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THE *Current*

July 3, 2012

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UC Santa Barbara Receives \$500,000 For Endowed Chair in Semiconductor Research

UC Santa Barbara's Solid State Lighting & Energy Center (SSLEC), a hub for leading-edge research in energy-efficient lighting, power electronics, and solar energy technology, has received a \$500,000 endowment from Seoul Optodevice Company to further its research on gallium nitride (GaN) for use in electronics and solid state lighting.

James Speck, a professor of materials at UCSB, member of SSLEC's Executive Committee, and director of the Interdisciplinary Center for Wide Band-Gap Semiconductors, has been named the campus's first Seoul Optodevice Chair in Solid State Lighting.

"Mr. Chung Hoon Lee and the Seoul Optodevice Company are leaders in the field, and have been longstanding supporters of UC Santa Barbara's Solid State Lighting and Energy Center, which is advancing the frontiers of research in energy-efficient solid state lighting, and helping to create a more sustainable future for us all," said Chancellor Henry T. Yang. "We are deeply grateful for their vision and generosity in establishing the Seoul Optodevice Chair in Solid State Lighting, and we are very proud that Professor Jim Speck will be the inaugural chair holder. Professor Speck is world-renowned for his pioneering research in electronic materials and physical properties, and is the ideal choice to hold this prestigious endowed chair."

The endowment represents an important partnership between UCSB and the Seoul Optodevice Company. Established in Korea in 2002, the company is a global leader in engineering products with a variety of applications, including outdoor and architectural lighting, LCD technology, and both V- and UV-LED products.

"Under the visionary leadership of Mr. Chung Hoon Lee, Seoul Semiconductor and Seoul Optoelectronic Device Companies are leading the transformation to solid state lighting," Speck offered. "UCSB and the Solid State Lighting and Energy Center have greatly benefited from the strong support from these two companies. I am honored to serve as the first Seoul Optodevice Chair at UCSB and extend my personal thanks to Mr. Lee."

Most silicon-based semiconductors in today's electronics, such as those found in computer microprocessor chips and transistors, are highly inefficient in their use of energy. New processors that use GaN as a wide band-gap semiconductor offer increased data processing capabilities while using minimal power. GaN is one of the most important next-generation semiconductor materials because it can be used for high-frequency, high-power transistors capable of operating at high temperatures.

"This endowment by Seoul Optodevice Company is critically important because our research in gallium nitride semiconductors places the college at the forefront of energy efficiency technology," said Rod Alferness, dean of the College of Engineering. "Professor Speck is leading this charge and understands how our relationship with industry is a driving force behind discoveries in solid state lighting."

Speck's research focuses on the relationship between thin-film electronic materials growth, and microstructure, as well as the link between microstructure and physical properties. He has worked extensively on the materials science of GaN and related alloys, and has consistently been lauded for his research. Among his many honors, Speck received the Quantum Device Award from the International Symposium on Compound Semiconductors in 2007. In 2010, he received the IEEE Photonics Society Aron Kressel Award for his work on nonpolar and semipolar GaN-based materials and devices.

"Jim Speck is the world's leading expert in gallium nitride (GaN) materials and crystal growth," said Steven DenBaars, co-director of SSLEC, a professor of materials, and of electrical and computer engineering, as well as the Mitsubishi Chemical Professor in Solid State Lighting & Display. "SSLEC is very fortunate to have him."

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