

Trade: Exporting to the world



# UK exhibitors and visiting delegation **Electric Vehicle Symposium 26**

Los Angeles, USA, 6 – 9 May 2012





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### Foreword



I am delighted that the United Kingdom is participating in the 26th Electric Vehicle Symposium in Los Angeles, California and extend a warm welcome to all our UK delegates.

Low carbon technology is of increasing global importance. In Britain, companies of all sizes are at the forefront of developments in emission regulation, power train electrification, lightweighting, improved battery storage and management system technology. This year's UK delegation includes a number of our leading companies and other innovative enterprises.

Our automotive sector is diverse, vibrant and world-renowned including many internationally recognised Tier 1 component manufacturers, technology providers, design and engineering consultancies and worldclass universities. Multinational companies are investing in the UK for R&D, testing and manufacture of vehicles and components. The UK and USA are natural partners with a long and successful history in the automotive industry. There have been large investments in both directions and increasing collaboration in R&D.

EVS26 will provide a great platform to develop new partnerships. We invite you to meet UK companies at stand 1037 and at our seminar presentation on Sunday May 6 and networking events on Monday May 7, as detailed in this brochure.

#### Dame Barbara Hay

Consul General British Consulate-General Los Angeles, California

### Society of Motor Manufacturers

### and Traders Ltd (SMMT)

The Society of Motor Manufacturers and Traders Ltd (SMMT) is the trade association for the UK motor industry. SMMT represents over 550 UK automotive organisations from volume vehicle manufacturers through the supply chain down to small component suppliers as well as R&D centres.

The UK is at the forefront of electric vehicle and hybrid technologies, with strong support from government. The ten companies exhibiting on the SMMT pavilion at EVS26 are all keen to develop strong links and business contacts with American automotive companies.

SMMT is pleased to be the mission leader for this select group that represent the diverse range of technologies on offer in the UK. SMMT is similarly keen to build relationships with American companies and organisations looking to increase their activity in the UK.

We are located in booth 1037 of the main hall, and look forward to meeting you at the show.



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#### Contacts:

#### David Croxson

DD: **+44 (0)20 7344 9230** Mobile: **+44 (0)7793 773 391** E-mail: **dcroxson@smmt.co.uk** 

#### Rob Morbin

DD: +44 (0)20 7344 9265 Mobile: +44 (0)7809 522 183 E-mail: rmorbin@smmt.co.uk

#### Pat Shaw

DD: +**44 (0)20 7344 9260** Mobile: +**44 (0)7809 522 452** E-mail: **pshaw@smmt.co.uk** 

#### Samantha Larner

DD: **+44 (0)207 344 9229** Mob: **+44 (0) 7809522185** E-mail: **slarner@smmt.co.uk** 

### Introduction to the

### UK Automotive Industry

The Society of Motor Manufacturers and Traders (SMMT) represents a dynamic and diverse UK automotive industry that has earned a welldeserved reputation for quality, innovative design, and manufacturing excellence. The UK is well placed to lead the global transition to a low carbon economy.

Strong government support for electric vehicle technology is manifest in a considerable number of policy initiatives, with the aim of making the UK a world leader in research. development and adoption of electric vehicles. London has announced a series of proposals to foster the electric vehicle market and Mayor Boris Johnson has announced his aim for London to become 'the electric car capital of Europe'. With consumers 'switched on', government 'plugged in' and commitment to innovation second to none the UK electric vehicle market is rapidly going places.

Over £1.3 billion is spent on automotive R&D annually in the UK and a strategic shift towards a low carbon economy will see in excess of £150 billion invested in low and ultra-low carbon vehicle technologies in the UK over the next 20 years. This investment into R&D is complemented by a dedication to training, skills and attracting the brightest talent into the sector. The UK automotive industry provides hundreds of training courses, supporting over 14,000 apprenticeships last year and dedicating great resource to training and up-skilling. In 2011, 64 per cent of UK automotive companies provided training, with 58 per cent recruiting 16-year olds from school, 11 per cent directly from university. The strong collaboration between industry and academia makes the UK a highly connected market with industry having open access to UK research skills and technology development. Industry co-operates closely with government, a relationship that is represented by a join Government/ Industry Automotive Council.

The UK government sees electric vehicles as a key factor in the drive to meet UK CO<sub>2</sub> reduction targets and as a result has introduced a range of incentives for electric passenger cars: including a 'plug-In car' grant. From January 2011 (until 2014), motorists purchasing a qualifying ultra-low emission vehicle can receive a grant of up to £5,000 for cars and from February 2012 £8,000 for vans as part of the new 'plug-in-van' grant. Further measures include zero Vehicle Excise Duty, no London Congestion Charge, favourable benefit-in-kind rates for company car drivers and free parking in some areas.

SMMT has an excellent relationship with the UK government and forms a supporting bridge between the UK automotive industry and policy makers. SMMT has formed an Electric Vehicle Group with around 175 company members from all areas of the EV industry; vehicle manufacturers, battery manufacturers,



infrastructure providers and many more and a number of representatives from this group are represented in the delegation visit.

Working in collaboration with government, UK based manufacturers are committed to offering ever more efficient products through the introduction of increasingly efficient engines and alternative technologies and have helped the UK motor industry make significant progress in cutting CO<sub>2</sub> emissions:

- In the last 10 years, CO<sub>2</sub> emissions of new cars registered in the UK have fallen by over 20 per cent, falling to 138.1g/km in 2011.
- More than 120,000 cars on UK roads by the end of 2011 emitted less than 100g/km CO<sub>2</sub>.
- Average new car CO<sub>2</sub> emissions fell 4.2 per cent in 2011, representing the second biggest annual fall in CO<sub>2</sub> emitted since 2007.
- The Automotive Council has identified five 'sticky' technology groups where the UK has the potential for a significant return on investment. These include; energy storage and management, electric motors and power electronics, internal combustion engines, lightweight vehicle and powertrain structures and intelligent mobility.

The EV market in the UK is making good progress with innumerable business opportunities for UK and overseas based companies in a range of areas. This has resulted in recent announcements from major vehicle manufacturers to invest, such as Nissan's decision to build the electric LEAF and a new factory for battery manufacture in Sunderland in the north east of England, ongoing interest and activity in the UK from a growing group of global vehicle manufacturers including BMW MINI, GM, Honda, Jaguar Land Rover, Lotus, Mitsubishi, Nissan, PSA, Renault, Smart, Tesla, TATA and on commercial vans activity from Mercedes-Benz, Renault, Smith and Allied

The charging infrastructure also requires the development of sophisticated electronic management systems and software and the need for suitable legislation, regulation and protocols to facilitate the introduction and development of this infrastructure – this is a key area of focus for SMMT.

Battery production requires the manufacture, sourcing and assembly of a number of elements.

This provides opportunity for a new set of suppliers and sub-assembly manufacturers to join together, which then have to be coupled to the battery management system. In the UK there are a number of companies entering the battery arena from the announcement of Nissan's new facility, to leading smaller manufacturers and R&D teams with unique technology and expertise in this area.

Demand for electric and alternativelyfuelled vehicles reached record levels in the UK in 2011, and accounted for 1.3 per cent of the market. Sizeable uptake of low, lower and ultra-low carbon vehicles will still depend on a number of organisations within manufacture and operations working together.

SMMT welcomes the opportunity to bring together UK and USA colleagues with mutual interests and involvement in entering the debate, contributing valuable ideas and practical solutions for a successful and sustainable future. EVS26 presents the opportunity for new organisations and new ways of thinking to come together, an opportunity the UK delegation looks forward to exploring.

### UK Seminar programme

### Sunday 6 May 14:00 - 17:00

LA Convention Center, Room 510. \*Invitation only – see below

# The UK: The Connected Innovation Nation – ingenious solutions driving business opportunities

## A Connected Market, presented by TSB

An overview of the UK low carbon market with reference to OEM research facilities and government strategy on investment, R&D, skills and market uptake.

#### Bridging the Gap Between Current Needs and Future Electric Vehicles, presented by Lotus Engineering

The importance of range extenders as a way to facilitate the ease of use for an electric vehicle as one's single daily vehicle. Examples will be show that illustrate the need for more energy than is currently available with state of the art battery technology.

# The varied landscape of UK innovation, presented by Ricardo UK

Expanding on the 'sticky technology' areas, defined by the Automotive Council with leading examples of key research.

# Fostering SME innovation in the UK, presented by Dearman Engine Company

Dearman will highlight the technology behind their exciting liquid air engine while explaining why the UK is a great place for US investors to come looking for world leading technology.

#### Axial Flux technology – A new dimension for Electric and Hybrid Power-trains,

#### presented by GKN and Evo Electric

Designed and manufactured in the UK, this cutting edge technology offers significant efficiency and manufacturing advantages, which translate into lighter, smaller and more efficient hybrid and electric drivetrains.

# Academic excellence delivering bottom line benefit,

#### presented by Coventry University and Oxford Brookes University

This presentation will highlight the global standing of UK academia, leading technology and the flexibility with which industry can access UK research skills.

#### Q&A, followed by networking reception

#### \*For invitation contact:

Michael Hallquist, UKTI, British Consulate-General, Los Angeles Email: michael.hallquist@fco.gov.uk Tel: 1 (310) 481 2902

### UK Networking reception

### Monday 7 May 18:00 – 21:00

Networking Reception to introduce UK delegation in conjunction with Los Angeles Cleantech Incubator. \*Invitation only – see below

411 S. Hewitt Street, Downtown Los Angeles Lead UK panellist Lord Paul Drayson PhD FREng, Drayson Racing

### Other presentations

All rooms at LA Convention Centre, see EVS26 catalogue for full details

Arup UK, www.arup.com May 7, 12:30 – 14:00, Room 511 and 13:00 - 14:30, Room 502B **Coventry University** (see page 14) May 7, 16:30 - 18:00, Exhibit Hall May 8, 10:00 - 11:30, Room 511 Cenex. www.cenex.co.uk May 7, 16:30 – 18:00, Exhibit Hall CHEEVC, www.cheevc.com May 7, 16:30 - 18:00, Exhibit Hall **Dearman Engine Company** www.dearmanengine.com UK seminar 6 May 14:00 - 16:00 Room 510 IDTechEx, www.idtechex.com May 7, 12:30 -14:00, Room 511 Imperial College London Monday 7th from 16:30 - 18:00 **Exhibit Hall** Intelligent Energy, (see page 21) May 7, 16:30 - 18:00, Exhibit Hall

Lotus Engineering, (see page 22) May 8, 08:00 - 09:30, Room 515A Newcastle University, www.ncl.ac.uk May 7 12:30 – 14:00, Room 501 and May 8, 08:00 - 09:30, Room 502B Protean Electric www.proteanelectric.com May 8, 16:30 – 18:00, Exhibit Hall **Ricardo**, (see page 26) May 8, 08:00 - 09:30, Room: 502A and May 8, 16:30 - 18:00, Exhibit Hall **UK Technology Strategy Board** www.innovateuk.org May 8, 13:00 – 14:30, Room 502B and May 9, 08:00 - 09:30 Room 502A TRL. www.trl.co.uk May 7, 14:30 - 16:00, Room 501 University of Surrey, www.surrey.ac.uk May 9, 08:00 - 09:30, Room 511 and May 8, 16:30 - 18:00, Exhibit Hall Urban Foresight UK www.urbanforesight.org May 9, 08:00 - 09:30, Room 503

\*For invitation contact:

Michael Hallquist, UKTI, British Consulate-General, Los Angeles Email: michael.hallquist@fco.gov.uk Tel: 1 (310) 481 2902

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### UK Exhibitors

### Ashwoods Automotive

#### **Bob Beckwith**

Hybrid House 80 Summerway, Exeter, EX4 8DS, United Kingdom Tel: **+44 (0)1392 341153** Email: **bob.beckwith@ashwoods.org** www.ashwoods.org

Ashwoods Automotive is the largest supplier of hybrid light commercial vehicles in the UK and is becoming recognised as one of the leading players in HEV and EV core drive train components including electric motors, gearboxes, batteries and Battery Management Systems.

Ashwoods pride themselves on their skills and knowledge gained designing and developing hybrid and electric vehicles. Their bespoke engineering solutions incorporate all aspects of simulation, modelling and their proprietary battery management design and integration. The company currently offer custom solutions including;

- Electric and hybrid drive train integration
- Mechanical and electromechanical design
- HEV and EV prototype design and manufacture
- Simulation modelling and testing
- Vibration analysis and vibration testing
- Design of custom embedded systems

### Axeon

#### **Rebecca Trengove**

Nobel Court Wester Gourdie, Dundee DD2 4UH, Scotland, United Kingdom

Tel: **+44 (0)1382 400040** Mob: **+44 (0)7814 865410** Email: **rtrengove@axeon.com** www.axeon.com

Axeon is one of Europe's foremost producers of Lithium-ion battery systems for electric, hybrid and plug-in hybrid electric vehicles (EVs, HEVs and PHEVs). Axeon's battery and charger systems are designed and manufactured to full automotive standards, incorporating all the exacting requirements of packaging design, thermal management, electronics and vehicle integration. Axeon works with many of the world's most advanced cell manufacturers. Currently Axeon's EV batteries give a range of up to 140 miles from a single charge, with stored capacity ranging from 5 kWh to 180 kWh. Axeon's Battery Management System is a market-leading technology for managing lithium-ion batteries, delivering safe, durable performance.

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Exhibiting: UK Pavilion Booth 1037

### ChargeMaster



#### **Janet Mills**

Mulberry House, Parkland Square, 750 Capability Green, Luton, LU1 3LU, United Kingdom Tel: **+44 (0)1582 399408** Mob: **+ 44 (0)7943 892673** Email: **janet.mills@chargemasterplc.com** www.chargemasterplc.com

Chargemaster Plc, European premier supplier of electric vehicle charging solutions. The company's team has over 25 years' experience of developing, managing telematics and motoring orientated infrastructures. It offers a full range of charging post solutions including single, dual and fast charge solutions, as well as units for home use and has operations in UK, Ireland, France, the Netherlands and Germany. Chargemaster Plc has also developed a unique management system Chargevision, providing online services to both the site owner and the motorist.



### **Coventry University**

#### **Claire Edwards**

Corporate Partnership Unit

Coventry University, Priory Street, Coventry CV1 5FB, United Kingdom

Mob: +44 (0)7974 984432 Email: claire.edwards@coventry.ac.uk www.coventry.ac.uk

Coventry University is proud to be a business-facing university with a reputation for excellence in applied research. Coventry University's work in the field of low carbon vehicles builds upon a track record of excellence in automotive engineering and design and upon a recognised market need to design, evaluate and test the vehicles and systems required to establish low carbon vehicles as viable alternatives to traditional modes of transport. Our research and consultancy work covers all aspects of vehicle design and engineering as well as expertise in intelligent transport systems, social policy and the behavioural aspects of vehicle use.

Exhibiting: UK Pavilion Booth 1037



### Delta Motorsport

#### **Nick Carpenter**

Unit 2250, Silverstone Technology Park Silverstone Circuit, Northants, NN12 8GX, United Kingdom

Tel: :+44 (0)1327 858200 Mob: +44 (0)7801 289179 Email: nick@delta-motorsport.com www.delta-motorsport.com

Delta Motorsport is an innovative engineering consultancy that brings a motorsport philosophy of problemsolving to a wide variety of sectors, and particularly to the challenges associated with electric and hybrid passenger cars. Delta's creative and dynamic engineering team is equipped to work from component concept design right through to whole vehicle design, engineering, simulation and low-volume build. This includes body, chassis, suspension, powertrain, HV electrical systems and more.

Delta has recently designed and built its own battery-electric passenger car, a sporty 2+2 coupe, and in the process has developed a number of innovative technologies. These include a light weight carbon composite chassis that is also focused on reducing the cost associated with large composite parts and a high torque density electric motor developed in partnership with Oxford's "YASA Motors".

Delta is currently carrying out a number of EV-related programs. Examples include in-house projects such as the development of an ultra-compact range extender and the development of a powertrain controller with builtin torque vectoring functionality, as well as customer projects including the design of a very high power, liquid-cooled battery pack for a high performance hybrid road sports car.

### Drayson Racing Technologies



#### Lord Paul Drayson

Unit 29 Chancerygate Business Park Langford Lane, Kidlington Oxfordshire, OX5 1FQ, United Kingdom

Tel: +44 (0)1865 841044 Email: paul.drayson@draysonracing.com www.draysonracing.com

Drayson Racing Technologies LLP is a research & development business based near Oxford at the heart of the UK's world-leading motorsport industry and the Oxford University science cluster. Lord Paul Drayson, a serial science entrepreneur and the UK Minister for Science and Innovation in the previous government, formed Drayson Racing Technologies to act as a racing laboratory to incubate the development of sustainable technologies in the challenging environment of motor sport. We carry out R&D projects, both in-house and in co-development with our customers and technical partners. Our technology focus is on alternative fuels, hybrids and electric drivetrains.

We have achieved a number of notable firsts racing second-generation biofuels and we are currently focusing on the emerging field of electric vehicle racing.

Current projects include:

- 200mph prototype all-electric racing car with a 850hp drivetrain
- wireless charging
- FIA Formula E
- programmable biofuel system

### Electric & Hybrid Vehicle Technology International



#### **Simon Edmands**

International Sales & Marketing Director UKIP Media & Events, Abinger House, Church Street, Dorking, Surrey, RH4 1DF, United Kingdom Tel: **+44 (0)1306 743744 extn. 2186** Mob: **+44 (0)7753 821964** 

Email: simon.edmands@ukipme.com www.ukipme.com

First published in 1995 and now sent twice a year to over 30,000 key specifiers and decision-makers throughout the global automotive industry, Electric & Hybrid Vehicle Technology International is firmly established as the world's leading international showcase for technology and innovation in electric, hybrid and fuel-cell vehicle design, development and manufacture.

### **GKN** Driveline



#### **Riccardo Weber**

Global Marketing Manager Ipsley House, Ipsley Church Lane, Redditch, Worcs, B98 0WR, United Kingdom

Tel: +44 (0)1527 533649 Email: riccardo.weber@gkndriveline.com www.gkndriveline.com

GKN Driveline – the world's leading engineering company for automotive driveline solutions. A pioneer and systems leader in advanced hybrid and fully-electric powertrains, GKN Driveline delivers sophisticated engineering solutions to vehicle manufacturers worldwide. With advanced electric and hubrid drivelines on 250,000 vehicles on today's roads, GKN Driveline already supplies eDrive Systems to each major automotive region. The latest launch is the eAxle for the Peugeot Hybrid4 platform. This enables a fuel efficiency improvement of 35 per cent compared with conventional vehicles of similar size and performance. The electrically powered rear axle also provides for ondemand AWD. GKN Driveline's patented disconnect feature enables seamless switching between 2WD and AWD modes and reduces drag energy losses by mechanically decoupling the motor from the drivetrain when not required.

One key enabler for GKN Driveline's success is the ability to address the manufacturing scale by developing families of eAxles and eTransmissions across multiple customer programmes. This offers validated products quickly; essential advantages in this fast growing market.

GKN Driveline is also able to offer high performance electric motor/generators and integrated eDrive Systems using axial flux technology developed by UK-based EVO Electric. The advanced G-VO 130-S2 with an axial flux electric motor and a 2-speed synchroshift eTransmission delivers peak power of an impressive 140 kW and a dry weight of only 58 kg. By integrating the motor and eTransmission in a single unit this eDrive System is optimised for packaging, weight and performance.

#### Exhibiting: UK Pavilion Booth 1037

### Goodwolfe Energy

#### Ian Goodman

Unit 27/28 Laurence Industrial Estate Eastwoodbury Lane, Southend-On-Sea Essex, SS2 6RH, United Kingdom Tel: **+44 (0)1702 527883** Email: **ian@goodwolfeenergy.com** www.goodwolfeenergy.com

Goodwolfe Energy (formerly LiFeBATT UK) is a supplier of Lithium battery systems for hybrid electric vehicles (HEVs), plug-in hubrid electric vehicles (PHEVs), and full battery electric vehicles (EVs), including, cars, buses, trucks, scooters & motorcycles. Combined with proven cell management, CANbus communication and modular architecture, we provide flexible "plug & play" solutions. The Lithium Iron Phosphate (LiFePO4) modules from Goodwolfe Energy benefit from the latest cell technology and CANbus Battery Management System ensuring safety, cycle and calendar life, reliability and cost control.

We offer a standard range of battery modules but are able to build entirely bespoke solutions to match a customer's individual requirements. Due to the adaptability of the batteries, rapid prototypes are able to be developed and deployed in less than 4 weeks. Over 1 million miles of vehicle testing has been used to develop advanced cell balancing strategies for use in Hybrid and Range Extended Electric Vehicles (REEV) applications. Our team is able to provide full worldwide on-site technical support, to our customers, from our R & D and distribution centre in the UK.



### IDTechEx

# **ID**TechEx

### Dr. Peter Harrop

Downing Park, Swaffham Bulbeck, Cambridge, CB25 0NW, United Kingdom Tel: **+44 (0)1256 862163** Email: **p.harrop@idtechex.com** 

www.idtechex.com

IDTechEx is headquartered near Cambridge UK. With 30 people, many of them PhDs, it stages the annual "Electric Vehicles Land, Sea, Air" conference and exhibition in California and carries out consultancy and publishes on EVs, their components and charging infrastructure and on allied technologies such as printed electronics and energy harvesting. For the latter two, it runs the world's largest events, these being in the USA, Europe and East Asia. It has offices in the USA, UK, Poland, Germany and New Zealand. There are 18 current IDTechEx reports on electric vehicles and their components and infrastructure and the company is holder of the Queen's Award for International Trade.



### Intelligent Energy

Charnwood Building, Holywell Park Ashby Road, Loughborough Leicestershire, LE11 3GR, United Kingdom

Tel: +44 (0)1509 271271 Email: marketing@intelligent-energy.com www.intelligent-energy.com

Intelligent Energy is a leading power technology company with a globally scalable business, operating in the stationary power, motive and consumer electronics sectors. Our proprietary and highly efficient power cores are designed to be integrated into high volume, mass market products and have received commercial approval from significant global brands. Formed in 2001 but drawing upon a quarter of a century's fuel cell expertise, Intelligent Energy's headquarters and technology delivery centre is in Loughborough, UK, with offices in London, Long Beach, Bangalore and Osaka.

Intelligent Energy is a B2B company accelerating and de-risking its Blue Chip customers go-to-market plans.

Intelligent Energy's class leading fuel cell systems are applied across sectors and markets:

- Consumer Electronics: portable & extended operating power
- Stationary Power: CHP, on-demand, telecommunications, backup power, emergency power
- Motive Power: Two-wheeled vehicles, automotive, commercial vehicles

As part of its commercialisation plans Intelligent Energy has formed a number of joint venture companies. In March 2012, Intelligent Energy and Suzuki Motor Corporation formed the JV company Smile FC System Corporation in Japan, to develop and manufacture fuel cell systems for the automotive and other industry sectors.

### Lotus Engineering



Potash Lane, Hethel Norwich, NR14 8EZ United Kingdom Tel: **+44 (0)1953 608423** Email: **eng-uk@lotuscars.com** www.lotuscars.com

Lotus Engineering, part of Group Lotus, is internationally recognised as one of the world's most exciting and dynamic automotive engineering consultancies. With facilities in the UK, USA, Malaysia, China and Japan, Lotus Engineering provides advanced technology and engineering solutions to many of the world's automotive suppliers and vehicle manufacturers for:

- Lightweight Architectures bespoke architectures, advanced materials, lightweight structures
- Efficient Performance clean engines, alternative fuels, engine control
- Electric and Electronic Integration

   hybrids and electric vehicles,
   systems integration,
   power management
- Driving Dynamics concept design, vehicle attribute development, active technologies

### MAHLE Powertrain

#### Charles Dion (US) Daren Mottershead (UK)

Costin House, St. James Mill Road Northampton, NN5 5TZ, United Kingdom

Tel: +44 (0)1604 738226 Email: charles.dion@us.mahle.com daren.mottershead@gb.mahle.com www.mahle-powertrain.com

MAHLE Powertrain is the engineering services division of MAHLE GmbH, specialising in the design, analysis, development, calibration, testing and manufacture of high efficiency, IC engines. With R&D centres in Northampton, Stuttgart, Detroit, Sao Paulo and Shanghai, MAHLE Powertrain supports OEMs on a truly global basis. MAHLE's advanced downsizing demonstrator engine is now a recognised industry benchmark for highly optimised gasoline engine performance. MAHLE's new twin cylinder, 4-stroke, 30 kW range extender engine is currently being installed in an electric demo vehicle. Both programmes, managed entirely by MAHLE Powertrain, are expected to make significant advances in low carbon transport technologies.



### **Oxford Brookes University**



#### **Prof Allan Hutchinson**

Head of the Sustainable Vehicle Engineering Centre Oxford Brookes University, Wheatley Campus Wheatley OX33 1HX, United Kingdom Tel: **+44 (0)1865 483504** Email: **arhutchinson@brookes.ac.uk http://mems.brookes.ac.uk** 

Oxford Brookes University occupies a strong position in automotive and motorsports engineering education. The Department of Mechanical Engineering and Mathematical Sciences provides a range of professionally accredited batchelor's and master's programmes.

Our focus is to provide world class, high quality teaching and applied research. The Department has around 700 students supported by experienced and well qualified academic and technical staff who also spend a significant proportion of their time working with outside organizations, many global, as practitioners in their discipline. We participate in leading edge projects such as the MINI-E and advanced engine design, and have been recognised for our research excellence. The Sustainable Vehicle Engineering Centre (SVEC) is driving innovation to create effective, affordable, energyand resource-efficient transport. SVEC deals with: forecasting, strategy and the implications of legislation; life-cycle analysis and end-of-life; development of sustainable technologies; electric vehicle introduction and e-mobility research.

### Qualcomm Halo

#### **Joe Barrett**

Snr. Director, EID Marketing Building 4, Chiswick Park, 566 Chiswick High Road, London, W4 5YE, United Kingdom

Tel: +44 (0)7976 037327 Email: jbarrett@qualcomm.com www.qualcomm.com

Qualcomm Halo is pioneering the development of Wireless Electric Vehicle Charging (WEVC) technology as a way to bring Electric Vehicles (EV) to the mass market. WEVC means no cables or plugs – the EV battery is charged using magnetic induction to transfer energy between a ground based pad and an on vehicle charging pad. Simplicity and Ease of Use are key features of Qualcomm Halo WEVC, which will help drive global EV adoption and increase air quality, from the reduction in air borne particle matter, especially in cities.

Exhibiting Booth 805



### Ricardo

#### **David Greenwood**

Shoreham Technical Centre Shoreham-by-Sea, West Sussex BN43 5FG, United Kingdom

Tel: +44 (0)1273 455611 Email: david.greenwood@ricardo.com www.ricardo.com

Ricardo is a global, world-class, multiindustry consultancy for engineering, technology, project innovation and strategy. With a century of delivering value, we employ over 1600 professional engineers, consultants and staff.

Ricardo expertise in hybrid and electric vehicle technology is comprehensive as evidenced by our track record of delivering in excess of 150 commercial projects and collaborative programmes in the sector over the last 15 years. Our world renowned capabilities in delivering successful solutions to the twin imperatives of the need for cleaner powertrains and more energy efficient propulsion are being realised right now. We can clearly illustrate this from case studu and demonstration vehicles that show the art of the possible, and we rise to the technical challenges our clients face on a daily

basis, helping them realise successful outcomes in compressed timescales. We offer a start-to-finish service from strategic consulting through R&D into manufacture and market launch, and look forward to sharing our proposition at EVS26

Our client list includes the world's major transportation Original Equipment Manufacturers (OEM), supply chain organisations, energy companies, financial institutions & governments.

Guided by our corporate values of respect, integrity, creativity & innovation and passion, we enable our customers to achieve sustainable growth and commercial success.

Exhibiting: UK Pavilion Booth 1037





### Sevcon

#### **Dave Lamb**

Kingsway South Gateshead NE11 0QA, United Kingdom Tel: **+44 (0)191 497 9159** Email: **dave.lamb@sevcon.com** www.sevcon.com

For over 50 years, Sevcon has been producing high quality traction motor controller systems used on battery powered electric vehicles. With product development in the UK and a global network of commercial and engineering support, our products have been successfully applied to a vast range of pure electric and hybrid vehicles around the world.

Sevcon products continue to evolve in order to meet new and ever higher requirements of vehicle performance, reliability and safety that are demanded today; including system integration with the very latest battery and motor technologies. Our advanced technology has been used in various applications around the world from industrial and off-road All Terrain Vehicles to on-road two wheel, four wheel and hybrid vehicles. We offer some of the most compact and efficient controllers/inverters, DC/DC converters and accessories for the EV market. The Sevcon Gen4 series represents the very latest in compact AC motor controller technology, delivering a high power capacity relative to size.

### The Technology Strategy Board

**Technology Strategy Board** Driving Innovation

The Technology Strategy Board North Star House, North Star Avenue Swindon, SN2 1UE, United Kingdom

Tel: **+44 (0)1793 442700** Email: **enquiries@tsb.gov.uk** www.innovateuk.org

The Technology Strategy Board is the UK Government body promoting technology-enabled innovation. Our vision is for the UK to be a global leader in innovation and a magnet for innovative businesses, where technology is applied rapidly, effectively and sustainably to create wealth and enhance quality of life.

We promote innovation by spreading knowledge, understanding policy and spotting opportunities, and by investing in programmes and projects that bring together business and research partners to solve problems or make new advances – ultimately bringing new products and services to commercial reality.

### **Zytek Automotive**

#### **Steve Tremble**

Sales and Marketing Director Lancaster Road Fradley Business Park, Fradley Lichfield, WS13 8RY, United Kingdom

Tel: +44 (0)1543 412789 www.zytekgroup.co.uk

Zytek Automotive is a specialist powertrain and vehicle engineering company dedicated to delivering exceptional value to its clients with innovative engineering solutions. From its expertise in the development of engine management control systems, Zytek Automotive is now designing and manufacturing electric and hybrid powertrains and ancillary components to many of the leading vehicle manufacturers, where it has demonstrable experience and a proven track record in solving complex engineering challenges for production vehicle projects.

Zytek Automotive's success can be attributed to its highly skilled and committed workforce, its comprehensive in house test and development facilities, and its electronics and electric traction motor production facilities – a feature unique to Zytek amongst automotive design consultancies.



### UK Trade & Investment

UK Trade & Investment is the Government Department that helps UK based companies succeed in an increasingly global economy.

Our range of expert services are tailored to the needs of individual businesses to maximise their international success. We provide companies with knowledge, advice and practical support.

UK Trade & Investment also helps overseas companies bring high quality investment to the UK's dynamic economy – acknowledged as Europe's best place from which to succeed in global business. We provide support and advice to investors at all stages of their business decision making. UK Trade & Investment offers expertise and contacts through a network of international specialists throughout the UK, and in British Embassies and other diplomatic posts around the world.

We can assist at all stages of the business planning cycle, from inception to completion. For an overview of what UK Trade & Investment does to foster companies' growth please visit:

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### UK Trade & Investment contacts Los Angeles

#### **Mike Rosenfeld**

Vice Consul USA Clean Technology Sector Lead

 DD:
 001 310 481 2986

 Mobile:
 001 310 420 0835

 Email:
 mike.rosenfeld@fco.gov.uk

#### Ian Rysdale

Vice Consul – Trade & Investment Officer Advanced Engineering & Aerospace

 DD:
 001 310 481 2965

 Mobile:
 001 310 261 4803

 Email:
 ian.rysdale@fco.gov.uk

#### **Jocelle Arcilla**

Business Development Associate Advanced Engineering & Aerospace

 DD:
 001 310 481 2938

 Mobile:
 001 310 869 0768

 Email:
 jocelle.arcilla@fco.gov.uk

#### **James Cummings**

Business Development Associate Clean Technology

 DD:
 001 310 481 2986

 Mobile:
 001 818 408 9735

 Email:
 james.cummings@fco.gov.uk

Michael Hallquist Business Development Associate Clean Technology

 DD:
 001 310 481 2902

 Mobile:
 001 262 565 3596

 Email:
 michael.hallquist@fco.gov.uk





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