

Material Informatics Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Application (Chemical and Pharmaceuticals, Material Science, Manufacturing, Food Science, Energy, Others), By Material Type (Elements, Chemicals, Others), By Technique (Digital Annealer, Deep Tensor, Statistical Analysis, Genetic Algorithm), By Region and Competition, 2020-2030F

Market Report | 2025-12-09 | 183 pages | TechSci Research

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Report description:

Market Overview

The Global Material Informatics Market, valued at USD 143.95 Million in 2024, is projected to experience robust expansion with a CAGR of 12.82% to reach USD 296.8 Million by 2030. Material Informatics applies data science, machine learning, and artificial intelligence to materials research and development, enabling accelerated discovery, design, and optimization of new materials. This approach allows researchers to analyze vast datasets, predict material properties, and simulate performance with unprecedented efficiency, significantly reducing the traditional trial-and-error cycle. The market's growth is primarily driven by the escalating demand for faster material discovery cycles across diverse industries such as aerospace, automotive, and electronics, alongside the imperative to optimize material performance for specific applications.

Key Market Drivers

The integration of advanced AI and machine learning techniques represents a significant catalyst for the Global Material Informatics Market. These technologies empower researchers to process and analyze immense datasets, discern complex patterns, and develop predictive models for material properties with unprecedented accuracy. This capability fundamentally transforms traditional materials science by minimizing the reliance on costly, time-consuming physical experimentation.

Key Market Challenges

The pervasive issue of data heterogeneity and the absence of a standardized data infrastructure within materials science significantly impedes the growth of the Global Material Informatics Market. This challenge complicates the integration of diverse

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datasets originating from various experimental techniques, computational simulations, and legacy systems. Consequently, developing robust machine learning models and artificial intelligence applications for materials discovery, design, and optimization becomes a complex and time-consuming endeavor.

Key Market Trends

Distributed data infrastructure adoption represents a critical trend, establishing scalable, accessible, and interoperable data environments essential for advanced materials research. This involves a shift toward cloud-native platforms and standardized data formats, facilitating the integration and sharing of vast materials datasets.

Key Market Players

- AI Materia Inc.
- ALPINE ELECTRONICS, Inc.
- Citrine Informatics
- Dassault Systemes S.E.
- Exabyte Inc.
- Hitachi High-Tech Corporation
- Kebotix, Inc.
- Materials.Zone Ltd.
- Materials Design, Inc.
- DataRobot, Inc.

Report Scope:

In this report, the Global Material Informatics Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

- Global Material Informatics Market, By Application:

- o Chemical and Pharmaceuticals
- o Material Science
- o Manufacturing
- o Food Science
- o Energy
- o Others

- Global Material Informatics Market, By Material Type:

- o Elements
- o Chemicals
- o Others

- Global Material Informatics Market, By Technique:

- o Digital Annealer
- o Deep Tensor
- o Statistical Analysis
- o Genetic Algorithm

- Global Material Informatics Market, By Region:

- o North America
 - United States
 - Canada
 - Mexico
- o Europe
 - France
 - United Kingdom
 - Italy
 - Germany

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- Spain
- o Asia Pacific
- China
- India
- Japan
- Australia
- South Korea
- o South America
- Brazil
- Argentina
- Colombia
- o Middle East & Africa
- South Africa
- Saudi Arabia
- UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in the Global Material Informatics Market.

Available Customizations:

Global Material Informatics Market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

-□Detailed analysis and profiling of additional market players (up to five).

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