

# azbil

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FIELD

MITSUI ELASTOMERS SINGAPORE

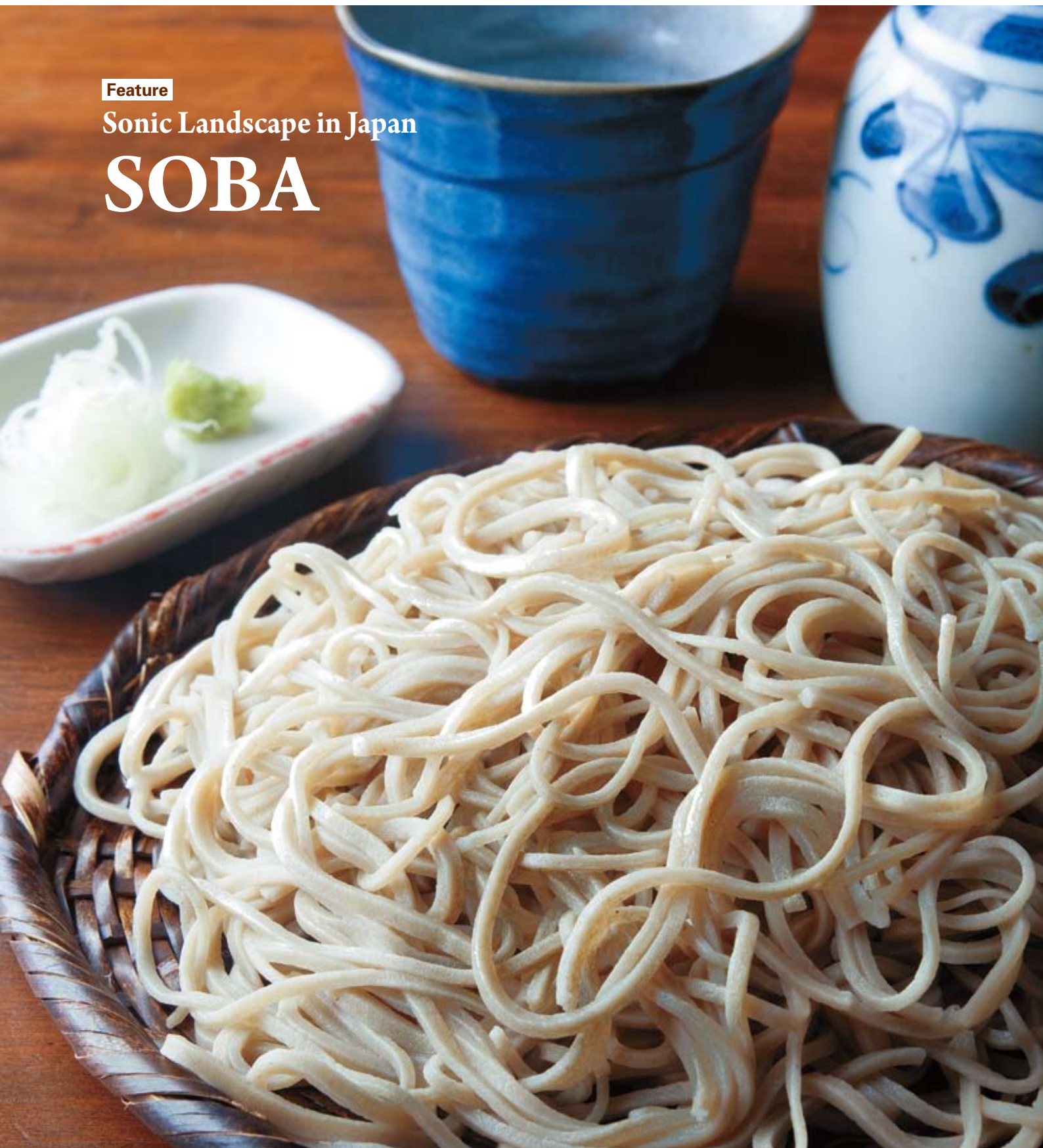
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MIND

Spearheading the azbil Group's Business  
in the Life Science Market Based on  
Advanced Technological Capabilities

Feature

Sonic Landscape in Japan

# SOBA



The subtle savor of *soba*

【zuruzuru】～ずるずる

Together with *sushi* and *tempura*, *soba* is one of the most loved traditional Japanese dishes. The word *soba* is Japanese for the buckwheat plant, but in general when someone says “*soba*” it refers to cuisines made of buckwheat noodles. Most people unaccustomed to the culture of the country are slightly shocked upon seeing and hearing Japanese people eating buckwheat noodles. That is because it is customary to vigorously and audibly slurp the noodles when you eat them. The onomatopoeia for this slurping sound is “zuruzuru”.

[How people eat *soba*]

Zuru  
Zuru...

Step 1

Grasp part of the *soba* noodles with your chopsticks, and dip part of the noodles in broth.



Step 2

Slurp down the *soba* noodles all at once. The key to doing this is to scoop up small bites at a time.



Soba cups and bottles

Special dishes are used for the cold *soba* broth. The broth is poured from a special bottle into a cup called a *soba-choko*.

The advanced technological skills and painstaking work that goes into Japanese buckwheat noodles

More than a few countries traditionally use buckwheat as a food source. In Europe, for example, buckwheat is made into crepes, porridges, and short pastas in France, Italy, and Russia. In Asia, in addition to thin crepe-like flatbreads eaten in Nepal,

buckwheat noodles are consumed in China, South Korea, and North Korea. The noodles are most commonly produced by squeezing well-kneaded buckwheat dough through small holes. In Japan, on the other hand, noodles are made with a traditional method called *teuchi*, which literally translates as “hand-kneaded”. The kneaded dough is flattened out into a thin layer, folded, then thinly sliced into noodles.

Evidence suggests that the methods to make *teuchi* *soba* noodles eaten in Japan today go back to the 16th or 17th centuries. Today, there are approximately 29,000 restaurants in Japan that specialize in *soba*. These restaurants vary widely in format and price range, from seat-less stalls on train platforms to high-

priced, multi-course *soba* restaurants. The *soba* noodles offered by lower-end restaurants are most commonly produced by squeeze-type noodle machines, but the restaurants that offer the simplest standard *soba* dish, which is called *mori* and costs 700 yen or more, generally use hand-kneaded *soba*. Hand-kneading not only requires skill, but it is time- and labor-intensive, which is why it demands prices



Wasabi (Japanese horseradish) and green onion generally accompany *soba* that is served cold. People generally partially dissolve the wasabi paste into the broth before eating.

Wasabi

The basics of menus in *soba* noodle restaurants

*Soba* noodle restaurants generally serve cold *soba*, *hotsoba* and side dishes.

Mori

The standard cold *soba* is called *mori*, *zaru*, or *seiro*. These cold noodles are dipped in cold thick broths. There are also styles of eating in which cold noodles are dipped in hot broth, or noodles already in broth are served with toppings.



Tempura *soba*

Hot *soba* is placed in broth that is just the right concentration to consume on its own. On top of this are served various varieties of toppings, including *tempura*.



Sake and snacks

Proper *soba* restaurants also serve *sake*. Fish sausage with high-end wasabi and soy sauce (called *itawasa*), fluffy scrambled eggs flavored with broth called *dashimaki-tamago*, are common side dishes. Proper connoisseurs of *soba* restaurants first enjoy these dishes with *sake*, then finish off with a dish of *soba*.

es higher than machine-produced noodles. Even so, as long as prices are not prohibitively expensive, most Japanese are willing to pay the extra for the pleasing texture and distinctive delicate flavor of hand-kneaded *soba*.

Slurping enhances the olfactory experience

Etiquette-wise, it is proper to slurp *soba* audibly. In fact, it is deemed more “orthodox” when eating *soba* to slurp it than to try to eat it quietly. The flavor of *soba* is not meant to be derived from thorough chewing. It is a particular kind of food whose proper appreciation requires a specific firmness, a smooth feel when swallowed, and an enjoyable aroma. By slurping the noodles together with the sur-

rounding air, one can strongly appreciate the aroma from the nostrils remaining from the “slurp and gulp” of the noodles.

*Soba* restaurants are places where you can also enjoy the extracted soups and soy sauce unique to Japanese cuisine. The soups, which are made from dried kelp and bonito flakes (shaved from bonito fish that are smoked, desiccated, and fermented) are extremely rich in flavor and aroma. Soups like this are flavored with soy sauce to make a broth for the noodles. The talent of *soba* chefs is also largely dependent upon how well they are able to create broths that bring out the subtle flavors of the *soba*.

October is when the buckwheat plants are harvested. Newly-harvested *soba* plants are particularly valued



Boiled *soba* water

At some restaurants, you will be served in a container the water used to boil the cold *soba* you have just finished eaten. This water is rich in the nutrients of the *soba* for which it was used. It is common to use this water—heated or kept hot by the proprietor—to dilute the *soba* broth, in order to enjoy every last drop.

for their strong aroma. *Soba* restaurants are especially crowded with “slurping” Japanese consumers in the fall who are there to enjoy the bounties of this season.

# MITSUI ELASTOMERS SINGAPORE



**In a bid to respond to the rapidly growing demand for its products, MITSUI ELASTOMERS SINGAPORE PTE LTD decided to build a new plant with the aim of doubling its production capacity. For construction of the control system for bolstering production, the Company actively addressed process improvements by drawing on the experiences accumulated through the operation of the existing plant, thus achieving further improvement of efficiency of production processes.**

**Decision to construct a new plant in order to double the production capacity**

Jurong Island in Singapore is one of the world's leading petroleum refining clusters. On this island, which measures approximately 32 km<sup>2</sup> in area, huge petrochemical complexes have been established, where the plants of global players in related fields are processing petroleum and producing industrial petrochemical products. Since April 2003 MITSUI ELASTOMERS SINGAPORE PTE LTD (MELS) has been



Harmonas-DEO installed in the central monitoring room monitors both Plant No. 1 and Plant No. 2.

operating a plant on Jurong Island for the production of Tafmer\* (alpha-olefin copolymer) and other elastomer products. Tafmer is a resin characterized by its flexibility. By blending with other resins such as polyethylene and polypropylene, impact resistance is improved and it is used in various applications, including automobile bumpers as well as packaging materials, cable sheaths, and mid-soles for sports shoes.

In response to the rapidly growing demand for its products in recent years, particularly in the Asian region, MELS decided in July 2007 to revamp its production facilities with the aim of doubling its production capacity. The Company initiated a project to construct a new second plant to augment the existing Plant No. 1. For construction of Plant No. 2, MELS invited Azbil Singapore (ASG), an overseas affiliate of Yamatake, as a partner and selected Yamatake's Harmonas-DEO™ "Harmonized Automation System-Dependable

Open" and related control instruments for the distributed control system (DCS) that supports the plant's production processes.

"Since we use Yamatake's DCS products in Plant No. 1, we know from our own experiences that Yamatake's products are highly reliable. I think it is only natural to select products of ASG and Yamatake because they allow us to continue utilizing our operators' skills," said Mr. Ohori.

**Renewal of two systems in pursuit of greater functionality**

In conjunction with the construction of Plant No. 2, MELS also launched a project for upgrading the existing Plant Information System (PIS) and modeling system in Plant No. 1. The PIS manages the recipe information of each product grade and transmits the information at the time of production for the control of pressure and temperature. In addition, it



Client terminal of the TSS (Thin client Supervisory Server) server/client system installed in the office. MELS installed the TSS in order to check and operate the monitoring/control screen of the Harmonas-DEO from locations outside the central monitoring room.

collects production data from the DCS and verifies whether production has been executed according to the instructions.

MELS produces Tafmer of various grades continuously using a single facility. To change product grades, a series of processes had to be performed before. First, the recipe was changed, and the product was actually produced. Then, the manufactured product was taken to the laboratory where its physical properties, such as viscosity, were verified for conformity with the specification for the particular product grade. In other words, it was necessary to actually manufacture a product to find out whether its physical properties meet the requirements for the particular grade of product to be manufactured next.

In view of this, MELS had been developing a system based on a modeling tool for estimating the physical properties of a product during production by collecting and analyzing various process data, instead of actually measuring the physical properties of the manufactured product. However, during the process of operating the system, it was faced with various problems, such as high cost, future use of the system, and specification issues. Therefore, MELS decided to replace the existing tool with Yamatake's dataFOREST™ data mining tool in order to solve the problems.

"If we could accurately predict the physical properties of a product without actually analyzing the actual product, we would be able to significantly reduce the time required for adjusting operating conditions to the next product grade. The virtual sensor technology incorporated in the dataFOREST answers our need in the most suitable way," said Ms. Wasuntarawat.

**Promoting further improvement of production processes for stable operation and product quality control**

For the Plant No. 2 project, Yamatake provided the software and hardware as it did so for Plant No. 1, except for the PIS whose construction was subcontracted entirely to Yamatake, while MELS conducted engineering and programming tasks themselves in accordance with their production needs.

"The fact that we could easily perform the engineering work ourselves was also a major advantage of using Yamatake products," commented Mr. Li.

MELS's Plant No. 2 began operation in March 2010. Stable operation of the DCS and PIS systems enabled the Company to achieve its original target of doubling its production capacity.

"When installing the systems in Plant No. 2, we drew on our experiences of operating Plant No. 1 and have improved the automation sequences implemented in the DCS. As a result, while the commencement of Plant No. 1 required nine support members from Japan, the number of support members dispatched from Japan for the startup of Plant No. 2 was only two, and the rest was handled by local personnel," said Mr. Ohori.

"Both plants have been operating 24 hours a day, 365 days a year. Stopping plant operations due to any problem will have a huge impact on our business. If any system problem should occur, we can call ASG. Its service personnel will come to the plant immediately and solve the problem in a short time. We can count on their excellent support," said Mr. Kuah.



Screen on the client terminal of the PREXION installed in the office. This terminal displays the history and trend data of the production facilities' operating status, which are used to investigate the cause should a problem occur. MELS installed the PREXION in Plant No. 1 and also decided to install it in Plant No. 2. This tool is also utilized in making process improvements.

**MITSUI ELASTOMERS SINGAPORE PTE LTD**



Plant location  
701 Ayer Merbau Road Singapore 627853  
Established  
February 7, 2001  
Business scope  
Manufacture and sales of elastomer products



Mr. Yoshiji Ohori  
Director and General Manager  
Plant



Mr. Li Shi Wei  
Manager  
Engineering Department



Mr. Kuah Hsian Yang  
Manager  
Production Department



Ms. Parinda Wasuntarawat  
Senior Engineer  
Technical Department

MELS intends to further drive the improvement of production processes in the future for continuous and stable plant operation and product quality control, by fully utilizing the newly installed systems.

"We are about to discuss the possibility of constructing another plant, although nothing is decided at present. Should another new plant project become reality, there is no doubt that ASG will be the most promising partner candidate for the configuration of the control system for that plant. We look forward to ASG's support to our production activities through its outstanding support and product capabilities," said Mr. Ohori.

\*Tafmer is a registered trademark of Mitsui Chemicals, Inc.

## Spearheading the azbil Group's Business in the Life Science Market Based on Advanced Technological Capabilities

In May 2009, BioVigilant Systems, Inc. in the United States made a new start as a member of the azbil Group. BioVigilant's IMD-A system is attracting considerable attention given its potential to revolutionize environmental air monitoring for microbial contamination in pharmaceutical manufacturing processes. Based on its cutting-edge technologies, BioVigilant plays a key role in the azbil Group's business endeavors in the life science market\* and delivers diverse value to customers.

### Technology for national security applications utilized for the development of consumer products

In July 2008, BioVigilant Systems, Inc. ("BV") signed a contract with Yamatake for the sales of its original product, the IMD-A™ system in the Japanese market. Subsequently, in May 2009, Yamatake purchased approxi-

mately 70% of BV shares, thus acquiring the management rights to BV. Consequently, BV made a new start as a member of the azbil Group.

Yamatake began handling BV's product in 2003, when BV was a new venture company established for the purpose of developing products for national security against bioterrorism and biological warfare. Yamatake's researcher, who was residing in the United States at the time in search of new technologies and business opportunities, came upon the idea to utilize BV's advanced optical and bio-sensing technologies in air-quality control products or solutions in the building automation field. As concrete collaboration between the two companies took shape, BV began shifting the focus of its technology application from the field of national security to

pharmaceuticals and other consumer product fields, which led to the development of the IMD-A system.

### Product developed with proprietary technology revolutionizes microbial detection and monitoring

The IMD-A system automatically detects airborne microbes (bacteria and fungi) in real-time when it is set up in an area requiring environmental air monitoring such as a pharmaceutical research or manufacturing facility. Conventional microbial detection is based on a culturing method using agar, which was developed 150 years ago by Louis Pasteur, a French microbiologist known as the "father of modern bacteriology." The conventional method normally takes several days to one week to complete microbial growth and also requires an experienced specialist to assess the results.



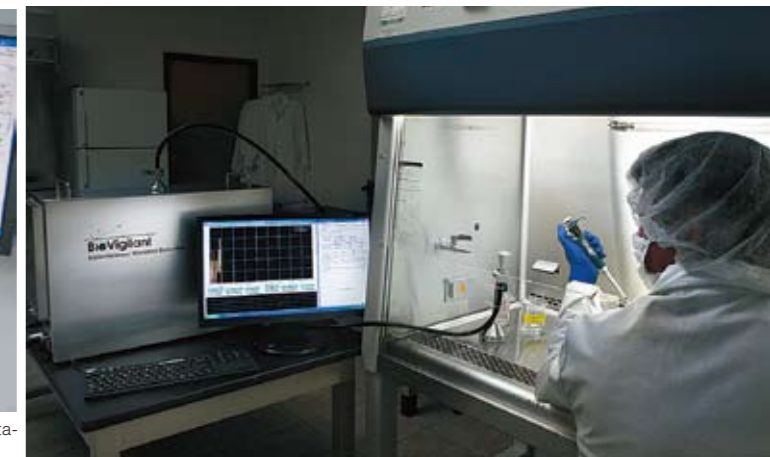
Bacteria cultured by the method that has been used since being developed by Louis Pasteur



**Aric Meares**  
CEO  
BioVigilant Systems, Inc.



The IMD-A system automatically detects airborne microbes instantaneously and (bacteria and fungi) in real-time.



Furthermore, since it involves human intervention, the measurement results could be affected by microbes brought in by humans, and the potential for human error must also be taken into consideration.

The IMD-A system, on the other hand, detects the presence of bacteria by detecting the fluorescence emitted by proteins and amino acids exposed to laser light that are necessary for microbial metabolism, and by distinguishing whether a particle is inert material or a microbe. Since the IMD-A system performs measurements automatically, it allows a suitably-trained technician to perform microbial monitoring easily in real-time, while eliminating the potential impact of human-originated bacteria that could affect conventional culturing methods. Moreover, the system's continuous measurement capability enables constant monitoring, which is another of its advantages.

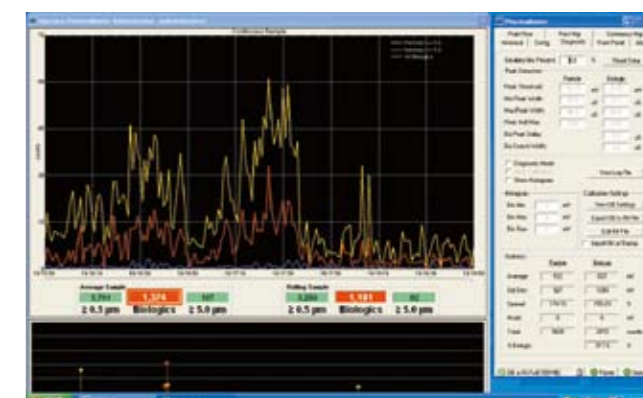
The IMD-A platform has ushered in a new microbial detection method that revolutionizes environmental air monitoring. In September 2008, BV submitted Drug Master Files (DMF) to the U.S. Food and Drug Administration (FDA) for its IMD-A series. This has drawn even greater attention from many companies, including the world's leading pharmaceutical companies operating on a global scale. Many pharmaceutical companies have been using the IMD-A system on a trial basis and are assessing its application in manufactur-

ing lines. As such, the full-scale use of the system in manufacturing facilities is expected to expand during the period from 2011 to 2012.

Meanwhile, BV is developing new products based on its superb optical and bio-sensing technologies. The present IMD-A system detects airborne microbes. For pharmaceutical, beverage and semiconductor manufacturing processes using pure water, the need to detect microbes in water has been growing. BV plans to introduce a product to meet that need soon.

### Active collaboration creates synergetic effects in various business facets

As mentioned initially, BV has been engaging in business as a member of the azbil Group since May 2009, and there has been increasing personal exchange and joint development between BV and Yamatake. The advanced collaboration between the two companies has created synergetic effects in various business aspects. While BV started as a venture company with cutting-edge technologies and capable of achieving market breakthroughs, Yamatake boasts expertise in prod-



The number of microbes detected by the IMD-A system can be confirmed on the PC screen.

uct manufacturing and quality control accumulated over many years of operation as a leading manufacturer in the building automation and industrial automation fields. By combining the strengths of both companies in a mutually complementary way, BV will continue to supply advanced and high-quality products to the market.

As a member of the azbil Group charged with the responsibility to explore business opportunities in the life science market actively addressed by the Group, BV is committed to delivering diverse value to customers based on its state-of-the-art technology.

\*IMD-A is a registered trademark or trademark of U.S.-based BioVigilant Systems, Inc. in the United States and other countries.

※ Market for research and production in medical, pharmaceutical and biotechnology fields

## ■ BioVigilant Unveils New Rapid Environmental Monitoring Systems to Pharmaceutical Drug Makers

BioVigilant Systems, Inc. of the azbil Group in June introduced its next-generation IMD-A™ family of rapid biologic detection systems for real-time environmental air monitoring in pharmaceutical manufacturing areas.

BioVigilant's IMD-A 300 and IMD-A 350 systems can detect immediately the presence of bacteria, in contrast to traditional culture-based methods, which can take as long as one week. As a result, IMD-A systems can greatly accelerate the quality assurance processes for pharmaceutical drug batch release.

Based on the principles of Mie

[URL](http://www.biovigilant.com/) http://www.biovigilant.com/

Scattering and the intrinsic fluorescence of microorganisms, the IMD-A 300/350 systems use laser light to simultaneously distinguish an inert particle from a biologic particle, on a single particle basis. The process begins with the IMD-A system drawing in a sample of air. IMD-A 300 samples 1.15 liters of air per minute while IMD-A 350 samples 28.3 liters per minute. Inert and biologic particles are then grouped into one of six bins and displayed in PharmaMaster™, the systems' software application and user interface. This application offers different levels of functionality, and allows for a library

of test profiles to be created, each with its own alert and action levels to address a range of process environments.



※ IMD-A, PharmaMaster are the trademarks or registered trademarks of BioVigilant Systems, Inc. in the United States and/or other countries.

## ■ ACTIVAL PLUS Reduces Energy Consumed by Building HVAC Systems

ACTIVAL PLUS is a next-generation control valve that consists of a conventional control valve and flow rate and calorimetric calculation functions using temperature and pressure measurement instruments. Installation of ACTIVAL PLUS reduces the energy consumed by air handling unit (AHU) by detecting and eliminating any control inaccuracies that were previously difficult to grasp.

ACTIVAL PLUS is well-received as a valve that provides both enhanced comfort and energy-saving performance, and has been installed in many new office buildings since its introduction.

Yamatake continues to develop and offer products that achieve energy conservation and improve comfort in buildings, and contribute to the preservation of the global environment.



### Features:

- Energy conservation  
By maintaining the optimum flow rate according to the air conditioning load, ACTIVAL PLUS prevents excess flow to reduce pump power consumption.
- Integrated energy control function  
By integrating the control valve with temperature, pressure, flow rate and calorimetric measurement functions, ACTIVAL PLUS realizes space-saving installation and equipment cost saving, and comprehensive energy management for each HVAC system.
- Improved control performance  
ACTIVAL PLUS is capable of maintaining optimum control of the chilled water flow rate in each AHU even if the differential pressure before and after the control valve fluctuates.

※ ACTIVAL is a trademark of Yamatake Corporation.

### Japan

- Yamatake Corporation • Yamatake & Co., Ltd.
- Yamatake Control Products Co., Ltd.
- Yamatake Friendly Co., Ltd. • Yamatake Care-Net Co., Ltd.
- Safety Service Center Co., Ltd.
- SecurityFriday Co., Ltd. • Hara Engineering Co., Ltd.
- Kimmon Manufacturing Co., Ltd.
- Yamatake Mizuho Co., Ltd. • Royal Controls Co., Ltd.
- Taishin Co., Ltd. • Tem-tech Lab.

### Overseas

- Azbil Korea Co., Ltd. • Azbil Taiwan Co., Ltd.
- Azbil Kimmon Technology Corporation
- Azbil Vietnam Co., Ltd. • Azbil India Pvt. Ltd.
- Azbil (Thailand) Co., Ltd. • Azbil Philippines Corporation
- Azbil Malaysia Sdn. Bhd. • Azbil Singapore Pte. Ltd.
- PT. Azbil Berca Indonesia • Azbil Control Instruments (Dalian) Co., Ltd.
- Azbil Information Technology Center (Dalian) Co., Ltd.
- Yamatake Environmental Control Technology (Beijing) Co., Ltd.
- Azbil Control Solutions (Shanghai) Co., Ltd.
- Shanghai Azbil Automation Co., Ltd.
- Azbil Hong Kong Limited
- Yamatake Automation Products (Shanghai) Co., Ltd.
- Azbil North America, Inc. • BioVigilant Systems, Inc.
- Azbil Brazil Ltd. • Azbil Europe NV

### <Branch/Office>