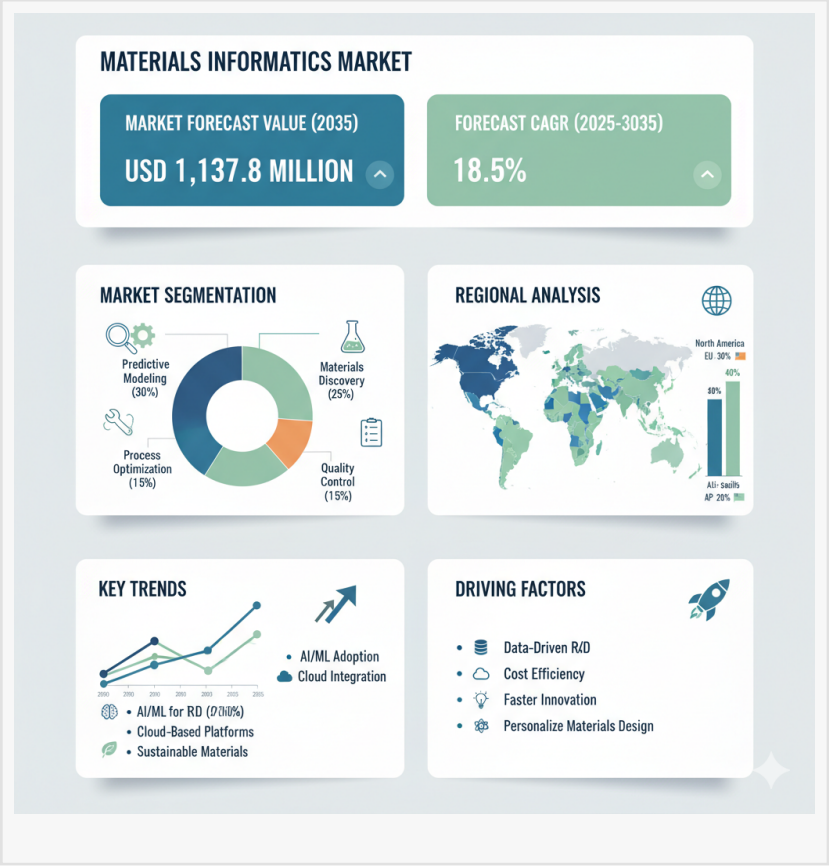
U.S. Materials Informatics Market to Grow at 19.8% CAGR from 2025 to 2035 | FactMR Report

The materials informatics market is rapidly expanding, driven by AI integration, data analytics, and rising demand for faster, smarter materials discovery.



ROCKVILLE, MD, UNITED STATES, October 10, 2025 /EINPresswire.com/ -- The global materials informatics market is projected to reach USD 1,137.8 million by 2035, recording an absolute increase of USD 931.1 million over the forecast period. The market, currently valued at USD 208.4 million in 2025, is set to rise at a CAGR of 18.5% during the assessment period. This remarkable growth reflects the increasing use of data-driven research tools in materials discovery, the need for faster product development, and rising investments in computational materials science.

Industries across chemicals, semiconductors, and energy systems are adopting informatics-based approaches to reduce research costs and accelerate innovation cycles. The ability to analyze vast datasets and predict material behavior before physical testing has revolutionized how new materials are designed and validated.

Market Segmentation Overview

The materials informatics market can be segmented by technique, material type, application, deployment, and region.

Techniques such as Digital Annealer, Statistical Analysis, Deep Tensor, and Genetic Algorithms

represent the backbone of computational materials modeling. Among these, the Digital Annealer segment holds the largest share due to its ability to efficiently solve high-dimensional optimization problems in materials research. Statistical analysis remains fundamental for data interpretation, while Deep Tensor models and Genetic Algorithms are gaining traction for their predictive and exploratory capabilities in new materials discovery.

Materials studied through informatics tools include Chemicals, Superalloys, Solid-State Electrolytes, and Composites. The Chemicals segment dominates the market, driven by applications in polymers, catalysts, and molecular materials. However, fast-growing segments such as solid-state electrolytes and composites are witnessing increasing adoption in energy storage, aerospace, and automotive industries. The demand for sustainable and high-performance materials continues to drive research using data-centric methods.

In terms of applications, materials informatics serves diverse industries including Chemical Industries, Materials Discovery, Product Development, and Electronics & Semiconductor sectors. Chemical industries lead in adoption, using informatics to optimize catalysts and accelerate molecular design. Meanwhile, the electronics and semiconductor sector is expected to grow rapidly as informatics enables the design of advanced semiconductors, high-k dielectrics, and nanomaterials.

Regarding deployment, the market is divided into Cloud-based and On-premise models. Cloud-based deployment accounts for the majority share due to its scalability, cost efficiency, and ease of integration with AI-driven analytics platforms. However, on-premise systems remain essential for organizations handling sensitive or proprietary datasets. Hybrid models are emerging as a popular choice, combining the flexibility of cloud infrastructure with the security of local data control.

Regional Landscape

Regionally, East Asia, South Asia & Pacific, and North America dominate the global materials informatics market. East Asia, particularly China, is expected to record the highest growth rate due to significant government investments in materials research and strong industrial adoption. India is also emerging as a promising market, supported by rapid technological advancement and growing academic-industry collaboration.

North America and Europe remain mature markets, driven by established research ecosystems, leading universities, and advanced industrial capabilities. The United States continues to invest heavily in AI-powered research and development, while Germany and other European nations are integrating informatics solutions into their materials innovation pipelines. South Korea and Japan, with their strong semiconductor industries, are also key contributors to market expansion.

Competitive Landscape and Recent Developments

The materials informatics market is moderately concentrated, with a small number of companies holding a large share of total revenue. Leading players include Citrine Informatics, Materials Project, Schrödinger Inc., BIOVIA (Dassault Systèmes), QuesTek Innovations LLC, Granta Design (ANSYS), Materials Design Inc., AFLOW, and Kebotix. These companies compete primarily on technological capability, data quality, and integration flexibility rather than price.

Recent developments in the market have focused on algorithmic innovation, strategic collaborations, and vertical specialization. Many firms are introducing hybrid computational frameworks that combine digital annealing, tensor modeling, and genetic optimization to enhance prediction accuracy and reduce computational costs. Partnerships between industry and academia are becoming increasingly common, allowing companies to leverage cutting-edge research while expanding access to real-world datasets.

Software providers are also tailoring their platforms for specific verticals such as semiconductors, battery technology, and aerospace composites. The rise of Software-as-a-Service (SaaS) business models has lowered barriers to adoption, enabling small and mid-sized research organizations to utilize advanced tools without heavy infrastructure investment. Moreover, the creation of shared databases and open data platforms is fostering a collaborative ecosystem, accelerating materials innovation across global industries.

As competition intensifies, leading companies are focusing on expanding their regional presence, developing localized solutions, and offering hybrid deployment options that balance data security with scalability. The market is shifting toward integrated solutions that combine computational modeling, machine learning, and experimental validation within unified digital ecosystems.

Future Outlook

The coming decade will see materials informatics transition from a research-oriented discipline to a core enabler of industrial innovation. Companies capable of merging data science with domain expertise will have a decisive advantage. The integration of machine learning, quantum computing, and cloud technologies is expected to further enhance predictive accuracy and accelerate the discovery of new materials.

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