

# ISOTT2025



# Thessaloniki

## Meeting of the International Society of Oxygen Transport to Tissue

24-28 August 2025

Thessaloniki, Greece

[www.isott2025.com](http://www.isott2025.com)

ORGANIZER



CONFERENCE BOOK



# Thessaloniki

# ISUTT2025



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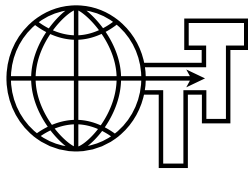
## WELCOME MESSAGE



I am delighted to invite you to the 2025 annual meeting of the International Society of Oxygen Transport to Tissue (ISOTT) in Thessaloniki, Greece. ISOTT is an interdisciplinary community of researchers and since its establishment back in 1973, the focus of the society and of the annual meetings have been the promotion of oxygen-related research in physiology, biology and medicine. Members of the society have pioneered the development of optical sensing methods such as Near-Infrared Spectroscopy (NIRS) and Electron Paramagnetic Resonance (EPR) oximetry; and demonstrated their application from the lab to the hospital, exploring conditions such as traumatic brain injury, neonatal prematurity, and cancer. Join us on the 24th of August 2025 to explore current and future developments and applications in tissue oxygen and metabolic sensing.

**Prof. Ilias Tachtsidis**  
*President And Chair*

## ABOUT ISOTT



The International Society of Oxygen Transport to Tissue (ISOTT) was founded in April, 1973 with a focus on inter and cross-disciplinary research involving theoretical and experimental investigations of oxygen transport to tissue. The intent was to bring life scientists and engineers together to examine the many complex phenomena of normal tissue growth and maintenance as well as tissue survival and repair under pathological conditions. At the first meeting of the society in Charleston/Clemson South Carolina the first elected president was determined to be Dr. Melvin H. Knisely. It was decided that in alternate years the meeting would be held in the United States and otherwise in Europe or Asia. The society has met around the world since then. [This is an extract from Prof. Bruley paper on The Genesis of ISOTT]

The ISOTT comprising about 250 members worldwide. Its purpose is to further the understanding of all aspects of the processes involved in the transport of oxygen from the air to its ultimate consumption in the cells of the various organs of the body.

The annual meeting brings together scientists, engineers, clinicians and mathematicians in a unique international forum for the exchange of information and knowledge, the updating of participants on latest developments and techniques, and the discussion of controversial issues within the field of oxygen transport to tissue.

The society has been the leading platform for the presentation of many of the technological and conceptual developments within the field both at the meetings themselves and in the proceedings of the society. These have been published by Kluwer Academic/Plenum Publishers in its Advances in Experimental Medicine and Biology series and lately by Springer.

Examples of areas in which members have made highly significant contributions include electrode techniques, spectrophotometric methods, mathematical modeling of oxygen transport, the understanding of local regulation of oxygen supply to tissue and fluorocarbons/blood substitutes.

For 2025 the meeting will be held for the first time in Greece and the town of Thessaloniki.

## PROGRAMME COMMITTEE



**Wesley B. Baker**

*Children's Hospital of Philadelphia,  
Philadelphia, USA*



**Subhabrata Mitra**

*University College London, London, UK*



**Paul W. Buehler**

*University of Maryland, Baltimore, USA*



**Flaminia Ronca**

*University College London, London, UK*



**David R. Busch**

*UT Southwestern, Dallas, Texas*



**Maheen Siddiqui**

*Birkbeck, University of London, London,  
UK*



**Alexander Caicedo**

*Pontificia Universidad Javeriana,  
Bogota, Colombia*



**Ilias Tachtsidis**

*President of ISOTT 2025, University  
College London, London, UK*



**Mamadou Diop**

*Lawson Health Research Institute,  
London, Ontario, Canada*



**Liesbeth Thewissen**

*Uz Leuven, Leuven, Belgium*



**Luca Giannoni**

*University College London, London, UK*



**Oliver Thews**

*University of Halle, Halle, Germany*



**Kazuki Hotta**

*Kitasato University School of Allied  
Health Sciences, Sagamihara, Japan*



**Bruno Montcel**

*Universite Claude Bernard Lyon, Lyon,  
France*



**Li Ting**

*Institute of Biomedical Engineering of  
Chinese Academy of Medical Sciences,  
Beijing, China*

## INVITED SPEAKERS

**KEYNOTE SPEAKER****Professor Clare Elwell***University College London, London, UK***PLENARY SPEAKERS****Chris Cooper***University of Essex, Colchester, UK***Allan Doctor***University of Maryland School of Medicine, USA***Turgut Durduran***ICFO-The Institute of Photonic Sciences, Barcelona, Spain***Himar Fabelo***University of Las Palmas de Gran Canaria, Spain***Katja Ferenz***University Duisburg - Essen, Essen, Germany***Irene Georgakoudi***Dartmouth College, New Hampshire, USA***Joy Hirsch***Yale School of Medicine, New Haven, USA***Jiang Jingjing***University and University Hospital of Zurich, Zurich, Switzerland***Ben Jones***University of Essex, Colchester, UK***Emily Jones***Birkbeck University of London, London, UK***Joseph Kao***University of Maryland, Baltimore, USA***Tiffany Ko***Children's Hospital of Philadelphia Research Institute, Philadelphia, USA***Vasilis Ntziachristos***Helmholtz Munich, Neuherberg, Germany***Thiébaud Picart***Hospices Civils de Lyon, Lyon, France***Niccole Ranaei-Zamani***University College London, London, UK***Pietro Ricci***University of Florence, Sesto Fiorentino, Italy***Keith St Lawrence***Western University and Lawson Research Institute, London, ON, Canada***Nucleus Xu***University of Pennsylvania, Philadelphia, USA*



## AWARDS

### THE MELVIN H. KNISELY AWARD

This award was established in 1983, to honor Dr. Knisely's professional accomplishments with respect to the transport of oxygen and other metabolites in the human body. Over the years, Dr. Knisely inspired many young investigators, and this award honors his enthusiasm for assisting and encouraging young scientists and engineers in various disciplines. The award acknowledges outstanding young investigators and was first presented during the banquet of the 1983 annual conference of ISOTT in Ruston, Louisiana. It includes a cash prize.

### THE DIETRICH W. LÜBBERS AWARD

This award was established in honor of Professor Lübbers' long-standing commitment, interest, and contributions to the problems of oxygen transport to tissue and to the Society. This award was first presented in 1994, during the annual conference of ISOTT in Istanbul, Turkey.

### THE BRITTON CHANCE AWARD

This award was established in honor of Professor Chance's long-standing commitment, interest, and contributions to the science and engineering aspects of oxygen transport to tissue and to the Society. This award was first presented in 2004 during the annual conference of ISOTT in Bari, Italy.

### THE DUANE F. BRULEY TRAVEL AWARDS

These awards were established in 2003 and first presented at the 2004 annual ISOTT conference in Bari, Italy. This award was created to provide travel funds for student researchers in all areas of oxygen transport to tissue. The awards signify Dr. Bruley's interest in encouraging and supporting young researchers to maintain the image and quality of research associated with the Society. As a co-founder of ISOTT in 1973, Dr. Bruley appreciates and encourages cross-disciplinary research among basic scientists, engineers, medical scientists, and clinicians. His pioneering work constructing mathematical models for oxygen and other anabolite/metabolite transport in the microcirculation employed computational solutions and were the first to consider system non-linearities and time-dependence, including multi-dimensional diffusion, convection, and reaction kinetics. The Duane F. Bruley Travel Awards are intended to inspire students to excel in their research, as well as to assist in securing future leadership for ISOTT. A candidate may be nominated and receive this award multiple times, as long as the award criteria are met in the year of nomination. The award includes a cash prize intended to assist with paying for ISOTT meeting registration fees and/or travel expenses.



## SPRINGER MANUSCRIPTS

Be featured in the Advances in Experimental Medicine and Biology series published by Springer Nature. All presenters are eligible to submit a full-length manuscript based on their ISOTT presentation.

### SPRINGER MANUSCRIPT PREPARATIONS

Full registrants are encouraged to submit a full-length manuscript based on their presentation given at ISOTT2025. All accepted and presented abstracts are eligible for manuscript submission regardless of their presentation type. The manuscript will be peer-reviewed and considered for publication in the Advances in Experimental Medicine and

### BIOLOGY SERIES BY SPRINGER

Manuscripts should be submitted as Microsoft Word files, formatted using Springer's Word template for book chapters provided on the Instructions for Authors page linked below. Authors must also include a separate Title Page document, including 5 keywords, the e-mail address of the corresponding author, and a copyright release form. (See below to download the form.) If copyrighted material has been used in the manuscript, a permission form should be included from the original publisher.

Springer links for the Word template and author instructions are provided below. We strongly recommend that you read the simplified instructions before starting to prepare your manuscript.

The maximum number of pages (including abstract, main text, figures, tables, and references) is 6.

Manuscripts should be sent to [isott2025@artion.com.gr](mailto:isott2025@artion.com.gr), either before or after the conference but no later than 30 September 2025. Candidates for ISOTT awards should submit their manuscripts with their nomination paperwork.

Visit [isott2025.com](http://isott2025.com) to find related documents and resources for authors.

## PRE & POST CONFERENCE EXCURSIONS



### MOUNT OLYMPUS PRE-CONFERENCE EXCURSION CULTURAL/ SPORTIVE EXCURSION

**Date:** 23 August 2025

**Time:** 09:00-17:00

**Inclusions:** Transportation, morning snack, Dion Archaeological Site and museum visit, lunch



### BOAT CRUISE

**Date:** 25 August 2024

**Time:** 19:00

**Venue:** Embarkation will take place close to the White Tower of Thessaloniki



### MID-CONFERENCE EXCURSION – BEACH DAY

**Date:** 26 August 2025

**Time:** 14:00-19:00

**Venue:** Beach bar in Chalkidiki



### WALKING CITY TOUR

**Date:** 26 August 2025

**Time:** 17:30-20:30

**Meeting Point:** Trygoniou (Chain) Tower



### POST CONFERENCE EXCURSION VERIA - VERGINA

**Date:** 29 August 2025

**Time:** 09:00-17:00

## SECRETARIAT & INFORMATION DESK DURING THE MEETING

**Sunday 24 August** 08:00 - 17:30

**Monday 25 August** 08:00 - 17:30

**Tuesday 26 August** 08:00 - 13:00

**Wednesday 27 August** 08:00 - 17:30

**Thursday 28 August** 08:00 - 17:00

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# ISOTT2025

## YOUNG RESEARCHERS SYMPOSIUM





## YOUNG RESEARCHERS SYMPOSIUM

The ISOTT Young Researchers Committee is delighted to announce the ISOTT Young Researchers Symposium, an event dedicated to trainees and early-career researchers.

This symposium is a platform to spotlight young researchers, offering them the opportunity to share their work, exchange ideas, engage with peers and professionals from diverse backgrounds, and socialize in a friendly and informal environment.

## YOUNG RESEARCHERS SYMPOSIUM COMMITTEE



**Lorenzo Cortese**

*ICFO-The Institute of Photonic Sciences,  
Barcelona, Spain*



**Jiang Jingjing**

*University and University Hospital of  
Zurich, Zurich, Switzerland*



**Luca Giannoni**

*University College London, London, UK*



**Qi Wang**

*Presbyterian College, South Carolina,  
USA*



**Mada Hashem**

*University of Calgary, Alberta, Canada*



**Hamoon Zohdi**

*University of Bern, Bern, Switzerland*

## INVITED SPEAKERS



**Kazuki Hotta**

*Career Paths After a PhD*



**Alexander Caicedo**

*AI and Human Collaboration: Mastering  
the Art of Prompt Engineering*



**Michele Lacerenza**

*Beyond Academia: The Industry  
Perspective on Advancing Tissue  
Oxygenation Technologies*

## YOUNG RESEARCHERS SYMPOSIUM PROGRAMME

## SUNDAY, 24 AUGUST 2025

## 08:30-14:45 YOUNG RESEARCHERS SYMPOSIUM

Chairs: **Dr. Hamoon Zohdi**, *University of Bern, Bern, Switzerland*  
**Dr. Lorenzo Cortese**, *ICFO-The Institute of Photonic Sciences, Barcelona, Spain*  
**Dr. Luca Giannoni**, *University College London, London, UK*  
**Prof. Qi Wang**, *Presbyterian College, South Carolina, USA*  
**Dr. Jiang Jingjing**, *University and University Hospital of Zurich, Zurich, Switzerland*  
**Dr. Mada Hashem**, *University of Calgary, Alberta, Canada*

## 08:30-08:45 Opening Remarks

**Prof. Ilias Tachtsidis**, *President of ISOTT 2025, University College London, London, UK*

## 08:45-10:30 PRESENTATIONS (YOUNG RESEARCHERS – PART 1)

**Dr. Luca Giannoni**, *University College London, London, UK*  
**Dr. Mada Hashem**, *University of Calgary, Alberta, Canada*  
**Dr. Antonio Renaldo**, *University of Maryland School of Medicine, Baltimore, USA*  
**Mr. Nikola Otic**, *Massachusetts General Hospital, Boston, USA*  
**Mr. Charly Caredda**, *CREATIS, Villeurbanne, France*  
**Ms. Letizia Lanini**, *BORL, University of Zürich, ETH Zürich, Switzerland*  
**Ms. Djazia Yacheur**, *ETH Zurich, Zürich, Switzerland*  
**Mr. Chenxi Yang**, *Chinese Academy of Medical Sciences and Peking Union Medical College, Tianjin, China*  
**Mr. Marco Filippi**, *Psychiatric Services Thurgau (Academic Teaching Hospital of the University of Konstanz), Kreuzlingen, Switzerland*  
**Mr. Ignacio Fernandez Jarillo**, *INEFC Barcelona, Universitat de Barcelona, Barcelona, Spain*  
**Mr. Renas Ercan**, *University of Cambridge, Cambridge, UK*  
**Ms. Xingmin Li**, *University College London, London, UK*  
**Dr. Pietro Ricci**, *European Laboratory for Non-linear Spectroscopy, Sesto Fiorentino*

## 10:30-11:00 Coffee Break

## 11:00-12:10 PRESENTATIONS - (YOUNG RESEARCHERS – PART 2)

**Mr. Wieland Lackinger**, *University Hospital Zurich, University of Zurich, Zurich, Switzerland*  
**Ms. Sung Min Park**, *Washington University in St. Louis, St. Louis, USA*  
**Dr. Frederic Lange**, *University College London, London, UK*  
**Mr. Oleksii Ustinov**, *ETH Zurich, Zurich, Switzerland*  
**Ms. Leila Motamed Jahromi**, *Physikalisch-Technische Bundesanstalt*  
**Dr. Travis Murphy**, *University of Miami, University of Miami, Miami, USA*  
**Ms. Letizia Contini**, *Politecnico di Milano, Milan, Italy*  
**Dr. Victor Ochoa-Gutierrez**, *Cornell Tech, New York City, USA*  
**Mr. Sarusan Jegatheeswaran**, *University of Bern, Bern, Switzerland*  
**Ms. Jacqueline Hausherr**, *University Hospital Essen, Essen, Germany*

## 12:10-12:20 Short Break



**12:20-13:20 PRESENTATIONS - INVITED SPEAKERS**

- 12:20-12:40 AI and Human Collaboration: Mastering the Art of Prompt Engineering  
**Prof. Alexander Caicedo Dorado**, *Pontificia Universidad Javeriana, Bogota, Colombia*
- 12:40-13:00 Career Paths After a PhD  
**Dr. Kazuki Hotta**, *Kitasato University School of Allied Health Sciences, Sagamihara, Japan*
- 13:00-13:20 Beyond Academia: The Industry Perspective on Advancing Tissue Oxygenation Technologies  
**Dr. Michele Lacerenza**, *CTO and co-founder of PIONIRS srl, Milano, Italy*

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13:20-13:30 **Questions and Open Discussion**

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13:30-14:40 **Lunch / Networking**

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14:40-14:45 **Session Closing**

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# kernel

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& Publications**



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Thessaloniki

ISOTT2025  
SCIENTIFIC PROGRAMME



## SUNDAY, 24 AUGUST 2025

THESSALONIKI CONCERT HALL - M2

### 16:00-18:00 OPENING SESSION

Chair: **Prof. Ilias Tachtsidis**, *President of ISOTT 2025, University College London, London, UK*

16:00-16:30 Opening Remarks

**Prof. Ilias Tachtsidis**, *President of ISOTT 2025, University College London, London, UK*

16:30-17:30 **KEYNOTE TALK: Transforming How, When and Where We Can Image Oxygen in the Brain**

**Prof. Clare Elwell**, *University College London, London, UK*

17:30-18:00 **2024 KNISELY AWARDEE TALK: Near Infrared Optical Tomography for Imaging Cerebral and Tissue Oxygenation**

**Dr. Jiang Jingjing**, *University and University Hospital of Zurich, Zurich, Switzerland*

18:00-19:30 **Welcome Reception, Thessaloniki Concert Hall (M2 Building)**

## MONDAY, 25 AUGUST 2025

### 08:30-10:30 SCIENTIFIC SESSION 1

**Oxygen and Metabolic Sensing in Tissue**

Chairs: **Prof. Mamadou Diop**, *Lawson Health Research Institute, London, Ontario, Canada*

**Dr. Tifanny Ko**, *Children's Hospital of Philadelphia Research Institute, Philadelphia, USA*

08:30-09:00 **PLENARY TALK: Optoacoustic Imaging of Oxygen Transport in Tissues**

**Prof. Vasilis Ntziachristos**, *Helmholtz Munich, Neuherberg, Germany*

09:00-09:15 What Do NIRS Measurements of Absolute Cytochrome C Oxidase Concentrations Tell us About Mitochondria in Neurological Disorders?

**Dr. Mada Hashem**, *University of Calgary, Alberta, Canada*

09:15-09:30 Neurometabolic Optical Monitoring of Primary Mitochondrial Dysfunction and Succinate Prodrug Treatment in Swine

**Dr. Wesley Baker**, *Children's Hospital of Philadelphia, USA*

09:30-09:45 Broadband Near Infrared Spectroscopy Measurement of Low Frequency Oscillation Reveals Protection of Metabolic-Haemodynamic Coupling by Nimodipine in an Animal Model of Cerebral Small Vessel Disease

**Dr. Zhiyuan Yang**, *University College London, London, UK*

09:45-10:15 **PLENARY TALK: High Resolution Tissue Metabolism Assessments Using Endogenous Two-Photon Excited Fluorescence**

**Prof. Irene Georgakoudi**, *Dartmouth College, New Hampshire, USA*

10:15-10:30 Potential of Optical Redox Imaging (ORI) for Imaging T Cell Activation and Response to Immunotherapy

**Dr. Lin Li**, *University of Pennsylvania, Aston, USA*

10:30-11:00 **Coffee Break - POSTER SESSION 1**

**11:00 - 11:30 SPECIAL SESSION****Memorial Session Honouring Prof. Duane F. Bruley co-founder of ISOTT**Chair: **Prof. Lin Z. Li**, *University of Pennsylvania, Philadelphia, USA*Panel Speakers: **Mr. Randall Bruley**, *Synthesizer, Inc, USA***Prof. Lin Z. Li**, *University of Pennsylvania, USA***Prof. Peter Vaupel**, *University Medical Center Freiburg, Mainz, Germany***Prof. Joseph LaManna**, *Case Western University, Cleveland, USA***11:30-13:00 SCIENTIFIC SESSION 2****Blood Therapeutics**Chairs: **Prof. Chris Cooper**, *University of Essex, Colchester, UK***11:30-12:00 PLENARY TALK: Perfluorocarbon-Based Artificial Oxygen Carriers****Prof. Katja Ferenz**, *University Duisburg - Essen, Essen, Germany***12:00-12:30 PLENARY TALK: Bio-Synthetic Whole Blood Analogue: Performance Evaluation in Models of Shock and Massive Transfusion****Prof. Allan Doctor**, *University of Maryland School of Medicine, USA***12:30-12:45 Perfluorocarbon Emulsion Therapy for Limb Ischemia****Dr. Travis Murphy**, *University of Miami, Miami, USA***12:45-13:00 Oxygen Responsive Regulation of RBC Endothelial Nitric Oxide Synthase****Dr. Zohreh Safari**, *University of Maryland School of Medicine, USA***13:00-13:30 Light Lunch Break****13:30-14:00 OPTIONAL LUNCH TIME SEMINAR:**Chair: **Prof. Clare Elwell**, *University College London, London, UK***The Many Faces of EPR Oximetry: Opportunities and Challenges****Prof. Harold Swartz**, *Dartmouth College, Hanover, USA***14:00-16:00 SCIENTIFIC SESSION 3****Oxygen and Metabolic Monitoring in Placenta, Fetus, and Paediatric Intensive Care**Chairs: **Dr. Liesbeth Thewissen**, *Uz Leuven, Leuven, Belgium***Prof. Subharata Mitra**, *University College London, London, UK***14:00-14:30 PLENARY TALK: Neurometabolic Optical Monitoring During Pediatric Extracorporeal Life Support****Dr. Tiffany Ko**, *Children's Hospital of Philadelphia, USA***14:30-15:00 PLENARY TALK: Continuous Neuromonitoring During Pediatric Extracorporeal Life Support****Dr. David Busch**, *University of Texas Southwestern, Dallas, USA***15:00-15:15 MW FlexNIRS: Wearable, Low-Cost, LED-Based, Multi-Wavelength NIRS Oximeter for Cytochrome C Oxidase Recovery in Neonates****Mr. Nikola Otic**, *Massachusetts General Hospital, Boston, USA***15:15-15:45 PLENARY TALK: The Effect of Maternal Position on the Performance of TD-NIRS to Monitor Placental Oxygenation and Metabolism****Dr. Niccole Ranaei-Zamani**, *University College London, London, UK***15:45-16:00 Umbilical Cord Blood Gases, pH and Base Excess of Healthy, in Term Neonates: Evaluation of Recent Data (2023-2025)****Prof. Peter Vaupel**, *University Medical Center Freiburg, Mainz, Germany***16:00-16:30 Coffee Break - POSTER SESSION 1****16:30-18:00 POSTER SESSION 1****20:00 Conference Dinner at Zithos Dore Restaurant**

## TUESDAY, 26 AUGUST 2025

### 08:30-10:30 SCIENTIFIC SESSION 4

#### Functional Brain Oxygen and Haemodynamics Monitoring and Imaging

Chairs: **Dr. Wesley Baker**, *Children's Hospital of Philadelphia, Philadelphia, USA*

**Dr. Maheen Siddiqui**, *Birkbeck, University of London, London, UK*

### 08:30-09:00 PLENARY TALK: Applications of Oxygen Transport to Brain Tissue to Understand Human Social Interactions in the Natural Everyday World

**Prof. Joy Hirsch**, *Yale School of Medicine, New Haven, USA*

### 09:00-09:15 Extended Consciousness Experiences Under Extreme Physiological Brain States: Philosophical Considerations on the Uncoupling of Mind and Brain

**Prof. Martin Wolf**, *University Hospital Zurich, University of Zurich, Zurich, Switzerland*

### 09:15-09:30 Measuring Whole-Head Cortical Activation with High-Density Wearable fNIRS During Naturalistic Sitting, Standing, and Walking

**Prof. David Boas**, *Boston University, Boston, USA*

### 09:30-09:45 A Portable, Fiberless, Low-Cost, and Scalable Wireless fNIRS System for Whole-Brain Functional

**Mr. Chenxi Yang**, *Institute of Biomedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College, Tianjin, China*

### 09:45-10:00 The Potential of Generative AI for NIRS/fNIRS Brain Research

**Prof. Alexander Caicedo Dorado**, *Pontificia Universidad Javeriana, Bogotá, Colombia*

### 10:00-10:15 Whole Hemisphere Speckle Contrast Optical Spectroscopy

**Mr. Alexander Howard**, *Boston University, Boston, USA*

### 10:15-10:30 ISOTT 2025 FAMILY PHOTO

### 10:30-11:00 Coffee Break - POSTER SESSION 1

### 11:00-13:00 SCIENTIFIC SESSION 5

#### Optical Instrumentation for Measuring Oxygenation, Flow and Metabolism

Chairs: **Prof. Turgut Durduran**, *ICFO-The Institute of Photonic Sciences, Barcelona, Spain*

**Prof. Martin Wolf**, *University of Zurich, Zurich, Switzerland*

### 11:00-11:30 PLENARY TALK: Measurements of Mitochondrial Cytochrome Oxidase With Near Infrared Spectroscopy – An ISOTT Magical Mystery Tour?

**Prof. Chris Cooper**, *University of Essex, Colchester, UK*

### 11:30-11:45 2bNIRS: A Portable, Multi-Distance, Broadband Oximeter and Cytochrome-C-Oxidase Monitoring System for In Vivo Applications

**Dr. Luca Giannoni**, *University College London, London, UK*

### 11:45-12:00 A Wearable LED-NIRS System for Quantifying Brain Glymphatic Function

**Dr. Kuan Cheng Wu**, *Athinoula A. Martinos Center, Massachusetts General Hospital, Boston, USA*

### 12:00-12:15 Compact Optofluidic Fluorometer for NAD(P)H-based Metabolic Sensing

**Mr. Oleksii Ustinov**, *ETH Zürich, Zürich, Switzerland*

- 12:15-12:30 A Combined bNIRS and TD-NIRS Approach for Quantitative Optical Property and Cytochrome-C-Oxidase Estimation in Tissues  
**Ms. Chiara Camati**, *Politecnico di Milano, Milano, Italy*
- 12:30-12:45 Combined Use of Hyperspectral Continuous-Wave and Multispectral Time-Resolved NIRS to Quantify Cytochrome-C-Oxidase  
**Prof. Mamadou Diop**, *Lawson Health Research Institute, London, Ontario, Canada*
- 
- 13:00-13:30 **Light Lunch Break**
- 13:30-14:00 **OPTIONAL LUNCH TIME SEMINAR**  
Chair: **Prof. He Nucleus Xu**, *University of Pennsylvania, Philadelphia, USA*  
**Pretreatment Thermophysical Traits and O<sub>2</sub> Status of Multi-Layered Tissues Exposed to Thermo-Radiotherapy of Breast Cancers: Update of Key Data**  
**Prof. Peter Vaupel**, *University Medical Center Freiburg, Mainz, Germany*
- 
- 14:00-19:00 **Beach Day\***
- 
- 14:00-16:30 **Executive Board Meeting**  
CR2 Room – Ground Level (Only for ISOTT Executive Board)
- 
- 17:30-20:30 **Walking City Tour\***
- 

*\*More information about the excursions of this day will be sent via email to those participating*



## WEDNESDAY, 27 AUGUST 2025

### 08:30-10:30 SCIENTIFIC SESSION 6

#### Neurosurgery

Chairs: **Prof. Bruno Montcel**, *Université Claude Bernard Lyon, Lyon, France*

**Dr. Luca Giannoni**, *University College London, London,*

08:30-09:00 **PLENARY TALK: Metabolic Imaging of Glioma: Interest in Deciphering Tumor Heterogeneity and Guiding Patient Care**

**Dr. Thiebaud Picart**, *Hospices Civils de Lyon, Lyon, France*

09:00-09:30 **PLENARY TALK: Artificial Intelligence and Multimodal Imaging for Brain Tumour Surgery: Challenges and Pathways for Clinical Validation**

**Dr. Himar Fabelo**, *University of Las Palmas de Gran Canaria, Spain*

09:30-10:00 **PLENARY TALK: A Non-Invasive Hyperspectral Imaging System for Neuronavigation: A Comprehensive Tool for Hemodynamic and Metabolic Monitoring**

**Dr. Pietro Ricci**, *University of Florence, Sesto Fiorentino, Italy*

10:00-10:15 Intraoperative Functional Hyperspectral Imaging Based on Changes in Hemoglobin Oxygenation and Oxidation of Cytochrome-C-Oxidase

**Mr. Charly Caredda**, *CREATIS, Villeurbanne, France*

10:15-10:30 Optical Monitoring of Cerebral Perfusion and Metabolism During Surgery

**Prof. Keith St Lawrence**, *Western University and Lawson Research Institute, London, ON, Canada*

### 10:30-11:00 Coffee Break - POSTER SESSION 2

### 11:00-13:00 SCIENTIFIC SESSION 7

#### Neonatal and Paediatric Application of Brain Oxygenation and Metabolic Imaging

Chairs: **Prof. Alexander Caicedo Dorado**, *Pontificia Universidad Javeriana, Bogota, Colombia*

**Dr. Hamoon Zohdi**, *University of Bern, Bern, Switzerland*

11:00-11:30 **PLENARY TALK: Neuroimaging in Neurodevelopment: Understanding Neurodiversity**

**Prof. Emily Jones**, *Birkbeck University of London, London, UK*

11:30-11:45 Cerebral Blood Volume Pulse Amplitude Changes During Creative Music Therapy in Neonatology Measured by fNIRS Hyperscanning: Case Report

**Mr. Wieland Lackinger**, *University Hospital Zurich, University of Zurich, Zürich, Switzerland*

11:45-12:00 Early Alterations in Auditory-Evoked Brain Metabolism in a Newborn with Congenital CMV: A bNIRS Case Comparison

**Dr. Maheen Siddiqui**, *Birkbeck, University of London, London, UK*

12:00-12:15 Associations of Childhood Maltreatment with Frontal-Brain Biomarkers of Energy Metabolism Using Near-Infrared Spectroscopy

**Mr. Marco Filippi**, *Psychiatric Services Thurgau (Academic Teaching Hospital of the University of Konstanz), Kreuzlingen, Switzerland*

12:15-12:30 Neuro-Hemo-Metabolic-Glymphatic Dynamics of the Cortex in Infants

**Prof. Gentaro Taga**, *Graduate School of Education, The University of Tokyo, Tokyo, Japan*

12:30-12:45 Cerebral Oxygenation Impairment in Pediatric Pneumonia: Insights from TD-NIRS

**Dr. Michele Lacerenza**, *PIONIRS srl, Milano, Italy*

12:45-13:00 Investigating Spatial Variability in Hemodynamics of Pediatric ECMO Patients Using High-Density Diffuse Optical Tomography  
**Ms. Sung Min Park**, Washington University in St. Louis, St. Louis, USA

13:00-13:30 **Light Lunch Break**

13:30-14:00 **OPTIONAL LUNCH TIME SEMINAR**

Chair: **Prof. Ilias Tachtsidis**, President of ISOTT 2025, University College London, London, UK

**Fifty Years of Electron Paramagnetic Resonance Oximetry: From Capillary to Clinical Measurements of Oxygen Concentration**

**Prof. Periannan Kuppusamy**, Dartmouth College, New Hampshire, USA

14:00-16:00 **SCIENTIFIC SESSION 8**

**Muscle Oximetry Applications and Brain Function During Exercise**

Chairs: **Dr. Flaminia Ronca**, University College London, London, UK

**Dr. Lorenzo Cortese**, ICFO-The Institute of Photonic Sciences, Barcelona, Spain

14:00-14:30 **PLENARY TALK: My Use of Near-infrared Spectroscopy (NIRS) in Sport, Recovery and Health**  
**Dr. Ben Jones**, University of Essex, Colchester, UK

14:30-14:45 Muscle Oxygenation Responses During a 400-Meter Open Water Swim Time Trial  
**Mr. Ignacio Fernandez Jarillo**, INEFC Barcelona, Universitat de Barcelona, Barcelona, Spain

14:45-15:00 Sex Differences in Skeletal Muscle Oxygenation Dynamics During Incremental Exercise: Effect of Muscle Strength and Endurance  
**Dr. Shinji Nemoto**, Showa Medical University, Yokohama, Japan

15:00-15:15 Comparisons of Physiological Estimates of Vascular Responsiveness Between Continuous Wave and Time-Domain NIRS Devices  
**Mrs. Chiara Motto**, Pionirs, Milan, Italy

15:15-15:30 Moxy: An Algorithm for Real-Time Measurement of Muscle Oxygen Saturation With Useful Accuracy  
**Mr. Roger Schmitz**, Moxy Monitor, Hutchinson, USA

15:30-15:45 Prediction of Critical Force Based on Time-Domain Near Infrared Spectroscopy and Electromyography With Explainable Machine Learning  
**Prof. Stephane Perrey**, Euromov Digital Health in Motion, Montpellier, France

15:45-16:00 BDNF Modulates Prefrontal Cortex Activity in the Context of Physical Exercise, Measured via fNIRS  
**Dr. Flaminia Ronca**, University College London, London, UK

16:00-16:30 **Coffee Break - POSTER SESSION 2**

16:30-18:00 **POSTER SESSION 2**

**Free Evening**

## THURSDAY, 28 AUGUST 2025

### 08:45-09:30 SCIENTIFIC SESSION 9

#### Red Blood Cells, Oxygen, Flow Relationships

Chairs: **Dr. Allan Doctor**, *University of Maryland School of Medicine, Baltimore, USA*

### 08:45-09:15 PLENARY TALK: Insights from Measuring Superoxide in Red Blood Cells

**Prof. Joseph P. Y. Kao**, *University of Maryland, Baltimore, USA*

### 09:15-09:30 Confounding Effects of Necrotic Tissue and Microvascular Shunts on Near Infrared Spectroscopy of Tissue Oxygenation

**Prof. Edwin Nemoto**, *SHEARIT, LLC, Lewisville, USA*

### 09:30-10:30 SCIENTIFIC SESSION 10

#### Tumor and Cancer Oxygenation and Metabolism

Chairs: **Prof. Oliver Thews**, *University of Halle, Halle, Germany*

**Prof. Peter Vaupel**, *University Medical Center Freiburg, Mainz, Germany*

### 09:30-10:00 PLENARY TALK: Immunotherapy Strategies and Immune Metabolism in Breast Cancer: From Treatment to Predictive Biomarkers

**Dr. He Nucleus Xu**, *University of Pennsylvania, Philadelphia, USA*

### 10:00-10:15 Modelling Tumour Oxygen Delivery Using Oxygen-Enhanced MRI

**Dr. Michael Dubec**, *The Christie NHS Foundation Trust / University of Manchester, Manchester, UK*

### 10:15-10:30 EPR Measuring Tumor Hypoxia and Acidosis Using Paramagnetic Probes With Multiple Functionalities

**Prof. Valery Khramtsov**, *West Virginia University, Morgantown, USA*

### 10:30-11:00 Coffee Break - POSTER SESSION 2

### 11:00-13:00 SCIENTIFIC SESSION 11

#### Oxygen Flow, Metabolism Interactions and Novel Applications

Chairs: **Dr. Petra Mayr**, *Oxford Optroinix, Adderbury, UK*

**Dr. Jiang Jingjing**, *University and University Hospital of Zurich, Zurich, Switzerland*

### 11:00-11:30 PLENARY TALK: Mapping Cerebral Oxygen Diffusibility by Hybrid PET/MRI

**Prof. Keith St. Lawrence**, *Western University and Lawson Research Institute, London, ON, Canada*

### 11:30-12:00 PLENARY TALK: Evaluating for Microvascular and Endothelial Function at the Intensive Care Towards Personalized Therapies With Hybrid Diffuse Optics

**Prof. Turgut Durduran**, *ICFO, Castelldefels, Spain*

### 12:00-12:15 Non-Invasive Evaluation of Microvascular Impairment in Intensive Care Patients Through Near-Infrared Spectroscopy: The HEMOCOVID Trial

**Dr. Lorenzo Cortese**, *ICFO-The Institute of Photonic Sciences, Barcelona, Spain*

### 12:15-12:45 PLENARY TALK: The Promising Role of In Vivo Brain Broadband Near Infrared Spectroscopy for Neuropsychiatric Disorders

**Dr. Hilary Blumberg**, *Yale School of Medicine, USA*

12:45-13:00 Optimising the Use of the Cytochrome Oxidase NIRS Signal by Combining Multimodal Monitoring With Systems Modelling: The Case of Hypercapnia  
**Prof. Chris Cooper**, *University of Essex, Colchester, UK*

13:00-13:30 **Light Lunch Break**

13:30-14:00 **OPTIONAL LUNCH TIME SEMINAR**

Chair: **Prof. Oliver Thews**, *University of Halle, Halle, Germany*

**First In Vivo Measurement of Native Mammalian Tumor Oxygen Enhancement Ratio**

**Prof. Howard Halpern**, *University of Chicago, Illinois, USA*

14:00-14:45 **SCIENTIFIC SESSION 12**

**Oxygenation and Optical Properties**

Chairs: **Dr. David Busch**, *University of Texas Southwestern, Dallas, USA*

**Mr. Alexander Kalyanov**, *BORL, UZH, Schlieren, Switzerland*

14:00-14:15 Quantitative Analysis of Optical Properties in Short-Distance Reflectance  
**Ms. Djazia Yacheur**, *Eth Zurich, Schlieren, Switzerland*

14:15-14:30 Influence of Skin Structures and Melanin Concentrations on NIRS Using Various Inter-Optode Distances  
**Ms. Letizia Lanini**, *University Hospital Zurich and University of Zurich, Switzerland*

14:30-14:45 PPG Modeling: Dual-Wavelength Simulation and Artifact-Scattering Compensation in Pulse Oximeters  
**Dr. Victor Ochoa-Gutierrez**, *Cornell Tech, New York City, USA*

14:45-16:00 **SCIENTIFIC SESSION 13**

**Oxygenation and Metabolic Measurement Technologies/Techniques**

Chairs: **Dr. Mada Hashem**, *University of Calgary, Alberta, Canada*

**Prof. Keith St. Lawrence**, *Lawson Research Institute, London, Canada*

14:45-15:00 Multilayer Tissue Oxygenation Estimation via Highly Multidimensional TD-NIRS: A Spatially and Spectrally Enhanced Fitting Approach  
**Dr. Frederic Lange**, *University College London, London, UK*

15:00-15:15 Noninvasive Optical Sensing of Venous Oxygenation  
**Dr. Gennadi Saiko**, *Toronto Metropolitan University, Toronto, Canada*

15:15-15:30 A Quantum Detector System for Hybrid Time-Domain Diffuse Optics  
**Dr. Martin Caldarola**, *Single Quantum B.v., Delft, The Netherlands*

15:30-15:45 An Approach to In Vivo Low Magnification Optical Coherence Tomography for Monitoring Tissue Glucose Concentration  
**Prof. Akitoshi Seiyama**, *Akita International University, Akita, Japan*

15:45-16:00 Alveolar-Capillary Oxygen Gradient in Mechanically Ventilated Rats - Real-time Monitoring Using Phosphorescence Quenching Technique  
**Dr. Kazuki Hotta**, *Kitasato University School of Allied Health Sciences, Sagamihara, Japan*

16:00-16:15 **Coffee Break**

16:15-17:30 **Annual Society Meeting**

19:00-22:00 **Conference Banquet & Awards Dinner at Electra Palace Hotel**



# Brain imaging: portability expands range of applications

LIGHTNIRS – portable Near-Infrared Spectroscopy system  
visualizes brain activity

**Real time measurement in a natural, unrestricted environment**  
due to light-weight and compact backpack design

**New opportunities for brain science research**  
with various new applications such as neuro-marketing, communication and rehabilitation

**Flexible measurement locations**  
through comfortable and secure holder types covering whole head

**High sensitivity and stability**  
using triple wavelength semiconductor lasers and avalanche photodiodes



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## POSTERS

### POSTER SESSION 1: 25-26 AUGUST 2025

#### TOPIC: Blood Therapeutics

- P24 In Vivo Evaluation of a Bio-Synthetic Whole Blood Analogue for Hemorrhagic Shock Resuscitation  
**Dr. Antonio Renaldo**, *University of Maryland School of Medicine, Baltimore, USA*
- P30 LENOX Optimized for Human Serum Albumin: A Step Towards Clinical Translation  
**Dr. Fabian Nocke**, *University Hospital Essen, Essen, Germany*
- P35 Oxygen Delivery Analysis of Bio-Synthetic Whole Blood in an In Vitro Massive Transfusion Model  
**Dr. Antonio Renaldo**, *University of Maryland School of Medicine, Baltimore, USA*
- P51 Optimization of Cryoprotectant Concentration for Lyophilization of PFC-Based Artificial Oxygen Carriers  
**Ms. Marina Penzel**, *University Hospital Essen, Essen, Germany*
- P64 In Vitro and In Vivo Characterisation of a New Hemoglobin Based Oxygen Carrier Designed to Decrease Oxidative Stress and Lower NO Scavenging  
**Prof. Chris Cooper**, *University of Essex, Colchester, UK*
- P112 Normothermic Ex Vivo Heart Perfusion Using Artificial Oxygen Carriers in a Porcine Model  
**Ms. Jacqueline Hausherr**, *University Hospital Essen, Essen, Germany*

#### TOPIC: Computational and Instrumentation Developments

- P31 Relationship Between Transmittance and Reflection Measurements of the Heads of Extremely Low-Birth-Weight Infants Using Time-Domain Near-Infrared Spectroscopy  
**Mr. Hiroaki Suzuki**, *Hamamatsu Photonics K.K., Hamamatsu City, Japan*
- P39 Wearable and Cost-Effective Near-Infrared Spectroscopy Device for Low-Resource Settings  
**Dr. Saeed Samaei**, *Western University, London, Canada*
- P40 Towards Beat-to-Beat Intracranial Pressure Estimation: Depth-Enhanced 1064nm Interferometric Diffuse Correlation Spectroscopy  
**Dr. Mitchell Robinson**, *Massachusetts General Hospital, Charlestown, USA*
- P42 Comparative Validation of Speckle Contrast Optical Spectroscopy Against Diffuse Correlation Spectroscopy for Human Brain Blood Flow Monitoring  
**Prof. Maria Angela Franceschini**, *Massachusetts General Hospital, Harvard Medical School, Charlestown, USA*
- P50 Investigating the Influence of Respiratory Modulation on Brain Hemodynamics With Time-Domain Near-Infrared Spectroscopy  
**Ms. Letizia Contini**, *Politecnico di Milano, Milan, Italy*
- P55 The Application of Surrogate Data Methodology in Revealing Neuro-Vascular Relationships  
**Dr. Daniil Aksenov**, *Endeavor Health, Illinois, USA*
- P68 A Miniature, Wearable Broadband Near-Infrared Spectroscopy Device for Monitoring Cerebral Haemodynamics and Metabolism  
**Mr. Renas Ercan**, *University of Cambridge, Cambridge, UK*
- P88 Tissue Oxygenation Measurements of Tissue Covering the Ischial Tuberosity Under Controlled Pressure Exposure  
**Mr. Sarusan Jegatheeswaran**, *University of Bern, Bern, Switzerland*
- P92 An Improved Liquid Phantom for Validating Hyperspectral Imaging in Brain Tumour Resection  
**Mr. Angelos Artemiou**, *University College London, London, UK*

**TOPIC: Computational and Mathematical Modelling**

- P49 Akaike Information-Driven Optimization (AIdO): A Data-Driven Method for Optimizing Preschoolers Hemodynamic Response in a VR Set-Up  
**Ms. Letizia Contini**, *Politecnico di Milano, Milano, Italy*
- P56 Failure of Oxygen Delivery in High-Frequency Neuronal Activity: Physical Neuroprotection by Anesthesia in Ischemia and Epilepsy  
**Mr. Evan Doubovikov**, *Endeavor Health, Evanston, USA*
- P70 Investigating Brain Oxygenation Depth Sensitivity Profiles With TD-NIRS by Using the Dual-Slope Method  
**Ms. Xingmin Li**, *University College London, London, UK*
- P72 Hemodynamic Vector Trajectories for Improved Classification of Functional Phases of Motor Activation  
**Dr. Zephania Phillips V**, *Korea University, Seoul, South Korea*
- P97 Deep Learning Based Multi-Layer Optical Property Estimation from MC-Simulated Time-Domain NIRS  
**Mr. Emanuele Russomanno**, *University Hospital Zurich and University of Zurich, Switzerland*

**TOPIC: Muscle, Exercise, and Sport Science**

- P6 Relationship Between Skeletal Muscle Strength and Oxygenation Dynamics During Incremental Exercise in Patients With Heart Failure  
**Mr. Taiki Yamasaki**, *Kawasaki Municipal Tama Hospital, Kawasaki, Japan*
- P8 Blunted Skeletal Muscle Deoxygenation and Blood Volume Responses in Overweight Children With Low Aerobic Capacity  
**Dr. Shun Takagi**, *Biwako-Gakuin University, Higashiomi, Shiga, Japan*
- P23 Muscle-Specific Oxygenation Dynamics in the Lower Limbs During Sustained Wheelchair Propulsion  
**Prof. Shinichiro Morishita**, *Fukushima Medical University, Fukushima, Japan*
- P25 Changes in Prefrontal Cortex Oxygenation During Moderate-Intensity Wheelchair Propulsion  
**Prof. Shinichiro Morishita**, *Fukushima Medical University, Fukushima, Japan*
- P29 fNIRS in Concussion Assessment: An Analysis of Youth and Semi Professional Rugby Players  
**Dr. Ben Jones**, *University of Essex, Colchester, UK*
- P52 Investigating the Vascular Dynamics of the Anterior Tibialis Muscle With Time-Domain Near-Infrared Spectroscopy  
**Ms. Letizia Contini**, *Politecnico di Milano, Milano, Italy*
- P77 Microvascular Oxygen Partial Pressure During Static Stretching in Rat Skeletal Muscle: Influence of Stretch Intensity and Duration  
**Ms. Rin Kataoka**, *Kitasato University Graduate School of Medical Sciences, Sagamihara, Japan*
- P83 Preliminary Study on Immediate Effects of Neuromuscular Electrical Stimulation on Renal Microvascular Oxygen Pressure in a Rat Model of Acute Kidney Injury  
**Mr. Shuri Arai**, *Kitasato University Graduate School of Medical Sciences, Sagamihara, Japan*
- P87 Validation of a Continuous-Wave Self-Calibrating Method for Tissue Oxygen Saturation Measurements  
**Ms. Leila Mohamed Jahromi**, *Physikalisch Technische Bundesanstalt, Berlin, Germany*

## POSTER SESSION 2: 27-28 AUGUST 2025

### TOPIC: Imaging and Monitoring of Neurodevelopment and Function

- P43 Filtering Choice in Resting-State fMRI: Implications for Functional Connectivity and Spurious Oxygen-Related Correlations  
**Dr. Daniil Aksenov**, *Endeavor Health, Illinois, USA*
- P96 Multimodal Imaging of Somatosensory Processing in Infants  
**Dr. Maheen Siddiqui**, *Birkbeck, University of London, London, UK*
- P103 Wall Shear Stress in Intracerebral Arteries Following Traumatic Brain Injury  
**Prof. Edwin Nemoto**, *SHEARIT, LLC, Lewisville, USA*
- P105 Transcranial Direct Current Stimulation Transiently Alters Cerebral Oxygenation in Mild Traumatic Brain Injury Patients  
**Prof. Edwin Nemoto**, *SHEARIT, LLC, Lewisville, USA*
- P106 Enhancing SPA-fNIRS by Pupil Diameter Measurement: A Case Study Investigating Physiological Responses to Blue and Red Light Exposure  
**Dr. Hamoon Zohdi**, *University of Bern, Bern, Switzerland*
- P114 Photobiomodulation Enhances Cerebral Microcirculation and Brain Drainage Function after Acute Traumatic Brain Injury.  
**Prof. Edwin Nemoto**, *SHEARIT, LLC, Lewisville, USA*

### TOPIC: Neurosurgery

- P27 A-priori Free Spectral Unmixing based on Tensor Low-rank Decomposition for Intraoperative Hyperspectral Functional Imaging  
**Mr. Charly Caredda**, *CREATIS, Villeurbanne, France*
- P95 A Multi-Modal Phantom for Validating Hyperspectral and Fluorescence Imaging Systems in Brain Tumour Resection  
**Dr. Frederic Lange**, *University College London, London, UK*

### TOPIC: Other

- P5 Noninvasive Optical Mapping of Cognitive Load Effect on Low Frequency Oscillations in Cerebral Hemodynamics  
**Mr. Chenxi Yang**, *Institute of Biomedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College, Tianjin, china*
- P22 Comparison of Cerebral Oxygenation Dynamics in Septic ICU Patients With and Without Early Mobilisation  
**Prof. Atsuhiko Tsubaki**, *Niigata University of Health and Welfare, Niigata City, Japan*
- P47 Deep Learning-Based Estimation of Cardiac Output from Peripheral Blood Flow Pulse Waves  
**Mr. Koki Kurono**, *Meiji University, Kanagawa, Japan*
- P54 Cerebral Oxygenation Monitoring Using Near-Infrared Spectroscopy During the Acute-Phase Mobilisation in a Patient With Acute Heart Failure and Cognitive Dysfunction: A Case Report  
**Prof. Atsuhiko Tsubaki**, *Niigata University of Health and Welfare, Niigata City, Japan*
- P79 Characterization of Mayer Wave Oscillations Measured by fNIRS in Prefrontal and Visual Cortex Hemodynamics During Colored Light Exposure  
**Mr. Sarusan Jegatheeswaran**, *University of Bern, Bern, Switzerland*
- P99 Spectroscopy of Haemoglobin in 2nd Optical Window  
**Mr. Alexander Kalyanov**, *University of Zurich and University Hospital Zurich, Switzerland*

**TOPIC: Oxygen\Metabolic Sensing in Neurology**

- P26 Time-Domain NIRS Study of Cerebral Oxygenation Dynamics Induced by Hydrogen Inhalation  
**Mr. Masamichi Moriya**, Showa Medical University School of Medicine, Shinagawa, Japan
- P36 Time-Domain NIRS-Derived Cortical Atrophy Indicators for Practical Dementia Risk Screening  
**Mr. Masamichi Moriya**, Showa Medical University School of Medicine, Shinagawa, Japan
- P44 Time Series Analysis of Blood Flow Change Signals During Walking Imagery Using Hemodynamic Modality Separation Method  
**Ms. Wataru Tsuchiya**, Nihon University Itabashi Hospital, Itabashi, Japan
- P45 Near-Infrared Spectroscopy (NIRS) to Assess Infection Complications During the Acute Phase of Intracranial Hemorrhage  
**Mr. Yuki Hattori**, Nihon University School of Medicine, Nakaitabashi, Tokyo, Japan
- P48 Localization of Functional Near-infrared Spectroscopy Channels Using AprilTag Markers and a Smartphone Camera  
**Mr. Tatsuya Suzuki**, Meiji University, Kawasaki, Japan
- P53 Comparison of Prefrontal Cortex Oxygenation During Walking Between Individuals With Mild Acute Stroke and Healthy Controls  
**Prof. Atsuhiko Tsubaki**, Niigata University of Health and Welfare, Niigata City, Japan
- P58 Assessment of the Depth of Anesthesia Based on Intraoperative Peripheral Tissue Blood Flow Monitoring  
**Prof. Zhe Li**, Beijing University of Technology, Beijing, China
- P60 Multimodal Imaging System Combining Hyperspectral and Laser Speckle Imaging for In Vivo Hemodynamic and Metabolic Monitoring  
**Mr. Junda Wang**, University College London, London, UK
- P63 Effect of Stroke Severity on Cerebral Oxygenation During Head Elevation in Acute Stroke  
**Prof. Atsuhiko Tsubaki**, Niigata University of Health and Welfare, Niigata City, Japan
- P74 Brain Microvascular Shunts and Hypothesized Role in Vascular Disease  
**Prof. Edwin Nemoto**, SHEARIT, LLC, Lewisville, USA
- P76 Efficacy of Drag Reducing Polymer (DRP) Lamiflo™ in Vascular Disease  
**Prof. Edwin Nemoto**, SHEARIT, LLC, Lewisville, USA
- P82 Impact of Superficial Skin Chromophores on Pulse and Cerebral Oximetry Accuracy in Critically Ill Children  
**Prof. David R. Busch**, UT Southwestern, Dallas, Texas, USA
- P110 Dose-Dependent Effects of Drag-Reducing Polymers on Intracranial Pressure and Cerebral Autoregulation after Severe TBI  
**Prof. Edwin Nemoto**, SHEARIT, LLC, Lewisville, USA
- P111 Role of eNOS in Microcirculatory and Oxygenation Enhancements Induced by Anodal tDCS after Traumatic Brain Injury in Mice  
**Prof. Edwin Nemoto**, SHEARIT, LLC, Lewisville, USA
- P121 Cerebrovascular Reactivity of Migraine Patients to Breath hold and Hyper ventilation Challenge assessed by fNIRS: Preliminary Findings  
**Ms. Gülnaz Yükselen**, Acibadem University, Istanbul, Turkey
- P122 Quantitative Comparison of the Hemodynamic and Behavioral Correlates of Impulsivity in Parkinson's Disease Patients before and after Deep Brain Stimulation  
**Dr. Emre Yorgancıgil**, Acibadem University, Istanbul, Turkey



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Near-infrared spectroscopy-derived muscle oxygen saturation on a 0% to 100% scale: reliability and validity of the Moxy Monitor

*Andri Feldmann, Roger W. Schmitz, Daniel Erlacher*  
Journal of Biomedical Optics, Vol. 24, Issue 11, 115001 (November 2019).



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