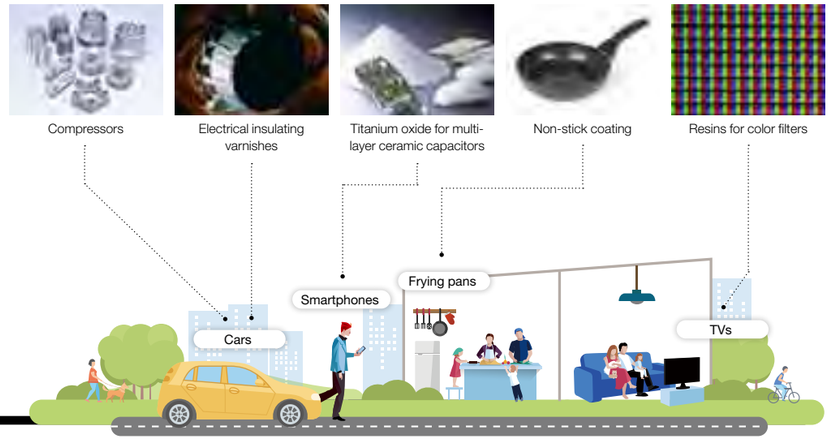
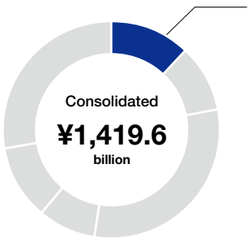
Innovation Enabling Materials



Showa Denko Products in Everyday Life

Fiscal 2021 Net Sales



Innovation Enabling Materials segment

Net sales
¥141.3 billion

Operating income
¥13.8 billion

Management Target

EBITDA margin
15% or more in 2025

Strategy for Realizing the Long-Term Vision

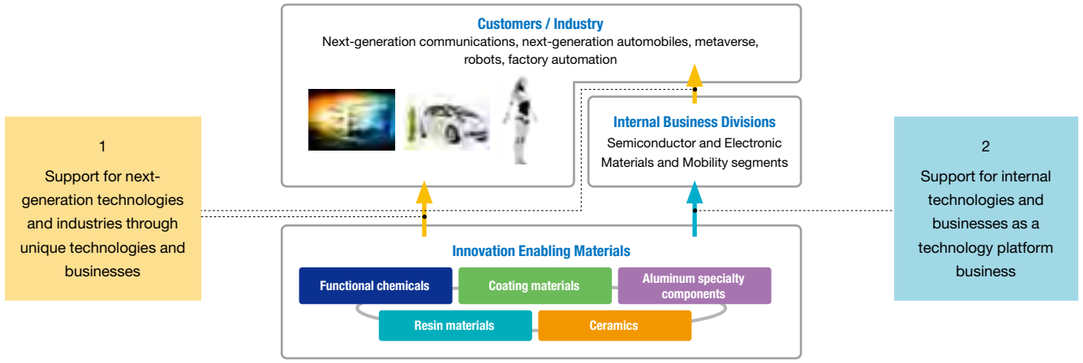
The Innovation Enabling Materials segment features an extensive lineup of technologies and materials as a technology platform business supporting innovation and competitiveness improvements in Showa Denko's Core Growth, Stable Earnings, and Next-Generation businesses.

This segment strives to remain a step ahead of the changing times by supplying the organic, inorganic, aluminum, and other functional materials deemed valuable by the market. In this way, the Innovation Enabling Materials segment will become a vessel for the creation of new businesses over the medium to long term and a driver behind the fulfillment of our purpose.

	Results in 2021	Plan for 2022	Vision for the future (2030)
Functional chemicals	• Strong demand centered on the electronic materials market • Increased profitability driven by structural reforms pertaining to fundamental products • Decision to bolster production capacity for functional materials for use in electronic materials • Synergies generated with Showa Denko Materials	• Stable earnings secured by increasing resilience to operating environment changes • Increased income spread achieved through sales promotions for high-performance, high-margin products • Reinforcement of functions and systems for supporting the development of other businesses • Integration with the resin materials business division	• Leader in specific sectors of the global market • Provision of value to society through the ability to aggregate individual strengths
Resin materials	• Recovery from impacts of the COVID-19 pandemic centered on the Chinese market • Establishment of mass production systems in Japan and China for polyimide varnishes for electrified vehicle motors • Growth of sales and acquisition of new certifications for semiconductor and electronic materials • Stable supply of materials for internal use	• Establishment of earnings structures that are resilient to changes in raw material trends • Expansion of sales of polyimide and polyamide-imide varnishes for electrified vehicles • Accelerated improvements to the product sales mix achieved through a focus on the ratio of sales from new products • Response to sources of potential future needs in the Semiconductor and Electronic Materials and Mobility segments	• Communication of the benefits of highly competitive functional materials together with the functional chemicals division to help resolve social issues through internal and external effort
Coating materials	• Construction of a factory in Malaysia and the promotion of integrated operation with factories in China • Development of new eco-friendly products • Assembly of a dedicated sales team for online sales channels • Development of a joint framework for Group procurement activities	• Extension of the production system into other areas of the world • Promotion of sales of eco-friendly products • Bolstering of sales channels for consumer products (emerging countries, online) • Expansion of scope of applications and regions of operation for industrial coating materials • Development of new products for growth markets	• Development of the coating business to serve major global players and contribute to Companywide growth as a new business capitalizing on unique composite insight
Ceramics	• Strong performance of materials for electronic device, heat dissipation, and glass polishing applications driven by recovery in demand for electronic devices, high-speed communications, and automotive products • Favorable performance of polishing and refractory materials due to recovery in demand for automotive and steel products	• Ongoing generation of synergies between CMP slurry and heat dissipation materials • Acceleration of development of next-generation materials for electronic devices	• Supply of first-rate ceramics products and services that surpass customer expectations and contribute to the resolution of social issues
Aluminum specialty components	• Robust demand in the first half of 2021 due to recovery from the impacts of the COVID-19 pandemic • Sluggish growth in sales beginning in the third quarter as a result of semiconductor shortages • Higher costs due to soaring prices of additive metal materials in the fourth quarter • Impressive sales of extrusion products for railcars	• Construction of earnings structures that are resilient to operating environment changes • Development of next-generation radiators • Application of aluminum processing technologies to mass production in pursuit of carbon neutrality • Receipt of suspension component orders from around the world	• Contribution to society through the combination of aluminum with other materials

Competitive Edge

The competitive edge of the Innovation Enabling Materials segment lies in the positioning of its unique technologies and businesses. Moreover, as a technology platform business, it generates intra-segment synergies while supporting the technologies and operations of Core Growth businesses to enhance our technical capabilities and secure a more sophisticated position for its unique technologies and businesses.



Initiatives for Resolving Social Issues as a "Co-creative Chemical Company"

Resin Materials: Electrical Insulating Varnishes
Electrical insulating varnishes contribute to improved functionality in the motors of electrified vehicles. Showa Denko boasts the leading share of 35% (based on estimates by the Company) in the Japan market for polyimide and polyamide-imide resin varnishes, which require particularly high levels of durability and reliability, together with a large share of the global market.

Coating materials: Non-Stick Coatings
Together with customers producing cooking utensils, Showa Denko is rolling out its MAXIMIZING green campaign designed to communicate the sustainability principles exemplified by the materials used in cooking utensils directly to end users. Carried out in Europe, this campaign has proved successful in boosting sales of cooking utensils.

Ceramics: Aluminum Nitride Filler
Showa Denko's aluminum nitride fillers contribute to smaller electronic components with excellent wet resistance and high thermal conductivity. Improving wet resistance is one of the greatest challenges in developing aluminum nitride fillers, but we succeeded in achieving a massive improvement by utilizing our proprietary ultrathin membrane surface processing technology, allowing our fillers to help create electronic components with higher functionality and longer lifespans.

Functional Chemicals: Isocyanate Monomer
Isocyanate monomers are functional monomers that contain two functions in a single molecule. The increased freedom of molecular design granted by these isocyanate monomers can be used to improve the features of materials for a wide variety of applications, including photosensitive resin materials, paints, and coating materials.

Aluminum Specialty Components: Aluminum Radiators for Electrified Vehicles
Aluminum radiators help to improve the reliability and heat dissipation characteristics of the power modules that are a central component of electrified vehicles as one of the multiple materials employed in these modules. Further increases in the functionality of power modules can be achieved by using our thermal performance simulation technologies, power module mounting technologies, and multi-material optimization technologies.