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Flow Cytometry Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028

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Abstracts

Market Overview:

The global flow cytometry market size reached US$ 5.4 Billion in 2022. Looking forward, IMARC Group expects the market to reach US$ 8.6 Billion by 2028, exhibiting a growth rate (CAGR) of 8.1% during 2023-2028. The widespread product adoption in personalized medicine, the expansion of research activities in life sciences and biotechnology, and the accelerating funding for academic and research institutes are some of the major factors propelling the market.

Flow cytometry is a technology that allows detailed multi-parameter analysis of individual cells within a heterogeneous population. This technique uses light to detect and measure physical and chemical properties of a population of cells or particles. Each particle is suspended in a stream of fluid and passed through an electronic detection apparatus. A beam of light is directed onto the stream, and the light scatter is characteristic of the particles and their properties. The intensity of these patterns can be used to derive various types of data about the physical and chemical structure of each cell. This information is valuable in a wide range of applications, including diagnostics and biomedical research. It can quickly analyze thousands of particles per second and concurrently gather data about multiple parameters of a single cell. Therefore, it is an essential tool in cell biology and medicine.

The expansion of research activities in life sciences and biotechnology majorly drives the global market. It is a crucial tool in cell biology, immunology, and oncology research. It is extensively used in the study of cell cycle and proliferation, apoptosis, and other cellular functions. The rising investments in these research areas, especially in

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developing countries, have influenced the demand for these instruments, reagents, and software. In addition, the precision and efficiency of these method in the detection and monitoring of diseases make it ideal for personalized medicine. As this medical model continues to rise in adoption, it is significantly driving the growth of the market. Apart from this, the accelerating funding for academic and research institutes, particularly those engaged in cell-based research, has been a considerable driver for the market. These funds facilitate the purchase of advanced cytometry technologies and the development of new applications, driving the overall market growth. Moreover, the accelerating awareness about the benefits of early diagnosis and therapeutics, coupled with a growing middle-class population is creating a positive market outlook.

Flow Cytometry Market Trends/Drivers:

Increasing Prevalence of Chronic Diseases

The rising incidence of chronic diseases such as cancer, HIV/AIDS, and other immune system-related diseases has substantially driven the demand for flow cytometry. Along with this, flow cytometry is indispensable in the diagnosis and prognosis of several hematological malignancies and is increasingly being used in monitoring disease progression and treatment response. As the global population ages and the prevalence of such diseases increases, the need for fast, accurate diagnostic and monitoring tools also grows. Consequently, the healthcare sector's ongoing efforts to provide effective treatments and improve patients' quality of life act as a significant driving force for the flow cytometry market.

Increased Adoption in Clinical Trials and Drug Discovery

The widespread adoption of the method in clinical trials and drug discovery is a significant market driver. In addition, flow cytometry's ability to provide detailed information about individual cells and cellular populations makes it ideal for evaluating drug effects and identifying potential therapeutic targets. Apart from this, pharmaceutical companies are increasingly relying on these methods for preclinical testing and clinical trials to assess the safety and efficacy of new drugs. Therefore, it is positively influencing the market. With the expanding pharmaceutical industry and escalating number of new drug candidates, the demand for flow cytometry in this domain is accelerating substantially, driving the overall growth of the market.

Continuous Technological Advancements

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One of the primary market drivers for the flow cytometry industry is the continued technological advancements in this field. The emergence of high-throughput flow cytometry, advancement in software solutions that offer better data analysis, and development of specific probes and reagents have significantly improved the efficacy of flow cytometry. Additionally, the introduction of compact, user-friendly, and affordable systems has led to the democratization of this technology, expanding its use from research labs to clinical settings and even point-of-care diagnostics. There has also been a rise in multicolor assays and reagents which allow simultaneous detection of many parameters, further enhancing the capabilities. These advancements not only provide more efficient and reliable results but also widen the range of potential applications, thereby contributing to the growth of the market.

Flow Cytometry Industry Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global flow cytometry market report, along with forecasts at the global, regional and country levels from 2023-2028. Our report has categorized the market based on product and service, technology, application and end-user.

Breakup by Product and Service:

Instruments

Reagents and Consumables

Accessories

Software

Services

Instruments dominate the market

The report has provided a detailed breakup and analysis of the market based on the product and service. This includes instruments, reagents and consumables, accessories, software, and services. According to the report, instruments represented the largest segment.

In the industry, market drivers for instruments and services are multifaceted. As

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instruments become more precise, user-friendly, and affordable, they facilitate an expanded range of applications, thus driving demand. In addition, the development of portable and benchtop flow cytometers has made the technology more accessible, boosting the sales of these instruments. Services related to flow cytometry, such as maintenance, training, and data analysis, also experience increased demand driven by the growing usage of this method in various sectors. The complexity of the method data requires specialized software and skilled professionals for analysis, making these services critical. As more businesses and research institutions adopt flow cytometry, they often seek out these services to ensure effective operation and accurate results, further propelling the market for these services.

Breakup by Technology:

Cell-Based Flow Cytometry

Bead-Based Flow Cytometry

Cell-based flow cytometry dominates the market

A detailed breakup and analysis of the market based on the technology have also been provided in the report. This includes cell-based flow cytometry and bead-based flow cytometry. According to the report, cell-based flow cytometry represented the largest segment.

The market for cell-based technology in the industry is driven by the increasing incidence of diseases such as cancer, where it plays a critical role in diagnosis and monitoring. This technology provides valuable information about cellular characteristics and behavior, making it crucial for understanding disease progression and treatment response. In addition, advancements in cell-based research, including stem cell research and cell therapeutics, contribute significantly to the market growth. These fields require in-depth cellular analysis, and flow cytometry is a key tool to meet these needs. In addition, the growing interest in personalized medicine, which requires precise information at the cellular level to develop individualized treatment strategies, is another driving factor. Moreover, the rise of single-cell analysis in genomics and proteomics is boosting the demand for cell-based flow cytometry, given its capability to analyze individual cells within a population.

Breakup by Application:

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Oncology

Drug Discovery

Disease Diagnosis

Stem Cell Therapy

Organ Transplantation

Hematology

Others

Oncology dominates the market

The report has provided a detailed breakup and analysis of the market based on the application. This includes oncology, drug discovery, disease diagnosis, stem cell therapy, organ transplantation, hematology, and others. According to the report, oncology represented the largest segment.

The market in the field of oncology is largely driven by the rising global incidence of cancer and the indispensable role of this method in cancer research and patient management. Flow cytometry provides rapid, detailed analysis of cell populations, making it essential for diagnosing various forms of cancer, particularly hematological malignancies. It is also widely used for monitoring disease progression and response to treatment, thereby contributing to the decision-making process in cancer management. In confluence with this, the esclating adoption of personalized medicine in oncology, which requires high-resolution cellular analysis to develop tailored treatment strategies, further propels the demand for flow cytometry. Additionally, advancements in flow cytometry technology, such as the development of multicolor flow cytometry, have significantly enhanced its capabilities in cancer research.

Breakup by End-User:

Hospitals and Clinics

Academic and Research Institutes

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Pharmaceutical and Biotechnology Companies

Others

Hospitals and clinics dominate the market

A detailed breakup and analysis of the market based on the end-user have also been provided in the report. This includes hospitals and clinics, academic and research institutes, pharmaceutical and biotechnology companies, and others. According to the report, cell-based hospitals and clinics represented the largest segment.

The market within hospitals and clinics is being driven by the growing prevalence of diseases that require flow cytometry for diagnosis and monitoring, such as cancers and immunological disorders. As the patient load for these conditions grows, so does the need for rapid, accurate diagnostic tools in these healthcare settings. Moreover, technological advancements have resulted in more compact and user-friendly flow cytometers, making it easier for hospitals and clinics to adopt this technology. The rise of personalized medicine also promotes the use of flow cytometry in these settings, as it provides the detailed cellular analysis needed for personalized treatment strategies. In addition, as this method becomes more recognized for its ability to deliver fast and comprehensive results, insurance providers are increasingly covering flow cytometry-based tests, further promoting its adoption in hospitals and clinics.

Breakup by Region:

North America

United States

Canada

Asia Pacific

China

Japan

India

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South Korea

Australia

Indonesia

Others

Europe

Germany

France

United Kingdom

Italy

Spain

Russia

Others

Latin America

Brazil

Mexico

Others

Middle East and Africa

North America exhibits a clear dominance, accounting for the largest flow cytometry market share

The report has also provided a comprehensive analysis of all the major regional markets, which includes North America (the United States and Canada); Europe

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(Germany, France, the United Kingdom, Italy, Spain, Russia, and Others); Asia Pacific (China, Japan, India, South Korea, Australia, Indonesia, and Others); Latin America (Brazil, Mexico, and Others); and the Middle East and Africa. According to the report, North America accounted for the largest market share.

The growth of the flow cytometry industry in North America is driven by a well-established healthcare infrastructure and robust research environment, both of which foster the adoption and development of advanced technologies. Along with this, the high incidence of chronic diseases such as cancer, where this method plays a crucial role in diagnosis and monitoring, also contributes to market growth. Additionally, the presence of leading companies in this region supports the development of innovative technologies and applications. Furthermore, the significant investment in research and development, including biomedical research, clinical trials, and drug discovery processes that extensively use flow cytometry, further fuels market growth. The region's growing interest in personalized medicine, which requires detailed cellular analysis provided by flow cytometry, also contributes to the market demand.

Competitive Landscape:

The global flow cytometry market is experiencing significant growth due to the growing investments in research and development to create advanced flow cytometry technologies. This includes the development of new instruments, reagents, software, and methodologies. These advancements aim to enhance the capabilities of flow cytometry, making it more precise, efficient, and user-friendly. Along with this, the escalating number of strategic partnerships with other businesses, research institutions, and healthcare providers is significantly supporting the market. These collaborations often aim to advance research, develop new applications, and broaden the reach of flow cytometry technology. Apart from this, the manufacturers are introducing education and training services, such as workshops, webinars, or online tutorials to help users fully utilize the potential of flow cytometry in their work. Therefore, it is significantly supporting the market. Moreover, key players are providing strong customer service and technical support, which is creating a positive market outlook.

The report has provided a comprehensive analysis of the competitive landscape in the global flow cytometry market. Detailed profiles of all major companies have also been provided. Some of the key players in the market include:

Agilent Technologies Inc.

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Apogee Flow Systems Ltd.

BD (Becton, Dickinson and Company)

Beckman Coulter Inc. (Danaher Corporation)

Bio-RAD Laboratories Inc.

Enzo Life Sciences Inc.

Luminex Corporation

Merck KGaA

Sony Biotechnology Inc.

Sysmex Partec GmbH

Thermo Fisher Scientific Inc.

Recent Developments:

In February 2023, Agilent Technologies Inc. announced the availability of new NovoExpress software, which brings integrated compliance tools for NovoCyte flow cytometer devices.

In June 2023, BD (Becton, Dickinson and Company) announced the global commercial launch of a new automated device that cleans samples for clinical diagnostics using flow cytometry, offering a full 'walkaway' workflow solution intended to increase standardisation and repeatability in cellular diagnostics.

In June 2021, Bio-RAD Laboratories Inc. released three StarBright Dyes made for use in flow cytometry. StarBright Violet 570, 670, and 710 Dyes are appropriate for use in multicolor flow cytometry panels because to their enhanced brightness and accurate excitation and emission spectra.

Key Questions Answered in This Report

1. What was the size of the global flow cytometry market in 2022?

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2. What is the expected growth rate of the global flow cytometry market during 2023-2028?

3. What are the key factors driving the global flow cytometry market?

4. What has been the impact of COVID-19 on the global flow cytometry market?

5. What is the breakup of the global flow cytometry market based on the product and service?

6. What is the breakup of the global flow cytometry market based on the technology?

7. What is the breakup of the global flow cytometry market based on the application?

8. What is the breakup of the global flow cytometry market based on the end-user?

9. What are the key regions in the global flow cytometry market?

10. Who are the key players/companies in the global flow cytometry market?

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