

## Webinar

Fast Physical Optics with VirtualLab Fusion

# Analysis and design of coupling systems for single-mode fibers

**Date:** 28 May 2019

**Times:** 10:00 – 11:00 and 17:00 – 18:00 (CET)

**Registration:** Please click on your preferred time to register – [10:00](#) or [17:00](#).

A sound analysis of the performance of a system whose purpose is to couple light into an optical fiber forcefully passes through a full physical-optics simulation of the set-up, as does a successful design of such a system: a small deviation in the position of the fiber entrance or in the beam profile, can affect the resulting coupling efficiency, with unnecessary waste of resources ensuing. VirtualLab Fusion, as a fully vectorial physical-optics software package, provides a flexible source model to realistically mimic the properties and behavior of light; an array of field solvers capable of efficiently simulating light propagating through high-NA lenses; a fast propagation operator to calculate the field in the focal region, and a bespoke detector for calculating the coupling efficiency via the overlap integral with respect to a fully customizable reference mode.

In this webinar we will take advantage of all of the above to guide the users through the following workflow, specific to the analysis and design of fiber-coupling systems:

- How to find the optimal working distance for off-the-shelf coupling lenses
- Compare the performances of different commercially available lenses
- Design a coupling lens with parametric optimization
- Perform tolerance and sensitivity analysis of fiber coupling setup

