



Kinetic River Corp. receives first Japanese patent for time-resolved flow cytometry

This issuance expands global protection for Kinetic River's technologies aimed at expanding the power of flow cytometry

Mountain View, Calif., October 1st, 2021 — Kinetic River Corp., a leader in custom flow cytometry instrumentation, announced today having been issued a patent from the Japanese Patent Office covering its innovative technologies for time-resolved flow cytometry. The official patent registration number is JP 6941053 B2, issued on September 7, 2021. This patent adds to a portfolio of 13 issued and 17 pending U.S. and international patents.

Flow cytometry is a powerful cell analysis tool with broad utility in research and clinical fields as diverse and important as tumor biology research, cancer and AIDS diagnostics, immunophenotyping, and cancer immunotherapy. Flow cytometry relies heavily on adding fluorescent labels to cells. The drive for simultaneous measurements of more and more such labels, the better to characterize cells in a sample, has been hitting both technological and operational barriers. Spectral crosstalk, due to the broad emission spectra of most common dyes used as labels, forces users to perform burdensome and costly compensation protocols. It also limits the number of dyes that can be measured simultaneously. Related constraints, such as autofluorescence background, limit the sensitivity of current assays.

The subject of Kinetic River's latest issued patent, time-resolved flow cytometry, provides solutions to these longstanding problems. This technology suite provides the ability to measure the lifetime of fluorescence emission following excitation with short laser pulses. This added parameter, in turn, allows discrimination of different dyes not only based on their color but also based on their temporal emission signature.

In one application, Kinetic River's technology enables compensation-free flow cytometry, greatly reducing both the labor burden on users and operators and the operating costs, due to the reduced number of control materials required to perform each experiment. In another application, the technology makes possible fluorescence-based instrumentation capable of measuring simultaneously 40+ colors with high sensitivity.

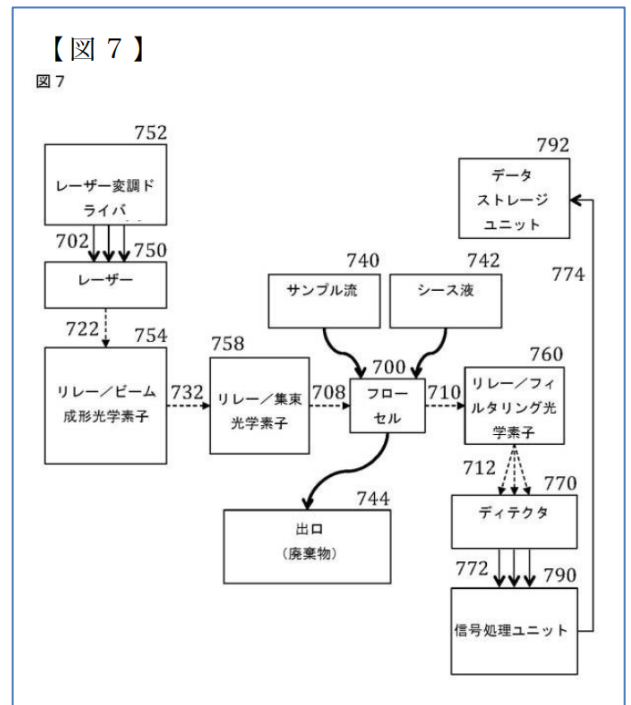


Figure 7 from the recently issued patent JP 6941053 B2.

The patented innovation also allows for automated removal of autofluorescence background in signals from cells or microspheres. By distinguishing autofluorescence from fluorescence due to added dyes, Kinetic River's technology offers greater sensitivity, more robust operation, and reduced operational costs. In addition, the technology demonstrated the ability to characterize autofluorescence emissions, which can be used to distinguish cancer cells from normal ones.

"We are very excited about the Japanese Patent Office's decision," said Giacomo Vacca, Ph.D., president of Kinetic River. "This issuance is the first outside the U.S. for this patent family, and we expect it will be far from the last. We continue to aggressively pursue protection for our extensive intellectual property in a global range of jurisdictions."

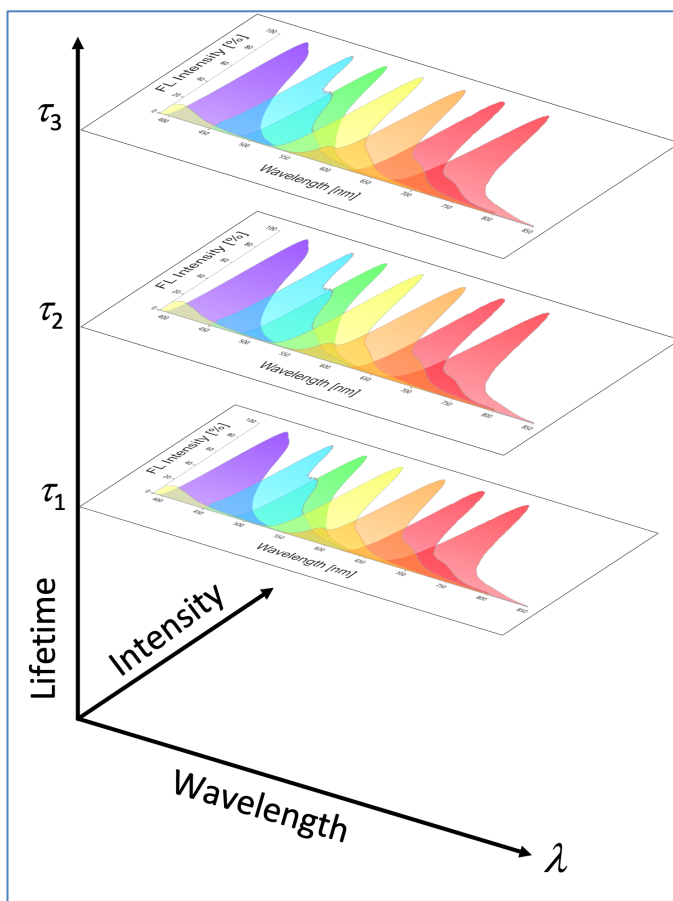
By establishing patent protection for this technology suite in Japan, this patent allows Kinetic River to pursue a sizable, growing market with presence across all the major flow cytometry segments.

About Kinetic River

Kinetic River Corp. is a product design and development company focused on flow cytometry and optics. Based in California's Silicon Valley, Kinetic River offers cutting-edge instrumentation solutions for biomedical research and the life sciences, including the *Potomac* modular flow cytometer and the *Danube*, a fluorescence lifetime flow cytometer. Kinetic River also provides a range of technical consulting services and training seminars to clients worldwide. For more information, visit KineticRiver.com.

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Kinetic River's time-resolved flow cytometry technology measures dye fluorescence emission lifetimes, allowing the use of "stacks" of dyes as schematically illustrated here. The dyes in each layer in the stack are grouped (and distinguished) by lifetime, doubling or tripling the number of measurable parameters.