

# SSL Postings

U.S. DEPARTMENT OF ENERGY

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*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 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, these Postings will focus on SSL companies manufacturing here in the U.S., a series we call "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 "Keeping Manufacturing in the United States,"](#) which grew out of DOE's 2010 SSL Manufacturing R&D Workshop.*

## Spotlight on Plasma-Therm LLC

Plasma-Therm LLC designs and manufactures plasma-processing equipment that's used to make semiconductor devices, primarily LEDs and specialty electronic components such as the filters and power amplifiers in smartphones and the night-vision sensors used by the military.

Plasma-Therm makes two types of equipment: one type for deposition and the other for etching. Both types are used in SSL manufacturing. The deposition equipment deposits oxide protective layers onto the LED after the MOCVD growth process. The etching equipment forms individual LEDs out of a single wafer by removing areas of semiconductor material with chemical plasma in a procedure analogous to sandblasting but on an atomic scale.

Plasma-Therm has been supplying equipment to LED manufacturers since the late 1980s. The company started in the mid-1970s in New Jersey, moved to Florida in 1990, and in 2000 was acquired by the

Swiss firm Oerlikon. In 2009, Plasma-Therm LLC separated from Oerlikon in a management buyout, becoming a privately held U.S.-based company. Headquarters is in St. Petersburg, FL, and all of Plasma-Therm's R&D, engineering, and manufacturing is done in the Tampa Bay area. The company has more than 150 employees in the U.S., most of them involved in very high-tech positions.

In fact, CEO Abdul Lateef cites this as a major reason Plasma-Therm chooses to do its manufacturing here in the U.S. He explains that because of the high-tech nature of the company's products, the quality of the labor, rather than its cost, is paramount. This, he says, makes it essential to have access to a well-trained labor pool where the university system is strong and there are plenty of opportunities for technical training. Abdul notes that to ensure it gets the right employees, Plasma-Therm does an extensive amount of recruiting at U.S. universities and even builds relationships with professors who are doing plasma research. He considers the higher cost of U.S. labor to be a fair and reasonable compromise in order to get higher-caliber employees.

Manufacturing in the U.S. also provides better access to – and service of – the U.S. market, where about half of the company's products are sold, Abdul says. He notes that the vast majority of Plasma-Therm's suppliers are U.S.-based, which makes for a significant "ripple effect" from the company's operations, in terms of the creation of U.S. jobs. Abdul says Plasma-Therm has benefited from a U.S. Export-Import Bank program that encourages U.S. exports, especially those that involve high-tech products. While he appreciates the intellectual property (IP) protection afforded by the U.S. government, he laments the fact that enforcement in foreign countries is often lax, and says this has resulted in a number of violations of the company's IP by overseas businesses that have suffered no consequences as a result of their transgressions. This, he observes, can make it hard for U.S. technology firms to maintain their global leadership.

Abdul credits the LED market in part for Plasma-Therm's substantial growth over the past three years, despite an overall downturn in the economy. He says the company is expanding with the solid-state lighting market and plans to offer more technologies and capabilities to LED manufacturers, to increase their productivity and enable them to build higher-efficiency LEDs.

Plasma-Therm LLC 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@lightingfacts.com](mailto:postings@lightingfacts.com).

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