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From Layout to Multiphysics: Integrating Thermal and Photonics Simulation into the PIC Design Flow

Thursday, April 19, 2018 11:00 AM - 12:00 PM EDT

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Presented by



About This Webinar

Presented by CST, this webinar will show you how to use CST STUDIO SUITE® to simulate the design of Photonic Integrated Circuits (PICs). It will demonstrate the complete workflow to analyze thermally tuned PIC devices, starting from a component model in Luceda Photonics IPKISS.

PICs are becoming more important in many areas, such as communications, remote sensing and medical applications. Designers in this field rely on simulation to study and optimize a circuit, even before the prototype stage. Simulating such devices can be challenging because of their large size in relation to the wavelength of interest and the need for multiphysics simulation. For example, PIC components are often thermally tuned to operate at a specific wavelength.

CST STUDIO SUITE® offers a unique platform to address these challenges. The user-friendly, interactive GUI allows the user to build geometries or import them from common layout formats (e.g., GDSII, DXF). A link to Luceda Photonics IPKISS allows a completely automated model generation from layout data.

The photonic/plasmonic behavior of the device can then be simulated by selecting the most appropriate algorithm (e.g., FIT/FDTD, FEM, BEM/MoM, MLFMM, and more). Dispersive, anisotropic and nonlinear materials are supported. High-performance computing (HPC) options, such as MPI or GPU, are available, and the results can be displayed and analyzed in the GUI using a comprehensive postprocessing library and state-of-the-art visualization engine.

About the presenters:

Frank H. Scharf joined CST Germany in 2008 and transferred to CST of America in 2009. He currently works as a principal application engineer and coordinator for optical applications. Scharf obtained his Ph.D. in electrical engineering from Ruhr-Universität Bochum, Germany. During his graduate studies, he focused on modeling and simulating the plasma sheath in high-intensity discharge lamps.

Pierre Wahl co-founded Luceda Photonics in 2014. At Luceda he is in charge of sales, support and training operations. He trains and supports R&D teams of major corporations, research institutes, foundries and universities in China, North America and Europe. Wahl completed a Ph.D. in optoelectronics at the Free University of Brussels and on ultralow energy optical interconnects at Stanford University in 2014. He obtained a master's degree in photonics from the University of Ghent and the Free University of Brussels in 2010. He has coauthored multiple journal publications and delivered talks about specialized design, simulation and optimization techniques used in integrated photonics.

Who should attend:

PIC designers, and anyone who is interested in learning how to use 3D electromagnetic simulation tools for optical design. You will learn about the scope of CST STUDIO SUITE® and how you can benefit from its use.

About CST:

CST is a market leader in providing 3D EM field simulation tools through a global network of sales and support staff and representatives. Its solutions are used globally by market leaders in a diverse range of industries, including aerospace, automotive, defense, electronics, health care and telecommunications. CST is part of SIMULIA, a Dassault Systèmes brand.



Mark Your Calendar

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