

# 5<sup>th</sup> International Workshop on Image Sensors and Imaging Systems (IWISS2022)

*-Frontiers in image sensors based on conceptual breakthroughs inspired by applications-*

**The workshop is an in-person event, but it can be switched online, depending on the pandemic situation**

**Sponsored by:** Technical Group on Information Sensing Technologies (IST), the Institute of Image Information and Television Engineers (ITE)

**Co-sponsored by:** International Image Sensor Society (IISS)  
Group of Information Photonics (IPG) +CMOS Working Group, the Optical Society of Japan, Innovative Photonics Evolution Research Center (iPERC)

**Date:** December 12 (Mon) and 13 (Tue), 2022

**Venue:** Sanaru Hall, Hamamatsu Campus, Shizuoka University

**Access:** [https://www.eng.shizuoka.ac.jp/en\\_other/access/](https://www.eng.shizuoka.ac.jp/en_other/access/)

**Address:** 3-5-1 Johoku, Nakaku, Hamamatsu, 432-8561 JAPAN

**Official language:** English

**The latest information on registration, poster submission, and advance program:**

<http://www.i-photonics.jp/meetings.html#20221212IWISS>

**Overview:** In this workshop, people from various research fields, such as image sensing, imaging systems, optics, photonics, computer vision, and computational photography/imaging, come together to discuss the future and frontiers of image sensor technologies in order to explore the continuous progress and diversity in image sensors engineering and state-of-the-art and emerging imaging systems technologies. The workshop is composed of invited talks and a poster session. **We are accepting approximately 20 poster papers, whose submission starts in August, with deadline on October 14 (Fri), 2022.** A Poster Presentation Award will be given to the selected excellent paper. We encourage everyone to submit the latest original work. **Every participant is required to register online by December 5 (Mon), 2022. On-site registration is NOT accepted.** Since the workshop is operated by a limited number of volunteers, we can offer only minimal service; therefore, no invitation letters for visa applications to enter Japan can be issued.

**Scope:**

- Image sensor technologies: fabrication process, circuitry, architectures;
- Imaging systems and image sensor applications;
- Optics and photonics: nanophotonics, plasmonics, microscopy, spectroscopy;
- Computational photography/ imaging;
- Applications and related topics on image sensors and imaging systems:  
e.g., multi-spectral imaging, ultrafast imaging, biomedical imaging, IoT, VR/AR, deep learning, ...

**General Chair:** Keiichiro Kagawa (Shizuoka Univ., Japan)

**Technical Program Committee (Alphabetical order):**

Chih-Cheng Hsieh (National Tsing Hua Univ., Taiwan)	Min-Woong Seo (Samsung Electronics, Korea)
Keiichiro Kagawa (Shizuoka Univ., Japan)	Hiroyuki Suzuki (Gunma Univ., Japan)
Takashi Komuro (Saitama Univ., Japan)	Hisayuki Taruki (Toshiba Electronic Devices & Storage Corporation, Japan)
De Xing Lioe (Shizuoka Univ., Japan)	
Hajime Nagahara (Osaka Univ., Japan)	Franco Zappa (Politecnico di Milano, Italy)
Atushi Ono (Shizuoka Univ., Japan)	

**Join and enjoy the workshop!**

### ***Online registration for audience:***

**Registration is necessary** due to the limited number of available seats. **Registration deadline is December 5 (Mon), 2022.**

The information to register and pay online will be provided at the following link after **October 21 (Fri), 2022:**

<http://www.i-photonics.jp/meetings.html#20221212IWISS>

### ***Registration fee:***

Regular and student: approximately 2,000-yen (~15 USD)

NOTE: This price is for purchasing the online proceeding of IWISS2022 through the ITE. If you cannot join the workshop due to any reason, no refund will be provided.

### ***Paper submission to the poster session:***

**Entry your paper at the following URL:**

[https://www.ite.or.jp/ken/form/index.php?tgs\\_regid=faf9bc5bde5e430962d98b110ccac65c5ddc6ca5718edb7c80089461c48b9cfa&tgid=ITE-IST&lang=eng&now=20220719133618](https://www.ite.or.jp/ken/form/index.php?tgs_regid=faf9bc5bde5e430962d98b110ccac65c5ddc6ca5718edb7c80089461c48b9cfa&tgid=ITE-IST&lang=eng&now=20220719133618)

**(Use the above English page. DO NOT follow the Japanese instructions at the bottom of the page.)**

**Paper entry deadline: Oct. 14 (Fri), 2022** (Only title, authors, and short abstract are required)

The acceptance of your paper will be notified by Oct. 21 (Fri)

**Manuscript submission deadline: Nov. 21 (Mon), 2022** (2-page English proceeding is required)

**One excellent poster will be awarded.**

### ***Collaboration with MDPI Sensors Special Issue***

[https://www.mdpi.com/journal/sensors/special\\_issues/CMOS\\_image\\_sensor](https://www.mdpi.com/journal/sensors/special_issues/CMOS_image_sensor)

Special Issue on “Recent Advances in CMOS Image Sensor”

Special issue editor: Dr. De Xing Lioe

**Paper submission deadline: February 25 (Sat), 2023**

**The poster presenters are encouraged to submit a paper to this special issue!**

Note-1: Those who do not give a presentation in the IWISS2022 poster session are also welcome to submit a paper!

Note-2: Sensors is an open access journal, the article processing charges (APC) will be applied to accepted papers.

Note-3: For poster presenters of IWISS2022, please satisfy the following conditions.

The submitted extended papers to the special issue should have more than 50% new data and/or extended content to make it a real and complete journal paper. It will be much better if the Title and Abstract are different with that of conference paper so that they can be differentiated in various databases. Authors are asked to disclose that it is conference paper in their cover letter and include a statement on what has been changed compared to the original conference paper.

## ***Plenary and Invited Speakers***

### **[Plenary Talk]**

“Deep sensing - Jointly optimize imaging and processing –“

Hajime Nagahara (Osaka Univ., Japan)

### **[Invited Talks]**

#### ***Image Sensors***

“InGaAs/InP and Ge-on-Si SPADs for SWIR applications”

Alberto Tosi\*, Fabio Signorelli, Fabio Telesca, Simone Riccardo, Enrico Conca (Politecnico di Milano, Italy)

“CMOS SPAD-Based LiDAR Sensors with Zoom Histogramming TDC Architectures”

Bumjun Kim, Seonghyeok Park, Su-Hyun Han, Seong-Jin Kim\*

(Ulsan National Institute of Science and Technology (UNIST), Korea)

“TBD (multi-user iToF)”

Min-Sun Keel (Samsung Electronics, Korea)

“TBD (SPAD LiDAR)”

Sheng-Di Lin (National Yang Ming Chiao Tung Univ., Taiwan)

#### ***Computational Photography/Imaging and applications***

“Computational lensless imaging by coded optics”

Tomoya Nakamura (Osaka Univ., Japan)

“TBD (computational imaging)”

Miguel H. Conde (Siegen Univ., Germany)

“TBD (computational image sensor)”

TBD (Toronto Univ., Canada)

#### ***Optics and Photonics***

“Optical system integrated time-of-flight and optical coherence tomography for high-dynamic range distance measurement”

Yoshio Hayasaki\*<sup>1</sup>, Juan Manuel Franco Sánchez<sup>1</sup>, Yuki Shimamoto<sup>1</sup>, Joel Cervantes<sup>2</sup>, Keiichiro Kagawa<sup>3</sup>, Hajime Nagahara<sup>4</sup> (<sup>1</sup>Utsunomiya Univ., Japan, <sup>2</sup>Guadalajara Univ., Mexico, <sup>3</sup>Shizuoka Univ., Japan, <sup>4</sup>Osaka Univ., Japan)

“High-speed/ultrafast holographic imaging using an image sensor”

Yasuhiro Awatsuji\*<sup>1</sup>, Tomoyoshi Inoue<sup>1</sup>, Osamu Matoba<sup>2</sup> (<sup>1</sup>Kyoto Institute of Technology, Japan, <sup>2</sup>Kobe Univ., Japan)

“Near-infrared sensitivity improvement by plasmonic diffraction technology”

Nobukazu Teranishi\* and Atsushi Ono (Shizuoka Univ, Japan)

One more talk is being planned.

\*presenter

**NOTE: The titles of the talks could be tentative.**

<Contact for any question about IWISS2022>

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(Keiichiro Kagawa, Shizuoka Univ., Japan)