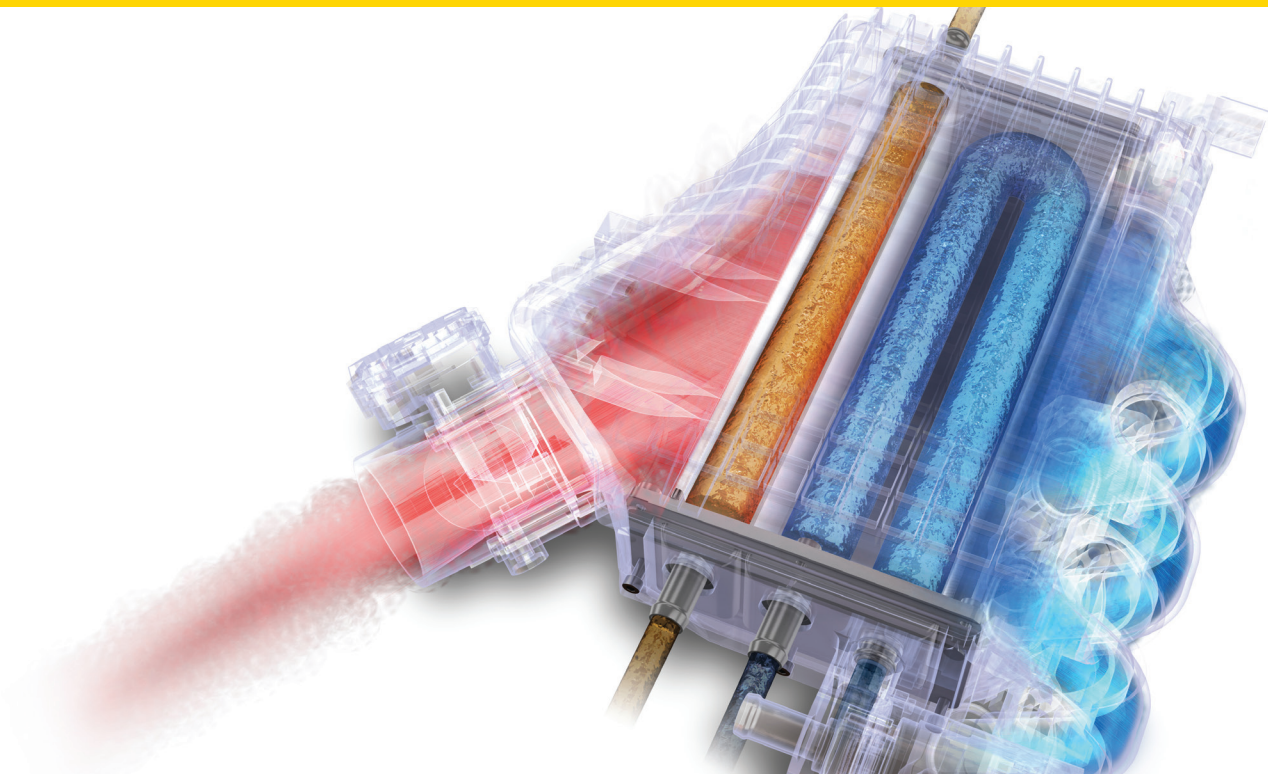


# VTMS 12 VEHICLE THERMAL MANAGEMENT SYSTEMS CONFERENCE AND EXHIBITION

Institution of  
**MECHANICAL  
ENGINEERS**

10-13 May 2015  
East Midlands Conference Centre, Nottingham  
[www.imeche.org/VTMS](http://www.imeche.org/VTMS)

CEFG/Automobile Division  
**Conference**



**EXHIBITORS:**



**DINNER SPONSOR:**

# VTMS 12

10-13 May 2015, East Midlands Conference Centre, Nottingham



**VTMS 12 WILL COVER THE LATEST RESEARCH AND TECHNOLOGICAL ADVANCES IN THE FIELD OF HEAT TRANSFER, ENERGY MANAGEMENT, THERMAL COMFORT AND THE EFFICIENT INTEGRATION AND CONTROL OF ALL THERMAL SYSTEMS WITHIN THE VEHICLE.**

## BENEFITS OF ATTENDANCE:

- **Hear** the latest developments in research on heat exchangers and components
- **Understand** the new trends and associated challenges for manufacturing
- **Study** powertrain thermal management for IC engines, HEV and EV
- **Consider** thermal management for the entire vehicle, including heating and cooling systems as well as air flow management
- **Network** with thought-leaders and companies at the forefront of VTMS technology

## EVENT PARTNERS:



## ORGANISING COMMITTEE:

Darren Butler (Chair), Nissan  
David Bridge, MIRA  
Jon Caine, Ford Motor Company  
Richard Davies, Calsonic Technology Centre Europe  
Bernd Gruenenwald, MAHLE Behr  
Thomas Heckenberger, Delphi  
Morgan Heikal, University of Brighton  
Paul Hillman, Calsonic Technology Centre Europe  
Clive Hughes, Tata Motors European Technical Centre  
Steve Jones, Bentley Motors  
Christophe Petitjean, Valeo  
Cedric Rouaud, Ricardo  
Paul Shayler, University of Nottingham  
Chris Wheelans, Jaguar Land Rover  
Peter White, Coventry University  
Ben Wicksteed, Jaguar Land Rover

## VTMS 12 EXHIBITION & SPONSORSHIP

There will be an exhibition supporting the conference, which delegates will be free to attend throughout Monday to Wednesday, plus the welcome reception on Sunday evening. There is also an exhibition reception on Monday evening for which delegates can purchase tickets.

## EXHIBITORS INCLUDE:



## SPEAKERS AND CONTRIBUTORS



**DARREN BUTLER CONFERENCE CHAIR**  
**MANAGER, CLIMATE SYSTEM DESIGN, NISSAN TECHNICAL CENTRE EUROPE**

Darren Butler began his career at Ricardo Consulting Engineers in the field of powertrain thermal and structural analysis. Following a move to the Research Group for Thermal Analysis, he was appointed Senior Project Engineer for Powertrain Thermal Systems in 1997, and went on to lead the Vehicle Thermal Management Systems group at Ricardo Vehicle Engineering from 2001. During his career, Darren has worked on a wide variety of thermal management projects, including published research for new vehicle thermal simulation methods to support shorter development lead times, and an advanced cooling system for reduced fuel consumption.



**DR SIMON EDWARDS KEYNOTE SPEAKER**  
**GLOBAL DIRECTOR, TECHNOLOGY, RICARDO**

Simon Edwards started his career at LeylandDAF Trucks in 1982. He joined Ricardo in 1993, working on engine development and research projects, firstly in the UK and latterly, after a UK Royal Academy of Engineering fellowship with DaimlerChrysler, in Stuttgart, Germany. Between 2006 and 2012, Simon was Head of Advanced Engineering, Engine Cooling at Behr in Stuttgart. In July 2012, Simon rejoined Ricardo and is currently Global Director, Technology, responsible for the research and collaboration portfolio of the company.



**DR BOB JOYCE AFTER-DINNER SPEAKER**  
**EXECUTIVE DIRECTOR, PRODUCT CREATION AND DELIVERY,**  
**JAGUAR LAND ROVER**

Bob Joyce has over 35 years of experience, which began at Ricardo Consulting, leading the development of 6/8/12/16 cylinder engines called the F Series. Bob joined Rover in 1991 and was responsible for the design and development of Rover's innovative new K series engine. Following the sale of Rover, Bob was recruited by Ford Motor Company to become Engineering Director – Land Rover. In 2007, under Tata ownership, Bob became Group Engineering Director responsible for the UK's third largest engineering team.

## RESEARCH FORUM PANEL:



**DR ANTHONY BAXENDALE**  
**MANAGER FOR FUTURE TRANSPORT TECHNOLOGIES AND RESEARCH, MIRA**

Anthony Baxendale joined MIRA in 1991 after five years at the Aircraft Research Association. From 1997 to 2004 he was responsible for MIRA's Fluids Engineering department. Since 2004 he has been MIRA's Research Manager, responsible for MIRA's future transport technology strategy and the operational management and development of the programme to deliver this. The key themes of this programme are low-carbon vehicle technologies, intelligent mobility technologies and autonomous ground vehicle technologies.



**DR ANDREAS EILEMANN**  
**ADVANCED ENGINEERING, LIGHT VEHICLE, MAHLE BEHR**

Andreas Eilemann studied Physics at the Universities of Düsseldorf and Göttingen in Germany, receiving his PhD in Physics from Göttingen University with a thesis in Psychological Acoustics. Joining Behr in 1995, he worked in different functions within Advanced Engineering Air Conditioning, before three years as Chief Engineer Air Conditioning at Behr America in Michigan, USA. After his return he took responsibility for development of heat exchangers. Since 2009, Andreas has been responsible for Pre-Development Engine Cooling Light Vehicles within the business unit, Thermal Management of Mahle.



**PROFESSOR DAVID GREENWOOD**  
**ADVANCED PROPULSION SYSTEMS, WMG, UNIVERSITY OF WARWICK**

David Greenwood is Professor of Advanced Propulsion Systems at WMG, University of Warwick, where he is responsible for powertrain research activities with a particular focus on the automotive industries. David joined WMG in 2014 with over 20 years' industrial experience in new technology development for the automotive and related industries. Following university, he joined engineering consultancy Ricardo UK, where he stayed for over 20 years. Beginning work as a technical software writer, David then worked in Powertrain and Vehicle research, and then led the Vehicle Thermal Management department before moving back into an Advanced Technology role as UK Product Group Head, finally running the UK Hybrid and Electric Systems business.

# CONFERENCE OVERVIEW

| MONDAY 11 MAY 2015 |   |                                    |
|--------------------|---|------------------------------------|
| 09.30-10.00        | Opening Ceremony                          |                                    |
| 10.00-10.30        | Keynote Address                           |                                    |
| 10.30-11.00        | Networking Refreshments & Exhibition      |                                    |
| 11.00-12.30        | Session 1A: Heat Exchange I               | Session 1B: Alternative Powertrain |
| 12.30-14.00        | Networking Lunch & Exhibition             |                                    |
| 14.00-15.30        | Session 2A: Heat Exchange II              | Session 2B: Engines                |
| 15.30-16.00        | Networking Refreshments & Exhibition      |                                    |
| 16.00-17.30        | Session 3: Simulation/Energy Management I |                                    |

| TUESDAY 12 MAY 2015 |                                      |   |
|---------------------|--------------------------------------|---|
| 09.30-10.30         | Session 4A: Waste Heat Recovery      | Session 4B: Heat & A/C I                    |
| 10.30-11.00         | Networking Refreshments & Exhibition |   |
| 11.00-12.30         | Session 5A: Heat Exchange III        | Session 5B: Simulation/Energy Management II |
| 12.30-14.00         | Networking Lunch & Exhibition        |   |
| 14.00-15.30         | Session 6A: Heat Exchange IV         | Session 6B: Waste Heat Recovery             |
| 15.30-16.00         | Networking Refreshments & Exhibition |   |
| 16.00-17.30         | Research Forum Panel                 |   |

| WEDNESDAY 13 MAY 2015 |                                      |  |
|-----------------------|--------------------------------------|--|
| 09.00-10.30           | Session 7A: Underhood & Simulation I | Session 7B: Heat & A/C II                    |
| 10.30-11.00           | Networking Refreshments & Exhibition |  |
| 11.00-12.30           | Session 8A: Heat Exchange V          | Session 8B: Underhood & Simulation II        |
| 12.30-14.00           | Networking Lunch & Exhibition        |  |
| 14.00-15.30           | Session 9A: Heat Exchange VI         | Session 9B: Simulation/Energy Management III |
| 15.30-16.00           | Networking Refreshments & Exhibition |  |
| 16.00-16.30           | Closing Ceremony & Awards            |  |

# PROGRAMME

## SUNDAY 10 MAY 2015

17.00-19.00

### Welcome Exhibition Reception

Please indicate if you would like to attend the welcome reception on the booking form at the back of this brochure.

## MONDAY 11 MAY 2015

09.30

### Opening Ceremony

10.00

### Keynote Address

Dr Simon Edwards, Global Director, Ricardo

10.30

### Networking Refreshments & Exhibition

11.00-12.30

### SESSION 1A: HEAT EXCHANGE I

#### Optimising the Cost of Thermal Management Components by Using High-Performance Engineering Polymer (HPEP)

M Wright, Solvay Specialty Polymers, UK

#### High-Temperature Polyamides: the Latest Developments for High-Temperature Applications

E Spini, Radici Plastics, Italy

#### Plastic Material Development for Lightweight Exchanger and Climate Control Parts

P Havet, A Tanghe, Valeo Thermal Systems – Powertrain Thermal Systems, France

11.00-12.30

### SESSION 1B: ALTERNATIVE POWERTRAIN

#### Efficient and Integrated Thermal Management for Electric Vehicles

B Jiang, HVACR & Heat Transfer Research Group, University of Nottingham, UK & Hefei University of Technology, China; Q Wang, Y Yana, HVACR & Heat Transfer Research Group, University of Nottingham, UK

#### Battery Thermal Management System Analysis and Improvement Methods for HEV

W Xihui, South China University of Technology, China & The University of Nottingham, UK; Zhengxiao, Y Yan, The University of Nottingham, UK

#### Improving Electric Vehicle Energy Efficiency with Co-Simulation of Cooling System, HVAC System and Electric Drivetrain

D Dvorak, Austrian Institute of Technology, Austria; C Rathberger, A Lichtenberger, MAGNA, Engineering Centre Steyr, Austria

12.30

### Networking Lunch & Exhibition

14.00-15.30

### SESSION 2A: HEAT EXCHANGE II

#### Taking the Best of Polyamide Engineering Materials for Cooling and Air Intake Systems Components

T Landtmeters, Toyota Motors Europe, Belgium; N Delon-Anik, Solvay Research and Innovation, France; A Guiu, Solvay Engineering Plastics, France

#### High-Heat Resistant Polyamides for the Air Intake System

M Hoffmann, O Thomas, A Bayer, B Hoffmann, EMS-CHEMIE, Switzerland

#### Plastic Material Development for New Charge Air Cooler Exchanger in the Low-Pressure Exhaust Gas Recirculation Loop

Z Ahmed, G Cairnie, M Ndiaye, J Rodriguez, A Sankar, AVL Powertrain, UK

14.00-15.30

### SESSION 2B: ENGINES

#### The Split-Cycle Engine and Its Impact on the Vehicle Cooling System

RE Morgan, G Dong, MR Heikal, Centre for Automotive Engineering, University of Brighton, UK

#### A New Approach to Investigating Engine Thermal Management Using a Bespoke Design of Four-Cylinder Engine

R Gardiner, C Zhao, J Addison, P Shayler, University of Nottingham, UK; I Pegg, R Stark, Ford Motor Company, UK; R Gilchrist, Jaguar Land Rover, UK

#### Development of a High-Efficiency Liquid-Air Engine For Cooling, Heat Recovery and Power

N Owen, H Clarke, Dearman Engine Company; D Charters, MIRA, UK; J Trembley, Air Products, UK; C Garner, S Mohr, A Williams, H Zhao, Loughborough University, UK

15.30

### Networking Refreshments & Exhibition

16.00-17.30

### SESSION 3: SIMULATION/ENERGY MANAGEMENT I

#### Thermal Gasoline Concept Vehicle, Simulation and Control

X Liu, R Rastelli, BorgWarner, USA

#### Assessment of the Benefits from an Electric Coolant Pump by Means of Dual Numerical Simulations, Comprising a Model of the Thermal System Coupled with the Model of a Plug-In Hybrid Concept

E Andrés, V Mazet, S Bruck, Renault SAS, Alliance Systems Engineering Division, France

#### Heat Transfer Characteristics of Nanofluid

M Elsebay, I Elbadawy, MH Shedid, Helwan University, Egypt

17.45

### Exhibition Reception

Canapés and drinks will be served among the exhibition stands. To reserve a place at the reception please complete the relevant section on the booking form.



**TUESDAY 12 MAY 2015**

|             |   |
|-------------|---|
| 09.30-10.30 | <b>SESSION 4A: WASTE HEAT RECOVERY</b>  |
|             | <b>Modelling and Optimisation of Thermoelectric Generator Systems</b><br>A Agurto-Goya, Jaguar Land Rover, UK; S Chiwanga, European Thermodynamics, UK; P Shayler, University of Nottingham, UK   |
|             | <b>A New Approach for Predicting the Maximum Fuel-Saving Potential of an Automotive Thermoelectric Generator in its Early Development Stage</b><br>A Bauknecht, M Rexeis, RA Almbauer, Graz University of Technology, Austria   |
| 09.30-10.30 | <b>SESSION 4B: HEAT &amp; A/C</b>   |
|             | <b>Effects of Heated Seats on Thermal Comfort and Heater Energy Consumption in Vehicle</b><br>H Oi, Nissan Motor Company, Japan; Y Tochiara, Kyushu University, Japan   |
|             | <b>Comprehensive Thermal Comfort Assessment Using Simplified Thermoregulatory Bio-Heat Equation within CFD</b><br>A Dixit, U Gade, A Kandekar, Tata Technologies, India   |
| 10:30       | <b>Networking Refreshments &amp; Exhibition</b>   |
| 11.00-12.30 | <b>SESSION 5A: HEAT EXCHANGE III</b>  |
|             | <b>Aluminium Heat Exchanger and Brazing – Review and Outlook of Successful Symbiosis</b><br>M Tuerpe, B Gruenenwald, MAHLE Behr, Germany  |
|             | <b>Electrochemical Study of Aluminium Extruded Tubes for Brazed Condenser</b><br>I Portal, C Casenave, M Wainer, L Aubanel, M Phillippe, V Renault, AG Vilemiane, Valeo Thermal Systems, France   |
|             | <b>A Mechanistic Study of Aluminium Brazing Systems</b><br>DK Hawksworth, Diomedea, Canada; DP Sekulic, University of Kentucky, USA & Harbin Institute of Technology, China; H Fu, University of Kentucky, USA; RA Westergård, Gränges, Sweden  |
| 11.00-12.30 | <b>SESSION 5B: SIMULATION/ENERGY MANAGEMENT II</b>  |
|             | <b>Heavy-Duty Vehicle Cooling System Auxiliary Load Management Control: A Comparison of Advanced Control Strategies</b><br>S Sermeno, E Bideaux, T Morgan, INSA de Lyon & Renault Trucks SAS, France  |
|             | <b>Next Generation of Thermal Management System for 2018 Applications</b><br>T Singh, R Nolte, A Calamiello, General Motors Engineering, Germany & Italy; C Rouaud, K Heffer, S Porteous, Ricardo, UK   |
|             | <b>An Integrated System Approach to Thermal Management on the BorgWarner Thermal Gasoline Concept Vehicle</b><br>A Sutherland, E Sharpe, X Liu, BorgWarner, USA   |
| 12:30-14:00 | <b>Networking Lunch &amp; Exhibition</b>  |
| 14.00-15.30 | <b>SESSION 6A: HEAT EXCHANGE IV</b>   |
|             | <b>Reaction Behaviour of Mixtures of Non-Corrosive Flux and Non-Corrosive Flux Containing Zn During Brazing</b><br>H Kumagai, N Yamashita, UACJ Corporation, Japan  |
|             | <b>Recent Work on Low Melting Clad for Heat Exchanger Products</b><br>A Schlegel, B Jacoby, S Kirkham, A Buerger, Aleris Rolled Products, Germany   |
| 14.00-15.30 | <b>SESSION 6B: WASTE HEAT RECOVERY</b>  |
|             | <b>Electrical Heat-Assisted Lean NOx Trap System for NOx Emissions Reduction in Diesel Engines</b><br>Z Ahmed, G Cairnie, M Ndiaye, J Rodriguez, A Sankar, AVL Powertrain, UK   |
|             | <b>A Novel Working Fluid for Organic Rankine Cycle (ORC)</b><br>AS Panesar, RE Morgan and MR Heikal, Centre for Automotive Engineering, University of Brighton, UK  |
| 15.30       | <b>Networking Refreshments &amp; Exhibition</b>   |
| 16.00       | <b>Research Forum Panel Discussion: Thermal Management for the 2020s: Challenges, Opportunities and Hanging Requirements</b><br><b>Panellists:</b><br><b>David Skipp</b> , Manager, UK Technical Strategy & Business Office, Research & Advanced Engineering, Ford, UK; <b>Prof David Greenwood</b> , Advanced Propulsion Systems, University of Warwick, UK; <b>Dr Anthony Baxendale</b> , Manager for Future Transport Technologies and Research, MIRA, UK; <b>Dr Andreas Eilemann</b> , Advanced Engineering, Light Vehicle, MAHLE Behr, Germany               |
| 17.30       | <b>Close of Technical Session</b>   |
| 18.30       | <div> <b>Conference Dinner: Nottingham Castle</b><br/> <b>After-Dinner Speaker</b><br/>           Dr Bob Joyce, Executive Director, Product Creation and Delivery, Jaguar Land Rover, UK<br/> <b>Sponsored by Dana</b><br/>           Please note places at the dinner are limited and will be reserved for delegates on a first come first served basis. Please complete the relevant section on the booking form.         </div> <div> <b>DINNER SPONSOR:</b><br/>  </div> |

**WEDNESDAY 13 MAY 2015**

|             |   |
|-------------|---|
| 09.00-10.30 | <b>SESSION 7A: UNDERHOOD &amp; SIMULATION I</b>   |
|             | <b>Drive Cycle Simulation of a Tiered Cooling Pack Using Non-Uniform Boundary Conditions</b><br>W Jansen, Jaguar Land Rover, UK   |
|             | <b>Cooling Airflow Virtual Component Characterisation</b><br>D Wellman, S Wakelam, Jaguar Land Rover Thermal and Aerodynamic Systems Engineering & EXA, UK  |
|             | <b>Predicting Cooling System Transient Performance Utilising 3D Simulation and a Simplified Cooling Package and Powertrain System Model</b><br>A Price, Bentley Motors, UK; E Tate, Z Yang, Exa Corporation, USA; V Staelens, Exa Corporation, UK   |
| 09.00-10.30 | <b>SESSION 7B: HEAT &amp; A/C II</b>  |
|             | <b>Prediction of Vehicle Interior Warm-Up and Cool-Down using CAE Techniques</b><br>KS Sandhu, Jaguar Land Rover, UK  |
|             | <b>Simulative Comparison of Conventional and Secondary Loop Automotive Refrigeration Systems</b><br>JC Menken, JE Koerner, TA Weustenfeld, K Strasser, Audi, Germany; J Koehler, Institute of Thermodynamics, University of Braunschweig, Germany   |
| 10:30       | <b>Networking Refreshments &amp; Exhibition</b>   |
| 11.00-12.30 | <b>SESSION 8A: HEAT EXCHANGE V</b>  |
|             | <b>Development of Continuous Cast Aluminium Fin Stock for a Smaller, Lighter and More Efficient Radiator</b><br>T Kokubo, T Anami, Nippon Light Metal Company, Japan; H Teramoto, S Teshima, T Toyama, Japan  |
|             | <b>Analysis of Unsteady Flow for Vortex Generator Development for Heat Exchangers</b><br>J Hara, M Iwasaki, Calsonic Kansei, Japan; I Honda, University of Hyogo, Japan   |
| 11.00-12.30 | <b>SESSION 8B: UNDERHOOD &amp; SIMULATION II</b>  |
|             | <b>Simulation Approach for Bumper Integrated Tailpipe Finisher</b><br>SK Sivasankaran, W Jansen, Jaguar Land Rover, UK; V Staelens, Exa, France   |
|             | <b>Dual-Use Heater Core – Increase in Trailer Tow Capacity and Analysis of Control Set-Points with Active Grill Shutters</b><br>S Uppuluri, A Naiknaware, Computational Sciences Experts Group, USA   |
| 12:30       | <b>Networking Lunch &amp; Exhibition</b>  |
| 14.00-15.30 | <b>SESSION 9A: HEAT EXCHANGE VI</b>   |
|             | <b>Next-Generation Header Materials for Corrosion-Resistant Heat Exchangers</b><br>V Sass, G Bermig, H Janssen and S Schlueter, Hydro Aluminium Rolled Products, Germany  |
|             | <b>Photochemical Etching of Heat Exchanger Components</b><br>M Eesa, G Marriot, Advanced Chemical Etching, UK   |
| 14.00-15.30 | <b>SESSION 9B: SIMULATION/ENERGY MANAGEMENT III</b>   |
|             | <b>Energy Flow Rate Based Thermal Management for Electric Vehicles Using a Secondary Loop Heating and Cooling System</b><br>TA Weustenfeld, W Bauer-Kugelmann, JC Menken, K Strasser, AUDI, Germany; J Koehler, Institute of Thermodynamics, University of Braunschweig, Germany                |
|             | <b>A Process for Battery Thermal Design</b><br>E Tate, J Han, A Velivelli, Z Yang, Exa Corporation, USA; W Jansen, I Hughes, Jaguar Land Rover, UK  |
|             | <b>Effects of Variable Accelerations on a PHP-based cooling system</b><br>M Manzoni, M Mameli, University of Bergamo, Italy; M Marengo, University of Bergamo, Italy & University of Brighton, UK; C de Falco, L Areneo, Politecnico di Milano, Italy; S Filippeschi, University of Pisa, Italy |
| 15.30       | <b>Networking Refreshments &amp; Exhibition</b>   |
| 16.00-16.30 | <b>Closing Ceremony &amp; Awards</b>  |

**THURSDAY 14 MAY 2015**

|             |   |
|-------------|---|
| 10.00-12.00 | <b>Technical Visit to Rolls Royce Heritage Trust</b><br>The Rolls-Royce Heritage Trust exhibition houses an extensive collection at our Light Alloy Foundry (LAF) site on Osmaston Road, where you can see the largest collection of aero engines in the country, ranging from World War I era piston engines, the famous Merlin, up to modern day jet engines. The collection also includes examples across Rolls-Royce's product range including marine and industrial applications. To reserve a place please complete the relevant section on the booking form. |
|-------------|---|

**Find out more about our speakers at [www.imeche.org/VTMS](http://www.imeche.org/VTMS)**

- This programme is subject to change.
- The Institution is not responsible for the views or opinions expressed by individual speakers.

BOOKING FORM

EVENT CODE: C1400AB

VTMS 12  
10-13 May 2015  
East Midlands Conference Centre, Beeston  
Lane, The University of Nottingham,  
Nottingham NG7 2RJ

REGISTRATION Please complete in capitals.

|                                       |                       |
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| Family Name                           | Title (Mr, Mrs, Miss) |
| First Name                            | Job Title             |
| Membership No                         | Institution           |
| Name of Organisation (for name badge) |                       |
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|                                       |                       |
| Town/City                             |                       |
| Postcode                              |                       |
| Contact Telephone                     |                       |
| Email                                 |                       |
| Do you have any special requirements? |                       |
|                                       |                       |

How did you hear about this event? ☐ Direct mail ☐ Website ☐ Colleague ☐ Other  
We would like to keep you informed of relevant services that may be of benefit to you.  
Please tick the boxes below to let us know what you're interested in:  
☐ Events and training opportunities  
☐ News and updates from the Institution  
☐ Services and offers from our preferred partners

FEES AND CHARGES Please complete the appropriate box.

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

|   | PRICE   | VAT     | TOTAL |
|---|---------|---------|-------|
| Member, Institution of Mechanical Engineers     | £660.00 | £132.00 | £     |
| Member, supporting organisation                 | £660.00 | £132.00 | £     |
| Non-member                                      | £864.00 | £172.80 | £     |
| Student/retired                                 | £275.00 | £55.00  | £     |
| Presenting Author                               | £440.00 | £88.00  | £     |
| Conference Dinner - Attendee                    | £60.00  | £12.00  | £     |
| Welcome Exhibition Reception                    | £20.00  | £4.00   | £     |
| Technical Visit to Rolls-Royce Heritage Centre: | £25.00  | £5.00   | £     |

Please indicate which sessions you would like to attend:

Monday 11 May                      Wednesday 13 May                      Tuesday 12 May  
☐ 1A/1B   ☐ 2A/2B                      ☐ 7A/7B   ☐ 8A/8B   ☐ 9A/9B                      ☐ 4A/4B   ☐ 5A/5B   ☐ 6A/6B

PAYMENT DETAILS

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

PLEASE INDICATE METHOD OF PAYMENT:

☐ **Cheque** Cheques should be made payable to IMechE and crossed. Please note international 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**  
Card type: ☐ 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 |             |   |

☐ **BACS** BACS bank transfers can be made to:  
**IMechE Current Account, NatWest Charing Cross Branch.**  
Sort Code: **60-40-05**                      Acc No: **00817767**  
Swift Code: **NWBKGB2L**                      IBAN Code: **GB96NWBK60400500817767**  
A copy of the draft must accompany this form.

☐ **Invoice (UK residents only)** 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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| Name and Address for Invoicing |          |
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| Tel                            | Fax      |

FIVE WAYS TO BOOK

- 1** Online:  
**www.imeche.org/VTMS**
- 2** Email:  
**eventenquiries@imeche.org**
- 3** Phone:  
**+44 (0)20 7973 1258**
- 4** Post completed booking form to:  
**Event Registrations  
Institution of Mechanical  
Engineers  
1 Birdcage Walk  
London SW1H 9JJ**
- 5** Fax:  
**+44 (0)20 7304 6845**

Please read the information listed below as each booking is subject to the Institution's standard terms and conditions.

**CONDITIONS OF BOOKING**  
Completed application forms should be returned to the address above, 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. The Institution reserves the right to cancel any event. In this case, the full fee will be refunded unless a mutually convenient transfer can be arranged. In the event that the Institution postpones an event for any reason and the delegate is unable or unwilling to attend on the rescheduled date, they will receive a full refund of the fee paid.

The Institution is not responsible for any loss or damage as a result of a substitution, alteration or cancellation/postponement of an event. The Institution shall assume no liability whatsoever if this event is cancelled, rescheduled or postponed due to a fortuitous event, Act of God, unforeseen occurrence or any other event that renders performance of this conference impracticable, illegal or impossible. For the purposes of this clause, a fortuitous event shall include, but not be limited to: war, fire, labour strike, extreme weather or other emergency.

Please note that while speakers and topics were confirmed at the time of publishing, circumstances beyond the control of the organisers may necessitate substitutions, alterations or cancellations of the speakers and/or topics. The Institution reserves the right to alter or modify the advertised speakers and/or topics if necessary without any liability to you whatsoever. Any substitutions or alterations will be updated on the event's webpage as soon as possible.

**VENUE**  
East Midlands Conference Centre, Beeston Lane, The University of Nottingham, Nottingham NG7 2RJ

**LIABILITY**  
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.

**ENQUIRIES**  
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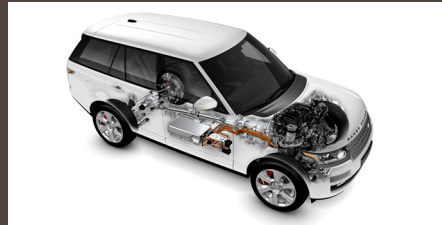


23 April 2015  
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Andy Cowell, Managing Director, Mercedes AMG High Performance Powertrains, will explore how to manage a fast-paced, technically advanced organisation and stay in control.

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16 June 2015  
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