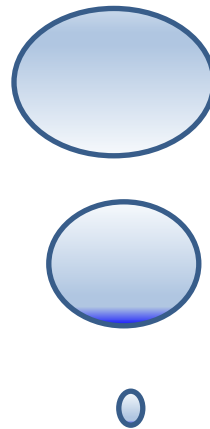


Description



Vehicle Company Hybrid Solid-State Batteries: Market Shares, Market Strategies, and Market Forecasts, 2022 to 2028:



www.wintergreenresearch.com
(781) 863-5078

WinterGreen Research, Inc.
Lexington, Massachusetts

REPORT # SH29571314

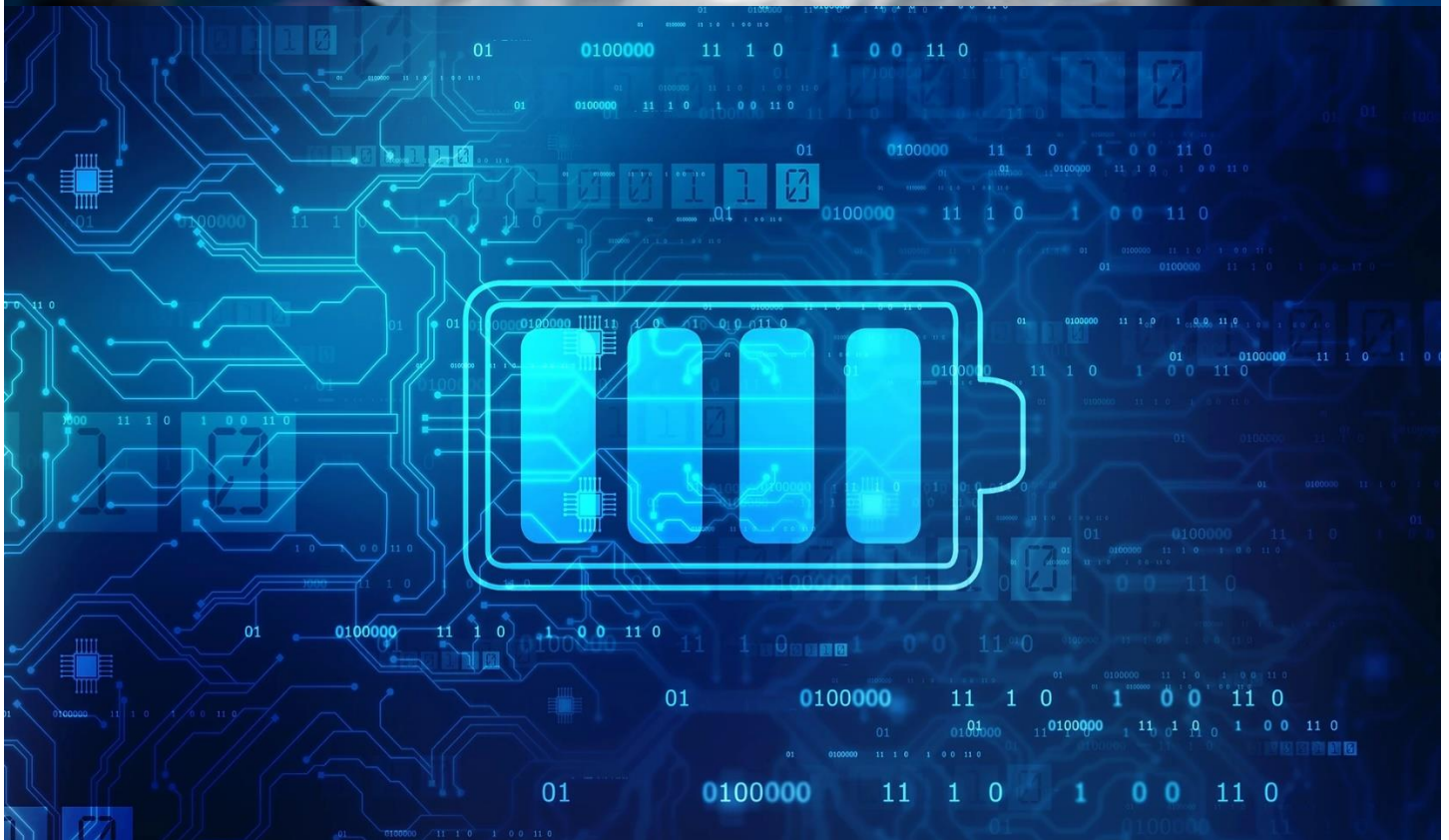
142 PAGES

75 TABLES AND FIGURES

2022

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The electrical solid state battery energy industry will reshape the future. The integrated business model of storage is becoming an application for energy consumption. Amid a greater industry focus on battery technology, automakers with EVs in their lineups are scrambling to position themselves for the arrival of solid-state battery cells

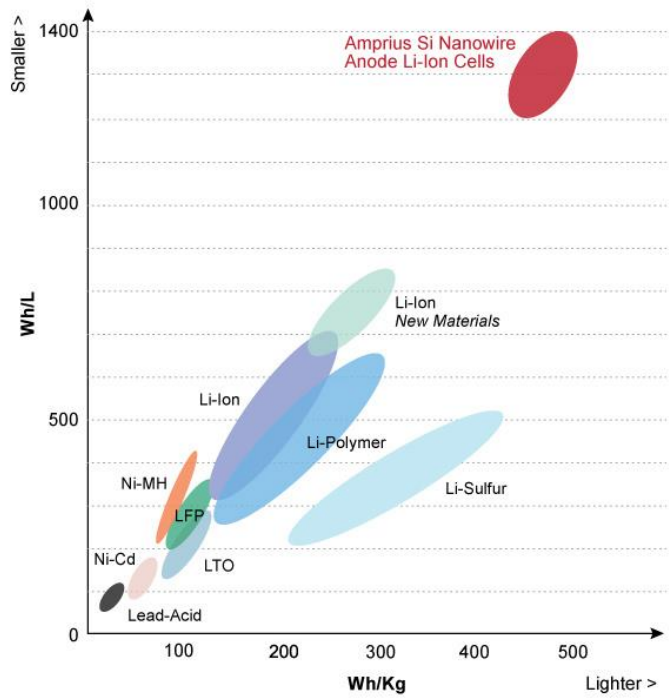


8.7 Billion
The number of smartphone batteries required to meet the current capacity of electric vehicle batteries

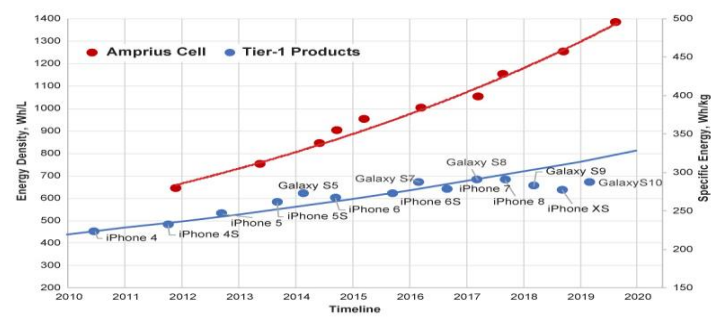


The number of applications that would benefit from improved battery technology

**(CAGR) of 147.8%
from 2021 to 2028**



Solid state battery market expected to grow at a compound annual growth rate (CAGR) of 147.8% from 2021 to 2028. Rising demand for solid-state batteries among end-use sectors along with the rising research and development activities are focused on commercializing the battery. Solid state batteries drive an immediate shift to EVs



Billions of Dollars in Hybrid Solid State Battery Development Money Being Spent by Car Companies:

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Ford

Mercedes Benz

Volkswagen

GM

Tesla

Bolloré

Honda

Enovate



Nissan

Hundai

Mullen Automotive

Schneider Electric

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24M
Amperex Technology Ltd. (CATL)
CATL Initial Public Offering in Shenzhen
Amprius Technologies Corporate Headquarters in Fremont, California
Apple
Aurora
Northvolt
Galp
BASF
Bettergy
BOAO Navigator Battery Holding
Bolloré
Bolloré Group Revenue
Bolloré BlueCar
Autolib Blue Solutions
Blue Solutions Solid State Battery Development
Solid State Battery Production Capacity
Autolib Red Car Solutions
Bolloré Energy Storage Ringo Project by RTE
BMW
Bosch
BYD
California Energy Commission
Cymbet
Dyson / Sakti3
Enevate
EV Battery Equivalent of a Gas Tank. Provides the Vehicle Powertrain
Replace Cars That Run on Fossil Fuels with EVs
Extreme Fast Charging Technology Changes Everything
Enovate
Factorial Energy
Factorial's new Solid-State EV Battery
Ford
FREYR Battery
Alussa Energy
FREYR A/S
Alussa Energy Acquisition Corp.
Front Edge Technology
Front Edge Technology Technical Information
General Motors Collaborating with LG Energy Solution on Solid State Batteries
GM Ultium Lithium-Ion Battery
Honda
Hyundai
Ilika
Ion Storage Systems
Ionic
Ionic Materials Liquid Crystal Polymer
Jiawei
Johnson Battery Technologies
LG
Lishen
Mercedes-Benz

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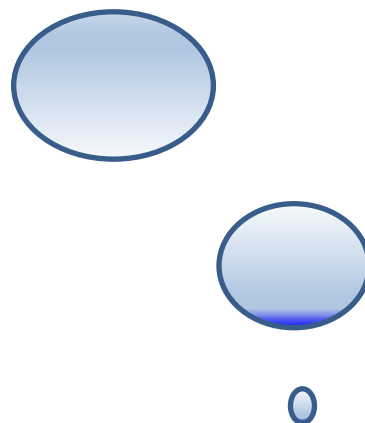
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MIT
Mitsui Kinzoku
Mobis Energy
Mullen Automotive
Nissan
Northvolt
Northvolt / Cuberg
Panasonic
Panasonic Leader in Lithium-Ion Battery Market by Virtue of Its Position as A Supplier to Tesla
Pellion
PolyPlus
PolyPlus Battery Company Joint Development Agreements, One with SK Innovation Co. Ltd.
ProLogium
ProLogium and Mercedes-Benz Technology Cooperation Agreement to Develop Solid-State Battery Cells for Electric Vehicles
ProLogium and Mercedes-Benz Agreed on Milestones
Softbank Backs ProLogium
ProLogium Major Product Pipelines
ProLogium Production Capacity Able to Meet Demand for Solid-State Batteries
QuantumScape
Riverstone Holdings' Decarbonization Plus Acquisition Corporation III
Sony
Total / Saft
Sakti3
Samsung
SK Innovation
Schneider Electric
Schneider Electric Positions to Implement Electrification of Society At Large
Seeo
Sila Nanotechnologies and Enivate
Sion Power
Sion Power Chemically Stable Ceramic Barriers
SK Innovation
SolidEnergy Systems
Solid Powe
Solid Power Technology
Solid Power Teaming with Ford and BMW
Samsung and Hyundai / Solid Power
Stanford TomKat Center
Sumitomo Electric Industries
SUNY
Tesla
Tesla Canada Industrial Research Chair, Dalhousie University
Thermo Scientific
Thermo Scientific Medical Spectrometers
Total Energies / Saft
Toyota
US Department of Energy
US Military
LG / University of California at San Diego
LG Silicon Anodes
Silicon As an Anode to Replace Graphite
University of Illinois at Urbana
University of Texas All-Solid-State Lithium-Ion Battery Cell
Volkswagen Group
Wildcat Discovery Technologies



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ABOUT THE COMPANY

WinterGreen Research, research strategy relates to identifying market trends through reading and interviewing opinion leaders. By using analysis of published materials, interview material, private research, detailed research, social network materials, blogs, and electronic analytics, the market size, shares, and trends are identified. Analysis of the published materials and interviews permits WinterGreen Research senior analysts to learn a lot more about markets. Discovering, tracking, and thinking about market trends is a high priority at WinterGreen Research. As with all research, the value proposition for competitive analysis comes from intellectual input.

WinterGreen Research, founded in 1985, provides strategic market assessments in telecommunications, communications equipment, health care, Software, Internet, Energy Generation, Energy Storage, Renewable energy, and advanced computer technology.

Industry reports focus on opportunities that expand existing markets or develop major new markets. The reports access new product and service positioning strategies, new and evolving technologies, and technological impact on products, services, and markets. Innovation that drives markets is explored. Market shares are provided. Leading market participants are profiled, and their marketing strategies, acquisitions, and strategic alliances are discussed. The principals of WinterGreen Research have been involved in analysis and forecasting of international business opportunities in telecommunications and advanced computer technology markets for over 30 years.

The studies provide primary analytical insight about the market participants. By publishing material relevant to the positioning of each company, readers can look at the basis for analysis. By providing descriptions of each major participant in the market, the reader is not dependent on analyst assumptions, the information backing the assumptions is provided, permitting readers to examine the basis for the conclusions.

WinterGreen Research is positioned to help customers facing challenges that define the modern enterprises. The increasingly global nature of science, technology and engineering is a reflection of the implementation of the globally integrated enterprise. Customers trust wintergreen research to work alongside them to ensure the success of the participation in a particular market segment.

WinterGreen Research supports various market segment programs; provides trusted technical services to the marketing departments. It carries out accurate market share and forecast analysis services for a range of commercial and government customers globally. These are all vital market research support solutions requiring trust and integrity.

About The Principal Author

Susan Eustis, President, co-founder of WinterGreen Research, is a senior analyst. She has done research in energy, technology, communications, healthcare equipment, and computer markets and applications. She holds several patents in microcomputing and parallel processing. She has the original patents in electronic voting machines. She has new patent applications in format varying, multiprocessing, electronic voting, and oxygen management. She is the author of recent studies of the drone and robot marketing strategies, Internet equipment, biometrics, biomaterials, a study of Internet Equipment, Artificial Intelligence, IoT, Worldwide Telecommunications Equipment, Top Ten Telecommunications, Digital Loop Carrier, Web Hosting, Web Services, and Application Integration markets.

Ms. Eustis is a graduate of Barnard College. Ms. Eustis was named Top Woman CEO in 2012 by Who's Who Worldwide. She was named Top Woman Market Research Analyst in 2012, 2013, 2014, 2015, 2016, 2018, 2019, and 2020. She has been twice featured on the cover of the Women of Distinction magazine. She was cited in a recent Time Magazine article and major media articles on Youth Sports market growth. She was also featured in recent Wall Street Journal, New York Times, HBO, and London Times articles. Bloomberg and Barron's have had several quotes regarding cyber currencies and blockchain recently. She is chairman of the GBA (Global Blockchain Association) election committee and has led some panels for that organization lately, most recently in the US Capital Administration room.

Susan Eustis has had an enduring interest in next-generation technology. After inventing the first electronic voting machine, she and a partner Ellen Curtiss started the company WinterGreen Research. Many next-generation products and markets were identified in the studies produced and sold by the company. In all, to date, 865 major market studies have been produced. Susan wrote a study on cardiac monitors that was the foundation of the patient monitor market and resulted in hospitals forming intensive care units. Without a way to monitor very ill patients, there was no ICU.

Susan wrote the first Internet study in 1995, predicting 100 million users within 5 years, and because the telecommunications companies that bought the study invested in that market, the prediction came true. Early on in the development of the cell phone market when fellow analysts were predicting 6% penetration tops in Europe and 3% penetration tops in the US, Susan predicted 95% penetration in 5 years, which was what happened. It helps senior executives in a large company to have an independent research study methodically lay out the path to a new market.

Many of the WinterGreen Research studies have been groundbreaking. The air medical transport study commissioned by Terry Schrier was carried to the financial community and resulted in the formation of the Air Methods company and the commencement of the air medical transport industry. The predictions of market growth held true and permitted the formation of a new industry. A series of studies of middleware messaging that was \$3 million market initially, tracked the market to \$21 billion and growing. The series of studies laid out market opportunity and market strategy.

A new set of studies on utility-scale energy storage platforms and Global Renewable Energy: 100% breaks ground in a new way, laying out the opportunities and the strategies for formation of next-generation utility scale energy platform markets. The opportunity in front of existing battery companies is to supplant the coal, oil, and gas industry as it goes the way of buggy whips.

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About the WinterGreen Research Team: The WinterGreen Research Team is comprised of senior analysts that prepare the market research and analysis that is offered to the client and developed using an iterative process to achieve a final study. Typical projects include providing market/viability research. The team can look at how drones can be applied to critical infrastructures safety, including: type of market existing, Barriers, Forecast demand and competitors, SWOT and competitive advantages, Price Analysis, product design recommendations (marketing orientation).

Research is typically for many different regions or localities, for example EU countries including Spain, UK, Nordic, Germany, and France. Typical projects profile the United States and areas of Asia. It is common to three representative countries from South America, Brazil, Argentina, Chile, and Mexico. Representative countries from Asia APAC typically include Japan, China, India, and Australia.

Critical infrastructure safety, including: type of market existing, barriers to entry and to faithful execution of product provision, forecast of demand, market share, SWOT, competitive advantage of major competitors, identification of new technologies and new companies, price performance analysis, product design recommendations, and marketing considerations are typical topics covered.