Latest Release of Synopsys' CODE V Enhances Design of High-Performance Asymmetric and Freeform Optical Systems

CODE V Optical Design Software Release 10.8 Is Now Generally Available

MOUNTAIN VIEW, Calif., Dec. 9, 2015 /PRNewswire/ --

Highlights:

- Enhanced computations of first-order properties enable superior optimization and analysis of asymmetric and freeform optical systems
- Extended aspheric surface formulations provide improved manufacturability
- Macro-PLUS enhancements extend workflow customizations
- Expanded materials library includes NHG glass catalog

Synopsys, Inc. (Nasdaq: SNPS) today announced the release of its CODE V® version 10.8 solution, the company's industry-leading software application for the design of imaging optical systems. The CODE V optical design software release 10.8 supports the design of high-performance asymmetric and freeform optical systems with algorithmic enhancements that yield highly accurate computations of optical system parameters and enable precise control of those parameters during design optimization. In addition, CODE V 10.8 provides designers with extended aspheric lens formulations, new ways to customize workflows and an expanded materials library.

"The updates in Synopsys' CODE V 10.8 help streamline the design of innovative optical applications," said George Bayz, vice president and general manager of Synopsys' Optical Solutions Group. "For example, we've strengthened CODE V's industry-leading analysis and optimization capabilities with computational enhancements specifically targeted to address the unique challenges of optical systems containing tilted and decentered elements."

"We rely on the speed, stability and flexibility of CODE V's optimization capabilities to develop sophisticated optical systems," said Russ Hudyma, managing partner, Hyperion Development LLC. "With its global optimization features, its ability to control constraints exactly, and an interface that allows us to set up user-defined merit functions quickly and easily, CODE V gives us ultimate design freedom."

Enhanced Computations for Systems without Symmetry

CODE V 10.8 includes algorithmic enhancements to yield highly accurate first-order computations during ray tracing of asymmetric optical systems, including those with tilted and decentered components as well as freeform surfaces. The computations are based on a rigorous approach that analyzes the matrix optics behavior of imaging systems and allows superior control of the optical system baseline attributes when using CODE V's powerful optimization engine. This approach is particularly useful for the analysis of systems such as helmet-mounted displays, optics-enabled wearables, segmented aperture telescopes, heads-up displays and unobscured reflective systems.

Extended Formulation for Aspheric Surfaces

Aspheric surfaces in CODE V, based on the Qbfs mathematical formulations published by Dr. G.W. Forbes, have been extended to support a non-zero conic constant. The extended formulations provide improved manufacturability of strong aspheres assuming interferometric testing. The new formulations are particularly useful for the design of compact optical systems that benefit from the use of aspheres to adhere to stringent packaging and image resolution requirements.

Macro-PLUS Enhancements

CODE V's Macro-PLUS™ programming capabilities offer optical designers flexibility to automate and streamline their optimization, analysis and tolerancing workflows. CODE V 10.8 includes several new built-in optical functions, improved access to optical database information and updated example macros to further extend the ability of users to customize CODE V to their own requirements.

NHG Glass Catalog

CODE V has added the NHG glass catalog from Hubei New Huaguang Information Materials Co., Ltd. to the program's materials library. The NHG catalog has been integrated into CODE V features such as Glass Expert,

which automatically selects the best set of glasses for a lens design to maximize performance while controlling manufacturing costs.

Availability & Resources

CODE V version 10.8 is available now. Customers with a current maintenance agreement can download this version from the Synopsys website using their SolvNet® account.

About CODE V

CODE V is an optical engineering and design software solution that supports the optimization, analysis and tolerancing of image-forming optical systems and free-space photonic devices. For more information, visit http://optics.synopsys.com/codev.

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 16th largest software company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and is also a leader in software quality and security testing with its Coverity® solutions. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing applications that require the highest quality and security, Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at www.synopsys.com.

Editorial Contacts:
Tess Cahayag
Synopsys, Inc.
650-584-5446
maritess@synopsys.com

SOURCE Synopsys, Inc.