

# **Asia-Pacific Supercapacitor Market by Product Type (Double-Layer Capacitor, Pseudo capacitors, and Hybrid Capacitors), Module Type (Less Than 10 Volts Modules, 10 Volts to 25 Volts Modules, 25 Volts to 50 Volts Modules, 50 Volts to 100 Volts Modules, and Above 100 Volts Modules), Material (Activated carbon, Carbide Derived Carbon, Carbon Aerogel, and Others), and End-user (Automotive, Industrial, Energy, and Aerospace & Defense), By Country, Competition, Forecast and Opportunities, 2028F**

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## **Abstracts**

Asia-Pacific Supercapacitors market is anticipated to grow at a steady pace in the forecast period, 2024–2028 due to increasing acceptance of the automotive industry & rising customer preference for electric /hybrid electric (HEV) vehicles. The electric double-layer capacitor (EDLC), commonly referred to as a supercapacitor, is able to store a lot of energy. Supercapacitors were formerly mostly used for boring applications, including internal battery backup, protection for memory.

Supercapacitor is utilized for energy storage systems undertaking frequent charge and discharge cycles at high currents. Supercapacitors work on the simple principle that they can store electrical energy by forming an electric double-layer capacitance between the interface of electrolyte and bath solution. It eliminates the vacuum left by rechargeable batteries and electrolytic capacitors. In comparison to electrolytic capacitors, it typically stores 10 to 100 times more energy per unit volume or mass, accepts and delivers charge considerably more quickly, and can withstand many more

charge and discharge cycles than rechargeable batteries. The major function of supercapacitors is utilizing reversible ion adsorption and desorption at the interfaces of electrode materials and electrolytes. Supercapacitors (SCs) are electrochemical energy storage devices that store and release energy. Supercapacitors are utilized in applications that require numerous rapid charge/discharge cycles rather than long-term compact energy storage, such as regenerative braking, short-term energy storage, or burst-mode power delivery in cars, buses, trains, cranes, and elevators. Smaller supercapacitors are utilized as a static random-access memory power backup (SRAM).

One of the main causes of this increase is the increased usage of electric cars (EVs) and renewable energy sources. Supercapacitors are ideal for these uses due to their rapid energy storage and release capabilities, which are necessary for addressing the high-power demands of electric vehicles and reducing fluctuations in the production of renewable energy. The market for supercapacitors is also being supported by the growing need for consumer and portable electronics. Supercapacitors can power small gadgets like smartwatches and headphones, and they may also be used in conjunction with batteries to enable faster charging and longer lifespan.

#### Growing Trend of Digital Gadgets Fueling the Market Growth in the Forecast Period

Traditional electric car batteries are being replaced by supercapacitors because of their quick charging capabilities and temperature stability. Supercapacitors are also more flexible than regular batteries. The high demand for a stable power supply for applications such as GPS, portable media players, laptops, and mobile devices, is an emerging trend in the market.

Among the current supercapacitor technology, more investigation is being done into the creation of inexpensive and creative solutions. It underlines the need to lower the cost of producing carbon-based electrodes and the dependence on essential components while providing a more cost-effective and environmentally friendly alternative to current versions. For instance, scientists at Imperial College London and University College London (UCL) have recently created an electrode material for supercapacitors that is more energy-dense and environmentally friendly, paving the way for increased market adoption of high-power, quick-charging electric vehicle technology.

The growth of supercapacitors in the automotive industry has also been pushed by numerous market manufacturers who observed a significant increase in sales in the electric car sector. For instance, in 2022, EV volumes sales were around 10.6 million and this represents a jump of 57% over 2021. At the end of 2022, there are almost 27

million EVs used in light vehicles (70% BEVs, and 30% PHEVs).

### China's Growing Electric Automobile Industry

To reach the carbon neutrality goals by 2060, China's demand for supercapacitors is anticipated to increase at one of the fastest rates in the world for a very long time. This goal is based on energy efficiency, renewables and reducing coal use. Supercapacitors are ideal for these uses, owing to their rapid energy storage and release facilities. The entire market share of supercapacitors in China would keep growing as a result of the rising demand in downstream markets, such as electric automobiles.

The automobile sector in China has a high degree of influence, and the nation has grown increasingly significant in the global automotive market. The government recognizes the automotive sector, which includes the auto parts industry, as one of the foundational industries of the economy. According to the Central Government of China, the country would produce 35 million cars by 2025, meeting the significant demand for supercapacitors. China is considered one of the top adopters of electric vehicles, which are becoming more and more popular. The 13th Five-Year Plan for China's transportation industry promotes the development of green mobility alternatives like hybrid and electric vehicles.

### Japanese Government Moving Towards Electric or Hybrid Models

Additionally, the goal of the Japanese government is to introduce new electric or hybrid vehicles by 2025. The nation intends to provide subsidies to accelerate the private sector's development of batteries and electric vehicle motors. The government is aiming for a reduction in greenhouse gas emissions from vehicles. Thus, Japanese bus and truck manufacturers are concentrating more on producing electric cars. As an illustration, Hino Motors Ltd. unveiled its first diesel-electric hybrid truck model.

### High Cost of Supercapacitors/Ultracapacitors Hinders the Market's Expansion

The high cost of supercapacitors and ultracapacitors hinders the market's expansion and limits their use in a wide range of possible applications. The materials used in the coating of electrodes, like activated carbons, significantly contribute to the high cost of supercapacitors. Supercapacitors are expensive, which has impacted the overall market growth. In the upcoming years, the cost of non-aqueous supercapacitors can reach USD 2400/KWh, which is substantially more expensive than the price of conventional and light ion batteries.

## Market Segmentation

The Asia-Pacific Supercapacitor Market is divided into Product Type, Module Type, Material, End-User, and region. Based on Product Type, the market is divided into Double-Layer Capacitor, Pseudo capacitors, and Hybrid Capacitors. Based on Module Type, the market is segmented into Less Than 10 Volts Modules, 10 Volts to 25 Volts Modules, 25 Volts to 50 Volts Modules, 50 Volts to 100 Volts Modules, and Above 100 Volts Modules. Based on Material, the market is segmented into Activated carbon, Carbide Derived Carbon, Carbon Aerogel, and Others. Based on End-User, the market is divided into Automotive, Industrial, Energy and Aerospace & Defense. Based on country, the market is divided into China, Japan, India, South Korea, Australia, Vietnam, Indonesia, Singapore, Philippines, Malaysia.

## Market Players

Major market players in the Asia-Pacific Supercapacitor Market are Panasonic Corporation, Eaton Corporation PLC, Cornell Dubilier Electronics, Inc., CAP-XX Ltd, Nippon Chemi-Con Corp., IOXUS (XS Power Batteries), Kilowatt labs, Inc., Targray Technology International Inc., and Skeleton Technologies.

## Report Scope:

In this report, the Asia-Pacific Supercapacitor Market has been segmented into following categories, in addition to the industry trends which have also been detailed below:

Asia-Pacific Supercapacitor Market, By Product Type:

Double-Layer Capacitor

Pseudo capacitors

Hybrid Capacitors

Asia-Pacific Supercapacitor Market, By Module Type:

Less Than 10 Volts Modules

10 Volts to 25 Volts Modules

25 Volts to 50 Volts Modules

50 Volts to 100 Volts Modules

Above 100 Volts Modules

Asia-Pacific Supercapacitor Market, By Material:

Activated Carbon

Carbide Derived Carbon

Carbon Aerogel

Others

Asia-Pacific Supercapacitor Market, By End User:

Automotive

Industrial

Energy

Aerospace & Defense

Asia-Pacific Supercapacitor Market, By Country:

China

Japan

India

South Korea

Australia

Vietnam

Indonesia

Singapore

Philippines

Malaysia

### Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Asia-Pacific Supercapacitor Market.

### Available Customizations:

Asia-Pacific Supercapacitor Market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

### Company Information

Detailed analysis and profiling of additional market players (up to five).

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