

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

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Abstracts

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 from 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,

Lithium Silicon Battery Market by Material, Technology, Capacity (<3,000 mAh, 3,000–10,000 mAh, >10,000 mAh),...

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 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.

Contents

1 INTRODUCTION

1.1 STUDY OBJECTIVES

1.2 MARKET DEFINITION

1.3 STUDY SCOPE

1.3.1 MARKETS COVERED

FIGURE 1 LITHIUM SILICON BATTERY MARKET: SEGMENTATION

1.3.2 GEOGRAPHIC SCOPE

FIGURE 2 LITHIUM SILICON BATTERY MARKET: GEOGRAPHIC SCOPE

1.4 YEARS CONSIDERED

1.5 CURRENCY CONSIDERED

1.6 STAKEHOLDERS

2 RESEARCH METHODOLOGY

2.1 RESEARCH DATA

FIGURE 3 LITHIUM SILICON BATTERY MARKET: RESEARCH DESIGN

2.1.1 LITHIUM SILICON BATTERY MARKET: RESEARCH APPROACH

2.1.2 SECONDARY DATA

2.1.2.1 List of major secondary sources

2.1.2.2 Key data from secondary sources

2.1.3 PRIMARY DATA

2.1.3.1 Primary interviews with experts

2.1.3.2 Key data from primary sources

2.1.3.3 Key industry insights

2.1.3.4 Breakdown of primary interviews

2.2 MARKET SIZE ESTIMATION

2.2.1 BOTTOM-UP APPROACH

2.2.1.1 Approach for arriving at market size by bottom-up analysis (demand side)

FIGURE 4 LITHIUM SILICON BATTERY MARKET: BOTTOM-UP APPROACH

2.2.2 TOP-DOWN APPROACH

2.2.2.1 Approach for capturing market size by using top-down analysis (supply side)

FIGURE 5 LITHIUM SILICON BATTERY MARKET: TOP-DOWN APPROACH

FIGURE 6 MARKET SIZE ESTIMATION METHODOLOGY FOR LITHIUM SILICON BATTERY MARKET USING SUPPLY-SIDE ANALYSIS

2.3 DATA TRIANGULATION

FIGURE 7 DATA TRIANGULATION

2.4 RESEARCH ASSUMPTIONS

2.5 LIMITATIONS AND RISK ASSESSMENT

3 EXECUTIVE SUMMARY

FIGURE 8 LITHIUM SILICON BATTERY MARKET, 2019–2030 (USD MILLION)

FIGURE 9 3,000–10,000 MAH CAPACITY SEGMENT TO HOLD LARGEST MARKET SHARE DURING FORECAST PERIOD

FIGURE 10 CONSUMER ELECTRONICS TO DOMINATE APPLICATIONS MARKET BETWEEN 2022 AND 2030

FIGURE 11 ASIA PACIFIC TO EXHIBIT HIGHEST CAGR IN LITHIUM SILICON BATTERY MARKET DURING FORECAST PERIOD

4 PREMIUM INSIGHTS

4.1 ATTRACTIVE GROWTH OPPORTUNITIES FOR LITHIUM SILICON BATTERY MARKET

FIGURE 12 EXTENSIVE FOCUS AND HIGH INVESTMENTS IN SILICON ANODE R&D TO FUEL MARKET GROWTH DURING FORECAST PERIOD

4.2 LITHIUM SILICON BATTERY MARKET, BY CAPACITY

FIGURE 13 3,000–10,000 MAH BATTERIES TO HOLD LARGEST MARKET SHARE FROM 2022 TO 2030

4.3 LITHIUM SILICON BATTERY MARKET, BY APPLICATION

FIGURE 14 CONSUMER ELECTRONICS APPLICATION TO HOLD LARGEST SHARE OF LITHIUM SILICON BATTERY MARKET IN 2030

4.4 LITHIUM SILICON BATTERY MARKET IN NORTH AMERICA, BY COUNTRY AND APPLICATION

FIGURE 15 CONSUMER ELECTRONICS AND US TO HOLD LARGEST SHARES OF NORTH AMERICAN LITHIUM SILICON BATTERY MARKET IN 2030

4.5 LITHIUM SILICON BATTERY MARKET, BY COUNTRY

FIGURE 16 CHINA TO EXHIBIT HIGHEST CAGR IN LITHIUM SILICON BATTERY MARKET FROM 2022 TO 2030

5 MARKET OVERVIEW

5.1 INTRODUCTION

5.2 MARKET DYNAMICS

FIGURE 17 LITHIUM SILICON BATTERY MARKET: DRIVERS, RESTRAINTS, OPPORTUNITIES, AND CHALLENGES

5.2.1 DRIVERS

5.2.1.1 Enhanced energy density of lithium silicon batteries

TABLE 1 COMPARISON OF VARIOUS ANODE MATERIALS USED IN BATTERIES

FIGURE 18 CAPACITY COMPARISON: ANODE MATERIALS

5.2.1.2 Growing demand for more efficient, longer-lasting batteries in consumer electronics

5.2.1.3 Rising demand for better battery technologies in energy storage systems

5.2.1.4 Growing emphasis on R&D to improve battery efficiency and performance

FIGURE 19 LITHIUM SILICON BATTERY MARKET: IMPACT ANALYSIS OF DRIVERS

5.2.2 RESTRAINTS

5.2.2.1 Expansion property of silicon and potential for damage to battery

5.2.2.2 Availability of substitutes

FIGURE 20 LITHIUM SILICON BATTERY MARKET: IMPACT ANALYSIS OF RESTRAINTS

5.2.3 OPPORTUNITIES

5.2.3.1 Fast-growing demand for EVs

FIGURE 21 GLOBAL ELECTRIC VEHICLE SHIPMENTS, BY MODE, 2020 TO 2030 (MILLION UNITS)

5.2.3.2 Graphite demand-supply gap favors alternative materials in the battery industry

FIGURE 22 GLOBAL GRAPHITE DEMAND FROM LI-ION BATTERIES

FIGURE 23 LITHIUM SILICON BATTERY MARKET: IMPACT ANALYSIS OF OPPORTUNITIES

5.2.4 CHALLENGES

5.2.4.1 Expensive and complex production process

5.2.4.2 Drawbacks of silicon use

FIGURE 24 LITHIUM SILICON BATTERY MARKET: IMPACT ANALYSIS OF CHALLENGES

5.3 VALUE CHAIN ANALYSIS

FIGURE 25 LITHIUM SILICON BATTERY MARKET: VALUE CHAIN ANALYSIS

5.4 ECOSYSTEM ANALYSIS

FIGURE 26 LITHIUM SILICON BATTERY MARKET: ECOSYSTEM ANALYSIS

TABLE 2 LITHIUM SILICON BATTERY MARKET: ECOSYSTEM

5.5 PRICING ANALYSIS

TABLE 3 AVERAGE SELLING PRICES OF LITHIUM-ION BATTERIES, 2021 (USD PER KWH)

5.5.1 AVERAGE SELLING PRICES OF LITHIUM-ION BATTERIES, BY KEY APPLICATION

FIGURE 27 AVERAGE SELLING PRICE, BY APPLICATION

TABLE 4 AVERAGE SELLING PRICES OF LITHIUM-ION BATTERIES, BY KEY APPLICATION (USD PER KWH)

5.6 TRENDS/DISRUPTIONS IMPACTING CUSTOMER BUSINESS

FIGURE 28 REVENUE SHIFT AND NEW REVENUE POCKETS FOR PLAYERS IN LITHIUM SILICON BATTERY MARKET

5.7 TECHNOLOGY ANALYSIS

5.7.1 SILICON NANOMATERIALS

5.7.2 SILICON NANOWIRES

5.8 PORTER'S FIVE FORCES ANALYSIS

TABLE 5 LITHIUM SILICON BATTERY MARKET: PORTER'S FIVE FORCES ANALYSIS

5.9 KEY STAKEHOLDERS & BUYING CRITERIA

5.9.1 KEY STAKEHOLDERS IN BUYING PROCESS

FIGURE 29 INFLUENCE OF STAKEHOLDERS IN BUYING PROCESS FOR TOP THREE INDUSTRIES

TABLE 6 INFLUENCE OF STAKEHOLDERS IN BUYING PROCESS FOR TOP THREE INDUSTRIES (%)

5.9.2 BUYING CRITERIA

FIGURE 30 KEY BUYING CRITERIA FOR TOP THREE INDUSTRIES

TABLE 7 KEY BUYING CRITERIA FOR TOP THREE INDUSTRIES

5.10 CASE STUDIES

TABLE 8 LITHIUM SILICON BATTERY USED IN WEARABLES TO REDUCE SIZE WITHOUT COMPROMISING ON BATTERY CAPACITY

TABLE 9 LITHIUM SILICON BATTERY TO INCREASE PERFORMANCE OF US MILITARY WEARABLES

TABLE 10 LITHIUM SILICON BATTERIES REDUCE WEIGHT AND INCREASE DENSITY OF SOLAR AIRCRAFT

5.11 TRADE ANALYSIS

FIGURE 31 IMPORT SCENARIO OF LITHIUM CELLS & BATTERIES, BY KEY COUNTRY, 2017-2021 (USD MILLION)

FIGURE 32 EXPORT DATA FOR LITHIUM CELLS AND BATTERIES, BY KEY COUNTRY, 2017-2021 (USD MILLION)

5.12 PATENT ANALYSIS

FIGURE 33 TOP 10 COMPANIES WITH HIGHEST NUMBER OF PATENT APPLICATIONS IN LAST 10 YEARS

FIGURE 34 NUMBER OF PATENTS GRANTED PER YEAR FROM 2012 TO 2021

TABLE 11 LIST OF PATENTS IN LITHIUM SILICON BATTERY MARKET, 2019-2021

TABLE 12 US: TOP 20 PATENT OWNERS IN 10 YEARS

5.13 KEY CONFERENCES & EVENTS, 2022-2023

TABLE 13 LITHIUM SILICON BATTERY MARKET: DETAILED LIST OF CONFERENCES & EVENTS

5.14 REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

TABLE 14 NORTH AMERICA: LIST OF REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

TABLE 15 EUROPE: LIST OF REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

TABLE 16 ASIA PACIFIC: LIST OF REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

TABLE 17 ROW: LIST OF REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

5.14.1 STANDARDS

TABLE 18 STANDARDS FOR LITHIUM-ION BATTERIES

6 LITHIUM SILICON BATTERY MARKET, BY MATERIAL

6.1 INTRODUCTION

FIGURE 35 LITHIUM SILICON BATTERY MARKET, BY MATERIAL

6.2 MICRONIZED SILICON-CARBON POWDER

6.3 SILA SILICON ANODE MATERIAL

6.4 POROUS SILICON ANODES

6.5 NANO-POROUS SILICON

6.6 SIFAB

7 LITHIUM SILICON BATTERY MARKET, BY TECHNOLOGY

7.1 INTRODUCTION

FIGURE 36 LITHIUM-ION BATTERY: TECHNOLOGY DEVELOPMENT ROADMAP

7.2 3D CELL ARCHITECTURE

7.3 100% SILICON NANOWIRE ANODE TECHNOLOGY

7.4 NANOCARBON SCAFFOLD

7.5 SILGRAIN

7.6 SINANODE

7.7 XFC-ENERGY TECHNOLOGY

8 LITHIUM SILICON BATTERY MARKET, BY CAPACITY

8.1 INTRODUCTION

Lithium Silicon Battery Market by Material, Technology, Capacity (<3,000 mAh, 3,000–10,000 mAh, >10,000 mAh),...

FIGURE 37 LITHIUM SILICON BATTERY MARKET, BY CAPACITY

FIGURE 38 3,000–10,000 MAH TO HOLD LARGEST SIZE OF LITHIUM SILICON BATTERY MARKET DURING FORECAST PERIOD

TABLE 19 LITHIUM SILICON BATTERY MARKET, BY CAPACITY, 2019–2021 (USD MILLION)

TABLE 20 LITHIUM SILICON BATTERY MARKET, BY CAPACITY, 2022–2030 (USD MILLION)

8.2

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