Synopsys Announces Results of Robert S. Hilbert Memorial Optical Design Competition

Annual Competition Recognizes Student Achievements in Optical Design

MOUNTAIN VIEW, Calif., Sept. 4, 2013 /PRNewswire/ -- Synopsys, Inc., a global leader providing software, IP and services used to accelerate innovation in chips and electronic systems, today announced that four students, Matthew Bergkoetter, James Corsetti, and Jonathan Papa, all of the University of Rochester; and Tzu-Yu Wu of the University of Arizona, are the winners of the 2013 Robert S. Hilbert Memorial Optical Design Competition. The competition was established in 2000 by Optical Research Associates (ORA®), now the Optical Solutions Group at Synopsys, and was named in honor of ORA's former president and chief executive officer Robert S. Hilbert. The annual competition is open to students in North America working toward a bachelor's, master's, or Ph.D. degree who utilize Synopsys' CODE V® or LightTools® software to perform optical design and engineering research. The awards are granted to students who have submitted papers that demonstrate optical design excellence.

Matthew Bergkoetter of the University of Rochester was recognized for his work on biometric imaging using CODE V as documented in his paper titled, "Extended Depth of Field in an Intrinsically Wavefront-Encoded Biometric Iris Camera." Bergkoetter optimized his design to increase the lens system's depth of field, to make it easier to align and focus on a human eye in an iris recognition system. Applications of Bergkoetter's project include identity authentication and facility access control.

James Corsetti of the University of Rochester was recognized for his project using CODE V titled, "Design of a Gradient-Index Zoom Lens over the Mid-Wave Infrared." Corsetti explored the use of gradient-index (GRIN) materials in zoom lens systems to improve imaging performance in the mid-wave infrared (MWIR) portion of the electromagnetic spectrum. For example, GRIN elements in a MWIR system can be useful for correcting chromatic aberrations, or color fringing, for night vision, navigation and medical imaging applications.

Jonathan Papa of the University of Rochester was recognized for his project using CODE V titled, "220 Degree Field of View Fisheye Lens for Full Frame SLR Camera." With assistance from CODE V's Glass Expert tool, which uses a unique algorithm to select the best set of glasses for a user's lens design, Papa produced a design that features fewer lens elements, a smaller package size and improved imaging performance over traditional fisheye lenses. Potential applications of his work include panoramic photography and meteorological imaging systems.

Tzu-Yu Wu of the University of Arizona used both CODE V and LightTools in his project titled, "Development of Confocal Microendoscopy for Precancer Detection." In CODE V, Wu designed a miniature lens for use in a confocal microendoscope with high resolution for cellular visualization. In LightTools, he performed stray light analysis to simulate and fix any issues created by potential unwanted light in the optical system. Wu's design is intended for medical imaging systems that provide early cancer detection.

"We congratulate this year's winners for their demonstration of strong optical design knowledge and innovative use of CODE V and LightTools," said George Bayz, vice president and general manager of the Optical Solutions Group at Synopsys. "They leveraged the software to explore new areas of optical design, as well as to improve upon more traditional applications."

About the Robert S. Hilbert Memorial Optical Design Competition

The annual Robert S. Hilbert Memorial Optical Design Competition recognizes excellence in optical design projects completed by students. The competition honors the memory of Robert Hilbert (1941-2008), former president and chief executive officer of Optical Research Associates, who was deeply committed throughout his career to fostering technical innovation in optics and supporting optics education. The competition is open to students in North America working toward a bachelor's, master's or Ph.D. degree. To participate, students can enter an optical design class assignment or thesis work that uses CODE V or LightTools software. For more information, visit http://optics.synopsys.com/learn/learn-design-competition.html.

About Synopsys

Synopsys, Inc. (Nasdaq: SNPS) accelerates innovation in the global electronics market. As a leader in electronic design automation (EDA) and semiconductor IP, Synopsys delivers software, IP and services to help engineers address their design, verification, system and manufacturing challenges. Since 1986, engineers around the world have been using Synopsys technology to design and create billions of chips and systems. Learn more at www.synopsys.com.

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

Lisa Gillette-Martin
MCA, Inc.
650-968-8900, ext.115
lgmartin@mcapr.com

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