

Tuesday August 13th to Friday August 16th 2013 (9AM – 16.30 PM)

Venue:

Technical University of Denmark (DTU),
Fotonik Department, Risø Campus,
Frederiksborgvej 399,
Building 130 (Upstairs), Meeting Room,
4000 Roskilde, Denmark.

Course fees:

Course fees for **1st day: 150 pounds / person + VAT (if applicable) and 4 days: 780 pounds / person + VAT (if applicable)**

Course overview:

Day 1:

- Introduction to Zemax and to Zemax interface
- Optical aberrations
- Introduction to optimization with a simple example
- Example: design of a diffraction-limited IR lens – a few words on global optimization

Day 2:

- Coordinates breaks and application to the design of an off-axis parabola
- Diffractive optics: examples of the achromatic singlet and the spectrometer
- Physical Optics Propagation: principles and examples

Day 3:

- Introduction to Zemax Non-Sequential mode
- Basics of photometry – modelling sources in Zemax
- Basics of colorimetry – modelling colour in Zemax
- Optimization in Non-Sequential mode

Day 4:

- Analysing a Ray database
- Geometry creation
- Optical properties, coating and polarization
- Importing and exporting CAD objects
- Surface and bulk scattering
- Overview of macro language and creation of User-Defined Non-Sequential objects

For the following topics, the trainer will direct people to articles on our Knowledge base, and answer questions during the breaks:

- Stray light analysis
- Tolerancing a Non-sequential system
- Handling errors in Non-Sequential mode

Proposed topics:

1. Illumination system with example of LEDs
 - a. Optimization of illumination systems
 - b. Tolerancing of illumination systems
 - c. Using measured source and spectral data
 - d. Source objects
2. Controlling unwanted light
3. Scattering and BSDF
4. Aberration description
5. Colorimetry & color mixing of RGB, having individual spectral power distribution (SPD)
6. Uniformity simulation and optimization of output beam spot
7. Geometry of the objects
8. Compound parabolic concentrators and giving example with parabolic mirror
9. Detector objects with example of colorimetry detector
10. Working with CAD modules
11. Error handling with examples
12. Design Tolerance and optimization functions
13. Zemax Part designer in context of specific project related to LED team
14. ZSO editor
15. Zemax programming in context of specific project related to LED team

Contact Person:

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