Welcome to the 4th Laser Display and Lightning Conference, LDC '25. LDC is the international conference focused on laser displays, solid state lighting, and related technologies. The 1st and 2nd LDC were held in Yokohama in 2012 and 2013 respectively, and the 3rd in Taichung in 2014. These conferences were held under the name of "Laser Display Conference". During the preparation of this 4th conference, we have decided to rename it as "Laser Display and Lighting Conference". The research and development of laser lighting is close to that of laser displays. These two fields share common basic technologies, such as, the development of visible light sources, efficient illumination technologies, reduction of speckle, etc. Cooperative combination of laser-display and lighting fields would be beneficial to both.

LDC '15 is being held at Pacifico Yokohama, Yokohama, Japan, on April 22 - 24, 2015 with the sponsorship of the Japan Society of Applied Physics under the operation of Laser Display Research Group, the Optical Society Japan, in cooperation with several academic societies and associations. The LDC '15 is intended to provide a central forum for the presentation and discussion of scientific and technical information on laser displays and lighting, covering a wide range of fields from fundamental research to systems and applications. A total of 33 papers will be presented during the conference, consisting of 3 plenary talks, 11 invited papers, and 19 contributed papers. A few post deadline papers will be accepted. On the first day of the Conference, the LEDIA-LDC Joint Session on "Advanced GaN-
based light emitting devices and their applications" will be held. In this joint session, recent advances on lasers and LEDs based on GaN technology will be presented. After the final session, the Award Ceremony will be held at which several papers will be commended for their outstanding achievement.

We would like to extend our thanks to all the presenters and participants of LDC ’15 for their contribution to the success of the conference. We also express our sincere thanks to Takano·Eiichi Hikari·Kagaku·Kikin (Optical Science Foundation) for their financial supports. We hope that all the attendees enjoy the conference.

[LDC2015]

1) Trends in laser display and lighting technologies

Basic technologies: Development of high-power, high-efficiency, and long-life semiconductor lasers in visible region of spectrum is progressing rapidly. Especially green lasers are improved substantially and are available on the market. Speckle reduction technologies are in progress.

System technologies: Various kinds of laser display and lighting systems are under development. Cinema projectors: The output power of laser cinema display exceeds that of lamp-based projectors. Laser TV: Recent trend is partial usage of lasers for the LED-and-phosphor-based backlight of liquid crystal display. Portable and small size laser displays: Promising applications of small size laser display are head-up display for navigation system in vehicles and head mounted display as a wearable device. In the field of laser lighting, laser headlamps for vehicles are attracting much attention.

2) Topics

LDC2015 will have 2 plenary talks. Dr. Sugawara of QD laser will present “Retina Imaging Laser Eyewear”, related to smallest laser display. Dr. Hanzawa of Christie Digital Systems will do “Latest Developments in Laser Projector”, largest one. The conference also plans 12 invited talks (3 of 12 will be done at the joint session with LEDIA). The invited talks cover the wide technological area of laser display and lighting, speckle-controlled light source, speckle control optics, advanced lighting, visible light source, standardization and measurement, and advanced technology for laser displays. The LDC committee believes that the conference should offer the best opportunity not only to touch the state-of-the art laser display and lighting technology but also to expand human relationship for the attendees.
3) Output
Laser diodes are capable of realizing much larger and more real displays than ever seen before. Much smarter and brand-new laser-lighting applications with a variety of added values are also expected. Such products and applications will bring us ultra-energy-saving environments for our more comfortable and smarter life. A market-forecast says their annual sales will reach more than 50 trillion yen in 2030. The laser display/lighting market is expected to grow up to one of the biggest industries in the world, not only improving existent products but also making dreams of new services and applications come true.