Online Training

VirtualLab Fusion Applications, Technology and Workflows

Modeling Anisotropy and Crystals in VirtualLab Fusion

Date and Time:
15 – 16 March 2022 | 17:00 – 20:30 (CET)
17 – 18 March 2022 | 08:30 – 12:00 (CET)
Note: This Training will be held twice to adapt to different time zones worldwide

Duration and Intended audience:
- 3 hours per day | 2 days in sum
- Additional 30 minutes technical check on first training day
- Active and prospective users of VirtualLab Fusion who would like to gain a general understanding of the modeling of anisotropic media through exercises and examples. Beginner & experienced level.

Technical environment:
- The online training will be implemented with the platform "WebEx".
- Detailed technical instructions will be provided to participants in time before training.

Request an Offer

We know how important polarization effects are in modern optics. They can be anything from detrimental side effects not initially taken into account by a design to a desired feature of a specific setup, with the vectorial behavior offering new degrees of freedom for the design process. And generally, if we talk about polarization, sooner or later we will be talking about **crystals and anisotropy in general**.

The **fast physical optics software VirtualLab Fusion** boasts a thorough electromagnetic treatment of the field, from the specification of the source to the definition of the detector function, through the response of the components, so that all vectorial effects in the system can be considered. And now, it also comes with **a solver for anisotropic media fully embedded in its powerful field tracing engine**! In this interactive online training, our optical engineering experts will give you a brief overview of the basic technology of VirtualLab Fusion, introduce the new anisotropy-related features, and walk you through the simulation of several relevant examples!

Learning Outcomes
- Become familiar with the basics of our connecting field solvers technology
- Learn how to set up an optical system including anisotropic media & crystals
- Perform simulations of basic experiments with anisotropy, like birefringence
- Use crystals in practical applications, like a reflective polarizer for use in an LCD
- Dive into new opportunities for the design of optical coatings with anisotropic layers

LIGHTTRANS

Agenda

15 – 16 MARCH 2022	**17 – 18 MARCH 2022**

DAY I

▪ **17:00 – 17:30** Welcome and technical check	▪ **08:30 – 09:00** Welcome and technical check
▪ **17:30 – 18:00** The basics of VirtualLab Fusion	▪ **09:00 – 10:30** The basics of VirtualLab Fusion
▪ **18:00 – 18:10** Break	▪ **10:30 – 10:40** Break
▪ **19:10 – 20:00** Features of field solver for anisotropic media and crystals	▪ **10:40 – 11:30** Features of field solver for anisotropic media and crystals
▪ **20:00 – 20:30** Playtime and Q&A	▪ **11:30 – 12:00** Playtime and Q&A

DAY II

▪ **17:00 – 18:30** Basic experiments with crystals in VirtualLab Fusion	▪ **08:30 – 10:00** Basic experiments with crystals in VirtualLab Fusion
▪ **18:30 – 18:40** Break	▪ **10:00 – 10:10** Break
▪ **18:40 – 19:30** Modeling of real-life applications in VirtualLab Fusion	▪ **10:10 – 11:00** Modeling of real-life applications in VirtualLab Fusion
▪ **19:30 – 20:00** Playtime and Q&A	▪ **11:00 – 11:30** Playtime and Q&A

Please note that this timetable is intended to serve as orientation only. The organization of the time slots during the actual training may be adjusted on the spot and will depend on the dynamics of the group on the day.
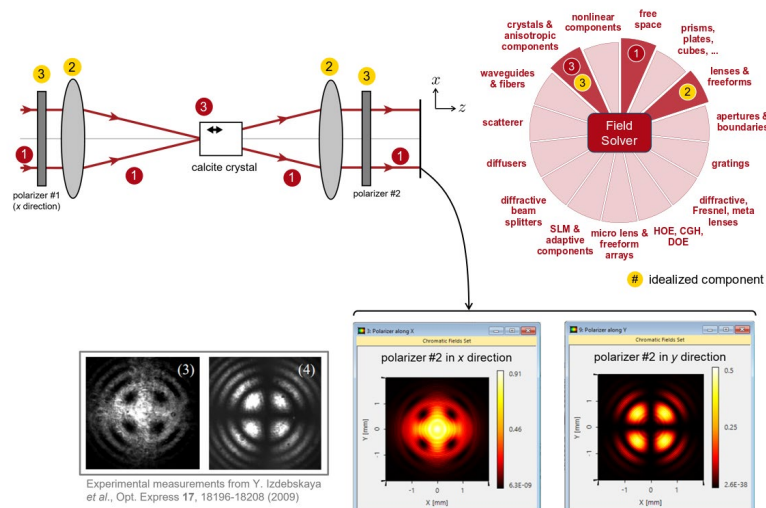
This figure demonstrates not only how a uniaxial crystal is changing the polarization state of the impinging light but also how accurate the propagation through a crystal plate can be modeled in VirtualLab Fusion based on physical optics concept. Here, the comparison between the results in VirtualLab Fusion and the mentioned paper is a good illustrative example.

LIGHTTRANS