

Metal Additive Manufacturing Market to Surge from \$2.6 Billion in 2021 to \$14.1 Billion by 2031, with a CAGR of 18.1%

Metal Additive Manufacturing Market Size, Share, Competitive Landscape and Trend Analysis

WILMINGTON, DE, UNITED STATES, July 10, 2025 /EINPresswire.com/ -- The global metal additive manufacturing market, valued at \$2.6 billion in 2021, is projected to reach \$14.1 billion by 2031, growing at a robust compound annual growth rate (CAGR) of 18.1% from 2022 to 2031. Also known as 3D metal printing, metal additive manufacturing uses metal powder, wire, or sheets, heated by a laser or

Metal Additive Manufacturing Market Growth and Processes

Manufacturing Processes

Metal Powder - Metal Wire - Metal Sheet - Laser Beam - Electron Beam - CAGR: 18.1%

Metal Additive Manufacturing Market Size, Share, Competitive Landscape

electron beam, to create precise, complex metal components. This technology is revolutionizing industries by enabling customized, high-precision manufacturing.

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Overview of Metal Additive Manufacturing

Metal additive manufacturing involves layer-by-layer construction of metal components, offering distinct advantages over traditional manufacturing methods. Unlike conventional processes suited for mass production, 3D metal printing excels in creating customized products, intricate designs, and functional prototypes with minimal waste. The process uses advanced machinery to consolidate metal materials into precise shapes, making it ideal for applications requiring high accuracy and complex geometries. Its benefits include reduced material waste, faster production cycles, and the ability to recreate legacy parts, which are critical for industries like aerospace, automotive, and healthcare.

Market Dynamics

The metal additive manufacturing market is driven by several key factors. Rapid industrialization,

fueled by population growth, rising disposable incomes, and increasing global trade, has boosted demand for advanced manufacturing technologies. The automotive industry, recovering from the impacts of COVID-19, is expected to reach pre-pandemic levels by 2024, driving demand for metal additive manufacturing in prototyping and component production. The aerospace sector, spurred by globalization and growing air travel, relies heavily on 3D metal printing for lightweight, high-strength parts. Additionally, the healthcare industry's need for custom surgical and dental implants, particularly for an aging population, is a significant growth driver.

Advancements in 3D printing technology have made metal additive manufacturing more accessible and cost-effective, creating lucrative opportunities. The electronics industry also benefits from this technology, using it to produce small, custom parts and specialized circuit boards. However, challenges such as high initial equipment costs and limitations in scaling for mass production may hinder growth. Despite these constraints, the technology's ability to produce complex, tailored components positions it as a valuable tool across multiple sectors.

Major industry players are expanding their offerings to stay competitive. For example, in July 2022, EOS GmbH introduced four new metal materials for its EOS M 290 system, including stainless steels, tool steel, and a nickel alloy, enhancing its applicability across industries.

Impact of COVID-19

The COVID-19 pandemic significantly disrupted the metal additive manufacturing market. Lockdowns halted production of components and machinery, while economic slowdowns reduced spending in key industries like automotive and aerospace. Supply chain disruptions further exacerbated challenges. However, by mid-2022, the introduction of vaccines and declining infection rates enabled manufacturers to resume full-scale operations. Companies focused on strengthening supply chains, ensuring workforce safety, and adopting new operational strategies to recover. The pandemic underscored the value of flexible manufacturing technologies like metal additive manufacturing, which can quickly adapt to changing demands, driving renewed interest post-recovery.

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Market Segmentation

The metal additive manufacturing market is segmented by type, component, end-user industry, and region, providing a comprehensive view of its dynamics.

By Type

The market is categorized into powder bed fusion, binder jetting, direct energy deposition, bound powder extrusion, and others. Powder bed fusion, which uses a laser to fuse metal powder into solid parts, held the largest share in 2021 due to its precision and versatility in producing complex components. Other methods, like direct energy deposition, are gaining traction for their ability to repair and add material to existing parts.

By Component

The market is divided into systems, materials, and services & parts. Systems, including 3D printers and related equipment, account for a significant share due to their high cost and critical role in the manufacturing process. Materials, such as metal powders and wires, are also a key segment, driven by the need for specialized alloys. Services and parts, including maintenance and post-processing, support market growth as adoption increases.

By End-User Industry

The aerospace industry is a major consumer of metal additive manufacturing, using it to produce lightweight, high-strength components for aircraft and spacecraft. The automotive sector relies on 3D metal printing for prototyping and manufacturing specialized parts. In healthcare, custom implants and prosthetics drive demand, while the electronics industry uses the technology for intricate components and circuit boards. Other industries, such as energy and defense, also contribute to market growth.

By Region

North America held the largest market share in 2021, driven by advanced manufacturing capabilities and significant investments in aerospace, automotive, and healthcare. Asia-Pacific is expected to grow at the highest CAGR during the forecast period, fueled by rapid industrialization in countries like China, Japan, and India. Europe remains a key market, supported by stringent quality standards and innovation in manufacturing. The LAMEA region, including Latin America, the Middle East, and Africa, is seeing gradual growth as industrial sectors expand.

Competitive Landscape

The metal additive manufacturing market is highly competitive, with key players including BeAM Machines, DMG Mori Seiki Co., Ltd., EOS GmbH, Farsoon Technologies, GE Additive, Renishaw Plc, Sisma SpA, SLM Solutions, Trumpf, and Xi'an Bright Laser Technologies Co., Ltd. These companies are investing in research and development to enhance material offerings, improve printing technologies, and expand market reach. Strategic partnerships and product innovations are critical for maintaining a competitive edge.

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Key Benefits for Stakeholders

Quantitative Analysis: The report provides detailed market size, growth projections, and segment analysis from 2021 to 2031, enabling stakeholders to identify high-potential opportunities.

Market Drivers and Opportunities: Insights into drivers like industrialization and technological advancements, alongside opportunities in electronics and healthcare, support strategic planning.

Porter's Five Forces Analysis: This framework evaluates buyer and supplier dynamics, aiding stakeholders in making profit-oriented decisions.

Regional Insights: Revenue mapping by region highlights growth trends and market potential in key countries.

Competitive Positioning: The report offers benchmarking and insights into the market positioning of key players, facilitating strategic decision-making.

Market Trends and Strategies

The metal additive manufacturing market is evolving with a focus on technological advancements and sustainability. Innovations in laser and electron beam technologies are improving precision and speed, while new metal alloys expand application possibilities. Sustainability is a growing focus, with companies emphasizing reduced material waste and energy-efficient processes. Additionally, the integration of digital tools, such as Al and simulation software, is enhancing design and production efficiency.

David Correa
Allied Market Research
+ +1 800-792-5285
email us here
Visit us on social media:
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X

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