+44 20 8123 2220
info@marketpublishers.com

Next-Generation Anode Materials Market - A Global and Regional Analysis: Focus on End User, Type, and Region - Analysis and Forecast, 2023-2032

https://marketpublishers.com/r/N7328261D064EN.html
Date: September 2023
Pages: 233
Price: US$ 5,500.00 (Single User License)
ID: N7328261D064EN

Abstracts

The global next-generation anode materials market was valued at $2,650.6 million in 2022, and it is expected to grow at a CAGR of 16.29% and reach $11,554.6 million by 2032. The growth in the global next-generation anode materials market is expected to be driven by growing demand for next-generation anode materials with faster charging properties and enhanced power density.

Introduction of Next-Generation Anode Materials Market

Both consumer electronics and the transportation sectors have had substantial growth over the past 10 years, yet these sectors are still constrained by the inefficient power sources employed in product manufacturing. In most laptops and phones, batteries occupy almost half of the space. Thus, a 50% increase in battery energy density can increase product efficiency while making room for additional features such as upgraded cameras, better sound, and improved communication. However, there has not been much progress in battery technology, and lithium-ion batteries remain the dominant energy storage paradigm today. Additionally, it is anticipated that within the next few years, lithium-ion battery technology is expected to reach an energy limit with the current materials and cell designs, thereby generating a demand for the next generation of anode materials, which have a higher energy density.

Market Introduction

The global next-generation anode materials market is in a growth phase, wherein the number of companies offering next-generation anode materials is increasing rapidly. Latest technological advancements in battery technologies and the growing number of

+44 20 8123 2220
info@marketpublishers.com

electric vehicles, as well as energy storage sectors, are boosting the adoption of next-generation anode materials market across the globe. Moreover, increased expenditures in advanced energy storage technologies are one of the primary factors fuelling the expansion of the next-generation anode materials industry. As a result of its minimal carbon footprint and competitive manufacturing expenditures, energy from renewable sources has seen an upsurge in investments worldwide. Furthermore, next-generation anode materials' capacity to outperform more traditional battery technologies in terms of effectiveness is one of its primary benefits. Additionally, with significant demand for next-generation anode materials during the forecast period, primarily from the transportation, energy storage, and electrical and electronics sectors, the market competition is expected to grow considerably among established and emerging next-generation anode materials providers in the next-generation anode materials industry.

Industrial Impact

The global next-generation anode materials market is driven by several factors, such as the increasing frequency of R&D projects to enhance battery competition, the increasing need for fast charging and high-density batteries, and growing concerns for the environment and carbon neutrality targets.

Next-generation anode materials are increasingly growing in demand, owing to benefits such as enhanced capacity and stability, improved life cycle, and high energy density. Additionally, next-generation anode components can be designed to function efficiently with high-capacity cathode substances. This coherence can result in optimized and high-performing batteries with greater combined volume and lower consumption of energy. Next-generation anode materials offer long-term solutions that comply with environmental stewardship guidelines and aid in protecting the environment for upcoming generations. Additionally, increased density of energy within next-generation anode materials may assist in making batteries more lightweight, which is crucial for electric vehicles as it increases their effectiveness and endurance. Furthermore, by providing customers with cutting-edge and sustainable products, the companies are establishing a large international customer base while increasing R&D investments. The growth of the global next-generation anode materials market largely depends on faster charging and discharging abilities and their adoption across various major markets. In the current market scenario, the market growth is held back either due to the increased volume and degradation of silicon anodes and lack of large-scale production of high-quality graphene. Over the projected period (2023-2032), it is anticipated that this market environment will become more favorable and assist in promoting market expansion.

+44 20 8123 2220
info@marketpublishers.com

Market Segmentation:

Segmentation 1: By End User

- Transportation
  - Passenger Electric Vehicles
  - Commercial Electric Vehicles
  - Others
- Electrical and Electronics
- Energy Storage
- Others

Transportation Segment to Dominate the Global Next-Generation Anode Materials Market (by End User)

The transportation segment based on end user led the next-generation anode materials market in 2022 and was the largest segment due to rising sales of electric vehicles globally. The demand for electric cars has increased dramatically in recent years, notably in countries such as the U.S., China, and Japan. According to the International Energy Agency (IEA), more than 10 million electric vehicles have been sold by 2022. The growing popularity of electric vehicles is driving up demand for next-generation anode materials for batteries. The producers and suppliers of next-generation anode materials for the transportation sector are anticipated to benefit from this during the projected period (2023-2032).

Segmentation 2: By Type

- Silicon/Silicon Oxide Blend
- Lithium Titanium Oxide

+44 20 8123 2220
info@marketpublishers.com

Silicon-Carbon Composite

Silicon-Graphene Composite

Lithium Metal

Others

Silicon/Silicon Oxide Blend Segment to Lead the Global Next-Generation Anode Materials Market (by Type)

Next-generation anode materials include silicon/silicon oxide blend, silicon-carbon composite, Siliocn-graphene composite, lithium titanium oxide, lithium metal, and others. Due to their distinct properties, these materials are projected to cause a disruption in the existing anode material industry during the forecast period 2023-2032. In the coming years, there could be a significant increase in the consumption of silicon/silicon oxide blend anode material. Over the next 10 years, these next-generation anode materials are expected to cannibalize a large share of the worldwide anode materials market from conventional pure graphite and carbon anode materials.

Segmentation 3: by Region

North America: U.S., Canada, and Mexico

Europe: Germany, Spain, Poland, Hungary, and Rest-of-Europe

U.K.

China

Asia-Pacific and Japan: Japan, South Korea, India, and Rest-of-Asia-Pacific and Japan

Rest-of-the-World: Middle East and Africa and South America

The global next-generation anode materials market is expected to witness significant growth in the coming years, with major contributions from China, Asia-Pacific and

Japan, Europe, and North America regional markets. In terms of revenue generation, China dominates the global market for next-generation anode materials due to the presence of major businesses, expanded battery production, increased R&D expenditure in this sector, and supporting infrastructure. The early adoption of lithium-ion battery technology, as well as the presence of a substantial EV fleet, is another factor driving market growth. Furthermore, China's rapidly rising economy and the presence of key industry players along the supply chain of next-generation anode material components are having a significant impact on the market's growth.

Recent Developments in the Global Next-Generation Anode Materials Market

In May 2022, Sila Nanotechnologies Inc. disclosed the purchase of a 600,000-square-foot facility in Moses Lake, Washington. Sila intends to employ the facility to manufacture lithium-ion anode materials at the high standard and volume required for serving the automotive industry.

In July 2023, to improve the efficiency of lithium-ion batteries for electric vehicles (EVs), Panasonic Energy Co., Ltd. stated that it had signed a contract with Nexeon Ltd. for the acquisition of silicon anode material for automobile batteries.

In February 2023, NanoRial Technologies Ltd. and NEO Battery Materials Ltd. entered a mutually exclusive partnership contract. By using NanoRial’s high-performance carbon nanotubes (CNT) materials as a durable nano coating material, NEO and NanoRial are collaborating to improve the durability and efficacy of NEO's silicon anode materials, NBMSiDE.

In August 2022, to increase the research of silicon battery anode substances, Nexeon raised $90 million, extending its total financing to $170 million. It is expected that the company will be able to manufacture large quantities of its silicon-based anode materials for lithium-ion batteries with the funding it received from subsequent rounds of investment.

In September 2022, a collaborative strategic framework contract was executed by Jiangxi Ganfeng Lithium Co., Ltd. and the municipal government of Yichun City in order to establish a manufacturing facility for lithium-ion batteries and other related manufacturing network initiatives. According to the release, the company intends to set up a lithium metal project with a planned production capacity of 7,000 tons in the Yichun Economic & Technological Development Zone, as well as a new-type lithium-ion production facility with a yearly output

+44 20 8123 2220
info@marketpublishers.com

capacity of 30 GWh.

Demand – Drivers, Challenges, and Opportunities

Market Drivers: Increasing Need for Fast Charging and High-Density Batteries

The evolution of lithium-ion batteries has ushered in a digital electronic revolution by serving as a powerhouse for a variety of devices such as laptops, mobile phones, and numerous other electronic gadgets. The increased demand for EVs as a result of escalating environmental concerns places a premium on battery energy storage capacity. The growing demand for EVs has a direct impact on the lithium-ion battery and next-generation anode materials markets. Major impediments to the growth of EVs and consumer appliances are charging difficulties, as recharging EV batteries takes much longer than fueling conventional petroleum vehicles. Graphite, a commonly used anode material, has a considerably low discharge potential. This inhibits the lithium-ion battery's ability to charge quickly. Furthermore, researchers are Sdeveloping various combinations of battery anode elements such as silicon, tin, and germanium to enable the batteries' quick charging capability without compromising their durability. Thus, it can be said that the growing demand for higher-density and fast-charging batteries is driving the growth of the global next-generation anode materials market.

Market Challenges: Lack of Large-Scale Production of High-Quality Graphene

The electrochemical performance of numerous end-use applications has improved as a result of the evolution of nanostructured graphene. A potential additive for self-healing materials is graphene. According to scientists at the Samsung Advanced Institute of Technology, batteries with graphene coatings have a five-fold increase in charging capacity. Through its use in batteries, graphene's electronic properties have the potential to usher in a revolutionary development in energy storage applications. The difficulty in scaling up mass graphene production, however, limits the wide adaptability of graphene despite its advantageous properties. Large-scale production has a significant impact on graphene's characteristics, including its thermal conductivity, mechanical flexibility, transparency, and electrical conductivity. As a result, maintaining the quality of graphene becomes challenging.

Market Opportunities: Increasing Investment in Renewable Energy Sources

Global acceptance and investment in renewable energy are increasing. Lithium-ion

+44 20 8123 2220
info@marketpublishers.com

batteries are anticipated to play a significant role in the transition that both governments and businesses are attempting to navigate away from fossil fuels and toward renewable energy sources in order to minimize carbon emissions and meet the targets of the Paris Agreement. The firms are additionally researching the potential for adopting lithium-ion batteries as the primary energy storage system for renewable energy accomplished off-grid. Furthermore, lithium-ion batteries outperform other commercially available batteries in terms of energy density, specific energy, and power density. Furthermore, lithium-ion batteries' rising use as energy storage devices for renewable energy sources is fueled by their high-power discharge capability, improved round-trip efficiency, low self-discharge rate, and substantially longer work life.

How can this report add value to an organization?

Product/Innovation Strategy: The product segment helps the reader to understand the different types involved in the next-generation anode materials market. Moreover, the study provides the reader with a detailed understanding of the global next-generation anode materials market based on the end user (transportation, electrical and electronics, energy storage, and others). Next-generation anode materials market is gaining traction in end-user industries on the back of sustainability concerns and their higher efficiency properties. Next-generation anode materials are also being used for controlling green house gas (GHG) emissions. Moreover, partnerships and collaborations are expected to play a crucial role in strengthening market position over the coming years, with the companies focusing on bolstering their technological capabilities and gaining a dominant market share in the next-generation anode materials industry.

Growth/Marketing Strategy: The global next-generation anode materials market has been growing at a rapid pace. The market offers enormous opportunities for existing and emerging market players. Some of the strategies covered in this segment are mergers and acquisitions, product launches, partnerships and collaborations, business expansions, and investments. The strategies preferred by companies to maintain and strengthen their market position primarily include partnerships, agreements, and collaborations.

Competitive Strategy: The key players in the global next-generation anode materials market analyzed and profiled in the study include next-generation anode materials providers that develop, maintain, and market next-generation anode materials. Moreover, a detailed competitive benchmarking of the players operating in the global next-generation anode materials market has been done to help the reader understand

+44 20 8123 2220
info@marketpublishers.com

the ways in which players stack against each other, presenting a clear market landscape. Additionally, comprehensive competitive strategies such as partnerships, agreements, and collaborations will aid the reader in understanding the untapped revenue pockets in the market.

Research Methodology

Factors for Data Prediction and Modeling

The scope of this report has been focused on next-generation anode materials.

The market volume has been calculated based on the anode materials production and share of the next-generation anode materials market in overall anode material production.

Based on the classification, the average selling price (ASP) has been calculated by the weighted average method. ASP calculations are completely based on the number of data points considered while conducting the research.

The base currency considered for the market analysis is the US$. Currencies other than the US$ have been converted to the US$ for all statistical calculations, considering the average conversion rate for that particular year.

The currency conversion rate has been taken from the historical exchange rate of the Oanda website.

Nearly all the recent developments from January 2020 to March 2023 have been considered in this research study.

The study of the market is limited to next-generation anode materials type and does not include other types.

The information rendered in the report is a result of in-depth primary interviews, surveys, and secondary analysis.

Where relevant information was not available, proxy indicators and extrapolation were employed.

Any economic downturn in the future has not been taken into consideration for

+44 20 8123 2220
info@marketpublishers.com

the market estimation and forecast.

Technologies currently used are expected to persist through the forecast with no major technological breakthroughs.

Market Estimation and Forecast

The market size for the global next-generation anode materials market has been calculated through a mix of secondary research and primary inputs. A combination of top-down and bottom-up approaches has been followed to derive the quantitative information. The steps involved in the bottom-up approach are as follows:

Overall battery, battery cell, and anode materials production for each country have been calculated separately.

Further, based on past data and future scenarios, each country's next-generation anode materials have been estimated till the forecast timeframe.

For each country, the next-generation anode materials penetration is calculated based on different secondary sources, and the same information has been validated from primary sources across the ecosystem of the next-generation anode materials market.

Once the next-generation anode materials penetration has been estimated in the anode materials production, the penetration for each level is estimated based on the parameters such as:

Major end-users, such as electric vehicle developments in the country

A regulatory scenario of each country

The presence of next-generation anode materials manufacturers in the country

The economic condition of the country

The estimated numbers of next-generation anode materials have been derived based on the demand for different types of anode materials.

+44 20 8123 2220
info@marketpublishers.com

From different secondary sources and primary respondents, the penetration of next-generation anode materials is estimated for each product and application.

Further, based on past end-user trends, primary interviews, and future scenarios, region shares have been estimated till the forecast timeframe.

For each country, the next-generation anode materials penetration was calculated based on different secondary sources, and the same information has been validated from primary sources across the ecosystem of the next-generation anode materials market.

Based on the penetration of next-generation anode materials under each product and application, the total estimated number of next-generation anode materials was derived for each country. After calculating the same data for each country, the numbers are summed up to get regional-level demand, and regional-level demand is summed up to get global demand from 2022 to 2032.

All the factors, such as penetration levels in each country, are validated from different primaries throughout the duration of the study.

Primary Research

The primary sources involve industry experts from the next-generation anode materials ecosystem, including the raw material supplier, next-generation anode materials manufacturers, and battery manufacturers, among others. Respondents such as CEOs, vice presidents, marketing directors, and technology and innovation directors have been interviewed to obtain and verify both qualitative and quantitative aspects of this research study.

The key data points taken from primary sources include:

validation and triangulation of all the numbers and graphs

validation of reports segmentation and key qualitative findings

understanding the competitive landscape

+44 20 8123 2220
info@marketpublishers.com

current and proposed production values of a particular product by market players

validation of the numbers of various markets for market type

percentage split of individual markets for regional analysis

Some of the key primary sources include:

Godi India Pvt. Ltd.

Morgan Advanced Materials

Faraday Battery Challenge

GODI energy

Battery Mineral & Materials

Cygni Energy Pvt. Ltd.

Centre for Materials for Electronics Technology

Batx Energies

Norley Carbon & Graphite Consultants, LLC

e-TRNL Energy

Ola electric

Fastmarkets

Ango Zara Comercio E Industria Lda.

Secondary Research

+44 20 8123 2220
info@marketpublishers.com

This research study involves the usage of extensive secondary research, directories, company websites, and annual reports. It also makes use of databases, such as Hoovers, Bloomberg, Businessweek, Factiva, and One-Source, to collect useful and effective information for an extensive, technical, market-oriented, and commercial study of the global market. In addition to the data sources, the study has been undertaken with the help of other data sources and websites, such as www.weforum.org and www.trademap.org.

Secondary research was done to obtain crucial information about the industry's value chain, revenue models, the market's monetary chain, the total pool of key players, and current and potential use cases and applications.

The key data points taken from secondary research include:

- Segmentation breakups, split-ups, and percentage shares
- Data for market value
- Key industry trends of the top players of the market
- Qualitative insights into various aspects of the market, key trends, and emerging areas of innovation
- Quantitative data for mathematical and statistical calculations

Some of the key secondary sources include:

- International Energy Agency (IEA)
- International Renewable Energy Agency (IRENA)
- Energy Storage Association (ESA)
- German Association of Energy and Water Industries (BDEW)
- United States Energy Association (USEA)
- The Energy and Resources Institute (TERI)

+44 20 8123 2220
info@marketpublishers.com

RenewableUK

National Solar Energy Federation of India (NSEFI)

International Solar Energy Society (ISES)

Clean Energy Regulator (CER)

Association of European Automotive and Industrial Battery Manufacturers (EUROBAT)

OurEnergyPolicy Foundation

China Association of Automobile Manufacturers (CAAM)

International Battery Materials Association (IBA)

Battery Association of Japan (BAJ)

Key Market Players and Competition Synopsis

The companies that are profiled have been selected based on inputs gathered from primary experts and analyzing company coverage, product portfolio, and market penetration.

Among the top players profiled in the report, the private companies operating in the global next-generation anode materials market accounted for around 73% of the market share in 2022, while the public companies operating in the market captured around 27% of the market share.

Some of the prominent names in this market are:

Private Companies

Altairnano

LeydnJar Technologies BV

+44 20 8123 2220
info@marketpublishers.com

Nexeon Ltd.

pH Matter LLC

Sila Nanotechnologies Inc.

Cuberg

Shanghai Shanshan Technology Co., Ltd.

AMPIRUS TECHNOLOGIES

California Lithium Battery

Enovix

POSCO CHEMICAL

Public Companies

Albemarle Corporation

Talga Group.

Tianqi Lithium Corporation

Jiangxi Ganfeng Lithium Co., Ltd.

+44 20 8123 2220
info@marketpublishers.com

Contents

1 MARKETS

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

5 MARKETS – COMPETITIVE BENCHMARKING & COMPANY PROFILES

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

List Of Figures

LIST OF FIGURES

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

List Of Tables

LIST OF TABLES

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

I would like to order

Product name: Next-Generation Anode Materials Market - A Global and Regional Analysis: Focus on End User, Type, and Region - Analysis and Forecast, 2023-2032

Product link: https://marketpublishers.com/r/N7328261D064EN.html

Price: US$ 5,500.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/N7328261D064EN.html

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

**All fields are required

Custumer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at https://marketpublishers.com/docs/terms.html

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970

+44 20 8123 2220
info@marketpublishers.com