TriEye and Vertilas Partner to Demonstrate 1.3µm VCSEL-Driven SWIR Sensing Solutions

Synergies Unleashed with TriEye and Vertilas Collaborative Approach Showcasing Cutting-Edge CMOS-Based SWIR Camera and InP VCSEL Technology

TEL AVIV, Israel, April 16, 2024/ – TriEye, pioneer of the world's first cost-effective mass-market Short-Wave Infrared (SWIR) sensing technology, and Vertilas GmbH, a leader in InP VCSEL products, announced today the joint demonstration of a 1.3µm VCSEL-powered SWIR sensing system.

TriEye and Vertilas announce their collaboration in advanced imaging technology. This partnership has led to the development of a technology demonstrator that integrates TriEye's state-of-the-art Short-Wave Infrared (SWIR) Raven image sensor with Vertilas' innovative Indium Phosphide (InP) Vertical-Cavity Surface-Emitting Laser (VCSEL) technology. Adopting high-volume, scalable manufacturing strategies, these technologies provide cost-effective solutions for both consumer and industrial markets.

The system highlights the capabilities of TriEye's CMOS-based SWIR sensor, noted for its high sensitivity and 1.3MP resolution. Designed to enhance imaging in various industries, including automotive, consumer, biometrics, and mobile robots, this solution represents a significant step forward in sensing technology.

Alongside, Vertilas introduces its InP SWIR VCSEL technology that provides high output power with high power efficiency. This new VCSEL technology is a complementary innovation that enhances the SWIR camera's functionality. Deploying 1.3µm VCSEL arrays enables greatly improved eye safety and signal quality while minimizing sunlight distortion. Vertilas InP VCSEL array technology also offers wavelengths at 1.55µm up to 2µm. This new technology is expected to broaden the scope of applications in imaging and illumination across multiple industries.

"Vertilas is thrilled to expand our efforts with TriEye in this groundbreaking initiative. Our InP VCSEL technology, combined with TriEye's exceptional SWIR sensor, marks a significant advancement in the realm of imaging and illumination solutions", said Christian Neumeyr, CEO at Vertilas. "This collaboration is more than just a technological achievement; it represents our shared vision of innovating for a better, more efficient future in both consumer and industrial applications."

"At TriEye, our commitment has always been to bring revolutionary SWIR technology to the forefront of the market. The integration of our SWIR sensor with Vertilas InP VCSEL technology in this collaborative venture is a testament to this mission", said Avi Bakal, CEO of TriEye. "We are proud to unveil a solution that not only enhances imaging capabilities across various industries but also does so in a cost-effective and scalable manner, making advanced sensing technology more accessible than ever."

Join us at the CS International Conference in Brussels

You're invited to explore our technologies at the Vertilas booth during the CS International Conference, hosted at the Sheraton Brussels Airport Hotel on April 16-17, 2024. Discover how our collaborative efforts are shaping the future of SWIR sensing technology. For further details or business inquiries, please contact us at info@trieye.tech.

About TriEye

TriEye is the pioneer of the world's-first CMOS-based Short-Wave Infrared (SWIR) image sensing solutions. Based on advanced academic research, TriEye's breakthrough technology enables HD SWIR imaging and accurate deterministic 3D sensing in all weather and ambient lighting conditions. The company's semiconductor and photonics technology enabled the development of the SEDAR (Spectrum Enhanced Detection And Ranging) platform, which allows perception systems to operate and deliver reliable image data and actionable information, while reducing expenditure up to 100x the existing industry rates. For more information, visit www.trieye.tech

About Vertilas

Vertilas GmbH is a leading global provider of long wavelength Vertical Cavity Surface Emitting Laser diodes (VCSEL) for optical communications, gas sensing (TDLS), 3D sensing and customer-specific applications. VERTILAS® unique Indium Phosphide (InP) VCSEL technology offers a wavelength range of 1.3 µm to 2.3 µm and has been proven for 20 years in a variety of demanding markets. Vertilas VCSELs are available as single-mode and multi-mode emitters, feature ultra-high performance, and enable system designers to reduce power consumption by 50% and more compared with other laser technologies. For more information, visit www.vertilas.com

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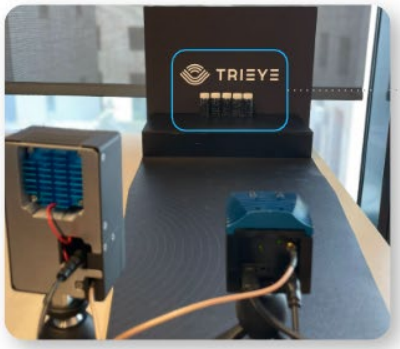
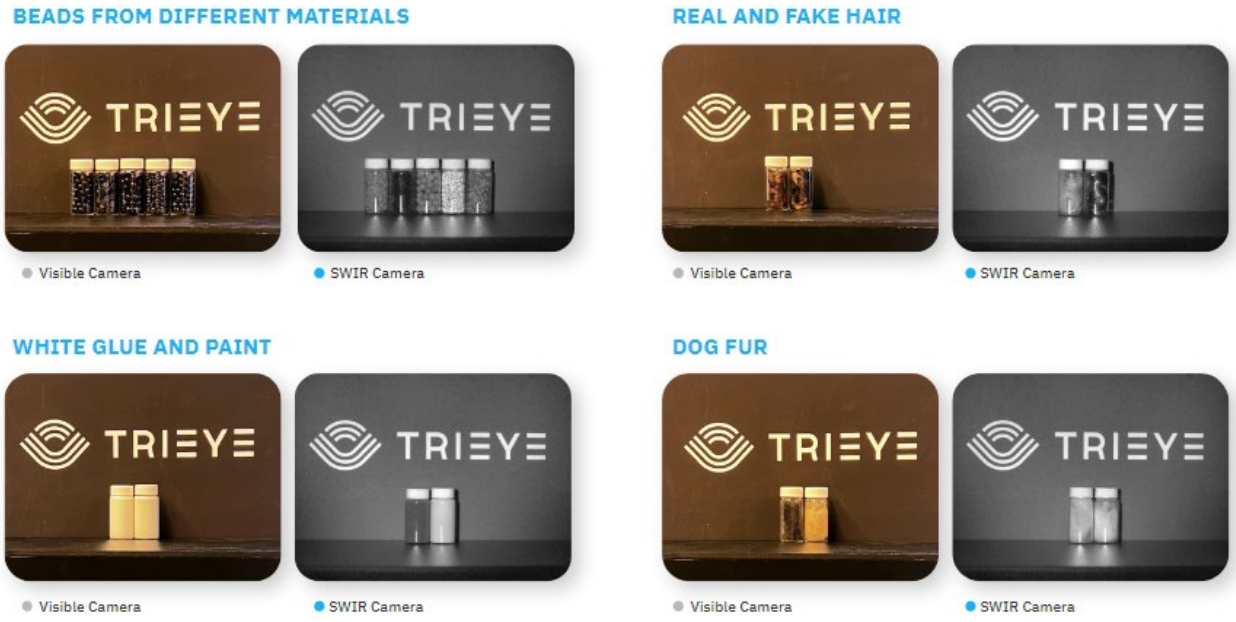
Demonstration Highlights



CAMERA SETUP

Wavelength	1340 nm
Range	1 meter
Field of View	25 deg

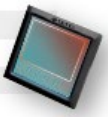
TriEye and Vertilas' shared demonstration of a 1.3µm VCSEL-driven SWIR sensing solution



High-level system specifications

Raven image sensor

- 1.3MP resolution (1284 x 960)
- Broadband imaging - 700nm to 1600nm
- 13mm x 13mm iBGA package
- Global shutter up to 120 fps



Ovi SWIR camera

- Modular stacked board Raven devkit
- USB3 and external sync cables
- 62 x 62 x 55 mm, tripod mounted
- Interchangeable C-mount lens

MAVI Illumination module

- Designed to be used with Ovi dev kit
- Uses Vertilas 1340nm high power InP VCSELs
- Up to 24W QCW optical power @ 10% DC
- Class I, eye safe laser illumination