

LightTrans' posters at SPIE Photonics West 2019

Design of Single-Mode Fiber-Coupling Lenses and Tolerance Analysis

SPIE LASE – Posters-Tuesday (5 February 2019 | 18:00 – 20:00)

Wenxiu Wang, Liangxin Yang, Site Zhang, Huiying Zhong, Christian Hellmann, Frank Wyrowski

Single-mode fibers, due to their guidance of the single-mode, are helpful in e.g. optical communications, high-beam-quality fiber lasers, etc. For such applications, it is always relevant to investigate how to launch light into, and collect light from, the fiber efficiently. In contrast to the traditional parametric-based lens design, we present an approach, using the knowledge of the mode field of a single-mode fiber and following the inverse design concept from physical optics. The performance of the coupling system, especially its tolerance with respect to misalignment, can be analyzed and evaluated.

Design and optimization strategy of incoupling gratings for near-eye displays

SPIE OPTO – Posters-Wednesday (6 February 2019 | 18:00 – 20:00)

Site Zhang, Yichen Liu, Stefan Steiner, Christian Hellmann, Frank Wyrowski

Waveguide-based near-eye display devices are drawing much interest recently, and one of the key technologies of such devices is the incoupling grating for the planar waveguide. Based on an analysis in the spatial-frequency domain, we put forward a design strategy which helps to determine the supported field-of-view, and to find a reasonable value of the grating period and orientation. Subsequent optimization, using the rigorous Fourier modal method for the grating efficiency calculation, can be employed to find the suitable grating profiles that deliver uniform diffraction efficiencies over the desired angular range.

LIGHT
SHAPING



OPTICAL
METROLOGY



IMAGING
SYSTEMS



LASER
SYSTEMS



VIRTUAL AND
MIXED REALITY

