

# Metal Nanoparticles Market Analysis, Revenue Share, Company Profiles, Launches, and Forecast till 2030

*The global market for metal nanoparticles reached a value of USD 2.40 billion in 2021*

NEW YORK, NEW YORK, USA, May 30, 2023 /EINPresswire.com/ -- The global [metal nanoparticles market](#) reached a value of USD 2.40 billion in 2021 and is projected to experience a compound annual growth rate (CAGR) of 11.5%

during the forecast period. The increasing occurrence of cancer cases worldwide across different age groups and the biomedical applications of metal nanoparticles in enhancing radiotherapy, thermal ablation, drug delivery, gene delivery, and anticancer treatment are expected to drive the revenue growth of the metal nanoparticles market. According to a recent report by the World Health Organization (WHO), cancer is one of the leading causes of death, resulting in nearly 10 million fatalities globally. Among these cases, breast cancer accounted for approximately 2.26 million cases, lung cancer for 2.21 million cases, colon and rectum cancer for 1.93 million cases, prostate cancer for 1.41 million cases, and skin cancer for 1.20 million cases. Nanoparticles and their properties hold potential for effective cancer treatment.

The desirable properties of metal-based nanoparticles, such as their ability to be functionalized with various functional groups like antibodies, peptides, DNA, and RNA, are encouraging manufacturers to increase production. These functional groups target cells, along with the use of biocompatible polymers like polyethylene glycol. Metal nanoparticles exhibit enhanced efficiency in biomedical applications and have shown promising results, prompting further research into modifying nanoparticles to improve stability during chemical processing and ensure environmental safety.

The demand for metal nanoparticles is expected to rise due to their applications across various industries and advancements in nanotechnology. They are increasingly used in therapeutic and diagnostic applications in medicine, particularly in the treatment of cancer, tumors, and targeted patient diagnosis.

Significant research and development activities are being conducted in the field of nanoparticles.



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For instance, studies have indicated that gold nanoparticles can enhance biosynthesis in plant plastids, and on October 26, 2022, researchers from Northwestern University developed unconventional open-framework superlattices composed of hollow metal nanoparticles to improve the method. This approach also enables the evaluation of particle functionality in diverse plant cells. Metal nanoparticles have a significant impact on osteoblast differentiation simulation in dentistry and are being widely adopted on titanium dental implant surfaces, which have gained popularity recently. Magnetic nanoparticles are being explored for wastewater treatment, which is expected to drive the demand for metal nanoparticles and contribute to market revenue growth.

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Companies profiled in the market report include American Elements, Nanoshel LLC, Nanostructured & Amorphous Materials, EPRUI Nanoparticles & Microspheres, US Research Nanomaterials, Tanaka Holdings, Meliorum Technology, Nanocomposix, BBI Group, Sigma-Aldrich, and Nanocs

### Advantages of the Metal Nanoparticles Market

The metal nanoparticles market offers several advantages that contribute to its growth and appeal. These advantages include:

1. **Biomedical Applications:** Metal nanoparticles play a crucial role in biomedical applications. They are used to enhance various medical treatments such as radiotherapy, thermal ablation, drug delivery, gene delivery, and anticancer treatment. Their unique properties make them effective in targeting specific cells and delivering therapeutic agents, leading to improved treatment outcomes.
2. **Cancer Treatment:** With the rising prevalence of cancer cases globally, metal nanoparticles provide a promising avenue for cancer treatment. They have demonstrated efficiency in treating different types of cancer, including breast, lung, colon, rectum, prostate, and skin cancer. Researchers are actively exploring the potential of metal nanoparticles in developing novel cancer therapies.
3. **Functionalization Capability:** Metal nanoparticles can be functionalized with various functional groups like antibodies, peptides, DNA, and RNA. This capability allows for specific targeting of cells and facilitates the development of tailored biomedical applications. Manufacturers can customize metal nanoparticles to suit specific requirements, enhancing their versatility and effectiveness.
4. **Research and Development:** The metal nanoparticles sector has seen a significant increase in research and development activities. Ongoing studies aim to further understand the properties and potential applications of metal nanoparticles. These efforts contribute to advancements in the field, leading to the development of improved production methods, increased stability during chemical processing, and enhanced safety for the environment.
5. **Industrial Applications:** Metal nanoparticles find applications beyond the biomedical field. They are increasingly used across various industries, driven by the advancements in

nanotechnology. Industries such as electronics, energy, environmental remediation, and catalysis utilize metal nanoparticles for their unique properties and capabilities. This wide-ranging demand contributes to the growth of the metal nanoparticles market.

6. **Advancements in Nanotechnology:** The continuous progress in nanotechnology has spurred the demand for metal nanoparticles. As nanotechnology evolves, metal nanoparticles find new applications and avenues for development. The integration of metal nanoparticles in emerging technologies further expands their market potential.

Overall, the metal nanoparticles market offers advantages such as biomedical applications, cancer treatment potential, functionalization capability, ongoing research and development, diverse industrial applications, and the continuous advancements in nanotechnology. These factors contribute to the growth and attractiveness of the metal nanoparticles market.

To know more about the report @ <https://www.reportsanddata.com/report-detail/metal-nanoparticles-market>

For the purpose of this report, Reports and Data has segmented the global metal nanoparticles industry into Metal Outlook, Synthesis Process Outlook, End-Use Outlook, Regional Outlook:

**Metal Outlook (Revenue, USD Billion; 2019-2030)**

- Platinum/Palladium
- Gold
- Silver
- Copper
- Nickel
- Iron
- Others

**Synthesis Process Outlook (Revenue, USD Billion; 2019-2030)**

- Chemical
- Physical
- Bio based

**End-Use Outlook (Revenue, USD Billion; 2019-2030)**

- Pharmaceutical & healthcare
- Electrical & electronics
- Catalyst
- Personal care & cosmetics
- Others

**Application Outlook (Revenue, USD Billion; 2019-2030)**

- Residential
- Commercial

#### End-use Outlook (Revenue, USD Billion; 2019-2030)

- Building & Construction
- Automotive & Transportation
- Electrical & Electronics
- Others

#### Regional Outlook (Revenue, USD Billion; 2019-2030)

- North America
  - o U.S.
  - o Canada
  - o Mexico
- Europe
  - o Germany
  - o U.K.
  - o France
  - o Italy
  - o Spain
  - o Sweden
  - o BENELUX
  - o Rest of Europe
- Asia-Pacific
  - o China
  - o India
  - o Japan
  - o South Korea
  - o Rest of APAC
- Latin America
  - o Brazil
  - o Rest of LATAM
- Middle East & Africa
  - o Saudi Arabia
  - o UAE
  - o South Africa
  - o Israel
  - o Rest of MEA

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