

# Fluorescence Microscopy: Americas Markets, Developments and Opportunities 2017 - 2020

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# **Abstracts**

Laboratory Markets has completed a global market study of the use of Fluorescence Microscopy (FM) in both clinical and research laboratory settings. This study, which estimates global market size for routine FM analysis from 2017 to 2020, profiles the use of FM across 2,200 clinical and research organisations, encompassing The Americas, The EMEA and the Asia Pacific and 91 countries. This study also investigated growth in the use of FM in terms of the number of FM studies, covering 8,100 studies over the period Jan 2013 to December 2016. A key goal in this study was to identify all major FM laboratories globally, to allow estimates of market sizes in terms of sample throughput/analysis costs. Details of these end-user organisations are provided as part of this report. NB: This report covers the Americas region of the market study.

FM 2017 Global Study

Market Sizes (\$Millions): Globally and covering 13 global regions and the top-10 countries

Market Growth (CAGR): Globally and covering 13 global regions and top the-10 countries

Opportunities: Core and developing opportunities in easiest-to-access market sectors

Leading Market Sectors: Identify leading sectors in core and adjacent market areas



Applications: Identify leading, growing and emerging applications and related activities

Reduce Risks and Costs: Reduce risks/costs by accurately profiling core and leading opportunities

Targeted Marketing: Reach desired market groups by reliably profiling end-users market populations

Increase Sales Opportunities: By identifying the most promising end-users in core market areas

Emerging Markets: Identify 'small but rapidly growing' markets by accurate sector and segment profiling

Increase ROI: Through reduced costs and increased sales, by accessing qualified prospects and opportunities

#### FM 2017

These new findings are the result of a detailed four-year market study by Laboratory Markets Limited, covering the period from 2013 until December 2016. Data presented in the FM 2017 Global Study have been compiled from more than 8,100 clinical and research studies carried out by experienced FM end-users. These end-users are major decision-makers in the selection and purchase of FM-related products and these 'real world' market data give in-depth information on the current and future use of FM, in addition to % growth in the numbers of FM studies, costs, trends and opportunities.

End-user organisations by name are identified in all key sectors and segments of this study. Findings are provided as a PDF report, together with the full FM 2017 market database created and compiled during this study. The data provided enables FM suppliers to easily and rapidly identify, analyse and profile areas of the FM market that offer the greatest opportunities to their own companies.

The extensive market database provided with the report augments the detailed market findings presented in the PDF report, allowing rapid and easy in-depth analysis across FM markets. These new study findings provide market information to suppliers in the FM field and they assist the identification of new FM opportunities and give powerful strategic insights into new developments and applications.



Key Features 1. Enables suppliers to profile key areas of FM markets relating to their own products and services and provides qualified prospects by end-user organisation name 2. Analyses and ranks FM practices by global region, country, organisation type, methods, applications and others, helping suppliers to identify 'high opportunity' sectors relevant to their current FM products and future plans in these fields, supporting targeted marketing and reducing costs and risks 3. Provides key information in growing and developing areas of the FM market, helping suppliers focus resources on FM growth areas, supporting new sales opportunities in important sectors 4. Helps suppliers to evolve and extend their own strategic visions, future plans and operational activities in the FM field 5. Enables suppliers to identify, analyse and rank end-user practices and needs and build new customer relationships in leading FM market sectors.

# FM 2017 Market Study

This study provides detailed market data on the use of FM across all global regions (also stratified across EMEA, Americas and Asia Pacific), covering 91 countries. Leading countries in terms of FM use are also identified, together with top users by country state or county, city and organisation name.

FM 2017 identified more than 2,200 FM end-user laboratories globally, which are profiled across key market areas allowing the analysis of all key sectors, developments and opportunities in this field.

Organisation types using FM are profiled as part of this study including hospitals, research institutes, universities and companies. The departments in which these organisations use these methods are also identified.

The PDF report provides an in-depth analysis of key findings across all major sectors, and identifies key developments and opportunities, growth and end-user costs in this diverse field.

FM market areas have been profiled applications, FM modes, confocal FM, superresolution, dyes, sample types, clinical or other use, bacteria, diseases, cell types, software, global regions (e.g. North America), Americas, EMEA, Asia Pacific segmentation, countries, end-user organisation types, departments, end-user organisations by name (as a source of qualified prospects) and other areas.

These findings assist suppliers in FM fields to keep pace with end-users' laboratory



activities and needs. They also offer a highly cost-effective source of marketing and sales related information and give new insights into today's evolving clinical and research FM fields.

#### FM 2017 Market Database

The FM 2017 global database contains more than 2,100 individual records of FM enduser organisations, covering studies reported between January 2013 and December 2016. It gives easy access to market datasets and provides valuable FM market insights.

This database is provided as an easy-to-use Excel file which can be rapidly analysed using Pivot Tables. This allows tables and graphs of all FM market sectors or segments to be easily generated in minutes.

Pivot table analysis allows the analysis of FM market data across all segments, allowing established FM methods and applications to be analysed, as well as newer developments and market opportunities.

Data contained in the FM 2017 database allows side-by-side comparisons of current and developing FM practices and applications across key sectors of this market.

This database enables easy analysis of FM practices from the methods and applications FM end-users are running, to more powerful analyses of relationships in the market, offering market predictions and trend analysis.

The market data presented in FM 2017 provides a valuable source of qualified sales prospects, based on the current and developing use of FM across multiple organisations and sectors.

# **Key Goals**

Identify sufficient numbers of published studies on the use of FM to enable Laboratory Markets to substantially identify all major FM laboratories globally, as a basis for calculating market sizes and for accurately profiling sectors, growth and opportunities in this field

Enable suppliers to profile key areas of FM markets relevant to their own products and services and provide relevant qualified prospects by end-user



# organisation name

Analyse and rank FM practices by country, end-user departments, global regions, countries, organisation names, organisation types (hospitals, clinics, medical centres etc), departments, FM applications, FM modes, confocal FM, super-resolution, dyes, sample types, clinical or other use, bacteria, diseases, cell types, software and other areas, assisting suppliers to identify sectors relevant to their current products and future plans in these fields, supporting targeted marketing and reducing costs and risks

Provide key information on growing and developing areas of the FM market, helping suppliers to focus their resources on these areas, supporting new sales opportunities in leading market sectors

Help suppliers to evolve and extend their own strategic visions, future plans and operational activities in FM

Enable suppliers to identify, analyse and rank end-user practices and needs and build new customer relationships in leading FM market sectors

Provide in-depth market data that suppliers can analyse alongside their own market information and insights into specific areas of the market, to assist in the identification of new market opportunities and reduce risk in important areas of commercial decision-making

# FM Market Study

#### 1. Market Size

Market size estimates provided in this report are based on the 'analysis' market, namely the routine costs associated with the day-to day-use of FM. Estimates are based on the numbers of leading laboratories worldwide that use FM, annual sample throughputs and per sample costs. These findings can be segmented across all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.

### 2. Market Growth



Market growth estimates (% change and CAGR) provided in this report are based on the numbers of studies reported by the leading FM laboratories worldwide, covering the periods 2014 to December 2016 inclusive. These findings can be segmented across all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.

# 3. Global Regions

The use of FM was investigated by global region. These findings can be segmented across all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.

#### 4. Countries

The use of FM was investigated by country. These findings can be segmented across all other areas of the study including, other countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.

# 5. Organisation Types

The use of FM was analysed across specific organisation types. These findings can be segmented across all other areas of the study including, countries, organisation names, other organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.

#### 6. Departments

The use of FM was analysed across end-user departments. These findings can be segmented across all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), other departments and other sectors covered in the study. In all cases, the



organisations reporting the use of FM are identified by name.

## 7. Clinical and Research Use

All FM studies cited in this report were reviewed to establish the clinical (e.g. involving patients or volunteers) or research use. These findings can be segmented across all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.

# 8. Applications

The use of FM in terms of applications including Nanoparticles, Gene expression, Single molecule, Bacterial, Cytotoxicity, Live cells, Adhesion, Cell viability, Neurones, Apoptosis, Cytoskeleton, Cellular localisation, Morphology, 3D Imaging, Cell growth, Lipids, Metabolism, Calcium, Cell migration, Membrane potential, Fluorescent proteins, Reactive oxygen species, Cell dynamics, Cell function, Extracellular matrix, Translocation, Microtubules, Spatial resolution, Diagnostics, Membranes, Biomarkers, Molecular dynamics, Intracellular localisation, 2D Imaging, Macromolecules, Parasites, Temporal events, Protein-protein interactions, Cell counting, DNA repair, Ion measurements, Intracellular trafficking, Immune cells, Mutagenesis, Single cells, Metabolites, in vivo studies and others. These findings can be segmented across all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.

#### 9. FM Modes

The use of FM in terms of modes including Fluorescence Resonance Energy Transfer, Laser Scanning Confocal, Fluorescence correlation spectroscopy, After Photobleaching, Total internal reflection fluorescence, Hyperspectral Imaging, Structured Illumination Microscopy, Differential interference contrast, Stimulated Emission Depletion, Fluorescence Recovery, light sheet, Stochastic Optical Reconstruction Microscopy, harmonic generation microscopy, Spinning Disk Confocal, Photoactivated Localization Microscopy, Fluorescence Recovery After Photobleaching, super resolution, Time-lapse live cell imaging, Photo-activated localization microscopy, Super-resolution optical fluctuation imaging, Light sheet fluorescence microscopy, Photokinetics, 3D super



resolution, light emitting diode (LED) fluorescence microscopy, WF Fluorescence, Widefield epifluorescence, fluorescence intravital video microscopy and time-resolved fluorescence anisotropy imaging. These findings can be segmented across all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.

#### 8. Confocal FM

The use of confocal FM. These findings can be segmented across all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.

# 9. Super-Resolution

The use of Super Resolution FM. These findings can be segmented across all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.

#### 10. Dyes

The use of FM in terms of dyes including Annexin, GFP, Autofluorescence, Alexa 488, Coumarin, Fluorescein isothiocyanate, Ethidium bromide, Carboxyfluorescein, Cy3, Alexa 647, Fluo-4, Mcherry, Auramine, Fura-2, Dihydroethidium, Nile red, Filipin, Fluo-3, Hoechst 33342, Concanavalin A, Laurdan, DCFH-DA, Atto 488, Alexa 555, Congo red, Alexa 568, BCECF, Fluorescent protein, Atto 647n, Mitotracker, Di-4-Aneppdhq, Calcofluor white, Alexa 546, Alexa 594, Nile blue, Cyto-ID, Celltracker, Dtomato, M540, FM4-64, JC-1, Fast blue, Lipid dyes, Aniline blue, Bodipy 493/503, Hoechst, Alizarin red, Flourescein, Actin-GFP and DAP. These findings can be segmented across all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.



# 10. Sample Types

The use of FM in terms of sample types including Stem Cells, Cell lines, Live Cells, Actin, Proteins, Lipids, Bacterial, Escherichia coli, Human cells, Cell culture, Collagen, Endothelial cells, Cancer cells, Brain cells, Fixed samples, Hela cells, Particles, Quantum dots, Polymers, Differentiate, Bone Marrow, Fibroblasts, Macrophages, Cultured cells, Cardiomyocytes, Amyloid, Mammalian cells, Spermatozoa, Cells in vitro, HEK cells, Micelles, Liver cells, Plant materials, Bone cells, Arabidopsis cells, Arteries, Tissues, Saccharomyces cerevisiae, Bladder cells, Mouse cells, Mesenchymal stem cells, Vesicles, Sputum, Biopsies, Leukocytes, Fish cells, Kidney cells, Hepatocytes, Emulsions and Cyanobacteria. These findings can be segmented across all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.

#### 10. Diseases

The use of FM in terms of diseases including Breast Cancer, Liver Cancer, Diabetes, Lung Cancer, Alzheimer's Disease, Cardiovascular, Prostate cancer, Drug Resistance, Atherosclerosis, Tuberculosis, leukaemia, Cervical cancer, Gastric Cancer, Stiffness, Glioma, lymphoma, Ovarian cancer, Herpes, Neuroblastoma, Pneumonia, Glioblastoma, Ototoxicity, Parkinson Disease, Autoimmune Disease, Edema, Asthma, Depression, Arrhythmia, Osteoarthritis, Thrombosis, Malignancy, Bladder Cancer, Antibiotic Resistance, Cholera, Fracture, Cataract, Pregnancy, Myocardial Infarction, Amyotrophic Lateral Sclerosis, Blood Pressure, Infertility, Periodontal disease, Malaria, Colitis, Infusion, Age-Related Macular Degeneration, Hypertension, Chagas Disease, Dehydration, Brain tumor and Huntington's disease. These findings can be segmented across all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.

#### 10. Cells

The use of FM in terms of cells including Bacterial cells, Cancer cellc, live cells, Cell lines, Viruses, Stem cell, Hela cell, liposomes, Lymphocytes, Plant cell, Human cell, Gametes, Animal cells, Mesenchymal cell, ectoderm cells, Drosophila cells, Insect cell, Retinal cells, endoderm cells and Fish cells. These findings can be segmented across



all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.

#### 10. Software

The use of FM in terms of software including IDL, ICY, Comet, Image J, Matlab, Python, Imaris, Fiji, Micromanager, MetaMorph, Huygens and Bioimage. These findings can be segmented across all other areas of the study including, countries, organisation names, organisation types (e.g. hospitals, research institutes, universities, companies, etc.), departments and other sectors covered in the study. In all cases, the organisations reporting the use of FM are identified by name.



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