

TAIYO YUDEN Group's Research and Development Activities

The Foundation of Our Research and Development Activities

Hikohachi Sato, the founder of TAIYO YUDEN, was a researcher in ceramic materials. Since its establishment, TAIYO YUDEN has believed that product commercialization should start from the development of materials. This has been one of the strengths of TAIYO YUDEN, and has resulted in us creating many products that have been "world firsts."

The TAIYO YUDEN Group's research and development activities are aimed at further honing the many elemental technologies it has so far developed to create products that are highly rated by its customers. In particular, the Group is focusing on the development of super high-end products and high reliability products, as well as on creating new businesses by proposing solutions.

Research and Development Principles

"Innovative advance"

Technology precedence

Promote leading edge technological development as the precursor to innovative product development and become a global leader in technology

Reproducibility

Logically verify the reproducibility of the technology we develop

Technological applicability

Develop technologies that are feasible and applicable economically to our manufacturing process and that meet critical environmental standards

Environmental consideration

Devise technologies which can be applied not only to specific products but also to other areas useful to the markets we serve

Achievement of Our Vision through Development of Smart Products

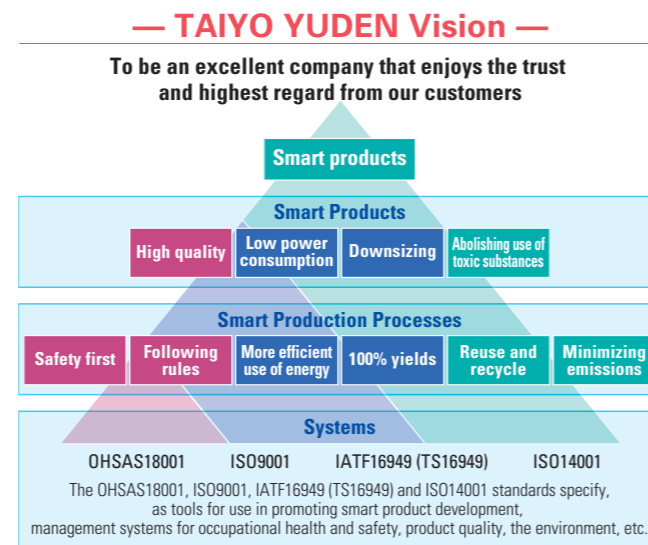
The TAIYO YUDEN Group aims to manufacture "smart products" and is actively working to develop and supply steadily such products.

We develop smart products to eliminate the three M's—muda (wastefulness), mura (inconsistency) and muri (overburden)—over their entire life cycle from design through production, sales, and incorporation into the final product right up to final disposal, to add value for customers and local communities we serve as well as our employees.

Combining our "smart processes," which utilized as development and promotional tools management systems for occupational health and safety, quality and the environment and other aspects, with our initiatives towards "smart products" that take usage and

final disposal into consideration to reduce environmental impact, we strive to develop smart products.

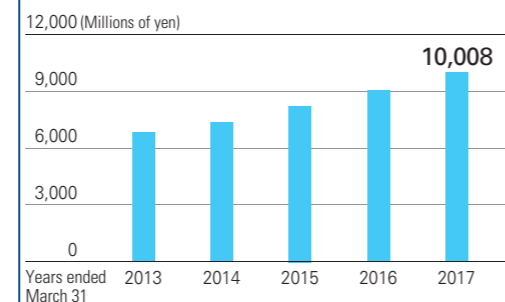
We believe that our research and development activities aimed at creating a higher standard of smart products will enable us to realize our vision of "becoming an excellent company that enjoys the trust and highest regard from our customers."



R&D Expenses

We recognize that continuing innovations and advancement in our technologies through R&D is the foundation for the Group to create the future. With this belief, we will continue to invest in R&D activities and future development of our products.

R&D expenses



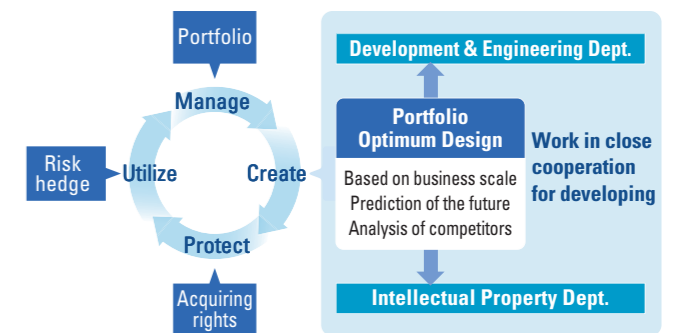
R&D Center, TAIYO YUDEN's Research Facility (Takasaki City, Gunma Prefecture)

As we were committed to continuing to create the world's best products and uphold our claim to be "the TAIYO YUDEN of technology and the TAIYO YUDEN of development," we opened the R&D Center in 1998. In 2003, we established an Anechoic Chamber Test Facility in the same complex, and accelerated our proactive R&D activities in the field of radio communication. Currently, the R&D Center of the TAIYO YUDEN Group drives development and technological progress and takes a role of a foundation of creativity focusing on the future.



Protection of Intellectual Property Rights

At TAIYO YUDEN, the Intellectual Property Department and the Development and Engineering Department work in close cooperation with each other from the early stages of developing new technologies and obtaining intellectual property rights. We have our own management system to create, protect and utilize the intellectual property rights that are suitable for each of our businesses.



Activities on Intellectual Property Rights

Basic Policy

We, the TAIYO YUDEN Group, endeavor to obtain, maintain and protect intellectual property rights for proper use, and also to respect the intellectual property rights of third parties, in accordance with our CSR Code of Conduct.

R&D Interview

We Will Undertake New Value Creation through Solution Proposals

TAIYO YUDEN is in the process of transforming its business model to establish a more profitable earnings structure. We are working on two major themes, one being high value added by pursuing the development of materials to their utmost limits, the other being new value creation by proposing solutions that combine the Company's core technologies. The New Business Promotion Department is responsible for the latter.

Leveraging the Company's strengths, we are working on creating new business value that proposes solutions in three packages—sensors, wireless networks, and software—one example being a monitoring system for solar power generation, which senses information from the solar panels and conducts fault diagnoses. At present, the focus is on the detection of faults, but gathering information and accumulating the empirical values from the analyses will lead us on to fault prediction and avoidance. With regard to sensors and analytical technologies, in addition to our own resources, we are considering flexible reinforcement measures, including tie-ups with other companies, and are aiming to propose optimal solutions for our customers.

Up to now, our new business promotion activities have been steadily bearing fruit, activities that include the commercialization of an electric power assistance system for bicycles that utilizes our distinctive energy regeneration system. Looking ahead, I would like to promote the IoT-centered commercialization of the system in high-need areas, such as mobility, security, and healthcare, and establish them as a business.



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