

Content

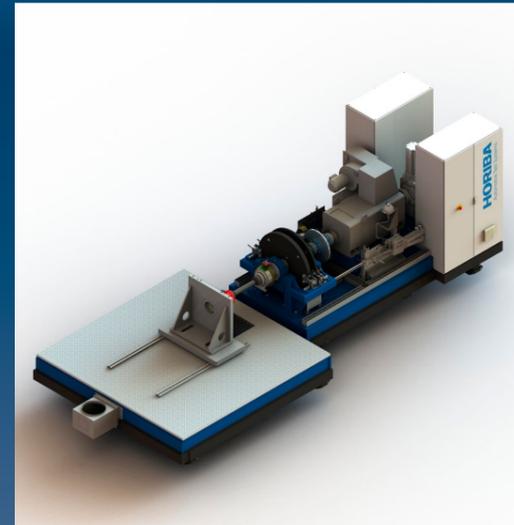
Content



**HORIBA
CONCEPT
Europe 2015**

Science and practical application go hand in hand at the 4th edition of CONCEPT (Conference for Combustion, Emissions, Particulates and Testing)

3-4



**Brake test
system
GIANT Evo**

The latest solution by HORIBA

5



**HORIBA on
the road**

Portable Emissions Measurement System OBS-ONE

6



**Review and
outlook**

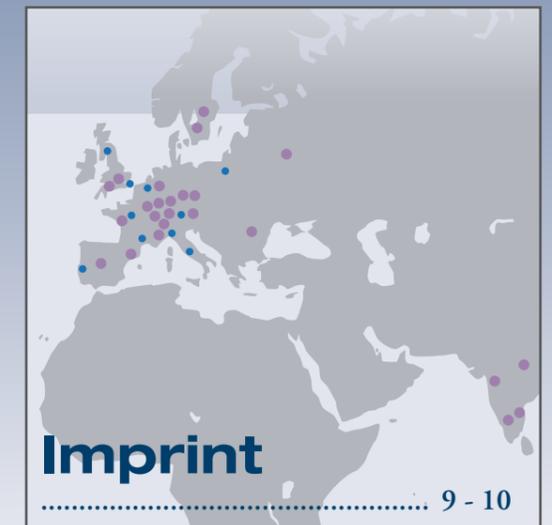
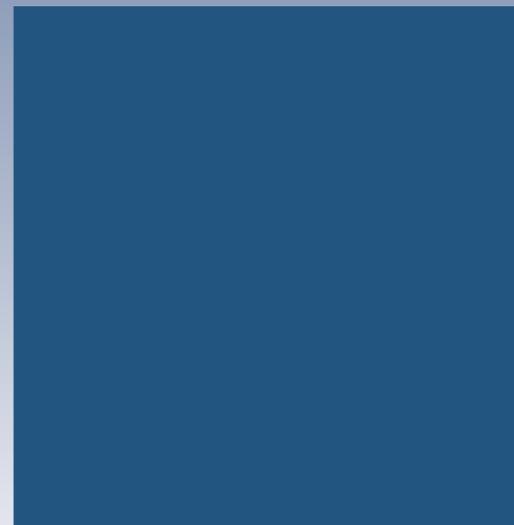
The market in 2014 and 2015
Five Questions for Markus Bode

7



**News, dates
and events
at a glance**

8



9 - 10

NAVIGATION

- Content
- CONCEPT Europe 2015
- Brake test system
- GIANT Evo
- OBS-ONE
- on the road
- Interview
- Markus Bode
- News
- Imprint

HORIBA CONCEPT Europe 2015

Science and practical application go hand in hand at the 4th edition of CONCEPT (Conference for Combustion, Emissions, Particulates and Testing)

Dresden University of Technology, on May 6th and 7th

Infos and Registration:
www.horiba.com/automotive-test-systems

Interview with Prof. Dr.-Ing. Günther Prokop, Chair of Automotive Engineering at the Dresden University of Technology, and Prof. Dr. Marcus Rieker, Director Academic Affairs at HORIBA.

What is the Conference for Combustion, Emissions, Particulates and Testing all about?

The 4th Annual CONCEPT Conference will discuss scientific topics with customers and other interested persons. We intend to focus on the scientific nature of these topics and the transfer of know-how. For us, feedback from industry is very important and we are eager to learn. Speakers from the USA, Germany and the whole of Europe will underline the international orientation of the conference.



Prof. Dr.-Ing. Günther Prokop

Which topic will probably interest the participants the most?

Three areas are particularly relevant at present, and the conference will be structured accordingly. The subject area of Real Driving Emissions will focus on legislative emission requirements and initial field reports connected with the measurement of emissions on the road. Under the heading "Integration of Testing and Simulation", the conference will elaborate on the vehicle development process, interdependencies between different parts and the relationship between testing on the



Prof. Dr. Marcus Rieker

rig, testing on the road, and simulations. The main focus in the third area, "Validation of Safety Critical Total Vehicle Functions", will be on road safety and vehicle assistance systems, as well as simulation and test methods for evaluation purposes.

What keynote speeches will be featured?

Brendan Shaffer, Senior Scientist at the University of California, Irvine, and Technology Manager of Advanced Power and Energy Program (APEP), will discuss how to put renewable technologies, including electricity and hydrogen, onto the road as well as the necessary infrastructure and suitable methods of measurement. Prof. Dr.-Ing. Bernhard Bäker, the Chair of Automotive Mechatronics at Dresden University of Technology, will report on the interesting topic of "Flying Cars Will Follow Later – Mechatronic Vehicle Tests in 2020". The third keynote speech entitled "Disruptive Technologies for Travel - An Automotive Perspective" will be presented by Chris Reeves, Commercial Manager - Intelligent Mobility & Future Transport Technologies at MIRA Ltd. It will cover two important trends in industry: the constantly increasing degree of automation and the rapid expansion of vehicle connectivity.

The event is being jointly organized by HORIBA and the Dresden University of Technology. What is the background for this collaboration?

The scientific approach itself suggests cooperation between the manufacturer and a notable university. In addition, HORIBA and the Dresden University of Technology have been working together closely for a year now. For example, in the development of test rigs. Joint realization by the two partners was therefore a logical step.

Why should we not miss CONCEPT 2015?

The conference will offer a wide range of topics, including some that reach beyond day-to-day business. The opportunity to network on an international scale is also quite important. Last but not least, everyone knows that Dresden is a beautiful city.

CONFERENCE PROGRAM

HORIBA CONCEPT Conference Europe 2015

May 6th (Wednesday)

- by
- 10:00 **Arrival and Registration**
- 11:00 **Opening Speech**

1. REAL DRIVING EMISSIONS & FUTURE TRENDS IN MEASUREMENT TECHNOLOGY

- 11:30 **Keynote Speech**
 "The Fuels Required to Meet California Carbon Reduction Goals: Electricity and Hydrogen"
 Brendan Shaffer
 Senior Scientist & Technology Manager
 University of California, Irvine
- 12:30 **LUNCH BREAK**
- 13:30 **"Recent Legislative and Research Developments in Vehicle Real World Emissions"**
 Les Hill
 Global Product Planning
 HORIBA Ltd.
- 14:00 **"CO₂ Emissions over the WLTP Test Cycle (WLTC), NEDC and TP-75 - Practical Considerations, Experimental Observations and Trends"**
 Piotr Bielaczyc
 Department Manager Engine Research
 BOSMAL Ltd.
- 14:30 **"Capabilities and Challenges of Mobile Emissions Measurement for North American Heavy-Duty Diesel Engines"**
 Thomas McKinley
 System Integration & Validation Chief Engineer
 Cummins, Inc.
- 15:00 **"Real Driving on the High-Dynamic Engine Test Bench - Approaches and Methods"**
 Dipl.-Ing. Robert Walter
 Faculty of Combustion Engines
 Dresden University of Technology
- 15:30 **COFFEE BREAK**

2. INTEGRATION OF TESTING & SIMULATION

- 16:00 **Keynote Speech**
 "Flying Cars Will Follow Later - Mechatronic Vehicle Tests in 2020"
 Prof. Dr.-Ing. Bernhard Bäker
 Ordinary for Vehicle Mechatronics
 Dresden University of Technology

19:00 EVENING EVENT



May 7th (Thursday)

- 9:00 **"Quality Assured Parameterization of Total Vehicle Simulation Models in Handling and Ride"**
 Prof. Dr.- Ing. Günther Prokop
 Ordinary for Automotive Engineering
 Dresden University of Technology
- 9:30 **"Implementation of Advanced Vehicle Development on Test System Solutions - A Cooperation between HORIBA and Dresden University of Technology"**
 Dr. Stefan Bender
 General Manager Product Line Powertrain & Chassis
 HORIBA Europe GmbH
- 10:00 **COFFEE BREAK**
- 10:30 **"Experimental Evaluation of Chassis Systems in Terms of Vibration Behavior"**
 Dr. Michael Wegscheider
 Consultant Structural Durability
 BMW Group
- 11:00 **"Model-based Drivability Application at the Example of the Load Shock"**
 Yagiz Dursun
 Test Engineering
 Daimler AG
- 11:30 **"Improving Fuel Economy Predictions Through Vehicle Simulations at the Test Cells"**
 Dr. Tara L. Hemami
 Director Engineering & System Performance Analysis
 Cummins, Inc.
- 12:00 **"Test Data Management for Integrated Physical and Virtual Security Based on open MDM"**
 Dr. Thomas Schmidt
 Process & Method Development, Testing Collaboration
 Audi AG
- 12:30 **LUNCH BREAK**

3. VALIDATION OF SAFETY CRITICAL VEHICLE FUNCTIONS

- 13:30 **Keynote Speech**
 "Disruptive Technologies for Travel - An Automotive Perspective"
 Chris Reeves
 Commercial Manager Future Transport Technologies
 MIRA Ltd
- 14:30 **"Testing of the Electric Vehicle in the Project Visio.M"**
 Dipl.-Ing. Patrick Stenner
 Institute of Automotive Technologies
 Technical University Munich
- 15:00 **COFFEE BREAK**
- 15:30 **"Longitudinal-Acceleration Control Method for ADAS Responding to Preceding Car Information"**
 Heiko Almannshofer
 Researcher Transportation Energy & Environment
 Hitachi Europe GmbH
- 16:00 **"Multidisciplinary Development of a Driving Simulator with Autostereoscopic Visualization for the Integrated Development of Driver Assistance Systems"**
 Dipl.-Ing. Cornelia Lex
 Scientific Project Researcher
 Graz University of Technology
- 16:30 **Closing Speech**

NAVIGATION

- Content
- CONCEPT Europe
- 2015
- Brake test system
- GIANT Evo
- OBS-ONE
- on the road
- Interview
- Markus Bode
- News
- Imprint

Brake test system GIANT Evo

The latest solution by HORIBA

The continuous improvement and development of brake systems makes a significant contribution to road safety. In this regard, reliable test devices are important components in research and development. HORIBA has had more than 90 years of experience in the production of brake test benches that fulfill this goal and are themselves constantly being expanded and improved. On the basis of this skill set, HORIBA has just introduced the newest product line addition: GIANT Evo. The name itself is derived from the word “evolution” to meet the current and emerging demands of the market.



Applications

This new test system is suitable for small and compact cars, midsize SUVs and large limousines. It is designed to meet the requirements of the automotive mass market in particular. GIANT Evo has a modular design, is easy to transport, and quick to install. Customers can choose between four powerful alternatives.

SAE Brake Colloquium 2014 in San Francisco. *Giant Evo NVH*
A team from Germany, and USA, Michigan was on-site at all times to discuss this new technology, which was completely designed and built at the HORIBA site in Darmstadt.

HORIBA GIANT Evo can also be viewed on YouTube:
<https://www.youtube.com/watch?v=WLgycycYr0>

Testing Expo China

GIANT Evo Performance is the most compact test bench of all. It is optimized for performance tests and allows the functional testing of brake systems. GIANT Evo Universal is a test system for performance testing and basic NVH analysis of the brakes. Numerous add-ons mean it can be extended at any time. GIANT Evo NVH is the largest test bench of the GIANT Evo family and is suitable for basic noise investigations as well as sophisticated NVH analyses. GIANT Evo NVH Pure is designed to be housed in a custom environment.

World premiere dates

The product family was first presented at the Automotive Testing Expo China in Shanghai. Shanghai was chosen as the place to premiere the product because China is one of the most dynamic markets in the automotive industry. A second appearance immediately followed at the



Further information:
<http://www.horiba.com/automotive-test-systems/products/mechatronic-systems/brake-test-systems/>



HORIBA on the Road

Portable Emission Measurement System OBS-ONE

The new Euro 6 exhaust regulations for passenger cars, with tightened standards and measurement parameters for diesel vehicles in particular, have been in force since September 1st, 2014. Now diesel vehicles are not allowed to produce more than 80 milligrams of nitrous oxides per kilometer. Against this background, car manufacturers must take measurements inside the engine and work on efficient exhaust aftertreatment. Legislative authorities in Europe and America have announced even stricter requirements for 2017, which will focus on emissions occurring under real driving conditions and commonly known as Real Driving Emissions (RDE).

New European Driving Cycle (NEDC)

Manufacturers are currently providing evidence that their vehicles meet the requirements by means of a standardized method called the New European Driving Cycle (NEDC) which requires testing to be conducted under sterile laboratory conditions. The problem is that this method is based on an average profile and often does not correspond with the actual use of a vehicle. Short-distance driving and city traffic are not adequately taken into account. Speeds of over 120 km/h and additional fuel consumption,

for example for the air-conditioning system, are usually not measured at all.

The PEMS approach

The discrepancies between average laboratory results and actual emissions are now to be addressed using Portable Emissions Measurement Systems (PEMS). HORIBA offers solutions of this kind and has expanded its portfolio of on-board measurement systems consistently over the past few years. The latest product in this field, the OBS-ONE, is a comprehensive system that allows measurements to be made according to all US EPA and EU regulations. It measures concentrations of emissions, exhaust flow rate, GPS data and environmental conditions and calculates mass emissions. The first devices have already been sold. HORIBA demonstrates the diversity of the product with a test vehicle that interested parties can try out on request. It is equipped with an OBS-ONE, so they can see for themselves how efficiently the product works.



Further information:
<http://www.horiba.com/automotive-test-systems/products/emission-measurement-systems/on-board-systems/details/on-board-emissions-measurement-system-obs-one-series-23645/>

Interview

NAVIGATION

- Content
- CONCEPT Europe
- 2015
- Brake test system
- GIANT Evo
- OBS-ONE
- on the road
- Interview
- Markus Bode
- News
- Imprint

Review and outlook: The market in 2014 and 2015

Five questions for Markus Bode, HORIBA ATS regional segment leader and Sales Director Europe



The financial year 2014 is now officially closed. What were the main developments?

The business was very encouraging for us. In Europe, we faced a remarkable willingness to invest, especially in Scandinavia, Benelux, and Southern Europe. The MCT (Mechatronics) segment, which is of great importance for the German location, benefited most from the steady momentum in China.

What topics will you, and the industry, focus on in 2015?

We supply systems, functionalities and solutions used by customers to continually optimize resources and increase efficiency. Resource optimization and increased efficiency are the key words, regardless of

the business segment. This applies equally for MCT (Mechatronics), EMS (Emission Measurement Systems) and TAS (Test Automation Systems).

HORIBA is positioning itself as a provider of world-class products, but also as a comprehensive solution provider. Can you explain this?

We are a company that fully supports its customers as an expert for specific applications. Whether we are talking about the World Harmonized Light Test Procedure (WLTP), noise, vibration or real driving emissions – HORIBA will provide solutions. For this purpose, we build the best possible equipment and technical devices. That is not all, however. We also extend our portfolio by investing in partnerships.

Can you give us a concrete example?

A good example is the cooperation agreement we signed with the Technical University of Dresden last December. Together, we want to meet the demands of future mobility, which will no doubt make better use of resources and be more energy-efficient. We are dealing with innovative, integrated controller systems and modules.

Finally, you became responsible for marketing activities in Europe at the end of 2014. What changes can we expect to see in the near future?

I don't want to reveal too much. But why not increase our impact by leveraging the unique position of HORIBA and coordinating activities belonging to different business sectors? In addition to the automotive industry, HORIBA's activities also range from medicine and environmental protection to scientific work with applications, instruments, and systems. Furthermore, the web will certainly play a greater role in marketing in the future.

News

News, dates and events at a glance

HORIBA cooperates with the Technical University of Dresden



The two partners at the contract signing

In an agreement signed in late 2014, both sides agreed that HORIBA will equip the Institute for Automotive Technology Dresden (IAD) with modern test bench technology and the corresponding know-how. At the Institute

of Automotive Technologies Dresden - of the Faculty of Transportation Sciences „Friedrich List“, TU Dresden concentrates its activities on the subjects of vehicle technology and individual mobility.

SAE 2015 World Congress & Exhibition



This year's SAE World Congress, under the motto „Leading Mobility Innovation“, takes place in Detroit, USA, from April 21 – 23, 2015. Matthias Schröder, Manager Emission

Engineering Global Product Planning Group of HORIBA, will present an exciting topic: an “Investigation of the Influencing Parameters Using Optimized Exhaust Emissions Measurement Systems with Different Modern Plug-in Hybrid Electrical Vehicles.” Previously, on March 18, he will be giving a talk on this topic at the Stuttgart International Symposium Automotive and Engine Technology of the FKFS (Research Institute of Automotive Engineering and Vehicle Engines Stuttgart).

HORIBA Sweden with new office in Gothenburg



Since last December, HORIBA ATS can be found at a new address in Sweden. The new contact details: HORIBA Europe GmbH filial Sverige, Grimboåsen 10A, SE-41749 Gothenburg, Sweden. This new, upgraded facility reflects HORIBA's significant investment in additional services for Scandinavian customers, and improved infrastructure for employees. The move to the new offices on December 11, 2014, was accompanied by a small celebration.

Further dates and events participated in by HORIBA

March 17 to 19
Automotive Testing Expo Korea 2015, Seoul, Korea.

April 21 to 23
SAE 2015 World Congress & Exhibition, Detroit, USA.

May 4 to 6
EuroBrake 2015, Dresden, Germany. With a presentation by Michael Wirtz, HORIBA: Inertia Brake Dynamometer Dust Particle Measurement, Wednesday, May 6, 2015, Technical Sessions, Environmental Influences (13:50–15:30).

May 6 and 7
HORIBA CONCEPT Europe 2015, Dresden, Germany.

May 20 to 22
JSAE 2015 Automotive Engineering Exposition, Yokohama, Japan.

June 16 to 18
Automotive Testing Expo Europe 2015, Stuttgart, Germany.

September 15 to 17
Automotive Testing Expo China 2015, Shanghai, China.

Contacts to HORIBA

NAVIGATION

- Content
- CONCEPT Europe
- 2015
- Brake test system
- GIANT Evo
- OBS-ONE
- on the road
- Interview
- Markus Bode
- News
- Imprint

HORIBA Europe GmbH

Head Office
Hans-Mess-Str. 6
D-61440 Oberursel, Germany
Phone: +49 (0) 6172 1396-0

Darmstadt Office
Landwehrstraße 55
D-64293 Darmstadt, Germany
Phone: +49 (0) 6151 5000-0

HORIBA Europe GmbH filial Sverige
Grimboåsen 10A
SE-41749 Göteborg, Sweden
Phone: +46 (0) 10 1611 500

HORIBA Europe GmbH - org. složka
Železniční 7
772 00 Olomouc
Czech Republic
Phone: +420 588 118 377

HORIBA Benelux
Science Park Eindhoven 5080
(Industrial park "Ekkersrijt")
5692 EA, Son, Netherlands
Phone: +31 (0) 40 2900-240

HORIBA JOBIN YVON
SRL-ATS DIVISION
Torino Office
Strada Torino 43
10043 Orbassano, Italy
Phone: +39 (0) 11 904-0601

İstanbul Office
Küçükbakkalköy Mah.
Kayışdağı Cad.,
Flora Residence No:3/2504
Ataşehir/İstanbul 34750 Turkey
Phone: +90 (216) 572 1166

HORIBA GmbH

Head Office
Kaplanstraße 5
A-3430 Tulln, Austria
Phone: +43 (0) 2272 65225

Tulln Sucursala Pitesti
B-dul REPUBLICII, Nr. 38,
Bloc 2 IRTA, Scara A, Etaj 3,
Ap. 11, PITESTI, 110011,
Judetul Arges, Romania
Phone: +40 (0) 348 807117

HORIBA UK Limited
Northampton Office, Kyoto Close
Moulton Park, Northampton
NN3 6FL, UK
Phone: +44 (0) 1604 542-500

HORIBA France S.A.R.L.
12, Avenue des Tropiques
Hightech Sud
F-91955 Les Ulis, France
Phone: +33 (0) 1 69 29 96 23

HORIBA OOO
Head Office
Building 5, h.13, Altufievskoe shosse
Moscow, 127106, Russia
Phone: +7 495 221-87-71

HORIBA Europe Automation
Division GmbH
Neuhausen Facility
Zabergäustr. 3
D-73765 Neuhausen, Germany
Phone: +49 (0) 7158 933-300

Imprint

HORIBA Europe GmbH
Head Office
Hans-Mess-Str. 6
61440 Oberursel, Germany
Phone: +49 (0) 6172-1396-0
Fax: +49 (0) 6172-1373-85
E-Mail: sales.hade@eu.horiba.com
Internet: www.horiba.com

HORIBA Europe GmbH
Darmstadt Office
Landwehrstr. 55
64293 Darmstadt, Germany
Phone: +49 (0) 6151-5000-0
Fax: +49 (0) 6151-5000-3865
E-Mail: sales.hade@eu.horiba.com
Internet: www.horiba.com

Text and Design:
TEXT-COM GmbH
Ziegelhüttenweg 4
65232 Taunusstein, Germany
Phone: +49 (0) 6128 8537-50
Fax: +49 (0) 6128 8537-59
E-Mail: office@text-com.de
Internet: www.text-com.de

Responsible for the content: Markus Bode