Global Nanocellulose Market by Growth, Industry Size, Trends, Shares, By Top Players, And Forecast 2033

As global demand for bio-based materials continues to rise, nanocellulose is poised to play a crucial role in various industries.

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VANCOUVER, BRITISH COLUMBIA, CANADA, March 16, 2025 /EINPresswire.com/ -- The global Nanocellulose Market is set to experience rapid expansion, with market size expected to grow from USD 650.5 million in 2024 to USD 4,574.5 million by 2033, at an impressive compound annual growth rate (CAGR) of 24.2%. The increasing demand for bio-based materials and their versatile applications are driving this growth.

Market Growth Drivers

The rising adoption of nanocellulose across industries is fueling market expansion. This bio-based material is widely used in various applications due to its lightweight nature, high strength, excellent oxygen barrier properties, and biocompatibility. The paper industry, in particular, benefits from nanocellulose as an additive to enhance filler content, reduce mass, and improve efficiency in paper production.

Nanocellulose is also gaining traction in biomedical applications, including personal hygiene products, wound dressings, and biomedicines, thanks to its excellent absorption properties. Additionally, increased research and development efforts are further advancing product applications, boosting market potential.

Growing Role in Composites and Automotive Industry

The composites sector is emerging as a key driver of nanocellulose demand. The shift toward

sustainable materials, driven by increasing government support for biodegradable plastics and eco-friendly packaging, is accelerating its adoption. Nanocellulose composites, which offer superior strength and biodegradability, are gradually replacing conventional plastics.

In the automotive industry, nanocellulose-based composites play a vital role in manufacturing lightweight and durable components. These materials enhance mechanical properties, contributing to improved fuel efficiency and sustainability in vehicle production. The push for electric vehicles (EVs) worldwide, especially in regions such as North America, Europe, and Asia, is expected to further drive demand. In Germany, for example, the Federal Motor Transport Authority reported over one million registered battery electric vehicles (BEVs) in 2023, indicating a rising preference for sustainable automotive solutions.

Challenges Hindering Market Expansion

Despite its strong growth trajectory, the nanocellulose market faces challenges related to product standardization. Variations in material properties due to differences in production processes and raw materials create difficulties in industrial adoption. The absence of standardized testing methods and certification processes further complicates regulatory approvals, particularly in sectors requiring strict quality control, such as coatings, composites, and biomedical devices.

To address these challenges, collaboration among researchers, industry players, and government bodies is essential in establishing uniform standards. This will pave the way for wider adoption and market expansion.

Segment Insights: Leading and Emerging Applications

The Nanocellulose market is categorized into multiple application segments, including Pulp & Paper, Composites, Biomedical & Pharmaceuticals, Paints & Coatings, Electronic Sensors, and Others (Cosmetics, Oil & Gas, and Food & Beverages).

Pulp & Paper: This segment led the market in 2023, driven by rising consumer demand for minimally processed, preservative-free packaging. Nanocellulose enhances paper strength, oxygen barrier performance, and sustainability, making it a preferred material for packaging, coatings, and absorbent products.

Electronic Sensors: This segment is witnessing the fastest growth due to nanocellulose's exceptional flexibility, conductivity, and biodegradability. These properties make it ideal for next-generation wearables, smart devices, and environmental monitoring systems.

The increasing focus on sustainable and eco-friendly materials, coupled with continuous advancements in technology, is expected to further propel nanocellulose applications across industries.

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In September 2023, The need for cooling rose dramatically on a global scale. Specifically, electric fans and air conditioners account for over 20% of a building's electricity usage. Research into sustainable, environmentally friendly cooling technology therefore presents encouraging chances to fight global warming and lower energy usage.

Accordingly, a team of scientists from China's Nanjing Forestry University created a nanocellulosic aerogel layer to keep buildings cooler.

Some of the key companies in the global Nanocellulose Market include:

Fiberlean Technologies
Borregaard
Nippon Paper Industries
Celluforce Inc.
Kruger Inc.
Stora Enso
Rise Innventia
American Process Inc.
Fpinnovations
UPM
OJI Holdings
SAPPI

Nanocellulose Latest Industry Updates

In May 2022, The new biocomposite facility at Norske Skog Saugbrugs in Halden, which creates and markets the usage of nanocellulose and produces CEBINA, was formally opened by Norske Skog ASA. The company's product line was strengthened as a result of this expansion.
In December 2022, At a COVID-19 vaccine storage facility in Spain, Carrier Commercial Refrigeration set up its PowerCO2OL refrigeration system. This technology helps conserve important vaccinations in Spain by using carbon dioxide, a natural refrigerant with a minimal potential for global warming and a sustainable application.

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Nanocellulose Market Segmentation Analysis

By Type Outlook (Revenue, USD Million; 2020-2033)

MFC & NFC
CNC/NCC
Others (BNC, TC, ANC and CNY)

By Raw Material Outlook (Revenue, USD Million; 2020-2033)

Wood
Non-Wood

By Application Outlook (Revenue, USD Million; 2020-2033)

Pulp & Paper
Composites
Biomedical & Pharmaceuticals
Paints & Coatings
Electronics Sensors
Others (Cosmetics, Oil & Gas, and Food & Beverages)

By Regional Outlook (Revenue, USD Million; 2020-2033)

North America
United States
Canada
Mexico
Europe
Germany
France
United Kingdom
Italy
Spain
Benelux
Rest of Europe
Asia-Pacific
China
India
Japan
South Korea
Rest of Asia-Pacific
Latin America
Brazil
Rest of Latin America

Middle East and Africa
Saudi Arabia
UAE
South Africa
Turkey
Rest of MEA

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As global demand for bio-based materials continues to rise, nanocellulose is poised to play a crucial role in various industries. While challenges related to standardization persist, ongoing research and industry collaborations are expected to create solutions, unlocking further growth potential.

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