

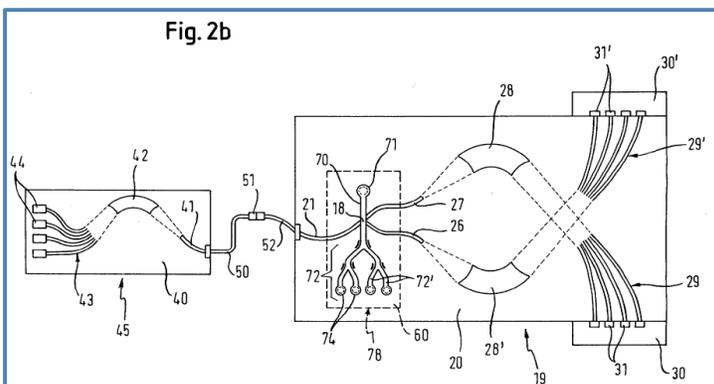
Flow Cytometry Patent Portfolio

US Patents Numbers 7245379, 7477384, and Related IP Assets

This Portfolio is Offered for Sale

Executive Summary: Integrated Optics to Achieve Multi-channel Capability

The inventions include a flow cytometric device or flow particle analyzer with integrated optics. The resulting instrument can be miniaturized while delivering high content analysis, enabling 100-200 channels in an envelope of only a few cubic inches. The usefulness of flow cytometric analysis as a proven instrumentation technology available for up to 15-18 color analysis is in practice. Although flow cytometers and similar particle flow analyzers have improved over time, the current technology had used bulk optical components and lasers with expensive photomultiplier tubes as detectors.



In contrast, integrated optical components such as light sources, multiplexers and detectors are readily accepted in the electronics and telecommunication industries. Efficient diode light sources achieve high power, with very narrow line width. Routing, multiplexing, and detector components are often fully integrated on substrates and achieve very low transmission losses. For example, while 50nm bandwidth resolution is part of flow cytometry art, the telecommunication industry has demonstrated WDM capability with just 0.4nm band spacing.

Leveraging capabilities developed for telecommunication applications in a novel manner, these patents deliver devices ready for the most challenging requirements in highly multiplexed flow cytometry and particle analysis. Arrayed waveguide grating technology replaces the optical routing bench and integrated optical diode detectors replace traditional photomultiplier tubes.

Enabling Technology: The Key to Next Generation Point of Care Products

In recent years flow cytometry companies have made some attempts to downsize their devices. For example, fiber attached diode lasers in cytometers are sometimes used as light sources. Still, wholesale transition to an integrated optics platform has proven a challenge. The portfolio anticipates and enables further developments in this area with an attractively early priority date of 12 December 2001, making the acquisition strategic for the successful bidder.

In terms of channel number, this technology could easily exceed the current performance of mass cytometry which has been heralded as a next generation of multiplexed cytometry. The present technology allows the user to remain with optical analysis. With current manufacturing technology, this is easier to implement and miniaturize compared to the mass spec technology alternatively deployed as a solution in mass cytometry. The device also opens the potential for sufficient miniaturization to address point of care applications that cannot be achieved with current designs.

Two US patents (above) are complemented by international counterparts GB2383127 and EP1454123, as well as WO/03054525 "Device and Method for Investigating Analytes in a Liquid Suspension or Solution" including pending claims. The successful bidder may be able to claim certain subject matter from the comprehensive specification, which envisions extensive embodiments and features, as commercialization moves towards application specific devices.

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