

NanoLambda Brings Color Measurement to Light

By Kevin Lane

Unless one is familiar with the Greek alphabet, it would be somewhat obscure to know that lambda is the equivalent of the English letter "L."

But in the case of start-up company NanoLambda, Inc. it would not be a stretch to assume that "L" stood for light.

NanoLambda was incorporated in February of 2005 as a spin-off company from the University of Pittsburgh, but the core technologies had been in place since 1998. The company is developing a low-cost, chip-scale optical spectrum analyzer, called the Spectrum Sensor, which can determine the chemical make-up of any substance. This analysis is typically accomplished with big, bulky and costly devices called optical spectrometers, and currently there are more than 50 different fields or industries that use this cumbersome and expensive technology. But NanoLambda's device is less bulky and costs significantly less than a typical optical spectrometer, which often has a price tag as high as \$30,000.

The company's high-resolution spectrum sensing capability enables mobile or wearable health monitors, such as a truly non-intrusive glucose monitor, and other personal devices manufactured by the likes of consumer electronics giants Sony, Samsung, Panasonic and Phillips.

But beyond these types of end-products, NanoLambda's technology also has applications in sensing, measuring and controlling color consistency of light emitting diodes (LEDs.)

Recognizing opportunities in the soon-to-explode LED markets, the Pennsylvania NanoMaterials Commercialization Center awarded NanoLambda \$197,450 in Air Force Research Laboratory funding, subject to \$260,250 in matching funds.

Color monitoring and control of LED light has commercial applications in environments where small changes in the perception of color could compromise or affect the success of outcomes. Perhaps nowhere is this more critical than in hospital operating rooms, where human organs may be distinguishable only by subtle variances or nuances of color. NanoLambda's wavelength sensor embedded in LED fixtures would monitor color wavelengths and provide feedback that automatically adjusts the light if it were, say, too blue.

Other less critical, yet no less commercially lucrative markets for NanoLambda's LED sensor would be museums, art galleries and design studios, as well as retail establishments where subtle variations in color perception could affect sales success.

"We are indeed fortunate to have the Pennsylvania NanoMaterials Commercialization Center in our corner," said NanoLambda CEO Bill Choi. "In addition to the funding we received, the Center also provided significant engineering expertise, quality reviews and business guidance. The Center actually helped us to focus on the previously overlooked LED market, and it was a major conduit to engineering and production process experts throughout the state. Their assistance was essential in enabling us to achieve critical milestones."

Although the Greek letter lambda ostensibly could stand for light, in the case of NanoLambda look for it to mean a laser-like focus on the LED market.

View a brief video of NanoLambda's technology at: www.ustream.tv/recorded/3840286

