

UCSB Solid State Lighting & Energy Electronics Center: A results-driven industry consortium

The Solid State Lighting & Energy Electronics Center (SSLEEC) at UC Santa Barbara is a new collaborative center, which partners key industry leaders and UCSB researchers to advance solid-state lighting and energy efficient power switching using wide-bandgap semiconductors.

SSLEEC was launched in late 2013. The previous generations of this center were called Solid State Lighting & Display Center (SSLDC), founded in 2001 with a \$24 million operating budget, and Solid State Lighting & Energy Center (SSLEC), founded in 2007 with \$30M operating budget.

The objective of the center is to provide a forum for its members – industry partners and the University of California, Santa Barbara (UCSB) faculty – to work in collaboration at the interface of these disciplines to address the most challenging problems in solid state lighting and energy electronics.

The research thrusts for the center include:

- * Ultra-efficient solid state lighting (>280ml/Watt)*
- * Power switching (98% efficient > 2kV)*
- * Laser lighting (>200ml/Watt)*
- * Low cost bulk GaN*

Under the leadership of Professors Steven DenBaars and Shuji Nakamura, Umesh Mishra and Jim Speck, SSLEEC has established one of the most unique and successful business models among universities and industry partners. Over the past 6 years, SSLEC produced a key patent portfolio of 154 patents that make up 25% of the total patent pool at UCSB,

according to UCSB's Technology and Industry Alliance (TIA). Its member companies can elect to license IP co-exclusively. SSLEC's intellectual property resulted in 65% of active inventions that were licensed or optioned from UCSB. The center has produced 430+ publications since 2007. SSLEC papers have been cited over 14,000 times (H-index = 91). The center averages less than \$195K in research expenditures per disclosure.



Because of the translational nature of the research at the center, several start-up companies have been formed leveraging the IP developed, including SixPoint Materials Inc., Solution Deposition Systems, Inc., Inlustra Technologies, LLC, Transphorm, Soraa, and Nitride Solutions. These companies have been founded by former researchers, UCSB alumni, and faculty.

SSLEEC is currently recruiting member companies that will provide funding support of \$1.75 million over 5 years. Industry partners in good standing will receive benefits including co-exclusive IP rights, a seat on the advisory board, attendance at the annual conference, and the ability to send one visiting researcher to work within a laboratory at SSLEEC.

For more information on how to become involved in SSLEEC, please contact Yukina Warner at yukina@engineering.ucsb.edu.

To learn more about how your company can work with UC Santa Barbara, contact Leslie Edwards (805-893-3944/edwards@engineering.ucsb.edu) or Chris Russo (805-893-5544/crusso@engineering.ucsb.edu) in the Corporate Affiliate Programs office.

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