ. of Denmark (Denmark); Lejla Emini, Technische Univ. Dresden (Germany); Niklas Rye Jørgensen, Rigshospitalet (Denmark), Univ. of Copenhagen (Denmark); Peter E. Andersen, Technical Univ. of Denmark (Denmark)

12632-18 • 11:15 - 11:30 | Room 4 "Theodore Maiman" B21 - Halle B2

Towards automatic identification of middle ear structures in endoscopic OCT

Author(s): Jonas Golde, TU Dresden (Germany); Joseph Morgenstern, Universitätsklinikum Carl Gustav Carus Dresden (Germany); Peng Liu, Nationales Centrum für Tumorerkrankungen Dresden (Germany); Steffen Ossmann, Universitätsklinikum Carl Gustav Carus Dresden (Germany); Lars Kirsten, Svea Steuer, TU Dresden (Germany); Stefanie Speidel, Nationales Centrum für Tumorerkrankungen Dresden (Germany); Edmund Koch, TU Dresden (Germany); Sebastian Bodenstedt, Nationales Centrum für Tumorerkrankungen Dresden (Germany); Marcus Neudert, Universitätsklinikum Carl Gustav Carus Dresden (Germany)

12632-19 • 11:30 - 11:45 | Room 4 "Theodore Maiman" B21 - Halle B2

Monitoring of fatigue damage in monolithic dental CAD/CAM crowns by optical coherence tomography

Author(s): Christin Grill, Medizinisches Laserzentrum Lübeck GmbH (Germany); Julie-Jacqueline Kuhl, Maximiliane Amelie Schlenz, Justus-Liebig-Universität Giessen (Germany); Ralf Brinkmann, Univ. zu Lübeck (Germany), Medizinisches Laserzentrum Lübeck GmbH (Germany)

12632-20 • 11:45 - 12:00 | Room 4 "Theodore Maiman" B21 - Halle B2

Using a multi-angle optical coherence tomography (OCT) system for the suppression of artifacts in the dental OCT images

Author(s): Tzu-Hsuan Chang, Graduate Institute of Photonics and Optoelectronics, National Taiwan Univ. (Taiwan); Fang-Ying Hua, National Taiwan Univ. Hospital (Taiwan); Heng-Yu Li, Graduate Institute of Photonics and Optoelectronics, National Taiwan Univ. (Taiwan); Yin-Lin Wang, Yu-Ren Chou, National Taiwan Univ. (Taiwan); Hsiang-Chieh Lee, Graduate Institute of Photonics and Optoelectronics, National Taiwan Univ. (Taiwan), National Taiwan Univ. (Taiwan)

Lunch Break 12:00 - 14:00

ECBO PLENARY

26 June 2023 • 14:00 - 15:30 | Room 5 ICM Ground Floor

This plenary Session features presentations by Melissa Skala and YongKeun Park.

Coffee Break 15:30 - 16:00

CONFERENCE 12632

SESSION 5: ADVANCES IN EYE IMAGING: FUNCTIONAL AND ANIMAL

26 June 2023 • 16:00 - 17:15 |

Room 4 "Theodore Maiman" B21 - Halle B2

Session Chairs: Kostadinka Bizheva, Univ. of Waterloo (Canada),
Richard Haindl, Medizinische Univ. Wien (Austria)

12632-21 • 16:00 - 16:15 | Room 4 "Theodore Maiman" B21 - Halle B2

Progress on the interpretation of optoretinogram (ORG): effect of water permeability of outer retina barriers

Author(s): Robert J. Zawadzki, Univ. of California, Davis (United States); Pengfei Zhang, Dalian Univ. of Technology (China); Sarah J. Karlen, Ewelina Pijewska, Ratheesh K. Meleppat, Ravi S. Jonnal, Edward N. Pugh, Univ. of California, Davis (United States)

12632-22 • 16:15 - 16:30 |

Room 4 "Theodore Maiman" B21 - Halle B2

Chirped frequency flicker optoretinography (fORG) with STOC-T

Author(s): Sławomir Tomczewski, International Ctr. for Translational Eye Research (Poland), Institute of Physical Chemistry (Poland); Piotr Wegrzyn, International Ctr. for Translational Eye Research (Poland), Institute of Physical Chemistry (Poland), Univ. of Warsaw (Poland); Dawid Borycki, International Ctr. for Translational Eye Research (Poland), Institute of Physical Chemistry (Poland); Kamil Liżewski, Maciej Wielgo, International Ctr. for Translational Eye Research (Poland), Institute of Physical Chemistry (Poland); Andrea Curatolo, International Ctr. for Translational Eye Research (Poland), Institute of Physical Chemistry (Poland); Maciej Wojtkowski, International Ctr. for Translational Eye Research (Poland), Institute of Physical Chemistry (Poland)

12632-23 • 16:30 - 16:45 | Room 4 "Theodore Maiman" B21 - Halle B2

Multi-modal functional sensorless adaptive optics for small animal retinal imaging

Author(s): Jun Song, Yusi Miao, Joanne A. Matsubara, The Univ. of British Columbia (Canada); Marinko V. Sarunic, Simon Fraser Univ. (Canada); Myeong Jin Ju, Tiffany Tse, The Univ. of British Columbia (Canada)

12632-24 • 16:45 - 17:00 | Room 4 "Theodore Maiman" B21 - Halle B2

Ultrafast volumetric imaging with a spatio-temporal optical coherence tomography (STOC-T) system for monitoring hemodynamics in the mouse retinal vessels directly from structural data

Author(s): Wiktor M. Kulesza, Warsaw Univ. of Technology (Poland); Maciej Wielgo, Piotr Wegrzyn, Sławomir Tomczewski, Onur Cetinkaya, Katarzyna Kordecka, Anna Galińska, Bartłomiej Bałamut, International Ctr. for Translational Eye Research (Poland); Egidijus Auksorius, Ctr. for Physical Sciences and Technology (Lithuania); Andrzej Foik, International Ctr. for Translational Eye Research (Poland); Robert J. Zawadzki, Univ. of California, Davis (United States); Maciej Wojtkowski, Dawid Borycki, Andrea Curatolo, International Ctr. for Translational Eye Research (Poland)

12632-25 • 17:00 - 17:15 | Room 4 "Theodore Maiman" B21 - Halle B2

In-vivo optophysiology in rodent eyes using phase-sensitive optical coherence tomography

Author(s): Bingyao Tan, Huakun Li, Nanyang Technological Univ. (Singapore); Veluchamy A. Barathi, Singapore Eye Research Institute (Singapore); Leopold Schmetterer, Tong Ling, Nanyang Technological Univ. (Singapore)

TUESDAY 27 JUNE

SESSION 6: ADVANCES IN EYE IMAGING: ANTERIOR SEGMENT

27 June 2023 • 08:30 - 10:00 |

Room 4 "Theodore Maiman" B21 - Halle B2

Session Chairs: Robert J. Zawadzki, Univ. of California, Davis (United States), Gavrielle R. Untracht, The Univ. of Western Australia (Denmark)

12632-26 • 08:30 - 08:45 | Room 4 "Theodore Maiman" B21 - Halle B2

Visible-light optical coherence microscopy

Author(s): David Huang, Shanjida Khan, Kai Neuhaus, Omkar Thaware, Alireza Karimi, Mary Kelley, Travis Redd, Ted Acott, Yifan Jian, Casey Eye Institute (United States)

12632-27 • 08:45 - 09:15 | Room 4 "Theodore Maiman" B21 - Halle B2

Powel lens-based line-scan SD-OCT for cellular resolution imaging of biological tissues

Author(s): Kostadinka Bizheva, Keyu Chen, Univ. of Waterloo (Canada)

12632-28 • 09:15 - 09:30 | Room 4 "Theodore Maiman" B21 - Halle B2

Low-cost long-range SS-OCT for imaging the human eye in-vivo from anterior to posterior segment

Author(s): Milana Kendrisic, Vladislav Agafonov, Matthias Salas, Wolfgang Drexler, Medizinische Univ. Wien (Austria); Tilman Schmöll, Medizinische Univ. Wien (Austria), Carl Zeiss Meditec, Inc. (United States); Rainer A. Leitgeb, Medizinische Univ. Wien (Austria)

12632-29 • 09:30 - 09:45 | Room 4 "Theodore Maiman" B21 - Halle B2

Classification of healthy and pathological human corneas by the analysis of clinical SD-OCT images using machine learning

Author(s): Corentin Soubeiran, Lab. d'Optique Appliquée, Ecole Nationale Supérieure de Techniques Avancées, Ecole Polytechnique, Institut polytechnique de Paris, CNRS (France); Maëlle Virbert, Lab. d'Optique et Biosciences, Ecole Polytechnique, INSERM, Institut Polytechnique de Paris, CNRS (France), GRC 32, Transplantation et Thérapies Innovantes de La Cornée (France); Benjamin Memmi, Cristina Georgeon, Vincent Borderie, GRC 32, Transplantation et Thérapies Innovantes de La Cornée (France); Anatole Chessel, Lab. d'Optique et Biosciences, Ecole Polytechnique, INSERM, Institut Polytechnique de Paris, CNRS (France); Karsten Plamann, Lab. d'Optique Appliquée, Ecole Nationale Supérieure de Techniques Avancées, Ecole Polytechnique, Institut Polytechnique de Paris, CNRS (France), Lab. d'Optique et Biosciences, Ecole Polytechnique, INSERM, Institut Polytechnique de Paris, CNRS (France)

12632-30 • 09:45 - 10:00 | Room 4 "Theodore Maiman" B21 - Halle B2

Objective characterisation of corneal transparency by analysis of clinical SD-OCT Images

Author(s): Maëlle Vilbert, Romain Bocheux, Ecole Polytechnique (France); Cristina Georgeon, Vincent Borderie, Ctr. Hospitalier National d'Ophthalmologie des Quinze-Vingts (France); Pascal Pernot, Institut de Chimie Physique, Univ. Paris-Saclay, CNRS (France); Kristina Irsch, Institut de la Vision (France); Karsten Plamann, Ecole Nationale Supérieure de Techniques Avancées (France)

Coffee Break 10:00 - 10:30

SESSION 7: ADVANCES IN OPTICAL COHERENCE IMAGING: PRINCIPLES

27 June 2023 • 10:30 - 12:00 |

Room 4 "Theodore Maiman" B21 - Halle B2

Session Chairs: Marinko V. Sarunic, Univ. College London (United Kingdom), Elena Gofas Salas, INSERM (France)

12632-31 • 10:30 - 11:00 | Room 4 "Theodore Maiman" B21 - Halle B2

New formulation of OCT for analytical signal-to-speckle separation and volumetric differential contrast imaging *(Invited Paper)*

Author(s): Kiriko Tomita, Shuichi Makita, Univ. of Tsukuba (Japan); Naoki Fukutake, Nikon Corp. (Japan); Rion Morishita, Univ. of Tsukuba (Japan); Ibrahim G. Abd El-Sadek, Univ. of Tsukuba (Japan), Damietta Univ. (Egypt); Pradipta Mukherjee, Univ. of Tsukuba (Japan); Antonia Lichtenegger, Univ. of Tsukuba (Japan), Medizinische Univ. Wien (Austria); Yoshiaki Yasuno, Univ. of Tsukuba (Japan)

12632-32 • 11:00 - 11:15 |

Room 4 "Theodore Maiman" B21 - Halle B2

TDMS: an open source time domain Maxwell solver for simulating optical coherence tomography image formation

Author(s): Peter R. T. Munro, Univ. College London (United Kingdom)

12632-33 • 11:15 - 11:30 | Room 4 "Theodore Maiman" B21 - Halle B2

Two-fold resolution increase and all-depth linearization using a neural network

Author(s): Krzysztof A. Maliszewski, Sylwia M. Kolenderska, Univ. of Canterbury (New Zealand)

12632-34 • 11:30 - 11:45 | Room 4 "Theodore Maiman" B21 - Halle B2

Validation of OCT Monte Carlo simulations by optical phantom OCT measurements

Author(s): Gijs Buist, Johannes F. de Boer, Vrije Univ. Amsterdam (Netherlands); Johannes Kübler, Jörg Fischer, Heidelberg Engineering GmbH (Germany); Arjen Amelink, Vrije Univ. Amsterdam (Netherlands)

12632-35 • 11:45 - 12:00 | Room 4 "Theodore Maiman" B21 - Halle B2

Speculative-philosophical modeling of measurement for comprehending modern OCT imaging

Author(s): Yoshiaki Yasuno, Univ. of Tsukuba (Japan)

Lunch Break 12:00 - 14:00

WORLD OF PHOTONICS PLENARY

27 June 2023 • 14:00 - 15:30 |

Room 1 ICM Ground Floor-1st Floor

This plenary Session features a presentation by Tammy Ma and Constantin Haefner on laser-driven inertial confinement fusion.

Coffee Break 15:30 - 16:00

SESSION 8: MULTIMODAL IMAGING

27 June 2023 • 16:00 - 17:00 |

Room 4 "Theodore Maiman" B21 - Halle B2

Session Chairs: Hsiang-Chieh Lee, Graduate Institute of Photonics and Optoelectronics (Taiwan), Liubov V. Amitonova, Vrije Univ. Amsterdam (Netherlands)

12632-36 • 16:00 - 16:15 | Room 4 "Theodore Maiman" B21 - Halle B2

A platform prototype for co-localized line-field confocal optical coherence tomography (LC-OCT) and confocal Raman microspectroscopy (CRM) acquisitions on ex vivo skin tissues

Author(s): Léna Waszczuk, Lab. Charles Fabry (France), DAMAE Medical (France); Jonas Ogien, DAMAE Medical (France); Ali Tfayli, Univ. Paris-Saclay (France); Jean-Luc Perrot, Ctr. Hospitalier Univ. de Saint-Étienne (France); Arnaud Dubois, Lab. Charles Fabry (France), DAMAE Medical (France)

12632-37 • 16:15 - 16:30 | Room 4 "Theodore Maiman" B21 - Halle B2

Colorimetric fusion of attenuation and birefringence in OCT signatures: a screening tool for evaluating muscular degradation in alpha-sarcoglycan deficit murine models

Author(s): Verónica Mieites, Marqués de Valdecilla Health Research Institute (Spain); Arturo Pardo, José A. Gutiérrez-Gutiérrez, Univ. de Cantabria (Spain); Xavier Suárez-Calvet, Biomedical Research Institute, Hospital de la Santa Creu i Sant Pau (Spain); José Miguel López-Higuera, Univ. de Cantabria (Spain); Jordi Díaz-Manera, John Walton Muscular Dystrophy Research Ctr. (United Kingdom); Olga M. Conde, Univ. de Cantabria (Spain)

12632-38 • 16:30 - 16:45 | Room 4 "Theodore Maiman" B21 - Halle B2

Enhanced multimodal optical imaging for optical properties extraction and radiomic analysis of fibrotic cardiac tissue

Author(s): Arno M. Krause, Gabriel Giardina, Medizinische Univ. Wien (Austria); James Marchant, Richard Walton, IHU Liryc Hôpital Xavier Arnoz (France); Laszlo Papp, Rainer A. Leitgeb, Wolfgang Drexler, Angelika Unterhuber, Marco Andreana, Medizinische Univ. Wien (Austria)

12632-39 • 16:45 - 17:00 | Room 4 "Theodore Maiman" B21 - Halle B2

Speed detection to suppress motion artifacts (MA) in laser speckle contrast imaging (LSCI)

Author(s): Ata Chizari, Univ. Twente (Netherlands); Mirjam J. Schaap, Radboud Univ. Medical Ctr. (Netherlands); Tom Knop, Univ. Twente (Netherlands); Marieke M. B. Seyger, Radboud Univ. Medical Ctr. (Netherlands); Wiendelt Steenbergen, Univ. Twente (Netherlands)

WEDNESDAY 28 JUNE

SESSION 9: ADVANCES IN OPTICAL COHERENCE IMAGING: NEW METHODS

28 June 2023 • 08:30 - 10:00 |

Room 4 "Theodore Maiman" B21 - Halle B2

Session Chairs: Robert A. Huber, Univ. zu Lübeck (Germany), Audrey K. Bowden, Vanderbilt Univ. (United States)

12632-40 • 08:30 - 09:00 |

Room 4 "Theodore Maiman" B21 - Halle B2

Friction in quantitative micro-elastography *(Invited Paper)*

Author(s): Kai L. Metzner, Qi Fang, Rowan W. Sanderson, Alireza Mowla, Brendan F. Kennedy, The Univ. of Western Australia (Australia)

CONFERENCE 12632

12632-41 • 09:00 - 09:15 | Room 4 "Theodore Maiman" B21 - Halle B2

Advanced FFT-based contrast approach for MHz optical coherence elastography

Author(s): Sazgar Burhan, Institut für Biomedizinische Optik, Univ. zu Lübeck (Germany); Nicolas Detrez, Medizinisches Laserzentrum Lübeck GmbH (Germany); Madita Göb, Institut für Biomedizinische Optik, Univ. zu Lübeck (Germany); Matteo M. Bonsanto, Universitätsklinikum Schleswig-Holstein (Germany); Ralf Brinkmann, Institut für Biomedizinische Optik, Univ. zu Lübeck (Germany); Medizinisches Laserzentrum Lübeck GmbH (Germany); Robert Huber, Institut für Biomedizinische Optik, Univ. zu Lübeck (Germany), Medizinisches Laserzentrum Lübeck GmbH (Germany)

12632-42 • 09:15 - 09:30 | Room 4 "Theodore Maiman" B21 - Halle B2

Spatio-temporal optical coherence tomography of chorioretinal complex with optimised light source

Author(s): Egidijus Auksorius, Karolis Adomavicius, Ctr. for Physical Sciences and Technology (Lithuania); Dawid Borycki, Piotr Wegrzyn, Kamil Liżewski, Slawomir Tomczewski, Maciej Wojtkowski, International Ctr. for Translational Eye Research (Poland)

12632-43 • 09:30 - 09:45 |

Room 4 "Theodore Maiman" B21 - Halle B2

A system using SPML laser in measuring the depth-resolved thermal change

Author(s): Hanife Gokkan, Emre Güralp, Serhat Tozburun, Izmir Biomedicine and Genome Ctr. (Turkey), Izmir International Biomedicine and Genome Institute, Dokuz Eylül Univ. (Turkey)

12632-44 • 09:45 - 10:00 |

Room 4 "Theodore Maiman" B21 - Halle B2

Using dynamic light scattering enhances the imaging capabilities of optical coherence tomography

Author(s): Klaudia Nowacka, Karol Karnowski, Maciej Wojtkowski, Dawid Borycki, International Ctr. for Translational Eye Research (Poland)

Coffee Break 10:00 - 10:30

SESSION 10: CELL AND TUMOR IMAGING AND APPLICATIONS IN BIOLOGY

28 June 2023 • 10:30 - 12:00 |

Room 4 "Theodore Maiman" B21 - Halle B2

Session Chairs: Brendan F. Kennedy, Harry Perkins Institute of Medical Research (Australia), Ibrahim G. Abd El-Sadek, Univ. of Tsukuba (Japan)

12632-45 • 10:30 - 11:00 | Room 4 "Theodore Maiman" B21 - Halle B2

Multimodal optical coherence microscopy, mechano-microscopy and fluorescence microscopy for three-dimensional characterization of multicellular spheroids (Invited Paper)

Author(s): Alireza Mowla, Matt Hepburn, Jiayue Li, Liisa Hirvonen, Danielle Vahala, Sebastian Amos, Samuel Maher, Yu Suk Choi, Brendan F. Kennedy, The Univ. of Western Australia (Australia)

12632-463 • 11:00 - 11:15 | Room 4 "Theodore Maiman" B21 - Halle B2

Human-derived tumor-spheroid-based anti-cancer drugs testing using dynamic optical coherence tomography

Author(s): Ibrahim G. Abd El-Sadek, Univ. of Tsukuba (Japan), Damietta Univ. (Egypt); Rion Morishita, Tomoko Mori, Shuichi Makita, Pradipta Mukherjee, Satoshi Matsusaka, Yoshiaki Yasuno, Univ. of Tsukuba (Japan)

12632-47 • 11:15 - 11:30 | Room 4 "Theodore Maiman" B21 - Halle B2

Low cost speckle reduction method for OCT B-scan imaging

Author(s): Julien Camard, Manuel J. Marques, Giuseppe Silvestri, Marie Aquilina, Darren K. Griffin, Adrian Podoleanu, Carla Caneido Ribeiro, Univ. of Kent (United Kingdom)

12632-48 • 11:30 - 11:45 | Room 4 "Theodore Maiman" B21 - Halle B2

Label-free intra-tissue activity imaging of alveolar organoid with three-dimensional dynamic optical coherence tomography

Author(s): Rion Morishita, Pradipta Mukherjee, Univ. of Tsukuba (Japan); Ibrahim G. Abd El-Sadek, Univ. of Tsukuba (Japan), Damietta Univ. (Egypt); Toshio Suzuki, Univ. of Tsukuba (Japan), HiLung Inc. (Japan); Antonia Lichtenegger, Medizinische Univ. Wien (Austria); Yiheng Lim, Yiqiang Zhu, Shuichi Makita, Univ. of Tsukuba (Japan); Yuki Yamamoto, Tetsuharu Nagamoto, HiLung Inc. (Japan); Yoshiaki Yasuno, Univ. of Tsukuba (Japan)

12632-49 • 11:45 - 12:00 | Room 4 "Theodore Maiman" B21 - Halle B2

3D visualization of plant-pathogen interaction inside plant leaves using dynamic contrast optical coherence tomography

Author(s): Jos de Wit, Technische Univ. Delft (Netherlands); Mon-Ray Shao, Sebastian Tonn, Guido van den Ackerveken, Utrecht Univ. (Netherlands); Jeroen Kalkman, Technische Univ. Delft (Netherlands)

POSTER SESSION AND LUNCH BREAK

28 June 2023 • 12:00 - 13:30 | ICM, Hall BO

Posters will be featured on Wednesday.

Poster authors: Please set up posters on the morning of your Session before or during the morning coffee break. Plan to stand by your poster to discuss it with Session attendees during the poster session. Remove your poster following the poster Session concludes as posters left on the boards will be discarded.

12632-10 • 12:00 - 13:30 | ICM, Hall BO

Optimization of time-domain full-field optical coherence tomography with digital confocal line-scanning

Author(s): Egidijus Auksorius, Danielis Rutkauskas, Ctr. for Physical Sciences and Technology (Lithuania)

12632-13 • 12:00 - 13:30 | ICM, Hall BO

Optimization-free method for multiple spectrometers alignment in polarization-sensitive optical coherence tomography

Author(s): Piotr Kasprzycki, Institute of Physical Chemistry (Poland); Maciej Szkulmowski, Nicolaus Copernicus Univ. (Poland); Maciej Wojtkowski, International Ctr. for Translational Eye Research (Poland); Karol Karnowski, International Ctr. for Translational Eye Research (Poland)

12632-64 • 12:00 - 13:30 | ICM, Hall BO

Optical design and simulation of a cervical scanning probe for polarization-sensitive optical coherence tomography using Ansys Zemax OpticStudio

Author(s): Frances S. Hooper, Rui Yuan, Dmitry G. Revin, The Univ. of Sheffield (United Kingdom); Dilly O.C. Anumba, Academic Unit of Reproductive and Developmental Medicine, University of Sheffield (United Kingdom); Stephen J. Matcher, The Univ. of Sheffield (United Kingdom)

12632-65 • 12:00 - 13:30 | ICM, Hall B0

Synthetic high-resolution, volumetric and wide field-of-view optical coherence tomography images with generative adversarial networks

Author(s): Chuan-Bor Chueh, Ting-Hao Chen, National Taiwan Univ. (Taiwan); Yu-Yu Li, National Taiwan Univ. (Taiwan); Ming-Che Tu, Shih-Jung Cheng, National Taiwan Univ. Hospital (Taiwan); Cheng-Kuang Lee, Simon See, NVIDIA AI Technology Ctr. (Taiwan); Hsiang-Chieh Lee, National Taiwan Univ. (Taiwan)

12632-66 • 12:00 - 13:30 | ICM, Hall B0

An AI-based algorithmic system that predicts missing A-scans in cross-sectional retinal images

Author(s): Ömer Faruk Dinç, Berfin Arlı, Izmir Biomedicine and Genome Ctr. (Turkey), Izmir International Biomedicine and Genome Institute, Dokuz Eylül Üniv. (Turkey); Serhat Tozburun, Izmir Biomedicine and Genome Ctr. (Turkey), Izmir International Biomedicine and Genome Institute, Dokuz Eylül Üniv. (Turkey)

12632-67 • 12:00 - 13:30 | ICM, Hall B0

Development of a 850 nm swept source based on a resonant scanner spectral filter

Author(s): Gopika Venugopal, George Dobre, Univ. of Kent (United Kingdom); Alexander Chamorovski, Andrei Anikeev, Superlum Diodes Ltd. (Ireland); Adrian Podoleanu, Univ. of Kent (United Kingdom)

12632-68 • 12:00 - 13:30 | ICM, Hall B0

Depth encoded cross-polarized optical coherence tomography with polarization maintaining fiber

Author(s): Maria Romodina, Max-Planck-Institut für die Physik des Lichts (Germany); Katharina Blessing, Kanwarpal Singh, Max-Planck-Institut für die Physik des Lichts (Germany), Friedrich-Alexander-Universität Erlangen-Nürnberg (Germany)

12632-69 • 12:00 - 13:30 | ICM, Hall B0

Accurate phase estimation of vibrating interfaces using spectral estimation optical coherence tomography

Author(s): Jos de Wit, Technische Univ. Delft (Netherlands); George O. Glentis, Univ. of Peloponnese (Greece); Jeroen Kalkman, Technische Univ. Delft (Netherlands)

12632-70 • 12:00 - 13:30 | ICM, Hall B0

Optimizing deep learning based retinal diseases classification on optical coherence tomography scans

Author(s): Aditya Chandra Mandal, Independent Researcher (India); Abhijeet Phatak, Independent Researcher (United States)

12632-71 • 12:00 - 13:30 | ICM, Hall B0

Ex vivo study of photothermolysis induced by laser therapy with dynamic optical coherence tomography

Author(s): Yin-Shen Cheng, Tai-Ang Wang, Hsiang-Chieh Lee, National Taiwan Univ. (Taiwan); Meng-Tsan Tsai, Chang Gung Univ. (Taiwan)

12632-72 • 12:00 - 13:30 | ICM, Hall B0

Simultaneous spectral calibration and dispersion compensation using a thin piece of glass

Author(s): Sylwia M. Kolenderska, Krzysztof A. Maliszewski, Univ. of Canterbury (New Zealand)

12632-73 • 12:00 - 13:30 | ICM, Hall B0

Blind scattering-assisted imaging enhanced by deep learning

Author(s): Marco Leonetti, Emmanouil Xypakis, Giorgio Gosti, Istituto Italiano di Tecnologia (Italy); Raffaele Santagati, Boehringer Ingelheim Austria GmbH (Austria); Giancarlo Ruocco, Istituto Italiano di Tecnologia (Italy)

12632-74 • 12:00 - 13:30 | ICM, Hall B0

Wavefront division swept source OCT

Author(s): Bettina Heise, Research Ctr. for Non Destructive Testing GmbH (Austria); Gopika Venugopal, Univ. of Kent (United Kingdom); Ivan Zorin, Andrii Prylepa, Research Ctr. for Non Destructive Testing GmbH (Austria)

12632-75 • 12:00 - 13:30 | ICM, Hall B0

In vivo skin imaging and laser therapy observation with ultrahigh-resolution optical coherence tomography

Author(s): Tai-Ang Wang, Yin-Shen Cheng, Hsiang-Chieh Lee, Graduate Institute of Photonics and Optoelectronics, National Taiwan Univ. (Taiwan); Chau Yee Ng, Chang Gung Memorial Hospital (Taiwan); Meng-Tsan Tsai, Chang Gung Univ. (Taiwan)

12632-76 • 12:00 - 13:30 | ICM, Hall B0

3D polarization-interference metrology of polycrystalline structure of self-assembled polycrystalline soft matter films

Author(s): Yuriy Ushenko, Chernivtsi National Univ. Y. Fedkovich (Ukraine); Zhingbeng Hu, Hubei Univ. of Technology (China); O. Litvinenko, Bukovinian State Medical Univ. (Ukraine); Mykhaylo Gorsky, Olexander V. Dubolazov, Olexander Ushenko, Chernivtsi National Univ. Y. Fedkovich (Ukraine); Jun Zheng, Zhebo Chen, Xianghua Lin, Taizhou Research Institute of Zhejiang Univ. (China); Oleg Vanchylyak, Bukovinian State Medical Univ. (Ukraine); Viacheslav Gantyuk, V. Ilin, Olexander Salega, Chernivtsi National Univ. Y. Fedkovich (Ukraine)

12632-77 • 12:00 - 13:30 | ICM, Hall B0

3D Jones matrix digital algorithms for phase and amplitude anisotropy tomography of self-assembled soft matter films

Author(s): Yuriy Ushenko, Chernivtsi National Univ. Y. Fedkovich (Ukraine); L. Trifonyuk, Rivne State Medical Ctr. (Ukraine); Iryna Solty, Chernivtsi National Univ. Y. Fedkovich (Ukraine); Marta Garazdyuk, Bukovinian State Medical Univ. (Ukraine); Olexander V. Dubolazov, Olexander Ushenko, Pavlo Gorodensky, Ivan Mikirin, Chernivtsi National Univ. Y. Fedkovich (Ukraine); Jun Zheng, Chen Zhebo, Xianghua Lin, Taizhou Research Institute of Zhejiang Univ. (China)

12632-78 • 12:00 - 13:30 | ICM, Hall B0

Information s=Stokes-correlometry method to investigation polarization-inhomogeneous images of optically anisotropic self-assembled soft matter films

Author(s): Yuriy Ushenko, Chernivtsi National Univ. Y. Fedkovich (Ukraine); Liliya Trifonyuk, Rivne State Medical Ctr. (Ukraine); Mykhaylo Gorsky, Chernivtsi National Univ. Y. Fedkovich (Ukraine); Marta Garazdyuk, Bukovinian State Medical Univ. (Ukraine); Olexander V. Dubolazov, Olexander Ushenko, Pavlo Gorodensky, Chernivtsi National Univ. Y. Fedkovich (Ukraine); Jun Zheng, Chen Zhebo, Xianghua Lin, Taizhou Research Institute of Zhejiang Univ. (China)

12632-79 • 12:00 - 13:30 | ICM, Hall B0

Non-invasive optical biopsies using cross-polarised optical coherence tomography - Advancements in the endoscopic exploration of deep tissue layers

Author(s): Katharina Blessing, Kanwarpal Singh, Max-Planck-Institut für die Physik des Lichts (Germany), Max-Planck-Zentrum für Physik und Medizin (Germany), Friedrich-Alexander-Universität Erlangen-Nürnberg (Germany)

12632-80 • 12:00 - 13:30 | ICM, Hall B0

Reverberant optical coherence elastography

Author(s): Kirill V. Larin, Univ. of Houston (United States)

CONFERENCE 12632

12632-81 • 12:00 - 13:30 | ICM, Hall B0

Improvement of image characteristics for 3D CBCT in dental medicine using OCT

Author(s): Ralph-Alexandru Erdelyi, Virgil-Florin Duma, Univ. "Aurel Vlaicu" din Arad (Romania), Univ. Politehnica Timisoara (Romania)

12632-82 • 12:00 - 13:30 | ICM, Hall B0

Fully automated, accurate quantification of airway smooth muscle with endoscopic PS-OCT

Author(s): David C. Adams, Melissa J. Suter, Massachusetts General Hospital (United States)

12632-83 • 12:00 - 13:30 | ICM, Hall B0

Optimization of dental OCT imaging

Author(s): Nazila Kazemigazestane, David Mills, Queen Mary Univ. of London (United Kingdom)

12632-84 • 12:00 - 13:30 | ICM, Hall B0

OCT and nonresonant Raman spectroscopy for multimodal in vivo assessment of the human retina

Author(s): Ryan Sentosa, Medizinische Univ. Wien (Austria); Clara Stiebing, Leibniz-Institut für Photonische Technologien e.V. (Germany); Matthias Eibl, Carl Zeiss Meditec AG (Germany); Milana Kendrisic, Matthias Salas, Medizinische Univ. Wien (Austria); Arjen Amelink, Wim de Jong, TNO (Netherlands); Jason Ensher, Insight Photonic Solutions, Inc. (United States); Vasyl Shynkar, HORIBA Scientific (France); Michael Schmitt, Jürgen Popp, Leibniz-Institut für Photonische Technologien e.V. (Germany); Heiko Stino, Andreas Pollreisz, Medizinische Univ. Wien (Austria); Michael Kempe, Carl Zeiss Meditec AG (Germany); Tilman Schmöll, Carl Zeiss Meditec, Inc. (United States); Wolfgang Drexler, Rainer A. Leitgeb, Medizinische Univ. Wien (Austria)

THURSDAY 29 JUNE

SESSION 11: SCATTERING AND WAVEFRONT CONTROL

29 June 2023 • 08:15 - 10:00 | Room 5 ICM Ground Floor

Session Chair: Jeroen Kalkman, Technische Univ. Delft (Netherlands)

12632-50 • 08:15 - 08:45 | Room 5 ICM Ground Floor

Computational 3D resolution enhancement for optical coherence tomography with a narrowband visible light source *(Invited Paper)*

Author(s): Jos de Wit, Technische Univ. Delft (Netherlands); George O. Glentis, Univ. of Peloponnese (Greece); Jeroen Kalkman, Technische Univ. Delft (Netherlands)

12632-51 • 08:45 - 09:15 | Room 5 ICM Ground Floor

Practical volumetric speckle reduction in OCT using deep learning *(Invited Paper)*

Author(s): Bhaskara Rao Chintada, Sebastián Ruiz-Lopera, Massachusetts General Hospital (United States); René Restrepo, Univ. EAFIT (Colombia); Martin Villiger, Brett E. Bouma, Néstor Uribe-Patarroyo, Massachusetts General Hospital (United States)

Enhanced contrast in optical coherence tomography using multiple scattering *(Invited Paper)*

Author(s): Gavrielle R. Untracht, Technical Univ. of Denmark (Denmark); Mingzhou Chen, Philip Wijesinghe, Joesp Mas, Univ. of St. Andrews (United Kingdom); Harold T. Yura, The Aerospace Corp. (United States); Dominik Marti, Peter E. Andersen, Technical Univ. of Denmark (Denmark); Kishan Dholakia, Univ. of St. Andrews (United Kingdom), The Univ. of Adelaide (Australia)

12632-53 • 09:45 - 10:00 | Room 5 ICM Ground Floor

Simulating optical memory effects and the scanning of foci using wavefront shaping in tissue-like scattering media

Author(s): Jake Bewick, Peter R. T. Munro, Simon Arridge, Univ. College London (United Kingdom); James Guggenheim, Univ. of Birmingham (United Kingdom), Univ. College London (United Kingdom)

Coffee Break 10:00 - 10:30

SESSION 12: ADVANCES IN EYE IMAGING: ANGIOGRAPHY

29 June 2023 • 10:30 - 12:00 | Room 5 ICM Ground Floor

Session Chairs: Bingyao Tan, Nanyang Technological Univ. (Singapore), Dierck Hillmann, Vrije Univ. Amsterdam (Netherlands)

12632-54 • 10:30 - 11:00 | Room 5 ICM Ground Floor

Ultra-widefield high-resolution OCT angiography of rodent retina *(Invited Paper)*

Author(s): Yali Jia, Casey Eye Institute (United States)

12632-55 • 11:00 - 11:15 | Room 5 ICM Ground Floor

In-vivo imaging of choroid by spatio-temporal optical coherence tomography

Author(s): Kamil Liżewski, Institute of Physical Chemistry (Poland), International Ctr. for Translational Eye Research (Poland); Egidijus Auksorius, Institute of Physical Chemistry (Poland), International Ctr. for Translational Eye Research (Poland), Ctr. for Physical Sciences and Technology (Lithuania); Piotr Wegrzyn, Institute of Physical Chemistry (Poland), International Ctr. for Translational Eye Research (Poland), Univ. of Warsaw (Poland); Slawomir Tomczewski, Institute of Physical Chemistry (Poland), International Ctr. for Translational Eye Research (Poland); Dawid Borycki, Institute of Physical Chemistry (Poland), International Ctr. for Translational Eye Research (Poland); Mounika Rapolu, Institute of Physical Chemistry (Poland), International Ctr. for Translational Eye Research (Poland); Ieva Zickiene, Karolis Adomavicius, Ctr. for Physical Sciences and Technology (Lithuania); Bartosz L. Sikorski, Nicolaus Copernicus Univ. (Poland), Oculomedica Eye Research & Development Ctr. (Poland); Maciej Wojtkowski, Institute of Physical Chemistry (Poland), International Ctr. for Translational Eye Research (Poland), Nicolaus Copernicus Univ. (Poland)

12632-56 • 11:15 - 11:30 | Room 5 ICM Ground Floor

Imaging capillary details with spectrally extended line field optical coherence tomography angiography

Author(s): Si Chen, Kan Lin, Xi Chen, Linbo Liu, Nanyang Technological Univ. (Singapore)

12632-57 • 11:30 - 11:45 | Room 5 ICM Ground Floor

Sub-diffusion flow velocimetry with number fluctuation optical coherence tomography

Author(s): Konstantine Cheishvili, Jeroen Kalkman, Technische Univ. Delft (Netherlands)

12632-58 • 11:45 - 12:00 | Room 5 ICM Ground Floor

Stable detection of diabetic lesions in widefield optical coherence tomography angiography en face images using a multiple instance learning binary classifier

Author(s): Philipp Matten, Julius Scherer, Thomas Schlegl, Jonas Nienhaus, Heiko Stino, Medizinische Univ. Wien (Austria); Benjamin Lee, Medical University of Vienna (Austria); Wolfgang Drexler, Rainer A. Leitgeb, Andreas Pollreisz, Medizinische Univ. Wien (Austria); Tilman Schmöll, Carl Zeiss Meditec, Inc. (United States)

Lunch Break 12:00 - 13:30

SESSION 13: IMAGING FOR MEDICAL TREATMENT AND THERAPIES

29 June 2023 • 13:30 - 15:00 | Room 5 ICM Ground Floor

Session Chairs: Maciej Wojtkowski, Institute of Physical Chemistry PAS (Poland), Yoshiaki Yasuno, Univ. of Tsukuba (Japan)

12632-59 • 13:30 - 14:00 | Room 5 ICM Ground Floor

Advances in large area robotically assisted OCT (LARA-OCT): towards drive-by continuous motion imaging *(Invited Paper)*

Author(s): Madita Göb, Simon Lotz, Institut für Biomedizinische Optik, Univ. zu Lübeck (Germany); Linh Ha-Wissel, Universitätsklinikum Schleswig-Holstein (Germany), Lübecker Institut für Experimentelle Dermatologie, Univ. zu Lübeck (Germany); Sazgar Burhan, Institut für Biomedizinische Optik, Univ. zu Lübeck (Germany); Sven Böttger, Floris Ernst, Institut für Robotik und Kognitive Systeme, Univ. zu Lübeck (Germany); Jennifer Hundt, Lübecker Institut für Experimentelle Dermatologie, Universitätsklinikum Schleswig-Holstein (Germany); Robert Huber, Institut für Biomedizinische Optik, Univ. zu Lübeck (Germany)

12632-60 • 14:00 - 14:15 | Room 5 ICM Ground Floor

Stereoscopic visualization of real-time intraoperative four-dimensional optical coherence tomography in ophthalmology

Author(s): Florian Kapeller, Philipp Matten, Anja Britten, Medizinische Univ. Wien (Austria); Michael Sommersberger, Technische Univ. München (Germany); Jonas Nienhaus, Kim Lien Huber, Wolfgang Drexler, Rainer A. Leitgeb, Andreas Pollreisz, Medizinische Univ. Wien (Austria); Tilman Schmoll, Medizinische Univ. Wien (Austria), Carl Zeiss Meditec, Inc. (United States)

12632-61 • 14:15 - 14:30 | Room 5 ICM Ground Floor

Demarcation of brain and tumor tissue with optical coherence tomography using prior neural networks

Author(s): Paul Strenge, Birgit Lange, Medizinisches Laserzentrum Lübeck GmbH (Germany); Wolfgang Draxinger, Univ. zu Lübeck (Germany); Christian Hagel, Universitätsklinikum Hamburg-Eppendorf (Germany); Christin Grill, Veit Danicke, Dirk Theisen-Kunde, Medizinisches Laserzentrum Lübeck GmbH (Germany); Sonja Spahr-Hess, Matteo M. Bonsanto, Universitätsklinikum Schleswig-Holstein (Germany); Robert Huber, Univ. zu Lübeck (Germany); Heinz Handels, Univ. zu Lübeck (Germany), Deutsches Forschungszentrum für Künstliche Intelligenz GmbH (Germany); Ralf Brinkmann, Medizinisches Laserzentrum Lübeck GmbH (Germany), Univ. zu Lübeck (Germany)

12632-62 • 14:30 - 14:45 | Room 5 ICM Ground Floor

High quality optical coherence tomography imaging of mock cataract surgery with deep-learning-based denoising

Author(s): Jonas Nienhaus, Anja Britten, Philipp Matten, Thomas Schlegl, Katharina Dettelbacher, Andreas Pollreisz, Wolfgang Drexler, Rainer A. Leitgeb, Medizinische Univ. Wien (Austria); Tilman Schmoll, Medizinische Univ. Wien (Austria), Carl Zeiss Meditec, Inc. (United States)

12632-63 • 14:45 - 15:00 | Room 5 ICM Ground Floor

Investigation of thin pharmaceutical coatings with ultra-high-resolution optical coherence tomography

Author(s): Richard Haindl, Alice Kern, Shiyu Deng, Medizinische Univ. Wien (Austria); Matthias Wolfgang, Sandra Stranzinger, Research Ctr. Pharmaceutical Engineering GmbH (Austria); Mengyang Liu, Wolfgang Drexler, Rainer A. Leitgeb, Medizinische Univ. Wien (Austria)

Break 15:00 - 15:30

ECBO CLOSING AND AWARDS

29 June 2023 • 15:30 - 16:30 | Room 5 ICM Ground Floor

Join us for closing remarks and presentation of the best paper awards.

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NOTES



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