



**Meng Han**

## **Laser Light Source for Lighting Applications**

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Recent progress in development of blue laser diodes and their integration with phosphors have enabled a new category of solid state light sources that deliver high luminance and advanced illumination effects especially for highly directional lighting. In this presentation, we discuss the challenges of phosphor converted laser light sources including optical performance, color uniformity, heat management and safety measures with different laser light source system design. An update on the capabilities of laser light source is provided including progress in luminous flux, luminance, efficacy, and color quality. Recently developed, innovative fiber coupled laser light modules with reflective phosphor produce precisely shaped road illumination pattern with compact optics and heatsink, which enables novel automotive lighting applications and stylish design covering low beam, high beam and patterned light projection by utilizing minimized size, ultra-long range and short throw optical modules.

Additionally, a dynamic laser light module with time variable illumination consisting of fiber coupled blue laser diode, a biaxial MEMS scanner and remoted phosphor will be introduced. The potential for simultaneous range detection (LiDAR) capabilities of the dynamic laser module and the feasibility of visible light communication (LiFi) with modulated laser light source will be presented, specifically for future intelligent lighting applications.

### **SHORT BIO:**

Meng Han is currently senior director of product marketing at SLD Laser since 2018. From 2010 to 2018 he was director of Lumileds to establish Asia Pacific Application and Development Center. He was project leader at Philips Germany from 2007 to 2010 to develop a laser Doppler ground speed sensor for vehicle stability control program. From 2001 to 2007 he was group leader at Kirchhoff Institute of Applied Physics, University of Heidelberg to develop a femtosecond Nd:glass laser for refractive surgery. He did his PhD research in laser material science at University of Goettingen, Germany from 1998 to 2000 as a Volkswagen fellow.