

# SSL Postings

U.S. DEPARTMENT OF ENERGY

April 2, 2015



*Although you do not often hear about growth in domestic manufacturing here in the United States, the solid-state lighting industry is steadily growing and establishing a manufacturing presence here at home. Solid-state lighting was not only born of U.S. ingenuity and R&D, but is also riding the crest of a worldwide trend toward greater energy efficiency. This offers a golden opportunity for U.S. manufacturing to take a significant role in SSL. From time to time, the Postings focus on SSL companies manufacturing here in the U.S., in a series called "SSL in America." This is not intended to endorse or promote any of the companies, but rather to describe advances in energy-efficient solid-state lighting. The activities you'll read about here are consistent with the U.S. Department of Energy (DOE) white paper ["Prospects for U.S.-Based Manufacturing in the SSL Industry."](#)*

## Spotlight on PhosphorTech

PhosphorTech Corporation manufactures phosphor products for LED applications, including remote-phosphor plates as well as powders for depositing directly on the LEDs. According to executive vice president Hisham Menkara, about 85% of the company's products are used for general illumination. PhosphorTech started out in the late 1990s, making remote-phosphor plates for use in lighting and display applications that covered various technologies; but over the past 10 years, its business has evolved to focus primarily on LEDs.

The company is based just outside Atlanta in Kennesaw, GA — not far from an historic Civil War battlefield — with headquarters and plant sharing the same facility. There, PhosphorTech manufactures all of its remote-phosphor sheets as well as some of the phosphor powders, with the rest of the powders licensed from companies here in the U.S. and abroad. PhosphorTech has been the recipient of a number of DOE SSL R&D funding awards, the latest being a recent SBIR award to improve its remote-phosphor product; and many of its proprietary materials were developed with the help of DOE funding. In addition to supplying its products to customers, the company has licensed some of its processes to a number of U.S. lighting manufacturers. Hisham notes that PhosphorTech's manufacturing process for remote phosphor sheets is compatible with roll-to-roll.

The company specializes in lighting applications that require customized color requirements for use in museums, theaters, and other demanding settings. Its customers provide the specifications, and PhosphorTech manufactures the phosphors to fit the desired CRI and CCT. Hisham says that manufacturing in the U.S. — where most of its customers are based — makes it easier for the company to meet the customers' demanding requirements on a consistent basis. It also enables PhosphorTech to provide very fast turnaround on orders, sometimes within just a week.

Another advantage of domestic manufacturing is that it makes it easier to protect intellectual property — an extremely important consideration for PhosphorTech, whose products are very proprietary. On the flip side, material costs are higher here in the U.S. than they are overseas, and what's more, most of the rare-earth materials involved in phosphor manufacturing come from China, a country that gives priority to Chinese manufacturers. This adds a certain amount of unpredictability, as shown by the fact that for a time several years ago, China limited its rare-earth exports. The relatively higher labor rates in the U.S. aren't much of a drawback, Hisham explains, because PhosphorTech's process is so efficient — e.g., everything that's not used is recycled — that it requires fewer employees than would otherwise be needed. The company has plans to increase its U.S. manufacturing.

PhosphorTech is among a number of companies that are working to create and strengthen a solid-state lighting manufacturing base here in the U.S. This will not only help bring significant energy savings through more efficient lighting products, but will benefit our economy by adding jobs at multiple levels of the supply chain.

As always, if you have questions or comments, you can reach us at [postings@akoyaonline.com](mailto:postings@akoyaonline.com).