Functional Materials Business

Employing advanced metal fabrication technology cultivated over the years of business, the Company has become a global supplier of copper foils for FPC, our mainstream product used in flexible circuit boards, as well as of precision Cu alloy products including titanium copper, Corson alloy, and phosphor bronze - all used in connectors and other parts. We are also engaged in precious metal plating and stamping, as well as other processes, on a global scale.

Key Strategies

- Expand applications of the rolled copper foil and advanced copper alloy products, and improve profitability
- Strengthen production capacity to expand business

Review of Fiscal 2020

The current COVID-19 pandemic has resulted in rapid changes in lifestyles including the spread of working from home and online education that have led to significantly increased demand in the core markets for our products, particularly in the fields of electronic devices such as smartphones, tablets, and PCs, and in communication infrastructure including base stations and data centers. Also, the first half of fiscal 2020 saw a drop in demand in the sales environment for devices used in automobiles but this recovered in the second half of the year, meaning this performed well overall.

In June 2020 we completed our investment into increased production of rolled copper foils and copper alloys that had been underway since fiscal 2017, and by starting full-scale operation, have responded to the current expansion in demand and thus achieved increased production and sales. In response to future growth in demand, we will achieve further improvements in efficiency and productivity, and by bolstering Group manufacturing facilities, will increase manufacturing capacity at each of the Group's sites thus expanding our production structures and strengthening our business foundations.

Hyakuno Manabu
Director and Senior Executive Officer, General Manager, Functional Materials Division, Senior Executive Staff, Technology Group
JX Nippon Mining & Metals Corporation

Outlook for Fiscal 2021

Demand for our advanced functional materials has remained strong from fiscal 2020 centered around the electronic device market and communications infrastructure market, and sales have remained strong going into fiscal 2021. The current expansion in demand is significantly advancing the development of the IoT/AI society, and this is expected to further accelerate in conjunction with the further full-scale deployment of 5th generation (5G) mobile communication systems which had been delayed as a result of trade friction between the U.S. and China.

In a society in which we need to achieve SDGs and become carbon neutral, we expect to see expanded demand for new applications such as the NEV market, recycling, and energy-savings, requiring more sophisticated and diverse materials characteristics. As a company, we will continue with the development of markets and technologies that anticipate changes in market needs, and strive to further bolster our production systems to address this growing demand.

TOPICS

Establishment of a Joint Venture and Installation of New Facilities to Meet Growing Demand for Advanced Functional Materials

In order to respond to growth in demand for advanced functional materials, Muroran Copper Alloy Co., Ltd. was established in August 2019 jointly with The Japan Steel Works, Ltd. within The Japan Steel Works Muroran Plant, and the installation of a melting and casting furnace was completed in September 2021. This joint venture will increase the Group's production capacity of hard copper alloys such as titanium copper and Corson alloys, and by integrating the steel melting technology and copper alloy manufacturing technologies from the two companies, will contribute to improvements in production technologies for copper alloy materials.

Looking forward, we will continue with the development of technologies that factor in dynamic expansion of capabilities and requirements, and by supplying the advanced functional materials required to achieve and develop our data-driven society, will contribute towards achieving the SDGs propounded by the United Nations.

Muroran Copper Alloy, Co., Ltd. Melting furnace

Thin Film Materials Business

Employing world-class nonferrous metal manufacturing technologies, we are a supplier of a wide variety of sputtering targets including for semiconductor applications, compound semiconductor materials, high-purity metals, and surface treatment. These and many other materials and services, provided on a global scale, find use cases in end products such as advanced devices, leading-edge IT equipment, medical instruments, and electric vehicles.

Key Strategies

- Establish a dynamic supply system to meet demand
- Strengthen new products and new business development capabilities
- Promote use of digital technologies for greater efficiency in manufacturing processes

Review of Fiscal 2020

Against the backdrop of a growth in the overall size of the market driven by an accelerated digital transformation because of the COVID-19 pandemic, the increased demand from people telecommuting and demand from stay-at-home workers has meant an increase in the semiconductor sector-related market. With the aim of responding to future market trends for which further future growth is anticipated, we are implementing capital investments to improve our production capacity. We have decided to move forward with our plan to expand overall process facilities in production facilities for our product's sputtering targets including copper, copper alloys, titanium, and tantalum used in forming ultra-fine interconnects for semiconductors that is part of our 2020-2022 medium-term management plan.

Nakamura Yuichiro
Director and Senior Executive Officer, General Manager, Thin Film Materials Division, Senior Executive Engineer, Technology Group
JX Nippon Mining & Metals Corporation

Outlook for Fiscal 2021

Fiscal 2021 will likely see ongoing uncertainty in the economic environment due to the widespread impact of COVID-19, the continuation of the United States' hardline policy towards China, and the state of Korea-Japan relations. However, the normalization of economic activities through more widespread vaccination, accelerated efforts towards digital transformation by many companies, and the mainstream adoption of 5G, IoT, and ADAS (Advanced Driver Assistance Systems) mean that we expect to see an increase in demand for our products. Furthermore, we expect the need for advanced materials to grow further in the medium to long term. Accordingly, we will steadily implement previously decided capital investment and thus increase our production capacity in order to meet this demand, flexibly responding to customer needs that vary due to changes in the market, thereby gaining their trust.

TOPICS

Expanded Production Capacity for Sputtering Targets for Semiconductors

Sputtering targets used for semiconductors are a mainstay product for the Thin Film Materials Business, mainly used in ultra-fine interconnects in leading-edge logic and memory chips, and demand for these continues to grow along with the move to a data-driven society. Factors such as telecommuting have resulted in increased demand for communications infrastructure and mobile terminals, and the semiconductor market is seeing accelerated growth. Looking forward, this underlying trend is expected to continue with the development of 5G and digital transformations.

We will enhance our production facilities for sputtering targets for copper, copper alloys, titanium, and tantalum used in ultra-fine interconnects for semiconductors, increasing our production capacity by 30% in fiscal 2020, and we are currently working on further expansion. We will continue our efforts to support expanded demand.

Production equipment used for semiconductor-grade sputtering targets such as electrolysis baths (Isohara Works)