



OptiBPM

What's New in

10.0

Created to address the needs of research scientists, component design engineers, and students; OptiBPM satisfies the demand of users who are searching for a comprehensive CAD environment used for the design of complex optical waveguides.





What's new in OptiBPM 10

The most comprehensive CAD environment used for the design of complex optical waveguides is even better with the release of OptiBPM 10, now Windows 7 compliant.

The latest version of OptiBPM introduces a number of new features and includes the addition of **OptiMODE**, a robust application used to create complete mode solving projects with the same level of design toolkits (layout designer, simulator, VB Script, Analyzer) utilized in BPM and FDTD projects.

Two new numerical methods are also featured in 2D mode solving and Anisotropic BPM.

New Applications

OptiMODE: Introducing a new application available to create a complete project out of mode solving.

In most cases, the first stage of optical design is the design of the optical waveguide itself. At this stage, mode solvers are the natural simulators to use. In OptiBPM 10, one can specify materials and profiles, and then create a project using **OptiMODE XS Designer**.

The OptiMODE design application is dedicated to the cross section of the waveguide only. The associated Simulator accesses all 3D mode solvers available from Optiwave, and is supported by a post processor Analyzer application, in the same style as OptiBPM and OptiFDTD. The designer also supports VB Scripts which facilitate batch simulation automation to scan or optimize design parameters.

Once the design is finished, the optimized profile can be added to the Master profile list in the Profile Designer, for use in subsequent OptiBPM (or OptiFDTD) simulations.

- **Additional feature in OptiMODE:** The solving of modes from user-defined refractive index distributions. Import a file with any kind of refractive index distribution into the OptiMODE XS Designer.

New ADI Methods for Full Vector AnisoBPM: Introducing a new BPM simulator in OptiBPM 10 based on the Alternating Direction Implicit (ADI) technique, which is much faster than methods (Crank-Nicholson method) used in previous editions of OptiBPM. Users now have the option to select one of the two ADI techniques based on their simulation requirements.



New Features

- **Advanced control over simulation data output:** Introducing new script commands that direct any of the Simulator output to an appropriately named ASCII file in the Optiwave format. This new feature makes custom post processing easier in porting data to 3rd party applications.
- **2D Cauchy Integral mode solver:** The 2D mode solver in OptiBPM is now enhanced to find **lossy and leaky modes**, as well as **surface plasmon modes**.

This mode solver exploits the Cauchy Integral rule – where the number of poles inside a closed path in the complex plane is given from the path integral over the contour. The algorithm sets up the dispersion equation for the given multilayer and searches for the modes in the form of poles in the complex plane. Users also have the flexibility to change the path to look for modes elsewhere.

- **3D Layout Designer:** The Layout Designer is now enhanced with full three-dimensional (3D) view of the design. One can rotate, move, and view designed structures in a versatile 3D environment with zoom in/out capabilities from any angle or position. Users no longer are limited to analysis of two-dimensional refractive index cross-section to deduct the spatial shape of the design.
- **Modal group delay and dispersion:** OptiMODE includes a special feature to plot modal index vs. wavelength. This data is displayed in the OptiMODE Results Analyzer. Users can also calculate and plot group delay and dispersion spectra.
- **Sellmeier definition of dispersion:** With this convenient feature, OptiBPM and OptiMODE will adjust the refractive index according to the current wavelength. This is especially useful in the calculation of modal dispersion. The result will include material dispersion as well as waveguide dispersion.

New applications and Validation Projects

Additional new applications and validation projects are included in OptiBPM 10.

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