

Seminar Overview - Day 1

Wednesday 2nd March 2022

07:45	Registration Opens
08:30	Delegates to the Imperial Suite for Welcome and Keynotes
08:45 - 09:00	Welcome Dr Matthias Wellers, AVL Powertrain UK & Prof Greg Offer, Imperial College London
09:00 - 09:30	Keynote Speaker Paul Gadd, Innovate UK
09:30 - 10:00	Keynote Speaker Dr Ben Todd, Ballard Motive Solutions
10:00 - 10:30	Refreshments & Networking (Britannia & Manxman Suites)
10:45 - 12:15	IMPERIAL - Session 1 - Markets & Regulations Chair Jon Regnart, Advanced Propulsion Centre TRAFALGAR - Session 2 - Heavy Duty & Off Highway Chair Dr Francesca Iudicello, Innovate UK
12:15 - 13:15	Lunch & Networking (Britannia & Manxman Suites)
13:15 - 13:30	Delegates to the Imperial Suite for Keynote
13:30 - 14:00	Keynote Speaker Dr Wasim Sarwar Dilov, Rimac Technology
14:00 - 14:30	Keynote Speaker Dr Andy Walker, Johnson Matthey
14:30 - 16:00	IMPERIAL - Session 3 - Batteries Application Chair James Gaade, The Faraday Institute TRAFALGAR - Session 4 - PEMD Session – Power Electronics Joint Chairs Paul Jarvie, DER IC Lead, South West & Wales & David Hudson, ePropelled
16:00 - 16:30	Refreshments & Networking (Britannia & Manxman Suites)
16:30 - 18:00	IMPERIAL - Session 5 - Batteries Modelling Chair Anna Wise, Nyobolt TRAFALGAR - Session 6 - PEMD Session – Electrical Machines Joint Chairs Paul Jarvie, DER IC Lead, South West & Wales & David Hudson, ePropelled
18:00 - 19:30	Evening Reception
18:50	Delegates booked for Evening Network Event to the Imperial Suite
19:00 - 22:00	Evening Network Event Introduction to Al Peasland

Seminar Overview - Day 2



Thursday 3rd March 2022

07:45	Registration Opens
08:45	Delegates to the Imperial Suite for Welcome and Keynotes
09:00 - 09:15	Welcome Dr Matthias Wellers, AVL Powertrain UK & Prof Greg Offer, Imperial College London
09:15 - 09:45	Keynote Speakers Martin Joyce & Nick Jepson, Changan UK R&D Centre Ltd
10:00 - 11:30	IMPERIAL - Session 7 - Systems Simulation & Integration Chair Dr Byron Mason, Loughborough University TRAFALGAR - Session 8 - Hydrogen Combustion Chair Alan Tolley, Advanced Powertrain Technologies Ltd
11:30 - 12:00	Refreshments & Networking (Britannia & Manxman Suites)
12:00 - 13:30	IMPERIAL - Session 9 - Electrified Engines For Euro 7 Chair Dr Aaron Costall, University of Bath TRAFALGAR - Session 10 - Fuel Cells Chair Jon Caine, AVL Powertrain UK
13:25 - 13:30	Delegates to the Imperial Suite for Keynote
13:30 - 14:00	Keynote Speaker Selin Tur, CNH Industrial
14:00 - 14:10	Closing Remarks Dr Matthias Wellers & Prof Greg Offer
14:15 - 15:00	Lunch & Networking (Britannia & Manxman Suites)
15:30	Conference Closes

Seminars - Day 1

Wednesday 2nd March 2022

07:45 Registration Opens

08:30 Delegates to Imperial Suite

08:45 - 09:00 Welcome

Dr Matthias Wellers, AVL Powertrain UK
& Prof Greg Offer, Imperial College London



09:00 - 09:30 Keynote Speaker

Paul Gadd, Innovate UK
"UK Transport Vision 2050"



09:30 - 10:00 Keynote Speaker

Dr Ben Todd, Ballard Motive Solutions
"Mainstreaming Hydrogen & Fuel Cells"



10:00 - 10:30 Refreshments & Networking (Britannia & Manxman Suites)



10:45 - 12:15

IMPERIAL SUITE - Session 1 - Markets & Regulations

Chair | Jon Regnart, Advanced Propulsion Centre

- ▶ Simon Reader, MAHLE Powertrain
"Challenges Faced by Automotive Suppliers: The Route Forward"
- ▶ Guy Bates, E4tech
"Fleet Decarbonisation: Lessons from a Swiss Local Authority"
- ▶ Kai Krüger, FEV Consulting GmbH
"Hydrogen – An Enabler for Clean Transport or Utopia?"
- ▶ Simon Moores, Benchmark Mineral Intelligence
"Building a Lithium Ion Economy in the UK: from Mine to Battery Cell"

[Discussion]

10:45 - 12:15

TRAFALGAR SUITE - Session 2 - Heavy Duty & Off Highway

Chair | Dr Francesca Iudicello, Innovate UK

- ▶ Dr Alistair Barnes, Innovate UK
"The UK's Zero Emission Road Freight Trials"
- ▶ Rob Lawton, Leyland Trucks
"Challenges Surrounding the Electrification of the Truck Fleet"
- ▶ Richard Kemp-Harper, Arcola Energy
"A Systems View of Fuel Cell Electric Powertrains for Buses, Trucks and Trains"
- ▶ Ryan Ballard, JCB
"Hydrogen as a Route to Zero Emissions for off Highway Heavy Duty Applications"

[Discussion]

12:15 - 13:15

Refreshments & Networking (Britannia & Manxman Suites)

13:15 - 13:25

Move to Imperial Suite for Keynote

13:30 - 14:00

Keynote Speaker

Dr Wasim Sarwar Dilov, Rimac Technology
"Insights into Hypercar Battery Innovations"





14:00 - 14:30

Keynote Speaker

Dr Andy Walker, Johnson Matthey



"How Rapidly will the Decarbonisation of Mobility Occur?"

14:30 - 16:00

IMPERIAL SUITE - Session 3 - Batteries Application

Chair | James Gaade, The Faraday Institution

- ▶ Fergal Harrington-Beatty, AMTE
"Designing and Manufacturing High Performance Li-ion Battery Cells in the UK"
- ▶ Ena Perić, Rimac Technology
"Insights into Battery System Design and Future Battery Technologies"
- ▶ Dr Ian Campbell, Breathe Battery Technologies
"Expectations & Opportunities with the Latest Development in Battery Management Software"
- ▶ Luke George, Rolls Royce
"The Powertrain Behind Rolls-Royce ACCEL: The World's Fastest All-Electric Aircraft"

[Discussion]

14:30 - 16:00

TRAFALGAR SUITE - Session 4 - PEMD Session - Power Electronics

**Joint Chairs | Paul Jarvie, DER IC Lead, South West & Wales
David Hudson, ePropelled**

- ▶ Will Drury, UK Research & Innovation
"Driving the Electric Revolution for Net Zero"
- ▶ David Bock, BMW
"@FutureBEV Driving Powertrain Solutions"
- ▶ Dr Stephen Lambert, McLaren Applied
"Building a UK Based Supply Chain for UK Manufacturing of Power Electronics"
- ▶ Daniel Murphy, STMicroelectronics Ltd
"Key Trends for Power Electronics in Electric Vehicle Traction Inverters"

[Discussion]

16:00 - 16:30

Refreshments & Networking (Britannia & Manxman Suites)

16:30 - 18:00

IMPERIAL SUITE - Session 5 - Batteries Modelling

Chair | Anna Wise, Nyobolt

- ▶ Dr Ferran Brosa Planella, University of Warwick
"PyBaMM: an Open-source Python Library for Battery Modelling"
- ▶ Dr Simon O'Kane, Imperial College London
"Lithium-ion Battery Degradation: How to Model it"
- ▶ Can Kurtulus, Eaton Technology
"Improving the Remaining useful Lifetime Estimation in Electric Vehicle Batteries"
- ▶ Chris Gardner, (C-ALPS) Coventry University
"Plasmonic Sensing as an In-situ and Operando Battery Diagnostic Technique"

[Discussion]

16:30 - 18:00

TRAFALGAR SUITE - Session 6 - PEMD Session - Electrical Machines

**Joint Chairs | Paul Jarvie, DER IC Lead, South West & Wales
David Hudson, ePropelled**

- ▶ Dr Muhammad Saad Razaq, Loughborough University
"Effects of Torque Ripples on the Performance of the Permanent Magnet Synchronous Machines"
- ▶ Dr James Edmondson, IDTechEx
"Electric Motors for Electric Vehicles: Technologies and Market Outlook"
- ▶ Ryan Maughan, Transense Technologies PLC
"Improving Electric Motor Control With Embedded Torque and Temperature Sensing"
- ▶ Pete James, Lyra Electronics
"Integrated Driver Development"

[Discussion]

18:00 - 19:30

Evening Reception | Sponsored by Infineon Technologies

19:00 - 22:00

Evening Network Event - Introduction to Al Peasland - Sponsorships, Partnerships, Leadership - "Lessons from Formula One" - Taking you Behind the Scenes of the World's Biggest Motorsport

Seminars - Day 2

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07:45 Registration Opens

08:30 Delegates to Imperial Suite

09:00 - 09:15 Welcome

Dr Matthias Wellers, AVL Powertrain UK
& Prof Greg Offer, Imperial College London



09:15 - 09:45 Keynote Speakers

Martin Joyce, Changan UK R&D Centre Ltd
Nick Jepson, Changan UK R&D Centre Ltd



"China's Path to Net Zero CO2 and the Role of Hybrids in that Path"



10:00 - 11:30

IMPERIAL SUITE - Session 7 - **Systems Simulation & Integration**

Chair | Dr Byron Mason, Loughborough University

- ▶ Dr Ilja Siera, Punch Powertrain NV
"Multi-objective Optimization of Hybrid Synchronous Machines: Exploring the Paretofront"
- ▶ David Briant, Claytex
"Virtualisation of Durability Studies For The New Era Of Vehicle Propulsion"
- ▶ Mark Holdstock, AVL Powertrain
"Sensitivity Study Utilising a Digital Twin Fuel Cell Powertrain and Vehicle Model"
- ▶ Andrew Law, Imperial College London
"Optimal Control Strategy Analysis for Parallel Gasoline Hybrid Electric Vehicles"

[Discussion]

10:00 - 11:30

TRAFALGAR SUITE - Session 8 - **Hydrogen Combustion**

Chair | Alan Tolley, Advanced Powertrain Technologies Ltd

- ▶ Duncan Engeham, Cummins
"Heavy Duty Powertrain Selection – Why H2-ICE"
- ▶ Trevor Downes, Ricardo
"The Hydrogen-fuelled Internal Combustion Engine – a Pragmatic & Economic Approach to Energy Conversion with Hydrogen"
- ▶ Dipl.-Ing. Bernhard Biermann FEV Europe GmbH
"The Hydrogen Combustion Engine as Zero Impact Emission Powertrain Concept"
- ▶ Nick Owen, Dolphin N2
"The Recuperated Split Cycle Engine: A Practical Hydrogen Solution for Heavy Duty?"

[Discussion]

11:30 - 12:00

Refreshments & Networking (Britannia & Manxman Suites)



12:00 - 13:30

IMPERIAL SUITE - Session 9 - Electrified Engines For Euro 7

Chair | Dr Aaron Costall, University of Bath

- ▶ Stefan Scheidel, AVL List GmbH
"Calibration Methods to Achieve EU7"
- ▶ Pauline Dumont, Delta Cosworth
"Catalytic Generator – A Low-Emission Solution to Accelerate Electrification"
- ▶ Sam Cockerill, Libertine FPE
"intelliGEN – Linear Generator Platform Technology for Advanced Combustion with Renewable Fuels in Hybrid Powertrain Applications"
- ▶ Dr Richard Osborne, Ricardo
"De-Fossilizing the ICE Vehicle Fleet with Sustainable Fuels – A Vital Net-Zero Pathway"

[Discussion]

12:00 - 13:30

TRAFALGAR SUITE - Session 10 - Fuel Cells

Chair | Jon Caine, AVL Powertrain UK

- ▶ Luke Bates, Advanced Propulsion Centre
"Getting ahead of the Curve with Fuel Cell Technology in the UK"
- ▶ Prof Richard Burke, University of Bath (IAAPS)
"Considerations and Opportunities for Air Handling Systems in Hydrogen Fuel Cells for Heavy Duty Applications"
- ▶ Dr Mike Bassett, Mahle Powertrain
"Light-duty Demonstrator Vehicle Featuring a Low-cost PCB Fuel Cell"
- ▶ Harry Hoster, ZBT
"How Fuel Cell Vehicles Suffer from Air Pollution"

[Discussion]

13:25 - 13:30 Delegates to the Imperial Suite for Final Keynote

13:30 - 14:00

Keynote Speaker

Selin Tur, CNH Industrial



"Powertrain Evolution of Off-Highway Vehicles"

14:00 - 14:10

Closing Remarks

Dr Matthias Wellers, AVL Powertrain UK
& Prof Greg Offer, Imperial College London



14:15 - 15:00

Refreshments & Networking (Britannia & Manxman Suites)

15:30

Conference Closes

