

Middle East & Africa Nanoparticle Measurement Instrument Market Report (2021-2031) by Scope, Segmentation, Dynamics, and Competitive Analysis

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Abstracts

The nanoparticle measurement instrument market in the Middle East and Africa is projected to grow significantly, reaching approximately USD 304.48 million by 2031, up from USD 223.91 million in 2023, with a compound annual growth rate (CAGR) of 3.9% during this period.

Executive Summary and Market Analysis

The market is divided into key regions: Saudi Arabia, South Africa, the UAE, and the Rest of the Middle East and Africa. As of 2023, South Africa holds the largest market share, driven by the increasing adoption of nanotechnology in healthcare, advancements in gold nanoparticles, and the presence of various market players.

Market Segmentation

The Middle East and Africa nanoparticle measurement instrument market is categorized by type and end user.

By Type: The market includes various instruments such as X-Ray diffractometers, scanning electron microscopes, atomic force microscopes, photon correlation spectroscopy, nanoparticle surface area monitors, transmission electron microscopes, condensation particle counters, differential mobility analyzers, scanning mobility particle sizers, nanoparticle tracking analyzers, aerosol particle mass analyzers, and others. Notably, the transmission electron microscope dominated the market in 2023.

By End User: The market is segmented into the biotechnology industry, pharmaceutical

industry, contract research organizations (CROs), and others. The pharmaceutical industry was the leading segment in 2023.

Market Outlook

Nanotechnology is increasingly utilized in the pharmaceutical sector for applications such as cancer treatment, targeted drug delivery, and diagnostic imaging. Nanoparticles serve as effective drug delivery vehicles, enhancing therapeutic efficacy while minimizing side effects. The development of nanopharmaceuticals, which are engineered at the nanoscale, aims to improve drug bioavailability, controlled release, and targeted delivery. This necessitates precise measurement tools to monitor drug delivery, ensure quality control, and characterize nanoparticles. Understanding and controlling nanoparticle size, shape, surface charge, and composition are critical for successful nanopharmaceutical development. Consequently, instruments like zeta potential analyzers, electron microscopes, and size analyzers are essential for nanoparticle research. The ongoing advancements in nanotechnology create a demand for sophisticated measurement tools, which are vital for ensuring the precise delivery of drugs and enhancing their stability and solubility.

The push for innovation in the pharmaceutical industry through nanotechnology further drives the need for advanced measurement instruments. These tools are crucial for the development, characterization, and quality assurance of nanopharmaceuticals, ensuring compliance with safety and efficacy standards.

Country Insights

The market encompasses South Africa, Saudi Arabia, the UAE, and the Rest of the Middle East and Africa, with South Africa leading in market share as of 2023. In February 2020, the South African Agency for Science and Technology Advancement (SAASTA) and the Nanotechnology Public Engagement Programme (NPEP), in collaboration with the Department of Science and Innovation (DSI), hosted a Nanotechnology Symposium to discuss the safety and environmental aspects of nanotechnology, promoting sustainable development in the field.

The pharmaceutical and biotechnology sectors in South Africa have advanced due to the integration of nanotechnology in healthcare. The United Nations' Sustainable Development Goals (SDGs) highlight the potential of nanotechnology to develop therapies for chronic diseases like tuberculosis and malaria, as well as to combat AIDS and other infectious diseases. South African researchers have utilized nanomaterials,

including gold and silver nanoparticles, carbon nanotubes, and quantum dots, for rapid virus diagnostics and early cancer detection. For instance, in 2022, Afrigen Biologics in Cape Town successfully produced a lab-scale batch of a COVID-19 vaccine similar to Moderna's, showcasing the potential for low- and middle-income countries to manufacture their vaccines. Additionally, South African institutions like the Council for Scientific and Industrial Research (CSIR) and private companies have developed nanotechnology-based solutions for water purification. The emergence of nanoparticle-based therapies, such as gold nanoparticle vaccines, presents opportunities for market players to expand their reach in South Africa during the forecast period.

Company Profiles

Key players in the nanoparticle measurement instrument market include Bruker, Spectradyne LLC, Malvern Panalytical Ltd, IZON Science LTD, Particle Metrix GmbH, Microtrac Retsch GmbH, Horiba Ltd, Angstrom Advanced Inc., Shimadzu Corp, and Yokogawa Electric Corp. These companies are pursuing various strategies, including expansion, product innovation, and mergers and acquisitions, to enhance their market presence and offer innovative solutions to customers.

Reason to buy

Save and reduce time carrying out entry-level research by identifying the growth, size, leading players, and segments in the Middle East & Africa nanoparticle measurement instrument market.

Highlights key business priorities in order to assist companies to realign their business strategies.

The key findings and recommendations highlight crucial progressive industry trends in Middle East & Africa nanoparticle measurement instrument market, thereby allowing players across the value chain to develop effective long-term strategies.

Develop/modify business expansion plans by using substantial growth offering developed and emerging markets.

Scrutinize in-depth Middle East & Africa market trends and outlook coupled with the factors driving the nanoparticle measurement instrument market, as well as those hindering it.

Enhance the decision-making process by understanding the strategies that underpin security interest with respect to client products, segmentation, pricing, and distribution.

Companies

Bruker

Spectradyne LLC.

Malvern Panalytical Ltd

IZON Science LTD

Particle Metrix GmbH

Microtrac Retsch GmbH

Horiba Ltd

Angstrom Advanced Inc.

Shimadzu Corp

Yokogawa Electric Corp

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