DEVELOPMENTS IN TRANSMISSION AND DRIVELINE TECHNOLOGY

Institution of MECHANICAL ENGINEERS

Automobile Division
Seminar

4 October 2018
MIRA Technology Institute, Nuneaton

KEY SPEAKERS INCLUDE:

Mark Ingram, Chief Engineer - Transmission Design
Changan UK

Adam James, Principal Design Engineer
Xtrac

Christopher Burbidge, Global Technical Expert – Transmission Software
Ricardo

Steve Nesbitt, Chief Engineer - Programme Management
The Manufacturing Technology Centre

Sean Worrall, Business Development Manager
GKN Innovation Centre

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PROFESSIONAL ENGINEERING

DEVELOPMENTS IN TRANSMISSION AND DRIVELINE TECHNOLOGY

4 October 2018, MIRA Technology Institute, Nuneaton

THIS SEMINAR WILL COVER WAYS TO OPTIMISE FUEL EFFICIENCY WHILE MAINTAINING PERFORMANCE AND DRIVEABILITY. UNDERSTAND THE IMPACT OF ELECTRIFICATION AND HYBRIDISATION ON INDUSTRY AS WELL AS IMPROVED TRANSMISSION AND DRIVETRAIN SYSTEM INTEGRATION FOR HEAVY DUTY, OFF-HIGHWAY AND PASSENGER VEHICLES.

Discover trends in gear ratio selection, the power of real-time data in transmission design and strategies to receive government funding. Discuss how regulation and innovation is revolutionising transmission and driveline design with OEMs, software designers, Tier 1 and Tier 2 suppliers.

KEY PROGRAMME HIGHLIGHTS:

- **Changan UK** address technical challenges in gearbox mechanics and optimal gear ratios
- **HORIBA MIRA** and the **Energy Technology Institute** discuss hybridisation and electrification for heavy duty and off-highway vehicles
- **Ricardo** look at the use of real-time data and how it will influence transmission systems
- **Romax Technology** explore the future of aircraft gear propulsion systems and transferable lessons
- **Drive System Design** assess lower cost electric drives and novel methods for analysing integrated electric powertrains
- **Valeo** discuss drive unit optimisation for low speed electric vehicles

ORGANISING COMMITTEE:

Automobile Division
Institution of Mechanical Engineers

MEMBERS CREDITS:

Dave Simner, Course Director for the Military Vehicle Technology MSc, Cranfield Defence and Security
Cranfield University

Sam Akehurst, Professor of Advanced Powertrain Systems
University of Bath

ATTEND THIS SEMINAR TO:

- Discover the **latest innovations** for the **design, manufacture, and operation** of transmission and driveline systems
- Hear lessons learnt from OEMs on **improving fuel economy while maintaining performance and driveability**
- Overcome challenges with the **integration of transmission, motors and power electronics**
- **Discuss methods to achieving emission reduction** through examples from heavy duty, off-highway and passenger vehicle manufacturers
- **Network and engage with driveline and transmission experts** from automotive manufacturers, aerospace, components suppliers, academia and software design

FEEDBACK FROM PREVIOUS EVENTS:

“”

This event allows engineers to gain an insight into the latest developments in technology and provides a forum for a wide variety of technical discussions with experts.

Lubrizol

“”

Excellent event with interesting insight into driveline systems and new ideas.

JCB

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TERMS AND CONDITIONS APPLY

PROGRAMME

	THURSDAY, 4 OCTOBER 2018
08:30	REGISTRATION AND REFRESHMENTS
09:00	**CHAIR'S OPENING REMARKS** **Dave Simner, Course Director for the Military Vehicle Technology MSc, Cranfield Defence and Security, Cranfield University**
	DEVELOPMENTS IN THE INTEGRATION OF TRANSMISSION AND DRIVETRAIN SYSTEMS FOR ELECTRIC AND HYBRID VEHICLES
09:10	**THE POWER OF INTEGRATION FOR EV TRANSMISSIONS** **Adam James, Principal Design Engineer, Xtrac**
09:35	**TRANSMISSION, MOTORS AND POWER ELECTRONICS: CREATING AN INTEGRATED UNIT** **Sean Worrall, Business Development Manager, GKN Innovation Centre**
10:00	**ELECTRIC DRIVE UNIT OPTIMISATION FOR LOW SPEED ELECTRIC VEHICLES** **Jérôme Mortal, Special Vehicle Application Director, Valeo**
10:25	**QUESTION AND ANSWER SESSION**
10:45	NETWORKING REFRESHMENT BREAK
	OFF-HIGHWAY AND HEAVY DUTY VEHICLES
11:15	**USING A CONTINUSOUSLY VARIABLE TRANSMISSION (CVT) AS A PLATFORM TECHNOLOGY TO IMPROVE FUEL EFFICIENCY IN HEAVY DUTY VEHICLES** **Christopher Thorne, Chief Technology Officer, Heavy Duty Vehicles, Energy Technologies Institute**
11:40	**CHALLENGES IN DEVELOPING ELECTRIC AND HYBRID HEAVY DUTY VEHICLES AND THE STRATEGIES CURRENTLY BEING EMPLOYED TO SOLVE THESE** **Alisdair Bowie, Senior Engineer – Battery and Hybrid Systems, HORIBA MIRA**
12:05	**QUESTION AND ANSWER SESSION**
12:25	NETWORKING LUNCH
	GEARBOX MECHANICS, PERFORMANCE AND DESIGN
13:25	**FUTURE OF AIRCRAFT GEAR PROPULSION SYSTEMS** **Youn Park, VP, Global Head of Aerospace, Romax Technology**
13:50	**MORE GEARS OR LESS? SELECTING THE OPTIMAL GEAR RATIOS** **Mark Ingram, Chief Engineer Transmission Design, Changan UK**
14:15	**GEARING UP FOR LOWER COST ELECTRIC DRIVES – NOVEL METHODS FOR ANALYSING INTEGRATED ELECTRIC POWERTRAINS** **Chris Norton, Design Engineer, Drive System Design**
14:40	**QUESTION AND ANSWER SESSION**
15:00	NETWORKING REFRESHMENT BREAK
	SUPPORTING FUTURE DEVELOPMENT
15:30	**BUILDING THE INFRASTRUCTURE FOR HYBRIDISATION AND ELECTRIFICATION** **Steve Nesbitt, Chief Engineer – Programme Management, The Manufacturing Technology Centre**
15:55	**ELECTRIFICATION AND THE INCREASE OF REAL TIME DATA IN VEHICLES** **Christopher Burbidge, Global Technical Expert – Transmission Software, Ricardo**
16.20	**QUESTION AND ANSWER SESSION**
16:35 PANEL DISCUSSION	**HOW WILL REGULATORY AND CONSUMER PRESSURE AFFECT THE FUTURE OF DRIVELINE AND TRANSMISSION SYSTEMS?** **Sam Akehurst, Professor of Advanced Powertrain Systems, University of Bath** **Jérôme Mortal, Special Vehicle Application Director, Valeo** **Steve Nesbitt, Chief Engineer – Programme Management, The Manufacturing Technology Centre** • How are OEMs responding to the shift towards hybrid and electric vehicles and are they the main driving force? • Is technology keeping up with regulatory requirements? • What is more important to consumers: Drivability or Efficiency?
17:10	**CHAIR'S CLOSING REMARKS**
17:15	END OF SEMINAR

For the most up-to-date and detailed programme for the event, please visit www.imeche.org/driveline

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

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

Seminar	Standard Rate
Member, Institution of Mechanical Engineers / Supporting Organisation	£300 + VAT = £360
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Student/Retired	£110 + VAT = £132

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THREE WAYS TO BOOK

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2 Email:
eventenquiries@imeche.org

3 Phone:
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6–7 November 2018, London

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www.imeche.org/evbatteries

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www.imeche.org/fuelsystems2018

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