Synopsys Announces 2017 Robert S. Hilbert Memorial Optical Design Competition Results

18th Annual Competition Recognizes Student Achievements in Optical Design

MOUNTAIN VIEW, Calif., Aug. 8, 2017 /PRNewswire/ -- Synopsys, Inc. (Nasdaq: SNPS) today announced that students from the University of Arizona and University of Rochester received awards for their entries in the 2017 Robert S. Hilbert Memorial Optical Design Competition. Now in its 18th year, the annual competition is open to students in North America working toward a bachelor's, master's or doctorate 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.

This year's award winners are:

Hekun Huang of the University of Arizona, for his paper titled, "Design of an Integral-Imaging-Based Light Field Head Mounted Display Using Freeform Optics." Huang presented a miniature 3D light field display system for use in head-worn, augmented-reality technologies. Huang designed the system in CODE V using freeform eyepiece optics and a micro-integral imaging module to decrease the overall weight and volume of the system while providing a high-quality 3D display intended to reduce visual fatigue.

"The Robert S. Hilbert Memorial Design Competition award means a lot to me," said Huang. "Exploring CODE V is fun and exciting, and I believe it will be a great help for my future career in optics."

Nicholas Kochan of the University of Rochester, for his paper titled, "Design Study: Dual Band Solar Concentrator/Coupler." Kochan used CODE V and LightTools to design an optical solar concentrator that combines solar photovoltaic and daylighting collection into a single unit to maximize the amount of solar energy captured and utilized. Kochan's design concentrates broadband visible light into a flexible optical fiber or lightguide to deliver natural light to a room while simultaneously concentrating infrared light onto a photovoltaic cell for conversion to electrical energy.

"I'm grateful that opportunities like this competition are generously supported," said Kochan. "I hope that in my career I can further this momentum to explore optics and encourage others to join the optics community."

Maximillian Bruggeman of the University of Rochester, for his paper titled, "Design of a Telephoto SLR Camera Lens from Scratch." Bruggeman presented a 200 mm lens design that meets all manufacturing and packaging specifications. He used the CODE V SpecBuilder™ feature throughout the project to monitor and optimize the design. Additionally, he used the CODE V Glass Expert tool for color correction, the CODE V General Tolerance Sensitivity optimization constraint to reduce system sensitivity to tolerances, and the CODE V Wavefront Differential Tolerancing (TOR) and Interactive Tolerancing features for rapid tolerancing and identification of the most effective locations of compensators.

"I am honored to receive this award," said Bruggeman. "This was a great opportunity to learn about lens design and hone my skills. The process has inspired me to continue pursuing lens design as a future career."

"This year's winning entries highlight how our CODE V and LightTools educational licensing programs help foster student research in the fields of imaging and illumination optics, with applications ranging from freeform optics in virtual reality systems to camera lenses and multi-purpose solar collection optics," said George Bayz, vice president and general manager of Synopsys' Optical Solutions Group. "We congratulate this year's student participants on their creativity and demonstrated knowledge of optics and optical design processes."

About the Robert S. Hilbert Memorial Optical Design Competition
The annual Robert S. Hilbert Memorial Optical Design Competition recognizes excellence in student optical design projects. The competition was established in 2000 by Optical Research Associates (ORA®), now Synopsys' Optical Solutions Group, and in 2009 was named in honor of ORA's former president and chief executive officer, Robert S. Hilbert. The competition is open to students in North America working toward a bachelor's, master's or doctorate 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) 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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