

RSoft Training

Register today for the upcoming RSoft training. To register, or for more information, contact us about this event.

RSoft Active Component Tool Training

RSoft's Photonic Component Design Suite allows users to design and simulate both passive and active photonic devices for optical communications, optoelectronics, and semiconductor manufacturing applications. The Suite is easy to use, accurate, and provides increased design flexibility for fast virtual prototyping.

RSoft Active Component Tool

GOALS FOR THIS COURSE

This training program begins with the basics of the LaserMOD™ Tool and gradually moves to intermediate and advanced topics. Here's a summary of topics that will be covered:

1st session – 3 hours

Slides :

- A. Overview of the active devices which can be simulated in LaserMOD™
 - Meshing of device cross-sections
 - Use of RSoft Mode Solvers
- B. Introduction of simulation methodology used by LaserMOD™
 - Simulation flows
- C. Utilities involving LaserMOD™

Demo :

- A. Review of RSoftCAD™ topics that apply to LaserMOD™
 - Symbol Tables
 - Passive Materials
 - Mode & Index File passing (to/from LaserMOD)
- B. Introduction to the LaserMOD™ CAD
 - Geometric Elements
 - Symbol Table Hierarchy
 - Active Materials
 - Use of RSoft Passive materials
- C. Meshing & Tiling
 - Use of Global and Local Mesh parameters
- D. Profile Generation
 - Index, doping, custom parameters
- E. Advanced LaserMOD™ CAD layout options
 - Alloy & Doping Profiles
 - Importing layer files
 - Coupled QWs (optional)
- F. Material Gain Calculation
 - Density / Temperature Sweep
 - Gain, PL, Index, Peak plots
 - Bulk vs QW
 - Gain Tables (optional)
- G. Mode solving
 - Creating a Table (optional)
 - Waveguide Modes: Ritz, BeamPROP™, FemSIM™
 - Cavity Modes: TMM, FemSIM™
 - Incident Fields: TMM
 - Importing Mode(s), Cavity Lifetime
- H. Bias Table
 - Steady-State / Transient
- I. Full active simulation
 - Model selection
 - Clearing old data
 - Recalculating the Gain/Modes
 - Threshold Bias
- J. Extracting Simulation Results
 - Standard Plots (extras)
 - Plot Dependencies
 - Custom Bias / Spatial / Energy Plots
 - Output options : FF orientation, axis, etc...
- K. Scanning of design parameters
 - Multi-variable scanning via scripting
- L. Advanced simulation techniques
 - Commonly used symbols not currently in the Dialogs
 - Convergence and re-meshing

Light Tec Training Series

2nd session – 3 hours

- A. FP Lasers (1D, 2D)
 - Waveguide Mode Calculation
 - Steady-State (Calibration)
 - Small signal (Frequency Response)
 - Large signal (Eye)
 - Self-Heating (Calibration)
- B. VCSELs (1D, quasi-3D)
 - Cavity Mode Calculation
 - Optical vs Full DBR
- Alignment with Gain
- Self-Heating (Calibration)
- C. DFBs
 - Cavity Mode Calculation
 - Alignment with Gain
 - Mode Competition
- D. External Cavity (optional)
 - Micro Cavity (optional)

3rd session – 3 hours

- A. Photodetectors
 - Reverse Bias
 - Surface normal
 - Responsivity
 - Frequency Response
 - Waveguide
 - Field Decay
- B. Modulators (FCA)
 - Frequency Response
 - MZM formulas
- C. Utilities including active device simulate (optional):
 - Solar Cell Utility™
 - Multi-Physics Utility™, (FCA, EAM, transients)
 - Tapered Laser Utility™

WHO SHOULD ATTEND?

Any engineer or designer who wants to learn to use design software for semi-conductor Lasers modeling will benefit from this course. Though not required, some familiarity with Lasers and CAD (concepts and terminology) is helpful.

Topics are subject to change according to the participant's needs.

Contact Us**Light Tec**

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