

# CALL FOR PAPERS

## LDC2022

11th Laser Display and Lighting Conference

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



**Apr. 19 (Tue.) - Apr. 22 (Fri.), 2022**

**Hybrid Format**

**PACIFICO Yokohama, Japan + Online**

**Paper Deadline: ~~January 14 (Fri.), 2022~~**

**February 4 (Fri.), 2022 (EXTENDED)**

## **Introduction**

The Laser Display and Lighting Conference (LDC) is an international conference on laser displays, laser lighting, and related technologies. The 11th Laser Display and Lighting Conference (LDC2022) will be held in a hybrid format with both onsite (PACIFICO Yokohama, Japan) and online versions on April 19 - April 22, 2022. This conference is sponsored by the Optical Society of Japan in cooperation with several academic societies and associations. The LDC2022 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>Conference Chair</b>	Co-chair	Kazuo Kuroda
	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
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	Vice Co-chair	Kenji Yamamoto

## **Sponsors**

### **Sponsored by**

The Optical Society of Japan

### **Organized by**

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

### **In Cooperation with**

The Japan Society of Applied Physics

The Laser Society of Japan

Optica

International Society for Optics and Photonics (SPIE)

Consortium of Visible Laser Diode Applications (VLDAC)

Information Photonics

International Display Workshops (IDW) PRJ-WS

The Chemical Society of Japan

The Society of Polymer Science, Japan

## **Co-located Conferences**

Optics and Photonics International Congress (OPIC) 2022 is a five day event, including fifteen cutting edge conferences. OPIC2022 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) 2022, 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 LDC2022, you can participate in all international conferences.

## **Important Deadlines**

Regular Paper Submission: ~~14th January 2022~~ **4th February 2022 (EXTENDED)**

Post-deadline Paper Submission: 4th March 2022

Registration: TBD

## **Contact Us**

LDC2022 Secretariat Desk

ldc[at]opicon.jp

## **Scope**

LDC2022 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**

Display, projector, lighting, 3D imaging, and holography systems and technologies. Evaluation and reduction technologies of speckle and color speckle. Color management for laser-based display and lighting. Laser safety and standardization are also included.

### **C. Smart Systems**

Display, projector, lighting, 3D imaging, holography, and IoT systems for smart society, which are integrated with other functional devices or technologies, such as AI analysis / control, 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. AR, MR, VR, ... XR Technologies**

AR (Augmented Reality), MR (Mixed Reality), and VR (Virtual Reality). These concepts are collectively called XR (Cross Reality). XR technologies expanding human potential and having a great impact on life style as well as opening a new market. New platforms using XR technologies (relevant hardware, software technologies and their applications for human being).

### **E. Laser Applications for Automotive**

Lighting applications include headlights, rear lights, as well as other functional lighting devices for use in adverse weather conditions. Applications involving both lighting and display include road surface projectors. Sensing applications of particular attention are those for use in autonomous vehicles, such as ToF based LiDAR, as well as FMCW LiDAR. Light-based vehicle-to-vehicle communication will also be featured in this session.

### **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**

**Mitsuru Sugawara,** QD Laser Co., Inc.

"Future unlocked by semiconductor lasers"

**Jonas Zeuner,** VitreaLab GmbH

"Writing waveguides in glass for future laser displays"

## **Invited Talks**

**Hideo Fujikake,** Tohoku University

"Liquid crystal small-pitch device technology for electronic holographic three-dimensional displays"

**Mitsuru Funato,** Kyoto University

"Strategy for higher red emission efficiency based on InGaN lattice matched to ScAlMgO<sub>4</sub> substrates"

**Hong Hua,** University of Arizona

"Recent development of head-mounted light field displays"

**Andrzej Kaczorowski,** Vivid-Q

"Advances in real-time computer-generated holography for displays"

**Kenneth Li,** Optonomous Technologies, Inc.

"Etendue efficient laser excited static phosphor light Source with moving focal spot"

**Manuel Ligges,** Fraunhofer IMS

"Single photon detection with high temporal precision"

**Shuhei Matsuyama,** T & S Ltd.

"xR that will change the way we live"

**Paulo H. Moriya,** University of Strathclyde

"InGaN-diode pumped AlGaInP-based VECSEL"

**Tomoharu Nakamura,** Sony Group Corporation

"360-degree transparent display with HOE screen"

**Boon S. Ooi,** KAUST

"Gbps underwater wireless optical communication"

**Katrin Paschke,** Ferdinand-Braun-Institut

"Tapered lasers and amplifiers in the spectral range between 630 nm and 670 nm"

**Paul Rudy,** Kyocera SLD Laser, Inc.  
"Laser light sources for automotive illumination and sensing, specialty lighting, and LiFi communications applications"

**Yuji Sakamoto,** Hokkaido University  
"Current status and the future of electro-holography - Is Holographic room realizable? -"

**Tobias Schuster,** SeeReal Technologies  
"Real holographic 3D image generation with dedicated LCDs"

**Tomas Sluka,** CReal  
"Light-field enabling AR interaction within arm's reach"

**Yasuhiro Takaki,** Tokyo University of Agriculture and Technology  
"Contact lens display using holographic image generation"

**Masahiro Yamaguchi,** Tokyo Institute of Technology  
"Novel spatial visual interfaces based on the manipulation of light using"

**Baoping Zhang,** Xiamen University  
"Longer wavelength GaN-based vertical-cavity surface-emitting lasers"

### **Paper Publication**

The abstract book of LDC2022 will be published in **SPIE. Digital Library** on June to August 2022 (Free Access). The special issue on Laser Displays will also be published in Nov./Dec., 2022 issue of **OPTICAL REVIEW**, the journal edited by the LDC committee and will be distributed by Springer. All the authors of LDC2022 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, 2022)

A detailed instruction is available from the following website:

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

## **Committee**

### **CONFERENCE CHAIR**

#### **Co-chairs**

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Fergal Shevlin (DYOPTYKA)

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