

Automobile Division

# HIGH-PERFORMANCE VEHICLES

Institution of  
**MECHANICAL  
ENGINEERS**

22 April 2010  
Prodrive, Warwickshire

**Book now:**

**[www.imeche.org/events/s1510](http://www.imeche.org/events/s1510)**



#### **ATTENDING THIS EVENT WILL HELP YOU:**

- Understand the engineering behind high-performance vehicles
- Gain knowledge of technologies and methods available that will improve vehicle performance without detracting from fuel economy
- Identify potential effects resulting from application of the technology and understand methods to mitigate the effects
- Understand the potential causes of failure to meet performance, economy and driveability targets
- Network with technical specialists and experts from the world's leading high-performance vehicle manufacturers and specialists

**Improving the world through engineering**

# HIGH-PERFORMANCE VEHICLES CAN GREEN STILL BE FAST AND FUN?

In the face of continued pressure to reduce carbon emissions through improvements in fuel economy, the high-performance vehicle is increasingly becoming public enemy number one. Despite this, the desire for high-performance vehicles and the associated enjoyment of driving remains strong. Given the future legislative and likely market pressures in this sector, this seminar aims to discuss the technical challenges of maintaining, or improving on, vehicle performance, driveability and performance-related NVH.

This one-day seminar will provide an overview of the technologies that will feature in vehicles over the coming years and how they affect performance and driveability (positively or adversely). Presentations will address how low-carbon technologies can be integrated without adversely affecting the overall performance and driveability of the vehicle – or how to mitigate the effects of the technologies.

## THIS EVENT WILL ATTRACT:

Design engineers, CAE and simulation engineers, test and development engineers, employees from OEMs, tier 1s, consultants/engineering service providers, fuel/energy companies, military and aerospace companies working on land vehicles, lightweight technologies and high-performance/high-efficiency systems

## TECHNICAL ADVANTAGES:

- Learn about the strengths and weaknesses of technologies, with respect to performance, economy and driveability
- Engage with engineers, technical specialists and industry experts from the high-performance vehicle sector
- Understand methods of integration of technologies (design, simulate, prototype, test, and produce)
- Experience current state-of-the-art solutions with a drive/demonstration of vehicles on track



AS AUTOMOBILE MANUFACTURERS CONSTANTLY SEEK THE UTOPIA OF EFFICIENT HIGH PERFORMANCE VEHICLES THEY WILL HAVE TO EXPLORE MORE EXOTIC AND CHALLENGING SOLUTIONS AND I'M SURE THAT DURING THE COURSE OF THE SEMINAR THERE WILL BE PLENTY OF OPPORTUNITY TO LEARN ABOUT THE VARIOUS TECHNOLOGIES NOW BEING ADOPTED.

**DAVID RICHARDS**  
CHAIRMAN AND CHIEF EXECUTIVE,  
PRODRIVE

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## SUPPORTING ORGANISATIONS



# HIGH-PERFORMANCE VEHICLES

22 APRIL 2010

PRODRIVE, KENILWORTH, WARWICKSHIRE, CV8 1NR

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## 09:00 REGISTRATION

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## 09:20 CHAIRMAN'S WELCOME

**James Miller, Group Quality Manager, Prodrive**

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## 09:30 ASTON MARTIN ONE-77

This presentation will cover the background to the project and how Aston Martin has combined both cutting-edge technology with traditional craftsmanship to produce the marque's definitive sports car.

**Chris Porritt, Chief Platform Manager, Aston Martin**

In 1997 Chris joined Aston Martin to set up an in-house Test and Development function on DB7 Vantage, was promoted to Vehicle Engineering Manager and supported the development activities on the Vanquish programme. In 1999 he was one of the concept team members on the VH Aston Martins – DB9 and V8 Vantage – looking after packaging and vehicle engineering initially and latterly vehicle dynamics, where his team delivered the current range of vehicles. In 2007 Chris became Chief Platform Manager for One-77 – “a once-in-a-career opportunity”.

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## 10:10 THE APPLICATION OF HYBRID TECHNOLOGIES FOR HIGH-PERFORMANCE AND PREMIUM VEHICLES

- The application of hybrid technologies for high-performance and premium vehicles
- System integration
- Performance and consistency
- Refinement
- Emissions and fuel consumption
- System control
- Future developments and enabling technologies

**Dave Rollett, Principal Engineer – Powertrain, Prodrive Automotive Technology**

Dave Rollett is a Principal Powertrain Engineer within Prodrive's Automotive Technology division, located at Banbury in the UK. He is responsible for a small team of engineers engaged in research projects centred on the analysis, control and integration of low-carbon technologies into vehicle propulsion systems.

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## 10:50 REFRESHMENT BREAK

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## 11:15 JAGUAR XFR: HIGH PERFORMANCE DRIVING ATTRIBUTES

**Andy Lowis, Powertrain Attributes, Jaguar Land Rover**

An introduction to Jaguar's latest high performance saloon car; providing an overview of key vehicle technologies and how they have been integrated, in order to deliver an outstanding driving experience to the customer.

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## 11:55 PERFORMANCE THAT DOESN'T COST THE EARTH

An insight into the subjective perception of performance and how we can exploit our knowledge to provide consumers with the experience they want without the need for high power.

- Performance feel and performance are only loosely associated
- Proven methods in powertrain can be used in vehicle dynamics
- Interpreting consumers' perception and interpretation
- Engineering the proper vehicle character

**Matthew Taylor, Principal Engineer – Dynamics, Prodrive Automotive Technology**

Matthew Taylor's experience extends back 15 years covering:

- Component stress analysis
- Chassis modal response and NVH effects
- Chassis specification, simulation and analysis
- Chassis test and response analysis
- Active and passive driveline and chassis control integration

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## 12:35 THE USE OF INFRARED TYRE PRESSURE AND TEMPERATURE MONITORING SENSORS IN TYRE AND VEHICLE PERFORMANCE DEVELOPMENT

- IRTPTMS, what is it?
- Benefits for tyre development
- Benefits for whole vehicle

**James Shingleton, Applications Engineer, Beru f1systems**

James Shingleton is a Senior Applications Engineer at motorsport engineering specialist beru f1systems and is responsible for the development of tyre pressure monitoring systems for high-performance road car and motorsport applications. Since graduating from Bristol University in 2004, he has been instrumental in the application of TPMS for OEMs, including Bugatti, Lamborghini, Aston Martin and other leading performance car brands. In 2009, James was a key member of the award-winning DigiTyre Infrared Tyre Pressure and Temperature Monitoring System development team. This unique system provides F1 teams, tyre manufacturers and chassis engineers with an accurate, real-time tyre carcass temperature measurement, as well as tyre chamber air pressure and temperature.



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### 13:15 LUNCH

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### 14:10 BENTLEY'S CONTINENTAL SUPERSPORTS ENVIRONMENTALLY RESPONSIBLE PERFORMANCE

- Bentley's approach to carbon dioxide reduction whilst maintaining brand values
- The technical challenges of applying E85

#### Mark Scott, Chassis - Powertrain Module Leader, Bentley Motors Ltd

Mark is currently the Chassis and Powertrain Module leader for the Continental product range and as such managed the introduction of the E85 Supersports program from design into production.

He has been with the Bentley Engineering department for nearly nine years and prior to this worked in the Design and Development department at Foden Trucks in Sandbach for thirteen years.

Mark has an Honours Degree in Mechanical Engineering from Wolverhampton Polytechnic and has been a chartered engineer for 17 years.

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### 14:50 TESTING PERFORMANCE VEHICLES AT JAGUAR LAND ROVER

An overview of the test procedures employed to enable to Jaguar Land Rover to validate its range of performance vehicles - from high speed testing of saloons to extreme off road testing of SUVs.

#### Julian Buckingham, Manager – Vehicle Capability & Robustness, Jaguar Land Rover

Jules is currently responsible for the Durability and Reliability Attribute for all Jaguar and Land Rover products. He has twenty eight years of experience in the automotive industry, having previously held the position of Chief Engineer, Chassis Development for the Rover group of brands. He has done extensive work on Chassis Engineering, Active Suspension Systems, Brake Design, Brake Development and Vehicle Ride & Handling development. This work has resulted in several patents in Braking and Hydro-pneumatic suspension design. In addition to this he has authored & co-authored many technical papers on braking including one on Taguchi & QFD.

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### 15:30 MAXIMISING POWER, BRAND POWER

Every aspect of vehicle engineering has the ability to communicate emotional equities and performance benefits, which can either reinforce or detract from the core brand message.

- Styling, engine and drivetrain refinement, ride/handling and dynamics, interior and HMI can be analysed using our unique and proven approach
- The Brandphonics approach can be used to ensure core values set by the programme are reinforced at every touch point, creating total brand synergy
- Adopting our tools, the result is a product that successfully delivers the brand messages through the core engineering

Our workshop will offer designers and engineers an opportunity to understand how exhaust acoustics can relate to the conceptual profiles of corresponding performance car brands.

#### David Howlett, Director, Brandphonics

David Howlett has 20 years' client-side marketing, sales and general management experience within many sectors: packaging, food, drink, paint, plastic housewares and recycling. Experience within the automotive market has come from five years with US-owned PPG as Marketing Manager for its Refinish Paint brands in Europe. Building brands that stand for something, even in the most unlikely categories, is always David's number one objective.

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### 16:10 REFRESHMENT BREAK

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### 16:20 DRIVE DEMONSTRATION

In order to assist in understanding the theory discussed throughout the day, delegates will have the opportunity to experience some of the technologies or vehicles in a practical demonstration on the test track.

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### 17:30 SEMINAR CLOSES

This programme is subject to change.



## Automobile Division

### Organising Committee:

James Miller Prodrive  
James Barry Jaguar Land-Rover

### The committee would like to thank the following supporters:

Combustion Engines & Fuels Group

# FORWARD THINKING.

## 15 APRIL 2010: ONE BIRDCAGE WALK, LONDON INTELLIGENT TRANSPORT SYSTEMS

This one-day seminar will examine the engineering and technological challenges created by developing and deploying an ITS service in the UK, and to share solutions to these challenges. With presentations by leading figures in the ITS industry, this event will provide a comprehensive update on the latest developments and technologies.

[www.imeche.org/events/s1520](http://www.imeche.org/events/s1520)

## 19-20 MAY 2010: ONE BIRDCAGE WALK, LONDON 9TH INTERNATIONAL CONFERENCE ON TURBOCHARGERS AND TURBOCHARGING

Emissions legislation and the need to reduce CO<sub>2</sub> and fuel consumption are the major market drivers in the transport and industry sectors. In these sectors, the key product is the turbocharged internal combustion (IC) engine. This international conference will cover all current aspects of design and development of turbochargers, turbocharging systems, other pressure charging devices and their associated systems.

[www.imeche.org/events/c1302](http://www.imeche.org/events/c1302)

## 8 JUNE 2010: ONE BIRDCAGE WALK, LONDON AN ENGINEER IN COURT

This one day seminar is designed to give a valuable insight into the legal responsibilities of an engineer. It is imperative that the engineer has a full understanding of the legalities surrounding their role and can maintain and produce personal records of the highest standards. With this in mind, in conjunction with Bond Solon, the UK's leading legal training consultancy for non-lawyers, this event will offer key advice on an engineer's relationship with the law.

[www.imeche.org/events/s1519](http://www.imeche.org/events/s1519)

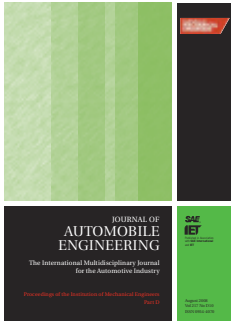
## 30 NOVEMBER 2010: ONE BIRDCAGE WALK, LONDON FUELS FOR LOW-CARBON TRANSPORTATION

The one day seminar will address the latest thinking and methods for how CO<sub>2</sub> emissions can be assessed on a well to wheels basis. Presentations will focus on the competitive and regulatory landscape for fuel and propulsion choices.

[www.imeche.org/events/s1542](http://www.imeche.org/events/s1542)

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The Institution of Mechanical Engineers is the professional body representing over 80,000 mechanical engineers worldwide. As a Learned Society, the Institution seeks to be a source of considered, balanced and impartial information

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One form per person only (forms may be photocopied)

For added convenience, you can also book online at [www.imeche.org/events/s1510](http://www.imeche.org/events/s1510)

## REGISTRATION (PLEASE COMPLETE IN CAPITALS)

Family Name	Title (Mr, Mrs, Miss etc)
First Name	Job Title
Membership No	Institution
Name of Organisation (for name badge)	
Address for Correspondence	
Town/City	
Postcode	Country
Contact Telephone	Fax
Email	
Do you have any special requirements?	
How did you hear about this event? Direct Mail <input type="checkbox"/> Website <input type="checkbox"/> Colleague <input type="checkbox"/> Other <input type="checkbox"/>	

## FEES AND CHARGES (PLEASE COMPLETE THE APPROPRIATE BOX)

Registration fees include entry to the sessions, refreshments, lunch and a copy of the event proceedings.

	Fee	VAT	Total	£
Institution of Mechanical Engineers Member	£280.00	£49.00	£329.00	_____
Member of Supporting Organisation	£280.00	£49.00	£329.00	_____
Non-Member	£340.00	£59.50	£399.50	_____
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<b>Extra Items</b>				
Invoice Charging (if applicable)	£10.00	£1.75	£11.75	_____
			Total	_____

Please do not send payment separately from this booking form.

By submitting this registration form, you will be indicating your consent to periodically receiving information on our events and publications, unless you indicate an objection to receiving such information by ticking this box

## PAYMENT DETAILS

Payment must accompany this registration form. Registration will be confirmed only on receipt of full payment.

Please indicate method of payment: Cheque  Credit Card  BACS  Invoice  (see below)

Cheques should be made payable to IMechE and crossed. Please note overseas delegates may pay only by credit card, BACS or banker's draft. A copy of the draft must accompany this form. It is the delegate's responsibility to pay any bank charges.

Credit Card: Visa  MasterCard  (please note we cannot accept American Express, Diners Club or Maestro)

Card No \_\_\_\_\_ Valid From \_\_\_/\_\_\_ Expiry Date \_\_\_/\_\_\_

Name of Cardholder \_\_\_\_\_

Billing Address of Cardholder (if different from above) \_\_\_\_\_

Postcode \_\_\_\_\_

Amount to be Deducted \_\_\_\_\_ Signature \_\_\_\_\_

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Delegates wishing to be invoiced must provide an order number. If your company does not use order numbers please include a formal request for invoicing on your company's letterhead. A charge of £10 + VAT will be made to cover additional administration costs. Invoices are payable on receipt and no alterations to these terms will be accepted.

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## Conditions of Booking

Completed application forms should be returned to the address below, along with the correct payment. Attendance at the event will be confirmed on receipt of the full balance. All participants are advised to bring a copy of their confirmation with them on the day, to ensure the fastest possible entry.

## Special Requirements

Please inform us of any special requirements ie dietary or access, on the relevant section of this form.

## Cancellation

For a refund (minus £25 + VAT admin charge), cancellations must be received at least 14 days prior to the event. Replacement delegates are welcome at any time.

## Supporting Organisations

Members of the following organisations can register at our members' rates: SMMT, LowCVP and MIA

## Venue

This event will be held at Prodrive, Kenilworth, Warwickshire CV8 1NR. Details will be sent upon registration.

## Insurance

The organisers do not accept liability for any injuries or losses of any nature incurred by delegates and/or accompanying persons, nor for loss or damage to their luggage and/or personal belongings.

## Accommodation

We have arranged special discounted rates at local hotels via the Corporate Team. Our list of hotels will be forwarded upon receipt of your registration and payment.

If you wish to contact the Corporate Team directly, please use the details below and quote ID number 8488ME

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Email: [events@corporateteam.com](mailto:events@corporateteam.com)  
[www.corporateteam.com/events/8488ME](http://www.corporateteam.com/events/8488ME)

## Enquiries

For event enquiries please call Louise McKenna on + 44(0)20 7973 1316 or email [l\\_mckenna@imeche.org](mailto:l_mckenna@imeche.org)

For registration enquiries call Tina Churcher on +44 (0)20 7973 1258 or email [t\\_churcher@imeche.org](mailto:t_churcher@imeche.org)

Complete and return this form to:  
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Fax: +44 (0)20 7222 9881

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