WYROWSKI

VirtualLab FUSION

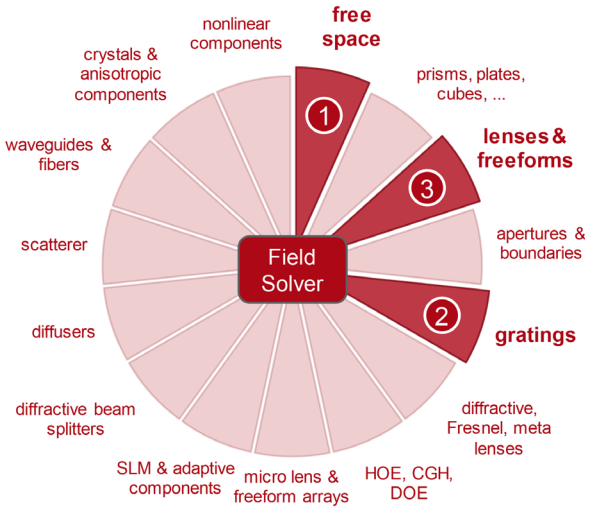
FAST PHYSICAL OPTICS SOFTWARE

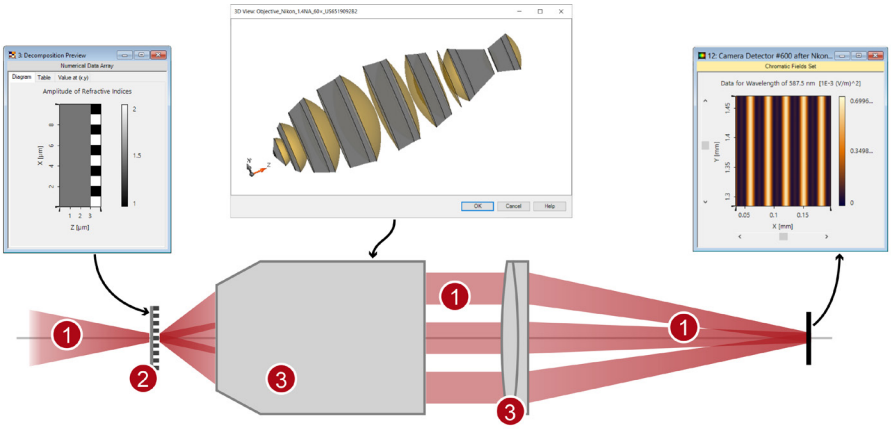
Design of Gratings and Their Modeling within Optical Systems

Gratings are increasingly gaining importance in modern optics for various applications. Subwavelength structures including metastructures require vectorial electromagnetic methods. VirtualLab Fusion provides full solutions, from the design of single components to their application in a complex optical system.

Benefits in VirtualLab Fusion

- **In-built rigorous Fourier modal method** (FMM), a.k.a. rigorous coupled wave analysis (RCWA)
- **Convenient graphical interface** for grating structure configuration (surface / holographic / slanted gratings / meta-gratings)
- **Optimization workflow** available for selected grating applications
- **Convenient inclusion and use of gratings** in a general optical system, together with other components





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Polarization-Conversion Grating

- Properly designed sub-wavelength gratings can be used for polarization control.
- Such gratings must be analyzed rigorously.
- Convenient visualization of polarization-dependent diffraction efficiencies.

Slanted Grating Design

- Slanted gratings are known for efficient lightguide coupling.
- Structural parameters of slanted gratings can be optimized.
- optiSLang and other external optimizers can be used.

Polarization-Insensitive Grating Design

- VirtualLab Fusion has convenient tools for monitoring polarization-related properties.
- An optimization workflow is available for design of high-efficiency polarization-independent binary gratings.

Holographic Grating and Multiplexing

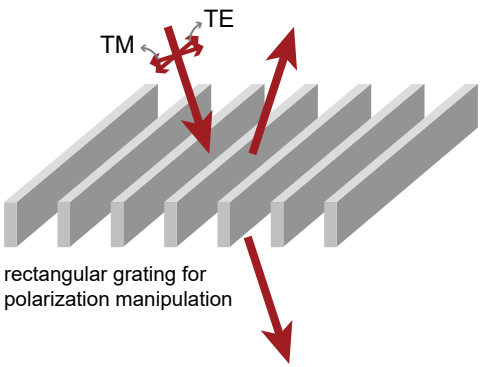
- Convenient user interface is available for defining volume gratings according to holographic process.
- Analysis of either wavelength or angle multiplexing is possible.

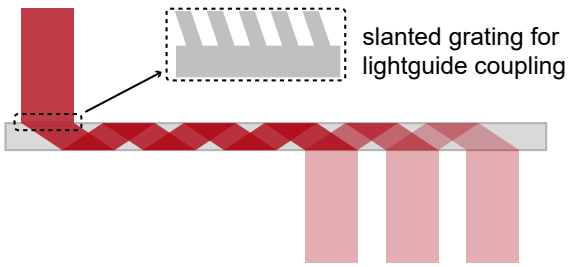
Meta-Grating in Lightguide Structure

- With spatially varying subwavelength cells, one can compose the so-called meta-gratings.
- Meta-gratings can be modeled on either the building-block level, or as a whole grating period, rigorously.

Dot-Cloud Projection System

- Non-paraxial beam splitters are the key components in dot-cloud projection setups.
- Rigorous modeling of non-paraxial beam splitters enables exact evaluation of the system performance.





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