

Seminar Overview - Day 1

Wednesday 27th February 2019

- 08:00 - 09:00 Registration Opens
- 09:00 - 09:10 Welcome - Prof Matthias Wellers - *AVL Powertrain UK* & Dr Greg Offer, *Imperial College London*
- 09:10 - 09:30 Keynote Speaker - Dr Martin Williams - *Kings College London*
- 09:30 - 10:00 Keynote Speaker - Jeff Pratt - *UK BIC*

10:00 - 10:30 Refreshments & Networking

- 10:30 - 12:00 **IMPERIAL - Session 1 - Faraday Session**
Chair - Anna Wise - *Innovate UK*
- TRAFALGAR - Session 2 - Explaining What's What (Machine Learning, AI, IOT, Predictive Control, Neural Network, etc)**
Chair - Jon Caine - *Ford*

12:00 - 13:00 Lunch & Networking

- 13:00 - 13:30 Keynote Speaker - Dr Elizabeth Rowsell - *Johnson Matthey Technical Centre*
- 13:30 - 15:00 **IMPERIAL - Session 3 - Batteries**
Chair - Isobel Sheldon - *UK Battery Industrialisation Centre*
- TRAFALGAR - Session 4 - Emissions**
Chair - Philippa Oldham - *Advanced Propulsion Centre*

15:00 - 15:30 Refreshments & Networking

- 15:30 - 17:00 **IMPERIAL - Session 5 - Power Electronics & Electrical M/Cs**
Chair - Dr Alastair McGibbon - *CSA Catapult*
- TRAFALGAR - Session 6 - Regulation/Government/Markets**
Chair - Alex Woodrow - *Knibb, Gormezano & Partners*
- 17:00 - 18:30 Drinks Reception / Poster Competition Winners
- 18:30 - 22:00 Evening Networking Event - Supported by *Infineon Technologies*

Seminar Overview - Day 2

Thursday 28th February 2019

- 08:00 - 09:00 Registration Opens
- 09:00 - 09:10 Welcome - Prof Matthias Wellers - *AVL Powertrain UK* & Dr Greg Offer, *Imperial College London*
- 09:10 - 09:30 Keynote Speaker - Simon Reader - *MAHLE Powertrain*
- 09:30 - 11:00 **IMPERIAL - Session 7 - Off Road & Heavy Duty**
Chair - Alan Tolley - *JCB*

TRAFALGAR - Session 8 - Connected & Autonomous Vehicles (CAV)
Chair - Richard Porter - *Meridian Mobility*

11:00 - 11:30 Refreshments & Networking

- 11:30 - 13:00 **IMPERIAL - Session 9 - Electrified Engines**
Chair - Prof Jamie Turner - *University of Bath*
- TRAFALGAR - Session 10 - Testing & Digital Tools**
Chair - Aaron Costall - *Imperial College London*
- 13:00 - 13:25 Keynote Speaker - Martin Gleich - *Infineon Technologies AG*
- 13:25 - 13:30 Prof Matthias Wellers & Dr Greg Offer

13:30 - 14:30 Lunch & Networking

15:00 **Conference Closes**

Day 1

Wednesday 28th February 2019

- 08:00 - 09:00 Registration Opens
- 09:00 - 09:10 Welcome Prof Matthias Wellers - *Managing Director, AVL Powertrain UK*
& Dr Greg Offer - *Reader in Mechanical Engineering, Imperial College London*
- 09:10 - 09:30 Keynote Speaker - Dr Martin Williams - *Assistant Air Quality Scientist, Kings College London*
"TBC"
- 09:30 - 10:00 Keynote Speaker - Jeff Pratt - *Managing Director, UK Battery Industrialisation Centre*
"UK Battery Industrialisation Centre: Developing UK Supply Chains for EV Batteries"

10:00 - 10:30

Refreshments & Networking



Day 1

10:30 - 12:00

IMPERIAL - Session 1 - Faraday Session

Chair: Anna Wise, *Innovation UK*

Ryan Maughan - *AVID*

"Developing Battery System Solutions for Heavy Duty and High Performance Applications"

Marcello Contestabile - *E4tech*

"The UK Chemicals Supply Chain for EV Battery Manufacture: Strengths, Opportunities and Support Needs"

Nick Carpenter - *Delta Motorsport*

"AMPLiFII-2 : Building a Cross-sectoral Battery System Supply Chain"

Discussion

10:30 - 12:00

TRAFALGAR - Session 2 - Explaining What's What (Machine Learning, AI, IOT, Predictive Control, Neural Network, etc)

Chair: Jon Caine, *Ford*

Florian Theil - *University of Warwick*

"Strategies for Obtaining Parameters from Experimental Data via Inverse Problems"

Umut Genc - *Eatron Technologies Ltd*

"TBC"

Sam Cooper - *Imperial College London*

"Clustering, Labelling and Predicting: Making Use of the ML Toolbox for Battery Science"

Discussion

12:00 - 13:00

Lunch & Networking

Day 1

13:00 - 13:30 Keynote Speaker - Dr Elizabeth Rowsell - *Corporate R&D Director, Johnson Matthey Technical Centre*
“The Metal Science Driving the Powertrain”

13:30 - 15:00

IMPERIAL - Session 3 - Batteries

Chair: Isobel Sheldon, UK Battery Industrialisation Centre

Yi Li - *Lancaster University*

“Diagnostics for State of Health of Lithium-ion Batteries with Random Forest Regression”

Emma Vendola - *Imperial College*

“The Effects of Thermal Gradients in Automotive Battery Packs Balancing Strategy”

Peter Keil - *Lancaster University*

“Battery Degradation Analysis with High Precision Coulometry”

Christopher Lee - *Ilika*

“Setting the Scene for Solid State Batteries”

Discussion

13:30 - 15:00

TRAFALGAR - Session 4 - Emissions

Chair: Philippa Oldham, Advanced Propulsion Centre

Iain Macbeth - *TFL*

“Urban Air Mobility – Noise and Air Quality Challenges”

James Hobday - *Emissions Analytics*

“The Impact of RDE & WLTP Legislation Based Upon EQUA Index Real-world Test Data”

Prof. Robert Morgan - *Brighton University*

“TBC”

Antonio Balboa - *Robert Bosch Ltd*

“Future Powertrain Mix: Diesel - Gasoline - Electrified”

Discussion

15:00 - 15:30

Refreshments & Networking

Day 1

15:30 - 17:00

IMPERIAL - Session 5 - Power Electronics & Electrical Machines

Chair: Dr Alastair McGibbon, CSA Catapult

Malte Jaensch - *Porsche*

“Cooling Concepts of High-Power Electric Machines”

Andy Birnie - *NXP*

“Electrification Drives New Demand in Microcontrollers”

Ahad Ahmed Buksh - *ST Microelectronics Applications GmbH*

“TBC”

TBC - *TBC*

“TBC”

Discussion

15:30 - 17:00

TRAFALGAR - Session 6 - Regulation/Government/Markets

Chair: Alex Woodrow, Knibb, Gormezano & Partners

Paul Loustalan - *Reddie & Grose*

“Future of Powertrains: Patent Filing Trends, and what they say about the Industry”

Darren Mitchell - *Potter Clarkson*

“Gearing up for Litigation in the Automotive Industry”

Dr Andy Walker - *Johnson Matthey*

“Powertrain Evolution in the Passenger Car and Commercial Vehicle Sectors”

Al Bedwell - *LMC Automotive Limited*

“TBC”

Discussion

17:00 - 18:30

Drinks Reception / Poster Competition Winners

18:30 - 22:00

Evening Drinks Reception - Supported by *Infineon Technologies*

Day 2

Thursday 28th February 2019

08:00 - 09:00 Registration Opens

09:00 - 09:10 Welcome Prof Matthias Wellers & Dr Greg Offer

09:10 - 09:30 Keynote Speaker - Simon Reader - *Director (Engineering), MAHLE Powertrain Ltd*
"Future Propulsion Systems: Is Pure Electric the Only Way?"

09:30 - 11:00

IMPERIAL - Session 7 - Off Road & Heavy Duty

Chair: Alan Tolley, *JCB*

Alan Tolley - *JCB*

"The Particular Challenges for Off Highway and Heavy Duty Machines as we Move to a Low Carbon, Zero Emissions Future"

Nick Owen - *Dolphin*

"CryoPower – A Long-haul Truck Engine with Near Zero Emissions and High Efficiency"

Ian Evans - *Caterpillar*

"Low CO₂ Technologies for Next Generation Off Highway Engines"

TBC - *TBC*

"TBC"

Discussion

Day 2

09:30 - 11:00

TRAFALGAR - Session 8 - Connected & Autonomous Vehicles (CAV)

Chair: Richard Porter, *Meridian Mobility*

Dr Majeed Soufian - *Salford University*

"Endpoints Security and Self-Defending Automotive Systems"

Gunwant Dhadyalla - *University of Warwick*

"INtelligent Testing of Autonomous Control Technologies (INTACT)"

Chris Fordham - *TRL*

"Autonomous Vehicle Testing – Real-world vs Simulation"

Kirsty Lloyd-Jukes - *Latent Logic*

"Simulations and the Driving Test for Self-driving Cars"

Discussion

11:00 - 11:30

Refreshments & Networking

11:30 - 13:00

IMPERIAL - Session 9 - Electrified Engines

Chair: Prof Jamie Turner, *University of Bath*

Martin Joyce - *Changan UK*

"A New High Efficiency Modular Engine Family – On the Road to 45% Thermal Efficiency"

Andrew Smallbone - *University of Newcastle*

"Recent Progress on Free-piston Engine Generators for Hybrid-electric Vehicles"

Paul Freeland - *Cosworth*

"Benefits of Fully Variable Valvetrain Technologies for all Applications of Internal Combustion Engine Propulsion Systems"

Andy Lane - *Ricardo*

"A New Generation of Lean Gasoline Engines for Premium Vehicle CO₂ Reduction"

Discussion

Day 2

11:30 - 13:00

TRAFALGAR - Session 10 - Testing & Digital Tools

Chair: Aaron Costall, Imperial College London

Dr Peter Miller - *Millbrook*

“The Future of Automotive Battery Testing”

Mark Cordner - *eDrive Engineering*

“Designing Electric Drive Systems in the “Cloud””

Mike Dempsey - *Claytex*

“Virtual Testing of Powertrain Systems”

Stephen Jones - *AVL*

“Energy-Efficient Cooperative Adaptive Cruise Control with Receding Horizon of Traffic, Route Topology & Traffic Light Information”

Discussion

13:00 - 13:25 Keynote Speaker - Martin Gleich - *Senior Marketing Manager, Powertrain Infineon Technologies AG*
“EE Architecture for Highly Electrified Powertrain 2020-2030”

13:25 - 13:30 Closing remarks Prof Matthias Wellers & Dr Greg Offer

13:30 - 14:30

Lunch & Networking

15:00

Conference Closes