Silicon Carbide Market Worth to reach USD 7.79 Billion in 2030 | Reports And Data

Increasing demand for SiC devices in power electronics & a reduction in the size of SiC-enabled devices are the key factors expected to drive revenue growth

Reports And Data

NEW YORK CITY, NY, UNITED STATES, June 14, 2022 /EINPresswire.com/ -- According to the latest report by Reports and Data, the Silicon Carbide (SiC) Market size is expected to reach USD 7.79 Billion in 2030 and register a revenue CAGR of 11.4% over the forecast period. Increasing demand for SiC devices in power electronics and a reduction in the size of SiC-enabled devices are the key factors driving market revenue growth over the forecast period.

Increasing demand for a cleaner environment, reduction in global warming, and the reduction of dependency on fossil fuels increase demand for hybrid and electric vehicles offering superior fuel efficiency, less emission, and can be digitally well-connected than the traditional vehicles. Demand for SiC devices increases with the surge of demand for electric vehicles (EVs) as they are capable of increasing the efficiency and range of EVs and reducing the weight and size, thus increasing the overall power density of vehicle electronics. The SiC devices are increasingly used in high voltage power converters and their higher thermal conductivity makes them ideal for use in high temperatures with significantly lower on-state resistance and switching losses, thus allowing faster heat dissipation. Furthermore, the energy conversion requirement of EVs is optimally fulfilled by SiC devices which helps to reach maximum efficiency and drive the growth of the market.

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SiC semiconductors, capable of operating at high temperatures are perfect for applications such as onboard charging and inverters used in the case of electric and hybrid vehicles for rapid charging solutions. They ensure that EVs can operate long distances and get charged within a reasonable timeframe with the highest efficiency. In addition, support and initiative from governments of various countries help in the development and improvement of this critical

technology. For instance, in April 2019, the University of Arkansas received a USD 1.5 Million grant from the US Department of Energy, as an aid for the development of next-generation SiC-based power modules designed for hybrid and EVs. The benefit of SiC semiconductors is that it enhances the overall efficiency of EVs by increasing range and reducing the amount of time for getting recharged, is expected to drive growth of the market over the forecast period.

However, the high material and fabrication cost of silicon carbide hampers the growth of the market as SiC is manufactured in elevated temperature conditions which makes it costlier than raw silicon material. In addition, the use of gallium nitride as an alternative compound bearing similar properties of bandwidth, energy efficiency, high-temperature sustainability, etc. further hampers the growth of the market during the forecast period.

Some major companies operating in the global market include STMicroelectronics N.V., Infineon Technologies AG, Rohm Co Ltd, Wolfspeed, ON SemiconductorCorporation, Fuji Electric Co., Ltd., Renesas Electronics Corporation, Microchip Technology Inc., Toshiba Corporation, General Electric Company, GeneSiC Semiconductor Inc., ESD-SIC B.V., Entegris, Inc., Powerex Inc., and SEMI Co. Ltd.

Market Overview:

Consumers are placing higher importance on sustainability and, as a result, are choosing items based on factors like circularity and carbon footprint. Furthermore, consumer concern about carbon emissions has prompted increased investment in renewable energy, energy efficiency, and transportation decarbonization. These developments have had a considerable impact on chemical end sectors, particularly in the automobile and construction industries. COVID-19 has exacerbated the situation by lowering the automobile and construction industries (as well as many others) and disrupting current supply lines.

The adoption of digital technologies by oil, gas, and chemical firms has been fueled primarily by cost savings and greater reliability. Many organizations in these areas saw excellent benefits from advanced market sensing, improved operational optimization, and expanded usage of "in silico" simulations. Companies' existing digital technologies provided an advantage with the abrupt entrance of COVID-19 and the accompanying shutdown of facilities and work sites, but they were often insufficient for the level of remote working and cybersecurity that was suddenly required.

The report is written with the aid of industry analysts, market segmentation, and data collection in order to assist readers in making profitable business decisions. The report includes a comprehensive database of technical and product advances. It also provides information on growth rates and market value, as well as a thorough examination of niche market segments. The report provides strategic advice to newcomers and existing businesses about how to make profitable and well-informed business decisions.

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Some Key Highlights in the Report

The black silicon carbide segment is expected to account for the largest market share over the forecast period owing to its applications such as grinding and polishing titanium alloys, stainless steel, jewelry, etc. for its high strength and low density. In addition, as an excellent deoxidizer, it helps in maintaining the composition and quality of steel during manufacturing and processing, which drives the growth of the segment.

The automotive segment is expected to account for the largest market revenue share during the forecast period owing to the growing popularity and increase in demand for electrical vehicles worldwide and the application of SiC power electronics devices with high temperature bearing capacity, which significantly increases the range an EV can travel. Furthermore, demand for a clean environment with low emissions of carbon dioxide across the world is expected to drive the growth of the segment.

The Asia Pacific is expected to account for the largest market share during the forecast period owing to an increase in demand for SiC devices for advanced and latest technologies across various sectors such as power, electronics, automotive, defense, renewable energy, and others in the region. In addition, a rise in infrastructural development leads to increasing in demand for steel, which consequently increases demand for SiC, which is a raw material for the refractories and acts as a deoxidizing agent in the manufacture of steel. Furthermore, the region is the world's largest market for semiconductors, which further drives the growth of the market in the region.

In February 2022, Infineon Technologies AG announced the launch of power semiconductors with CoolSiC MOSFET and XT technology in the XHP 2 package for rail services with an increase in energy efficiency and focus on green mobility. This will help to maintain the trend of reduction of dependency on fossil fuels, with eco-friendly electric solutions.

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For this report, Reports and Data have segmented the silicon carbide market based on product, device, wafer size, application, end-use, and region.

Device Outlook (Revenue, USD Billion, 2019-2030)

SiC Discrete

SiC Bare Die

SiC Module

Application Outlook (Revenue, USD Billion, 2019-2030)

Power Grid Devices

Flexible AC Transmission Systems

High-Voltage Direct Current Systems

Power Supplies & Inverters

EV Motor Drives & Charging Stations

Others

Wafer Size Outlook (Revenue, USD Billion, 2019-2030)

2-inch

4-inch

6-inch

Vertical size Outlook (Revenue, USD Billion,2019-2030)

Energy & Power

Automotive

Defense

Electronics

Telecommunications

Regional Outlook (Revenue, USD Billion; 2019-2030)

North America

Europe

Asia-Pacific

Latin America

Middle East & Africa

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Rotomoulding Powder Market @ https://www.globenewswire.com/news-release/2019/03/20/1758035/0/en/Rotomoulding-Powder-Market-Is-Expected-To-Reach-USD-31-99-Billion-By-2026-Reports-And-Data.html

Geotextile Market @ https://www.globenewswire.com/news-release/2019/04/09/1799911/0/en/Geotextile-Market-To-Reach-USD-11-86-Billion-By-2026-Reports-And-Data.html

Silicon Nitride Market @ https://www.globenewswire.com/news-release/2019/05/20/1829097/0/en/Silicon-Nitride-Market-To-Reach-USD-157-5-Million-By-2026-Reports-And-Data.html

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