Members' Profiles

Furukawa Electric Co., Ltd.

1. Business Profile of Furukawa Electric Co., Ltd.

Founded in 1884 as a manufacturer of electric cables and nonferrous metals, Furukawa Electric has accumulated more than a century of expertise in the development of technologies and products aimed at reinforcing the foundation of our society and industry. Today companies in the Furukawa Group are active in such diverse industries as telecommunications, automobiles, energy, electronics, and construction, utilizing the strengths of a wide range of materials, including light, metal, and plastic. The following is a description of some of our signature products in these fields.

One of the core products in telecommunications is the optical fiber cable, which is indispensable for building optical communication networks that sustain our advanced information society. In 1974 Furukawa Electric became the first company in the world to successfully manufacture optical fiber cables. Today we are the world's second largest manufacturer of optical fiber cables and globally provide total solutions for optical parts, optical communication equipment, and optical systems essential to our optical information-oriented society.

Steering roll connectors, a major product in the automotive parts industry, function to transmit electric signals for activating an airbag built into the steering wheel of an automobile. Furukawa Electric has been developing and manufacturing these connectors for more than twenty years, bringing the company recognition for its development capabilities and earning the products praise for their low cost and reliability. Our connectors are used throughout the world, accounting for the highest share of the global market.

As China continues to grow, the country has been plagued with a chronic shortage of electric power. Furukawa Electric has established production centers in China for manufacturing ultra-high-voltage power cables and related components, and optical fiber composite overhead ground wires in order to supply these products throughout China. We have received high praise for our superior manufacturing capability and product quality and are the market leader in ultra-high-voltage power cables.

Furukawa Electric's signature product in electronic-related fields is the copper foil. Copper foils are used in printed wiring boards incorporated in computers, cell phones, and other communication equipment, collectors for lithium ion batteries, and electromagnetic interference shielding materials for plasma displays. From common to sophisticated foils, the company provides high-quality products backed by more than thirty years experience in producing electrodeposited copper foils.

By utilizing this wealth of material expertise and exploring the diverse applications, we will always strive to be a more profitable, innovation-oriented business group with a dynamic global presence. We will continue to develop technologies and products that enrich our society and offer these products not only in Japan, but also in countries throughout North and South America, Europe, and Asia.

2. New Product Development

2.1. Furukawa Electric's Distinctive Production Technology

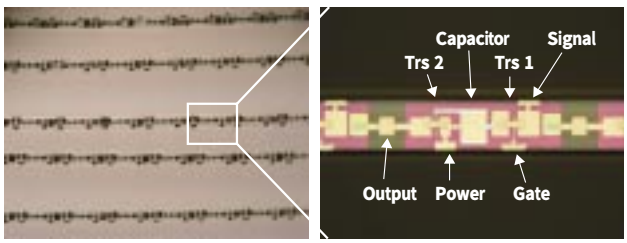
Since many of our products are long in dimension, such as the optical fibers, electric cables, copper foils, and plastic sheets, these products are produced using our continuous roll-to-roll processing technology. The elemental technologies used in this process include a thermal processing technique for maintaining an optimum process temperature, a processing technique to perform molding and extrusion continuously, and a sensing technique for monitoring product quality online. The sophisticated materials in our products are testament to how we have managed over the years to develop each elemental technology into our own distinctive technology. It would not be an exaggeration to say that the history of our product innovation is inseparable from the development of our continuous processing technology. Recently we have been working on developing new products made distinctive by this production technology.

2.2 One-Dimensional Substrate Technology

Using proprietary techniques in optical fiber manufacturing processes, Furukawa Electric is working on a project aimed at transforming fabrication based on an entirely new concept called ."one-dimensional substrate technology."

One dimensional substrate technology is the efficient, low-cost manufacturing of electronic devices on long and narrow film-like glass and metal substrates. A major feature of this technology is its conduciveness to fabricating devices using our roll-to-roll processing technique. Today displays, solar cells, and semiconductor substrates are predominantly produced through vacuum batch processes using two-dimensional silicon wafers and glass substrates. However, in order to increase the number of devices that can be produced from a single substrate and thus reduce costs, the size of the substrate has been increased, leading to a need for larger manufacturing equipment–an enormous investment. By using one-dimensional substrates in device fabrication, the production method can be changed from the vacuum batch process to an atmospheric-pressure continuous process to achieve lower production costs. Since it is also possible to localize the process area, we can employ more compact equipment and increase the processing speed. Hence, there is potential for transforming the semiconductor industry from the traditional model of increasing scale to an approach aimed at increasing processing speed.

Recognizing the potential for expanding one-dimensional substrate technology into a wide range of industrial products and the advantages of incorporating this technology as a new business, Furukawa Electric is currently engaged in development aimed at achieving commercial viability as early as possible.



TFT circuit formed on a one-dimensional substrate

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