Synopsys' RSoft Photonic Component Design Suite Version 2017.03 Accelerates Optoelectronic Device Analysis

Updated Interface with Synopsys Sentaurus TCAD Products and New High-Speed Optical Absorption Calculation Now Available

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Highlights:

- Enhances integration with Synopsys' Sentaurus TCAD products
- Speeds simulations of waveguide photodetectors by as much as 100x
- Improves the bidirectional scattering distribution function calculation for mixed-level LED/OLED simulations

Synopsys, Inc. (Nasdaq: SNPS) today announced the latest release of itsRSoft™ Photonic Component Design Suite, the company's industry-leading software for the design of photonic devices and components used in optical communications, optoelectronics and semiconductor manufacturing. Version 2017.03 of the RSoft Photonic Component Design Suite accelerates optoelectronic device analysis with an updated interface to Synopsys' Sentaurus™ TCAD products and new general monitor objects in the RSoft BeamPROP™ tool that can speed simulations of waveguide photodetectors by as much as 100x compared to finite-difference-time-domain (FDTD) methods. The release also builds on the RSoft tools' capabilities for modeling nanoscale optical structures with an improved bi-directional scattering distribution function (BSDF) calculation for mixed-level LED/OLED simulations.

Sentaurus TCAD Interface: Enhanced Usability and Faster Waveguide Photodetector Simulations

The Sentaurus TCAD interface provides seamless integration of the RSoft optical tools in Sentaurus Workbench for in-depth, multidisciplinary simulations of optoelectronic devices. Usability improvements include support for systems with dispersive materials and dynamic updates of materials and the common simulation area. Native bi-directional data interchange between the RSoft tools and Sentaurus Workbench has been expanded to include the BeamPROP tool for waveguide detector simulation, giving designers a substantial speed advantage. Specifically, BeamPROP's new general monitor objects perform highly efficient optical power absorption calculations to speed photodetector simulations by up to 100x when compared to FDTD-based methods. This enables faster device characterization and optimization and also reduces time-to-market and development costs.

"Designers can use the RSoft-Sentaurus TCAD interface for accurate, high-speed simulations of complex optoelectronic that benefit from both photonic and electronic simulations," said George Bayz, vice president and general manager of Synopsys' Optical Solutions Group. "For example, the new version offers significantly faster simulations of waveguide detectors used in photonic integrated circuits."

Improved BSDF Scattering Calculation

The release improves Synopsys' unique LightTools® and RSoft mixed-level co-simulation method, which combines ray- and wave-based techniques to incorporate polarized diffraction effects in LightTools' ray-tracing simulator with accuracy and efficiency. The co-simulation method uses the RSoft BSDF capability, which now performs more robust scattering calculations of polarization-dependent effects in nanoscale optical structures. This can be useful for designing LEDs and OLEDs used in high-efficiency backlights, projection display lighting and sensors.

About Synopsys RSoft Products

Synopsys RSoft products are leading solutions in photonic design software and serve several industries including optical communication, optoelectronics and semiconductor manufacturing. RSoft products provide a full range of design, optimization and planning tools for optical communications, as well as solutions for optoelectronics components and subsystems. Learn more at http://optics.synopsys.com/rsoft.

About Synopsys

Synopsys, Inc. (Nasdaq: SNPS) is the Silicon to Software™ partner for innovative companies developing the electronic products and software applications we rely on every day. As the world's 15th largest software company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and is also growing its leadership in software security and quality solutions. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors,

or a software developer writing applications that require the highest security and quality, Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at http://www.synopsys.com/.

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