

**HORIBA**

Explore the future



**Gaiareport**

---

HORIBA / CSR Report

**2012**



“Omoshiro Okashiku”

## The HORIBA Motto: “Joy and Fun”

“Joy and Fun” represents our desire to see all employees performing work that is rewarding and allows them to lead happy and fulfilling lives. We want our people to put “Joy” into their work through their own efforts by making the most of the time they spend in the workplace. To that end, the company provides places where employees can work with a sense of “Joy and Fun.” Furthermore, if employees do work with a sense of “Joy and Fun,” their ability to generate ideas increases, their imagination expands, their efficiency also rises, and corporate value increases. This results in a “win-win” relationship for customers, shareholders, suppliers, and society.

## “Omoi”: five pillars to phrase the HORIBAway

“Omoi” means an emotional feeling, passion, thoughts, enthusiasm, desire, aspiration, ambition, commitment, mission, and objective. We encourage our employees to have the following “Omoi,” which is the essence of acting on “Joy and Fun” through their work.

1. To be a part of a collaborative community, at the forefront of new ideas and creations
2. To achieve goals and making my life memorable by fostering the highest intellectual potential
3. Reach across the globe to expand learning that captures key business developments, wherever they occur
4. To be proud of sharing what I do and what HORIBA delivers
5. I want to participate all around and where I can be of help

Top Message



We strive to build a brilliant future for everyone by fulfilling our roles and responsibilities.



Chairman, President & CEO  
HORIBA, Ltd.

## 2011: A year for HORIBA to reconfirm its roles and missions

The year 2011 will be remembered as the year of the unthinkable massive and horrific disaster known as the Great East Japan Earthquake. But the year also allowed those of us at HORIBA to reconfirm our role as a leading manufacturer of analysis and measurement instruments as well as recognize how much our stakeholders expect from us.

In the aftermath of the Great East Japan Earthquake, which shocked us with its devastation and horror, we at HORIBA immediately established a special task force to initially confirm the safety of our employees and their families and to make contact with our business partners and customers. Then we swiftly set out to provide information and support to help our customers safely restart our products as electricity and other utilities were restored. The results of the task force work in different places and situations repairing equipment, restarting our supply chains, etc., have now made us even more aware of how closely we are connected to our customers, business partners and society.

Responding to Japan’s immediate needs, we increased

production of our stack gas analyzers for pollution monitoring in order to help thermal power stations across Japan resume operation, thereby contributing to massive efforts to restore the supply of electricity, as electricity shortages had quickly become a social problem. At the same time, we made company-wide efforts to increase production of our environmental radiation monitor in response to the sudden need for radiation measurements to protect public safety. In the immediate aftermath of the disaster it was genuinely frustrating to have to keep so many needy people waiting for our products. However, approximately half a year after the earthquake, we succeeded in enhancing our supply system to its current status, which now allows us to deliver our products to those in need as soon as orders are received.

As a manufacturer of analysis and measurement instruments, one of our important missions is to contribute to a safer and more secure society by supporting public infrastructure, such as power plants, with instruments for measuring pollutants and radiation. I would like to extend my heartfelt thanks to all of our suppliers and employees who have helped achieve this objective by making swift supply a reality.

## Creating products and technologies that contribute to a more sustainable society

Although 2011 was an unprecedented year due to the earthquake, analysis and measurement will forever remain essential technical elements in the foundation of our daily lives, encompassing energy, the environment, and human health and safety. As a company with five business segments (Automotive Test Systems, Process & Environmental, Medical, Semiconductor, and Scientific), HORIBA is deeply involved in many aspects of our daily lives.

For example, you can find our blood cell counters being used in many of the hospitals and clinics around you. HORIBA counters only require extremely small samples of blood to deliver on the spot results, enabling quick quantification of health conditions and identification of possible infection. Their accuracy and speed help medical professionals make accurate diagnoses and provide precise information to their patients. HORIBA's products are also used in the automotive industry. For example, HORIBA's automotive emission measurement systems and engine test systems are used to develop clean, ultralow-emission engines for environmentally friendly vehicles. Moreover, other HORIBA analyzers play pivotal roles in analyzing the structure and composition of new materials for rechargeable batteries and fuel cells, technologies expected to be central to future transportation solutions. In addition, a wide variety of our measurement instruments and sensors are used to improve product quality in manufacturing processes for solar battery panels and semiconductors, including LEDs (light-emitting diodes), which are essential components in LCD TVs and mobile phones. We have many ways to support public health and safety and security throughout a wide variety of situations through our technologies and products, thereby contributing to the creation of a more sustainable society. This is our pride and the essence of the HORIBA Group's CSR activities.

We are committed to enhancing our R&D and production capacities on an international scale, which will allow us to swiftly deliver our technologies and products across wider sections of society. As part of our efforts towards this objective, we will complete a Research & Development Center in France in 2012. This R&D Center will advance our R&D capabilities for analysis and measurement instruments, primarily in the scientific arena.

Regarding production capacity, we recently completed a factory improvement in Shanghai to enhance our production capacity for several business areas and supply greater capacity to the Chinese market. In another area, we are now in the process of establishing global supply facilities for medical test reagents by expanding the Aso Factory (Kumamoto Prefecture) and commencing construction of a new factory in Brazil. Moreover, we are aiming to expand our automotive test system business model by developing and improving our various bases in Asia. In 2011, we merged our subsidiary in Japan that handle drive recorders and digital tachographs. In addition, we are integrating several subsidiaries in the United States in 2011 and 2012.

We believe that we can better fulfill our responsibility of supplying the analysis and measurement instruments that people need by striving to increase our management efficiency by consolidating different functions from a global point of view.

## Incessant efforts devoted to improving quality and developing better employees

The ultimate goal of our business and CSR activities is to achieve HORIBA PREMIUM. In other words, we aim to create and provide premium quality and value for everyone. To this end we will continue our efforts to improve overall quality through the previously mentioned activities as well as our Product Quality Improvement (PQI) activities that are focused on

improving the quality of our products, services and operations. We also seek to improve overall quality through initiatives such as our Technical Olympics and discussion sessions developed in cooperation with our production partner companies with a focus on improving manufacturing and processing technologies as well as product quality. We will also continue to invest in human resource development, particularly the HORIBA COLLEGE, which is our unique in-house college.

We signed the United Nations Global Compact in April 2011 to express our conviction that we are a company that is committed to working together with our stakeholders to create a better, more prosperous future. This initiative is for companies that are committed to incorporating 10 corporate responsibility principles into their business operations and strategies, including addressing concerns related to protecting human rights, eliminating unfair labor practices, protecting the environment and anti-corruption efforts. We believe that this initiative will lead to a movement for the creation of a global standard for CSR activities in the future.

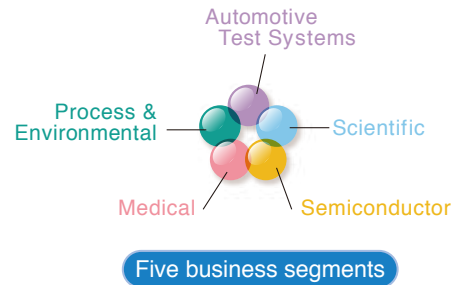
Though we are now in the midst of turbulent times with social and economic conditions changing from moment to moment, HORIBA is nevertheless determined to fulfill its social responsibilities

by steadily doing what it ought to do, one step at a time. We look forward to your continued attention to, and understanding of, our future activities. We appreciate your generous guidance and support. Thank you very much.



## Striving to achieve a sustainable society through analysis and measurement

Maintaining safe and healthy lifestyles, saving energy and reducing emissions, researching and developing new energy technologies, and realizing sustainable manufacturing—all these activities are founded upon accurate measurements of data using analytical and measurement instruments. As a comprehensive manufacturer of analysis and measurement instruments, our goal is to contribute to creating a sustainable society by revealing the essence of various issues facing the global environment and society, as we fulfill our mission to provide the means to analyze or measure complex substances.



● Motor Exhaust Gas Analyzer ● Engine Test System

### ◀ Automotive Test Systems

Comprehensive support for developing environmentally friendly vehicles

HORIBA contributes to the development of powertrains with high fuel economy and performance while facilitating compliance with global emissions regulations. HORIBA also develops, manufactures, and markets advanced test and measurement systems for all stages of vehicle and powertrain development. The extensive HORIBA product line provides vital support for developing environmentally friendly vehicles.

### ▶ Process & Environmental

Providing measuring tools for environment protection and the development of new energy industries

In compliance with global environmental conservation regulations, HORIBA provides analysis and measurement systems with applications ranging from air and water to soil. HORIBA's technologies play important roles in areas such as monitoring gases and wastewater from chemical plants, managing water for medical applications and pure water in the semiconductor industry, and controlling water quality in the pharmaceutical, food and cosmetics industries. Our products reduce the environmental impact of operations and facilitate the monitoring of processes in order to support industrial development.



● Portable Gas Analyzer ● Automatic COD\* Monitoring System  
\*COD: Chemical Oxygen Demand

### ▶ Medical

Supporting evidence-based medicine

Effective and efficient medical treatment requires not only excellent medical skills but also prompt and accurate data. HORIBA offers easy-to-use hematology and glucose analyzers for medical professionals. Our medical analyzers are routinely used in facilities such as clinics, hospitals, emergency labs and NICUs. Our advanced technologies make medical examinations possible with only a small sample of blood, reducing both patient suffering and the workload on medical professionals, and thus contributing to improving the quality of people's lives.



● Blood Glucose Analyzer ● Automatic Blood Cell Counter plus CRP



● Mass Flow Controller ● Fiber Optic Type Chemical Solution Concentration Monitor

### ◀ Semiconductor

Supporting semiconductor manufacturing for the realization of a prosperous and pleasant society

During semiconductor manufacturing processes, which support contemporary IT industries, products are inspected at each step by a number of measurement and control systems. HORIBA's technologies provide instrumentation to support semiconductor manufacturing processes. We also support the manufacture of flat panel displays, including liquid crystal displays used in high-definition TVs and mobile phones, and organic electro-luminescent displays, as well as solar cells and light-emitting diodes.

### ▶ Scientific

Developing nano-measurement technologies to provide solutions for the analysis of a wide variety of materials

Analysis of the nano-materials required for fundamental research focuses on the nano-level behavior of molecules and atoms. HORIBA scientific instruments provide solutions for the analysis of a wide variety of materials to support researchers working on the cutting edge as they explore the unknown and produce the high-technology products and new materials of the future. HORIBA's analysis systems are also applied in many other areas, including pH measurement of pharmaceutical products, inspection and defect analysis of electronic parts, criminal investigations and archaeological research.



● Benchtop pH/Water Quality Analyzer ● X-ray Analytical Microscope

## Meeting the needs of society and customers with reliable technologies

HORIBA's analytical and measurement technologies affect our lives in many ways. We at HORIBA believe that providing products and services that satisfy the needs of our customers will contribute to building a more sustainable society and improve people's quality of life.



As a company with five business segments (Automotive Test Systems, Process & Environmental, Medical, Semiconductor, and Scientific), HORIBA is deeply involved in issues related to energy, human health, the environment and safety. HORIBA is working to realize a sustainable society that brings comfort to all by providing the analytical and measurement technologies required for industrial development.

**R&D of new materials and new energy technologies**

- New materials**: R&D of new materials, such as carbon nano materials and graphene
- Organic electro-luminescent elements**: R&D of organic electro-luminescence technology, which is expected to play an important role in the next generation of flat panel displays
- Rechargeable batteries**: R&D of rechargeable battery components such as anodes, cathodes, electrolytes and separators
- Clean energy**: R&D of natural energy technology, which is expected to play an important role in next generation energy technology

**Productivity improvements in manufacturing and processing factories**

- Semiconductor devices**: Improving device quality and yield through fluid control, chemical solution monitoring and particle detection, etc.
- Flat-panel displays (FPDs)**: Control and inspection of the manufacturing process of next generation FPDs
- Solar cells**: Development of efficient and advanced process control for the manufacture of solar cells
- Printed circuit boards**: High-accuracy inspection of lead-free printed circuit boards
- Painting and coating**: Management of ink, paint, and coating powder as well as inspections of the surface gloss of coatings
- Petrochemical plants**: Safety management of manufacturing processes in environments where explosive gases may be present

**Next generation vehicle R&D**

- Ultra-low exhaust emissions**: High-accuracy measurement of low-concentration exhaust gases from vehicles designed to meet the latest emissions regulations
- Fuel efficiency**: Support using test equipment for R&D of high fuel economy vehicles
- Environmentally friendly driving**: Analysis of driving conditions using digital tachographs to promote energy-saving driving
- Greenhouse gases**: Analysis of the greenhouse gases (CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O) emitted from vehicles
- Alternative fuels**: Research and assessment of new fuels that are potential alternatives to gasoline and diesel
- Engines, powertrains and brakes**: Development of vehicle simulation testing environments for major automotive components
- Electric motors**: Performance assessment of the electric motors required for electric and hybrid vehicles

**Quality management**

- Electronics**: Detection of contamination in manufacturing to increase production yields
- Cosmetics**: Management of particles in foundations and skin lotions
- Food products**: Quality inspection to detect contamination of food products such as vegetables, meat, rice and cooking oil
- Pharmaceutical products**: Accurate analysis of high-purity pharmaceutical water

**Human health and safety**

- Food safety**: Various inspections of food products, such as checking residual agricultural chemicals and customs inspections of imported food
- Drinking water**: Automatic monitoring of inspection items such as turbidity, color, residual chlorine and water pressure at water supply facilities
- Medical examinations**: Quick blood tests using small samples to reduce suffering of patients
- Safe driving**: Promoting safe driving by analyzing the causes and circumstances of accidents
- Environmental radiation measurement**: Identifying radiation around people (in living environments) by quantifying it

**Protection of the global environment**

- Air pollution monitoring**: Detection of photochemical smog and other pollutants by continuously monitoring atmospheric conditions
- Water quality monitoring for rivers, lakes and oceans**: Monitoring of water quality in natural environments, including rivers, lakes and oceans
- Control of factory waste emissions**: Monitoring of waste gas emissions and liquid discharge
- Control of wastewater discharge**: Monitoring of the quality of water discharged from factories
- Hazardous substances**: Analysis of toxic materials, supporting compliance with environmental regulations around the world
- Chemical fertilizers**: Monitoring of soil contamination caused by chemical fertilizers
- Agricultural and domestic water**: Water quality monitoring of agricultural and public water supplies

**Improvement of agricultural and fishing environments**

- Productivity improvements**: Management of water quality in fish hatcheries, live fish transportation and hydroponic cultures
- Safety and security**: Food safety assurance by measuring nitrate ion concentrations and residual chemicals in agricultural products

**Archaeological research**

- Protection of cultural properties**: Non-destructive analysis of historical artifacts, including cultural properties and valuable objects

**Forensics**

- Criminal investigations**: Analysis to find clues to solve cases based on mere traces of evidence

**Veterinary medical care**

- Animal hospitals**: Quick and accurate medical examinations for animals

Our research aims to discover the simple, beautiful truth

## Evaluating semiconductor quality using light to advance solar batteries and LSI technologies



### Dr. Michio Tajima, Doctor of Engineering

Professor Emeritus, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency (JAXA)  
Visiting Professor, Meiji University

Dr. Tajima received his Doctor of Engineering degree from the University of Tokyo's Faculty of Engineering in 1975. He then joined the Electrotechnical Laboratory at the Agency of Industrial Science & Technology within the Ministry of International Trade & Industry. Later, he was appointed as a professor at ISAS and at the Graduate school of the University of Tokyo. Among his many awards are the Watanabe Memorial Research Incentive Award from the Semiconductor Research Institute and the Conference on Solid State Devices and the Materials Award from the Japan Society of Applied Physics.

In the mid-1970s, a thought struck the young Michio Tajima—Could the luminescence phenomena of semiconductors be used to detect impurities? This idea ultimately supported the later prosperity of the semiconductor industry and also played an important role in solar battery development. Dr. Tajima is a researcher who pursues originality and simultaneously advocates contributing back to society through the popularization of technologies. We interviewed Dr. Michio Tajima, Professor Emeritus at ISAS/JAXA, about his career and his enthusiasm for research.

### Developing an evaluation method “outside the box”

— Semiconductors, which are widely used in home electronics, PCs and a broad range of other products, are a vital component of our daily lives. You developed a very popular method of evaluating semiconductor quality.

Put simply, a semiconductor is a material with electrical conductivity that is intermediate in magnitude between that of a conductor, such as metal, and an insulator. Silicon is an example of a semiconductor. The amount of impurity contained within a semiconductor changes its level of conductivity.

Some impurities degrade the functions of materials while others help improve them. This means that when you want to make use of impurities to enhance the quality of silicon wafers for LSI (large-scale integration) circuits, you first need to identify the appropriate impurity elements and quantify them. This is because it is impossible to provide stable quality if you are unsure about the kinds and amounts of impurities contained within your materials. I developed an original method to conduct such measurements using photoluminescence.

### — Can you introduce us to that method, the Photoluminescence Method, which you developed?

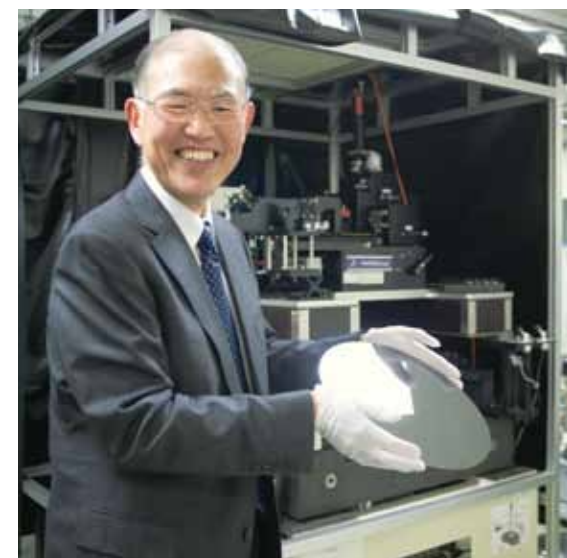
This may get a bit technical, but generally speaking, when you apply energy to substances, they absorb that energy. The absorbed energy is then later released in different forms. When energy is released in the form of light-emission it is called luminescence. The term “photoluminescence” refers to the process in which a substance absorbs energy provided as photons and then emits photons.

Silicon crystals, which are commonly used in the semiconductor electronics industry, emit light when exposed to laser-beam radiation because defects and impurities within them react to the beam. I applied this to evaluate crystals by measuring and analyzing the light emitted in order to identify the kinds and amounts of the impurities contained within semiconductors. I think that the experience of measuring weak light in my research on light-emitting diodes as a graduate student at the University of Tokyo helped me a lot.

— You successfully developed the crystal evaluation method during your second year at the



▲ Laser beams play a significant role in semiconductor evaluation



▲ Dr. Tajima stands in front of a measurement instrument holding an actual wafer

Electrotechnical Laboratory, which you joined upon completing your graduate studies. Things went very smoothly for you, didn't they?

Actually, not really. In retrospect, I can say that knowing no fear whatsoever at that time was the reason I gave it a try. After all, measuring ultra-trace amounts of impurities contained within silicon wafers on the order of parts per billion was anything but easy. Moreover, it was almost unprecedented to perform such measurements using photoluminescence. If I were to go back to when I was in my 20s, would I want to do the same thing again? No, I don't think so (laugh). From an objective point of view, it was quite the fool's errand.

Nevertheless, in those days I worked very hard—almost too hard, perhaps—with what you might call the “bravado of youth.” Then, one day, after numerous trials and errors, I finally detected light emitted from the crystals. I proceeded to gather many pieces of data that suggested a very simple, very beautiful rule that governed the phenomenon. I immediately designed appropriate measurement conditions and conducted tests again in order to validate the rule. The second set of results established the reproducibility of the rule. The memory of that moment is still vivid and fresh in my mind.

— The Photoluminescence Method has been adopted in ASTM (American Society for Testing and Materials) standards as well as JIS (Japanese Industrial Standard) and is now in widespread use around the world.

It is rare for JIS to approve this kind of evaluation method. It also was the first Japanese technology registered with ASTM, which is considered a global authority in this area, so I felt extremely honored and flattered.

I had always wanted to develop helpful technologies to aid the growing semiconductor industry; this was the original inspiration behind my research efforts. I had also been working hard to standardize the evaluation method, which I had developed working in cooperation with manufacturers, in order to bring it into wider use across the entire industry. Therefore, it meant a lot to me when the method was approved as a standard.

The efforts one must make to standardize technologies differ from those necessary for research. One must get far more people and organizations involved—for example, preparing 50 sets of standard samples and distributing them to the leading global semiconductor companies. In fact, it took us more than 10 years to standardize the method.

### Researchers must understand the principles behind measurement instruments

— The Photoluminescence Method is also applied in the area of solar batteries, which contain semiconductors.

As you know, demand for solar batteries is now growing rapidly. Improving their quality is also an urgent task because higher quality solar batteries with enhanced power generation efficiency will take up less space when installed, use fewer materials and have lower costs.

As part of our efforts to realize higher quality, our laboratory has developed the hydrofluoric acid liquid-immersion photoluminescence imaging method. This is a method for evaluating the quality of silicon, the main ingredient in solar batteries. By using this method, one can ascertain quality in under a second. The conventional method requires about 20 minutes to do the same thing. Moreover, this new method offers 20 times higher resolution—in other words, measurement performance.

Solar batteries are closely related to the space industry and artificial satellites. In fact, I have been involved in a number of scientific satellite projects as the leader of the power supply system group. Since solar batteries intended for use in space must have special durability characteristics and other high performance features, the semiconductors used in them are often made using a multilayer structure. That is why we modified the original Photoluminescence Method in this field in order to provide a new method for selectively evaluating the respective layers of semiconductors. With no need for pretreatment, this non-destructive, non-contact method is now playing a major role in defect analysis for solar batteries intended for use in satellites.

— Thank you very much for using HORIBA's measurement instruments. We understand that measurements are

an essential part of your research.

Yes, indeed. You could even say that measurement is the very theme of my research. To evaluate the quality of semiconductors is none other than to measure their impurities and defects.

Whenever I work to develop a new evaluation method, I must improve measurement instruments with the support of manufacturers. This is why I don't want to let others look at the instruments I am using when I am working on cutting-edge development, as I put a lot of my know-how into them (laugh). Germany is excellent at manufacturing. For example, the research activities of the Max Planck Institute for Solid State Physics, where I used to work as a researcher, were supported by highly skilled engineers known as Meister. However, Japan also has quality engineers worthy of the Meister name. In fact, during the process of establishing the Photoluminescence Method, many brilliant Japanese engineers, including those from HORIBA who to this day have continued to take care of my instruments, worked night and day with us to develop the method.

— Do you have any requests for measurement instrument manufacturers?

Above all, I want manufacturers to create instruments that produce accurate, repeatable results and to guarantee a certain level of precision regardless of the skill of the user. In addition, given the increasingly "black box" nature of today's instruments that is a consequence of their ever increasing sophistication, I would find even more user support very helpful. For example, at times manufacturers handle product failures simply by replacing parts, leaving me in the dark about what actually occurred.

At the same time, researchers also need to keep in mind that users must learn and understand the principles behind the measurement instruments which they use. We should not merely press buttons and wait for the results. Otherwise, we may fail to understand what our data really mean and overlook something very important.

### Earnest "dialogues" may cause chemical reactions

— Are there any policies that you have advocated for as a researcher throughout your career?



▲ Dr. Tajima's style is to always write down measurement results in his notebook

I place great emphasis on having dialogues during research. In fact, I faced a large number of different criticisms and debates, both inside and outside Japan, immediately after I published the results of my research on photoluminescence. Since the method offered a much higher sensitivity than the then conventional evaluation methods, many people had doubts about its effectiveness, wondering whether it was really possible and reliable.

I also received many questions at international academic conferences. When I was unable to answer them on the spot, I worked through the night to prepare answers in order to respond the following day. As I handled these pieces of feedback one by one in this way, I developed a deeper understanding of the subject and noticed many new things. Interacting with other people in earnest sometimes enables one to discover things which one otherwise could not. In fact, some of my major breakthroughs are a result of such dialogues. Having those heated debates is now among my most precious memories and also gave me invaluable personal contacts, both in Japan and overseas.

— That is very interesting. Do you place importance on anything else in your research?

As for the mental aspect, I would say concentration and relaxation. To demonstrate your creativity and originality, you must have good concentration, which in turn requires that your mind be relaxed. It may just be me, but I feel that my mind was always in some kind of relaxed mode when I made valuable discoveries. Of course, some element of luck is also a vital component of such discoveries. Nevertheless, it's true that you are more likely to make the most of your luck when relaxed.

— You have not only produced great results as a researcher but also provided a driving force for industry growth. What satisfaction do you get from your research and what is the source of your energy?

I am proud to say that the precise evaluation method for different types of wafers that was developed at JAXA, which I mentioned earlier, contributes to the practical use of space devices. I also feel that I have contributed to improving the quality of semiconductor materials. What is the point of engineering if it doesn't do people or society any good? As such, seeing our technologies being used in industry boosts my motivation.

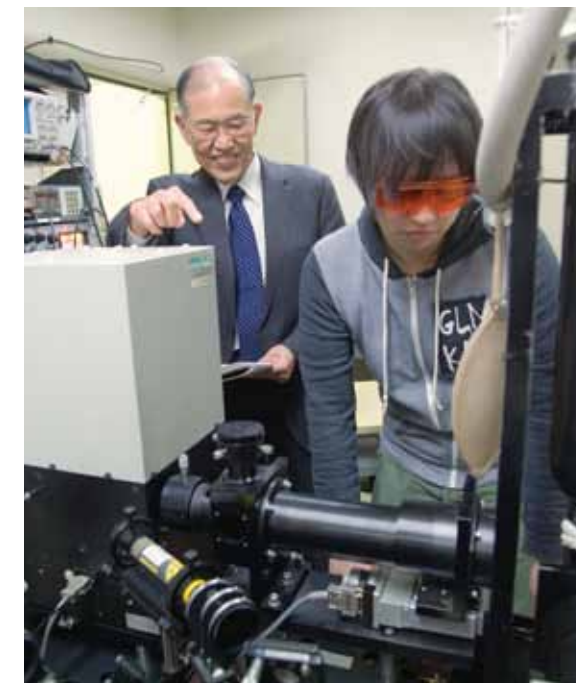
However, rather than carrying out research with a special sense of mission, personally I feel that I am just focusing on what I can do at the moment to resolve the challenges at hand. Semiconductors have been experiencing dramatic evolution—from silicon to gallium arsenide to SOI (silicon on insulator) to SiC (Silicon carbide). I have also been striving to develop new evaluation methods

to effectively evaluate each of these in turn. I believe that my achievements so far are the results of my efforts to resolve these problems one-by-one by making the most of the technologies and know-how that I have accumulated.

As for the satisfaction that I get from my research, the best thing about doing research is discovering the truth. Although words can hardly describe this, genuine truth is extremely simple and tremendously beautiful. I feel that finding such truth is the most rewarding and joyful thing about being a scientist.

— Lastly, what would you say to the young researchers and students who are the future of this field?

More than anything else, researchers must be creative. "Do yourself what no one has ever done before." "Discover new things, even if they seem trivial." I frequently say such things to the students whom I teach and supervise. In a way, discovering new things and establishing new methods is a lonely and painstaking exercise. Also, although you may need to inherit work from your predecessors, that alone is not very interesting. When you encounter something that captures your imagination during difficult research—that is when you feel the real pleasure of research. Moreover, those who experience this always grow exponentially afterwards without requiring any additional impetus. In my opinion, the key to growth is to focus on pursuing the truth.



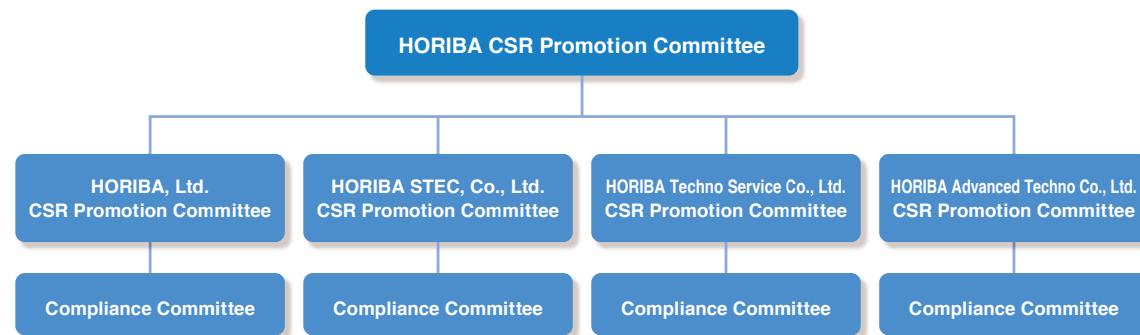
▲ Guiding students through new discoveries is now one of Dr. Tajima's important jobs

## CSR promotion and management systems that exceed public expectations

HORIBA believes that the essential objective of CSR activities is to contribute to realizing a sustainable society and prosperous future through our technologies and products. However, that is not all that our stakeholders expect from us. In order to perform our duties as a corporate citizen, we believe that it is essential to create and improve our management systems for corporate governance and compliance.

### CSR Promotion System

The HORIBA Group formed the HORIBA CSR Promotion Committee in April 2005. The Committee is currently engaged in CSR initiatives with the full-fledged support of Group companies. It determines CSR policies and priority challenges for all Group companies. Committee members deliberate the details of issues and approve items, seeking to reflect the results of their meetings in their workplaces through their respective CSR Promotion Committees.



#### CSR Promotion Committee

- Deliberations on how to implement policies and issues adopted by the HORIBA Group's CSR Promotion Committee
- Social action work in the areas of education, environmental protection and contributing back to local communities

#### Compliance Committee

- Compliance-related awareness building as well as prevention, early detection and advice on correcting illegal acts
- Internal reporting systems (external lawyer consultation services, internal e-mail reporting system, etc.)
- Provision of compliance-related seminars for employees in managerial positions

#### HORIBA CSR Policy

##### Promoting CSR through operations

Based on our commitments to energy, human health, the environment and safety, we will pursue corporate initiatives to contribute to the realization of "a life of content for all."

#### Top issues for 2011

##### HORIBA PREMIUM: Create First Class Value for MLMAP

Realize HORIBA PREMIUM from the perspective of CSR

- Sign the United Nations Global Compact.
- Set CSR-related KPIs (Key Performance Indicators).

### Corporate Governance / Internal Controls

By upholding the basic principles of open and fair, HORIBA, Ltd. is striving to maximize managerial transparency and corporate value. We have put the following organizations and systems in place to promote corporate governance and internal controls:

#### Board of Auditors

- Three auditors (including two outside auditors) supervise and monitor the business operations conducted by the Board of Directors.

#### Internal auditing

- The Internal Auditing Division provides advice and guidance to ensure that business operations throughout all HORIBA Group companies are conducted legally and fairly in accordance with laws, statutes and company regulations.

#### Internal controls

- We have adopted the Basic Policies for the Development of Internal Control Systems to establish systems to ensure legal compliance and for risk management.

### Integrated Management System

In April 2011, the Japan Quality Assurance Organization (JQA) granted the JQA Integrated Management System Certification (JQA-IG0001-07) to the HORIBA Group in the group IMS\* category. We are aiming to have our major overseas production bases obtain accreditation for ISO9001 (quality) and ISO14001 (environmental) standards.

In addition, the Kyoto Analysis Center of HORIBA, Ltd. was approved by the Japan Accreditation Board as a test station for ISO/IEC 17025:2005 (RTL00880) (chemical testing) in June 2001. Also the CS of the HQ at HORIBA Techno Service Co., Ltd., one of our group companies, was accredited by the National Institute of Technology and Evaluation as a CAB for ISO/IEC 17025:2005 (ASNITE 0033C) Calibration of Emission Test Facilities in August 2009.



\* IMS (Integrated Management System) is a management system that integrates the ISO9001 quality standard, the ISO14001 environmental standard and the occupational health and safety certification OHSAS18001. HORIBA, Ltd. and HORIBA STEC Inc. employ IMS in combination with the ISO13485 quality management system for medical devices.

## HORIBA, Ltd. signed the United Nations Global Compact



This is our **Communication on Progress** in implementing the principles of the United Nations Global Compact. We welcome feedback on its contents.

Mr. Atsushi Horiba, President & CEO of HORIBA, Ltd., signed the Letter of Commitment of the United Nations Global Compact (UNGC) and submitted it to the United Nations through the office of Global Compact Japan Network. On April 28th, 2011, HORIBA, Ltd. was registered as a participant in the UNGC.

The UNGC is a strategic policy initiative for businesses with ten universally accepted principles in the areas of human rights, labor, environment and anti-corruption.

We are determined to take a proactive approach to these issues in order to continue a sustainable growth as a global corporation.

#### The Ten Principles of the United Nations Global Compact

Human Rights	Principle 1	Businesses should support and respect the protection of internationally proclaimed human rights; and
	Principle 2	make sure that they are not complicit in human rights abuses.
Labour	Principle 3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
	Principle 4	the elimination of all forms of forced and compulsory labour;
	Principle 5	the effective abolition of child labour; and
	Principle 6	the elimination of discrimination in respect of employment and occupation.
Environment	Principle 7	Businesses should support a precautionary approach to environmental challenges;
	Principle 8	undertake initiatives to promote greater environmental responsibility; and
	Principle 9	encourage the development and diffusion of environmentally friendly technologies.
Anti-Corruption	Principle 10	Businesses should work against corruption in all its forms, including extortion and bribery.





○ On pages 16 to 20 of this report, we present some of our 2011 CSR activities.  
 ○ Detailed data on our CSR activities is available on our website.

<http://www.horiba.com/jp/gaiareport/>

## CSR activities through daily business operations

Theme	Activities and policies	Name of activity	Overview	Major activities in 2011		
				Page No. (this report)	Location on the website	Global Compact Compliance
Working Alongside Our Customers	We provide products and services with high added value in a timely manner in order to improve customer satisfaction and earn the trust of our worldwide customers.	▶ <b>Improvement in customer satisfaction</b>	We endeavor to quickly support customers by shortening the time required to respond to inquiries.	P16 Working Alongside Our Customers TOPICS 1	B-a-1	
		▶ <b>Improvement in product quality and business operations</b>	In order to reduce product warranty servicing costs we minimize the number of manufacturing flaws, deliver products on-time and develop environmentally friendly designs for all new products.	P16,17 Working Alongside Our Customers TOPICS 2	B-a-2	
Working Together with Our Owners	We have adopted a dividend ratio policy of distributing a fixed percentage of after-tax profit every fiscal term as our basic policy to meet the expectations of our owners (shareholders).	▶ <b>Communication with owners and investors</b>	We cherish all opportunities to have dialogue with our owners and investors at general shareholder meetings and IR briefing sessions. We disclose all relevant information.	P17 Working Together with Our Owners TOPICS 1	B-b-1	
Working Together with Our Suppliers	We maintain relationships of trust with our suppliers based on the awareness that our activities would be impossible to carry out without all their cooperation and support.	▶ <b>Fair transactions</b>	We cooperate with our production partner companies to more deeply understand first-class quality, to implement effective change management and to secure our supply chain.		B-c-1	Principle 10
		▶ <b>Partnerships with production partner companies</b>		P17,18 Working Together with Our Suppliers TOPICS 1	B-c-2	
Working Together with Our Employees	We consider each employee an invaluable contributor. We endeavor to establish a training system to develop each individual's potential to the fullest extent possible, as well as to provide an open and fair work environment that allows every member to contribute with a sense of security.	▶ <b>Communication with employees</b>	We facilitate communication between management and staff by developing work environments in accordance with the circumstances of individual employees and by holding birthday parties for employees as well as workplace tours for their families. We also provide unique training programs for human resource development, including the HORIBA COLLEGE project.	P18 Working Together with Our Employees TOPICS 1	B-d-1	Principles 1-6
		▶ <b>Diversity</b>		P18 Working Together with Our Employees TOPICS 2	B-d-2	
		▶ <b>Work-life balance</b>		P18 Working Together with Our Employees TOPICS 3	B-d-3	
		▶ <b>Human resource development</b>		P19 Working Together with Our Employees TOPICS 4	B-d-4	
	We give the highest priority to human safety and health in all of our business activities and take an active part in raising individual awareness of safety and health issues.	▶ <b>Eliminating risk factors</b>		P19 Working Together with Our Employees TOPICS 5	B-d-5	
		▶ <b>Health management and promotion</b>		P19 Working Together with Our Employees TOPICS 6	B-d-6	
Working Together with Society	Based on the recognition that environmental initiatives are an essential requirement for validating the existence and activities of companies, we take independent and positive actions toward environmental conservation.	▶ <b>CO<sub>2</sub> emissions reduction</b>	In order to reduce the environmental impact at each stage of our products' lifecycles, from production and distribution through to sale and use, we implement various measures, such as ensuring compliance with environmental laws and regulations, reducing the size and weight of products and developing eco-friendly products. We also take measures to conserve energy and resources as well as reduce CO <sub>2</sub> emissions throughout all of our corporate activities, such as turning off lights during lunch breaks, using LED lighting in guest rooms and undertaking zero-emission activities.		B-e-1	Principles 7-9
		▶ <b>Environmental impact reduction</b>			B-e-2	
		▶ <b>Energy and resource conservation</b>		P19 Working Together with Society TOPICS 1	B-e-3	
		▶ <b>Waste reduction</b>			B-e-4	
		▶ <b>Eco-friendly product designs</b>			B-e-5	
		▶ <b>Environmental accounting</b>			B-e-6	
	We serve as a responsible corporate citizen by performing an active and independent role in closely communicating, collaborating, and cooperating with local communities.	▶ <b>Initiatives for the Growth of the Analysis and Measurement Industry</b>		P20 Working Together with Society TOPICS 2	B-e-7	
		▶ <b>Dialogue with local communities and society</b>		P20 Working Together with Society TOPICS 3	B-e-8	
		▶ <b>Support for the development of society's next generation</b>		P20 Working Together with Society TOPICS 4	B-e-9	
		▶ <b>Environmental activities promotion</b>		P20 Working Together with Society TOPICS 5	B-e-10	
From our unique perspective as an analytical equipment manufacturer, we deliver messages that stimulate interest in analysis and the global environment.		We provide opportunities to think about the environment through the use of familiar media, such as corporate advertisements and support for the TV animation series, "Animal Conference on the Environment."				

## “Joy and Fun,” the precept of HORIBA’s CSR activities

Staying true to our company motto, “Joy and Fun,” we are striving to create an open and fair corporate culture. We aim to form closer partnerships with our stakeholders and improve our CSR activities.



©Detailed data on our CSR activities is available on our website.

<http://www.horiba.com/jp/gaiareport/>

HORIBA Gaiareport

Search

## Working Alongside Our Customers

We contribute to the development of a sustainable society and improvements in the quality of life through our high-quality products and services.

### Action

- Inquiry services at our customer support center
- The service system developed by HORIBA Techno Service Co., Ltd.
- Technical exhibitions in company offices
- Awards for inventions
- Product release celebrations

## TOPICS 1 Improvement in customer satisfaction

### Special interview

this report P8-11

**Dr. Michio Tajima, Professor Emeritus, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (JAXA)**

The quality of semiconductors, which have already become an essential component of modern life, has dramatically improved at least in part thanks to better evaluation methods such as the development of the Photoluminescence Method. We interviewed Dr. Michio Tajima, who is making great contributions to society through popularizing technologies while simultaneously pursuing originality as a researcher.



Dr. Michio Tajima



Skill improvement training for field engineers abroad



PQI Competition

## The fifth HORIBA Group PQI\* competition

WEB B-a-2

HORIBA Group companies cooperate with our production partner companies to improve product quality and to reduce the percentage of defective products.

\*Product Quality Improvement

## The fourth Technical Olympics

WEB B-a-2

We held our fourth Technical Olympics with members from the HORIBA Group and our production partner companies. By sharing knowledge of basic manufacturing skills among all members, we are able to establish processes for eliminating manufacturing flaws and producing trusted products for our customers.



## Working Together with Our Owners

We appropriately distribute profits to our owners (shareholders) and promote management transparency through fair disclosure of information and two-way communication.

### Action

- Executive-lead financial briefings for institutional investors; briefings via conference calls
- Visits to overseas investors (Europe, North America and Asia) by executives
- Factory tours: HORIBA, Ltd.; HORIBA STEC, Co., Ltd.

## TOPICS 1 Communication with owners and investors

### Awarded the "Best IR Award" in 2011

WEB B-b-1

For the first time, HORIBA was named as a winner of the “Best IR Award” in a competition for excellence in IR (Investor Relations) activities organized by the Japan Investor Relations Association. The selection of winners out of 304 companies that had applied to participate in the competition was based on a questionnaire survey of stock analysts and investors and a review by a screening panel. We will continue to further refine our strengths which were evaluated highly by the judges (e.g., proactive participation in IR activities by top management, clear presentations and easy-to-understand annual reports), thereby carrying out effective IR activities to accurately communicate HORIBA’s corporate culture to our stakeholders.



Award ceremony (December 14, 2011)  
Left: Hajime Sawabe (Chairperson, Japan Investor Relations Association) Right: Atsushi Horiba

## Working Together with Our Suppliers

We consider our suppliers, who provide and process components and materials, as partner companies with whom we work and grow together.

### Action

- HORIBA Group Meetings with production partner companies
- Quality study sessions with production partner companies

## TOPICS 1 Partnerships with production partner companies

### HORIBA Group Meetings with production partner companies

WEB B-c-2

We hold regular meetings with production partner companies and exchange advice through the co-hosting of events such as the Technical Olympics under the motto “Achieving co-evolution, harmony and coexistence.”



Award ceremony at the 2011 HORIBA Group meeting with production partner companies

## Product workshops

WEB B-c-2

By inviting our production partner companies to our factories and allowing them to observe how the parts they supply us with are used and what roles such parts play with their own eyes, we show them the level of quality that is required of HORIBA products. We endeavor to raise their quality awareness, improve production sites and increase technological capabilities through enhancing cooperation and coordination between our suppliers and HORIBA and encouraging learning from one another.



## Working Together with Our Employees

Staying true to our company motto, "Joy and Fun," we are making efforts to create an open and fair working environment as well as a safe, healthy and pleasant workplace for all HORIBA employees.

### Action

- Workplace tour for employee families
- Support for the development of society's next generation
- Seminars by obstetricians
- Promoting consumption of local products in company cafeterias
- Medical examinations and health guidance services
- Employment of new graduates with foreign citizenship
- Dispatch of employees for overseas training

## TOPICS 1 Communication with employees

### HORIBA Open House

WEB B-d-1

About 70 Group members and their families attended the HORIBA Open House at the head office of HORIBA, Ltd. We have held this event every year since 2002 to provide employees' families with the opportunity to discover more about and deepen their understanding of HORIBA's corporate culture, working environment, business activities, etc. We also organized an Open House event at HORIBA Europe GmbH (Germany) in 2011.



"HORIBA Open House" at HORIBA, Ltd.

## TOPICS 2 Diversity

### Recruiting employees irrespective of nationality

WEB B-d-2

HORIBA, Ltd. employs excellent human resources across a wide range of job categories irrespective of nationality. In fact, HORIBA employees hail from many different countries, including France, the UK, India, China, South Korea and Russia, performing important jobs both inside and outside the company. We also proactively recruit non-Japanese nationals when hiring new graduates. In fact, we have had international students join the company five years in a row.



"Family day" at HORIBA Europe GmbH (Germany)

## TOPICS 3 Work-life balance

### Creating offices that are easy to work in

WEB B-d-3

In response to our employees' changing family situations, we have introduced the Employees with Reduced Working Time System and the Work from Home System as part of our efforts to support our employees in maintaining and improving their work-life balance. In addition, we are striving to create an office environment that encourages employees to make effective use of childcare leave and other support systems.

### Employees who took childcare leave

Data on HORIBA Group companies in Japan

(Unit: person)

	2008	2009	2010	2011
Women   No. who gave birth	20	19	28	24
No. on childcare leave (No. of managers)	20(0)	18(0)	28(1)	26(0)
Men   No. on childcare leave (No. of managers)	2(1)	3(0)	3(0)	3(1)

## TOPICS 4 Human resource development

### Open Application Overseas Training Program

WEB B-d-4

HORIBA, Ltd. launched an open-application overseas training program in 1984 to allow our employees to develop international ways of thinking by working in HORIBA Group companies abroad. Then, in 1999, this program was made available to all employees of HORIBA Group companies. In 2011, including those on the Overseas On-the-job Training Program, we sent 13 Japanese employees to our overseas bases. A total of more than 150 employees have participated in such overseas training so far and worked on the global stage.

## TOPICS 5 Eliminating risk factors

### Safety patrols

WEB B-d-5

Based on the annual occupational health and safety management plan, each office implemented priority measures, such as on-site patrols by executives to achieve its annual goals.

## TOPICS 6 Health management and promotion

### Health Management Office opened

WEB B-d-6

We expanded the functions of the Health Management Office, which is a department for health support. There, a full-time occupational physician (three days a week) and a public health nurse (every day) work to help employees effectively manage and improve their health. Our aim is to promote mental and physical health of our employees, thereby contributing to the creation of an office environment that is even easier to work in.

### Employees who join the overseas training program

(accumulated from 1984 to 2011)  
Data on HORIBA Group companies in Japan  
(Unit: person)

Region	Country	Number of persons
Americas	US	67
Europe	UK	9
	Germany	22
	France	45
	Austria/Germany	1
Asia	China	5
	South Korea	6
	Singapore	4
	India	2
Total		161



Safety patrol in a test reagent factory

## Working Together with Society

We are working to create an environmentally friendly production system. We are also taking an active role in supporting the development of society's next generation by supporting educational and cultural events.

### Action

- Energy and resources conservation
- Eco-friendly product designs
- On-site environmental seminars
- Acceptance of interns
- Global environmental conservation activities
- Trash inspections during daily commutes
- Corporate advertisements
- Gaiapress, an informational website on the environment, nature, space and science

## TOPICS 1 Waste reduction

### Energy saving initiatives overflowing with creativity

WEB B-e-3

We made proactive efforts to conserve electricity at all HORIBA Group company bases in Japan throughout 2011. During the Month of the Environment (from June 13 to July 15), individuals and groups of volunteers carried out various energy conservation activities. Among these creative, unique activities, those initiatives that particularly contributed to raising people's awareness about energy conservation and reducing energy consumption were commended with the Highest Award and Awards for Excellence. We will continue our daily energy conservation efforts with a fresh enthusiasm for reducing electricity use and other kinds of energy conservation.



Group awarded the Highest Award for their energy conservation activities

**TOPICS 2**  
Initiatives for the Growth of the Analysis and Measurement Industry

Participation on the boards of industrial associations, etc. 

In May 2011, Atsushi Horiba (Chairman, President and CEO of HORIBA, Ltd.) was appointed Chairman and Kansai Branch Director of JEMIMA\*1 and Vice President (for International Operations) of JAIMA\*2. We are striving to stimulate international strategic activities targeted at allowing the analysis and measurement industry to achieve further growth.

\*1: The Japan Electric Measuring Instruments Manufacturers' Association  
\*2: The Japan Analytical Instruments Manufacturers' Association



Atsushi Horiba delivering his inaugural speech after being appointed Chairman of JEMIMA

**TOPICS 3**  
Dialogues with local communities and society

Support to Africa Inspires 

HORIBA Instruments Ltd. (UK) is supporting "Africa Inspires," a project aimed at helping to improve the water quality in Ugandan schools. Improvement targets were created by using a HORIBA analyzer comparing the water quality between the UK and Africa. LOCOG\* are also supporting this project with fund raising activities.

\*London Organising Committee of the Olympic and Paralympic Games  
"Africa Inspires" <http://www.africa-inspires.com/index.html>



HORIBA's equipment used in water analysis in Africa

**TOPICS 4**  
Support for the development of society's next generation

Environmental delivering classes 

"We want children to feel closer to global environmental issues as well as the mysterious sensors of plants and animals." "We want to let more children know how important and fun it is to analyze (measure) things." These wishes led us to start to provide environmental delivering classes by HORIBA employees. We also provided such classes in Japanese schools in Europe in 2011. About 250 students, parents and teachers in France and Belgium participated.



Class at a Japanese school in Paris

**TOPICS 5**  
Environmental activities promotion

Runner-up in the 38th Nikkei Business Daily Advertising Awards 

One of HORIBA's advertisement series was awarded the runner-up award in the Material, Industrial Equipment and Service Category in the Nikkei Business Daily Advertising Awards, the largest advertising awards in Japan. This is the fifth consecutive time HORIBA has received this award. We will continue to strive to communicate our unique messages to society.



(Nikkei Business Daily, September 26, 2011)



©Detailed data on our CSR activities is available on our website.

<http://www.horiba.com/jp/gaiareport/>

HORIBA Gaiareport

Search

## The HORIBA Group's response to the Great East Japan Earthquake

The HORIBA Group set up a disaster response headquarters to identify and handle the damage caused to the Group by the disaster as well as to offer services to meet the needs of our customers and business partners suffering serious damage in the Tohoku and Kanto regions (e.g., by lending out medical equipment, providing test reagents, and arranging emergency vehicles for services). At the same time, we worked to accelerate the supply of our products necessary for reconstruction work.

In addition, we continue to strive to enhance our risk management by improving our system for contacting employees during emergencies as well as by implementing safety confirmation training.



Disaster response headquarters

**Product-related**  
Supplying products necessary for reconstruction work

We have made company-wide efforts to increase our production of environmental radiation monitor for measuring radioactivity and of stack gas analyzers, which are used at thermal power stations to measure stack gases, in order to help such power stations resume operation.

In addition, we have lent out cartridges for blood glucose analyzers (used for measuring blood glucose levels) and automatic blood cell counters plus CRP\* free of charge. These have been used in the temporary clinics set up in disaster-stricken areas.

\*C-reactive protein. Blood CRP level is a known indicator of inflammation.



Environmental radiation monitor



Blood cell counter lent out free to a temporary clinic set up in Miyako City, Iwate Prefecture

**Support activities**  
Donation and volunteer activities

HORIBA Group companies both inside and outside Japan offered donation matching programs to double the amount of relief money donated by employees in order to reach as many victims in the disaster-stricken areas as possible. As a result, the Group donated a total of more than 40 million yen, including the proceeds from a charity bazaar and auction held in April, through the Red Cross societies of the respective countries, etc. Besides this financial support, individual HORIBA employees volunteered to work to support the disaster-stricken areas.



Charity bazaar held by employees

**Support activities**  
Messages of support from French children

In late March 2011, HORIBA ABX SAS (France) received messages of support intended for the disaster-stricken areas in Japan from 210 local elementary school students. These warm, cordial messages were delivered via HORIBA to elementary schools in Iwate Prefecture.



HORIBA ABX members received messages written by French elementary school students

## What is the Gaiareport?

According to Greek mythology, Gaia is the maternal goddess of the Earth who ensures that the planet thrives and is capable of cleansing itself. The HORIBA Group, a manufacturer of analytical and environmental measuring instruments, contributes to the advancement of a sustainable society through our analytical and measurement business. To express this determination, we have named our CSR communications media Gaiapress (our website) and Gaiareport (the CSR report). At HORIBA, we remain committed to the global environment by focusing on environmental measurements.

### See our data resources on the Web for more information

Detailed information about our CSR activities appears on the Web, making its access easier and more convenient. Searching for the subject you are interested in is made easy by using keywords or categories to take you to the web page where the relevant information is available.

For more information, access our data resources on the Web!

HORIBA Gaiareport

検索

<http://www.horiba.com/gaiareport/>

**HORIBA**  
Explore the future

**HORIBA, Ltd.**

2, Miyanohigashi-cho, Kisshoin, Minami-ku,

Kyoto 601-8510, Japan

TEL: (81) 75-313-8121

FAX: (81) 75-321-6621

URL: <http://www.horiba.com>

\*Please direct all inquiries to  
the Corporate Communications Office.

#### ● Relevant websites

Environmental protection initiatives → <http://www.horiba.com/social-responsibility/>

Investor relations → <http://www.horiba.com/investor-relations/>

Gaiapress → <http://www.jp.horiba.com/sensorium/>

### The new Gaiareport significantly reduced paper use

From 2009 on, the Gaiareport is in leaflet and online formats, significantly reducing the use of paper compared to the previous booklet format. The essence of HORIBA's CSR activities focuses on the hope that our Gaiareport will be read by as many people as possible.



This is printed on FSC-certified paper using wood from "responsibly managed forests" and is also Lake Biwa Ecological Paper, part of the cost of which is donated to an environmental charity working to protect the environment of Lake Biwa. Also, it was printed with soy-based vegetable ink, using a waterless printing process that does not produce hazardous liquid waste. Moreover, we offset carbon dioxide emissions from the production process through the COJ (CARBON OFFSET JAPAN).

Catalogue No. HRE-0060B

Printed in Japan TF-R(EI)23

Explore the future

Automotive Test Systems | Process & Environmental | Medical | Semiconductor | Scientific

**HORIBA**