

Research and Development

Refining core technologies

UACJ is working to refine its core technologies used for material design and production processes by acquiring the latest technologies and expertise in collaboration with leading-edge research organizations in Japan and around the world. As part of these efforts, in fiscal 2019, the Company began fully operating a laboratory specializing in industry-collaborative research on aluminum, which has been set up at the Chubu Center of the National Institute of Advanced Industrial Science and Technology in Japan. The laboratory has launched joint research projects spanning across a wide range of fields, including methods for improving production processes, new applications for aluminum using newly developed surface finishing technologies, and data science applications in R&D.

UACJ has also been carrying out joint research with Hokkaido University, which is offering a practical course on next-generation innovations in aluminum to prepare students for working in the aluminum industry through R&D aimed at creating innovative aluminum materials. Combining the university's academic expertise with UACJ's

extensive technical development capabilities, the course is designed to equip students with the skills they will need to develop innovative and highly useful materials.

Outside Japan, UACJ has been networking with members of national research institutes in Thailand through the UACJ Thailand R&D Center. The center has also set up a system for recruiting and training engineering students from local universities to provide a solid source of skilled human resources in the future.



A university student being trained at the UACJ Thailand R&D Center

Developing products and applications

UACJ conducts R&D on aluminum and its many useful properties with a view to promote applications across a broad range of industries. In collaboration with Japan's New Energy and Industrial Technology Development Organization, the Company has been using high-strength aluminum alloys for auto parts, developing an aluminum recycling process, and assessing corrosion resistance under various driving conditions. Together with Hitachi, Ltd., UACJ has been verifying a system designed to make new material development more efficient by applying the results of computer-derived material data analyses to shorten development times. With the system, the companies are aiming to reduce the weight of auto parts and quickly develop easily recyclable can stock. In addition, UACJ has partnered with SAP Japan Co., Ltd., and Doctors, Inc., to develop a medication tracking system that notifies caregivers remotely about whether patients have taken medication or

not, made possible by a pharmaceutical packaging foil that can detect whether a package has been opened. By collaborating in this way, UACJ is aiming to offer practical solutions for caregivers and patients.



In the countries where its main production plants are based—Japan, the United States, and Thailand—UACJ has established R&D facilities to help boost productivity and support manufacturing of products tailored for regional needs.

UACJ Innovation Challenge launched to create new value with aluminum

UACJ has been successful in producing high-quality products according to customers' requests, but it will need to proactively create new value in the future to ensure further growth. From that perspective, the Company's main research and development facility, the UACJ R&D Center, launched a program called the UACJ Innovation Challenge in 2019 to generate ideas about creating new value using aluminum. Among the program's activities, the center invited members of other manufacturers and trading companies as well as students to join employees in workshops designed to brainstorm ideas that can lead to innovations. It also provides support for related projects initiated by employees.



Employees who volunteered to join the UACJ Innovation Challenge program share ideas about innovation.

Advancing Sustainable Manufacturing

Producing Environmentally Friendly Products

Demand for aluminum is growing around the world as people recognize its usefulness as an alternative to plastic and as a lightweight material for automobile parts amid increasingly strict environmental regulations. Transport tractors and trailers, for example, can be made lighter by using lightweight aluminum materials for body panels and components. That contributes to both higher fuel efficiency and lower CO₂ emissions.

To make use of aluminum in products, however, the performance of the materials must be improved. Therefore, the UACJ Group makes aluminum sheet, parts, and other items according to the required performance specifications of the end-products. For example, it improves the strength of aluminum components used in automobiles.

In the same way, the Group strives to make aluminum products that enhance user-friendliness and help reduce environmental burdens, specifically by saving resources, combating global warming, facilitating a circular economy, and eliminating substances that are harmful to the environment.

This approach is reflected in the Group's corporate philosophy, which was revised in February 2020. The Our Vision section of the philosophy states the following: "Aluminum is our passion. It inspires our work in building a better world and a healthier environment." Accordingly, while working to expand its operations, the Group will pursue solutions for global environmental issues through its businesses with a view to ensure not only its own sustainable growth but also that of society.

Increasing production volume, however, will lead to a greater environmental load from manufacturing processes. Therefore, the Group strives to reduce the total amount of energy it consumes and waste it disposes in line with targets set every year in an effort to lower the environmental load of its manufacturing processes.

In addition, UACJ Corporation has joined the Aluminium



Stewardship Initiative (ASI), a global non-profit standards setting and certification organization that aims to "maximize the contribution of aluminum to a sustainable society" by promoting improvements in environmental, social and governance impacts of aluminum production and measures to reduce environmental burdens across the industry and supply chain as a whole. UACJ was the first rolled aluminum product manufacturer in Japan to join the ASI. As a member, the Company is actively contributing to global standards-setting in the aluminum industry while supporting the ASI's activities and objectives.

Project launched to promote aluminum as a solution for environmental problems

UACJ has launched a group-wide project for promoting the adoption of aluminum by demonstrating how it can be used in potential solutions for environmental problems. For instance, using aluminum instead of plastic to make beverage containers can help slow down ocean plastic pollution. Through the project, group companies provide information on aluminum's benefits and recent trends to beverage manufacturers in Japan and other countries, and to consumers in general, including children. As a way of showing the feasibility of switching from plastic containers, the Company offers drinking water bottled in aluminum cans to people visiting its head offices in Japan and Thailand. Now that awareness of ocean plastic pollution is on the rise, UACJ is cooperating with the Japan Aluminium Association and the Japan Aluminium Can Recycling Association to educate the public about the benefits of aluminum cans.



All beverages in vending machines at the Company's factories in Japan are bottled in aluminum cans.

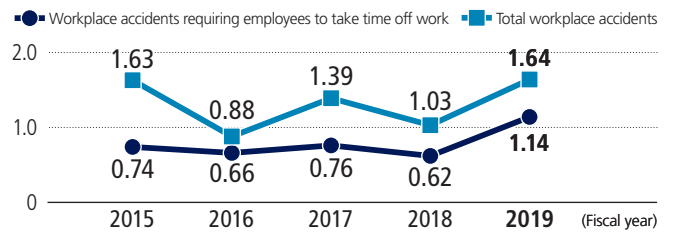
Human Resources Management

Ensuring safe workplaces

In the UACJ Group's flat-rolled aluminum production plants, working conditions come with risks as employees must handle large-scale equipment. For example, oil used for lubrication when rolling aluminum can fly off of machines, resulting in dangerous conditions. Therefore, the Group places the highest priority on ensuring the health and safety of all employees. Its production plants implement thoroughgoing measures to maintain safety and require all of their members to participate in health and safety activities. They also conduct comprehensive risk assessments covering a wide range of operations in an effort to completely eliminate risks and unsafe conditions that could cause accidents. If the assessments identify relatively high risk levels for specific machinery and operating procedures, priority is given to reducing those risks in safety measures, and provisional measures are implemented for all remaining risks. Furthermore, as part of its human resources development, the Group has been fostering a workplace culture that places the utmost importance on safety through various

training programs, including safety awareness training and practical drills for workers as well as occupational health and safety education for managers. Indicating the effectiveness of these activities, UACJ has maintained a relatively low number of workplace accidents since its establishment.

Frequency of Workplace accidents in Japan per million work hours



Enabling employees to make the most of their capabilities

The UACJ Group employs almost 10,000 people worldwide. In addition to their different nationalities, cultures, and languages, these employees live in diverse communities and balance work and life differently. Therefore, in each of its businesses, the Group strives to maintain accommodating workplaces that allow all members to make the most of their capabilities. As part of those efforts, group companies have been introducing a number of childcare and nursing care leave systems while promoting workplace reforms. The reforms are being independently carried out by various workplaces with the goal of raising productivity and employee engagement, with 106 measures taken in fiscal 2019. To boost productivity, each workplace has set their own targets for improving the efficiency of meetings and document production. To raise employee engagement, an engagement survey was conducted for the first time in fiscal 2019, and improvement measures were initiated based on the results. In the same fiscal year, about 400

employees participated in a project to renew the Group's corporate philosophy. The renewed philosophy is providing a clear path forward for the UACJ Group to manufacture products with an even stronger sense of purpose.



UACJ's president has been visiting production plants in Japan to directly speak with employees about the Group's philosophy and vision, and plans to visit overseas workplaces in the future.

VOICE

Message from a manager Growing together with the company

I am a senior manager responsible for supervising 13 subordinates in the Procurement Department. Procurement is closely linked to factory production schedules and profitability, so we must take great care in our work. I make sure that the importance of that is understood by everyone on my team so we can contribute to the growth of UACJ (Thailand) while refining our individual skills. In other departments, too, such as accounting and finance, women have been appointed as managers, so I feel that the company has a culture of gender equality.



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