



## Programme

Ricardo Motorcycle Conference 3.0  
Riding Future Technologies

**7<sup>th</sup> November 2016**  
**Milan**

# Scientific Board



## **Prof. Dr. Angelo Onorati – Politecnico di Milano, Department of Energy**

Professor at the Department of Energy of Politecnico di Milano. Since 2004, he is a member of SAE (Society of Automotive Engineers) and of the editorial board of the International Journal of Engine Research. In April 2011 he received the Lloyd L. Withrow distinguished speaker SAE award. Currently he coordinates the activities of the Internal Combustion Engine Group at Politecnico di Milano, working in the field of internal combustion engine CFD modeling and simulation. During the last decade he has carried out industrial research projects with MV Agusta, Piaggio, Lafranconi Silencers, Aprilia and Husqvarna.

## **Paul Etheridge – Head of Strategy Motorcycle & Urban Mobility at Ricardo**

Paul joined Ricardo in 1978, becoming Head of Motorcycle Engineering in November 2012. Paul bought his first motorcycle at the age of 10, and since that time has owned more than 60 different road bikes, rebuilding and repairing many of them along the way. With over 25 years' experience in the motorcycle industry, Paul has gained particular expertise in the development of a wide range of different motorcycle engines, leading multiple motorcycle engineering programmes during his career. He was a member of the World Super Bike team between 2004 and 2006.

## **Geoff Liersch – Head of Two-Wheeler & Powersports at BOSCH**

Geoff's career has always been within the Automotive Industry. In 2005 he joined Bosch Australia in the Body Electronic group. Having held various positions worldwide in the body electronic area he is now responsible for Two-Wheeler & Powersports unit within BOSCH as Senior Managing Officer. He is currently located at BOSCH Corporation Japan. Geoff is also active as a director of the Society of Automotive Engineers – Australasia. Having grown up on a farm in Australia his first bike was given to him at an age of just 4 years old and he's still a keen motorcycle rider today.

# Welcome!

On Monday 7th November 2016, the Ricardo Motorcycle Conference 3.0, will take place for the third time, bringing together top global motorcycle industry experts in Milan the day before EICMA 2016 opens its doors to the industry.



The conference will pick up again on a number of topics focusing on the current trends and future drivers of the motorcycle and urban mobility world. We are excited to announce that our keynote speech will be delivered by Vinay Harne, President of New Product Development at TVS Motor, India.

This year will also see the addition of an interactive 'Expert Dialogue' to the main conference programme. Specialists from automotive and motorcycle engineering will share their latest technologies and develop ideas in conjunction with delegates as to when and how they might be applied to future motorcycle development. Topics will be 'On Board Diagnostic for EURO 5', 'Motorcycle Vehicle Dynamics' and 'Advanced Combustion Technologies for Motorcycles' like latest innovation in boosting, direct injection and downsizing.

The conference will take place once again at the Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci, in the Sala del Cenacolo which has by now become familiar to our delegates, with the Expert Dialogues running concurrently in the Tinkering Room of the museum, close to the conference hall.

We will round off the conference with an evening event at the restaurant of Deus Ex Machina again. After last year we were tempted to ring the changes with a new venue but simply haven't found another in the city with a better motorcycle ambiance. We have already asked for an improved menu and so, you will once again have the opportunity to expand your network of like-minded people, make valuable global motorcycle industry contacts and enjoy these fascinating surroundings next to the Deus showroom and shop, situated right at the heart of motorcycle customising in Milan.

I look forward to welcoming you to the conference.

Paul Etheridge

On behalf of the scientific board

# Programme

- 08:30 **Registration**  
Reception with coffee and tea
- 10:00 **Welcome and Opening**  
Dr. Robert Hentschel, Managing Director Ricardo Motorcycle
- 10:10 **Keynote Speech**  
Vinay Harne, President of New Product Development, TVS Motor

## Emerging Technologies

Moderator: Paul Etheridge

- 10:30 **Connectivity Solutions for Two-Wheeler – A Technical Challenge**  
Christian Cosyns - Robert Bosch Car Multimedia GmbH;  
Matthias Mörbe - Robert Bosch GmbH
- 11:00 **The 'Rider Experience': Human Factors and a User-Centred Perspective for Exploring Advanced Human-Machine Interaction (HMI) Technologies for Motorcycling**  
Dr. Alex Stedmon, Dr. Siraj Shaikh, Dr. Jeremy Bryans, Dr. Dale Richards, Prof. Andrew Parkes - Coventry University, Centre for Mobility and Transport; Dipak Mistry - Ricardo Urban Mobility
- 11:30 **Side View Assist - Blind Spot Detection System for Two-Wheelers**  
Mathieu Grelaud, Michael Schoenherr - Robert Bosch GmbH

- 12:00 **Lunch**

## Powertrain Technologies

Moderator: Prof. Dr. Angelo Onorati

- 13:30 **Potential of Different Injection Systems for High Performance Two-Stroke Engines**  
Nigel Foxhall, Walter Hinterberger - BRP-Rotax GmbH & Co KG;  
Dr. Franz Winkler, Roland Oswald - Technical University Graz
- 14:00 **A 1-D Engine Model in Dyno Testing for Residual Gas and Dilution Tolerance Response Modeling**  
Nathan Haugle, Jeff Bickle - Harley-Davidson Motor Company
- 14:30 **AMT – Automated Manual Transmission for Motorcycle**  
Stefano Di Palma, Giovanni Costa, Stefano Granvillano - Ricardo Motorcycle

Expert Dialogue  
Advanced Combustion  
Technologies for Motorcycles

Expert Dialogue  
Motorcycle  
Vehicle Dynamics

15:00 **Euro 5 Effect Study for L-Category Vehicles (Two- or Three-Wheel Vehicles and Small Quadricycles)**  
Dr. Alessandro A. Zardini, Giorgio Martini - European Commission - Joint Research Centre (JRC), Sustainable Transport Unit, Institute for Energy and Transport

15:30 **Coffee Break**

### **Vehicle Technologies**

Moderator: Geoff Liersch

16:15 **Integrated Numerical and Experimental Approach for the Battery Safety Evaluation of Electric Driven Motorcycles**  
Christian Ellersdorfer, Alessio Sevarin, Dr. techn. Ernst Tomasch, Ass. Prof. Dr. techn. Wolfgang Sinz - Graz University of Technology, Vehicle Safety Institute; Arno Ebner, Nina Deitermann, Martin Forster - KTM AG

16:45 **Parametric Modelling, Simulation and Validation of Lithium Ion Batteries for Temperature Rise Prediction in HEV**  
Balaji Ravichandran Vignesh - University of Warwick, WMG

17:15 **Motorcycle Suspensions Optimal Design Based on Riding Comfort Objectification Criteria**  
Dr. Elisabetta Leo , Dr. Marco Ezio Pezzola, Niccolò Taroni - Soluzioni Ingegneria; Prof. Dr. Federico Cheli - Politecnico di Milano, Department of Mechanic

17:45 **Development Process of Ducati XDiavel**  
Simone Di Piazza, Pierluigi Zampieri - Ducati Motor Holding S.p.A.

18:15 **Summary of the Expert Dialogues**

18:30 **Closing Remarks**  
Dr. Robert Hentschel, Managing Director Ricardo Motorcycle

**Transfer to Deus ex machina**

19:30 **Dinner and Evening Event**

Expert Dialogue  
On Board Diagnostic for EURO 5

# Event



## About the Conference

Each year in November, motorcycle developers from all over the globe travel to Milan to take part in EICMA, the world's largest motorcycle exhibition. Ricardo contributes its expertise and passion for motorcycling to that industry throughout the world but had yet to find a conference with a clear and genuine focus on integrated motorcycle development, and so the idea was born among the biking enthusiasts at Ricardo to provide a vehicle to bring together global engineering capabilities.

This took the form of the inaugural Ricardo Motorcycle Conference, which took place in 2014. The Conference endorsed the clear message: It's about connecting like-minded people all over the world – not a barely concealed selling event! During the one-day conference we discuss the challenges, directions and trends of future two-wheelers, learn about local legislative restrictions and afford everybody the opportunity to develop their personal network in smaller and more intimate surroundings prior to EICMA, the biggest motorcycle trade show in the world.

Due to the fact that the time slot available for the conference is strictly limited – feedback from our participants has confirmed this over the last two years – this year an 'Expert Dialogue' will also run in parallel to the main conference, bringing together automotive engineering experts and motorcycle and urban mobility developers.



## About Ricardo

Ricardo has a long history in motorcycle engineering, dating back to the 1920s. Its earliest associations include Triumph (4 valves cylinder head in 1921), Vauxhall (complete motorcycle in 1922) and Harley Davidson (combustion system in 1934).

The Ricardo motorcycle group was formalised in 1992 to provide a dedicated, specialist technical resource and to grow the business (at that time based in the United Kingdom). Since then the Ricardo team has completed more than 300 motorcycle projects for more than 70 different clients in engine, transmission, driveline, vehicle and control and electronics. The Centre of Competence for motorcycle engineering is today located at Schwaebisch Gmuend in the South of Germany and it is from there that a dedicated team organises the Ricardo Motorcycle Conference.

In November 2014, Ricardo Motorcycle was created by incorporating another United Kingdom specialist consultancy (formerly Vepro Ltd) and subsequently in summer 2016, after years of good collaboration, Ricardo acquired the full operations and assets of Exnovo Srl in Italy to form the Rimini Technical Centre. This now firmly establishes Ricardo Motorcycle as the first 'one-stop shop' for complete motorcycle engineering and development.

# Conditions

## Registration fee

€ 550,- plus VAT

This price includes conference documentation, refreshments, lunch and evening event.

## Venue

Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci  
Via San Vittore 21  
20123 Milan, Italy

Deus Café  
Via Thaon di Revel 3  
20159 Milan, Italy

## Please send the registration form by E-mail, fax or post to:

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Elena Peev  
Gueglingstr. 66  
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Germany

Phone: +49 7171 9821 500

Fax: +49 7171 9821 639

E-mail: [motorcycleconference@ricardo.com](mailto:motorcycleconference@ricardo.com)  
[www.motorcycleconference.com](http://www.motorcycleconference.com)

No cancellation charge is due if registration is cancelled by 7<sup>th</sup> October 2016. Cancellations made after that date will incur a charge of 50 % of the registration fee. For cancellations made after 21<sup>st</sup> October 2016 the full registration fee is payable. Cancellations must be made in writing. The date of the postmark will determine whether the deadline has been met. We will gladly accept a replacement delegate at no extra charge.

Should a speaker be unable to attend at short notice by reason of force majeure, illness, accident or other circumstances for which Ricardo Deutschland GmbH cannot be held responsible, another qualified person will be appointed to the exclusion of any claim for compensation. Should the event be cancelled altogether, we will of course refund the registration fee.

No conference documentation may be reproduced or transferred to third parties without the express written consent of Ricardo Deutschland GmbH. Photographing the presentation slides and taking audio and video recordings of the event are not permitted.

## Data Protection

Please be aware that your personal data will be collected, stored and processed for further internal processing, as well as for advertising purposes, according to the legal provisions of the German Data Protection Act (BDSG). We will not disclose your personal data to third parties, unless this is necessary to provide the service or to carry out the contract.

You can disagree with the data collection, storage and processing at any time by contacting [motorcycleconference@ricardo.com](mailto:motorcycleconference@ricardo.com).

# Registration

7<sup>th</sup> November 2016, Milan



I hereby confirm my participation in the Ricardo Motorcycle Conference on 7<sup>th</sup> November 2016 in Milan. I accept the conditions and the attendance fee of € 550.- plus VAT.

Title/Name: \_\_\_\_\_

Company/Institute: \_\_\_\_\_

Department: \_\_\_\_\_

Function: \_\_\_\_\_

Street/P. O. Box: \_\_\_\_\_

Postal code/City: \_\_\_\_\_

Country: \_\_\_\_\_

VAT: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Mobile: \_\_\_\_\_

E-Mail: \_\_\_\_\_

Invoice Address (if different from above address): \_\_\_\_\_

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Date

Signature