SSL Postings
U.S. DEPARTMENT OF ENERGY

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OLED Update

Greetings from Rochester, NY, where the OLED community—with some facilitating by DOE—is meeting to share updates on the efforts of a new OLED Coalition, explore basic science and applied research needs for OLED advancement, discuss product development and manufacturing challenges, and provide a forum for open discussion among stakeholders.

A year ago, DOE convened a similar meeting, and a number of ideas that were hatched there have already come to life. One of those is the OLED Coalition—which, among many other things, is carrying out marketing education efforts, developing a manufacturing cost model, and working on a business plan to support large-volume manufacturing.

Another result of last year's meeting is a new testing opportunity that enables component makers to incorporate various R&D-stage components into larger OLED components or panels. The results of this testing will lead to the identification of high-performing components with the ability to advance OLED technology performance and efficiency while reducing cost. One testing laboratory has already been qualified, and component makers are invited to apply for testing. Other testing laboratories that have the capability to incorporate OLED components into baseline structures or complete OLED panels are invited to apply for qualification, so that they can take part in this collaborative process.

Last year's OLED meeting was followed by two DOE-sponsored opportunities for the OLED community to deepen the discussions and tighten the collaborations—first at our 11th annual SSL R&D Workshop, which was held in January 2014 in Tampa; and then at our sixth annual SSL Manufacturing R&D Workshop, which was held in May in San Diego. This week's OLED meeting is intended to share updates on the progress that's been made to date, and to take things to the next level.

Meanwhile, DOE continues to fund OLED R&D, with Pixelligent Technologies LLC, OLEDWorks, Princeton University, and UCLA the latest such recipients. And the performance of OLED panels continues to improve, with many issues already overcome. With the use of tandem stacks, OLEDs are now plenty bright (typically 3,000 cd/m^2) and quite efficient (60 lm/W commonly available), with good color

quality (most products with CRI>80 and some even >90) and dramatically improved lifetimes. The cost of OLED lighting has come down about 40% in the past year alone, although there's still a long way to go in that regard.

With manufacturers finding applications that showcase the technology's unique advantages, the OLED lighting market is starting to build momentum, and we're seeing viable products—beyond pricey chandeliers—and value-added features such as color tunability and transparency. The U.S. Embassy in Helsinki, Finland, features an OLED luminaire in a conference room in its innovation center. And the Next Generation Luminaires™ Solid-State Lighting Design Competition—which is sponsored by DOE, the International Association of Lighting Designers, and the Illuminating Engineering Society—recently announced its first OLED winner: a family of OLED luminaires by Acuity Brands®–Winona® Lighting that received recognition in the Emerging Products category.

Collaboration is the key to improving OLED lighting technology and market viability, and DOE is working to help build a collaborative framework that enables this sector of the SSL industry to advance and fulfill its energy-saving potential.

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