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# News release

## For immediate use

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### Academy conference examines broad range of automotive opportunities

The UK's resurgent automotive sector is in a good position to be a global leader in automotive innovation, a half-day conference organised by the Royal Academy of Engineering heard yesterday. Innovation in the automotive sector covers a very broad spectrum – not just in the vehicles themselves, but also in the way that they are designed and manufactured and in the wider business of providing “mobility services”. Many of the central issues for the future automotive industry, such as the role of electric vehicles, are undecided, and there are many opportunities for innovation by companies and organisations both big and small.

The conference, Innovation in Automotive, is one of a series of innovation events at the Academy investigating sectors where UK engineering is generating competitive advantage worldwide. Innovation in the automotive industry is often characterised as being driven by the various new ideas for power, such as electric vehicles, hybrids and fuel cells, and this area, combined with developments that make existing petrol and diesel engines more economic and cleaner, is clearly an important focus for future research.

Lord Drayson, former science minister, current head of Drayson Racing and a passionate advocate of electric vehicles, told the conference: “Now is a great time to be in the car business, but it's electrons you need these days in your veins, not petrol.”

Other speakers, however, considered that there were still many options for achieving the twin aims of cutting fuel consumption and reducing emissions. Steve Sapsford, the motorsports and high performance vehicles chief at the leading automotive technology group Ricardo, said there were “no clear winners and no silver bullets”. He outlined different electric, hybrid and alternative fuel ideas, plus energy recovery devices, and for each there were apparent advantages but also some current disadvantages, he said.

But automotive innovation spans many different issues and some very broad themes. The Royal Academy of Engineering conference also heard about:

- new kinds of research collaboration between industry and universities;
- increasing crossover between developments in motorsports and the mainstream automotive industry;
- new technologies in areas as diverse as electronics, communications and materials; and
- new business models in which customers are buying “mobility” – which may, or may not, mean that they end up buying a car.

Jerry Hardcastle, Nissan's technical director for global motorsports, has long experience of working with universities in the UK and beyond, and said that UK academia had strengths in terms of skills, knowledge and resources. Nissan has recently launched innovative products like Qashqai, Leaf and GT-R and wants to continue to create “innovation that excites”, if the UK academic sector maintains its' global competitiveness it is well positioned to work together with Nissan to deliver the automotive innovations of the future.

Professor Richard Dashwood, Academic Director of the Warwick Manufacturing Group, agreed that there were strong plus-points for the UK academic sector, but there was limited money available in the UK for collaborative R&D projects, and there were issues of compatibility between industry's timescales and those of universities. Recent initiatives, however, such as the Catapult Centres, the UK Energy R&D Centre and the National Automotive Innovation Campus, were expanding the opportunities for partnerships linking industry and academia.

Dick Glover, McLaren Automotive Research Director stated that motorsports are generally seen as a test bed for the innovations and technologies that we now see in road cars. Innovations such as structural carbon fibre and active suspension were bridging the divide between the two and can now be seen on supercars such as the McLaren 12C, he said. And Steve Sapsford from Ricardo said there was a lot of lobbying to get the technology roadmaps produced for the two industries into closer alignment.

A continuing theme of the Academy conference was the need to see automotive industry innovation in a wider context. Mark White, Chief Technical Specialist responsible for Body Development at Jaguar Land Rover, outlined developments in materials and manufacturing that could save up to 25% of the weight of a vehicle and that have the effect (when combined with related Power train downsizing and improved parasitic losses) of making a new petrol car as efficient as a previous diesel, and a new diesel as efficient as an earlier hybrid in terms of CO2 reduction. But, he said, the industry needed to take a broader view of Life Cycle energy usage and costs; and changes to process technologies contribute as well as more obvious changes such as new materials to ensure we tackle all aspects of sustainability, not just focus on reducing tail pipe emissions alone.

Recent figures indicate that the UK automotive industry increased vehicle production in 2012 by 9% and that the sector was a net exporter for the first time in many years. Two final speakers at the conference questioned whether car sales and numbers produced are a measure of success that has a long-term future.

Tony Douglas, head of sales and marketing for BMW Mobility Services, explained that innovative solutions to improve urban travel – both inside and outside the car – are an important element of the BMW i brand. BMW Group's first custom-built all-electric vehicle, the BMW i3 will be launched later this year and is the world's first implementation of series produced carbon fibre passenger cells in automotive production. Smart solutions for personal urban mobility need intelligent and integrated services such as the online marketplace ParkatmyHouse, and DriveNow, an innovative car-sharing scheme.

Zipcar is not an automotive manufacturer, with its business model centered around car sharing as outlined by Mark Walker, Zipcar's UK General Manager. Zipcar understands how customer behaviour is changing, and the increasing importance of providing mobility as a cost effective and convenient service, without involving the purchase of a vehicle. Both BMW and ZipCar are seeing new models for doing business in the future – a different kind of innovation in the broad automotive industry.

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#### Notes for Editors

Founded in 1976, the Royal Academy of Engineering promotes the engineering and technological welfare of the country. Our fellowship – comprising the UK's most eminent engineers – provides the leadership and expertise for our activities, which focus on the relationships between engineering, technology, and the quality of life. As a national academy, we provide independent and impartial advice to Government; work to secure the next generation of engineers; and provide a voice for Britain's engineering community.

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