

Molecular Spectroscopy Market Set for Expansion to \$13.28 Billion by 2032 | SNS Insider

Valued at \$7.15 Billion in 2023 and projected to grow at a 7.15% CAGR, driven by technological innovation and expanding global demand.

AUSTIN, TX, UNITED STATES, February 19, 2025 /EINPresswire.com/ --According to Research by SNS Insider, The global <u>Molecular Spectroscopy</u> <u>Market</u>, valued at USD 7.15 billion in 2023, is poised for significant growth, with forecasts projecting a rise to USD 13.28 billion by 2032. This robust



expansion, driven by a steady CAGR of 7.15% from 2024 to 2032, is fueled by rapid advancements in technology, increased R&D investments, and expanding applications across industries including pharmaceuticals, environmental monitoring, and food safety.

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The steady 7.15% CAGR underscores a pivotal industry shift, unlocking new opportunities for research and investment." Key industry trends indicate that enhanced precision, automation, and integrated digital platforms are redefining operational efficiencies and quality control processes. As organizations worldwide prioritize innovation to stay competitive, the evolving landscape of molecular spectroscopy offers transformative opportunities for strategic investment and market leadership.

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By Technology: In 2023, nuclear magnetic resonance (NMR) spectroscopy held the largest market share, accounting for 28% of the total market.

NMR spectroscopy is commonly known for its precision and accuracy in the determination of

molecular structures. The method is greatly preferred in research and industrial use, especially in chemistry and pharmaceuticals, where it is essential in the identification of compounds and the determination of molecular structures. The dominance of the NMR segment is due to its proven history in analytical science and its capability to deliver precise information on molecular dynamics, thus being the first choice for experts across industries.

The Raman spectroscopy segment is expected to grow at the fastest rate in the forecast period. Raman spectroscopy offers special benefits, including its non-destructive nature and capability to study solid, liquid, and gas samples without complicated sample preparation. Its uses are increasing in a broad array of industries, ranging from pharmaceuticals to environmental monitoring and materials science. The increasing use of Raman spectroscopy in industrial quality control and the rising need for portable, real-time analysis tools are propelling this segment's swift growth.

The pharmaceutical applications segment emerged as the dominant force in the molecular spectroscopy market in 2023, holding a 38% market share.

The pharmaceutical sector depends on molecular spectroscopy for drug discovery, development, and quality control operations. Methods like NMR and infrared (IR) spectroscopy are critical in the analysis of the chemical makeup of drugs, their purity, and their interaction with biological systems. With increasing global pharmaceutical markets and the need for high-quality drugs, molecular spectroscopy will continue to play a central role in guaranteeing drug safety and efficacy.

Biotechnology and biopharmaceuticals are the fastest-growing sectors in the molecular spectroscopy market. As there is a growing interest in personalized medicine and biologics, drug development, manufacture, and quality control are assisted by molecular spectroscopy. An increase in the research of biopharmaceuticals, particularly in the formation of biologic drugs such as monoclonal antibodies, is driving the growth of these technologies. The capability of molecular spectroscopy to give a thorough molecular characterization of intricate biological compounds renders it an essential tool in biopharmaceutical laboratories.

Key Players in Molecular Spectroscopy Market

• Thermo Fisher Scientific (Nicolet iS50 FTIR Spectrometer, Q Exactive Plus Orbitrap Mass Spectrometer)

• PerkinElmer (LAMBDA 265 UV-Vis Spectrophotometer, Frontier FTIR Spectrometer)

• Agilent Technologies (Cary 3500 UV-Vis Spectrophotometer, 7000 Series Triple Quadrupole GC-MS)

• Bruker Corporation (Tensor 27 FTIR Spectrometer, Ultraflextreme MALDI-TOF Mass Spectrometer)

• Horiba Scientific (Scientific Raman Spectrometers - LabRAM HR Evolution, UV-Vis-NIR Spectrophotometer - U-3900i)

• JASCO Corporation (V-750 UV-Visible Spectrophotometer, FT/IR-4600 Series FT-IR

Spectrometer)

- Shimadzu Corporation (UV-2600 UV-Visible Spectrophotometer, IRSpirit FTIR Spectrometer)
- Bio-Rad Laboratories (Bio-Plex 200 System, ChemiDoc MP Imaging System)
- Malvern Panalytical (Morphologi 4-ID Particle Imaging System, Zetasizer Ultra)
- Hitachi High-Tech Corporation (U-5100 UV-Vis Spectrophotometer, FTIR-8400S Fourier Transform Infrared Spectrometer)
- Oxford Instruments (XploRA PLUS Raman Microscope, INCA X-ray Spectrometer)
- Renishaw (InVia Raman Microscope, Raman Imaging Systems)
- Enwave Optronics (UV-Vis-NIR Spectrometer, MicroNIR 1700 Handheld Spectrometer)
- Newport Corporation (Oriel Instruments Fiber Optic Spectrometer, Oriel 77250 Raman Spectrometer)
- Witec (alpha300 R Confocal Raman Microscope, spm 3000 AFM Spectrometer)
- SPECTRO Analytical Instruments (SPECTRO iQ 8000 X-ray Fluorescence Spectrometer, SPECTRO ARCOS ICP-OES Spectrometer)
- Carl Zeiss (Axio Observer Microscope, LSM 880 Confocal Laser Scanning Microscope)
- Analytical Systems Keco (AC-1500 FT-IR Spectrometer, HT-5000 High-Throughput NIR Analyzer)
- Edinburgh Instruments (FS5 Fluorescence Spectrometer, FLS1000 Spectrometer)

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Regional Analysis: North America is the largest regional market for molecular spectroscopy, accounting for 37% of the global market share in 2023.

The dominance of the region is assured through advanced healthcare infrastructure, robust pharmaceutical and biotechnology industries, and ongoing investments in research and development. The United States and Canada have some of the top research institutions in the world and hence promote the use of molecular spectroscopy technologies in both academia and industry.

On the contrary, the Asia-Pacific region is the most rapidly growing market for molecular spectroscopy. Due to growing investments in healthcare infrastructure and increasing growth in pharmaceutical and biotechnology sectors, nations such as China, India, and Japan are witnessing the fastest adoption of molecular spectroscopy. The growth of research centers and government policies favoring scientific innovation are also propelling the market growth in this region.

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