fNIRS 2018

Program

The University of Tokyo
7-3-1 Hongo, Bunkyo-ku, Tokyo, JAPAN
Welcome to fNIRS 2018 Tokyo

We are glad that the biennial meeting of the Society for functional Near Infrared Spectroscopy (SFNIRS) is held in Tokyo and over 300 abstracts from 37 countries were submitted. This shows the growth of the world-wide appeal of the society and the research field of fNIRS. From the many excellent contributions, we hope to have arranged a program which will spur discussions and will inspire everyone to contribute to the advancement of this field. In order to evaluate the submissions and organize the oral and poster sessions, many colleagues have been helping us and we thank all of them for their work. The program includes a keynote talk, invited talks, oral and poster presentations, and a session for the presentations of the candidates short-listed for the young investigator award, and a special session for “the origin of the signals” to discuss the foundation of fNIRS. We have also added morning tutorials for experienced fNIRS users to give time for more focused discussions about a specific topic. We also thank our seventeen sponsors who will exhibit their state-of-the-art technologies.

We wish you a great time in Tokyo, a dynamic and creative city where traditional and innovative things cross each other.

Gentaro Taga & Turgut Durduran
Co-chairs
Acknowledgements

Many people have contributed to the meeting. We thank all of them for their support.

We have relied on the program committee for their valuable input on the program.

Program Committee:

We thank keynote and invited speakers: Martin Wolf, Arjun Yodh, Hamid Dehghani, Takashi Kusaka, Fumitaka Homae, Joy Hirsch, Niels Birbaumer, Kaja Jasinska, Haijing Niu, David Boas, Ilias Tachtsidis, Yunjie Tong, Hellmuth Obrig for their important contributions to the conference.

We wish to thank the following reviewers for their enthusiastic works. Their contributions were indispensable for the selection of the oral presentations from many excellent abstracts.

We are grateful to the coordinators of the educational course, Pepe Dan and Yasuyo Minagawa, and Judit Gervain and the members of education committee of the society, as well as the other instructors, Meryem Yucel, Rob Cooper, Hiroki Sato, and Daisuke Tsuzuki. We are also grateful to the volunteers who have supported the course.

We have initiated the morning tutorials in this conference. Judit Gervain demonstrated leadership in organizing the tutorials. We thank Meryem Yucel, Felix Scholkmann and Heidrun Wabniz for their contributions.

Stacey Ladieu has taken a major role for organizing and running the meeting. The meeting cannot be held without her contribution. Gary Boas created and timely updated the conference website. Heather Bortfelt and Maria Angela Franceschini as member of communication committee, helped to announce the conference through the newsletter.

As a local organizer, Hama Watanabe planned and executed all the details of preparation and management of the meeting. Fumitaka Homae, Daisuke Tsuzuki, and Hiroki Sato supported us from various angles, including design of a beautiful logo of the conference. Yasuo Kuniyoshi was kindly responsible for the use of the venue. Many people who cannot put names here supported the meeting. Without their support, the conference could not have been held.

We wish to thank Eiju Watanabe and Yoko Hoshi as board of directors for their push to propose to hold the meeting in Tokyo and for continuous support.
The conference could not have been organized without the enthusiasm and the encouragement of the Society’s officers and the board of directors. Clare Elwell, the president of society, has demonstrated strong leadership, which has led the right management of the conference. David Boas, the founding president and the treasurer, has continuously encouraged our works and shown the direction for the society. Martin Wolf, the society’s secretary, has observed all the events neutrally and coordinated complicated issues in wonderful ways.

We wish to thank Gates foundation for supporting attendance of researchers from low and middle income countries to increase the impact of fNIRS in global health.

Last, but not least, we wish to thank our host and our sponsors, for their valuable support.

Gentaro Taga & Turgut Durduran
Co-chairs
For more information about public transportation and a route planner in Tokyo, see Go Tokyo website.
Training Course and Conference Venue

The conference and the training course will take place at Hongo Campus in The University of Tokyo.

**Address:**
7-3-1 Hongo, Bunkyo-ku,
Tokyo 113-0033, JAPAN

For more information about The University of Tokyo, see the University website.
Social Event Venue & Information

Sunday, October 7
18:30-21:30 (Doors open at 18:00)
National Museum of Nature and Science
Japan Galley

Address:
7-20 Ueno Park, Taito-ku,
Tokyo 110-8718

Access map:

25 min by walk from Yasuda Auditorium (1.8 km)

For more information about National Museum of Nature and Science, see the official website
Information for attendees and presenters

1. Registration

Registration desk
Opening hours:
Friday (Oct. 5): 15:30-18:15 @ Yasuda Auditorium, 18:15-20:30 @ Second Refectory
Saturday (Oct. 6), Sunday (Oct. 7) and Monday (Oct. 8): 8:00-end of the program
@ Yasuda Auditorium

Name badge
Please be sure to wear your name badge throughout the meeting. Entry without the badge is
NOT acceptable. You need to show your name badge for reception, coffee/ tea breaks,
lunches, and social event.

Program booklet/ abstract online
A program booklet will be given at the registration desk. The abstracts will be available on the
web site of the conference. A printed abstract booklet will not be issued.

2. Services & Facilities

Cloak service
Location: Yasuda Auditorium
Opening hours:
Friday 15:30-18:20 (Please pick your items up when you move to the reception place)
Saturday 8:00-18:30
Sunday 8:00-17:00 (Please pick your items up when you move to the social event place)
Monday 8:00-18:30
Valuables or computers cannot be checked into the cloak since the society/meeting does not
hold any responsibility for loss or damage of your items.
**Internet**

Eduroam as Wi-Fi is available at the meeting site. You can access internet with your ID of eduroam. If you don’t have an eduroam ID, please receive credentials at the registration desk. Wi-Fi can be unstable in some spots.

**Reception (Friday evening) and Lunch**

The registration includes reception and lunches. They are served on Second Refectory (see Venue). Please wear your name badge so the conference attendees can be identified.

**Coffee break**

Coffee/ tea and some snacks will be served on Engineering Bldg. 2 (see Venue). Please wear your name badge so the conference attendees can be identified.

**Social event (Sunday evening)**

The registration fee includes the social event on National Museum of Nature and Science, Japan Gallery. Please wear your name badge so the conference attendees can be identified. You can walk to the museum from Yasuda Auditorium (25 min, 1.8 km). You may also use taxi or bus to the museum.

**3. Prohibited items**

**Smoking**

Smoking is NOT allowed in the Campus.

**Drinking and eating**

Drinking and eating is NOT allowed inside Yasuda Auditorium.

**4. Information for chairpersons and presenters**

**For chairpersons and speakers of oral presentation**

Please bring a laptop with you for your presentation. Our staff will help to connect your laptop to a switcher.

Time allocation will be controlled by chairpersons. Keep the time schedule and make smooth progress in the program. As a time keeper, our staff will help you.
Invited talks: Presentation 25 min. + Discussion 3 min. + Laptop change 2 min.
Other oral presentations: Presentation 10 min. + Discussion 3 min. + Laptop change 2 min.

Please come to the stage by 15 min before your presentation. Our staff will help to connect your laptop to a switcher. Please note that there is no preview room.

**For poster presentation**

<table>
<thead>
<tr>
<th>Set up: 8:00-10:30</th>
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<tbody>
<tr>
<td>Presentation and discussion: 10:30-11:30 and 14:00-15:00 (you need to present twice)</td>
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<tr>
<td>Removal: 15:00-17:30</td>
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</tbody>
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Panels: Size are 90 cm (wide) * 210 cm (high). Use ONLY curing tapes provided by our staff on the site. Push pins can NOT be used on the board.
Periods of poster display: Posters will be replaced every day for the next day’s poster presentations.
Removal: Any posters remaining on panels after the removal time will be discarded by the local staffs.

**How to read the presentation numbers**

(Ex) I-18, II-18, III-18
The presentation numbers include the presentation day and the panel number
Presentation day: I (Saturday), II (Sunday), and III (Monday)
Panel number: Number of poster will be shown on each board. For example, please put your poster on the board of No.18. The posters of the same number of different days (e.g., I-18 (Monday), II-18 (Sunday), and III-18 (Monday)) use a same board.

**Morning tutorial**

Morning tutorials will start at 8:00 on Saturday, Sunday, and Monday at Room 213, Engineering Bldg. 2 (see Venue). Doors will open just before the session.
## Program at a Glance

### Friday Oct. 5th

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9:00-16:30</td>
<td>Training Course</td>
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<tr>
<td>9:00-16:30</td>
<td>Opening</td>
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<tr>
<td>17:15-18:15</td>
<td>Keynote</td>
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<td>17:15-18:15</td>
<td>M. Wolf</td>
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<tr>
<td>17:15-18:15</td>
<td>Measuring the brain by near-infrared light</td>
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<tr>
<td>18:30-20:30</td>
<td>Reception</td>
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### Saturday Oct. 6th

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00-8:45</td>
<td>Morning Tutorial I</td>
</tr>
<tr>
<td>8:00-8:45</td>
<td>FNIRS data analysis and statistics</td>
</tr>
<tr>
<td>9:00-10:30</td>
<td>Hardware Development</td>
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<td>9:00-10:30</td>
<td>Inv. talk: A. Yodh</td>
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<tr>
<td>9:00-10:30</td>
<td>Correlation spectrosocopies</td>
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<tr>
<td>10:30-11:30</td>
<td>Poster I &amp; Coffee</td>
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<tr>
<td>11:30-12:30</td>
<td>Lunch</td>
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<tr>
<td>12:30-14:00</td>
<td>Development I</td>
</tr>
<tr>
<td>12:30-14:00</td>
<td>Inv. talk: F. Homae</td>
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<tr>
<td>12:30-14:00</td>
<td>Dynamics of Functional Networks</td>
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<tr>
<td>14:00-15:00</td>
<td>Poster I &amp; Coffee</td>
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<tr>
<td>15:15-16:30</td>
<td>Clinical I &amp; Global FNIRS</td>
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<tr>
<td>16:50-18:10</td>
<td>Award finalists session</td>
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<td>16:50-18:10</td>
<td>Inv. talk: K. Jasińska</td>
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<tr>
<td>16:50-18:10</td>
<td>Learning to read</td>
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<tr>
<td>18:30-21:30</td>
<td>Social event and award ceremony</td>
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### Sunday Oct. 7th

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00-8:45</td>
<td>Morning Tutorial II</td>
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<tr>
<td>8:00-8:45</td>
<td>Integrating fnIRS</td>
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<tr>
<td>9:00-10:30</td>
<td>Clinical II</td>
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<tr>
<td>9:00-10:30</td>
<td>Inv. talk: N. Birbaumer</td>
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<tr>
<td>9:00-10:30</td>
<td>BCI in complete paralysis</td>
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<td>10:30-11:30</td>
<td>Poster II &amp; Coffee</td>
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<td>11:30-12:30</td>
<td>Lunch</td>
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<tr>
<td>12:30-14:00</td>
<td>Development II</td>
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<tr>
<td>12:30-14:00</td>
<td>Inv. talk: T. Kusaka</td>
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<tr>
<td>12:30-14:00</td>
<td>Metabolism of bilirubin and oxygen</td>
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<td>14:00-15:00</td>
<td>Poster II &amp; Coffee</td>
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<tr>
<td>15:15-16:45</td>
<td>Special session</td>
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<td>15:15-16:45</td>
<td>“The origin of the signals”</td>
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<td>15:15-16:45</td>
<td>I. Tachtsidis/O. Boas/H. Obrig/Y. Tong</td>
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<tr>
<td>18:30-21:30</td>
<td>Social event and award ceremony</td>
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### Monday Oct. 8th

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00-8:45</td>
<td>Morning Tutorial III</td>
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<tr>
<td>8:00-8:45</td>
<td>ISO/IEC standardization of fnIRS</td>
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<tr>
<td>9:00-10:30</td>
<td>Cognitive &amp; social</td>
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<tr>
<td>9:00-10:30</td>
<td>Inv. talk: J. Hirsch</td>
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<tr>
<td>9:00-10:30</td>
<td>The new neuroscience of two</td>
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<tr>
<td>10:30-11:30</td>
<td>Poster III &amp; Coffee</td>
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<td>11:30-12:30</td>
<td>Lunch</td>
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<tr>
<td>12:30-14:00</td>
<td>Development II</td>
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<tr>
<td>12:30-14:00</td>
<td>Inv. talk: H. Niu</td>
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<tr>
<td>12:30-14:00</td>
<td>Resting-state fNIRS imaging</td>
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<tr>
<td>14:00-15:00</td>
<td>Poster III &amp; Coffee</td>
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<tr>
<td>15:15-16:45</td>
<td>Neuroscience</td>
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<tr>
<td>15:15-16:45</td>
<td>Inv. talk: H. Niu</td>
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<tr>
<td>15:15-16:45</td>
<td>Resting-state fNIRS imaging</td>
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<tr>
<td>16:45-17:45</td>
<td>SfNIRS general meeting</td>
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<tr>
<td>17:45-18:00</td>
<td>Closing</td>
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Program
9:00-16:30 Educational course  (*Fukutake Hall*)

[organizer: Yasuyo Minagawa & Ippeita Dan]

*Note that this event is not part of the main conference program and require separate registration and payment.*

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**Registration**

15:30-18:15  (*Yasuda Auditorium*)

18:15-20:30  (*Second Refectory*)

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17:00-17:15 Opening  (*Yasuda Auditorium*)

**17:00 Welcome speech by the co-chair**

Gentaro Taga

*The University of Tokyo, Japan*

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**17:05 Welcome remarks by president of Japan Optical Functional Brain Imaging Society**

Eiju Watanabe

*Jichi Medical University, Japan*

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**17:15-18:15 Keynote speech  (*Yasuda Auditorium*)**

**Measuring the brain by near-infrared light: Achievements, challenges and solutions**

Martin Wolf

*University Hospital Zurich, Switzerland*

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**18:30-20:30 Welcome reception  (*Second Refectory*)**
8:00-8:45 Morning tutorial I *(Room213, Engineering Bldg. 2)*

Advanced topics in fNIRS data analysis: Motion Artifact Detection and Correction

Meryem Yücel

*Boston University, USA*

9:00-10:30 Hardware Development *(Yasuda Auditorium)*

[chairs: Yoko Hoshi & Alessandro Torricelli]

9:00 [Invited talk] Correlation spectroscopies for monitoring cerebral blood flow

Arjun Yodh

*University of Pennsylvania, USA*

9:30 Effects of head of bed posture changes on cerebral hemodynamics measured with fast diffuse correlation spectroscopy

Jonas B. Fischer, Giacomo Giacalone, Daniel Fernández Cuenca, Ameer Ghouse, Turgut Durduran and Udo M. Weigel

9:45 Increasing diffuse correlation spectroscopy sensitivity to brain using light at longer wavelengths

Kuan-Cheng Wu, Davide Tamborini, Kimberly Stephens, Oleg Shatrovoy, Andrew Siegel, Megan Blackwell, Stefan Carp and Maria Angela Franceschini

10:00 Comparison of haemodynamic and metabolic mappings of cortical activations to lateralized visual stimulation using broadband NIRS

Andrew Levy, Maheen Siddiqui, Paola Pinti, Phong Phan and Ilias Tachtsidis

10:15 High-resolution TR NIROT for brain imaging with >3000 source/detector pairs
10:30-11:30 Poster I & Coffee *(Forum, Engineering Bldg. 2)*

11:30-12:30 Lunch *(Second Refectory)*

12:30-14:00 Neonatal, pediatric & developmental neuroscience I *(Yasuda Auditorium)*

[12:30 [Invited talk] Dynamics of Functional Networks in the Developing Brain
Fumitaka Homae
*Tokyo Metropolitan University, JAPAN*

13:00 The role of timing in the consolidation of newborn’s memories
Silvia Benavides-Varela, Roma Siugzdaite and Jacques Mehler

13:15 Statistical learning of phonemic contrast in neonates: cerebral networks and activities
Eiichi Hoshino, Takeshi Arimitsu, Naomi Shinohara, Takao Takahashi and Yasuyo Minagawa

13:30 Functional connectivity patterns in monolingual and bilingual infants
Borja Blanco, Monika Molnar, Enrico Amico, Manuel Carreiras and Cesar Caballero Gaudes

13:45 Neural basis of attention cues assisting grammar learning in preverbal infants
15:15-15:30 Compensatory brain activation is associated with the relationship between aerobic fitness and working memory in the elderly
Kazuki Hyodo, Jindo Takashi, Tatsuya Tokuda, Kiyomitsu Nioka, Ippeita Dan, Hideaki Soya and Toshiya Nagamatsu

15:30 Disinhibition in children with ADHD: Simultaneous study of fNIRS and ERPs in Go/NoGo task
Yoshimi Kaga, Riyo Ueda, Miho Tanaka, Yosuke Kita, Kota Suzuki, Yasuko Okumura, Shota Mitsuhashi, Yuzuki Kitamura, Eiji Nakagawa and Masumi Inagaki

15:45 Hemodynamic correlates of changes in neuronal excitability: a simultaneous Transcranial Magnetic Stimulation (TMS) / functional Near Infra-Red Spectroscopy (fNIRS) study
Zhengchen Cai, Giovanni Pellegrino, Amanda Spilkin, Alexis Machado, Thomas Vincent, Chifaou Abdallah, Jean-Marc Lina and Christophe Grova

16:00 Habituation and novelty detection fNIRS brain responses in 1 - 8 month old infants: The Gambia and UK
Sarah Lloyd-Fox, Anna Blasi, Samantha McCann, Maria Rozhko, Laura Kischkel, Luke Mason, Topun Austin, Sophie E. Moore and Clare Elwell

16:15 Building a brain maturation growth chart with NIRS-DCS: Results from a nutritional study in Guinea Bissau
16:50-18:10 Early investigator award finalists session (Yasuda Auditorium)

[chair: Clare Elwell]

16:50 Presentation of early investigator award finalists

Clare Elwell

16:55 [Invited talk] Learning to read in high-risk environment: an fNIRS study of cognitive and reading development in rural Côte d’Ivoire

Kaja Jasińska

University of Delaware, USA

17:20 Decoding pre-activation of lexical representations during language comprehension in infancy

Lauren Emberson, Tracy Reuter, Claire Robertson, Carolyn Mazzei, Casey Lew-Williams and Ben Zinszer

17:45 Improving working memory in older healthy adults: A simultaneous fNIRS-tDCS study

Sabrina Brigadoi, Elisa Di Rosa, Simone Cutini, Roberto Dell'Acqua, Daniela Mapelli, Vincenza Tarantino, Todd S. Braver and Antonino Vallesi
8:00-8:45 **Morning tutorial II** *(Room213, Engineering Bldg. 2)*

*Integrating fNIRS with systemic physiological measures: Systemic-physiology-augmented functional near-infrared spectroscopy (SPA-fNIRS) neuroimaging*
Felix Scholkmann
*University Hospital Zurich, Switzerland*

9:00-10:30 **Clinical applications II** *(Yasuda Auditorium)*

[invited talk] **Brain computer interface (BCI) in complete paralysis:**
*The role of fNIRS*
Niels Birbaumer
*Wyss Center for Bio and Neuroengineering, Switzerland*

9:30 **Reduced frontal activation with age in adults with Down syndrome**
Rosalyn Hithersay, Carla Startin, Robert Cooper, Clare Elwell and Andre Strydom

9:45 **Near infrared spectroscopy (NIRS) indicates hypoxia and cerebrovascular dysfunction in patients with chronic liver inflammation**
Chris C Duszynski, Vince Avati, Felix Scholkmann, Mark G Swain and Jeffrey F Dunn

10:00 **Time-domain near infrared spectroscopy in acute ischemic stroke patients with different sites of large vessel occlusion**
Giacomo Giacalone, Marta Zanoletti, Rebecca Re, Davide Contini, Lorenzo Spinelli, Alessandro Torricelli and Luisa Roveri

10:15 **Non-invasive optical monitoring of cerebral blood flow and oxygen metabolism in adult critically brain-injured patients**
10:30-11:30 **Poster II & Coffee** (Forum, Engineering Bldg. 2)

11:30-12:30 **Lunch** (Second Refectory)

**12:30-14:00 Data analysis & algorithms** (Yasuda Auditorium)

[Invited talk] Computational algorithms in spatial recovery of functional maps in near infrared spectroscopic imaging

Hamid Dehghani

*University of Birmingham, UK*

**12:30** NeuroDOT: an extensible Matlab toolbox for streamlined optical brain mapping

Adam Eggebrecht, David Muccigrosso and Joseph Culver

**13:15** **NIRSTORM, a Brainstorm plugin inspired by electrophysiology dedicated to fNIRS data analysis, advanced 3D reconstructions and optimal probe design**

Thomas Vincent, Zhengchen Cai, Francois Tadel, Amanda Spilkin, Alexis Machado, Sylvain Baillet, Louis Bherer, JeanMarc Lina and Christophe Grova

**13:30** NIRS-based hyperscanning of six prefrontal cortices during different learning activities

Jie Sheng Chong, Wei Chun Ung, Takushige Katura, Masashi Kiguchi and Tong Boon Tang
13:45 Are partial volume errors the cause of inverse oxygenation during fNIRS studies of motor-imagery?
Androu Abdalmalak, Daniel Milej, David Cohen, Tracy Ssali, Mamadou Diop, Adrian M. Owen and Keith St Lawrence

14:00-15:00 Poster II (continuation) & Coffee (Forum, Engineering Bldg. 2)

15:15-16:45 Special session: "The origin of the signals" (Yasuda Auditorium)
[chairs: Turgut Durduran & Gentaro Taga]

15:15 Introduction to the special session: "The origin of the signals"
Ilias Tachtsidis
University College London, UK

15:20 The flow: Consumption ratio and what it tells us about evoked excitatory and inhibitory neural responses – What we’ve learned from optical microscopy
David Boas
Boston University, USA

15:35 Theory-driven versus signal-driven analyses of fNIRS data in neurodevelopment
Hellmuth Obrig
University Hospital Leipzig & Max-Planck-Institute for Human Cognitive and Brain Sciences, Germany

15:50 NIRS signal: what can we learn from fMRI
Yunjie Tong
Purdue University, USA
16:05 The fNIRS blood-level-oxygen-dependent signals represent neuronal activity and more
Ilias Tachtsidis
University College London, UK

16:20 Panel discussion "the origin of the signals"
Ilias Tachtsidis, David Boas, Hellmuth Obrig and Yunjie Tong

18:30-21:30 Social event and award ceremony
(National Museum of Nature and Science, Japan Gallery)
[MC: Shinya Fujii]
Doors open at 18:00

18:30-18:50 TAIKO performances

18:50-19:00 Early investigator award ceremony

Free social interaction

19:15-19:30
Short introduction on the National Museum of Nature and Science
Daisuke Koyabu
Musashino Art University, Japan

19:30-21:30
Food and drinks
Short tour through the exhibit with a vertebrate anatomist
8:00-8:45 Morning tutorial III (Room 213, Engineering Bldg. 2)
ISO/IEC standardization of fNIRS and cerebral tissue oximeter equipment
Heidrun Wabnitz
Physikalisch-Technische Bundesanstalt, Germany

9:00-10:30 Cognitive & social neuroscience/ Clinical applications III (Yasuda Auditorium)

9:00 [Invited talk] The new neuroscience of two: hyperscanning with fNIRS to understand communicating brains
Joy Hirsch
Yale School of Medicine, USA

9:30 The Role of Mirror Neuron System in Encoding Motor Complexity
Xinge Li, Manon Krol, Sahar Jahani, David Boas, Helen Tager-Flusberg and Meryem Yücel

9:45 Interpersonal neural synchronization as a neural signature of outcome of mate choice
Xianchun Li and Di Yuan

10:00 Biological motion perception modulated by emotional contexts in children with autism spectrum disorder
Minah Kim, Adham Atyabi, Beibin Li, Yeojin Amy Ahn, Erin Barney, Madeline Aubertine, Kelsey Jackson, Sarah Corrigan, Emily Neuhaus, Kevin Pelphrey and Frederick Shic

10:15 Potential biomarker for classifying subjects with subthreshold depressive criterion: an fNIRS study
Stephanie Sutoko, Akiko Obata, Hirokazu Atsumori, Takashi Numata, Hiroki Sato and Masashi Kiguchi
12:30-14:00 Neonatal, pediatric & developmental neuroscience II
(Yasuda Auditorium)

[chairs: Justin Skowno & Ilias Tachtsidis]

12:30 [Invited talk] The unique metabolism of bilirubin and oxygen during neonatal period
Takashi Kusaka
Kagawa University, Japan

13:00 Validation and potential calibration of diffuse correlation spectroscopy versus 15 O–water positron emission tomography on neonatal piglets
Martina Giovannella, Bjørn Andresen, Julie Bjerglund Andersen, Sahla El-Mahdaoui, Davide Contini, Antonio Pifferi, Lorenzo Spinelli, Alessandro Torricelli, Ian Law, Gorm Greisen, Turgut Durduran and Udo Michael Weigel

13:15 A somatotopic organization of painful stimuli cortical processing develops longitudinally, over time, in preterm infants
Stefano Bembich and Gabriele Cont

13:30 Top-down Sensory prediction in neonates: fNIRS evidence
Naiqi Xiao, Claire Robertson and Lauren Emberson

13:45 Cytochrome c oxidase response is more localized than haemoglobin response during functional activation in infants
Maheen Siddiqui, Sarah Lloyd-Fox, Emily Jones, Ilias Tachtsidis, Mark Johnson and Clare Elwell
15:15-16:45 Neuroscience (Yasuda Auditorium)
[chairs: Hiroki Sato & Yunjie Tong]

15:15 [Invited talk] Resting-state fNIRS imaging for functional brain network analysis and its applications
Haijing Niu
Beijing Normal University, China

15:45 Neural underpinnings of the emerging sense of self in 18-month-olds
Chiara Bulgarelli, Carina de Klerk, Anna Blasi, Antonia Hamilton and Victoria Southgate

16:00 Decoding visual information from high density diffuse optical tomography neuroimaging data
Kalyan Tripathy, Andrew Fishell, Zachary Markow, Tracy Burns-Yocum, Adam Eggebrecht, Bradley Schlaggar and Joseph Culver

16:15 Multi-channel NIRS brain imaging of freely moving animals during cognitive stimulation using a customized kit box
Juhee Kim, Shin-Young Kang, Zephaniah Phillips, Seung-Ho Paik, Youngwoon Choi and Beop-Min Kim

16:30 Functional high-density speckle contrast optical tomography (fSCOT) of cerebral blood flow in small animal brain
Ernesto Elias Vidal Rosas, Tanja Dragojevic, Joseph L. Hollman, Joseph P. Culver, Carles Justicia Mercader and Turgut Durduran
16:45-17:45 SfNIRS general meeting (Yasuda Auditorium)

17:45-18:00 Closing (Yasuda Auditorium)

Closing remarks by the co-chair

Turgut Durduran

ICFO- The Institute of Photonic Sciences, Spain
Poster Program
I-1 Felipe Orihuela-Espina, Alejandro Antonio Torres- García, Claudia Cruz-Martínez, Luis Villaseñor- Pineda and Fernando Javier Martínez-Santiago

OntoNIRS: Can we automatize and optimize experiment design and analysis in NIRS neuroimaging for more rigorous interpretation?

I-2 Yang Haibo, Liu Hejun, Zhang Peng, Zhang Huan and Li Liang

The Effects of Binocular Disparity and Masking Type on unmasking: An fNIRS study

I-3 Silvia Radulescu, Sergey Avrutin, Frank Wijnen and Judit Gervain

Same processing costs for encoding sameness and difference in the developing brain: An fNIRS study with 6-7-month-olds

I-4 Xian Zhang, Adam Noah, Swethasri Dravida, Yumei Ono and Joy Hirsch

Verifying Wavelet coherence analysis on fNIRS data using pseudo-random visual stimulation sequence

I-5 Sagi Jaffe-Dax, Makeda Gayle and Lauren L Emberson

Incorporating neural reliability measures to isolate functional connectivity differences across populations

I-6 Ho-Ching Yang, Zhenhu Liang, Xiaopeng Zhou and Yunjie Tong

Investigating Spatial Specificity Between Channels of Functional Near-infrared Spectroscopy

I-7 Sagi Jaffe-Dax, Isaac N Treves, Vikranth R Bejjanki and Lauren Emberson

Predictability modulates response amplitude and boosts background connectivity in infants and in adults
An fNIRS screening procedure to determine compatibility for neuroimaging

Impact of blood glucose variability on the very preterm neonatal brain: Preliminary results

Removal of Extracerebral Activity Improves Signal Quality and Channel Specificity in a Motor Imagery Neurofeedback Paradigm

Multi-distance, multi-exposure, functional speckle contrast optical spectroscopy (fSCOS) of the adult brain

Removing extra-cerebral signal contamination for Brain fNIRS studies using Frequency Domain multi-distance measurements

The detection of repetition-based regularities from visual input at 6 months of age

Comparison of Kernels in Online SVM Classification of fNIRS Data

fNIRS-based Gender Classification upon Voice Hearing

The detection of repetition-based regularities from visual input at 6 months of age

Comparison of Kernels in Online SVM Classification of fNIRS Data

fNIRS-based Gender Classification upon Voice Hearing
Do personal experiences affect how typically fluent speakers perceive stuttering? Data from neurological, psychophysical, and surveyed responses

I-17 Brianna Spilsbury, Sergio Novi, D'Manda Price, Cara Imbalzano, Arjun Yodh, Rickson Mesquita, Elizabeth Heinmiller, Jordan Seprosky, Glen Tellis and Cari Tellis

How does eye contact during stuttered speech effect a listener’s comfort levels? Data from neurological, psychophysical, and surveyed responses

I-18 Cara Imbalzano, Sergio Novi, D'Manda Price, Brianna Spilsbury, Arjun Yodh, Rickson Mesquita, Elizabeth Heinmiller, Jordan Seprosky, Glen Tellis and Cari Tellis

Which types of stuttering invoke cortical and emotional responses in people who do not stutter? Data from neurological, psychophysical, and surveyed responses

I-19 Hideyuki Taura and Amanda Taura

An fNIRS study on language acquisition and attrition

I-20 Hiroshi Kawaguchi, Yukari Tanikawa and Toru Yamada

Reduction of Scalp Hemodynamic Component from fNIRS Signal Using a Reflectance-Modulation Device

I-21 Sobanawartiny Wijeakumar, Vincent Magnotta, Lourdes Delgado Reyes, Aarti Kumar, Sean Deoni and John Spencer

Using fNIRS to assess the impact of early adversity on brain health in India

I-22 Morgan Wesner, Richard Lewis and Sharon Goto

Synchronization of Neural Activity During Social Conversation

I-23 Sergio Novi, Danielle Spagnuolo, Brianna Spilsbury, D'Manda Price, Cara Imbalzano, Glen Tellis, Cari Tellis, Arjun Yodh and Rickson Mesquita

Validation of a novel approach to remove speech-related artifacts in fNIRS studies with speech production protocols
I-24 Katherine Perdue, Charles Nelson, Swapna Kumar, S. H. Kakon, R. Haque and William Petri

Using functional near-infrared spectroscopy to assess statistical learning in urban Bangladeshi children

I-25 Jessica Defenderfer, Mark Hedrick, Patrick Plyler and Aaron Buss

Functional networks between temporal and frontal cortices during effortful listening

I-26 Rodrigo Forti, Christopher Favilla, Jeffrey Cochran, Wesley Baker, Scott Kasner, Michael Mullen, Steven Messe, W. Andrew Kofke, Rickson Mesquita, John Detre and Arjun Yodh

Diffuse optical monitoring of acute stroke physiology during mechanical thrombectomy

I-27 Martina Giovannella, Bjørn Andresen, Agnese De Carli, Marco Pagliazzi, Monica Fumagalli, Gorm Greisen, Davide Contini, Antonio Pifferi, Lorenzo Spinelli, Turgut Durduran, Udo Michael Weigel and Alessandro Torricelli

The clinical performance of the BabyLux device; a hybrid diffuse optical monitor of the infant brain

I-28 Daniel Milej, Androu Abdalmalak, Mahro Khalid, Marwan Shahid, Ajay Rajaram, Matthew Kewin, Mamadou Diop and Keith St Lawrence

Assessing Extracerebral Signal Contamination in NIRS and DCS

I-29 Androu Abdalmalak, Daniel Milej, Mamadou Diop, Adrian M. Owen and Keith St Lawrence

Towards a robust brain-computer interface based on motor imagery for communicating with patients with brain injuries

I-30 Arnaldo Fim Neto, Alex Carvalho, Sergio Novi, Wagner Rocha, Andres Quiroga, Rodrigo Forti, Clarissa Yasuda and Rickson Mesquita

Validation of fNIRS resting-state functional connectivity graphs of the human brain with BOLD-fMRI
**I-31** Hong Lee, Tingwen Sheng, Yibiao Liang, Xiaopan Ding, Liyang Sai, Genyue Fu and Kang Lee  
*Neural correlates underlying second-order deception: Using individual functional channels of interest approach with fNIRS*

**I-32** Naiqi Xiao, Janet Werker, Kang Lee and Lauren Emberson  
*Visual and auditory bi-sensory speech processing in infants: A fNIRS study*

**I-33** Burçin Tatlıeşme, Ali Murad Özmen, Erim Habib and Ata Akın  
*Test correlated brain function analysis with global efficiency during stroop task*

**I-34** Seong-Woo Woo, Eakdanai Kavichai and Keum-Shik Hong  
*Hemodynamics and respiration variation during arithmetic tasks under stress*

**I-35** Muhammad Atif Yaqub, Amad Zafar, Seong-Woo Woo and Keum-Shik Hong  
*A high spatiotemporal resolution and modular system for 3D neuroimaging*

**I-36** Usman Ghafoor, Amad Zafar, Ho-Ryong Yoo and Keum-Shik Hong  
*Effect of visual training on motor imagery ability: Application to fNIRS-BCI*

**I-37** Daisuke Tsuzuki, Jay Dubb, Robert Cooper, Ippeita Dan, David Boas and Meryem Yücel  
*A preliminary report on the probabilistic-atlas-guided DOT*

**I-38** Antonio Maria Chiarelli, Pierpaolo Croce, Filippo Zappasodi, Chiara Filippini, David Perpetuini, Daniela Cardone, Ludovica Rotunno, Nelson Anzoletti, Michele Zito and Arcangelo Merla  
*Neurovascular coupling assessment during clinical tests for early alzheimer disease diagnosis: a multimodal EEG-fNIRS and deep learning approach*
I-39 Yumi Oboshi, Kohei Miyata, Takahiko Koike and Norihiro Sadato
The frontal pole activity in imagination of a self-related future situation

I-40 Helena Storchak, Thomas Dresler, Justin Hudak, Andreas J. Fallgatter and Ann-Christine Ehlis
Neural correlates of inner speech - fNIRS-fMRI - measurements

I-41 Swethasri Dravida, Yumie Ono, J. Adam Noah, Xian Zhang and Joy Hirsch
Simultaneous EEG and fNIRS co-localization of theta band activity and hemodynamic responses to fusiform gyrus during face perception

I-42 Sagi Jaffe-Dax, Amit H Bermano and Lauren L Emberson
Automated spatial co-registration method from simple video

I-43 Faizah Mushtaq, Ian Wiggins, Pádraig Kitterick, Carly Anderson and Douglas Hartley
Towards an fNIRS-based objective measure of speech understanding in children with cochlear implants: Our search for a suitable auditory baseline for speech processing

I-44 Vrinda Kalia, Bryan Vonder Vellen, Jose Jacobo and Karthik Vishwanath
Impact of acute stress on risky decision making: An fNIRS study

I-45 Hui Zhao, Huixin Xie and Min Shi
Neural synchronization mechanism behind mother-child attachment during natural social interactions

I-46 Meryem Yucel, Kira Osowski, Karthik Vishwanath and Vrinda Kalia
Brief mindfulness intervention and risky decision making: An fNIRS examination of intervention efficacy

I-47 Zhenhu Liang, Hao Tian, Yasuyo Minagawa, Takeshi Arimitsu, Takao Takahashi and Yunjie Tong
The time-delay of oxygenated-hemoglobin changes in early infancy
**I-48** Meryem Ayse Yucel, Parya Farzam, Tony Wu and Maria Angela Franceschini

**fNIRS-DCS as a new brain-computer interface approach**

**I-49** Moritz Maier, Florian Haeussinger, Martin Hautzinger, Andreas Fallgatter and Ann-Christine Ehlis

**Excessive bodybuilding as pathology? A first neurophysiological classification**

**I-50** Rebecca Re, Ileana Pirovano, Davide Contini, Lorenzo Spinelli, Dario Messenio and Alessandro Torricelli

**Monitoring of visual cortex activation in glaucomatous patients with TD-fNIRS: a pilot study**

**I-51** Hamish Innes-Brown, Mehrnaz Shoushtarian and Colette McKay

**Improved prognosis for hearing device candidates using fNIRS measures of cross-modal brain activity**

**I-52** Colette McKay, Stefan Weder, Mehrnaz Shoushtarian and Hamish Innes-Brown

**fNIRS for objectively programming of cochlear implants**

**I-53** Daniel Hyde, Fransisca Ting and Fernando Sanchez Hernandez

**A comparison of fixed array and functionally defined channel of interest approaches to analysis of infant NIRS data**

**I-54** Sri Rama Pranav Kumar Lanka, Sanathana Konugolu Venkata Sekar, Andrea Farina, Lorenzo Spinelli, Alessandro Torricelli and Antonio Pifferi

**Investigating the layered nature of the adult human brain using multi-distance time domain diffuse optical spectroscopy**

**I-55** Andrew Fishell, Ed Richter, Claudia Valdes, Marcela Rivera, Adam Eggebrecht, Christopher Smyser, Ana Maria Arbelaez and Joseph Culver

**Mapping cortical effects of childhood malnutrition using high-density diffuse optical tomography**
I-56 Arun Nemani, Meryem Yucel, Uwe Kruger, Denise Gee, Clairice Cooper, Steven Schweitzberg, Suvranu De and Xavier Intes

**Surgical skill assessment using fNIRS**

I-57 Debora Miranda, Suelen Oliveira, Ana Carolina Machado, Rickson Mesquita, Paulo Moraes, Sergio Novi, Marco Romano-Silva, Jonas De Paula and Maria Ferrarez

**Association between cortical activity and motor development in pre- and full-term infants using fNIRS**

I-58 Terrence Barnhardt, Jasmine Chan and Teresa Wilcox

**The role of left inferior prefrontal cortex in processing attributes of brand-name products during exposure and purchase**

I-59 W. Darlene Reid, S. Ahmed Hassan, Leandro Bonetti, Kara Patterson, Deryk Beal and Anthony Ruocco

**The brain at work: Neural correlates of cognitive and motor performance**

I-60 Mikie Nakabayashi, Kanichiro Nozaki, Yasuhiro Matsuda, Masashi Ichinose and Yumie Ono

**Fatigue effect on muscle blood flow and oxygenation during handgrip exercise: a combined diffuse correlation spectroscopy and time-resolved near-infrared spectroscopy study**

I-61 Christine Hucke, Marlene Pacharra, Edmund Wascher and Christoph van Thriel

**fNIRS in the context of chemical irritation and the influence of short-separation regression on the hemodynamic response**

I-62 Masako Nagashima, David Rosenbaum, Justin Hudak, Andreas J Fallgatter and Ann-Christine Ehlis

**Determining optimal reference channels for a NIRS-based neurofeedback training study**

I-63 Stephanie Sutoko, Yukifumi Monden, Tatsuya Tokuda, Takahiro Ikeda, Masako Nagashima, Masashi Kiguchi, Atsushi Maki, Takanori Yamagata and Ippeita Dan
Supporting differential diagnostic tool based on methylphenidate response on brain activation of attention-deficit/hyperactivity disorder and autism spectrum disorder comorbid children

I-64 Kota Suzuki, Tatsuya Suzuki, Yumie Ono, Atsumichi Tachibana, Jack Adam Noah and Joy Hirsch

Enhanced dorsolateral prefrontal activity during exergame played with whole body relative to hand movements

I-65 Julie Tremblay, Eduardo Martinez-Montes, Phetsamone Vannasing, Dang Nguyen, Mohamad Sawan, Franco Lepore, Maryse Lassonde and Anne Gallagher

Comparison of source localization techniques in diffuse optical tomography for fNIRS application using a realistic head model

I-66 Yogeve Koren, Yisrael Parmet and Simona Bar-Haim

Unstable walking terrain increases prefrontal cortex activity: A pilot fNIRS study

I-67 Toru Yamada, Hiroshi Kawaguchi, Junpei Kato, Keiji Matsuda and Noriyuki Higo

fNIRS system for monitoring macaque cerebral motor activity during voluntary movements without head fixation

I-68 Takeaki Shimokawa, Toshihiro Ishii, Yoichiro Takahashi, Yuki Mitani, Hironobu Mifune, Sunao Chubachi, Masaki Satoh, Yoshihiro Oba, Kazuhiko Adachi, Satoru Sugawara and Okito Yamashita

Human experimental study of multi-directional diffuse optical tomography

I-69 Satoru Watanabe, Yoshihiro Miyake and Takayuki Nozawa

Decoding multidimensional mental state dynamics from fNIRS signals during simulated communication
I-70 Jonathan Perry and Luca Pollonini
The brain on bikes: Voluntary performance and hemodynamic response in the prefrontal cortex during exhaustive exercise

I-71 Yasuhiro Matsuda, Mikie Nakabayashi and Yumie Ono
Changes in skeletal muscle blood flow by manipulative therapy: a diffusion correlation spectroscopy study

A mild orthostatic challenge shows cerebral autoregulation impairment on the ipsilesional side of ischemic stroke patients

I-73 Yibiao Liang, Xiao Pan Ding, Genyue Fu and Kang Lee
Role of the cortical reward system in deceptive behavior: Using individual functional channels of interest approach with fNIRS

I-74 Akiko Obata, Daisuke Fukui, Masahip Egi, Stephanie Sutoko, Hirokazu Atsumori, Tsukasa Funane, Ayako Nishimura and Masashi Kiguchi
Proposal of the classification methods for the automated analysis combining data-driven and knowledge-driven approaches

I-75 Ayako Nishimura, Hirokazu Atsumori, Hiromitsu Nakagawa, Hiroyuki Kuriyama, Masashi Egi, Keiro Muro, Takeshi Tanaka and Masashi Kiguchi
Mental healthcare system based on biometric measurement

I-76 Andreas J. Fallgatter, Beatrix Barth, Justin Hudak and Ann-Christine Ehlis
NIRS-Neurofeedback in ADHD

I-77 Solène Fourdain, Phetsamone Vannasing, Julie Tremblay, Mathieu Dehaes, Nancy Poirier, Lionel Carmant and Anne Gallagher
Altered functional brain network in infants with CHD after corrective cardiac surgery: a near-infrared spectroscopy (NIRS) study

I-78 Serhat Ilgaz Yöner, Gökhan Ertaş and Ata Akın

VEGA-Vision: Wireless fNIRS with spatially resolved short separation approach for improved SNR

I-79 Seunghui Cha and Hojeong Kim

Hemodynamic changes in primary motor cortex during isometric muscle contractions against various loads under functional near-infrared spectroscopy

I-80 Mada Hashem, Ying Wu and Jeff F. Dunn

Quantitative NIRS applied to study cytochrome oxidase and oxygenation in the brain of the cuprizone mouse model of demyelination

I-81 Meryem Yucel, Gladys Pachas, Kevin Potter, Eve Manghis, Hannah Broos, Nina Levar, Eden Evins and Jodi Gilman

The effect of cannabis on brain activity and performance under a cognitive load

I-82 Wei Chun Ung, Fabrice Meriaudeau, Masashi Kiguchi and Tong Boon Tang

Functional near-infrared spectroscopy based dynamic difficulty adjustment system for cognitive training and rehabilitation

I-83 Ke Peng, Arielle Lee, Sarah Steele, Lino Becerra and David Borsook

Capturing ongoing pain with fNIRS: An analysis of cortical low frequency hemodynamic oscillations

I-84 Huixin Xie, Min Shi, Hui Zhao and Chunming Lu

The influence of mother’s verbal and nonverbal behavior on brain to brain synchrony during mother-infant shared book reading
**II-1** Yuki Iwata, Keiko Fukuda and Mamiko Fujii

*Using a depth-selective filter to suppress superficial hemodynamic changes*

**II-2** Takeru Matsuda, Fumitaka Homae, Hama Watanabe, Gentaro Taga and Fumiyasu Komaki

*Statistical verification of the common oscillatory behaviors in oxy-Hb and deoxy-Hb time series*

**II-3** Stefan Carp, Melissa Wu, Parisa Farzam, Jason Qu, Juliette Selb and Maria Angela Franceschini

*Choosing model parameters for effective removal of extracerebral contributions to diffuse correlation spectroscopy cerebral blood flow measurements*

**II-4** Weixiang Qin, Sho Kojima, Shinichiro Morishita and Atsuhiro Tsubaki

*Effects of moderate-intensity exercise duration on cognitive function and oxygenated hemoglobin in the prefrontal cortex*

**II-5** Sho Kojima, Shinichiro Morishita, Weixiang Qin and Atsuhiro Tsubaki

*Relationship between respiratory metabolism and cortical oxyhemoglobin levels in motor-related areas during a cardiopulmonary exercise test*

**II-6** Yoshinori Ueno, Hiroshi Kawaguchi, Takayuki Obata and Eiji Okada

*Visualization of spatial sensitivity matrix for evaluation of difference between individual and atlas-based head models for DOT*

**II-7** Jeong Hyeon Seo and Youngjin Jung

*Development of NIRS (Near Infrared Spectroscopy) system for diabetic foot screening*
II-8 Megumi Mizuno, Sho Taniguchi, Satoru Hiwa and Tomoyuki Hiroyasu
A fNIRS-based hyperscanning study of inter-brain neural synchronization during a cooperative task

II-9 Gihyoun Lee, Seung Hyun Lee, Sang Hyeon Jin and Jinung An
Cortical brain activation during playing a rhythm game with and without musical stimuli

II-10 Seung Hyun Lee, Sang Hyeon Jin, Gihyoun Lee and Jinung An
Influence of skillfulness on cortical excitability: An fNIRS study

II-11 Zong Zhang, Yang Zhao, Xiang Xiao, Chao-Zhe Zhu and Zheng Li
Age-specific transcranial brain atlas for children and adolescents from 6 to 18 years old

II-12 Xiaosu Hu, Neelima Wagley, Alexandre DaSilva and Ioulia Kovelman
Group level power analysis using linear mixed-effects model

II-13 Isabel de Roever, Gemma Bale, Subhabrata Mitra, Judith Meek, Nicola Robertson and Ilias Tachtsidis
Investigation of the pattern of the haemodynamic response as measured by fNIRS in newborns (less than a month old)

II-14 Segolene Guérin, Marion Vincent, Costas Karageorghis and Yvonne Delevoye-Turrell
Hemodynamic brain activations during rhythmic finger tapping: The effect of motor pacing on frontal HBO2

II-15 Antonia Hamilton, Paola Pinti, Davide Paoletti and Jamie Ward
Seeing into the brain of an actor with fNIRS and mocap

II-16 Lisa Kobayashi Frisk, Clara Gregori Pla, Federica Maruccia, Turgut Durduran and Jana M Kainerstorfer
Diffuse optical parameterization of cerebral autoregulation in healthy adults

II-17 Lia Hocke, Kenroy Cayetano, Yunjie Tong and Blaise Frederick

Global Low frequency oscillations in fNIRS - mapping systemic signals using a specifically designed multimodal probe

II-18 Danielle Costa, Jonas De Paula, Rickson Mesquita, Débora Miranda and Marco Romano-Silva

Young adults with high IQ shows a faster peak of brain hemodynamic activity during a cognitive control task: a fNIRS experiment

II-19 David Perpetuini, Paola Pinti, Arcangelo Merla and Ilias Tachtsidis

Investigation of use of sample rntropy in fNIRS to infer brain functional activation

II-20 Maria Arredondo, Xiao-Su Hu, Teresa Satterfield, Ioulia Kovelman and Adriene Beltz

"It's a GIMME": Data-driven connectivity mapping identifies monolingual vs. bilingual brain activity

II-21 Antonia Hamilton, Paola Pinti, Joy Hirsch, Xian Zhang, Adam Noah, Sam Gilbert and Ilias Tachtsidis

Which is the best Blood-Level-Oxygen-Dependent signal for the identification of functional activation in fNIRS?

II-22 Paola Pinti, Felix Scholkmann, Paul Burgess and Ilias Tachtsidis

Current status and issues regarding pre-processing of fNIRS neuroimaging data: An investigation of diverse signal filtering methods within a General Linear Model framework

II-23 Paola Pinti, David Perpetuini, James Crum, Lily Carnegie-Peake, Maud Buseman, Davide Paoletti, Arcangelo Merla, Albert Postma, Antonia Hamilton, Ilias Tachtsidis and Paul Burgess

Using fNIRS as a biomarker for executive function atypicality in Autism Spectrum Disorder
II-24 Javier Herrera-Vega, Isabel De Roever, Ilias Tachtsidis, Carlos G. Treviño-Palacios and Felipe Orihuela-Esparza

**Reconstructing scalp and brain haemoglobin in optical imaging**

II-25 Nicholas Barone, Tanapun Dao Chaikulgnamdee, Erin Roberts, Julia Spong, Erin Moore, Emma Rooney and Ethan Navarro

**Examination of mirror neurons during categorical perception of non-native phonemes using fNIRS**

II-26 Laura Bell, Vanessa Reindl, Wolfgang Scharke and Kerstin Konrad

**Impulsivity and attention deficits in children with binaural hearing impairment or Attention-Deficit/Hyperactivity Disorder**

II-27 Vanessa Reindl, Jana A. Kruppa, Julia Prinz, Eileen Weiß, Christian Gerloff, Wolfgang Scharke, Beate Herpertz-Dahlmann, Kerstin Konrad and Martin Schulte-Rüther

**Interpersonal brain synchronization during social cooperation in children with Autism: a hyperscanning study using fNIRS**

II-28 Ileana Pirovano, Rebecca Re, Davide Contini, Lorenzo Spinelli, Simone Porcelli, Mauro Marzorati and Alessandro Torricelli

**Cerebral and muscle hemodynamic response to acute hypoxia: Time domain near infrared spectroscopy monitoring**

II-29 Martyna Lachowska, Anna Gerega, Keith St. Lawrence and Adam Liebert

**Assessment of cerebral perfusion parameters during normo- and hypocapnia using multiwavelength time-resolved NIRS combined with ICG bolus-tracking method**

II-30 Nozomi Naoi, Yoko Hakuno and Yasuyo Minagawa

**Cerebral responses during joint attention in infants**
II-31 Lina Qiu, Matteo Chincarini, Emanuela Dalla Costa, Simona Cannas, Clara Palestrini, Elisabetta Canali, Michela Minero, Giorgio Vignola, Bruno Cozzi, Lorenzo Spinelli and Alessandro Torricelli

**Cerebral cortex activity in freely moving sheep using a wireless CW fNIRS system: preliminary results**

II-32 Mamiko Fujii

**Depth-selective filter for fNIRS improves visibility of cerebral hemodynamic response**

II-33 Miyu Nishizawa, Satoru Hiwa and Tomoyuki Hiroyasu

**Detecting attentional and inattentional brain metastases based on dynamic functional connectivity analysis**

II-34 Lina Qiu, Huiyi Cheng, Alessandro Torricelli and Jun Li

**Using a simulation approach to optimize time domain diffuse correlation spectroscopy measurement on human head**

II-35 Yutaka Fuchino, Ikuko Kato, Yukihiro Konishi, Yuji Takano, Htun Yinmon, Takashi Kusaka and Yukuo Konishi

**Developmental changes in neonatal hemodynamics during resting state using whole-head functional near-infrared spectroscopy**

II-36 Atsuhiro Tsubaki, Shinichiro Morishita, Yuta Tokunaga, Daisuke Sato, Weixiang Qin, Sho Kojima and Hideaki Onishi

**Haemodynamic changes during and after moderate-intensity cycling exercise in the motor-related area: A near-infrared spectroscopic study**

II-37 Mariagrazia Popeo, Matteo Caffini and Angelo Bifone

**Source space fNIRS data analysis: validation for functional connectivity study in newborn brain**

II-38 Chiara Bulgarelli, Carina de Klerk, Victoria Southgate, Anna Blasi and Antonia Hamilton

**Using fNIRS to explore connectivity in the developing brain**
**II-39** Shin-Young Kang, Seung-Ho Paik, Zephaniah Phillips V, Youngwoon Choi and Beop-Min Kim

**Pilot study: Classification of Parkinson’s disease using resting-state hemodynamic signals and machine learning**

**II-40** Lorenzo Spinelli, Davide Contini, Antonio Pifferi, Udo Michael Weigel, Helene Isler, Daniel Ostojic, Heidrun Wabnitz and Martin Wolf

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**II-41** Seung-Ho Paik, Zephaniah Phillips V, Shin- Young Kang, Juhee Kim, Youngwoon Choi and Beop-Min Kim

**A portable, modular, continuous wave NIRS system using SiPM for whole brain monitoring: Preliminary studies and pilot testing**

**II-42** Manon Jaquerod, Alessandra Lintas, Stephen H. D. Perrig and Alessandro E. P. Villa

**Distribution of oscillatory activity across frontal and central ROIs during different sleep stages**

**II-43** Aya Morimoto, Shinji Nakamura, Masashiro Sugino, Yinmon Htun, Kosuke Koyano, Makoto Arioka, Noriko Fuke, Ikuko Kato, Yukihiro Konishi, Sonoko Kondo, Takashi Iwase, Saneyuki Yashuda and Takashi Kusaka

**Impact of the delivery modes on cerebral hemodynamic patterns in term neonates during immediate transition period using near-infrared time-resolved spectroscopy**

**II-44** Takatsugu Aihara, Takeaki Shimokawa, Takeshi Ogawa, Yuto Okada, Akihiro Ishikawa, Yoshihiro Inoue and Okito Yamashita

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II-46 Koki Hayabusa and Eiji Okada
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II-47 Peyman Mirtaheri, Terje Gjøvaag, Max Engvik, Marte Helén Andersen Gjestemoen, Anders Horpestad, Janne Martinsen and Stian Nordli
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II-48 Hamoon Zohdi, Felix Scholkmann and Ursula Wolf
Is the prefrontal cerebral oxygenation changing asymmetrically during a long-term exposure with colored light?

II-49 Jonas De Paula, Danielle Costa, Rickson Mesquita, Débora Miranda and Marco Romano-Silva
Impulse control and delaying gratification are associated with left prefrontal hemodynamics during low levels cognitive control: an fNIRS study

II-50 Hubin Zhao, Topun Austin and Robert Cooper
The ANIMATE project: developing a modular, wearable, high-density diffuse optical tomography system for imaging newborn infant motor development

II-51 Sabrina Brigadoi, Livio Finos and Simone Cutini
Is intensity the best feature to prune noisy channels for near-infrared spectroscopy data?

II-52 Zuzana Kovacsova, Gemma Bale, Frederic Lange and Ilias Tachtsidis
A multi-distance broadband approach to measure brain tissue oxygen saturation with NIRS

II-53 Tanja Karen, Stefan Kleiser, Daniel Ostojic, Helene Isler, Dirk Bassler, Martin Wolf and Felix Scholkmann
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II-54 Luca Giannoni, Frédéric Lange and Ilias Tachtsidis

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II-55 Mina Nourhashemi, Mahdi Mahmoudzadeh, Sabrina Goudjil, Guy Kongolo and Fabrice Wallois

Neurovascular coupling in the developing neonatal brain at rest

II-56 Mahdi Mahmoudzadeh, Mana Manoochehri, Emilie Bourel and Fabrice Wallois

Shedding lights on interictal epileptic discharges: Multimodal EEG/ECoG and fast optical signal study

II-57 David Davies, Hamid Dehghani, Mario Forcione, Samuel Lucas and Piotr Sawosz

The Valsalva maneuver: An indispensable physiological tool to differentiate intra vs extra-cranial Near-Infrared signal

II-58 Maia Osborne-Grinter, Ronak Patel, Hemel Modi, Harsimrat Singh, Ara Darzi and Daniel Leff

Enhancing surgical performance through mental rehearsal: An fNIRS study

II-59 Mario Forcione, Kamal Yakoub, Joshua D. Veesa, Hamid Dehghani, Sam Lucas, Antonio Belli, Adam Liebert, Piotr Sawosz and David Davies

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II-60 Danielle Forster, Virginia Saxton, Emmanuel Koumoundouros and James Holberton

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II-62 Lilla Zakariás, Anne van der Kant, Judit Gervain and Isabell Wartenburger
**A methodological review on recent fNIRS studies in infants**

II-63 Anne Planat-Chrétien, Michel Berger, Rodolphe Lartizien, Maxime Henry, Benjamin Houang, Mathieu Perriolat, Jean-Luc Coll and Georges Bettega
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Correspondence of feature points on the scalp with functional areas in the cytoarchitectonic map of the brain
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