

TECHNICAL
PROGRAM

SPIE. FUTURE SENSING TECHNOLOGIES

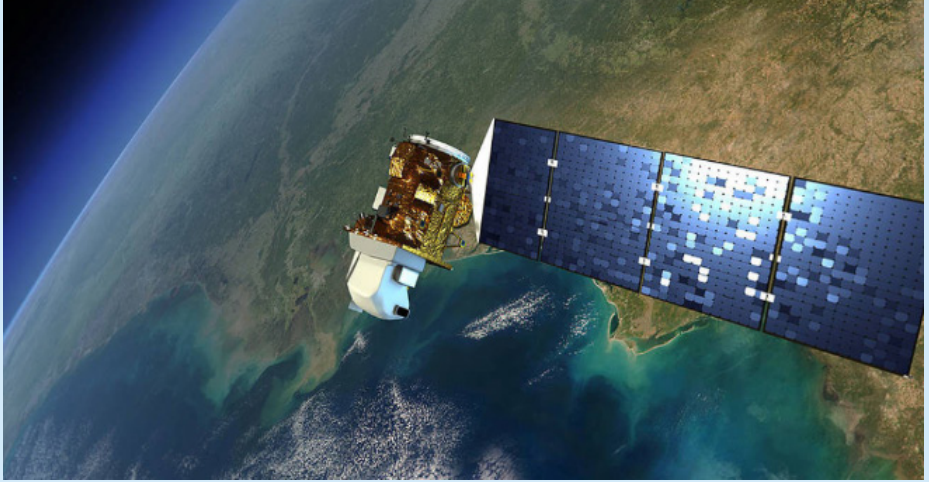
22-24 April 2024
Yokohama, Japan

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SPIE. FUTURE SENSING TECHNOLOGIES

22-24 April 2024
Yokohama, Japan



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OPTRONICS

OPTICS & PHOTONICS
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OPIE '24



Welcome to Future Sensing Technologies: The conference for ongoing research in sensor systems and related technologies. Browse the program and join your colleagues to discuss next generation sensors research and applications.

You will find plenty to enjoy at this meeting. This is the best opportunity to connect face-to-face for discussions, networking, and advancing your everyday work on emerging sensor technologies.

Registered attendees have access to all the conferences and plenary presentations at OPIC. Plus, don't miss the collocated OPIE '24, Optics and Photonics International Exhibition, a specialized technology showcase.

SPIE Future Sensing Technology conferences: 22-24 April 2024

OPIC Conferences: 22-26 April 2024

OPIE Exhibition: 24-26 April 2024

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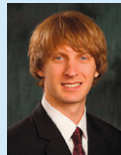
CONFERENCE CHAIRS



Osamu Matoba
Kobe Univ.
(Japan)



Joseph A. Shaw
Montana State
Univ. (United
States)



Christopher R. Valenta
Georgia Tech
Research
Institute (United
States)

PROGRAM COMMITTEE

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Applied Physics Lab., LLC (United States)

Nathan A. Hagen, Utsunomiya Univ. (Japan)

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(Japan)

Shinpei Ogawa, Mitsubishi Electric Corp.
(Japan)

Silvia Serranti, Sapienza Univ. di Roma
(Italy)



Keynote Talk I

22 April 2024 • 09:00 - 09:45 | Room 411/412



Computational image sensing at Sony

Ryuichi Tadano

Sony Semiconductor Solutions Corp. (Japan)

In this talk, we will provide an overview of Sony's cutting-edge sensors

that offer special functionalities. We will explore the exciting possibilities that arise when they are combined with advanced AI and signal-processing techniques. Our talk will showcase the latest research and development updates from Sony, highlighting the diverse range of applications that can be achieved through this powerful synergy.

OPIC Welcome Reception

22 April 2024 • 17:30 - 19:30 | Bay Bridge Cafeteria (Conference Center 6th Floor)

Join colleagues on opening day of OPIC for networking and light refreshments. This OPIC event, sponsored by SPIE, is a great opportunity to reconnect with colleagues and prepare for the week ahead.

Keynote Talk II

23 April 2024 • 09:00 - 09:45 | Room 411/412



Development of a highly-sensitive interferometer for laser ultrasonic testing of minute defects in metal materials

Kazunori Miyata

Nikon Corp. (Japan)

Laser ultrasonic testing (LUT) is a noncontact and nondestructive method

for inspecting surface and internal defects of materials. Ultrasonic waves are generated by pulsed lasers, reflected or scattered by defects, and detected by an optical interferometer through surface displacements. One of the most significant challenges of LUT is improving sensitivity of the interferometer. In this presentation, we report the development of a highly sensitive interferometer and its application in detecting minute defects on the surface and within the internal structure of metals.

Poster Session

24 April 2024 • 13:30 - 15:00 | Exhibition Hall A

Come view the posters, ask questions, and network with colleagues in your field.

Poster Setup: 12:00 - 13:30

Poster authors, view poster presentation guidelines and set-up instructions:

<https://spie.org/fst/poster-presentation-guidelines>

OPIC Plenary Session

24 April 2024 • 16:15 - 18:45 | Room 501/502



16:15 - 17:05

Optics and Photonics as key enabling technologies for smart glasses

Bernard Kress

Director, XR Engineering
Google (United States)
SPIE 2023 President

Optics and Photonics have been proven to be key enabling technologies for all constituting sub-systems in next generation smart glasses, such as in display sub-systems, sensor sub-systems and imaging sub-systems.

Consumer mass adoption of AR headsets are conditioned by solving all three immersive displays comfort pillars: wearable, visual and social. To do so, new micro- and nano-fabrication challenges need to be addressed, specifically more efficient waveguide combiners and smaller display engines and coherent sensor fusion systems. Novel nanofabrication techniques are needed to improve the performance of flat optical display systems while allowing for mass production at consumer cost levels. Such novel nano-fabrication technologies push the envelope beyond what is possible today with traditional nano-imprint lithography.



17:05 - 17:55

Organic semiconductor laser diode: challenges and perspectives

Fatima Bencheikh

CEO & CTO
KOALA Tech, Inc. (Japan)

Organic lasers have the potential to add value to OLED technology, expanding its applications by providing highly directional monochromatic light. In this talk, we will discuss a comprehensive investigation of the influence of exciton and photon losses on the performances of organic semiconductor laser diodes. Our findings indicate that the exciton loss affects the laser threshold while the slope efficiency remains unaffected. Conversely, photon losses affect both the lasing threshold and slope efficiency.



17:55 - 18:45

Proton Fast Ignition as a path to commercial fusion energy

Markus Roth

Chief Science Officer and Founder
Focused Energy Inc. (Germany)

The first successful ignition of a fusion reaction and the first demonstration of scientific energy gain have changed the direction of fusion research from fundamental research towards the question of how commercial energy production can be achieved.

Focused Energy is a US/German startup working to commercialize fusion energy. Over the last two years we have gathered the best laser fusion scientists from both sides of the Atlantic. Upon a careful analysis of all the individual aspects of laser fusion Focused Energy has chosen the direct-drive, proton fast ignition approach as, to our belief, the most robust pathway to commercialize laser fusion energy.

This talk will present our considerations, based on many decades of research around the globe, and our roadmap towards a first fusion reactor by the end of the next decade.

OPIC Banquet

24 April 2024 • 19:10 - 21:10
InterContinental Ballroom

Join us for the OPIC Banquet, to be held after the plenary on Wednesday in the InterContinental Ballroom, InterContinental Yokohama Grand (adjacent to Pacifico Yokohama).





CONFERENCE 13083

SPIE Future Sensing Technologies

22 - 24 April 2024 | Room 411/412

MONDAY 22 APRIL 2024

SESSION 1: IMAGE PROCESSING

22 April 2024 • 09:00 - 10:45 | Room 411/412

Session Chair: Joseph A. Shaw, Montana State Univ. (United States)

13083-1 | 09:00 - 09:45 | Room 411/412

Computational image sensing at Sony (*Keynote Presentation*)

Ryuichi Tadano, Shun Kaizu, Hideki Oyaizu, Tuo Zhuang, Sony Semiconductor Solutions Corp. (Japan); Alexander Gatto, Sony Europe B.V. (United Kingdom)

13083-2 | 09:45 - 10:05 | Room 411/412

High accuracy object detection by an optical neural network implementation

Mamoru Otake, Shun Miura, Hiroyuki Kusaka, Masahiro Kashiwagi, Yuichiro Kunai, Takahiro Nambara, Yumi Yamada, Fujikura Ltd. (Japan)

13083-3 | 10:05 - 10:25 | Room 411/412

Evaluation of quantum image processing in CUDA-based simulation

Akira Hasegawa, Nagoya Institute of Technology (Japan); Yoshihiro Maede, Shibaura Institute of Technology (Japan); Norishige Fukushima, Nagoya Institute of Technology (Japan)

13083-4 | 10:25 - 10:45 | Room 411/412

How down-sampling affects supervised-learning-based image super-resolutions

Ning Zhao, Beihang Univ. (China); Cong Zhang, AVIC DIGITAL (China); Haopeng Zhang, Zhiguo Jiang, Beihang Univ. (China)

Coffee Break 10:45 - 11:15

SESSION 2: POLARIZATION-BASED SENSORS

22 April 2024 • 11:15 - 12:35 | Room 411/412

Session Chair: Christopher R. Valenta, Georgia Tech Research Institute (United States)

13083-5 | 11:15 - 11:35 | Room 411/412

Exploring the performance limits of an optical rotation encoded multispectral imager

Nathan A. Hagen, Till Johne, Utsunomiya Univ. (Japan)

13083-6 | 11:35 - 11:55 | Room 411/412

Compact snapshot hyperspectral imaging instrument in the visible/near-infrared spectral band using CMOS sensor with integrated 4-directional wire grid polarizer array

Matthieu Porte, Yann Ferrec, ONERA (France); Frédéric Bernard, Elisa Baldit, Ctr. National d'Études Spatiales (France); Nicolas Guerineau, ONERA (France)

13083-7 | 11:55 - 12:15 | Room 411/412

Using oscilloscope to measure optical fiber length

Karel Slavicek, Masaryk Univ. (Czech Republic); David Grenar, Brno Univ. of Technology (Czech Republic); Martin Kyselak, Jiri Vavra, Univ. of Defence (Czech Republic)

13083-8 | 12:15 - 12:35 | Room 411/412

Toward polarization-enhanced water quality remote sensing measurements from UAVs

Patrick Morgan, Wyatt W. Weller, Dylan Maxwell, Shannon M. Hamp, Erica Venkatesulu, Joseph A. Shaw, Bradley M. Whitaker, Montana State Univ. (United States); Michael R. Roddewig, Univ. of Alaska Fairbanks (United States)

Lunch Break 12:35 - 14:05

SESSION 3: SATELLITE REMOTE SENSING

22 April 2024 • 14:05 - 15:45 | Room 411/412

Session Chair: Joshua B. Broadwater,
Johns Hopkins Univ. Applied Physics Lab., LLC (United States)

13083-9 | 14:05 - 14:25 | Room 411/412

Quantifying and mapping of forest cover loss based on Google Earth engine cloud platform with self-programming

Xia Pan, Zhenyi Wang, Shan Wang, Inner Mongolia Univ. of Finance and Economics (China)

13083-10 | 14:25 - 14:45 | Room 411/412

Estimation of air quality of New Delhi, India using Sentinel-5

Tanu Priya Tanu Priya, Forest Survey of India (India)

13083-11 | 14:45 - 15:05 | Room 411/412

Harnessing multisatellite remote sensing data and machine learning for flood risk assessment in Nam Ngum River Basin, Lao PDR

Sackdavong O. Mangkhaseum, Kyushu Institute of Technology (Japan); Sunil Duwal, Yogesh Bhattarai, Khwopa College of Engineering (Nepal); Akitoshi Hanazawa, Kyushu Institute of Technology (Japan)

13083-12 | 15:05 - 15:25 | Room 411/412

Deformation monitoring at Koldam dam and surrounding slopes using SBAS-InSAR

Krishan Kumar, Alok Bhardwaj, Dhyan S. Arya, Indian Institute of Technology Roorkee (India)

13083-13 | 15:25 - 15:45 | Room 411/412

Snow cover monitoring by SAR, optical and thermal data in Rila and Vitosha mountains

Temenuzhka Spasova, Daniela Avetisyan, Space Research and Technology Institute (Bulgaria)

Coffee Break 15:45 - 16:15

SESSION 4: SPECTRAL IMAGING

22 April 2024 • 16:15 - 17:15 | Room 411/412

Session Chair: Giuseppe Bonifazi, Sapienza Univ. di Roma (Italy)

13083-14 | 16:15 - 16:35 | Room 411/412

Hyperspectral imaging-based approach for recycling space waste

Giuseppe Bonifazi, Idiano D'Adamo, Sapienza Univ. di Roma (Italy); Lucia Grizzaffi, Thales Alenia Space (Italy); Roberta Palmieri, Silvia Serranti, Sapienza Univ. di Roma (Italy); Antonia Simone, Thales Alenia Space (Italy)

13083-15 | 16:35 - 16:55 | Room 411/412

SWIR/NIR snapshot imaging spectrometers for monitoring water vapor dynamics

Tomasz S. Tkaczyk, Desheng Zheng, Christopher Flynn, Haimu Cao, Coby McNichols, David Alexander, Rice Univ. (United States); Ethan Gutmann, National Ctr. for Atmospheric Research (United States); Bruce Kindel, Univ. of Colorado Boulder (United States)

13083-16 | 16:55 - 17:15 | Room 411/412

Multi spectral data fusion from high energy arcing fault experiments

Alvaro A. Cruz-Cabrera, Austin M. Glover, Ryan Flanagan, Sandia National Labs. (United States)

SESSION 5: SENSOR CALIBRATION & CHARACTERIZATION

22 April 2024 • 17:15 - 17:55 | Room 411/412

Session Chair: Christopher R. Valenta, Georgia Tech Research Institute (United States)

13083-17 | 17:15 - 17:35 | Room 411/412

Fast drawing method of circular patterns based on Gaussian circles for camera calibration

Soshi Asamura, Yuki Naganawa, Norishige Fukushima, Nagoya Institute of Technology (Japan)

13083-18 | 17:35 - 17:55 | Room 411/412

Non-destructive reflectance measurement technique for anti-reflective coating during ophthalmic lens manufacturing

Lawan Sampanporn, Boonsong Sutapun, Suranaree Univ. of Technology (Thailand)

TUESDAY 23 APRIL 2024

SESSION 6: ACTIVE SYSTEMS

23 April 2024 • 09:00 - 11:40 | Room 411/412

Session Chair: Joseph A. Shaw, Montana State Univ. (United States)

13083-19 | 09:00 - 09:30 | Room 411/412

Development of a highly-sensitive interferometer for laser ultrasonic testing of minute defects in metal materials (Keynote Presentation)

Kazunori Miyata, Satoshi Yashiki, Yuki Kamei, Fuyuhiko Inoue, Satoru Odate, Yasuko Yamasaki, Ryosuke Doi, Yuichi Takigawa, Nikon Corp. (Japan)

13083-20 | 09:30 - 09:50 | Room 411/412

Graph-based Object Classification Techniques for Autonomous vehicles

Rasim Akin Sevimli, Baskent Univ. (Turkey)

13083-21 | 09:50 - 10:10 | Room 411/412

Nondestructive testing of corrosion thickness in coated steel structures with THz-TDS

Ying Xu, Harbin Institute of Technology Shenzhen Graduate School (China)

13083-22 | 10:10 - 10:30 | Room 411/412

Prototype and analysis of solid state beam steering using spatial light modulator for LIDAR

Chiayu Hu, Chih-Chun Chen, Yi-Chi Lee, Sian-You Wu, Shih-Ting Lin, Seth Tsau, Ji-Bin Horng, Industrial Technology Research Institute (Taiwan)

Coffee Break 10:30 - 11:00

13083-23 | 11:00 - 11:20 | Room 411/412

Enhanced FMCW depth sensing

Ljubomir Jovanov, Wilfried Philips, Univ. Gent (Belgium)

13083-24 | 11:20 - 11:40 | Room 411/412

Analyzing laguerre-gaussian beams for optical communication resilience in adverse weather conditions

Yuichi Isashi, Yaser M. Banad, Sarah S. Sharif, The Univ. of Oklahoma (United States)

SESSION 7: BIO SENSORS I

23 April 2024 • 11:40 - 12:20 | Room 411/412
Session Chair: Osamu Matoba, Kobe Univ. (Japan)

13083-25 | 11:40 - 12:00 | Room 411/412

Exploring metal-molecule-metal nanoparticles (MMNP) configuration for SPR biosensor specificity

Aditi Chopra, Girish C. Mohanta, Sudipta S. Sarkar, CSIR - Central Scientific Instruments Organisation (India)

13083-26 | 12:00 - 12:20 | Room 411/412

Optical fiber tactile sensor with bioinspired whisker transducer

Eric Fujiwara, Univ. of Campinas (Brazil)

Lunch Break 12:20 - 14:00

SESSION 8: BIO SENSORS II

23 April 2024 • 14:00 - 15:00 | Room 411/412
Session Chair: Osamu Matoba, Kobe Univ. (Japan)

13083-28 | 14:00 - 14:20 | Room 411/412

Optical fiber force myography sensor for assessing lower limb movements

Eric Fujiwara, Vinicius G. Balbino, Victor Ferman, Univ. of Campinas (Brazil); Julio Fajardo, Univ. of Campinas (Brazil), Univ. Galileo (Guatemala); Eric Rohmer, Univ. of Campinas (Brazil)

13083-29 | 14:20 - 14:40 | Room 411/412

Improving elderly fall detection of accelerometer and infrared systems

Zeyu Liu, Valley Christian High School (United States); Eric Cheek, Univ. of Michigan (United States)

13083-30 | 14:40 - 15:00 | Room 411/412

Super-resolution chemical imaging and correlation mapping of metabolism in aging and diseases

Hongje Jang, Yajuan Li, Zhi Li, Univ. of California, San Diego (United States); Ellen Ackerstaff, Jason Koutcher, Memorial Sloan-Kettering Cancer Ctr. (United States); Lingyan Shi, Univ. of California, San Diego (United States)

Coffee Break 15:00 - 15:30

SESSION 9: SENSING FROM UAVS & ROBOTIC VEHICLES

23 April 2024 • 15:30 - 16:50 | Room 411/412

Session Chair: Joshua B. Broadwater,
Johns Hopkins Univ. Applied Physics Lab., LLC (United States)

13083-32 | 15:30 - 15:50 | Room 411/412

A case study on the use of unmanned aerial vehicle digital photogrammetry and combined terrestrial laser scanning for high rock slope stability analysis

Ashok Anand, Alok Bhardwaj, Indian Institute of Technology Roorkee (India)

13083-34 | 15:50 - 16:10 | Room 411/412

Assessment of mosses in Antarctica and Bulgaria based on remote sensing and chlorophyll fluorescence

Temenuzhka Spasova, Space Research and Technology Institute (Bulgaria)

13083-35 | 16:10 - 16:30 | Room 411/412

Autonomous safe landing site detection for UAV in unknown and dense environment

Ishan Narayan, Shashi Poddar, CSIR - Central Scientific Instruments Organisation (India)

13083-64 | 16:30 - 16:50 | Room 411/41

Using stars for VIIRS day-night band calibration

Xiaoxiong Xiong, NASA Goddard Space Flight Ctr. (United States); Truman Wilson, Science Systems and Applications, Inc. (United States); Kevin Vermeesch, Global Science & Technology, Inc. (United States); Xu Geng, Science Systems and Applications, Inc. (United States)

WEDNESDAY 24 APRIL 2024

SESSION 10: COMPONENT TECHNOLOGY

24 April 2024 • 09:00 - 11:30 | Room 411/412

Session Chair: Christopher R. Valenta, Georgia Tech Research Institute (United States)

13083-36 | 09:00 - 09:20 | Room 411/412

A bias-switchable narrowband/broadband NIR organic photodetector fabricated using a scalable technique

Wei Hsiang Lin, Lai Hung Lai, Hsuan Chun Chang, Chin Chuan Hsieh, VisEra Technologies Co., Ltd. (Taiwan); Maria Antonietta Loi, Univ. of Groningen (Netherlands)

13083-37 | 09:20 - 09:40 | Room 411/412

En route to a practical ring-resonator thermometer with an uncertainty of 1 mK

Sergey Dedyulin, Vraj Patel, Siegfried Janz, Dan-Xia Xu, Ross Cheriton, Shurui Wang, Martin Vachon, John Weber, National Research Council Canada (Canada)

13083-38 | 09:40 - 10:00 | Room 411/412

Spectral and polarization sensing in short-wave infrared with thin-film photodiodes and optical metasurfaces

Vladimir Pejovic, Bruno Figeys, Renaud Puybaret, Deniz Sabuncuoglu Tezcan, Itai Lieberman, David Cheyns, Roelof Jansen, Xavier Rottenberg, Paul Heremans, Pawel E. Malinowski, imec (Belgium)

13083-39 | 10:00 - 10:20 | Room 411/412

A concept for a large-scale non-contact strain measurement system using nanostructures

Andreas Ulm, Niels König, Fraunhofer-Institut für Produktionstechnologie IPT (Germany); Robert Schmitt, WZL der RWTH Aachen Univ. (Germany)

Coffee Break 10:20 - 10:50

13083-41 | 10:50 - 11:10 | Room 411/412

MXene-based fibre optic Fabry-Perot interferometer for heavy metal detection

Jiaxing Sun, Hanlin Jiang, Miles Buchanan, Rowan Wain, Xianfeng Chen, Nottingham Trent Univ. (United Kingdom)

13083-42 | 11:10 - 11:30 | Room 411/412

3D Printed Helices for High EF SERS Dual-Sensing

Chia-Te Chang, HongTao Wang, Wang Zhang, Hao Wang, Singapore Univ. of Technology and Design (Singapore); Chin-Yi Kuan, Chang Gung Univ. (Taiwan); Xiaoyan Zhou, Singapore Univ. of Technology and Design (Singapore); Chia-Ming Yang, Institute of Electro-Optical Engineering, Chang Gung Univ. (Taiwan), Chang Gung Memorial Hospital (Taiwan); Joel K. W. Yang, Singapore Univ. of Technology and Design (Singapore)

Lunch Break 11:30 - 13:30

POSTER SESSION

24 April 2024 • 13:30 - 15:00 | Exhibition Hall A

Come view the posters, ask questions, and network with colleagues in your field.

Poster Setup: 12:00 - 13:30 Japan Standard Time

Poster authors, view poster presentation guidelines and set-up instructions at:
<https://spie.org/fst/poster-presentation-guidelines>

13083-43

Assessment of heat islands and renewable energy sources in the north-east planning region of Bulgaria by remote sensing

Temenuzhka Spasova, Iva Ivanova, Daniela Avetisyan, Adlin Dancheva, Space Research and Technology Institute (Bulgaria)

13083-44

Research on high-precision calibration device for dual-axis tilt sensor

Jin Zhou, XiaoLi Wu, Jing Zheng, Sen Zhou, XueMei Yang, Chongqing Institute of Metrology and Quality Inspection (China)

13083-45

Full geometric information measuring model of 3D gear based on laser scanning techniques

Sen Zhou, Shuang Mao, Lei Tao, Jin Zhou, Jian Xu, Chongqing Institute of Metrology and Quality Inspection (China)

13083-46

Analyzing DSIAC ATR algorithm development database utilizing transfer learning

Kemal Arda Özertem, Roketsan A.S. (Turkey)

13083-47

Landslide susceptibility mapping in the Mandakini Catchment in Indian Himalayas after the Great 2013 Disaster using maximum entropy machine learning technique

Arnab Chowdhury, Alok Bhardwaj, Indian Institute of Technology Roorkee (India)

13083-48

Survey of urbanization status in developing countries using optical/SAR satellite data

Natsuki Maruyama, Hideki Hashiba, Masashi Sonobe, Nihon Univ. (Japan)

13083-49

Study of the impact of COVID-19 on Tokyo's 23 wards using Suomi-NPP nighttime light satellite images

Moyu Sekine, Hideki Hashiba, Masashi Sonobe, Nihon Univ. (Japan)

13083-50

Landslide monitoring using UAV point clouds and terrestrial laser scanning: An object-based classification

Ashok Anand, Alok Bhardwaj, Indian Institute of Technology Roorkee (India)

13083-51

Landslip monitoring from mathematical surface approximation: comparing methods for classifying terrestrial laser scanner point clouds

Ashok Anand, Alok Bhardwaj, Sahil Kundal, Indian Institute of Technology Roorkee (India)

13083-52

Non-linearity analysis of a spectroradiometer

Konstantin Torgasin, Andreas Baumgartner, Deutsches Zentrum für Luft- und Raumfahrt e.V. (Germany)

13083-53

Multi-temporal UAV-based displacement study of a rock-debris slope in Upper Indian Himalayas

Sahil Kundal, Indian Institute of Technology Roorkee (India)

13083-56

Spectral analysis and mapping of unregulated and regulated landfills by planning areas (NUTS 2) in Bulgaria

Temenuzhka Spasova, Iva Ivanova, Daniela Avetisyan, Adlin Dancheva, Space Research and Technology Institute (Bulgaria)

13083-57

Remote sensing monitoring of snow and snow avalanche in Longyearbyen, Arctic

Temenuzhka Spasova, Space Research and Technology Institute (Bulgaria)

13083-58

Postfire forest disturbances and initial regrowth using direction angle

Nataliya Stankova, Temenuzhka Spasova, Space Research and Technology Institute (Bulgaria)

13083-59

Application of Sentinel-2 MSI optical data for snow cover monitoring in the Vitosha mountain region of Bulgaria

Andrey Stoyanov, Temenuzhka Spasova, Space Research and Technology Institute (Bulgaria)

13083-60

Appropriate handling of fluorescence spectra for accurate spectral overlap (J) values in Förster energy transfer (FRET) calculations

Masahiko Taniguchi, Jonathan S. Lindsey, Hai Du, North Carolina State Univ. (United States)

13083-61

Optimization of computational parameters in fluorescence imaging based on transport of intensity equation in white noise

Shiori Matsuda, Osamu Matoba, Kobe Univ. (Japan)

13083-62

Smart autonomous crack detection in concrete structures

Arya Prakash Padhi, Ashok Anand, Indian Institute of Technology Roorkee (India)

13083-63

Harnessing satellite remote sensing for wheat lodging assessment in India: a machine learning approach

Vishal Mishra, Sumit Kumar, Prashant Singh, Indian Institute of Technology Roorkee (India)

13083-65

Cross-linked perovskite/polymer composites with sodium borate for highly stable and efficient wide bandgap photodetectors

Bonghyun Jo, Sungkyunkwan Univ. (Korea, Republic of)

Coffee Break 15:00 - 16:15

OPIC PLENARY SESSION

24 April 2024 • 16:15 - 18:45 | Room 501/502

For more information, see the OPIC website: <https://opicon.jp/program/plenary/>

Digital Posters

The posters listed below are available exclusively for online viewing during the week of SPIE Future Sensing Technologies 2024.

13083-54 | On Demand Only

Image quality assessment of thermal images for Maritime surveillance applications

Issac Niwas Swamidoss, Abdulla Alsaadi Al Mansoori, Shahanas Shajahan, Hamad Mubarak Al Remeithi, Abdulrahman Mohamed Al Marzooqi, Tarek Bouamer, Slim Sayadi, Tawazun Technology & Innovation LLC (United Arab Emirates)

13083-55 | On Demand Only

Analysis of optical flow methods for estimating UAV velocity in low-features environment

Issac Niwas Swamidoss, Abdulla Alsaadi Al Mansoori, Shahanas Shajahan, Tarek Bouamer, Hamad Mubarak Al Remeithi, Abdulrahman Mohamed Al Marzooqi, Slim Sayadi, Tawazun Technology & Innovation LLC (United Arab Emirates)

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www.spiedigitallibrary.org

Onsite Services

Find information about how to navigate the onsite conference experience.

Badge pickup and registration hours

Pacifico Yokohama Conference Center | Conference Center 2F Lobby

Monday 22 April	8:00-16:30
Tuesday 23 April	8:00-16:30
Wednesday 24 April	8:00-16:30

SPIE Registration Desk

Location: Conference Center 2F Lobby

Open during registration hours

Registration payments

If you are planning to register onsite, please do so at the “Need to Register” laptop station. Your credit card payment will be processed during registration.

Receipt and Certificate of Attendance

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

Badge Corrections

Badge corrections can be made at the Registration Desk. Please mark your badge with your changes before approaching the counter.

Speaker Check-in

Location: Conference Rooms 411 and 412

Open during Registration hours

Monday 22 April	8:00-16:30
Tuesday 23 April	8:00-16:30
Wednesday 24 April	8:00-16:30

All speakers must upload their slide presentation files on the computer in the conference room at least two hours before their scheduled session (during a break) or the day before if they present in the first session. Speakers are not able to present using their own devices. All conference rooms are equipped with a laptop, projector, screen, lapel microphone, and laser pointer.

If you need assistance with uploading your presentation, visit the Registration Desk.

SPIE will record the audio plus screen content of all presentations. Recordings will be published on the SPIE Digital Library.

SPIE health and safety products

Location: Registration Desk

Open during registration hours

Stop by to pick up face masks, hand sanitizer, and other safety products from SPIE.

Internet access

Location: Conference Center

Complimentary wireless internet access is provided in meeting rooms and lobbies in the conference center. Instructions will be posted onsite.

SPIE Conference App information

This useful tool allows you to search and browse the program, special events, participants, courses, and more. It is free and available for iPhone and Android phones. Download the SPIE App: spie.org/apps

SPIE Bookstore

Location: Exhibition Hall

Wednesday 24 April	10:00-17:00
Thursday 25 April	10:00-17:00
Friday 26 April	10:00-17:00

Stop by the SPIE Booth at OPIE to browse the latest SPIE Press Books.

Business Center

Location: Conference Center 1F

Self-service machines are available for photocopying and printing services.

Kinko's Business Center:

Location: Exhibition Hall 2F

Copies, printouts, scanning, computers, binding service, lamination, oversize printing, and DHL shipping services

Baby Lounge

Location: Exhibition Hall 2F

The Baby Lounge is equipped with three nursing rooms, three baby beds, hot water supply equipment, and a sink.

Barrier-free and family-friendly bathrooms

Location(s): Conference Center B1F-5F and Exhibition Hall 1F/2F

There are barrier-free and family-friendly bathrooms in each facility.

Lost and found

Location: Registration Desk

Open during registration hours

Found items will be kept at the SPIE Registration Desk during the meeting and available only during registration hours. At the end of the meeting, all found items will be turned over to the Pacifico Yokohama facility.

Food and beverage services

Coffee Breaks

Location: Conference room foyer

Complimentary coffee and tea will be available on the following days and times.

Monday 22 April	10:00-11:00 15:00-16:00
Tuesday 23 April	10:00-11:00 15:00-16:00
Wednesday 24 April	10:00-11:00 15:00-16:00
Thursday 25 April	10:00-11:00 15:00-16:00
Friday 26 April	10:00-11:00 15:00-16:00

Food and refreshments for purchase

Location: Exhibition Hall 1F and 2F

7:00-11:00

Daily Yamazaki

Ristorante Attimo

Danzero Restaurant and Bar

Pizza-LA Express

Doutor Coffee Shop

Location: Conference Center 6F

Bay Bridge Cafeteria

Location: Queen's Square Yokohama

Over 75 restaurants and food shops are located just across the pedestrian bridge

Medical Services

Keiyu Hospital

3 Chome-7-3 Minatomirai, Nishi Ward, Yokohama, Kanagawa 220-8521, Japan

Plan for 2025

SPIE. FUTURE SENSING TECHNOLOGIES

21-23 April 2025
Yokohama, Japan



www.spie.org/fst