

SSL Postings

U.S. DEPARTMENT OF ENERGY

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What's Next for SSL?

As you may know, DOE's [12th annual SSL R&D Workshop](#) will be held next month (Jan. 27–29) in San Francisco, with opening remarks delivered by none other than Shuji Nakamura of the University of California Santa Barbara, co-winner of the 2014 Nobel Prize in Physics for his work in inventing the efficient blue LED. Shuji will offer his thoughts on what's next for SSL, which is the theme of the San Francisco workshop. A number of other “leading lights” — Cree cofounder John Edmond, George Craford of Philips Lumileds, John Davidson of Walmart, and Biing-Jye “BJ” Lee of Epistar — will give their own intriguing takes on where the technology is headed.

That's the question on everyone's minds, as we stand poised on the verge of a lighting revolution that's being spearheaded by SSL technology. To further help us answer this question, the first workshop panel, on new directions in lighting, will feature experts exploring how color-tunable bulbs are reshaping lighting, as well as innovative roadway lighting designs, innovations in horticultural lighting, the latest on intelligent light bulbs, and off-grid lighting solutions enabled by LEDs.

The final workshop panel — this one including Peter Ngai of Acuity Brands, Steve Paolini of NEXT Lighting, Mike McGaraghan of Energy Solutions, Martin Wittmann of OSRAM Opto Semiconductors, and Dennis Bradley of GE Lighting — will focus on the thought-provoking question of finding the cost-performance balance that drives adoption, maximizes energy savings, and creates lasting value. This panel will also consider whether R&D can reduce compromises between cost, efficacy, color, lighting performance, and new functionality. The lighting visionaries on this panel will provide insight on these questions and long-term visions for the lighting industry, basically continuing the discussion from the first day.

In between these two provocative panels, we'll explore the critical R&D topics that can push SSL technology — ranging from innovations in controls, to advancements in OLED materials, to novel red phosphor materials, to design-for-manufacturing for LEDs and OLEDs . . . and lots more. Discussions will also include market drivers — such as the rise of Asian lighting manufacturers, which has brought intense competition. In addition to BJ Lee offering his global perspective, Clive Yen of LEDInside will give a talk on LED lighting trends in terms of LED market size, technology development, and vendor strategies.

All of these talks and panel discussions will feature scientists, product designers, and manufacturers who are among the best in their fields. You'll get a chance to meet them one-on-one at an evening reception that includes more than 30 posters representing federally funded SSL R&D projects. Posters will highlight SSL R&D projects funded by the DOE SSL and SBIR programs, ARPA-E, and Advanced Manufacturing Office, as well as the National Science Foundation. This will be a turbocharged poster session that's sure to generate considerable buzz, with researchers from universities, national laboratories, and companies large and small eager to share their work.

The DOE SSL workshops are open-ended forums where everyone has a chance to weigh in. One of the purposes of our SSL R&D Workshop is to gather input to help update the [DOE SSL R&D Multi-Year Program Plan](#), which is widely consulted by industry here and abroad and also guides DOE's [SSL funding solicitations](#). To that end, in San Francisco we'll be splitting up into separate LED and OLED track sessions to enable deeper discussions on specific issues. LED track sessions will cover reliability, developments in red emitters, advanced materials, and ongoing R&D challenges that stand in the way of that next leap in performance. OLED track sessions will focus on an overview of OLED technology progress, a look at early markets for OLED products, challenges and breakthroughs in OLED materials, OLED panel integration and manufacturing challenges, and OLED luminaire product development. You can hear more about SSL R&D challenges in [these videos](#) on the DOE SSL website.

On the first evening of the workshop, an optional guided bus tour will provide an up-close look at the innovative LED roadway lighting on the Bay Bridge East Span, as well as LED and OLED lighting vignette installations at Acuity's Center for Light&Space.

The San Francisco event represents a merging of two SSL R&D workshops we had been holding each year: one that focused on the challenges of core research and product development, and another that concentrated on manufacturing. A major reason for merging those two workshops was that, as the technology continued to develop, we found that the two discussion threads were becoming increasingly intertwined.

The San Francisco workshop is a unique opportunity to share the latest news; dissect the most complex science and technology challenges facing SSL today; examine new ways to improve manufacturing processes, reduce costs, and foster U.S. competitiveness — and network, network, network. I'm looking forward to seeing many of you there. To register or for more information, please visit the [DOE SSL website](#).

As always, if you have questions or comments, you can reach us at postings@akoyaonline.com.