

## TOC HEADLINE 9/12 GOTHAM NARROW BOLD

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## EMERGENCY PROCEDURES DURING THE SAE 2014 INTERNATIONAL POWERTRAINS, FUELS & LUBRICANTS MEETING

During the SAE SAE 2014 International Powertrains, Fuels & Lubricants Meeting attendees are to follow the established emergency guidelines of the facility where the emergency occurs. **Based on the location of the incident, report emergencies to the nearest venue representative and/or security personnel if available, or report to the SAE registration desk located outside of Hall 4.**

Should a catastrophic event occur, attendees should follow the safety and security instructions issued by the facility at the time of the event. This includes listening for instructions provided through the public address system and following posted evacuation routes if required.

In the event of an emergency or a major disruption to the schedule of events at the SAE 2014 International Powertrains, Fuels & Lubricants Meeting, attendees and exhibitors may call this number to receive further information about the resumption of this event. Updates will also be provided via the SAE website at [www.sae.org](http://www.sae.org)

**SAE EMERGENCY HOTLINE**  
**+1.800.581.9295**  
**OR**  
**+724.772.4044**

## **WELCOME** ORGANIZING COMMITTEE



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# SYMPOSIUM OVERVIEW

Monday 20 October	Tuesday 21 October	Wednesday 22 October	Thursday 23 October
<b>Registration</b> 08:00 – 17:00	<b>Registration</b> 08:00 – 17:00	<b>Registration</b> 08:00 – 15:00	<b>Outlook for Future Engines / Fuels &amp; Future Engineers</b>  University of Birmingham 8:30 – 20:00  Technical Presentations, poster displays, university tour, and refreshments  A separate registration fee will be required for this event.
<b>Coffee</b> 08:00 – 08:30	<b>Coffee</b> 08:00 – 08:30	<b>Coffee</b> 08:00 – 08:30	
<b>Welcome, Opening Ceremonies and Keynote</b> 08:30 – 10:00	<b>Keynote</b> 08:30 – 09:30	<b>Keynote</b> 08:30 – 09:30	
<b>Networking Break</b> 10:00 – 10:30	<b>Networking Break</b> 09:30 – 10:00	<b>Networking Break</b> 09:30 – 10:00 <b>Tour to Castle Bromwich</b> Separate registration required 09:30-11:30	
<b>Technical Sessions</b> 10:30 – 12:30	<b>Technical Sessions</b> 10:00 – 12:30	<b>Technical Sessions</b> 10:00 – 12:30	
<b>Networking Lunch</b> 12:30 – 13:30 Sponsored by: Innospec Fuel Specialties	<b>Networking Lunch</b> 12:30 – 13:30 Sponsored by: Jaguar Land Rover	<b>Networking Lunch</b> 12:30 – 13:30 Sponsored by: Shell International B.V.	
<b>Technical Sessions</b> 13:30 – 15:30	<b>Technical Sessions</b> 13:30 – 15:30	<b>Technical Sessions</b> 13:30 – 15:30 <b>Tour to Castle Bromwich</b> Separate registration required 12:30-14:30	
<b>Networking Break</b> 15:30 – 16:00 Sponsored by: Afton Chemical Ltd.	<b>Networking Break</b> 15:30 – 16:00 Sponsored by: AVL Powertrain UK Ltd.	<b>Networking Break</b> 15:30 – 16:00	
<b>Technical Sessions</b> 16:00 – 18:30	<b>Technical Sessions</b> 16:00 – 17:30	<b>Technical Sessions</b> 16:00 – 18:00	
<b>Welcome Reception ICC Convention Center</b> 18:30 – 19:30 Sponsored by: Lubrizol Limited	<b>Conference Dinner University of Birmingham Great Hall</b> 18:30 – 20:30 Sponsored by: Business Birmingham		

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## EMERGENCY HOTLINE

1-800-581-9295  
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# GENERAL INFORMATION

## HOURS OF OPERATION

### LOCATION

**International Convention Centre (ICC)**  
**Broad Street**  
**Birmingham B1 2EA England**

### Registration

Sponsored by

**HORIBA**

### REGISTRATION

#### Hall 4

Hours of Operation:

Monday 20 October  
08:00 – 17:00

Tuesday 21 October  
08:00 – 17:00

Wednesday 22 October  
08:00 – 15:00

### ON-SITE REGISTRATION FEES:

SAE Classic/IMEchE Member (pkg 1).....	\$1095
SAE Premium Member (pkg 1).....	\$1070
SAE Elite Member (pkg 1).....	\$1045
Non-Member (pkg 1).....	\$1495
Technical Program Participants (pkg 1)..... <i>(includes organizers, session chairs, presenters, panelists, keynote speakers, reviewers &amp; authors)</i>	\$695
SAE Student Members (full time student ID required) (pkg 2).....	\$250
Exhibitor – 2 per tabletop (pkg 1).....	FREE
Additional Conference Dinner Tickets .....	\$120
Technical Tour .....	\$20
SAE Outlook for Future Engines/ Fuels & Future Engineers Symposium .....	\$149

### Dinner/Banquet

sponsored by



### REGISTRATION ENTITLEMENTS:

#### Package 1

All registrants receive admittance to the Monday - Wednesday technical sessions, tabletop exhibits, networking breaks, reception, Tuesday banquet and electronic conference proceedings. The 4th day Symposium at the University of Birmingham is a separate ticketed event.

#### Package 2

All student registrants receive admittance to Monday - Wednesday technical sessions, tabletop exhibits, networking breaks, and reception. Tuesday banquet and proceedings are not included. The 4th day Symposium at the University of Birmingham is a separate ticketed event.

### BANQUET/CONFERENCE DINNER

#### University of Birmingham – Great Hall

Tuesday 21 October  
18:30 – 20:30

All full conference package 1 attendees will receive a banquet ticket as part of their registration package.

### EXHIBITS

#### Hall 4

Open during event hours. All breaks and Monday evening networking reception will be held in the exhibit area.

# GENERAL INFORMATION

## NETWORKING BREAKS

Monday 20 October  
10:00 – 10:30 & 15:30 – 16:00

Tuesday 21 October  
09:30 – 10:00 & 15:30 – 16:00

Wednesday 22 October  
09:30 – 10:00 & 15:30 – 16:00

## NETWORKING LUNCHES

Hall 4

Monday – Wednesday, 20-22 October  
12:30 – 13:30

## WELCOME RECEPTION

Hall 4

Monday 20 October  
18:30 – 19:30

## TECHNICAL TOUR TO CASTLE BROMWICH

Wednesday 22 October  
09:30 – 11:30 & 13:00 – 15:00

*Check SAE Registration Desk for Availability*

### Monday Lunch

Sponsored by:



### Tuesday Lunch

Sponsored by:



### Wednesday Lunch

Sponsored by



### Monday Afternoon Networking Break

Sponsored by



### Tuesday Afternoon Networking Break

Sponsored by



### Welcome Reception

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## SPECIAL EVENTS AND NETWORKING OPPORTUNITIES

**MONDAY**  
**OCTOBER 20**

**WELCOME AND OPENING KEYNOTE**  
**HALL 5 (LEVEL 4)**  
**08:30 – 10:00**

**Coffee/Refreshments**

Hall 4  
08:00 – 08:30

**Networking Break**

Hall 4  
10:00 – 10:30 &  
15:30 – 16:00

**Afternoon Networking  
Break**

Sponsored by



**Networking Lunch**

Hall 4  
12:30-13:30  
Sponsored by



**Welcome Reception**

Hall 4  
18:30 – 19:30  
Sponsored by



**WELCOME BY GENERAL CHAIR**  
**HONGMING XU**  
**UNIVERSITY OF BIRMINGHAM**

**MODERATOR**  
**STEVE RICHARDSON**  
**JAGUAR LAND ROVER**



**FEATURED KEYNOTE SPEAKER**  
**BRIAN WATT**

**VICE PRESIDENT, STRATEGIC PLANNING, INNOSPEC INC.**

Brian Watt is Vice-President, Strategic Planning for Innospec Inc. He has spent his whole career in the specialty chemicals industry - and the last 13 years working in the fuel additives business with Innospec Inc. Part of his responsibility is to provide the context information on market development for the company to develop its marketing and R&D programs.

**SAE**  
INTERNATIONAL

**SAE 2014 LIGHT  
DUTY EMISSIONS  
CONTROL  
SYMPOSIUM**

December 9-10, 2014  
Troy Marriott  
Troy, Michigan, USA

[www.sae.org/events/ldc](http://www.sae.org/events/ldc)

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# SPECIAL EVENTS AND NETWORKING OPPORTUNITIES

## WELCOME AND OPENING KEYNOTE

HALL 5 (LEVEL 4)

08:30 – 9:30

## WELCOME BY GENERAL CHAIR HONGMING XU

UNIVERSITY OF BIRMINGHAM

MODERATOR

**ROGER CRACKNELL**  
SHELL



## FEATURED KEYNOTE SPEAKER RON LEE

DIRECTOR OF POWERTRAIN, JAGUAR LAND ROVER

Ron Lee received the title of Jaguar Land Rover Director of Powertrain in 2013 following twelve years as Group Chief Engineer of Powertrain. In his role, Ron is responsible for the delivery of engines, transmissions, drivelines and associated systems for all Jaguar Land Rover products. Most recently this has included a new 380HP supercharged V6 engine for the F-Type and other Jaguar Land Rover vehicles. Ron has been instrumental in developing the new family of advanced, low emission, 4-cylinder petrol and diesel engines which will be built at Jaguar Land Rover's £500m state-of-the-art advanced

Engine Manufacturing Centre. Ron became Chief Engineer for Jaguar Powertrain in 1999 and in 2001 became Group Chief Engineer for Jaguar and Land Rover Powertrain.

## DINNER/BANQUET

UNIVERSITY OF BIRMINGHAM

GREAT HALL

18:30 – 20:30

All package 1 registrants receive admittance to the conference dinner. Additional tickets may be purchased for \$120. Check registration desk for availability.

## TUESDAY

OCTOBER 21

### Coffee/Refreshments

Hall 4

8:00 – 8:30

### Networking Break

Hall 4

09:30 – 10:00 & 15:30 – 16:00

### Afternoon Networking Break

Sponsored by



### Networking Lunch

Hall 4

12:30-13:30

Sponsored by



### Conference Dinner

sponsored by City of Birmingham



The Great Hall is at the center of the Aston Webb building located at the southern end of Chancellor's Court.

#### Bus Information

- The 61 and 63 stop on the Bristol Road: from there it is a short walk up the Edgbaston Park Road through the East Gate for the University Campus.

#### Train Information

- Trains whose ultimate destination is Longbridge, Redditch, Hereford and Cardiff Central stop at University station. There is a train from New Street, the main, central station for Birmingham, on average every 15 minutes; the journey takes only 8 minutes and is 2 stops from New Street. University station is at the West Gate of the University.



QR Code links to campus map of University of Birmingham provided by venueBirmingham



# SPECIAL EVENTS AND NETWORKING OPPORTUNITIES

**WEDNESDAY**  
**OCTOBER 22**

**WELCOME AND OPENING KEYNOTE**  
**HALL 5 (LEVEL 4)**  
**08:30 – 9:30**

**Coffee/Refreshments**

Hall 4  
8:00 – 8:30

**Networking Break**

Hall 4  
09:30 – 10:00 &  
15:30 – 16:00

**Networking Lunch**

Hall 4  
12:30-13:30  
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**WELCOME BY GENERAL CHAIR**  
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**FEATURED KEYNOTE SPEAKER**  
**WOLFGANG WARNECKE**  
**CHIEF SCIENTIST, SHELL**

Dr. Wolfgang Warnecke appointed to as Shell's  
**Chief Scientist for Mobility** since early 2011.

The 10 Chief Scientists in the Shell organisation, reporting directly to the CTO, are leading the Shell Group Technologies, ranging from Geology to finished Fuels and Oils. The Chief Scientist role for Wolfgang Warnecke is covering all technology developments in transport, related to fuels and lubricants and all issues on Mobility directions, ranging from Marine, Rail and Aviation to Off- and On-Road incl. Motorsport. In addition

to his Chief Scientist role, Wolfgang is also Senior Technology Manager for longer term Fuels Development & Innovation in Shell. And since 1998 he is also the Head of Shell's Technology Centre in Hamburg, Germany, which specialises in fuels and lubricants development and engine, vehicle and marine technologies.

After studying Mechanical Engineering at the Technical University of Hannover (specialising in automotive combustion engines), he gained a PhD in Automotive Engineering from Hamburg University in 1987.

Joining Shell in 1987, Wolfgang started his career as a scientist in the field of lubricant development and engine testing in Hamburg. He then moved to work as a senior scientist at Shell's UK technology centre before returning to Hamburg to head up lubricants development and engine testing. Subsequent assignments in Shell's Business units included Lubricants Technical Services in Germany or Fuels Marketing in London.

**TOUR TO CASTLE BROMWICH**  
Wednesday 22 October

1st Tour: (max delegates 36 persons)  
Depart ICC at 09:30  
Arrive at Castle Bromwich 10:00  
Tour Time 10:00-11:00  
Return to ICC 11:30

2nd Tour (max delegates 24 persons)  
Depart ICC at 12:30  
Arrive at Castle Bromwich 13:00  
Tour Time 13:00-14:00  
Return to ICC 14:30

Cost is \$20. Check SAE Registration Desk for Availability.



**SAE INTERNATIONAL**

ATTENTION SAE EVENT ATTENDEES:

# **FOR MORE SAE INTERNATIONAL POWERTRAIN AND FUEL RESOURCES....**

[engineering.sae.org/mypowerinfo](http://engineering.sae.org/mypowerinfo)

Grow Personally & Professionally with SAE Membership.

**The Advanced Internal  
Combustion Engine  
Technologies Report,  
2013 Edition**

Check out this featured product and others!



# SPECIAL EVENTS AND NETWORKING OPPORTUNITIES

**THURSDAY**  
**OCTOBER 23**

## **SAE OUTLOOK FOR FUTURE ENGINES/ FUELS & FUTURE ENGINEERS SYMPOSIUM**

**UNIVERSITY OF BIRMINGHAM**

**GREAT HALL**

**08:30 – 20:00**

There is a separate registration fee to attend this event. Please sign up at the SAE registration desk

8:30 - 8:45	University Welcome Speech, Richard Williams, Pro-Vice-Chancellor and Head of College, Engineering and Physical Sciences, University of Birmingham and General Chair, Hongming Xu
8:45 - 10:25	Keynote Speakers Neville Jackson, Overview of Future Powertrains Ausilio Bauen, E4tech, Automotive Biofuels Road Map Work
10:25 - 10:45	Coffee Break
10:45 - 12:25	Session 1: Future Fuels Moderator: Roger Cracknell, Shell <b>Biofuel Contribution to EU Road Transport in 2030</b> Ausilio Bauen, Director E4tech <b>The Outlook for Road Transport Fuels in Europe</b> Heather Hamje, Science Executive, CONCAWE <b>The Contribution of Natural Gas to Commercial Road Transport</b> Steve Whelan, Technical Director, Clean Air Power, UK <b>Hydrotreated Vegetable Oil</b> Markku Kuronen, Associate in Research and Technology: Neste Oil Corporation <b>Octane Number Trend of Future Fuels</b> Gautam Kalghatgi, Principal Professional, Saudi Aramco
12:30 - 13:30	Lunch Break/Networking session
13:30 - 15:10	Session 2: Future Engines Moderator: Steve Richardson, Jaguar Land Rover <b>Session Introduction; Welcome and Outline of the Structure and Aims</b> Steve Richardson, Jaguar Land Rover <b>System Approach New Energy Vehicle</b> Heiko Weller, Robert Bosch LLC <b>Subsystem Requirements for Low Carbon Vehicles</b> Dave Greenwood, Univ. of Warwick <b>Future Trends Gasoline Engines</b> Guenter K. Fraidl, AVL LIST GmbH <b>Overview of Load Extension with Gasoline Compression Ignition (GCI) using 87 AKI Fuel from 20 Bar BMEP to Idle</b> Stephen Ciatti, Argonne National Laboratory <b>Session Closing Remarks</b> Steve Richardson, Jaguar Land Rover
15:10 - 15:20	Break
15:20 - 17:00	Session 3: Future Engineers - Creating a Vision and Fulfilling the Expectation Moderator: Richard Stobart, Loughborough University Panelists: Jo Lopes, Head of Technical Excellence, Jaguar Land Rover Jenny Body, President of the Royal Aeronautical Society Helen Wollaston, Director of WISE Prof Fred Maillardet, Chair the Institution of Mechanical Engineers Education Advisory Group (EAG), and former Dean of Engineering, Brighton University Prof Zoran Filipi, Timken Endowed Chair in Vehicle System Design at Clemson University

# SPECIAL EVENTS AND NETWORKING OPPORTUNITIES

17:00 - 18:30

Student Poster Session & Tours of the Mechanical Engineering School Laboratories

Student Poster Participants:

**Thermally Efficient Advanced Diesel Exhaust Aftertreatment**

Isaline Lefort, University of Birmingham

**Effect of an Oxygenated Functional Group in a Fuel Molecule on Exhaust Gas Emissions and Engine Thermal Efficiency of a Compression Ignition Engine**

Elina Koivisto, University College London

**Method for Determining the Oxidation Stability of Biofuels by Means of Dielectric Spectroscopy**

Mustafa Eskiner, Coburg Univ. of Applied Sciences

**Bio Lubricants in Automotive Applications**

Julia Carrell, Univ. of Sheffield

**Lowering Boiling Curve by Metathesis Reaction**

Martin Kortschack, Coburg Univ. of Applied Sciences

**Characterization of Particulate Matter Emitted From Gasoline Direct Injection Engines**

Maria Bogarra Macias, Univ. of Birmingham

**Development of a Fast-acting, Time-resolved Gas Sampling System for Combustion Analysis**

Midhat Talibi, University College London

**Development and Experimental Investigation of a Compressed Air Engine**

Vasu Kumar, Delhi Technological University

**Laser-induced Fluorescence Spectroscopic Sensor for Real-time Identification of Fossil Diesel Fuel, Biodiesel and Biodiesel Blends**

Viktor Gross, Coburg Univ. of Applied Sciences

**Characterisation of Spray Development with Hydrous and Anhydrous Ethanol Fuels for Direct-Injection Spark-Ignition Engines**

Jaimin Shukla, Pavlos Aleiferis, University College London; Mark L. Brewer, Shell Global Solutions UK; Roger Cracknell, Shell

**Development of an Isobutanol Flexible Fueled Performance Trail Snowmobile for the SAE Clean Snowmobile Challenge**

Madeleine Scanlon Moir, Michael Jaymes Cox, Gregory W. Davis, Kettering Univ.

**A new experimental approach to achieve controlled HCCI-DI combustion by in-cylinder multi injection strategy: Methods, results and discussions**

Pranab Das, Indian Institute of Technology-Delhi

**Dieseline Partially Premixed Compression Ignition Combustion**

Soheil Zeraati Rezaei, Univ. of Birmingham

**Impact of DMF and MF on Engine Performance and Emissions as New Generation of Sustainable Biofuels**

Chongming Wang, Univ. of Birmingham

**Impact of Cold Ambient Conditions on Diesel Engine Emissions and the Performance of Diesel Oxidation Catalyst**

Dai Liu, Univ. of Birmingham

**Influences of cold ambient temperature on particulate emission under transient operating condition**

Jianyi Tian, Univ. of Birmingham

**A Study of Methodology for the Investigation of Engine Transient Performance**

Cheng Tan, Birmingham Univ.

18:30

reception

Presentation of prizes for best posters followed by networking

Great Hall foyer

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