

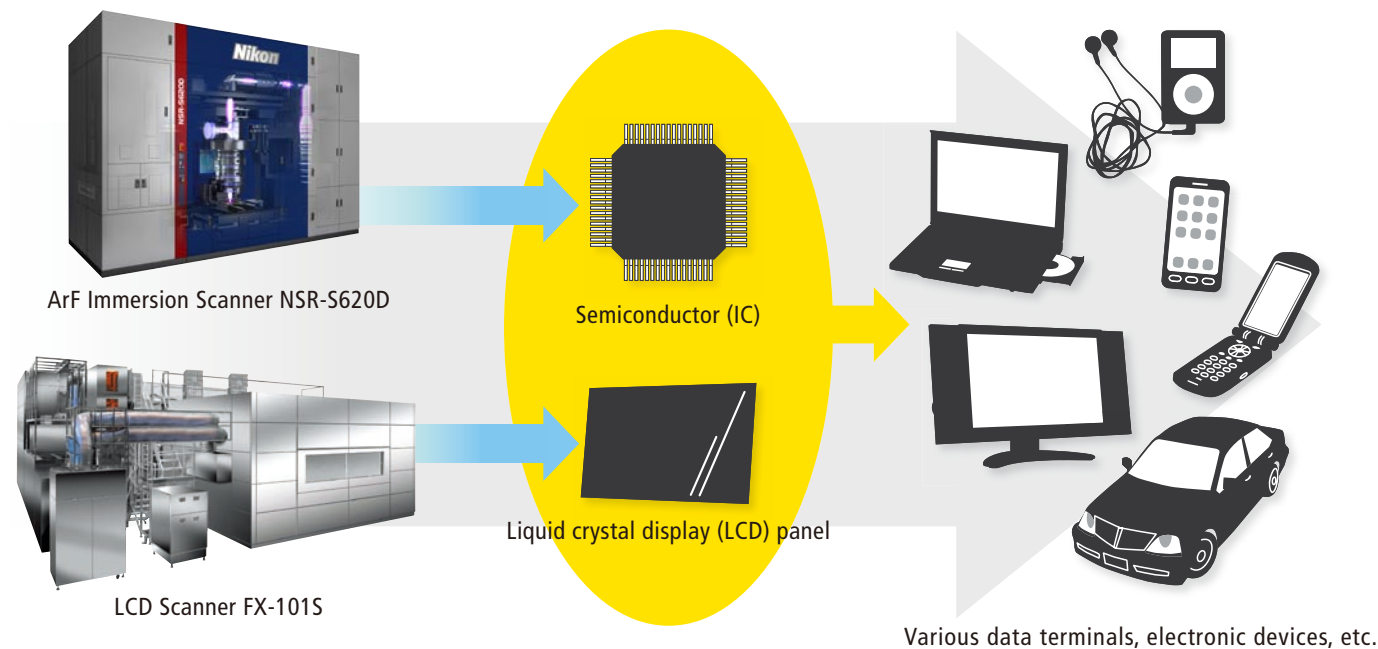
# Business Activities and CSR in the Nikon Group

One of the basic commitments of the Nikon Group is its determination to contribute to the substantial development of society through its business activities. Based on this idea, each business division undertakes a variety of initiatives to meet customer expectations.

## Precision Equipment Company

### Supporting Information Society Infrastructure

The Nikon Precision Equipment Company contributes to the progress of the information society through IC/LCD steppers and scanners.



### Information society and exposure systems

Electronic devices have made great progress in the short term. Together with communication technologies, these devices have made our society more information-oriented and enabled us to lead more convenient and comfortable lives, store information more speedily and accurately, and send clearer and more beautiful images. In recent years the energy efficiency of electronic devices has been substantially improved, making it possible to read newspapers and books electronically without wasting important resources.

Semiconductors (ICs) and LCD panels are indispensable components for electronic devices. The Precision Equipment Company develops and manufactures the equipment essential for the manufacture of ICs and LCD panels, thereby contributing greatly to the development of the information society.

### Roles of IC/LCD steppers and scanners

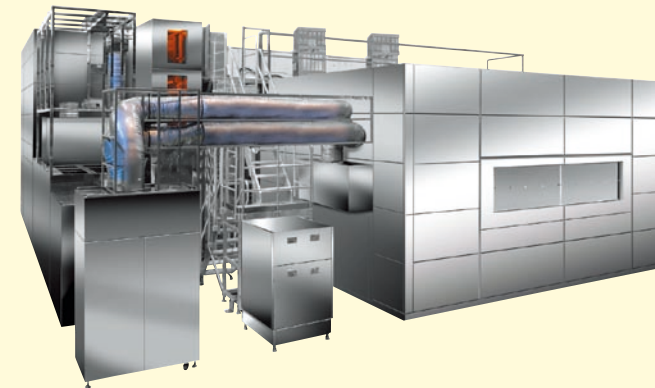
IC/LCD steppers and scanners are used to print semiconductor (IC) circuits and LCD panel circuits precisely onto silicon wafers and glass plates using projection exposure technology. The Precision Equipment Company develops and manufactures state-of-the-art equipment in response to the miniaturization of ICs and also to the upsizing of LCD panels and the miniaturization of the circuits for these panels. The miniaturization of ICs is helping to improve energy efficiency, downsize products, and reduces the use of resources.

Leading-edge Nikon IC steppers and scanners enable the formation of a circuit in units of nanometers (1/1,000,000,000 meter). LCD panels are much more energy-efficient than cathode-ray tube displays, and they can be made even more energy-efficient with the formation of smaller circuits. Nikon LCD steppers and scanners are also used to manufacture organic ELs and other displays that are basically more energy-efficient than LCD panels.

## Product-related Activities (for Customer Satisfaction and the Environment)

### Development that responds to environmental needs and customer expectations

#### LCD Scanner FX-101S



#### Environmentally friendly features

- Energy efficiency**  
Larger in size but parallel in energy efficiency with the FX-85S for eighth-generation plates (calculated based on Nikon Corporation's own criteria for the area that can be exposed per unit of power)
- Lead-free solder**  
Used on 100% of new circuit boards
- Ozone layer protection**  
Use of new HFC refrigerant with zero ozone depletion potential (ODP) for temperature control and air-conditioning chillers
- Reduction in the use of polyvinyl chloride (PVC)**  
Reduced use of PVC cables

The FX-101S is a super-large exposure system for tenth-generation glass plates measuring an impressive three meters.

Past exposure systems were upsized in line with upsizing of the glass plates. Nonetheless, in developing a system for the tenth-generation glass plates, we realized that if we continued upsizing the equipment as in the past, the size would exceed 1.6 times that of the previous product, which would also lead to an increase in weight. We therefore began development of a product that was as compact and light as possible.

As a result, we were able to develop the FX-101S, which requires an installation area that is almost the same size as that for the machine for eighth-generation glass plates (FX-85S), and because we made it as compact as possible, we were also able to substantially reduce the use of materials.

The FX-101S has a productivity that is at least 50% higher than that of the previous model. In addition to its high performance achieved through Nikon optical technologies, it displays the world's highest productivity in the mass production of 32 to 70-inch LCD panels. It can also be used efficiently for the mass production of LCD panels larger than 100 inches.

We will continue to develop products that meet both customers' needs and environmental requirements capitalizing on our long-accumulated technologies.



**Tomoyuki Watanabe**

Second Development Section  
First Development Department  
LCD Equipment Division  
Precision Equipment Company  
Nikon Corporation

### ArF Immersion Scanner NSR-S620D



The ArF immersion scanner is equipped with a platform that provides both high precision and high throughput, and enables double patterning by forming fine circuits through double exposure.

#### Environmentally friendly features

- Energy efficiency**  
Reduced consumption of electricity (energy) per wafer
- Lead-free solder**  
Complete use of lead-free solder on new circuit boards
- Elimination of hexavalent chromium**  
Discontinued use of hexavalent chromium in the surface treatment process
- Use of Eco-glass**  
Complete use of Eco-glass for optical systems
- Ozone layer protection**  
Use of new HFC refrigerant with zero ozone depletion potential (ODP) for temperature control and air conditioners

Imaging Company

Contribute to the Development of Visual Culture

Nikon's Imaging Company not only supplies cameras and lenses, it also offers a diverse range of imaging-related services including image storage and sharing. These business activities create and contribute to the development of visual culture.

Enhanced customer support

Maximizing customer satisfaction is always a priority at Nikon's Imaging Company. We make various efforts to provide quality service by maintaining relationships with customers through Nikon products and our advertisements and services, and by listening directly to what customers say at our Customer Service Section we always try to determine what they need.

To help customers around the world feel closer to our products, we have increased the number of service facilities and direct touchpoints (customer service contacts).

In order to improve our level of service, managers from around the world who are in charge of service come together at the semiannual "Meeting of service managers (from four bases)," where they confirm global targets and performance progress, exchange new information, share best practices, and work to solve problems.

As a result of these efforts, Nikkei Business magazine ranked Nikon first in the 2010 After-sale Service Satisfaction Ranking, the seventh time Nikon has held such a rank in the last 11 years.

Evolving communication

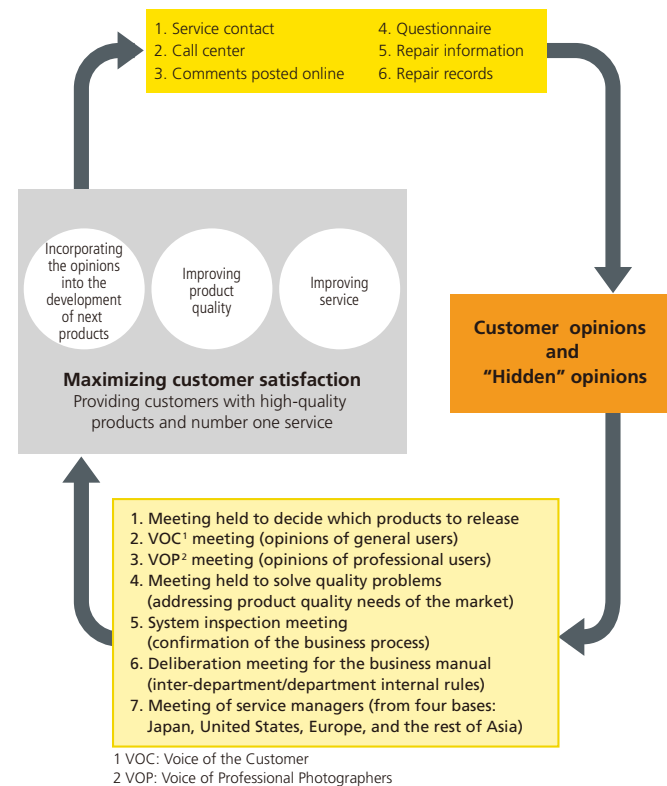
In addition to the standard user manuals, we have introduced new ways to help customers learn quickly and efficiently how to use our products and take advantage of all the functions they offer.

In the Guide Mode included in our D3000 and D3100 digital SLR cameras, users select how they want their photo to look by answering a number of questions on a range of environmental conditions, allowing the camera to automatically select the best settings. Guide Mode thus dramatically reduces the complexity of choosing camera settings. In recognition of this new feature, the D3000 was awarded an Honorable Mention by the Final Screening Committee at the 2010 Japan Manual Awards, while the D3100 received an iF Communication Design Award from iF International Forum Design GmbH, an industrial design association in Hanover, Germany.

Digitutor, another new service, is a "watch and learn" manual that Nikon SLR camera users can download from the Nikon website. With clear video clips and step-by-step instructions, Digitutor teaches everything from basic camera use to advanced functions.

Two additional services, "my Picturetown" and Nikon OnlineGallery, promote photo-rich lifestyles by allowing users to store their digital photos and share them with family and friends, and to post their photos online with an easy-to-use format.

Cycle to incorporate customer opinions



The D3000 control panel, designed for easy use

Service-related Activities (for Customer Satisfaction)

Offering the best service for all customers

Nikon Plaza Shinjuku



Top: Touchscreen for searching product information  
Left: Nikon Plaza Shinjuku after the renovation

Nikon Plaza Shinjuku is a showroom and service center that offers a range of services commonly used by Nikon customers, including descriptions of Nikon products, repair services, photography classes, and a photography gallery. In fall 2010, the facility underwent an eco-friendly renovation. Ample use of LED lighting resulted in a more than 40% reduction in electricity consumption, and the new indoor lighting can be adjusted to emit cooler- or warmer-colored light. The Plaza's large mobile showcase is fitted with Internet-connected touchscreens that allow guests to review information on the latest products at their leisure, and provide the opportunity to actually handle products.

The Service Center inside Nikon Plaza Shinjuku serves some 600 visitors a day. We receive various questions, requests, and sometimes strict criticism when meeting and talking with customers, but we regard everything our customers say as an opportunity to improve our services, and so we take the necessary time to understand what our customers want and consider the ways in which we can better serve them in the future. We will continue to lend an attentive ear to our customers to enable Nikon products to enhance enjoyment of their lives, and to develop a sense of security and loyalty by using Nikon products.

Nikon Plaza Shinjuku operates with the primary goal of providing visitors with a pleasant experience. I hope everyone will stop by sometime.



Eiichi Chiba  
Shinjuku Service Center  
Nikon Imaging Japan

The COOLPIX S3000 Series

Eco Friendly Product



Released	Model	CCD effective pixels	Lens	Battery life*
2009	COOLPIX S220	10M pixel	3X optical zoom	Approx. 180 photos
2010	COOLPIX S3000	12M pixel	4X optical zoom	Approx. 220 photos
2011	COOLPIX S3100	14M pixel	5X optical zoom	Approx. 220 photos

\*Defined by CIPA standard battery life measurement methods.

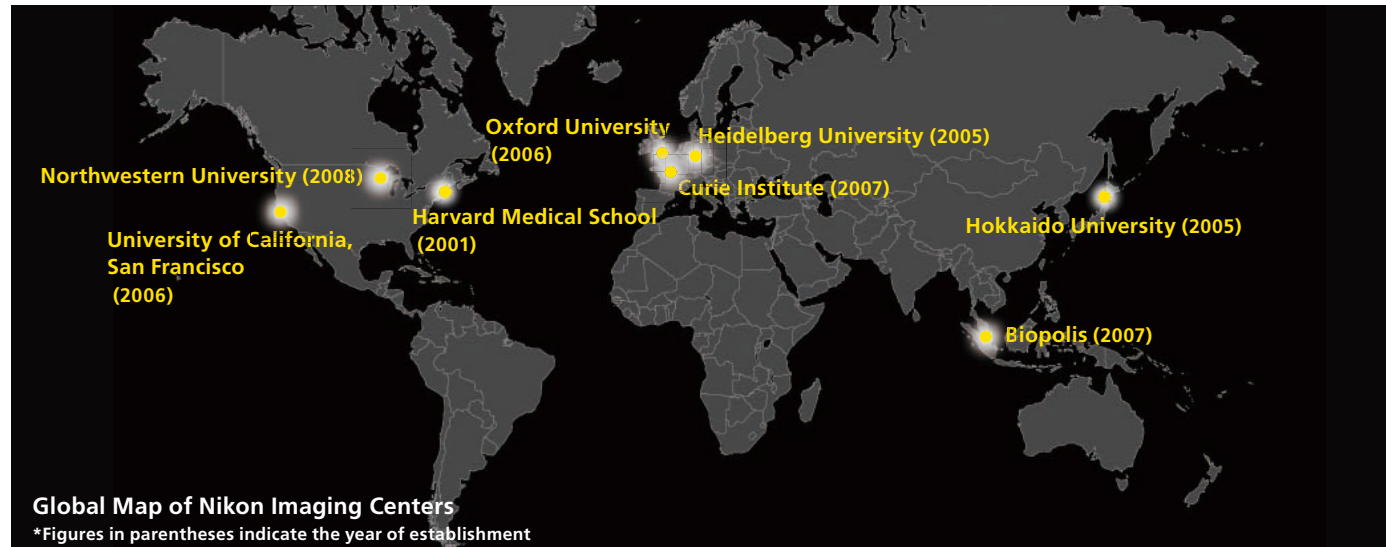
We have achieved a number of new improvements with the COOLPIX S-Series, a brand valued for its slim and stylish yet functional design. The new S-Series features higher resolution, higher-powered optical zoom, faster speed, and increased sensitivity—all inside a slimmer body. Such improved functionality like this also requires an efficient power system and sequence design. The newest model, the COOLPIX S3100, realizes at least the same length of battery life as previous models while achieving better resolution and zoom.

Previously, a charger and cable for charging the lithium-ion rechargeable battery came in a camera display box. Now with the adoption of a USB charging system, the S3000 and S3100 models have an internal battery that can be charged using a USB cable and an AC adapter plug. This also reduces the size of the packaged equipment and amount of PVC used. We also worked to make the shipping box smaller, achieving a 25% reduction in volume for the newest model, the COOLPIX S3100, compared to the S3000.

Instruments Company

▶ Spurring Innovation in Science

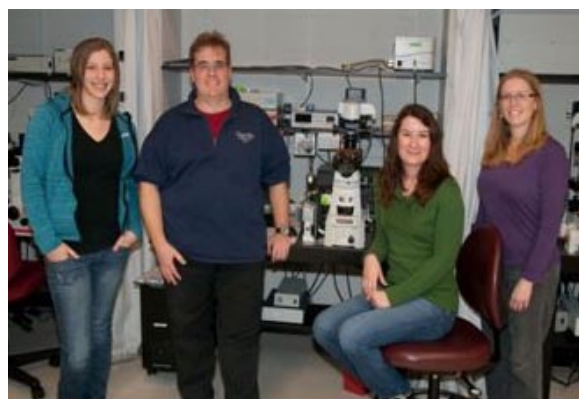
The Nikon Instruments Company develops microscopes, measuring instruments, and semiconductor inspection equipment that meet the most advanced needs of our customers, thereby contributing to the development of bioscience and industrial fields.



**Nikon Imaging Centers: contributing to research and education**

Products made by the Nikon Instruments Company have a very diverse range of applications, covering everything from research fields such as medicine and biotechnology to industrial sectors such as pharmaceuticals, electronic components, and automotive parts. The Nikon Group develops new products and new imaging technologies to keep pace with a multitude of new discoveries and new customer needs.

We also contribute to the advancement of bioscience by providing research and educational institutions with cutting-edge microscopy equipment. As part of this contribution, Nikon has partnered with the world's most distinguished universities and research centers to launch "Nikon Imaging Centers" on science campuses around the world. These centers have been instrumental



Nikon Imaging Center at Harvard Medical School

in the grand success and achievements of the researchers who use them.

There are eight Nikon Imaging Centers in total—three in the United States, two in Asia, and three in Europe—and each is set up adjacent to the laboratories in the research institutions of which it is a part. While the Centers are primarily operated by their respective universities to meet the needs of their research institutions, Nikon is also able to use them as a showroom for microscopes and as a place to educate and train researchers, Nikon employees, and other parties.

**The mutual benefits of partnership**

Many researchers and future research leaders at Nikon Imaging Centers have a great fondness and appreciation for Nikon's state-of-the-art laser scanning confocal microscopy systems and inverted microscopes such as the Eclipse Ti inverted microscope. This in turn leads to a deeper understanding of the principles of microscopy and to the discovery of more advanced applications. Research using these instruments is cited in over 160 research papers.

At Nikon Imaging Centers, users, Center staff, and Nikon specialists share information relating to product performance, product needs, and research validation. Nikon also considers this information as a valuable opportunity to determine new applications and needs.

Improving Physical Distribution (for the Environment)

**Finding ways to cut carbon emissions in transportation**

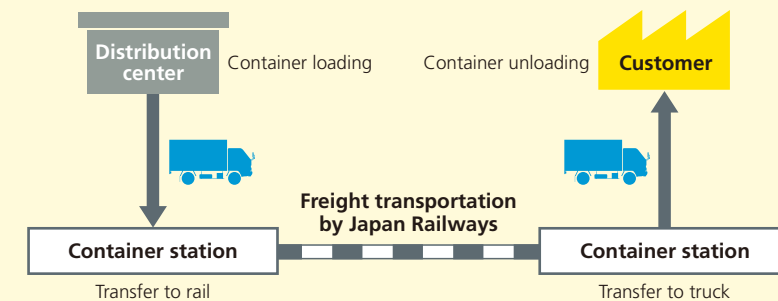
**Modal shift**

The Nikon Instruments Company has been simplifying packaging, using greener packaging materials, and reusing packaging to reduce the environmental impact of its distribution operations. With environmental awareness growing across the company, we began working to cut CO<sub>2</sub> emissions in transportation by launching a modal shift initiative in the fiscal year ended March 31, 2009. A modal shift is the act of switching to rail, coastal shipping, or other high-volume modes of transportation that release fewer carbon emissions and are more energy-efficient. Railway transport in particular is said to have the smallest environmental impact. The Instruments Company most often uses trucks (consolidated cargo) to ship its products to domestic customers. In the past we also used chartered trucks for bulk shipments of microscopes and measurement instruments, however, we have shifted a portion of these shipments to railway transport using JR freight containers.

Since reserving a container requires more time than it does for a truck, containers require extra leeway in terms of deadlines. They also have to satisfy certain requirements such as shipment volume and delivery area. And sometimes, even when all requirements are satisfied, individual customer needs preclude us from using them. Thus there are numerous obstacles to implementing a modal shift program, but as our sales team has become more understanding since the launch and as we receive better advance information allowing us to implement a modal shift, our ability to do so has expanded. Consequently, in the year ended March 31, 2011, we achieved 16 out of 18 targets, eliminating some 9,564 kilometers in combined transport distance and about 1.6 tons of CO<sub>2</sub>.

In addition, we also regularly use marine transport when importing microscopes produced in China. As shipping from China to our warehouse takes around two weeks, we previously used air transport for rush shipments, but since the fiscal year ended March 31, 2010, we have been able to cut CO<sub>2</sub> emissions while maintaining shipping speed by practicing an additional method where we use high-speed marine transport and rail in Japan.

We hope to further increase our use of environmentally friendly transportation and by doing so, contribute to a smaller carbon footprint in distribution.



**Noriaki Nakamoto**  
Manager  
Logistics Operation Section  
Business Management Department  
Instruments Company  
Nikon Corporation

**Eco Friendly Product**

**Non-contact multi-sensor 3D metrology system - HN-6060** (released in December 2010)



**Environmentally friendly features**  
**Hexavalent chromium free**  
 Uses no hexavalent chromium  
**Use of Eco-glass**  
 100% use of Eco-glass

HN-6060 is a 3D metrology instrument capable of capturing high-density, high-precision measurement data at high speeds and without contact. Its 120,000 points-per-second data-capturing ability allows for faster, higher-density measurement than conventional contact-type 3D metrology systems. Efficiency is further improved with all-in-one measurement of complex 3D forms, which usually require multiple devices to measure surface shape, roughness, and other properties.

By offering new visualization of waviness and other previously unmeasurable data, the HN-6060 can help increase product performance (e.g., better vehicle fuel efficiency) and efficiency in manufacturing processes.

## Customized Products Division

### ► Fulfilling the Advanced Needs of Specialized Fields

Nikon's Customized Products Division works in collaboration with other divisions in consideration of performance through to design and production according to intended usage. As well as fulfilling the needs of customers by maximizing the use of Nikon's core technologies, this division also contributes to technological progress.

#### Initiatives in Research and Development (Quality/Customer Satisfaction)

#### Using cutting-edge technologies to make dreams of space come true

##### AVNIR-2 / large infrared telescopes installed on AKARI



1) Advanced Land Observing Satellite "DAICHI" (ALOS)

2) Infrared Imaging Satellite "AKARI" (ASTRO-F)

3) Eruption of a mountain in the Kirishima volcanic range photographed by ALOS

4) "Catalogues of Infrared Astronomical Bodies" with astronomical observation information gathered by ASTRO-F

Photos provided by the Japan Aerospace Exploration Agency (JAXA)

Space optical products include optical systems installed on man-made satellites as well as machinery and tools for astronomical observation used on the Earth's surface. Reflecting telescopes used in space are a representative type of optic systems for man-made satellites. There are several different types of reflecting telescopes, including those for viewing the surface of the Earth and moon and others for observing the distant cosmos known as "deep space." In addition, there are also observational instruments and telescopes that are installed above ground for observing astronomical bodies.

The Advanced Land Observing Satellite "DAICHI" (ALOS) was launched in January 2006 and completed its operations in May 2011. ALOS was equipped with Nikon's Advanced Visible and Near Infrared Radiometer type 2 (AVNIR-2), and the results of its observations are used for a range of purposes including map creation, earth observation, understanding disasters, and resource exploration. Observational images of affected areas were provided after the Great East Japan Earthquake to contribute to the government's activities to gather information. ALOS also took images of an erupting mountain (Shinmoedake) in the Kirishima volcanic range for emergency observation.

The Infrared Imaging Satellite "AKARI" (ASTRO-F), launched in February 2006, is also equipped with reflective optics in the form of a large 67-centimeter aperture infrared telescope. ASTRO-F is Japan's first genuine infrared astronomical satellite and is used to study mysteries such as the birth, evolution, and death of stars and galaxies. The "Catalogues of Infrared Astronomical Bodies" was created from the results of ASTRO-F's observations in 2010 and made public to the entire world.

We hope to contribute to making observations that are useful for disaster-prevention measures and environmental protection on a global level, as well as to investigations of other planets in our solar system and research related to the origins of the universe. For this reason we are working each day to improve the reliability of our technologies.



**Tatsuhiko Ezaki**

2nd Development Section  
Development Department  
Customized Products Division  
Nikon Corporation

## Group Company (Nikon Vision Co., Ltd.)

## ► Providing Society with Points of Contact Between Nature and People

Through the development, manufacture, and sales of products such as binoculars, fieldscopes, and portable stereoscopic microscopes, Nikon Vision provides opportunities for people to observe and study nature in a carefree fashion. Nikon Vision also contributes to the development of research in environmental fields.

## Product-related Activities (for Social Contribution and the Environment)

## Contributing to environmental education for future generations with environmentally-considerate products

## Nikon Fieldmicroscope series



Fieldmicroscope



Children observing insects at an event



Okinawan white-striped chafers seen with the Fieldmicroscope

## Environmentally friendly features

## Use of bioplastic

Use of bioplastic in five body components

## Easy recycling

The materials used are indicated for all applicable resin parts (resin parts weighing 25 grams or more) (ISO 11469)

## Reduction of hazardous substances

All parts are compliant with the Nikon Green Procurement<sup>□</sup> Standards and the European RoHS Directive<sup>□</sup>

Use of Eco-glass<sup>□</sup>

100% use of Eco-glass

Since the Fieldmicroscopes series went on sale in 2001, it has become much loved by all generations. Its most striking feature is that it allows you to observe even the most detailed parts of outdoor insects and plants with both eyes and in three dimensions. Furthermore, some models allow you to attach a compact digital camera or digital SLR camera, making it possible to photograph the images you are observing.

Among this series, the simple models (the Fieldmicroscope and Fieldmicroscope Mini) are used as teaching materials for science education in many elementary and junior high schools, since they provide opportunities for children and students to easily observe the “micro world” of nature during outdoor classes. In addition, we provide the Fieldmicroscope series to various events such as the environmental events participated in by the Nikon Group in order to support opportunities for children to learn the terminology related to biodiversity. <sup>□</sup>

From 2009, the EZ-Micro, which allow the user to take photographic images, were added to the series. With this product lineup, we intend to continue contributing to surveying and recording in the fields of nature and the environment, which are drawing ever greater attention.

A range of eco-friendly materials are used for the EZ-Micro, such as bioplastic, Eco-glass, and lead-free solder.

We also implement Hazardous Substance Management to check whether hazardous substances are included in the various materials used in our products. The difficult part of Hazardous Substance Management is that we cannot tell if hazardous substances are included just by viewing or touching a product. In order to perform these checks, we make evaluations after performing X-ray fluorescence analysis, simplified chemical reaction examination, precise analysis, documentary examination, and other procedures.

Technological innovations bring increased opportunities to use new parts and raw materials. Each time we do so, we must perform an evaluation. Another important task is confirming whether our management system for hazardous substances is functioning correctly during the manufacturing process. We repeat the cycle of trial and error and accumulate the results of consistent work. In this way, we intend to continue making reliable efforts in the future as well so that people can use Nikon products with peace of mind.



## Hideo Nakamura

Engineering Quality Control  
Department  
Nikon Vision Co., Ltd.