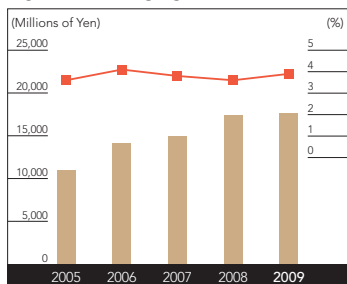
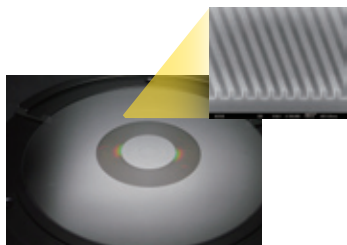


Forward Looking Research & Development

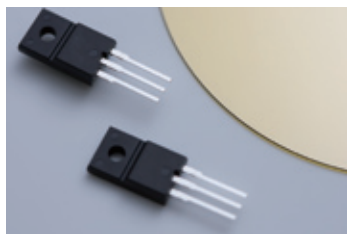
R&D EXPENSES



■ R&D Expenses (left)
— Ratio of R&D expenses to sales (right)



Quartz nanoimprint mold for DTR media



3C-SiC wafers and devices



Connectors for optical communications

R&D ACTIVITIES

Aiming to achieve sustainable growth and increase corporate value, the Hoya Group devotes considerable effort to formulating business strategy from a long-term perspective and developing technology, as well as acquiring and cultivating new businesses. The R&D Center conducts various R&D with an eye on the future. It conducts R&D in new business fields, develops technologies and products that enhance the competitiveness of existing businesses, and supports development on technology themes common to more than one business division.

In March 2008, Hoya merged with Pentax, in the process adding a new business domain: Pentax's precision devices, such as medical-use endoscopes and digital cameras, which the company has built up over the years. In addition to Hoya's traditional electro-optics, the Group is investing substantial management resources in the promising medical and health-care field, aiming to use its advanced technological capabilities to achieve sustained growth into the future. Here we present some of the R&D themes that Hoya is currently pursuing.

Nanoimprint Technology: Verifying Molds for Next-Generation HDDs

Hoya is putting its years of expertise in lithographic technologies to good use in the development of nanoimprint molds, which will be used to create the discrete track recording (DTR) media for next-generation hard disk drives (HDDs). Eyeing 2010 as the date for practical application of DTR media, HDD manufacturers are working on commercializing products, with high hopes for using Hoya's microfabrication technologies to achieve a track pitch of 50 nanometers.

3C-SiC: Success with Prototype Devices

Hoya is promoting the development of 3C-SiC cubic monocrystal silicon carbide semiconductor wafers and devices, which are expected to offer superior energy efficiency. 3C-SiC can be used in automobiles and home appliances such as air conditioners to help combat global warming. Taking volume production efficiency into account, Hoya is currently developing six-inch wafers and testing and evaluating the power devices that will be the end product. The Company is aiming for practical application in 2010.

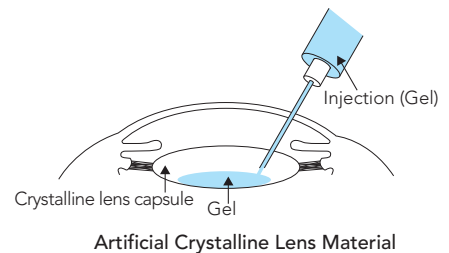
Connectors for Optical Communications: Completion of Ultra-Small FTTH Components

As the FTTH (Fiber to the Home) environment widens around the world, Hoya is working to develop a GE-PON/G-PON*¹-compliant module for converting optical signals to electrical ones at optical communication access points. GE-PON/G-PON is the next-generation standard for high-speed optical communications, and is expected to become common from 2010 and beyond. By building a functional device on top of a wafer, Hoya is aiming to create products that are significantly smaller than existing products.

*¹ GE-PON/G-PON (Gigabyte Passive Optical Network): A technology that enables high-speed transmission of 1 gigabyte per second over fiber optic lines and networks.

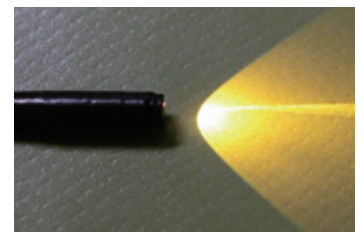
Artificial Crystalline Lens Material: Recognition from the Japan Ophthalmological Society

In the field of ophthalmology, Hoya is conducting R&D of artificial materials for use inside crystalline lens capsules. Animal trials are already underway, and are yielding extremely positive results. This material offers the potential for vision correction, and in the future may have medical applications that rival that of intraocular lenses.



Scanning Fiber Endoscope (SFE): Completion of Ultra-Small Diameter Endoscope Prototype

SFE is a new type of imaging device developed jointly by the University of Washington and Pentax. An ultra-small diameter prototype endoscope created using this technology is currently under testing. SFE produces high-definition images that are equal to or better than those provided by charge-coupled devices used in current endoscopes, while achieving a high frame rate.*² Using a narrow-band laser light source and image processing, the Company is working to improve the ability to distinguish between normal areas and tumors, and in combination with various optical technologies, it is aiming for application in applied products with new functionality.



Head of an ultra-small diameter prototype SFE

*² Frame rate is a standard measure of frequency per time unit that an image is refreshed. Higher frame rates generate smoother images.

Ultrasonic Bronchoscope: Commercialization in October 2008

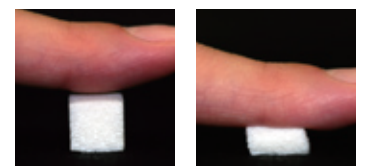
Much like an electronic endoscope, bronchoscopes are equipped with a color CCD on one end, allowing the medical professional to view the image on the screen as the device is inserted into the bronchial area. The convex array transducer enables ultrasound imaging from the tracheal mucous membrane. In October 2008, Hoya launched sales of the world's first ultrasonic bronchoscope, EB-1970UK, for the European market. This product enables physicians to view a precise optical image of the target area and then use the ultrasound image to confirm the affected area while making punctures. This new technology is expected to be effective in the diagnosis and treatment of chest diseases such as lung cancer.



The EB-1970UK ultrasonic bronchoscope

Biocompatible Organic/Inorganic Composite Bone Prostheses: Proven Effective in Clinical Trials

When implanted in the human body, biocompatible organic/inorganic composite bone prostheses are absorbed through the same mechanism as normal bone metabolism to form new bone tissue because they have the same structure as natural human bone. These bone prostheses are garnering attention as a bone regeneration "scaffolding material" that is approaching practical application in regenerative medicine. The prostheses show promise in applications that unite them with stem cells and bone morphogenetic protein technologies.



The resilience of biocompatible organic/inorganic composite bone prostheses

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INTELLECTUAL PROPERTY ACTIVITIES

The Hoya Group's intellectual property strategy protects proprietary technologies, and along with business strategies and R&D is a key management strategy for supporting Hoya's continued growth. The 2008 merger with Pentax augmented the Group's intellectual property, and we intend to meld the existing intellectual property of the two corporations to create unprecedented value. From the perspective of patent portfolio management, the Company will work to enhance its intellectual property rights in growth areas such as medical care and healthcare going forward.

Intellectual Property Policy

One of the Hoya Group's fundamental objectives is to make the fullest possible use of intellectual property to bolster the competitive strengths of its global businesses.

Obtaining Patent Rights

To ensure the most efficient possible patent prosecution for obtaining patent rights, technical development managers and intellectual property managers work closely as a team. The Company aims to secure all necessary intellectual property rights from the initial stage of the development of leading-edge technologies, with an eye toward peripheral, applied and alternative technologies. In relation to those fields in which Hoya commands a leading position, the Company focuses on accelerating the process of securing patents in cutting-edge areas. At the same time, in competitive markets, Hoya concentrates on promoting efficient patent prosecution while preventing infringement of the patents held by other companies. To achieve these ends, careful technical searches of patent information at other firms are performed, and the Company supports the patent prosecution that is most appropriate for each field. Hoya is also devoting itself to the formation of global patent networks that will be coordinated with the moves of its production bases and trading partners into international markets.

Cross-Licensing and Out-Licensing

Hoya's individual businesses are not large, but the Company strives to improve its competitiveness in each respective market. Hoya focuses on effectively and fully utilizing the patents that are the cornerstone of the competitive position its businesses enjoy. This means there are cases in which Hoya might assign licenses to third parties: for instance, where it is appropriate to sign cross-licensing agreements granting mutual exercise of patent rights, or where the Company can expect out-licensing of its patents to other companies to result in an expansion of the overall market, or when dictated by changes in Hoya's competitiveness. This enables the Company to pursue effective utilization of its intellectual property in line with its business strategy.

Prevention of Imitation and Infringement

Hoya maintains a constant watch on the market to ensure that its technologies are not imitated by third parties. When its technologies are imitated, the Company issues warnings and, where necessary, takes appropriate steps such as filing for injunction. Hoya also respects patents held by others, affording them appropriate value and avoiding infringement, as part of its efforts to streamline its patent management.

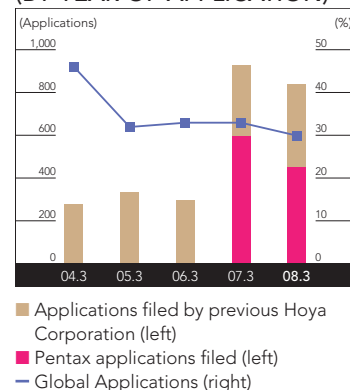
Utilization of Third-Party Patents and Technologies

Hoya does not rely excessively on its own proprietary technologies and patents. If, after careful technical search and consideration of the available technologies, the Company finds that third parties have superior technologies, patents or other advantages, and if it decides that using them would be most efficient in commercializing a product, Hoya takes steps to seek licenses to use third-party patents or introduce their technologies.

Systems Supporting Intellectual Property Activities

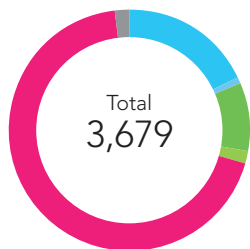
The Hoya Group is organized according to business divisions and companies, with extensive delegation of authority from strategic business planning to decision-making. Each division has an intellectual property group responsible for working in conformity with the respective strategies of their divisions—for instance, by filing patent applications and other rights-related management activities, taking actions in relation to patents held by others and licensing out Hoya's own patents. Hoya's global headquarters are under the management of the chief intellectual property officer and are responsible for working to improve the intellectual property functions of the Group. This includes such matters as establishing and promoting overall intellectual property strategy, assisting business divisions in the establishment of patent strategies, the training and skill enhancement of employees, managing intellectual property assets, and the development of patent management systems. In particular, matters that necessitate decision-making for the Group—for example those requiring coordination of intellectual property issues that run across more than one business division, or that involve bringing a case to court or reaching an amicable settlement—are deemed to require the approval of headquarters and are strictly managed under the direction of the CEO. Because intellectual property activities are dispersed across all business divisions, there is a need to reduce any adverse effect from potential difficulties in information sharing. At the same time, to improve synergies between business divisions, the Company periodically holds joint intellectual property meetings for the exchange and sharing of information on each division's intellectual property activities.

GLOBAL APPLICATIONS
(BY YEAR OF APPLICATION)



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REGISTERED PATENTS AND UTILITY MODELS (As of March 31, 2009)



Electro-Optics Division	661
Photonics Division	26
Vision Care Division	339
Health Care Division	59
Pentax	2,523
New-Business Related	70
Other	1

Status of Intellectual Property

Number of Registered Patents and All Patent Applications Filed

During the year under review, Hoya registered 3,679 patents and utility models in Japan. The main businesses of the electro-optics and vision care divisions accounted for 27% of these, while Pentax's cameras and medical-related devices accounted for 51%. Of the Company's patent applications, approximately 30% were lodged outside Japan during the year under review. Moreover, as shown by this high percentage of global patent applications, Hoya is making the fullest possible use of intellectual property in line with its policy of increasing the competitive strengths of its global businesses.

Percentage of Patents Granted

The percentage of patents granted Group-wide in Japan (including those in the prior examination and review stages) was approximately 61.6% for the fiscal period ended March 31, 2008, the most recent year for which data available.