OptoCompiler

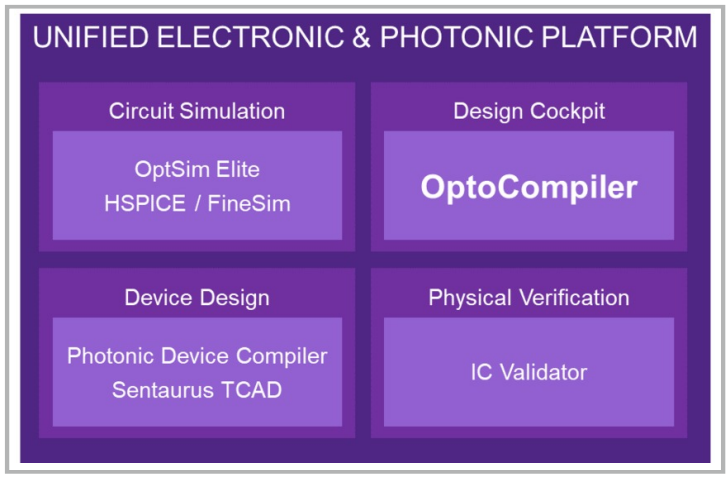
Unified Electronic and Photonic Design Platform

Features at Glance

- OptoCompiler combines specific capabilities for photonic design with industry-proven electronic design methods in a unique, unified platform to make photonic IC design accessible, fast, and flexible
- Supports electronic-photonic co-design to ensure scalable design processes
- Provides comprehensive features for hierarchical design to enable design teams to collaborate and accelerate product development

Overview

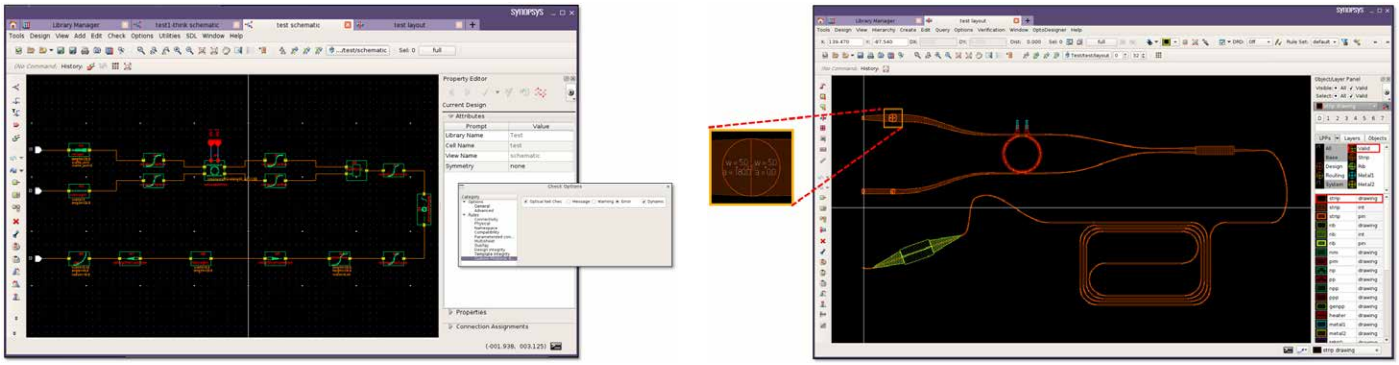
OptoCompiler is the industry's first unified electronic and photonic design platform, combining mature and dedicated photonic technology with Synopsys' industry-proven electronic design tools and methods to enable engineers to produce and verify complex PIC designs quickly and accurately. By providing schematic-driven layout and advanced photonic layout synthesis in a single platform, OptoCompiler bridges the gap between photonic experts and IC designers to make photonic design accessible, fast, and flexible.



Key Features

OptoCompiler combines unique capabilities for photonic design with industry-proven EDA capabilities, including:

- Support for electronic-photonic co-design to ensure scalable design processes
  - Photonic design in the same environment as analog/mixed-signal electronics design
- Comprehensive features for hierarchical design to enable multiple designers to work closely together to shorten product development cycle times
  - Top-down or bottom-up hierarchical design, enabling different teams to work on different parts of a design
  - Version control integration



- Ability to use dedicated native photonic simulators in conjunction with industry-standard electrical simulators for accurate simulation results that account for statistical variations
  - OptSim Elite provides electro-optic (E/O) co-simulation with Synopsys' electrical circuit simulators, and integrates seamlessly with OptoCompiler's simulation and analysis environment
- Seamless design and simulation of custom photonic components for inclusion in design alongside process design kit (PDK) components
  - Photonic Device Compiler enables IC designers and PDK developers to design, analyze, and optimize photonic devices within OptoCompiler
- Ease-of-use features such as native optical port and net support, assisted waveguide routing, auto-alignment of photonic circuits, and curvilinear layout synthesis
  - Optical ports can only connect to other optical ports, and only one-to-one
  - Photonic connectors simplify layout process by automating a photonic waveguide between two components and back-annotating its contents for re-simulation. Routing can be adjusted to interactively avoid obstacles with FlexConnectors
  - Seamless abutment of pcells ensures that no gaps or overlaps appear even when two photonic devices are abutted at an arbitrary angle
  - Entire subcircuits can be seamlessly abutted with a single command
  - Automatic on-grid creation of all needed layers for curvy waveguides in photonic pcells
  - Automatic synthesis of phase-sensitive connections and full lattice filters
- Supports industry standards: Python, TcL and OptoDesigner for scripting and iPDK technology to support PDK development

For more information and to request a demo, contact Synopsys' Photonic Solutions at photonics@synopsys.com or visit synopsys.com/photonic-solutions/optocompiler.html.

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