

TriMark Publications

July 2008
Volume: TMRMICRO08-0701

MICROSCOPY MARKETS

(SAMPLE COPY, NOT FOR RESALE)

Trends, Industry Participants, Product Overview and Market Drivers

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1 Overview

1.1 Statement of Report

The purpose of this report is to describe specific major market segments of the microscope market. It includes examinations of those microscopy devices operated as light, confocal, electron, ion and scanning probe microscopes. Also analyzed are applications for certain microscope technology platforms such as semi-conductor processing systems and automated imaging systems. This study deals primarily with the analysis of market segments of professional research microscopes used in industrial, clinical and academic laboratories. Emphasis is on the U.S. markets; however, the worldwide markets are analyzed and discussed as appropriate. Specifically, this analysis examines those companies and products which are actively developing and marketing microscopy devices.

1.2 Scope of This Report

This examination provides an overview of individual microscopy markets, which are believed to possess the elements that will lead to sustained growth rates for the foreseeable future. The current status of each market is assessed, with projections for market size, discussions of the market strategies of leading companies in each market segment, and evaluations of the forces that underlie the high growth of each segment. An overview of the instruments and supplies marketed by major companies is additionally provided for each market segment. The market size, growth rates, and market components for instruments used for microscopy are also analyzed.

This report reviews and analyzes the structure of the microscopy industry as a whole, as well as the patents that apply to microscopy. The Company Profiles section includes a detailed discussion of the manufacturers that have pioneered the diverse technologies of microscopy and examines how their latest products and services are currently marketed.

The principal objectives of this study are to:

- Identify viable technology drivers through a comprehensive look at various platform technologies for microscopes.
- Obtain a complete understanding of the use of microscopy—predictive, screening, prognostic, diagnostic and monitoring—from its basic principles to its applications.
- Discover feasible market opportunities by identification of high-growth applications in different imaging areas, with a focus on the biggest and expanding markets in microscopy.
- Focus on global industry development of microscopy through an in-depth analysis of the major world markets for microscopic imaging, including forecasts for growth.
- Establish the essentials of the microscopic imaging market including definitions, processes and trends.

Market figures regarding the current value of the microscopy market are taken from the most recently available data of the global medical products industry. This examination covers the following categories of microscopy:

- Light microscopes.
- Electron microscopes.
- Confocal microscopes.
- Scanning probe microscopes.

Analysis of the microscopy market includes the use of charts and graphs measuring product growth and trends within the marketplace. In addition, a discussion of research into the microscopy arena provides the reader with a deeper understanding of the possibilities for future technology development and avenues for possible R&D budgets. Company-specific information, including sales figures, product pipeline status, and research and development trends, is provided throughout the report. The study will:

- Assess the microscopy market drivers and bottlenecks, from the perspective of the medical and scientific communities.

- Discuss the potential benefits of the microscopy market for various sectors of the medical and scientific communities.
- Establish the current total market size and future growth of the microscopy market and analyze the current size and growth of various segments.
- Provide current and forecasted market shares by company.
- Discuss profit/business opportunities by imaging segment.
- Provide strategic recommendations for near-term business opportunities.
- Assess current commercial uses of the microscopic technology platforms.
- Review microscopy product business models.

The emphasis in this analysis is on those companies that are actively developing and marketing microscopy technologies. The reader should consult other TriMark Publications reports at <http://www.trimarkpublications.com> for a detailed discussion of the other important individual market segments that are related to the medical imaging markets, such as X-ray and radiography, mammography, magnetic resonance imaging (MRI), ultrasound, gamma camera market, computed tomography (CT) scans, and picture archiving and communication systems (PACS).

This report concentrates on the microscopy market segment in important worldwide markets such as the U.S., Japan and Europe. It focuses primarily on the hospital market segment, and, separately, on a description of the instruments, reagents and supplies marketed by major companies in the microscopy segment. The analysis discusses the market size, growth rates and market components for instruments and reagents, controls and consumables used in microscopy. This study reviews the market for microscopy in the clinical and research hospital market, rather than the heavy industrial uses of microscopy imaging. It defines the dollar volume of sales of the market, both worldwide and in the U.S., and analyzes the factors that influence the size and the growth of the market segments.

The report discusses activity and trends in the microscopy market and goes on to discuss in detail the trends that have stimulated this market. Leading companies are discussed in depth with a section on the history of the company, the product line, business and marketing analysis, and a subjective commentary of the position of the company in its market. Microscopy products consist of hardware, software and supplies. This report will focus on end-user markets including hospitals, research facilities, freestanding clinics and equipment-leasing companies.

1.3 Objectives

This report reviews the microscopy market segments for equipment supporting basic research, clinical usage and the monitoring and testing of industrial devices. Both the dollar volume of sales in the U.S. and international microscopy markets are defined and analyzed via factors that influence the size and growth of the market segments. Details of market sizes and growth rates, with projections usually through 2013 for U.S. and international markets, are included.

Activity and trends in the microscopy market are also discussed, including the number of institutional placements, and the factors that influence purchasing activity. Surveys of the companies known to be marketing, manufacturing and/or developing microscopy instruments in the U.S. are covered. Each company is discussed in depth with sections on its history, product lines, business and marketing analysis, and a subjective commentary of the position of the company in its market. Company profiles have been compiled from annual reports, investment analysis summaries, and interviews with individuals at the client/company interface who thus often contribute to the companies' success or failure, or, due to their key positions, can—and often do—provide important insider comment.

Included in this analysis are:

- Accurate and up-to-date R&D information from the major microscopy companies.
- Identification of the unmet needs in current microscopy development markets and how far each product goes to meet these needs.
- In-depth comparative analyses of individual products.
- Profiles of current research developments that will impact the microscopy market and the direction that innovative research will take.

Report facts at a glance:

- A comprehensive, up-to-date report describing and analyzing microscopy markets.
- Data-intensive research—an imperative for the serious player.
- Focused identification of key microscopy market segments.
- Reader-friendly tables, charts and text formats.
- The profiles of leading companies, covering key and niche players worldwide.
- Market data, tables, shares, analyses, trends, *etc.*
- Research assisted by many key players worldwide.

1.4 Methodology

The information in this study is based on interviews with sales and marketing professionals of companies in the microscopy market. People from virtually every company mentioned were queried, some several times, about their companies' products and marketing strategies as well as their overall thoughts about their industry segment. Information was also obtained from interviews with founders, chief executive officers and vice presidents of some of the companies discussed in the report. The actual use of many of the microscopy technology platforms described in this report was based upon the lab experience of one of the authors.

Sources of information for the study were trade association publications and meetings, product brochures and catalogs and company literature. When the companies under discussion were publicly held, an examination of the annual reports, 10k filings and financial reports were used as the basis of the data reported. Important data sources include the Health for All Database of the World Health Organization (WHO), data published by the statistical office of the European Communities (Eurostat), as well as various health data from the United Nations and the Organization for Economic Cooperation and Development. When possible and practicable, the most recent data available have been used.

The author of this report has had several decades of direct experience in microscopy and is a doctoral level clinical scientist. He has over 30 years of experience in laboratory testing and instrument and reagent development technology, as well as extensive experience in senior level positions in biotech and medical service companies. The editor is the Director of Microscopy at Drexel University's Department of Materials Science and Engineering in the College of Engineering.

Some of the statistical information was taken from Biotechnology Associates' databases and from TriMark's private data stores. The information set forth in this study was obtained from sources that we believe to be reliable, but we do not guarantee the accuracy, adequacy or completeness of any information, omission or for the results obtained by the use of such information.

Primary Sources—TriMark collects information from hundreds of database tables and many comprehensive multi-client research projects and Sector Snapshots that we publish annually. We extract relevant data and analytics from TriMark's research of the past three years as part of this data collection. We also extract qualified data feeds from e-questionnaire responses and primary research responses for this compilation.

Secondary Sources—TriMark uses research publications, journals, magazines, newspapers, newsletters, Industry reports, Investment Research reports, Trade & Industry Association reports, government-affiliated trade releases and other published information as part of our secondary research materials.

The information is then analyzed and translated by the Industry Research Group into a TriMark study. The Editorial Group reviews the complete package with product and market forecasts, critical industry trends, threats and opportunities, competitive strategies and market share determinations. The report conclusions are verified through intensive interviewing of top-ranking companies in the industry.

TriMark Publications Report Research and Data Acquisition Structure

The general sequence of research and analysis activity prior to the publication of every report includes the following items:

- Completing an extensive secondary research effort on an important market sector, including gathering all relevant information from corporate reporting, publicly-available databases, proprietary databases, direct meetings and personal interviews with key personnel.
- Formulating a study outline with the assigned writer, including important items:
 - Market and product segment grouping and evaluation of their relative significance.
 - Key competitor evaluations including their relative positions in the business and other relevant facts to prioritize diligence levels and assist in designing a primary research strategy.
 - End-user research to evaluate analytical significance in market estimation.
 - Supply chain research and analysis to identify any factors affecting the market.
 - New technology platforms and cutting edge applications.
- Identifying the key technology and market trends that drive or affect these markets. Assessing the regional significance for each product and market segment for proper emphasis of further regional/national primary and secondary research.
- Launching a combination of primary research activities including two levels of questionnaires, executive-direct focused, company-specific and region-specific communications to qualified and experienced senior executives worldwide.
- Careful review of key companies in the sector.
- Completing a confirmatory primary research assessment of the report's findings with the assistance of Expert Panel Partners from the industry being analyzed.

1.5 Aims of This Report

This analysis includes market segment size, growth rates projections, major players and competitive strategies for the microscopy market segment. It also incorporates an analysis of technology platforms, descriptions of companies in the field, and trends in technology and business that impact this market segment. It will discuss technology platforms in various forms of microscopy including light, confocal, electron, ion, and scanning probe. Products currently in development, perceived medical and other market needs, the market outlook, economic considerations, and pricing for the microscopy market segment are also examined.

1.6 Executive Summary

The global market for microscopes and accessories was estimated at \$██████ in ██████ and is expected to reach \$██████ in ██████; that is, an average annual growth rate of ███%. Charged particle microscopes—which have the largest market share of any product segment and are one of the fastest-growing segments—are projected to increase their market share further, from ███% in ██████ to ███% in ██████, with a CAGR of ███%. The second largest segment, optical microscopes, has the lowest growth rate, and as a result is expected to lose market share significantly over the next ███ years. Optical microscopes are projected to lose market share, from ███% in ██████ to ███% in ██████, with a CAGR of ███%.

The scanning probe microscopes segment constituted less than ███% of the market in ██████, but it has the highest projected annual growth rate (███%) through ██████, with a projected market share to ███% in ██████. In ██████, the life sciences were the dominant end-user market for microscopes, with ███% of the total market, followed by semi-conductors and materials science, each with ███%, and nanotechnology with ███%.

The U.S. accounted for the largest share of the global microscope market in [REDACTED] with over [REDACTED]% of the market for all types of microscope. Japan has the second-largest market share with [REDACTED]% of the global market, followed by the European Union (E.U.) with [REDACTED]% and other Asian countries with [REDACTED]%. However, geographical market shares varied with this type of technology.

1.7 Trends and Conclusions

- Unit sales growth drives revenue moderately, with the differential reflecting the continued trend to value-added, application-specific systems.
- Light microscopy accounts for approximately [REDACTED]% of microscope revenues and more than [REDACTED]% of units sold. Light microscopy revenues are expected to decrease to [REDACTED]% of the total microscopy market by [REDACTED] in view of the overall lower growth of this segment compared to the other high-growth segments.
- When light microscopy is removed from consideration, revenue growth for the remaining microscopy segments increases to the high teens. Also, two-thirds of remaining revenues and [REDACTED]% of unit sales derive from electron microscopy.
- Scanning probe microscopy is anticipated to grow at an accelerated rate of approximately [REDACTED]% through [REDACTED], while confocal, electron and ion microscopy will exceed light microscopy in growth by about [REDACTED]%.
• The “big four” light microscope companies continue to dominate the U.S. market overall.
- Electron microscope manufacturers occupy a second tier in revenue market share.
- The “big four” electron microscope manufacturers continue to dominate the world market.
- A third tier is composed of companies specializing in microscopies such as scanning probe and three-dimensional microscopy.
- Semiconductor-related microscopy has undergone tremendous growth with recent leveling.
- Medical automated imaging is poised for take-off on the basis of recent regulatory approvals for automated cervical cytology.
- Specialized (*e.g.*, acoustic force) and new (*e.g.*, helium ion scanning) microscopies continue to develop.