



"HipE" research project successfully completed

Step toward a fully adaptive lighting system based on laser technology

Lippstadt, July 9, 2019. HELLA GmbH & Co. KGaA, a globally leading automotive supplier for lighting and electronics, and the Fraunhofer Application Center for Inorganic Phosphors in Soest, are co-developing a prototype lighting system for the future based on laser technology. The HipE (highly innovative pixelated phosphors for laser-based emissions in headlamps) research project was funded by the European Regional Development Fund (ERDF) over a period of three years and was successfully completed in February 2019.

To project the light exactly where the driver needs it when driving on public roads as well as detect potential hazards earlier on so that they can be avoided as quickly as possible, a fully adaptive, high-resolution light distribution system is required that can adapt to the traffic situation at hand in real time. To this end, both the headlamp and corresponding sensor system must be fitted to the vehicle. At the same time, the system must meet the heightened requirements when it comes to packaging, efficiency and illumination quality.

It is in this context that the Fraunhofer Application Center for Inorganic Phosphors tested different materials with respect to their suitability as part of the HipE research project – i.e. with regard to their conversion characteristics and heat propagation. The materials were then structured using a femtosecond laser, the removal parameters were optimized, the contrast was increased and the heat propagation in the pixelated phosphor was analyzed. During the course of the research project, HELLA designed and built a prototype for a high-resolution headlamp module incorporating a laser light source for subsequent use in the headlamp assembly. The lighting and electronics expert also checked which optical systems are suitable for meeting the requirements for a more compact design and greater efficiency.

PRESS RELEASE



As a result, it can be stated that structuring the phosphors can significantly improve the contrast between two pixels. To fully meet the requirements of a headlamp application, however, additional measures must be subsequently implemented to improve the contrast still further. The two project partners will continue to work together on this after the end of the research project.

Please note:

This text and corresponding photo material can also be found in our press database at: www.hella.com/press

HELLA GmbH & Co. KGaA, Lippstadt: HELLA is a global, family-owned company, listed on the stock exchange, with more than 40,000 employees at over 125 locations in some 35 countries. The HELLA Group develops and manufactures products for lighting technology and electronics for the automotive industry and also has one of the largest retail organizations for automotive parts, accessories, diagnostics, and services within Europe. With more than 7,000 people working in research and development, HELLA is one of the most important innovation drivers on the market. Furthermore, with sales of € 7.1 billion in the fiscal year of 2017/2018, the HELLA Group is one of the top 40 automotive parts suppliers in the world and one of the 100 largest German industrial companies.

For additional information please contact:

Dr. Markus Richter
Company spokesman
HELLA GmbH & Co. KGaA
Rixbecker Straße 75
59552 Lippstadt, Germany
Germany
Phone: +49 2941 38-7545
Fax: +49 2941 38-477545
Markus.Richter@hella.com
www.hella.com