

International Society on Oxygen Transport to Tissue (ISOTT) 2023 in Tokyo

Sep. 27th (Wed.) – Oct 1st (Sun.)

University of Electro-Communications, Building B

1-5-1 Chofugaoka, Chofu, Tokyo, Japan

Tentative Schedule

Sep. 27th (Wed.)

12:00 pm - Registration desk open

1:00 pm - Opening remarks

❖ Session 1: Oxygen Transport: Theory

(Chairs) K. Masamoto (Tokyo, Japan) and TBA

1:30 pm **KL1:** The cerebral microcirculation: roles in oxygen transport and disease

Dr. Leif Østergaard (Denmark)

2:00 pm **KL2:** A computer simulation approach for understanding whole-brain flow and mass transport based on mechanics

Dr. Shigeo Wada (Osaka, Japan)

2:30 pm Selected abstract: TBA

2:45 pm Selected abstract: TBA

❖ The 50th Anniversary of ISOTT special session:

~In light of 50 years of ISOTT and possible future directions~

(Chairs) K. Sakatani (Tokyo, Japan) and A. Flood (USA)

3:00 pm – 6:00 pm Expected speakers (Drs. Duane F Bruley [online], Harold M Swartz,

Peter Vaupel, Peter E Keipert, Sally C Pias, Ursula Wolf, Joseph C LaManna, Edwin M Nemoto)

6:00 pm – 8:00 pm Welcome reception (Restaurant Harmonia, University Center 3F)

Sep. 28th (Thu.)

8:30 am Registration desk open

❖ Presidential lecture 1

(Chair) Y. Yamada (Tokyo, Japan)

9:00 am 「Imaging and quantification of cerebral microcirculation dynamics」

Dr. Kazuto Masamoto, Univ. of Electro-Communications, Tokyo, Japan

10:00 am Coffee break & Poster viewing

❖ Session 2: Oxygen Transport: Cutting-edge Technologies

(Chairs) T. Kuchimaru (Tochigi, Japan) and TBA

10:30 am **KL3:** Visualization of ATP dynamics *in vivo*

Dr. Masamichi Yamamoto (Osaka, Japan)

11:00 am **KL4:** Oxygen imaging of living tissues based on phosphorescence lifetime imaging microscopy

Dr. Toshitada Yoshihara (Gunma, Japan)

- 11:30 am Selected abstract: TBA
- 11:45 am Selected abstract: TBA
- 12:00 pm Sponsored Luncheon session1 (Room #101)
(a sponsored lunch box will be provided)

❖ **Session 3: *In vivo* Oxygen-Related Measurements**

- (Chairs) H. Hirata (Hokkaido, Japan) and TBA
- 1:00 pm **KL5:** Multifunctional EPR-based profiling of tumor microenvironment: focus on tissue oxygenation
Dr. Valery Khrantsov (USA)
- 1:20 pm **KL6:** Novel effects of ultra-high FLASH radiotherapy in the tumor microenvironment
Dr. G-one Ahn (Korea)
- 1:40 pm **KL7:** *In vivo* imaging of NAD redox and bioenergetics
Dr. Lin Li (USA)
- 2:00 pm Selected abstract: TBA
- 2:15 pm Selected abstract: TBA
- 2:30 pm Poster flash talk (1 min each)
Poster session 1

❖ **Session 4: Application of Machine Learning to Oxygen Transport and Diagnosis**

- (Chairs) K. Kuronuma (USA) and TBA
- 4:00 pm **KL8:** TBA
Dr. Piotr Slomka (USA)
- 4:30 pm **KL9:** Predictive ability of dementia risk: A comparative study of NIRS, blood test, and periodontal disease test
Dr. Katsunori Oyama (Fukushima, Japan)
- 5:00 pm Selected abstract: TBA
- 5:15 pm Selected abstract: TBA
- 5:30 pm Breakup
Mt. Takao dinner (Bus will depart from the campus at 6:00 pm)

Sep. 29th (Fri.)

- 8:30 am Registration desk open

❖ **Presidential lecture 2**

- (Chair) E. Watanabe (Tokyo, Japan)
- 9:00 am 「Relationship between brain and systemic metabolic status: From deep learning studies in Dementia」
Dr. Kaoru Sakatani, Tokyo University, Tokyo, Japan
- 10:00 am Coffee break & Poster viewing

◆ Session 5: Advances in NIRS

- (Chairs) G. Taga (Tokyo, Japan) and K. Sakatani (Tokyo, Japan)
- 10:30 am **KL10:** Kernel Flow2: Next-Generation Time-Domain NIRS
Dr. Ryan M. Field (USA)
- 10:50 am **KL11:** Pushing the limits of fNIRS technology: how high have we climbed and how much further to the peak?
Dr. Robert Cooper (UK)
- 11:10 am **KL12:** The need for accuracy in clinical settings: TD-NIRS and reliable tissue oximetry
Dr. Michele Lacerenza (Italy)
- 11:30 am Selected abstract: TBA
- 11:45 am Selected abstract: TBA
- 12:00 pm Sponsored Luncheon session2 (Room #101)
(a sponsored lunch box will be provided)
- 1:00 pm Free afternoon
EC meeting (Room #101)

Sep. 30th (Sat.)

- 8:30 am Registration desk open

◆ Plenary lecture

- (Chair) E. Takahashi (Saga, Japan)
- 9:00 am **「VHL-deficient kidney cells reconstitute inflammatory tumor microenvironment in the progression of renal cell carcinoma」**
Dr. Tien Hsu, China Medical University, Taichung, Taiwan
- 10:00 am Coffee break & Group photo

◆ Session 6: Redox Imaging and Therapy

- (Chairs) Y. Hoshi (Shizuoka, Japan) and TBA
- 10:30 am **KL13:** In-vivo imaging of the redox state of cytochrome-c-oxidase as a biomarker of brain function and/or brain health
Dr. Ilias Tachtsidis (UK)
- 10:50 am **KL14:** Imaging tissue redox status using in vivo dynamic nuclear polarization MRI
Dr. Fuminori Hyodo (Gifu, Japan)
- 11:10 am **KL15:** PET imaging of mitochondrial function in living brain
Dr. Hideo Tsukada (Shizuoka, Japan)
- 11:30 am Selected abstract: TBA
- 11:45 am Selected abstract: TBA
- 12:00 pm Sponsored Luncheon session3 (Room #101)
(a sponsored lunch box will be provided)

❖ Session 7: Muscle Oxygenation

- (Chairs) T. Hamaoka (Tokyo, Japan) and TBA
- 1:00 pm **KL16:** Using muscle oxygenation to measure mitochondrial capacity
Dr. Kevin McCully (USA)
- 1:30 pm **KL17:** Muscle oxygen dynamics measured by NIRS
Dr. Ryotaro Kime (Tokyo, Japan)
- 2:00 pm Selected abstract: TBA
- 2:15 pm Selected abstract: TBA
- 2:30 pm Poster flash talk (1 min each)
Poster session 2

❖ Session 8: Respiratory Failure Up-to-Date

- (Chairs) I. Kuwahira (Tokyo, Japan) and Y. Okuma (Tokyo, Japan)
- 4:00 pm **KL18:** Characteristics of post-cardiac arrest mitochondrial physiology and oxygen energy metabolism
Dr. Koichiro Shinozaki (USA)
- 4:20 pm **KL19:** COVID pandemic and ICU crowdedness
Dr. Mitsuaki Nishikimi (Hiroshima, Japan)
- 4:40 pm **KL20:** Secondary respiratory failure following various diseases
Dr. Yu Okuma (Tokyo, Japan)
- 5:00 pm Selected abstract: TBA
- 5:15 pm Selected abstract: TBA
- 5:30 pm Breakup
- 6:00 pm Banquet (Chofu Creston Hotel 8F, no dress code)

Oct. 1st (Sun.)

- 8:30 am Registration desk open

❖ Session 9: Rehabilitation

- (Chairs) M. Moriya (Tokyo, Japan) and TBA
- 9:30 am **KL21:** Application of the Near infrared spectroscopy as a treatment tool for neurological disease patients
Dr. Masahito Mihara (Okayama, Japan)
- 10:00 am **KL22:** Application of NIRS in Exercise Rehabilitation
Dr. Atsuhiro Tsubaki (Niigata, Japan)
- 10:30 am **KL23:** Skeletal muscle O₂ transport during extracorporeal membrane oxygenation
Dr. Kazuki Hotta (Kanagawa, Japan)
- 11:00 am Selected abstract: TBA
- 11:15 am Selected abstract: TBA
- 11:30 am Poster flash talk (1 min each)

- 12:00 pm Sponsored Luncheon session4 (Room #101)
 (a sponsored lunch box will be provided)
- 1:00 pm Poster session 3

❖ **Session 10: Cerebral Blood Flow and Metabolism**

(Chairs) T. Yagi (Tokyo, Japan) and TBA

- 2:00 pm **KL24:** Yiqifumai injection attenuated blood–brain barrier disruption after thrombolysis with tissue plasminogen activator in mice
 Dr. Jing–Yan Han (China)
- 2:20 pm **KL25:** Recent development in stroke focusing on cell therapy for ischemic stroke and spreading depolarization in subarachnoid hemorrhage
 Dr. Takao Yasuhara (Okayama, Japan)
- 2:40 pm **KL26:** Clinical impact of the regional cerebral oxygen saturation assessment for the prediction of clinical outcomes in patients with cardiac arrest
 Dr. Ryosuke Takegawa (Osaka, Japan)
- 3:00 pm Selected abstract: TBA
- 3:15 pm Selected abstract: TBA

❖ **3:30 pm - 5:00 pm Annual General Meeting & Closing**