

Issue 02/2012

Highlights:

**Prestigious European Premiere:
HORIBA Unveils MEXA-ONE**

**Interview with Atsushi Horiba,
Chairman, President and CEO**



Dear readers,
Hybrid Electric Vehicles (HEVs) have been available for more than two decades and are becoming a strategic part of all major OEM's product portfolio.

The problems encountered with combining an internal combustion engine with an electric motor and battery have created challenges for manufacturers and legislators – for example on how to test powertrain units as well as complete vehicles for representative and accurate emissions plus fuel economy measurement.

Even though our industry has made substantial developments and enhancements in HEV technology, it still faces major challenges as the market improvement depends on OEMs and government bodies creating the environment for a sustainable sector model.

To meet some of these challenges, HORIBA provides not only high performance chassis dynamometers and E-drive test systems but also exhaust gas analyzers capable of meeting the customers' demand for ever more precise measuring. Our latest innovation and addition to our extensive portfolio, the MEXA-ONE, which we presented at this year's Testing Expo in Stuttgart, offers a future-proof solution for all kinds of exhaust gas analysing and also serves the growing demand for HEV testing.

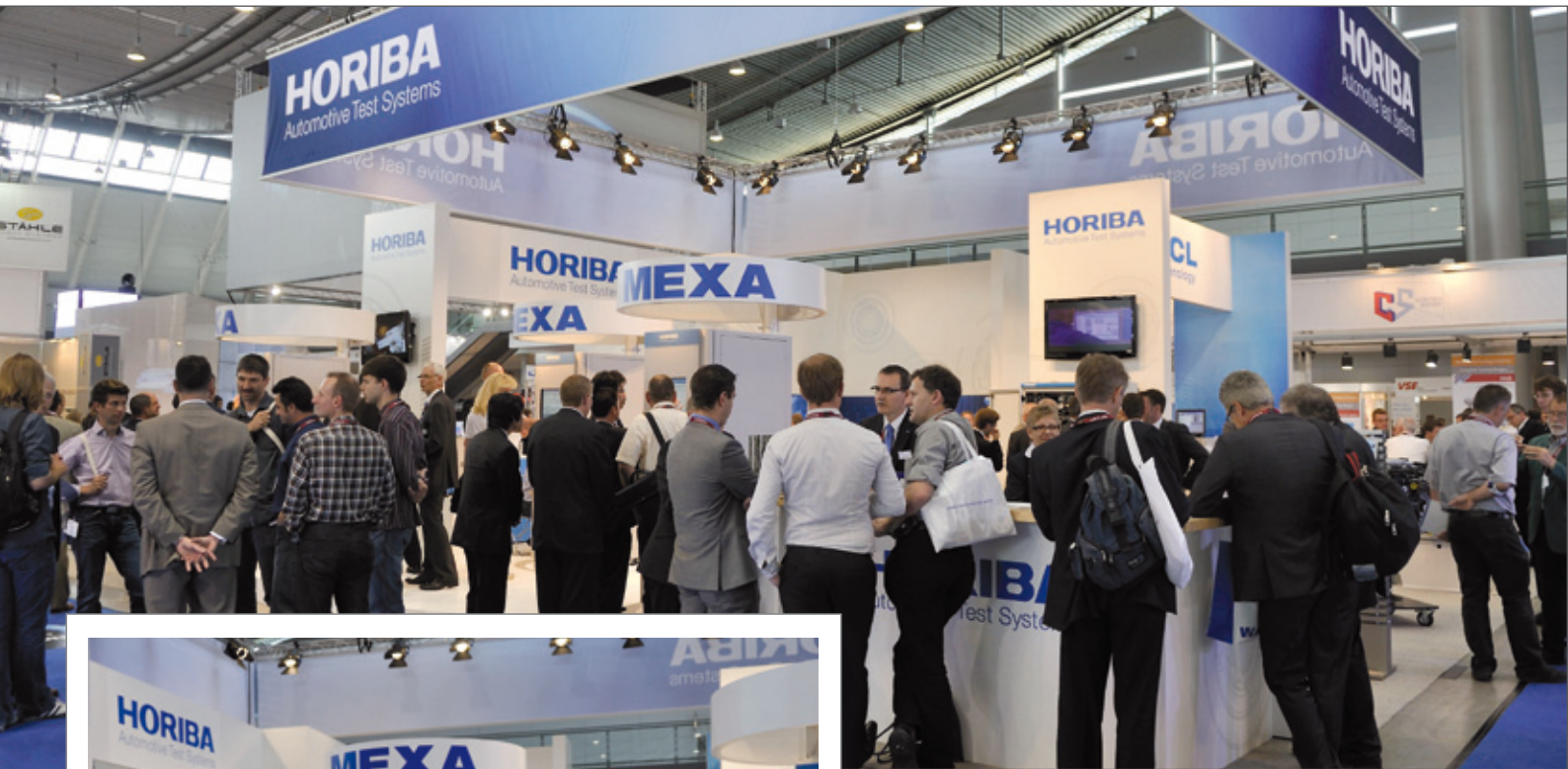
See for yourself how HORIBA supports you with its recent technological innovations and enjoy reading our latest issue.

Yours, Jonathan Eaton
Vice President Business Development & Marketing
Automotive Test Systems



HORIBA Unveils MEXA-ONE

Prestigious European Premiere at the Testing Expo



Mr. Atsushi Horiba, Dr. Hiroshi Nakamura and Jean-Pierre Surin at the MEXA-ONE premiere

For three days, from June 12th to June 14th, HORIBA participated in the 14th Automotive Testing Expo Europe. More than two hundred exhibitors in multiple fields presented themselves and their latest innovations in Stuttgart, Germany; many of them seizing the opportunity to launch new products. HORIBA's anticipated launch event followed an intriguing media campaign. Located in Hall 1 at booth

number #1512, HORIBA presented a wide range of exhibits including 2012's most important product, MEXA-ONE. HORIBA tiles designed with the recognisable MEXA-ONE curve graphics were placed on the ground to guide visitors directly to the booth. The booth itself then became a platform for many rich expert discussions.

Product Track Record Continues

The first day of the event was dedicated to the European premiere of the MEXA-ONE unveiled by Mr. Atsushi Horiba, Chairman, President and CEO of HORIBA Ltd. Three MEXA-ONE systems were simultaneously exposed. After the welcoming speech and the revelation of MEXA-ONE, joint Global Segment Leaders of HORIBA, Mr. Jean-Pierre Surin and Dr. Hiroshi Nakamura, presented some introductory information on the MEXA series. The MEXA-ONE will continue the success of the previous versions with over 8,500 units supplied to emission laboratories and test cells worldwide so far. The latest version of the MEXA product series contains increased accuracy and reliability that make MEXA-ONE the next genera-

tion in emissions measurement technology. The new product is the result of a continuous development process and follows the footsteps of the world-class MEXA-7000 series.

50 Years of Know-how

After the introduction, Dr. Hiroshi Nakamura, also Global Manager R&D Automotive Test Systems, gave a technical presentation on the MEXA-ONE. The emission measurement system is capable of supporting a wide range of sampling requirements for raw exhaust, dilute exhaust, and EGR. HORIBA's new top model achieves faster response times, shorter test times and features lower total costs of ownership. The improved overall testing efficiency supports an accelerated engine and vehicle development. Besides the technical improvements, there have also been changes regarding the design of the MEXA-ONE. The new front access system simplifies maintenance and analyzer adjustments resulting in higher user efficiency and allows users to increase laboratory layouts effectively. More information, facts and features about the MEXA-ONE can be found within this ESPRIT issue. At the finale of the product launch guests were invited to participate in a champagne toast and indulge in MEXA-ONE shaped pretzels.

Successful Products

During the three days of the Automotive Testing Expo, HORIBA showcased a variety of new and well-proven products to the public. The MEXA-ONE premiere was at the heart of the booth design, but visitors could also take interest in the innovative MEXA-1400QL-NX utilizing quantum cascade laser technology, which allows the real-time simultaneous measurement of four nitrogen components in motor exhaust gas (NO, NO₂, NH₃, N₂O).

Also on show was the latest generation of DYNAS₃ asynchronous machine which has been specifically designed for the high speed and starting torque of electrically driven engines. Alongside this the FQ-2100DP Fuel Flow Meter by HORIBA offers a Flex Fuel compatible system. It provides accurate measuring results at low fuel consumptions of small-sized engines as well as at maximum consumption rates of large-sized engines. The FQ-2100DP Fuel Flow Meter covers various fuel types and fuel flow rates from 0.2 l/h to 220 l/h and is therefore a versatile solution for modern engine testing.

On Board with HORIBA

After another demanding but rewarding day at the exhibition, HORIBA organized a boat trip on the River Neckar, a chance to talk outside a professional setting.

On board of the "MS Wilhelma", valuable customers and Horibarians enjoyed casual conversation and were provided with food and drinks in a relaxing atmosphere. That is until the football! The exciting group match between Germany and the Netherlands in the UEFA European Football Championship was displayed on a large screen for all to enjoy. As the game came to a close with a 2-1 victory for Germany, it was clear that the result did not dampen anybody's fun on this evening.

After three interesting and hard-working exhibition days, the feedback has been very positive for both visitors and HORIBA employees. All agree that the Automotive Testing Expo 2012 has been a huge success.



Mr. Horiba presenting the MEXA shaped pretzels



Enjoying the football match on board with HORIBA

Interview

“We are continuing to technologies”



Atsushi Horiba
Chairman, President and CEO of HORIBA, Ltd.

Born in 1948 as son of the company's founder in Kyoto, Japan, Atsushi Horiba early started his carrier at HORIBA. From 1971, he worked at OLSON-HORIBA Inc. as a service engineer and later transferred to HORIBA International Corp. and HORIBA Instruments Inc. in the USA. Afterwards, he returned to Kyoto as Manager of Overseas Technical Service Dept. of HORIBA, Ltd. In 1992, Atsushi Horiba became President and CEO and in 2005, he took on the additional role of Chairman.

Interview

invest in future testing

Mr. Horiba, what are your expectations regarding the market development of automotive test systems worldwide?

My expectations are positive due to several aspects: the further development of the OEMs' product portfolios; with the introduction of more and more technology, the different emission regulations globally, combined with the development of zero emission vehicles and hybrid vehicles, as well as optimized gasoline engines. The tasks for OEM testing engineers are complex and, for saving cost and development time, it is highly necessary to minimize testing and down time for customers especially.

Could you specify your general expectations regarding the different global markets – Europe, Asia and the Americas?

Europe, as the second largest market is a key place for us because many global OEMs and a number of major competitors of HORIBA are based here. Our latest product, MEXA-ONE, launched in June at the Testing Expo, is very important for the European market due to its capabilities regarding improving testing efficiency. Compared to conventional systems, the new analyzer achieves a 50 percent reduction in analyzer response times and a 30 percent reduction in calibration waiting times.

The Asian region, especially China and India, is a strong growing market. I am very optimistic for China in the mid-term, Chinese OEMs will start to develop and market their own high-tech engines for export purposes. And for those engines, the OEMs need further testing capabilities.

Our home country Japan has recently recovered from the earthquake disaster of 2011. Even if our market share in Japan is already very large, I am expecting further good business opportunities there too. A significant number of emission test systems has to be re-

placed – partly due to stringent regulations – which is another big chance for our new analyzer.

As it is investing a lot in the automotive industry, India plays a significant role and is a large and important market for HORIBA. A short time ago, I travelled there and visited some key customers in India. In order to meet the demands of our local customers, we founded HORIBA India Ltd. in 2007. From one engineer originally, the company has around 100 employees only five years later. In this rapidly growing market, the number of engineers is limited. That means the organizations are competing for the best. For us, it is important that we can support our Indian team with the best service and technology.

Regarding the Americas, we are confident to defend our very strong market position there. Nevertheless we will give our competitors some chances, as competition is our motivation for further development. HORIBA is following its clients. That is why we have strong R&D centres in America, Europe and Japan. In the near future, we will establish one in Shanghai for China.

What is your vision for HORIBA's future?

The automotive business is shifting to energy efficient vehicles. The question is how we can support our clients with the best testing solutions for this purpose. In the future, I am expecting a market share for EVs of 20 percent at maximum. The other engines will be diesel, gasoline or hybrid engines. And, as especially hybrids require large testing efforts, it is obvious that both engines; gasoline and electric, need to cooperate smoothly and comfortably.

HORIBA will face a strong growth rate in the future. Our well proven emission testing solutions will especially help to bring us a big advantage on the market. Our mechatronics systems business is showing strong growth rates too. We are continuing to invest in future testing technologies as, for us, continuity is the key.

MEXA-ONE – the New Emission Measurement

MEXA-ONE represents the industry standard in analytical system technology based on HORIBA's 50 years of experience in motor exhaust gas analysis. Launched at 2012 Automotive Testing Expo, the MEXA-ONE can achieve up to 50 percent reduction in analyzer response times and a further 30 percent reduction in analyzer calibration times compared to conventional analysis systems. In addition, consumables such as filters and calibration gas, as well as power

consumption could be significantly reduced. The MEXA-ONE modular and compact design offers a highly flexible system that facilitates easy adaption to each customer's specific requirements.

Multi-Point Sampling

Depending on the selected system specification, features such as multi-point real-time analysis of a variety of exhaust components enable a single MEXA-ONE to measure from multiple points, eliminating multiple tests. Consequently, emission laboratories benefit from improved testing efficiency and shorter development programs. Additionally, the application range has been extended by MEXA-ONE and new measurement technologies are now possible, including:

- Evaluation of NO_x after-treatment catalyst systems
- Close-coupled transient EGR measurement
- Multi-point EGR measurement.

High Variability and Dependability

The overall performance of MEXA-ONE has been further improved and new configuration possibilities offer a variety of different system line-ups for a broad range of testing scenarios. Apart from the space saving "One Rack" solution (comprising a single MEXA-ONE cabinet), the system setup can be combined with various other separate units for a multitude of system line-ups and maximum flexibility. For example, the system allows the combination of cold and heated analyzers, as well as a combined heated/cold sample-handling system inside one rack. HORIBA's innovative new front access design for the MEXA-ONE reduces the required floor space by up to 30 percent, allowing test laboratories to benefit from increased operation availability through shorter maintenance time.

The HORIBA MEXA-ONE series is today's most advanced exhaust gas analytical system representing tomorrow's standard for automotive emissions testing. Built on nearly half a century of customer trust in our innovative, purpose designed systems, HORIBA is committed to maintaining MEXA-ONE as the utmost in quality, dependability and durability.

HORIBA ONE PLATFORM

With HORIBA ONE PLATFORM, the test system supplier provides a new integrated operating platform. It is a powerful operating platform for MEXA-ONE and other devices, and has been spe-

MEXA-ONE System Line-ups

- One rack (cold sample-handling system and analyzer module in main cabinet)
- One rack (cold analyzer, heated analyzer and combined heated/cold sample handling system in main cabinet)
- One rack + heated analyzer (OVN)
- One rack + heated sample-handling system

Benefits

- 100 % HORIBA core technology
- Nearly half a century of experience in emissions measurement
- Continuous and stable measurement
- Increased test efficiency
- Improved test facility operation
- Wide application range
- Compact design / front access
- Reduction of required floor space
- Integrated operating platform
- Selectable systems for all measurement applications

Main Features

- New measurement technologies
- Faster response and shorter testing times
 - Up to 50 % reduction in analyzer response time*
 - Up to 30 % reduction in analyzer calibration waiting time*
 - Optimization of analyzer purging times
- Lower maintenance costs
 - Up to 10 % reduction in power consumption*
 - Up to 30 % reduction in analyzer calibration gas consumption*
- Simultaneous multi-point sampling and measurement (application dependent)
- Easy integration of your existing HORIBA equipment

* compared with HORIBA's conventional products.

World Standard for Systems

cifically designed to provide emission laboratories and test cells with all the tools needed for efficient everyday emissions measurement. The platform covers applications for R&D (Research and Development), Certification Tests and Real World Tests and allows the integration of various emission measurement devices into a single controller. HORIBA ONE PLATFORM is a high-performance all-in-one software solution and acts as Device Management Controller (DMC).

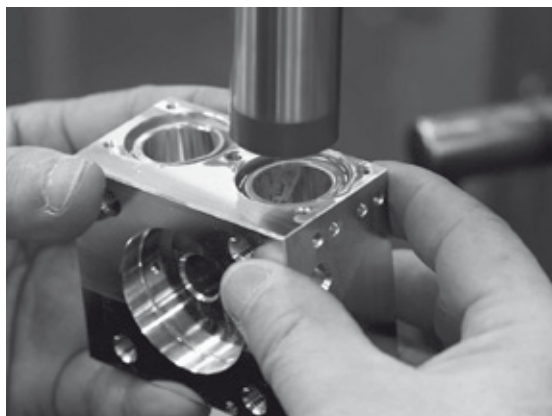
New Features

HORIBA engineers expanded existing functions with a variety of new features, such as automated daily operation, status display of connected devices and help message functions. In addition, the new intuitive and touch-sensitive graphical user interface (GUI) enables users to visualize the device operation and offers detailed operation guidance. An on-demand remote maintenance function is also included.

The flexible and powerful operating platform integrates a wide range of measurement equipment including HORIBA legacy products as well as new and future equipment. Continuous maintenance and updates in response to industry needs and technology advancements keep your measurement equipment always up-to-date.

Powerful Combination

MEXA-ONE and HORIBA ONE PLATFORM are the systems of choice for reliable and sustainable emissions measurement along with outstanding usability. The latest innovations in emissions measurement technology not only enhance the overall testing efficiency but – with improved compatibility and expandability – represent a future-proof investment for your emissions laboratory or test cell.



HORIBA ONE PLATFORM FEATURES:

- Centralized management and control of all test cell functions
- Expandability / easy integration of additional features
- Wide range of measuring applications, such as
 - SULEV measurement
 - LDV measurement
 - HDD measurement
 - Non-road engine measurement
 - High-precision fuel economy measurement
 - Calibration of engines and ECU
 - Evaluation of after-treatment devices
 - Evaluation of alternative fuels
- High scalability, compatibility and standardization
 - Easy plug in/out of different devices
 - Uniform interface
 - Remote access
 - Maintenance
 - Device sharing
 - Multilingual
- And much more



HORIBA Welcomes a New Family Member

*Official opening
ceremony in Olomouc,
Czech Republic*

In October 2012, HORIBA proudly opened its latest manufacturing facility in Olomouc, Czech Republic. With Executive Management visiting from the HORIBA head office in Japan, an official ribbon-cutting ceremony took place. Dr. Kozo Ishida, Mr. Juichi Saito and Mr. Takashi Nagano were amongst the management who assisted in the introduction of the new branch office.

This new office will help to expand the manufacturing capabilities within Europe in order to meet the growing needs that are demanded by HORIBA's mechatronics business.

New Centre of Competence

The facility in Olomouc encompasses a centre of competence for chassis dynamometer production

and engineering. Located in the Eastern area of the Czech Republic, the new branch office already contributes to the HORIBA Group, conducting engineering work for all other mechatronics product groups.

In his ceremony speech, Dr. Ishida, Executive Vice President of HORIBA, expressed his confidence that the new location will become a leading facility for the production of chassis dynamometers. Beyond that, he is certain that Olomouc will have a big role in contributing to HORIBA Europe's growth in earnings. The facility is expected to grow and be superior in quality.

With more than 50 guests invited, the HORIBA Czech team enjoyed celebrating the opening ceremony together.

*Centre of competence for
chassis dynamometers*



Success Story

HORIBA Sold 1,000th DYNAS Machine for Engine Testing

In 2012, Hyundai, South Korea ordered and received the 1,000th DYNAS machine from HORIBA; sold for engine testing purposes to its customers. For this momentous occasion, Mr. Hark-Ryul Lee, Director at HORIBA Korea, presented Hyundai a plaque and thanked the company for its commitment to HORIBA's products.

In 1990, HORIBA laid the foundation of a very successful product with its DYNAS asynchronous machines for engine testing purposes. Approximately two decades later, more than 1,000 units have been sold, proving the global success of HORIBA's DYNAS machines in a broad range of engine test applications. Today, the asynchronous machines are in use in 35 countries globally. Starting in 2000, the latest version entered the market; the DYNAS₃. These machines are especially suited for use in engine test stands and powertrain test stands and provide universal support for all tasks in the steady-state, transient and dynamic testing range. Thus, the DYNAS₃ poses an important tool in the development and testing of combustion engines, electric engines and assemblies. Nearly every application in the field of engine testing can be performed on a test stand with DYNAS₃.



Driving for Charity

HORIBA has sponsored a team from Trymax for next year's ScanCovaryTrial; a motorsport event across Scandinavia. Participating teams cover a distance of 7000 kilometres and are exposed to rough weather conditions. Elements such as snow, ice and temperatures of below minus 40 degrees Celsius are involved in the race. By sponsoring this particular event HORIBA lives up to its reputation as a socially responsible global player: 10 percent of the registration fees are donated to the KWF Kankerbestrijding, a charity supporting cancer patients. The event will take place from 4th to 12th January 2013. To follow the HORIBA sponsored cars from Trymax and their drivers Ludo Vandenberk and Leo Meijer, see <http://team7.scanct.nl/>.



HORIBA Celebrates 40 Years of Presence in Europe



On a sunny autumn day in early October, HORIBA Europe celebrated its 40th anniversary. Employees from Darmstadt, Oberursel, Leichlingen and Stuttgart were invited to the office in Darmstadt. Chairman, President and CEO, Mr. Atsushi Horiba visited Germany for this special occasion, heightened by HORIBA's success in the European market. It was an event to celebrate the employees as well as the company.

40 Years in Germany

Mr. Horiba cordially welcomed around 270 Horibarians and emphasized the joyful nature of the event. Under the slogan "Past and Present: 1972-2012", Mr. Hiroshi Kawamura, Executive Vice President of HORIBA Europe, gave the audience an overview of the company's development in Germany. The pictures that accompanied his speech depicted the best of the company's growth. With the manpower of only three employees and a shared capital of EUR 81,500, HORIBA gained a foothold in Frankfurt in 1972. It was only 20 years later that the company's success

story was right on track; HORIBA's manpower had already grown to 85 employees and the sales volume was EUR 20.5 million. In 2002, the company's sales volume had more than doubled (EUR 47 million). With locations in Oberursel, Darmstadt, Leichlingen and Stuttgart, Japan's test systems supplier is well established on German grounds today. Mr. Kawamura finished his speech by thanking the Horibarians for their commitment and loyalty to the company highlighting that it was their daily work that makes HORIBA a success.

HORIBA's International Character

After the key speech, refreshments were served and reflected HORIBA's international presence. The interior design of the canteen for this particular occasion resembled the three continents HORIBA operates on. US-flags with matching colours and fashionable plastic chairs reminded the guests of the ambience usually found in American diners. Another corner has been decorated with wooden elements; Buddhas and paper umbrellas to represent the Asian region. The food



itself also reflected the company's multi-cultural composition. For the European continent, French tarte flambée and crepes were served. German food came directly from the grill in the form of Bratwurst. US-American cuisine was featured by hamburgers, donuts and brownies. Last but not least, the course prepared in a wok represented food from the Asian continent.

Bringing Employees Together

In the forefront of the anniversary celebration, all of HORIBA Europe's departments were asked to present themselves during the event; the employees' imagination could run wild and no limits were set on creativity. The presentational formats then went from board-presentations to elaborated short films depicting certain departments. The self-presentations not only showed the range of duty and the contribution of every single department to HORIBA's overall portfolio but furthermore, the employees were given the chance to make explicit what they stand for – their philosophy, their motivation and what makes them and their co-workers special. By means of these presentations, the Horibarians not only got insights into the various departments, but were also brought closer together and engaged in lively conversations. The result was an active exchange between the employees who were able to engage in conversation more closely on a personal and furthermore on a professional level. This again depicts on one of the company's maxims, namely that interaction between employees and departments not only rewards HORIBA but also its customers.



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