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A Look Back at 2016

Looking back, the events of 2016 highlighted more than ever the need for science, not sound bites, when it comes to realizing the full potential of SSL. The DOE SSL Program works hard on multiple fronts to make sure this happens. Below are some key highlights from our efforts in 2016.

Report forecasts 75% energy savings from LED lighting. Based on the technology’s full potential, DOE’s latest forecast uses an updated 2016 U.S. lighting-market model and projects that energy savings from LED lighting will reach 5.1 quads of energy annually by 2035. Connected lighting and associated controls will be essential to realizing that forecast.
DOE connected lighting test bed up and running. To accelerate advances in connected lighting systems, DOE developed a connected lighting test bed (CLTB) in 2016 to characterize the capabilities of market-available connected lighting systems. The results will increase visibility on what does and does not work, and create tight information feedback loops to inform technology developers about needed improvements related to interoperability, configuration complexity, and other issues. Look for the first CLTB study in 2017.

Understanding the nonvisual effects of LED lighting. We’re just beginning to understand how the ability to tune the spectrum and output of LED lighting systems provides new opportunities for addressing human needs and preferences. A 2016 pilot study at a senior-care facility in Sacramento, CA, explored the use of white-tunable LED lighting, along with circadian-friendly LED night lighting, to improve lighting quality and better match the lighting spectrum and intensity to the needs of patients and staff at different times of the day and night. The lighting is adjusted according to a daily schedule (above) to help provide appropriate circadian cues, while enhancing visibility and safety for patients and staff.
LED street lighting webinar. Unless you’ve been hiding under a rock, you’ve seen a lot of news stories in 2016 focused on street lighting and the impact of the blue content on our health and the environment. An October DOE webinar — intended to separate the facts from misperceptions — examined key issues underlying concerns raised by the American Medical Association’s community guidance on street lighting, and their applicability to LED street lighting. It also provided essential background context related to exposure to light at night and reviewed activities currently being supported by DOE to fill existing knowledge gaps. The webinar was attended by 1,000 — maximum capacity — with many more turned away, and since then has been viewed more than 550 times on the website.

Filling knowledge gaps to advance OLED lighting.
These are early days for OLED lighting, and, as in the early days of LED lighting, there’s a great deal to be learned from CALiPER testing and GATEWAY demonstrations. Taken together, three DOE reports released in 2016 provide a picture of where OLED lighting stands and provided valuable inputs for OLED technology developers. The GATEWAY field study OLED Lighting in the Offices of Aurora Lighting Design, Inc, highlighted some challenges encountered during installation as well as the viability of OLED lighting products to provide creative and effective lighting solutions. OLED Lighting Products: Capabilities, Challenges, Potential described currently available OLED products as well as promised improvements and major hurdles. And the first CALiPER analysis of OLED lighting, Photometric Testing, Laboratory Teardowns, and Accelerated Lifetime Testing of OLED Luminaires, provided valuable insight on needed technology developments.
Three workshops offer insights and interaction with top experts. DOE’s three annual SSL workshops in 2016 — focused on SSL R&D (January in Raleigh, NC), Connected Lighting Systems (June in Santa Clara, CA) and Technology Development (November in Denver, CO) — collectively drew more than 600 industry experts and thought leaders to share insights, ideas, and updates on SSL technology advances. These workshop discussions guide DOE SSL program efforts and identify opportunities for government-industry partnerships.

The DOE Solid-State Lighting Program wishes you happy holidays and a happy — and energy-saving — New Year. Stay tuned to these Postings for a look ahead to 2017.

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