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on Automotive Lightning**

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## **13th International Symposium on Automotive Lighting**

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## Foreword

It is a pleasure to present you the proceedings of the 13<sup>th</sup> International Symposium on Automotive Lighting, which takes place in Darmstadt on September 23-25, 2019. This conference is the document of a series of successful conferences since the first PAL-conference in 1995 and shows the latest innovative potentials of the automotive industry in the application of lighting technologies.

These proceedings result from the work of a lot of experts in the automotive and optical industry, administrative bodies, research institutes and universities. It summarizes the findings of more than 200 authors and co-authors and gives a scope of their expectations for the future. In 2019, the ISAL Steering Board could identify the following focus topics:

- Light source technology generally with the latest innovations in Laser and LED modules
- High Resolution Headlamps and Digital Light
- Road Projections
- Communication between automated vehicles and other road users
- Headlamp Rating Systems

While in the last couple of years, focus was placed high-resolution headlamps and this topic still remains relevant today, the most pressing topic for this year's ISAL is the visual communication between automated vehicles and other road users. While this topic includes the general question, if communication is necessary emphasis is also placed on how, when and where communication is needed. Another strong topic for this year's symposium is the ongoing investigation on road projection and its benefit for the driver. What kind of symbols should be projected onto the road in front of the driver and what benefit do they lead to?

Similar to ISAL 2017, ISAL 2019, will host a podium discussion on the latest research regarding the communication between automated vehicles and other road users. Discussing different findings over the last two years and the consequences for automotive lighting due to that.

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We wish you a very informative and successful ISAL 2019 in Darmstadt. We hope that this year's event and these proceedings will give you inspiration and motivation for your work during the next 24 months.

Yours sincerely,



Prof. Dr.-Ing. habil. Tran Quoc Khanh

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