Yokogawa Fluid Imaging Technologies, Inc.

Providing innovative, imaging-based particle analysis solutions on a global scale with a world-class commitment to customer service, quality, and value since 1999.

Yokogawa Fluid Imaging Technologies, Inc., http://www.fluidimaging.com, manufactures industry-leading particle analysis instrumentation based on digital imaging technology. Our flagship product, the FlowCam, is the first automated particle analysis instrument to use digital imaging for measuring size and shape of microscopic particles in a fluid medium. With applications in biopharmaceutical research & development, municipal water, marine & freshwater research, chemicals, oil & gas, biofuels, and many other markets, Fluid Imaging Technologies leads the way in imaging particle analysis.

The Beginning

Fluid Imaging Technologies, Inc. was founded in 1999 as a spinoff from Bigelow Laboratory for Ocean Sciences (BLOS) in West Boothbay Harbor, ME. The original FlowCam was developed at Bigelow for studying plankton in ocean water. An extremely novel concept, the FlowCam was designed to combine the benefits of digital imaging, flow cytometry, and microscopy into a single instrument.

During our initial five years, the FlowCam was sold exclusively to the oceanographic research community. Towards the end of this period, several non-oceanographic customers evaluated the FlowCam for their particle analysis applications, and eventually purchased instruments. These early "industrial" customers included a flavors and fragrances manufacturer and a petrochemical company. Recognizing the potential of the FlowCam to address additional applications, we expanded and began marketing to the industrial sector, while continuing to sell to the core oceanographic customers.

Demand for the FlowCam continued worldwide, and we strengthened our commitment to new product development. In 2012, we introduced the FlowCam Particle Vision (PV) Series. Building on our patented imaging technology, the PV analyzer is pre-configured to promote maximum speed, efficiency, accuracy and repeatability in laboratories where analyses are repeatedly performed on the same products and/or on particles within the same size range. Then we received a development award from the Maine Technology Institute (MTI) Business Innovation Program for development of the next generation of an imaging flow cytometer. This allowed us to expand our research and development department, and immediately hire additional engineers to work on development of a high-sensitivity automated imaging flow cytometer.

The FlowCam Evolves and Expands

In July 2017, we introduced the first-ever Nano-Flow Imaging Particle Analyzer, http://www.fluidimaging.com/products/flowcam-nano. Now, for the first time ever, Nano-Flow™ particle imaging provides digital images of particles ranging in size from 300nm to 10µm using patented, oil immersion technology for enhanced optical resolution. The new FlowCam Nano reveals protein agglomerates, silicon oil droplets, glass shards, and other opaque, transparent, and translucent sub-visible particles with the high-resolution imagery needed for identification. Particle analyzers based on light obscuration, dynamic light scatter, Brownian motion or Coulter Principle are unable to image these particles and allow for their identification.

Ideal for analytical scientists, biochemists, formulation scientists, lab managers, and other biopharmaceutical professionals, the new FlowCam Nano was initially developed to find, expose, and identify nanoparticles in protein formulations and help track the progression of protein agglomerates from

individual, proteinaceous particles into the larger aggregates that pose a threat to the safety, efficacy, stability, and longevity of parenteral bioformulations. The ability to image and characterize nano particles has many applications across numerous markets.

In 2019 we launched the FlowCam 5000, a streamlined and affordably priced instrument with a single objective configuration. The simplified design makes it accessible across industries and ensures that it is straightforward to implement into any lab setting.

In 2019 we also launched the FlowCam + LO, which combines our patented flow imaging microscopy technology with an embedded light obscuration particle counter to provide the data necessary for USP regulations.

The FlowCam particle imaging and analysis family of instruments now encompasses 7 models engineered to analyze particles ranging in size from 300 nm to 5 mm. The companion software, VisualSpreadsheet, provides the means for the FlowCam to automatically capture and measure more than 40 different parameters in real-time from size, count, and concentration to color, grayscale, and morphological characteristics such as circularity, elongation, and fiber curl.

In April of 2020 Fluid Imaging Technologies was acquired by Yokogawa Electric Corporation, of Kanasawa Japan, a multinational electrical engineering and software company with businesses based on its measurement, control, and information technologies. The addition of the FlowCam to the Life Innovation Business unit of Yokogawa provides for a strategic expansion into the growing biopharmaceutical market.

By the end of 2020, the FlowCam exceeded 1,000 units in service. It is deployed in over 50 countries and on all seven continents, while ship-based units sail the seven seas in support of critical scientific research.