

# CALL FOR PAPERS

## LDC2024

13th Laser Display and Lighting Conference

<https://ldc.opicon.jp/>



**Apr. 23 (Tue.) - Apr. 26 (Fri.), 2024**

**In-Person**

**PACIFICO Yokohama, Japan**

Paper Deadline: ~~Dec. 18 (Mon.), 2023~~

**Jan. 4 (Thu.), 2024 (EXTENDED)**

## **Introduction**

The Laser Display and Lighting Conference (LDC) is an international conference on laser displays, laser lighting, and related technologies. The 13th Laser Display and Lighting Conference (LDC2024) will be held in-person at PACIFICO Yokohama (Yokohama, Japan) on April 23 - April 26, 2024. This conference is sponsored by the Optical Society of Japan in cooperation with several academic societies and associations. The LDC2024 is intended to provide a central forum for the update and review of scientific and technical information on laser display and lighting covering a wide range of fields from fundamental research to systems and applications.

For details, please come to our website: <https://ldc.opicon.jp/>

## **Chairs**

|                           |               |                    |
|---------------------------|---------------|--------------------|
| <b>Honorary Chair</b>     |               | Kazuo Kuroda       |
| <b>Conference Chair</b>   | Co-chair      | Hiroshi Murata     |
|                           | Co-chair      | Fergal Shevlin     |
| <b>Steering Committee</b> | Co-chair      | Kazuhisa Yamamoto  |
|                           | Co-chair      | Norihiro Ohse      |
| <b>Program Committee</b>  | Co-chair      | Sunao Kurimura     |
|                           | Co-chair      | Tetsuya Yagi       |
|                           | Co-chair      | Shining Zhu        |
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|                           | Vice Co-chair | Hirotsugu Yamamoto |
|                           | Vice Co-chair | Tatsushi Hamaguchi |
|                           | Vice Co-chair | Muneharu Kuwata    |

## **Sponsors**

### **Sponsored by**

The Optical Society of Japan

### **Organized by**

Laser Display Technology Group (LDT) of Optical Society of Japan (OSJ)

### **In Cooperation with (under application)**

The Laser Society of Japan

The Japan Society of Applied Physics

Consortium of Visible Laser Diode Applications (VLDAC)

\*Some other organizations are under negotiation.

## **Co-located Conferences**

Optics and Photonics International Congress (OPIC) 2024 is a five-days event, including sixteen cutting edge conferences. OPIC2024 provides access to the very latest products, research and initiatives in the optics and photonics sector. It also offers you the opportunity for the interaction with those driving the future of optics and photonics technology. And Optics and Photonics International Exhibition (OPIE) 2024, an exciting trade and technology exhibition featuring leading players from across the globe, will be held at the great hall next to the conference place. That may bring you good opportunities to touch the state-of-the-art products and technologies in the sector. By registering for LDC2024, you can participate in all international conferences.

## **Important Deadlines**

Regular Paper Submission: ~~18th December 2023~~ **4th January 2024 (Extended)**

Post-deadline Paper Submission: 23rd February 2024

Registration: TBD

## **Contact Us**

LDC2024 Secretariat Desk

ldc[at]opicon.jp

## **Scope**

LDC2024 covers the laser display and lighting technology in the following major topical fields;

### **A. Light Sources and Components**

Visible lasers, LED, solid-state light sources, phosphor, wavelength conversion materials, for displays and automotive applications. Optoelectronic components, such as spatial light modulators, high-speed scanners, MEMS, projection components, display drivers and interfaces are also included.

### **B. Imaging / Lighting**

Physical display unit (projection, holography, light-field), Sensing and Imaging technologies (3D imaging by scanning, ghost imaging, imaging algorism), Image acquisition by new technologies (Raman/ Nonlinear scattering, Photoacoustic imaging PAI...). Illumination and lighting including LIFI. Imaging Evaluation and Image processing for speckle reduction. Color management and image quality control. Laser safety and standardization.

### **C. AI and DX analysis for Smart Systems**

Intelligent Display and IoT systems for smart society, which are integrated with other functional devices or technologies, such as AI analysis / control, digital transformation (DX), signal processing, various sensors (e.g., cameras, TOF and LiDAR), human interfaces, wired / wireless microwave / millimeter wave / optical communication devices or interfaces, or wired / wireless optical power supplies. Design, algorithm, or components particularly applied for the above smart systems are also included.

### **D. XR(AR, MR, VR) and Metaverse Technologies**

Metaverse platforms and related technologies such as AR (Augmented Reality), MR (Mixed Reality), and VR (Virtual Reality), XR technologies (relevant hardware, software and their applications): Those technologies expand human potential and have a great impact on life style as well as opening a new market.

### **E. Laser Applications for Moving Platforms**

Sensing applications used in various moving platforms, such as ToF based LiDAR, as well as FMCW LiDAR. Light-based vehicle-to-vehicle communication. Lighting/communication applications including headlights, rear lights, CASE, as well as other functional lighting devices. Applications involving both lighting and display include road surface projectors.

### **F. Novel and Emerging Technologies**

Novel and emerging technologies of laser display and lighting including components and optics. Their applications to entertainment, education, medical, social and other systems are also included.

## **Keynote Session**

**LIU Xianrong, Hisense Laser Display Co., Ltd.**

“Laser TV, Hisense’s technology and strategy(tentative)”

**Jae-Hyeung Park, Inha Univ.**

“Next generation AR 3D near eye display”

## **Invited Talks**

**Cristoph Schmid, ams-OSRAM International GmbH**

“FMCW LIDAR system analysis – modeling & experiment”

**Danny Chepenko, SpatialChat**

“The effect of the online collaboration method in social presence”

**Hirokazu Ishii, Exploratory Research Center on Life and Living Systems (ExCELLS)**

“All-pulsed two-photon STED microscopy for nanoscale tissue imaging”

**Jinsoo Jeong, KETI**

“Holographic Technology for Augmented Reality Near-eye Display”

**Keisuke Isobe, RIKEN Center for Advanced Photonics**

“Simultaneous multi-plain two-photon imaging and 4D optical manipulation”

**Kenta Temma, Osaka Univ.**

“ Super-resolution microscopy using nonlinear fluorescence response for volumetric imaging”

**Kiyoshi Kiyokawa, Nara Institute of Science and Technology**

“Smart AR Glasses for Social Inclusion”

**Kouichi Akahane, NICT**

“High performance quantum dot laser for optical fiber systems”

**Louise Bradley, Trinity College Dublin**

“TBD”

**Martin Pfennigbauer, RIEGL Laser Measurement Systems GmbH**

“ Latest developments on Airborne LiDAR Bathymetry - technology and applications”

**Motoaki Iwaya, Meijo Univ.**

“Fabrication of stacked RGB monolithic  $\mu$ LED arrays using tunnel junctions and challenges for display applications”

**Naru Usukura, Sharp Display Technology Corp.**

“Novel highly efficient pancake optics for HMD named “Double-path””

**Nathan Palmquist, UCSB**

“Long cavity III-nitride vertical-cavity surface-emitting lasers utilizing a curved

mirror”

**Okudaira Yoshihiro, Venus Laser Inc.**

“New developments of laser beam application equipment from laser show content to bird prevention”

**Qiong-Hua Wang, Beihang Univ./Seoul National Univ.**

“Holographic 3D display system with wide viewing angle and large size”

**Ryo Kato, Tokushima Univ.**

“Mid-infrared chemical imaging using mid-infrared and visible lasers for bio-analysis”

**Stephan Haneder, ams-OSRAM International GmbH**

“From AR Glasses to Mainstream Display Projection — Recent Advances in red, green and blue LEDs and Laser Solutions”

**Terumasa Ito, Tokyo Univ. of Agriculture and Technology**

“High-contrast Raman imaging using temporal filtering”

**Yasuaki Hirano, Sharp**

“Development of high power GaN laser diode and its applications”

**Yoshihisa Takayama, Tokai Univ.**

“Research activities on free-space and underwater optical communications”

### **Paper Publication**

The proceedings of LDC2024 will be published in **SPIE Digital Library** on September 2024. The special issue on Laser Displays will also be published in Nov./Dec., 2024 issue of **OPTICAL REVIEW**, the journal edited by the LDC committee and will be distributed by Springer. All the authors of LDC2024 are strongly encouraged to submit the original papers to the special issue. Please note that all submissions will be peer-reviewed following the editorial policy of OPTICAL REVIEW. The submissions from invited speakers are also welcome. Manuscript should follow Optical Review submission guidelines "Instructions for Preparation of Manuscript" and be submitted in the electronic form on the internet.

Submission Deadline: TBD (E. May, 2024)

A detailed instruction is available from the following website:

<http://myosj.or.jp/en/publication/optical-review/>

## **Committee**

### **HONORARY CHAIR**

Kazuo Kuroda (Utsunomiya Univ.)

### **CONFERENCE CHAIR**

#### **Co-chairs**

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Fergal Shevlin (DYOPTYKA)

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