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FOUR TRENDS SHAPING THE FUTURE OF THE CONDUCTIVE FILLER MARKET

The conductive filler market is growing due to increasing demand for conductive fillers in EMI shielding applications and a growing electronic sector. The rising wave of carbon nanotube, graphene, and carbon-based conductive fillers is creating significant potential in various consumer electronics, automotive, industrial, aerospace, and other industries. The major growth drivers for this market are growth in consumer electronics and increasing demand for compact,

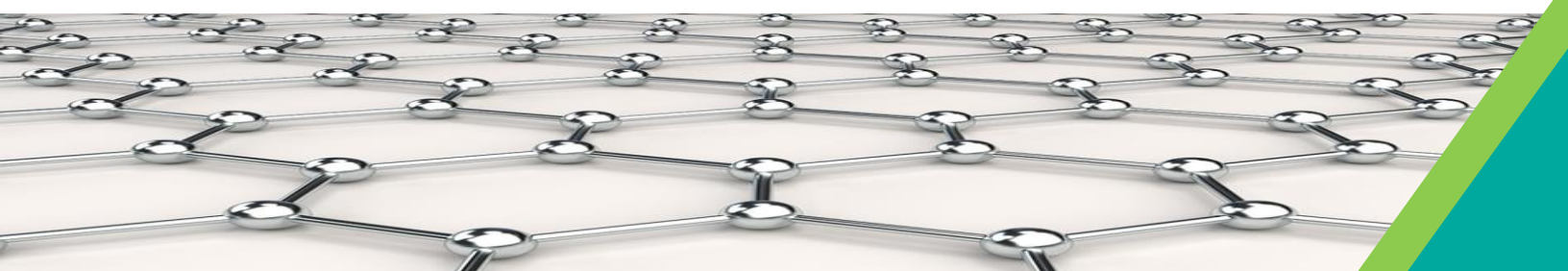
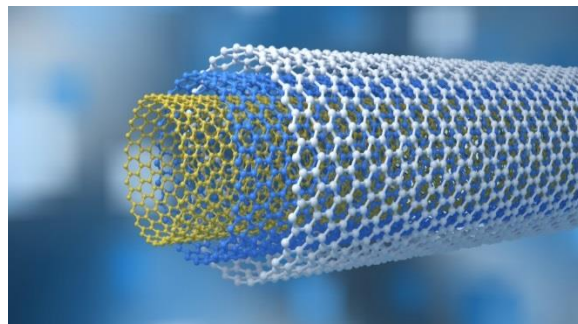
high-performance, and high-density electronic products.

The conductive filler market is divided into several segments, such as carbon black, graphite, carbon fiber, alumina, copper, silver, steel, and others. Key players in the conductive filler market include Cabot Corporation, Showa Denko K.K, Orion Engineered Carbon, Birla Carbon, Imerys, Nippon Light Metal, Dowa Electronics, Asbury Carbon, and Almatris Corporation. These have been working on different strategies to drive sales using highly influential marketing approaches; however, as we examine the challenges and opportunities ahead in this market, companies can benefit from a strategy of developing carbon nanotube conductive filler and graphene conductive fillers, along with the key target market trends we have identified. Lucintel predicts the global conductive filler market will be valued at \$6.3 billion by 2025, with an expected CAGR of approx. 5.0% between 2020 and 2025.

Lucintel identifies four trends set to influence the global conductive filler market. Most of the industry players and experts agree that these four trends will accelerate developments in the conductive filler industry in the near future. In terms of the widespread knowledge about the conductive filler market already on the horizon, there is still a lack of unified perspective on the direction the industry is moving to proactively address developments. To help bring more clarity to this gap, our study aims to provide insights concerning the direction that changes are taking and how these changes will impact the conductive filler market.

1. Increasing Demand for Carbon Nanotube Conductive Filler

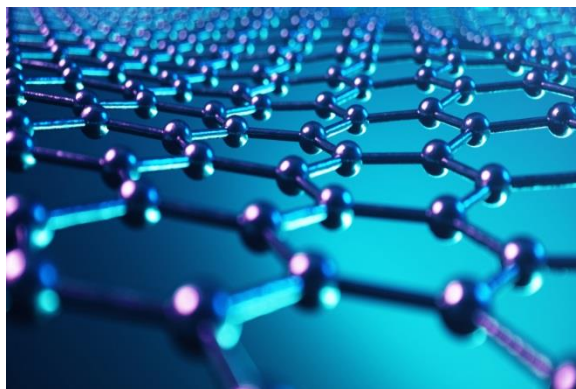
Carbon nanotubes (CNTs) are a tube-shaped material made of carbon. The diameter of carbon nanotube is one-billionth of a meter, or one ten-thousandth of the thickness of a human hair. Carbon nanotubes have superior conductivity, and better structural and functional properties, and



serve a broad range of applications in every sector. Carbon nanotubes are a hundred times stronger and six times lighter than steel, due to which they are gaining popularity in many electronic applications, such as electromagnetic interfaces, electromagnetic discharge, semiconductor devices, photovoltaics, sensors, conductors, displays, transistors, touch screens, and others. Carbon nanotubes have also shown great potential as anode materials for Li-ion batteries.

2. Use of Graphene in Conductive Coatings

Graphene is a two-dimensional layer of carbon atoms, arranged in the form of a honeycomb lattice. Graphene is one of the lightest, strongest, thinnest materials, and offers the very best heat and electrical conductivity. The vast range of extraordinary properties that graphene possesses open the door for many types of coatings, paints, inks, and more. Graphene's high resistivity enables durable coatings



that do not crack and are resistant to water and oil; its excellent electrical and thermal conductivity is ideal for making various conductive paints, and a strong barrier effect can contribute to extraordinary antioxidant, scratch- and UVA-resistant coatings. Conductive graphene coatings find use in cell phones, tablets, computers, television screens, and other displays.

3. Use of Conductive Carbon Fillers in Lithium-Ion batteries

Lithium-ion batteries are the major rechargeable power source for many portable devices as well as electric vehicles, but their use is limited because they do not provide high power output while simultaneously allowing reversible energy storage. New research aims to offer a solution by showing that the inclusion of conductive fillers improves battery performance. The most

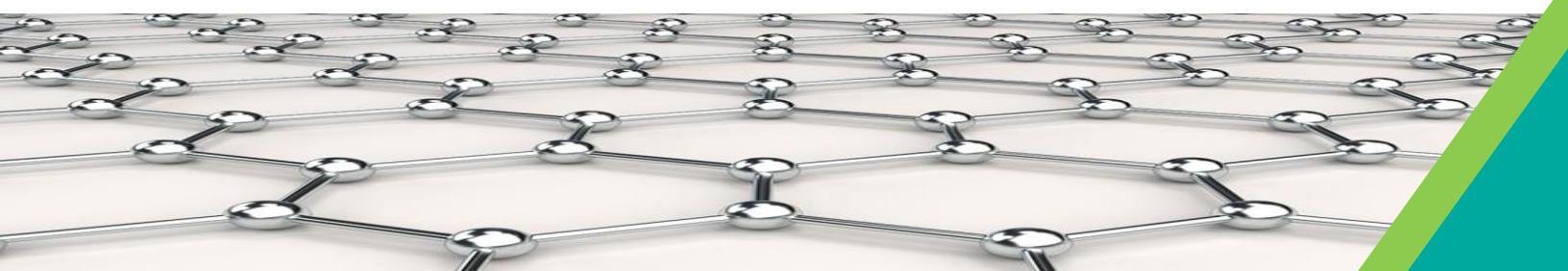


commonly used conductive filler in lithium-ion batteries are single-walled carbon nanotubes (SWCNTs), graphene nanosheets, and a type of carbon black particle produced during the oxidation of petroleum precursors. The use of conductive carbon filler in lithium-ion batteries allows high power output with reversible energy storage.



4. Development of Low Cost Silver-Coated Copper Filler

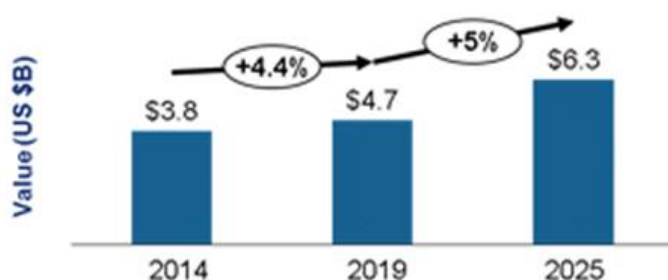
Electrical conductivity is achieved with conductive metal fillers and polymeric resin. In metal fillers, silver is the most often used due to its high electrical and thermal conductivities, as well as its chemical stability. Recently, copper is being used as a conductive filler metal due to its low resistivity, low cost, and good electro-migration production. To address the problem of high electrical resistance related to the oxidation of copper, copper particles were coated with silver, and the silver-coated copper was tested as a filler metal. The reliability factor for silver coating on the copper was investigated, and the electrical conductivity of silver-coated copper was lower than silver alone, but it did successfully conduct electricity at a reduced cost. Silver-coated copper is currently used in many industries for electrical conductivity, and research is under way to make it more feasible for commercial usage.



Strategic Considerations for Key Players in the Conductive Filler Market

The conductive filler industry is dynamic and ever-changing. Successful industry players are necessarily masters of innovation, change, and adaptation. To retain this status, they need to be attentive to current trends. We believe there will be promising opportunities for conductive filler in the consumer electronics, automotive, industrial, and aerospace industries. As per Lucintel's latest market research report (Source: <https://www.lucintel.com/conductive-filler-market.aspx>), the [conductive filler market](#) is expected to grow with a CAGR of approx. 5.0% between 2020 and 2025, and reach \$6.3 billion by 2025. This market is primarily driven by the growth in consumer electronics and increasing demand for compact, high-performance, and high-density electronic products.

**Trends and Forecast for the Global Conductive Filler Market
(US \$B) (2014 - 2025)**



Source: Lucintel

Whether you are new to the conductive filler market or an experienced player, it is important to understand the trends that impact the development process, as these trends as listed above will lead players to create long-term strategy formulation that will allow them to remain competitive and successful in the long run. For example, to capture growth, some of the strategic considerations for players in the conductive filler market are as follows:

- Conductive filler market players can increase their capabilities to develop carbon nanotubes for higher conductivity.
- Players can focus on graphene conductive filler, which is expected to lead future trends.
- Investment to increase competencies in the development of conductive carbon filler for lithium-ion batteries
- Research and development activities for development of low-cost conductive filler

Note: In order to gain better understanding, and learn more about the scope, benefits, and companies researched, as well as other details in the conductive filler market report from Lucintel, click on <https://www.lucintel.com/conductive-filler-market.aspx>. This comprehensive report provides you in-depth analysis on market trends and forecast, segment analysis, regional analysis, competitive benchmarking, and company profiling of key players. In addition, we also offer **strategic growth consulting** to meet your customized needs. We have worked with many PE firms and corporate customers in the process of their market entry and M & A initiatives.



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