

AUTOMOBILE DIVISION

LOW-CARBON VEHICLES 2009

Institution of
**MECHANICAL
ENGINEERS**

20-21 May 2009
One Birdcage Walk,
Westminster,
London SW1H 9JJ

Book now:
www.imeche.org/events/c678

ATTENDING THIS EVENT WILL HELP YOU:

- Find cost-effective routes to high efficiency, high performance and low CO₂ emissions
- Examine responses to market, regulatory and operational pressures

Improving the world through engineering

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Technology Strategy Board
Driving Innovation



LOW-CARBON VEHICLES 2009

Climate change is happening, no doubt about it. Carbon emissions have been at unacceptable levels for a long time. It is vital to find new approaches to old problems – fresh answers to difficult questions.

Vehicle powertrains need to use less fuel – and a broader mix of fuels – while still meeting requirements for power, refinement and flexibility. How do we combine high efficiency, high performance and low CO₂ emissions?

Low-Carbon Vehicles 2009 will cover a wide range of technological approaches to cutting CO₂ emissions from vehicles. The four main themes will be: advanced IC engines, advanced transmissions, hybrid powertrains and fuel cell developments. Fossil, bio- and other alternative fuels will be discussed, helping you take a fresh look at the Low-Carbon Roadmap.

With every challenge comes an opportunity. This event will help you make the most of them.

THIS EVENT WILL ATTRACT

Technicians, engineers, engineering manufacturers, component manufacturers, consultants, students and academic staff from universities and institutions.

Technology Strategy Board

Driving Innovation

The Technology Strategy Board is a business-focused public body with a leading role in driving innovation in the UK.

In partnership with government departments, RDAs, devolved administrations and research councils, the organisation will apply investment of around £1bn over the coming three years – working with business to drive innovation in areas with the greatest scope for boosting UK growth and productivity. Key areas of work include innovation platform programmes in intelligent transport systems and services and low carbon vehicles.

The Technology Strategy Board's vision is for the UK to be a global leader in innovation and a magnet for innovative businesses who can apply technology rapidly, effectively and sustainably to create wealth and enhance quality of life.

See www.innovateuk.org or contact enquiries@tsb.gov.uk

TECHNICAL ADVANTAGES:

- Make more-environmentally friendly buses, trucks, taxis and passenger cars
- Study the simulation and validation of affordable hybrid electric systems for urban commercial vehicles
- Find out the latest developments in engine lubricants
- Investigate the design of fuel cell hybrids
- Seek resolutions to the conflicts of hybrid vehicle design
- Develop new internal combustion engines
- See latest developments in alternative energy storage media
- Debate the merits of electric cars
- Engage in panel discussions with key industry figures

SPONSORSHIP AND EXHIBITION OPPORTUNITIES

Your involvement with our events is an effective way to get into the minds of key decision makers, helping you capture your chosen audience when they are in the frame of mind to do business.

Our flexible opportunities allow you to:

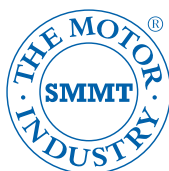
- Showcase new products
- Raise awareness of your operation
- Improve perception of your brand
- Influence other organisations' spending plans

To talk through how to get the best from one of our events, contact Aman Duggal

Tel: +44 (0)20 7973 1309

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SUPPORTING ORGANISATIONS



LOW-CARBON VEHICLES 2009

20-21 MAY 2009
IMECHE, 1 BIRDCAGE WALK, LONDON SW1H 9JJ

DAY 1 - 20 MAY

09:00 REGISTRATION

09:30 CHAIRMAN'S WELCOME

Chris Brace, Senior Lecturer,
University of Bath

SESSION 1 - THE CARBON CHALLENGE

Chaired by Professor Richard Folkson,
Automobile Division Chairman

09:40 KEYNOTE ADDRESS

10:10 A NEW LOOK AT THE LOW-CARBON ROADMAP

N Owen, N Jackson, Ricardo UK

10:30 DISCUSSION

10:40 BREAK

SESSION 2 - ELECTRICITY

Chaired by Dr James Marco,
Lecturer, Cranfield University

11:10 ELECTRIC CARS - ARE THEY REALLY 'GREEN'?

B Randall (formerly of Tesla Motors)

11:30 THE ELECTRIC SCOOTER AS A MEANS OF GREEN TRANSPORT

T Muneer, P Clarke, Napier
University; K Cillinane, Transport
Research Institute, FCIT, UK

11:50 DESIGN OF A FUEL CELL HYBRID LONDON TAXI

A Kells, Intelligent Energy, UK

12:10 DISCUSSION

12:25 LUNCH

SESSION 3 - HYBRIDS

Chaired by Chris Wheelans,
Chief Engineer - Powertrain
CAE, Lotus Engineering

13:25 UNRAVELLING AND RESOLVING HYBRID ELECTRIC VEHICLE DESIGN CONFLICTS

D Mann, Systematic Innovation; Prof A
Cole, Birmingham City University, UK

13:45 DUODRIVE - SIMPLE SERIES - PARALLEL HYBRID USING AXIAL FLUX TECHNOLOGY

M Lampérth, A Beaudet, M
Jaensch, EVO Electric, UK

14:05 A NEW PARALLEL/SERIES HEV POWERTRAIN

V Kilic, M Yildirim, I Kockan,
Ford Otosan, Turkey

14:25 OPTIMISING THE PERFORMANCE OF A FLYWHEEL-BASED HYBRID SYSTEM

I Murphy, Flybrid Systems

14:45 DISCUSSION

15:05 BREAK

15:35 LOW CARBON VEHICLES INNOVATION PLATFORM - ACTIVITY REVIEW

T O'Brien, Innovation Platform
Leader - Low-Carbon Vehicles,
Technology Strategy Board

SESSION 4 - FUELS AND LUBES

Chaired by Jon Hilton, Managing
Partner, Flybrid Systems

15:55 DECARBONISING TRANSPORT - TECHNOLOGY OPTIONS AND COMPETITION

J Cooper, General Manager
Strategy & Commercial, BP
Global Fuels Technology

16:15 GASOLINE-ETHANOL-METHANOL TRI-FUEL VEHICLE DEVELOPMENT AND ITS ROLE IN EXPEDITING SUSTAINABLE ORGANIC FUELS FOR TRANSPORT

R Pearson, JWG Turner, AJ
Peck, Lotus Engineering, UK

16:35 ENGINE LUBRICANT DEVELOPMENT FOR LOW-CARBON PASSENGER CARS

K Howard, Lubrizol, UK

16:55 THE ROLE OF COMMUNITIES IN STIMULATING A HYDROGEN ECONOMY

N Owen, Ricardo UK, and the partners
of the Roads2HyCom Consortium

17:15 DISCUSSION

17:30 CLOSING REMARKS

18:30 CONFERENCE DINNER

Sponsored by



The conference dinner will be held in the library of the Institution of Mechanical Engineers. The grand Elizabethan-style library has stunning views of St James's Park and contains 400 years of engineering history.

Delegates should register for the Conference Dinner by ticking the appropriate box on the registration form. Places are limited.



DAY 2 - 21 MAY 2009

09:10 REDUCING UNCERTAINTY IN IMPLEMENTING A UK VEHICLE RECHARGING INFRASTRUCTURE

J Batterbee, Programme Manager – Transport, Energy Technologies Institute, UK

09:40 TRANSFORMING TRAVEL – ROUTES TO LOW-CARBON BUSES

J Bickerton, First UK Bus; C Brace, University of Bath, UK

10:00 DISCUSSION**SESSION 5 – ALTERNATIVE ENERGY STORAGE MEDIA**

Chaired by Jon Hilton, Managing Partner, Flybrid Systems

10.10 HIGH-EFFICIENCY AIR HYBRID ENGINE TECHNOLOGY

C Lee, H Zhao, T Ma, Brunel University, UK

10:30 DEVELOPMENT OF A COMPRESSED-AIR ENERGY STORAGE SYSTEM FOR A PLUG-IN HYBRID VEHICLE

H Ditmore, University of Westminster, UK

10:50 DISCUSSION**11.00 BREAK****SESSION 6 – PANEL DISCUSSION**

Chaired by Richard Folkson, Automobile Division Chairman

11:30 ALTERNATIVE TECHNICAL SOLUTIONS TO ACHIEVE LOW-CARBON VEHICLES

Panellists will include representatives from Nissan, Jaguar Land-Rover and BMW

13:00 LUNCH AND EXHIBITION**SESSION 7 – IC ENGINES**

Chaired by Chris Brace, Senior Lecturer, Bath University

14:00 PREMIUM LUXURY VEHICLE CO2 CHALLENGE

M Richardson, Manager Sustainable Mobility Projects and Hybrids, Jaguar Land-Rover, UK

14:20 SABRE: A COST-EFFECTIVE ENGINE TECHNOLOGY COMBINATION FOR HIGH EFFICIENCY, HIGH PERFORMANCE AND LOW CO2 EMISSIONS

JWG Turner, RJ Pearson, R Curtis, B Holland, Lotus Engineering, UK

14:40 DEVELOPMENT OF A NEW THREE-CYLINDER, 1.21 DOWNSIZING DEMONSTRATOR ENGINE

N Fraser, G Lumsden, D Oudenijeweme, D Hancock, M Bassett, H Blaxill, MAHLE Powertrain, UK

15.00 DISCUSSION**15.20 BREAK****SESSION 7 CONTINUED****15:50 DEVELOPMENT OF A MULTI-CYLINDER TWO-STROKE/FOUR-STROKE SWITCHING GASOLINE ENGINE**

R Osborne, J Stokes, D Ceccarini, N Jackson, T Lake Ricardo UK; M Joyce, S Visser, DENSO Sales UK; N Miche, S Begg, M Heikal, University of Brighton; N Kalian, H Zhao, T Ma, Brunel University, UK

**AUTOMOBILE DIVISION.****Organising Committee:**

Chris Brace, University of Bath

Richard Folkson, Automobile Division Chairman

Jon Hilton, Flybrid Systems

Chris Wheelans, Lotus Engineering

James Marco, Cranfield University

The Committee would like to thank:

Combustion Engines & Fuels Group and Railway Division

16:10 THE EFFECT OF VARIABLE FLOW OIL PUMPS ON VEHICLE FUEL ECONOMY

C Brace, JG Hawley, A Cox, University of Bath; IG Pegg, R Stark, Ford Motor Company, UK

16:30 ACHIEVING DIESEL EMISSIONS TO SUPPORT INCREASING UPDATE OF DIESEL ENGINES IN USA

B Cooper, Ricardo UK

16:50 DISCUSSION**17:00 CLOSE OF CONFERENCE**

This programme is subject to change.



FORWARD THINKING.

Please visit the relevant weblink to find out more about each event.

13-14 MAY 2009: ONE BIRDCAGE WALK, LONDON INJECTION SYSTEMS FOR IC ENGINES

This international conference will address all technological aspects of diesel and gasoline fuel injection systems
www.imeche.org/events/c677

8-9 DECEMBER 2009: ONE BIRDCAGE WALK, LONDON INTERNAL COMBUSTION ENGINES: PERFORMANCE, FUEL ECONOMY AND EMISSIONS

The next in the successful biannual series will cover drivers of change, technological developments and advances from the latest research into internal combustion engines
www.imeche.org/events/c684

9-10 JUNE 2009: ST WILLIAM'S COLLEGE, YORK BRAKING 2009

An international conference examining the recent advances and future prospects in vehicle braking
www.imeche.org/events/c672

MAY 2010: LONDON 9TH INTERNATIONAL CONFERENCE ON TURBOCHARGERS AND TURBOCHARGING

We are pleased to announce that the next conference in this successful series will take place in London in 2010
www.imeche.org/events/c1302

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Selected pay-to-enter events will feature on PLAYBACK too (for a nominal fee). To try out this exciting new service, head for:

www.imeche.org/playback

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, LCV Partnership

Venue

This event will be held at One Birdcage Walk, Westminster, London SW1H 9JJ

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

Tel: (UK only) 0845 604 4060
International: +44 (0)20 7592 3050
Email: events@corporateteam.com
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

For registration enquiries call Tina Churcher on +44 (0)20 7973 1258 or email t_churcher@imeche.org

Complete and return this form to:
Event Registrations,
One Birdcage Walk, Westminster,
London, SW1H 9JJ.
Fax: +44 (0)20 7222 9881
Email: t_churcher@imeche.org

The Institution of Mechanical Engineers is a registered charity (No 206882) VAT No GB 299930493

One form per person only (forms may be photocopied)

For added convenience, you can also book online at www.imeche.org/events/c678

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 Website Colleague Other

Fees and Charges (please complete the appropriate box)

Registration fees include entry to the sessions, refreshments, lunches and a copy of the conference volume.

	Fee	VAT	Total	£
Institution of Mechanical Engineers Member	£550.00	£82.50	£632.50	_____
Member of Supporting Organisations	£550.00	£82.50	£632.50	_____
Non-Member	£650.00	£97.50	£747.50	_____
Presenting Author	£325.00	£48.75	£373.75	_____
Student/Retired Member	£250.00	£37.50	£287.50	_____
Conference Dinner (delegate)	£15.00	£2.25	£17.25	_____
Conference Dinner (guest)	£50.00	£7.50	£57.50	_____
Extra Items				
Invoice Charging (if applicable)	£10.00	£1.50	£11.50	_____
			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 _____

Invoice Details (UK delegates 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.

Order No _____

Contact Name _____

Name and Address for Invoicing _____

Postcode _____

Tel _____ Fax _____

BACS bank transfers can be made to: IMechE Current Account, NatWest Charing Cross Branch.

Sort code: 60-40-05 Acc No: 00817767. A copy of the draft must accompany this form.

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