



The International
Year of Light and
Light-based Technologies 2015



JAPAN SOCIETY FOR THE PROMOTION OF SCIENCE
日本学術振興会

**ADVANCED PHOTONICS
IN CLINICAL MEDICINE AND SURGERY**
THE 1st FINNISH – JAPANESE MEDICAL PHOTONICS SYMPOSIUM
25 May 2015 – Technopolis Microkatu 1 – Kuopio Finland
Kuopio University Hospital and University of Eastern Finland

REGISTRATION by Friday 15 May
virve.karkkainen at kuh.fi +358 44 717 4310
No Registration Fee

PROGRAM Monday 25 May

08.30 Registration on site

SESSION I

09.00 DIGITAL ARCHIVAL OF MEDICAL IMAGES AND VIDEOS IN HOSPITALS

- 09.00 Welcome / Markku Hauta-Kasari and Juha E Jääskeläinen
09.10 Digital Archival of Clinical Images and Videos / Juhana Hakumäki
09.25 Digital Archival of Pathology Images / Tuomas Rauramaa
09.40 Advanced Photonics in Ophthalmology / Kai Kaarniranta
09.55 Spectral Imaging of Retina / Pauli Fält
10.10 Future Trends for Hospital Image and Video Archival / **TBA**
10.30 Break and Coffee + Networking + Exhibition

SESSION II

11.00 ADVANCED PHOTONICS IN CNS MICRONEUROSURGERY

- 11.00 Brain Mapping using Transcranial Magnetic Stimulation / Esa Mervaala
11.15 Stereotactic CyberKnife Radiotherapy / Jan Seppälä
11.30 Image Projection from Navigated Operation Microscope /
Mikael von und zu Fraunberg
11.45 Tracking of Microneurosurgeon's Eye Movements / Shahram Eivazi
12.00 Fluorescence Assisted Microneurosurgery / Arto Immonen
12.15 Fluorescence and Spectral Analysis of Intracranial Aneurysm Wall /
Juhana Frösen
12.30 Lunch Break (Antell Restaurant / own cost) + Networking + Exhibition

SESSION III

13.30 ADVANCED PHOTONICS IN SURGICAL ENDOSCOPY

- 13.30 Endoscopic ENT Diagnostics and Surgery / Matti Pukkila
13.50 Bronchoscopic Diagnostics and Surgery / TBA
14.10 Minimally Invasive Diagnostics and Surgery in Thoracic and Esophageal Surgery / Eero Sihvo
14.30 Laparoscopic Diagnostics and Surgery / Ilmo Kellokumpu
14.50 Intra-Articular Ultrasound and NIR Spectroscopy / Isaac Afara and Antti Joukainen
15.10 Break and Coffee + Networking + Exhibition

SESSION IV

15.30 CENTER FOR FRONTIER MEDICAL ENGINEERING CHIBA UNIVERSITY / CHIBA JAPAN

- 15.30 Collaboration between Chiba and Joensuu / Markku Hauta-Kasari
15.40 Microcirculation Imaging and Analysis / Professor Hideaki Haneishi
15.55 Detection of Bleeding Regions and Frames in Laparoscopic Surgery / Assistant Professor Takashi Ohnishi
16.10 Surgical Assistance by Projector-based Augmented Reality / Associate Professor Toshiya Nakaguchi
16.25 Reduce Physical Burden and Improve Clinical Skills for Laparoscopic Surgeons / Associate Professor Hiroshi Kawahira
16.40 Intraoperative Oxygen Saturation Estimation of Gastrointestinal Tissue by Transmitted Light Intensity Analysis / Graduate Student Yoshitaka Minami
16.50 Improving Convenience and Reliability of 5-ALA Induced Fluorescence Imaging for Brain Tumor Surgery / Graduate Student Hiroki Taniguchi
17.00 Image Enhancement of Blood Vessel of Colon Serous Surface under Endoscopic Surgery / Graduate Student Ayaka Oka
17.10 Discussion on Joint Research Possibilities in Advanced Medical Photonics

ORGANIZERS / CONTACT

Coordinator Virve Kärkkäinen PhD / KUH NeuroCenter virve.karkkainen at kuh.fi +358 44 717 4310
Professor Juha E Jääskeläinen / Neurosurgery of KUH NeuroCenter juha.e.jaaskelainen at kuh.fi +358 44 717 4660
Professor Markku Hauta-Kasari / UEF School of Computing markku.hauta-kasari at uef.fi +358 50 405 6231

FACULTY

Docent Juhana Hakumäki / KUH Diagnostic Imaging Center juhana.hakumaki at kuh.fi
Neuropathologist Tuomas Rauramaa / KUH Pathology tuomas.rauramaa at kuh.fi
Professor Kai Kaarniranta / KUH Ophthalmology kai.kaarniranta at kuh.fi
Post Doc Pauli Fält / UEF School of Computing pauli.falt at uef.fi
Professor Esa Mervaala / KUH Clinical Neurophysiology esa.mervaala at kuh.fi
Docent Jan Seppälä / KUH Oncology and CyberKnife jan.seppala at kuh.fi
Docent Mikael von und zu Fraunberg / KUH NeuroCenter mikael.fraunberg at kuh.fi
PhD Student Shahram Eivazi / UEF School of Computing shahram.eivazi at uef.fi
Docent Juhana Frösen / KUH NeuroCenter juhana.frosen at kuh.fi
Docent Matti Pukkila / KUH ENT matti.pukkila at kuh.fi
TBA Bronchoscopic Surgery
Docent Eero Sihvo / Central Hospital of Central Finland eero.sihvo at ksshp.fi
Professor Ilmo Kellokumpu / Central Hospital of Central Finland ilmo.kellokumpu at ksshp.fi
Professor Heikki Kröger / KUH Orthopedics heikki.kroger at kuh.fi
Antti Joukainen / KUH Orthopedics antti.joukainen at kuh.fi
Post Doc Isaac Afara / UEF Biophysics of Bone and Cartilage isaac.afara at uef.fi