Flash Photonics Highlights the NIRONE Spectral Engines NIR Sensor in talk at Pittcon 2018

Invited talk in the field spectroscopic applications session discusses performance of the rugged and miniaturized sensor plus applications to industrial sensing

ORLANDO, FLORIDA, UNITED STATES, March 1, 2018 /EINPresswire.com/ -- Flash Photonics is pleased to announce that Dr. Steven Buckley was invited to give a talk this week at the 2018 Pittsburgh Conference and Exposition (Pittcon) on the innovative NIRONE near-infrared (NIR) spectral sensor from Spectral Engines Oy (Helsinki, Finland). Pittcon is one of the largest annual instrumentation conferences in the United States, in its 68th year; it showcases the most innovative technologies in instrumentation worldwide.
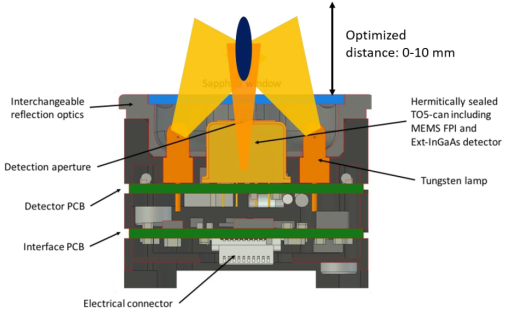
Dr. Buckley spoke about the Spectral Engines NIRONE sensor, a powerful sensor intended for the industrial IoT and handheld sensor market. His presentation, "Miniature Fabry-Perot NIR Spectrometers Extend the Reach of NIR Spectroscopy," was given in the session "Field Spectroscopic Applications, Point of Care, Safety & Security, and Environmental Scenarios" on Monday February 26th.

Miniature spectral module

- Compact spectral module
- Detector and light source integrated
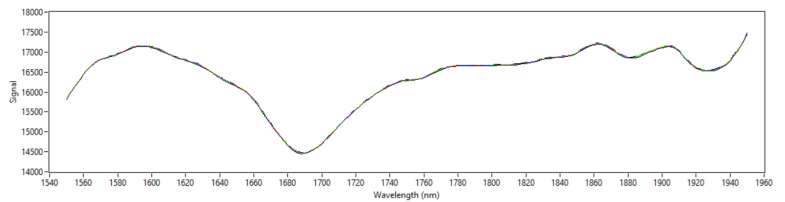- Cortex M3 microcontroller
- PCB mountable
- I²C and UART busses

Optimized distance: 0-10 mm

Interchangeable reflection optics
Detection aperture
Detector PCB
Interface PCB
Hermetically sealed TO5-can including MEMS FPI and Ext-InGaAs detector
Tungsten lamp
Electrical connector

1 inch

Spectral Engines Miniature NIRONE spectral module

Signal repeatability on NIRONE 2.0

- Wavelength reflectance calibration target from Avian Technologies LLC (FW-WC-VisNIR-02c)
- Each spectra is an average of 150 readings, wavelength step of 2 nm
- 45 consecutive measured spectra
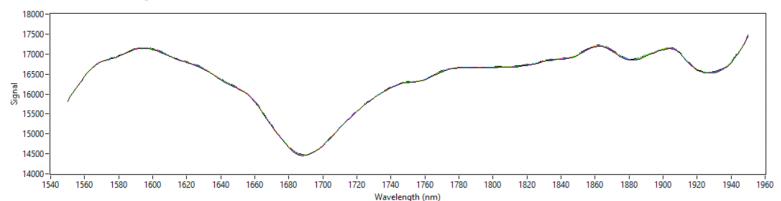- Standard deviation of raw signal is ~5.2 digital units

=> **Average SNR is ~3200**

An overlay of 45 measured spectra illustrates the signal repeatability on the NIRONE sensor.

The talk was comprised of two main thrusts. The first highlighted the stability and repeatability of the sensors, showing data from both individual sensors over time, and data illustrating the signal uniformity between large numbers of sensors. These characteristics, plus inherent ruggedness and temperature stability, make the NIRONE sensor ideal for networked and distributed applications using machine learning cloud-based models.

The second portion of the talk discussed applications. Examples presented included moisture measurements in flour with application to bakeries, moisture in industrial powders, recognition of fabric types, and determination of carbohydrate, fat, and protein in common foods. Additional uses may include moisture in grains, composition of oils, and measurement of sugar, alcohols, and other components during fermentation of beer and wine, among many. While NIR spectroscopy has been used for some time, with a mature set of applications, it is only recently that such hardened and small industrial sensors have arrived, allowing online process analytical technology (PAT) applications to be

"

The NIRONE sensor is only a cubic inch in size, but has the dynamic range of laboratory NIR spectrometers that are much larger and ten times as costly."

Dr. Steve Buckley

easily pursued.

"The NIRONE sensor is only a cubic inch in size, but has the dynamic range of laboratory NIR spectrometers that are much larger and ten times as costly," said Dr. Buckley. The audience at the conference asked several interesting questions, including the speed of a typical measurement (answer - typically under 1 second, and possibly less than 50 milliseconds) and about the various ranges of devices offered.

The NIRONE sensor and application development kits are available in North American via Flash Photonics. For more information, including a copy of the presentation, please contact sales@flash-photonics.com.

Steve Buckley
Flash Photonics, Inc.
425-296-4765
email us here

This press release can be viewed online at: http://www.einpresswire.com