

Excelitas Technologies® Corp. and Kinetic River Corp. Collaborate to Design and Build Flow Cytometer Prototype for SPIE Photonics West 2015

Demonstrates Ease and Expediency in the Design and Build of Analytical Instrumentation

Excelitas Technologies Corp., a global technology leader in delivering innovative, high-performance photonic solutions, today announced it has collaborated with Kinetic River Corp., a leader in photonics design, consulting and product development, to develop a fully functional flow cytometer prototype built from Excelitas and Qioptiq off-the-shelf components. The prototype will be on display at SPIE Photonics West 2015 in the Excelitas booth #1723, South Hall, February 10-12. Excelitas teamed with Kinetic River to leverage its proven expertise in flow cytometry instrumentation, which resulted in the delivery of a working system in only eight weeks. The prototype instrument clearly demonstrates the ease and expediency of designing and building life science and analytical instruments from the ground up using standard photonic components from a single-source solutions provider.

“Offering end-to-end solutions encompassing optical, illumination, sensing, and opto-mechanical technologies provides our OEM customers convenience, simplicity and an accelerated path to market for the development of highly complex systems. Partnering with Kinetic River for this particular project is the ideal demonstration of this concept based on our combined track record in developing cutting-edge biophotonic systems.”

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The optical engine of the instrument was built almost entirely with Excelitas and Qioptiq components, including lasers, optics, optomechanics and detectors. The flow cytometer incorporates two compact solid-state iFLEX-IRIS™ lasers and six high-performance LynX™ silicon photomultiplier modules (SiPMs) for photon detection into an optical bench built with Microbench parts, along with additional LINOS® optical and mechanical components from Qioptiq, an Excelitas Technologies Company. The fluidics are powered by a high-accuracy Dolomite Microfluidics Mitos dual-syringe pump, and the data acquisition is provided by a DarklingX Azurite unit. Stable and modular, these components simplified the selection process while still providing design flexibility.

For the optical system design, Kinetic River used its Live Ideas modeling tool to examine the system's behavior in real time. With this interactive software, designers are able to review simulations on a dashboard to see the impact of design changes based on a variety of performance parameters. “To create a modular system solution that can expand with user needs, a designer must have access to a large library of components. I have been very impressed with both the selection of photonic components from Excelitas’ trusted brands and with the very high quality of workmanship evident in the parts,” stated Dr. Giacomo Vacca, Kinetic River founder and president. “This partnership is a great example of the kind of innovative solutions that can come from combining comprehensive photonic product portfolios with our system design expertise.”

To evaluate design options, designers used BeamWise™ optical system design tools to generate a three-dimensional CAD model of the prototype and of alternative design configurations, including one with four laser sources and twelve detectors.

About Excelitas Technologies

Excelitas Technologies Corp. is a global technology leader focused on delivering innovative, high-performance, market-driven photonic solutions to meet the lighting, detection and optical technology needs of global customers. From biomedical technology to research laboratory, safety and security, consumer products, semiconductor, energy and environment, industrial sensing & imaging, defense and aerospace, Excelitas Technologies is committed to enabling our customers' success in their end-markets. Excelitas Technologies has approximately 5,500 employees in North America, Europe and Asia, serving customers across the world. Connect with Excelitas on [Facebook](#), [LinkedIn](#) and [Twitter](#).

About Kinetic River

Kinetic River Corp. is a biophotonics design, consulting, and product development company with a mission to create tools for innovative life science research and biomedical diagnostics. Based in California's Silicon Valley, Kinetic River has delivered instrumentation designs and prototypes, due-diligence technology assessments, and biophotonics training seminars to clients worldwide. For more information, visit KineticRiver.com.

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