

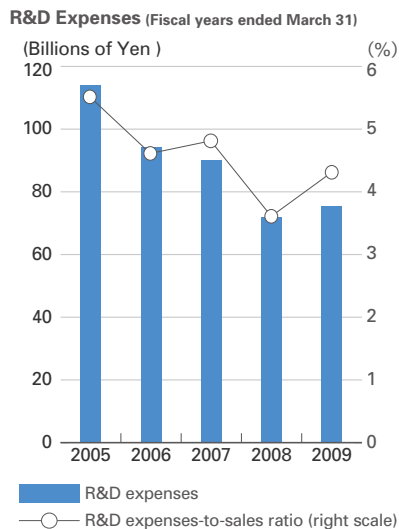
R&D / Intellectual Property

Within SANYO aiming to become a “leading company for energy and environment,” the R&D H.Q. teams up with each business division to create products and offer solutions for the global arena through maximizing our proprietary technologies and power to create new ideas, for the business domains of “Energy” and “Ecology” and the “Electronics” business domain that sustains these. Further, SANYO formulates intellectual property portfolios for individual technologies in line with the business direction to collectively manage intellectual properties from R&D to business operations, thus facilitating sustained business growth.

R&D Activities

SANYO promotes selection and concentration in R&D activities to strengthen the competitive advantages of its core technologies. At the same time, SANYO strives to conduct efficient R&D through promoting across-the-board utilization of common basic technologies and collaborating with universities and research institutes in Japan and overseas.

For fiscal 2009, research and development expenses were up 5.1% from the previous year to ¥75.4 billion. Major activities included research and development of basic technologies related to next-generation rechargeable batteries and PV systems; environment-related technologies, such as water and air purification technologies represented by heat pump-based equipment using a natural refrigerant (CO₂) with zero ozone depletion potential, and “virus washer” products; and imaging technologies represented by our original QuaDrive new optical engine.



Energy Business Domain

For lithium-ion batteries, SANYO is focusing on technology development of high-performance and high capacity models targeting the HEV market which is expected to rapidly expand both in Japan and overseas, as well as on those for mobile devices, such as mobile phones and notebook computers.

For PV systems, whose market is expected to expand globally, SANYO is advancing technology development for the HIT solar cell; capable of the world’s highest* conversion efficiency among the existing crystalline silicon solar cells, with the aim of further improving conversion efficiency, lowering cost, and reducing resource use. In addition, SANYO is accelerating technology development of next-generation thin-film solar cells at the Advanced Photovoltaics Development Center established in April 2008.

(* As of May 22, 2009)



Nickel-metal hydride HEV batteries capable of 1.3 times higher output power compared with conventional models

Ecology Business Domain

With increasing environmental awareness worldwide, the replacement demand for commercial equipment, such as showcases and commercial air conditioners, that enable energy-saving and CO₂ emissions reduction is expected to increase. In line with this, SANYO is strengthening development of environment-related basic technologies, such as the CO₂ compressor. At the same time, SANYO is promoting development of “Eco Store System” to reduce energy use in a store like a supermarket and energy management technologies by combining a PV system with commercial equipment, etc.

Further, SANYO is focusing on development of its original water/air purification technologies using electrolyzed water or ozone.



CO₂ heat pump heater/hot-water supply system for Europe, which is guaranteed to operate normally at an ambient temperature of -25°C

■ Electronics Business Domain

As for semiconductors and electronic components, such as capacitors and optical pickups, SANYO is focusing on technology development to enhance product capabilities. At the same time, SANYO is promoting development of new devices to be a next-generation core business.

As for digital equipment, SANYO is working to advance its original digital technologies, such as image processing technologies for digital cameras and optical design technologies for projectors.



POSCAP (Tantalum Solid Capacitors with Conductive Polymer) with the mounting area being 1/3 compared to that of SANYO's conventional models

World's first projector incorporating the new QuaDrive optical engine

Intellectual Property Strategies

Intellectual property rights are registered rights for inventions and innovations realized through technology/product development activities. By legally protecting SANYO's product development technologies, revenue is secured and sustained business development is guaranteed. Thus, intellectual property rights are extremely important business assets.

For the respective business domains of "Energy," "Ecology," and "Electronics," SANYO is promoting the formulation and enhancement of its intellectual property portfolios by identifying inventions and registering their rights with emphasis on quality more than quantity.

In addition, SANYO is promoting its intellectual property strategies in step with individual business strategies and supporting business management through utilizing intellectual properties, such as using them to create differentiated products and licensing third parties to use them.

In line with its business directions, SANYO is strengthening activities to apply for patents and register their rights overseas, including the United States. At the same time, an inventory of patents held is taken on a regular basis and inactively-used patents are disposed of through sale, abandonment, etc. in a proactive manner, so that the soundness of patents as management assets can be maintained. As of the end of March 2009, SANYO owns approximately 12,600 patents in Japan and approximately 12,700 patents overseas.

For SANYO, the United States is considered to be an important region, not only as a marketplace but also as a location where intellectual property-related disputes and lawsuits are frequent. SANYO now operates three intellectual property management bases in

Patent Registration Ranking of SANYO in USA
(Based on US Patent and Trademark Office data)

Registration Year	Ranking
2004	49
2005	47
2006	37
2007	39
2008	38

the United States after two new bases were added in April 2009. Under this structure, SANYO will strengthen its competitiveness by capitalizing on its intellectual properties to facilitate continuous growth. In 2008, the Company registered 446 patents in the United States.

Further, to ensure the safety of consumers as well as protecting the SANYO brand, SANYO, in cooperation with the administrative bodies of various countries, is proactively acting to eliminate any counterfeit brand products and dealing with any cases where a business is using an unauthorized trade name similar to the SANYO brand.

Number of Patents Held (As of March 31)

