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Materials Informatics Global Market 2024-2035

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Abstracts

Large-scale digital transformation is occurring across a broad range of industries, fuelled by cheap computing power, proliferation of cloud-based database hosting infrastructure, ubiquitous data collection, and powerful artificial intelligence (AI). Materials and chemicals companies are also following digitalisation trends, and industry leaders have begun adopting systematic data-driven R&D practices to optimize materials and formulations through tuning of composition and processing conditions. Materials informatics (MI), the application of data science, materials science, and AI to the materials and chemicals space, has enabled researchers to leverage complex, data-driven insights for the discovery of novel materials faster than ever before by reducing the number of experiments required during the materials development process by 50–70%. By leveraging the power of AI and data science, we can accelerate discovery, optimize processes, and develop materials with unprecedented precision and efficiency. The integration of MI with other emerging technologies, such as robotics for autonomous experimentation and quantum computing for advanced simulations, promises to further revolutionize the field. As these technologies mature, we can expect to see even more rapid advancements in materials discovery and development. However, realizing the full potential of MI requires addressing significant challenges in data quality, algorithm development, and integration across different scales and disciplines.
The Materials Informatics Global Market 2024-2035 covers the global MI market from 2024 to 2035, offering in-depth insights into market trends, key players, technological advancements, and growth opportunities across various industries. Report contents include:

Critical issues in materials science data, strategies for dealing with sparse data, and key technologies driving the MI revolution.

Market challenges, recent industry developments, leading market players.

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Integration of artificial intelligence into materials science and engineering, presenting AI opportunities and algorithm advancements.

Comprehensive overview of MI approaches, including data mining, machine learning, high-throughput computation, and quantum computing. It examines

MI algorithms, automated feature selection, supervised learning models, and deep learning techniques.

Data infrastructure, databases, and the transition from traditional databases to big data in materials science.

MI applications across diverse fields including alloy design and optimization, drug discovery and development, battery materials, polymer informatics, nanomaterials, and many other areas.

Market players including market strategies, funding trends, corporate initiatives, and strategic collaborations.

Global initiatives and research activities driving MI advancement.

Detailed company profiles provide insights into the strategies, technologies, and market positioning of leading MI companies. These profiles cover a wide range of players, from established software companies, chemicals and materials corporations, to innovative startups specializing in MI solutions. Companies profiled. Companies profiled include Alchemy Cloud, Asahi Kasei, Citrine Informatics, Copernic Catalysts, Elix, Inc, Enthought, Exomatter GmbH, Exponential Technologies Ltd., FEHRMANN MaterialsX, Genie TechBio, Hitachi High-Tech, Innophore, Intellegens, Kebotix, Kyulux, Materials Zone, Matmerize, Mat3ra, Noble.AI, OntoChem GmbH, Phaseshift Technologies, Polymerize, Proterial, Ltd., Schr?dinger, Sumitomo Chemical, TDK, Toray, Uncountable, Xinterra and Yokogawa Fluence Analytics.

Market forecasts, projecting the global MI market size from 2023 to 2035. Growth trends, market drivers, and potential barriers to adoption.

Cost savings in materials R&D, accelerated time-to-market for new materials, job creation, and the impact on traditional materials industries.

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Sustainability and environmental considerations highlighting MI's role in sustainable development, reducing the environmental impact of materials production, and supporting the circular economy.

Future trends, including the integration of AI and robotics in materials labs, quantum machine learning, and materials informatics as a service (MIaaS).

This report is an essential resource for:

Materials scientists and researchers seeking to understand and leverage MI technologies

R&D managers in industries relying on advanced materials

Investors and venture capitalists interested in the MI market

Technology companies developing MI solutions

Policy makers and regulators involved in materials science and technology innovation

Academic institutions and research organizations focused on materials science and data-driven approaches

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