Lithium Silicon Battery Market by Material, Technology, Capacity (<3,000 mAh, 3,000-10,000 mAh, >10,000 mAh), Application (Consumer Electronics, Automotive, Aerospace & Defense, Medical Devices, Energy) and Region - Global Forecast to 2030

Market Report | 2022-08-04 | 165 pages | MarketsandMarkets

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Report description:

The global lithium silicon battery market size is estimated to grow from USD 10 million in 2022 to USD 247 million by 2030, at a CAGR of 48.4 % from 2022 to 2030. With energy needs and demand rising globally-due to growing industrial activity, increasing population, and urbanization-the demand for batteries in energy storage systems is expected to skyrocket.The need for better battery technologies in electric grid storage applications is driven by supportive government policies and the migration of utility providers from non-renewable to renewable energy sources.BESS manufacturers are now looking for improved technologies to improve energy density and capacity, which can be accomplished using silicon electrodes

">10,000 mAh capacity lithium silicon batteries to grow at a significant CAGR grom 2022 to 2030"

Batteries in this range are still being developed. These batteries are expected to be used in energy-heavy applications such as EVs, material handling equipment, marine, robots, industrial, renewable energy storage, military, aircraft, drones, satellites, and spacecraft. A recent example is the space mission undertaken by Airbus Defence and Space, where lithium silicon batteries were used in the aerospace Zephyr High Altitude Pseudo Satellite (HAPS) program. The demand for lithium silicon batteries in the aviation industry will rapidly rise once the batteries are commercialized.

"Aerospace & Defense applications to grow at an impressive CAGR from 2022 to 2030"

Aerospace & defense is one of the crucial applications of battery technology. Aircraft require batteries to power engines, APUs, and integrated systems. While li-ion batteries are widely used in commercial aircraft, the aerospace & defense sector is turning toward advanced power technologies for new applications, such as lithium silicon batteries. These batteries can also power UAVs such as drones due to their small size, low weight, and increased power capacity. Lithium silicon batteries have been used to power drones used by the defense sector-for example,the US Army's Rapid Capabilities and Critical Technologies Office

(RCCTO)has used Amprius lithium silicon batteries for its drones.

"The market in Europe is expected to grow at the significant CAGR during the forecast period"
The automobile sector of Europe is an advanced industry with the leanest production processes where water and energy use are optimal. The market for wearable devices is also growing in Europe. Hence, Europe has a flourishing silicon battery market, with high growth anticipated.The automobile market in the UK is booming and is expected to open a potential market for lithium silicon batteries.Germany is a major contributor to the EVs market and home to global automobile manufacturers. Their strong presence is expected to push the adoption of new silicon anode technology in EV batteries.
Breakdown of the profiles of primary participants:
-□By Company Type: Tier 1 -45%, Tier 2 -35%, and Tier 3 -20%
-□By Designation: C-level Executives -40%, Directors-45%, and Others -15%
-□By Region: North America -46%, Europe -21%, Asia Pacific-25%, and RoW -8%
Major players profiled in this report are as follows:Amprius Technologies (US), Enovix Corporation (US), NanoGraf Corporation (US),Enevate Corporation (US), Sila Nanotechnologies, Inc. (US), Group14 Technologies, Inc. (US), and others.
Research Coverage
In this report, the lithium silicon battery market has been segmented based on material, technology, capacity,application, and region. The lithium silicon battery market based on material is segmented into Micronized Silicon-Carbon Powder, SILA Silicon Anode material, Porous silicon anodes, Nano-Porous Silicon, and SiFAB. The technology is segmented into 3D cell architecture, 100% Silicon Nanowire Anode Technology, Nanocarbon scaffold, Silgrain, Sinanode, XFC-Energy Technology. The capacity is segmented into < 3,000 mAh; 3,000 mAh to 10,000 mAh and > 10,000 mAh. Based on application, lithium silicon battery market has been segmented into consumer electronics, automotive, aerospace and defense, medical devices, and energy.The study also forecasts the size of the market in four main regions-North America, Europe, Asia Pacific, and RoW.
Key Benefits of Buying the Report:
The report would help market leaders/new entrants in this market in the following ways:
□This report segments of the lithium silicon battery market comprehensively and provides the closest approximation of the overall market size and subsegments that include capacity, application, and region.
□The report would help stakeholders understand the pulse of the market and provide them with information on key drivers, restraints, challenges, and opportunities pertaining to the lithium silicon battery market.
□This report would help stakeholders understand their competitors better and gain more insights to enhance their position in the business.
□The competitive landscape section includes the competitor ecosystem, as well as growth strategies such as product launches and acquisitions carried out by major market players.

Table of Contents:

* Business Overview, Products Offered, Recent Developments, and MnM View might not be captured in case of unlisted companies.
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