Denka

# **Electronics & Innovative Products**



### Message from the Division Head

Our department's growth strategy is to deepen our understanding of customer needs, and to continue providing optimal materials to the market on time by using non-organic/organic composite technologies, thermal countermeasure technologies, and high-frequency response technologies that we expertise. When we face suppression of environmental impact as a pressing issue, we will contribute to achieving better society by providing high performance materials that help digital and other technologies evolve.

## Hiroto Horiuchi Head

Executive Officer Head of Electronics & Innovative Products

In FY2023, we accelerated investment to achieve "Mission 2030" management plan goals, including an establishment of a joint venture in Thailand where we manufacture Acetylene Black, performance enhancement in various high functional ceramic powders. We will release new products equipped with three elements – "Specialty", "Mega Trend", and "Sustainability" - and foster them to be core business to support Denka business.



## To achieve the management plan "Mission 2030" targets

Areas of focus and markets	[Key products]	[202
Next-generation high-speed communication	<ul> <li>Spherical silica/spherical alumina</li> <li>Low dielectric silica</li> <li>Low dielectric organic insulating resin (SNECTON)</li> <li>LCP film</li> </ul>	<ul> <li>De sp 30</li> <li>De ar wi</li> <li>De be</li> </ul>
xEVs and renewable energy	<ul> <li>Acetylene black</li> <li>Spherical alumina</li> <li>Silicon nitride</li> <li>Silicon nitride substrates</li> </ul>	e Es pr te cc St of

#### [2023 results]

- Decided to increase the production capacity of spherical silica at Denka Advantech Pte. Ltd. by 30%
- Decided to establish joint venture in Thailand and build an Acetylene Black production facility with a 11,000-ton production capacity per year
- Decided to increase silicon nitride production capacity by 50% at Omuta Plant
- Established a formulation as a part of preparation for a release of the heat-resistant temporary bonding material (TBM) for power conductor production processes in FY2024
- Started trial marketing of SNECTON, as a part of preparation for its FY2024 release

#### [2026 plan]

- Expanded sales of Acetylene Black for growing markets of LiB and cable applications
- Retained and enhanced the top world share of silicon nitride for xEV motor bearing ceramic ball application
- Achievement of HITTPLATE high thermal conductor for the general industry (over 20W)
- Achievement of new emitter types for semiconductor production and inspection equipment
- Established a market de facto standard of LCP film and SNECTON for expected production release of next-generation high speed communication

#### [Divisional vision (ideal form in 2030)]

- Establish overwhelming presence and de facto standards as specialty products
- "On-time development and delivery of optimum materials" targeting the field of mega trends
- Achieve a sustainable society via our ESG/SDGs management

Denka

Financial

information

## **SWOT** analysis

- A diverse product lineup capable of meeting a broad range of customer needs
- Intelligence capabilities stemming from strong market share commanded by our products
- A broad range of essential technologies, including high-temperature control, nitriding, spherical shaping, and calcining technologies
- Growing importance of communication and the progress of high-speed communication due to the spread of IoT and autonomous driving systems
- Trend for decarbonized society, including xEV and renewable energy

### Strengths S O Opportunities

## Weaknesses W T Threats

- Growing financial burden attributable to capital expenditure due to rapid market expansion
- Possible emergence of novel material serving as a game changer
- A major shift in technological development trends due to factors such as the growing need for environmental solutions
- An increase in the number of competitors due to the entry of newcomers from emerging nations

## **Development of spherical silica**



### Contributing to society through business

#### Low-dielectric organic insulating material "SNECTON" + low dielectric tangent/low transmission loss silica filler

The next-generation mobile communication is expected to bring a big innovation to our society. The challenge for its spread is insufficient performance of the electric devices and terminals to receive the radio wave. SNECTION, a low-dielectric organic insulating material developed by utilizing Denka's coordination polymerization technology calls attention as a material that can overcome this challenge.

Initially a thermoplastic resin that gets softened when heated, its design was modified to a thermosetting resin to accommodate its applications. In addition, its low dielectric characteristic was enhanced. It is a soft resin that not only has both top-level low dielectric characteristic and excellent heat resistance but also high affinity with other low dielectric materials, allowing easy compounding and forming. Its expected applications include insulating materials in the next-generation high frequency high speed communication substrate and packages, as well as antenna materials. With a combination with our silica filler that already has a large market share. Denka can deliver with an optimal compounding to customers because we have both organic and non-organic technologies.

