

SAVE 10%
OFFER ENDS
27 JULY 2018

SIMULATION AND MODELLING 2018 INTEGRATION, OPTIMISATION AND VALIDATION INITIATIVES

Institution of
**MECHANICAL
ENGINEERS**

KEY SPEAKERS INCLUDE:

Nawal Prinja, Technology Director (Nuclear)
Wood Group Plc

Adrian Gaylard, Technical Specialist
for Aerodynamics
Jaguar Land Rover

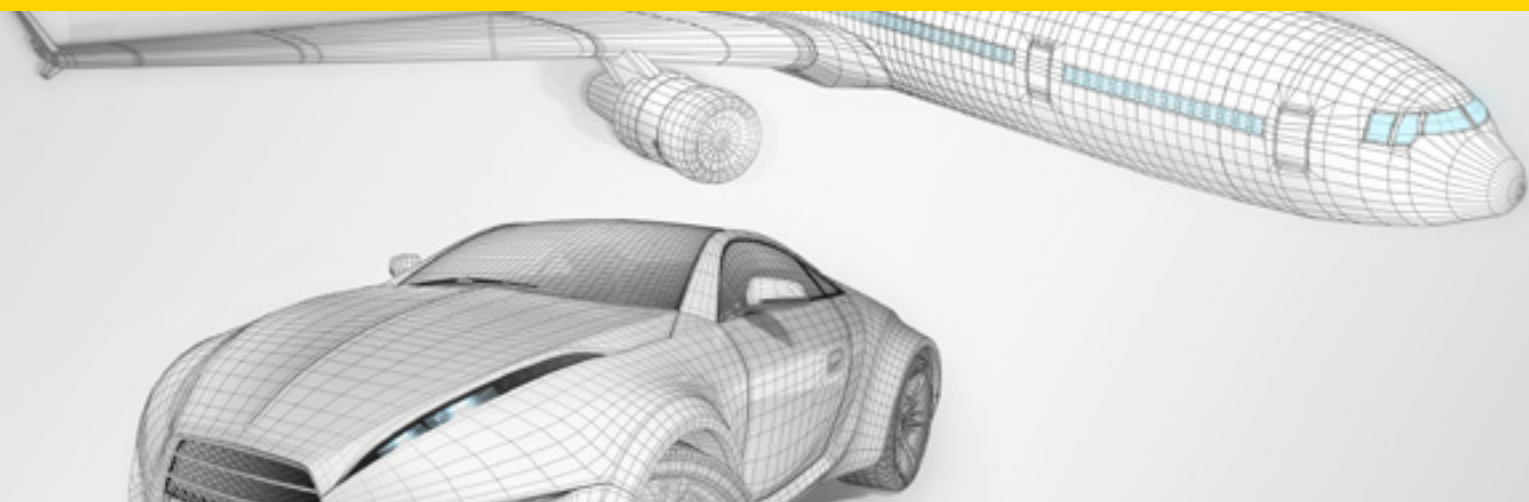
Akin Keskin, Chief of Virtual Engine Design System
Rolls Royce Plc

Jonathan Wheals, Chief Engineer – Innovation
Ricardo UK

Philippe Martinuzzi, Research Engineer
in Mechanical Modelling
EDF Energy R&D UK Centre

Conference

18–19 September 2018
De Vere Colmore Gate, Birmingham



SPONSOR:

SIEMENS
Ingenuity for life

Modelon

SUPPORTING ORGANISATIONS:



ROYAL
AERONAUTICAL
SOCIETY

SaRS SAFETY
AND
RELIABILITY
SOCIETY

FISITA

WELSH
automotive
Alliance

Welsh Automotive Forum
Fframodur Cymru



NAFEMS



Composites UK

EVENT PARTNER:

topEngineer

Save 10% before 27 July 2018 www.imeche.org/simmod2018

SIMULATION AND MODELLING 2018

18-19 September 2018

De Vere Colmore Gate, Birmingham

SIMULATION AND MODELLING 2018 WILL PROVIDE A UNIQUE OPPORTUNITY TO DISCUSS THE LATEST DEVELOPMENTS BEING MADE WITH COMPUTER AIDED AND VIRTUAL ENGINEERING. EXPLORE THE ADVANCES BEING MADE WITH INTEGRATION, OPTIMISATION AND VALIDATION, FROM DESIGN STAGE RIGHT THROUGH TO MANUFACTURING.

Join us in 2018 to gain the latest from thought leaders on how they are using new technologies for applications including **digital twinning, design, validation, fault detection and process optimisation**. Attendees will have the opportunity to engage colleagues and peers across the **automotive, aerospace, power, process and manufacturing** sectors. Hear how these technologies are used to optimise design, development, testing, manufacturing and operational engineering.

Join one of our specialist parallel sessions to tailor your event experience for your needs in **manufacturing, process optimisation, powertrain engineering or automation and systems control**. Hear about the latest projects in **design, development and testing** across the different engineering sectors in our plenary sessions.

WITH THANKS TO:

Tribology Group
Institution of Mechanical Engineers

Thermofluids Group
Institution of Mechanical Engineers

TECHNICAL ADVISORY COMMITTEE:

Tim Morris, Chief Executive
NAFEMS

Akin Keskin, Chief of Virtual Engine Design System
Rolls-Royce

ATTEND THIS EVENT TO:

- Hear from leading companies using simulation and modelling including **Rolls Royce, Wood Group, Caterpillar Global Mining, Jaguar Land Rover, and EDF Energy**
- Join **speed networking sessions** and engage with colleagues, peers and industry innovators from across the transport industries in one location
- **Design your own experience** by taking advantage of our specialist parallel sessions on both conference days
- Hear directly from suppliers and get an update on the **latest technologies** in our dedicated exhibition space

KEY TOPICS INCLUDE:

- Plenary sessions addressing simulation developments, digital twinning, and validation techniques including contributions from **Rolls Royce and Wood Group**
- Insight into intelligent manufacturing processes from the **National Composites Centre UK and Coventry University**
- Applications within powertrain and wider automotive development, including presentations from **Jaguar Land Rover and MAHLE Powertrain**
- Exploring the role of simulation for fault detection with **d2H Aero and BHR Group**

BOOK YOUR PLACE TODAY
WWW.IMECHE.ORG/SIMMOD2018

TERMS AND
CONDITIONS
APPLY

PROGRAMME

18 SEPTEMBER 2018	
08:30	REGISTRATION
09:00	CHAIR'S OPENING REMARKS Tim Morris, Chief Executive, NAFEMS
DEVELOPMENTS AND PROGRESS IN THE USE OF SIMULATION	
09:10	TRANSPORT PERSPECTIVE: INTEGRATION OF MULTIPLE SYSTEMS AND SOFTWARES FOR MORE EFFICIENT AND JOINED-UP WORKFLOWS Akin Keskin, Chief of Virtual Engine Design System, Rolls Royce plc
09:40	POWER PERSPECTIVE: SIMULATION AND MODELLING FOR DESIGNING AGAINST EXTREME EVENTS Nawal Prinja, Technology Director (Nuclear), Wood Group Plc
10:10	QUESTION AND ANSWER SESSION
10:20 PANEL	BRIDGING THE DIVIDE BETWEEN PHYSICAL AND DIGITAL <ul style="list-style-type: none"> Assessing the cross industry benefits of digital twinning Using digital twins to deliver accurate and reliable results Effectively rolling out operational strategies based on digital twinning
10:50	NETWORKING REFRESHMENT BREAK AND SPEED NETWORKING
AUTOMOTIVE VEHICLE DESIGN AND DEVELOPMENT PROCESS OPTIMISATION ACROSS INDUSTRIES	
11:30	REAL-TIME ADVANCED MF TIRE MODELLING AS A NECESSARY INSTRUMENT TOWARDS THE VEHICLE PERFORMANCE OPTIMISATION Aleksandr Sakhnevych, Vehicle Dynamics Engineer, MegaRide
	DIGITAL TECHNOLOGY AT THE SERVICE OF MODELLING AND SIMULATION Philippe Martinuzzi, Research Engineer in Mechanical Modelling, EDF Energy R&D UK Centre
12:00	THE ROLE OF SIMULATION IN AUTOMOTIVE AERODYNAMICS DEVELOPMENT Adrian Gaylard, Technical Specialist, Computational Aerodynamics & WDM, Jaguar Land Rover
	ON THE APPLICATION OF CFD IN THE OIL AND GAS SECTOR, AND HOW WE CAN IMPROVE CONFIDENCE IN THE CFD APPROACH Steve Howell, Technical Director, Abercus
12:30	VIRTUAL PRODUCT DEVELOPMENT OF HYBRID TECHNOLOGIES FOR EXCAVATION TYPE VEHICLES Igor Strashny, Engineering Manager, Hydraulic Mining Shovels Hybrid Program CATERPILLAR Global Mining
	SIMULATION MEETS MEASUREMENT: LIDAR, UNIFIED DATA REQUIREMENTS AND DIGITAL CONVERGENCE IN THE WIND INDUSTRY Peter Clive, Senior Scientist, Wood Group Plc
13:00	QUESTION AND ANSWER SESSION
	QUESTION AND ANSWER SESSION
13:15	NETWORKING LUNCH
AUTOMOTIVE ENGINES AND POWERTRAIN COMPONENTS MODELLING FOR FAULT DETECTION	
14:15	SIMULATIONS FOR PRODUCT DESIGN: HYDRODYNAMIC ENGINE BEARINGS Omar Mian, Head of Numerical Simulation, MAHLE Engine Systems UK Ltd
	COMBINED THERMODYNAMIC AND FEA SIMULATION TO PREDICT BRAKE DISC FAILURES Darren Davies, Technical Director, D2H Aero
14:45	DYNAMIC SIMULATION OF ROLLING BEARINGS Lars-Erik Stacke, Team Leader Simulation Tool R&D, SKF Research and Technology Development
	TIME-SAVING SIMULATION TECHNIQUE TO QUANTIFY THE EFFECTS OF EXCRESCENCES ON AEROPLANE PERFORMANCE Nick Brown, CFD Engineer, BHR Group
15:15	QUESTION AND ANSWER SESSION
	QUESTION AND ANSWER SESSION
15:25	NETWORKING REFRESHMENT BREAK

For the most up-to-date and detailed programme for the event, please visit:
www.imeche.org/simmod2018

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

PROGRAMME

	UTILISING DATA EFFECTIVELY
15:55	ADDRESSING MODELLING CHALLENGES FOR VEHICLE ELECTRIFICATION WITH THE NEWLY DEVELOPED ELECTRIFICATION LIBRARY Erik Durling, Simulation Engineer, Modelon AB Gothenburg
16:25	QUESTION AND ANSWER SESSION
16:30 PANEL	BIG DATA FOR SIMULATION <ul style="list-style-type: none"> • Identifying and collecting relevant data for simulation and modelling • Identifying the benefits of big data for CAE engineers • Big data and simulation and the role in engineering innovation
17:00	CHAIR'S CLOSING REMARKS
17:10	END OF DAY ONE

19 SEPTEMBER 2018	
08:30	REGISTRATION
09:00	CHAIR'S OPENING REMARKS
DIGITAL TWINNING FOR DESIGN AND TESTING	
09:10	DIGITAL TWINS FOR IMPROVED EFFICIENCY IN DESIGN, MANUFACTURING AND TESTING OF AUTOMOTIVE PRODUCTS Speaker to be announced
09:40	THE ROLE AND CHALLENGES OF DIGITAL TWINS IN A PRODUCT'S LIFECYCLE Roy Kalawsky, Director of Advanced VR Research Centre, The Centre for Virtual Engineering, University of Loughborough
10:10	QUESTION AND ANSWER SESSION
10:20	HOTSPOT DISCUSSIONS: INSIGHTS FROM INDUSTRY SPECIALISTS An opportunity to put your questions to experts in their specialist area. Presenters have 5 minutes to address their chosen area and 5 minutes to answer questions. <ul style="list-style-type: none"> • Artificial Intelligence and the role within simulation and modelling • Addressing the relationship between modelling and additive manufacturing • Democratisation and making products usable
10:50	NETWORKING REFRESHMENT BREAK
INCREASED AUTONOMY AND CONTROL SYSTEMS	
11:20	HUMAN COMFORT METRICS AND TOOLCHAIN IN CAV Jonathan Wheals, Chief Engineer – Innovation, Ricardo UK Michael Wheeldon, Innovation Engineer, Ricardo UK
11:50	MODEL BASED DEVELOPMENT OF EFFICIENT CONTROL SYSTEM FOR A 600 TON CLASS HYDRAULIC MINING SHOVEL Sharath Cugati, Engineering Specialist -Design, CATERPILLAR Mining
12:20	MODELLING HUMAN BEHAVIOUR FOR IMPROVED RISK MANAGEMENT Speaker to be announced
12:50	QUESTION AND ANSWER SESSION
13:05	NETWORKING LUNCH
VERIFICATION AND VALIDATION	
14:05	RAPID PROTOTYPING TRANSIENT TEST HARNESS DEVELOPMENT FOR SUBMARINE CONTROL FEASIBILITY STUDIES Martin Bayliss, Senior Engineer, Stirling Dynamics
14:35	ASSESSING SIMULATION TESTING ACCURACY AND RELIABILITY Speaker to be announced
15:05	QUESTION AND ANSWER SESSION
15:15	NETWORKING REFRESHMENT BREAK

BOOK EARLY AND OFFER ENDS **SAVE UP TO 10%** 27 JULY 2018

TERMS AND CONDITIONS APPLY

PROGRAMME

**15:45
PANEL**

EFFECTIVELY USING SIMULATIONS IN CONJUNCTION WITH PHYSICAL TESTING

- Use of simulation to address multiple appropriate real world variables
- Reducing testing costs whilst ensuring the robustness of testing methods
- Usability of available software and products

16:15

CHAIR'S CLOSING REMARKS

16:25

END OF CONFERENCE

WHO SHOULD ATTEND?

AUTOMOTIVE, AEROSPACE, POWER, PROCESS AND MANUFACTURING INDUSTRY PROFESSIONALS WITH A DIRECT OR INDIRECT INTEREST IN SIMULATION ENGINEERING. RANGING FROM DIRECTOR TO DEVELOPING ENGINEER AND IN ROLES INCLUDING, BUT NOT LIMITED TO:

- CFD and Fluid Dynamics
- CAE
- Modelling, Simulation and Testing
- Advanced Vehicle Development and Programmes
- Analysis and Verification
- Virtual Engineering
- Design and Development
- Research and Development
- Calculation Methods
- Engineering and Technology
- Aerodynamics and Aeroacoustics
- Digital Prototyping
- Manufacturing
- Process
- Integration and Validation

FEEDBACK FROM PREVIOUS CONFERENCE:

“Excellent speakers, thought provoking content.”

Rolls-Royce Fuel Cell Systems

“Excellent event, well worth the time and money. The cross company knowledge share is invaluable.”

BAE Systems

“The IMechE Simulation and Modelling 2017 was a great event to see how the rest of the industry is approaching the implementation of simulation during product design.”

Mitsubishi Turbocharger & Engines Europe B.V.

SPONSORSHIP AND EXHIBITION OPPORTUNITIES

CREATE A BESPOKE STRATEGY THAT PLACES YOUR COMPANY IN FRONT OF SENIOR DECISION MAKERS

Engage face to face with your target market of senior engineers

Extensive networking opportunities to help you forge strong long-term business relationships with leading industry players

Firmly establish thought leadership credentials within your specialist field

Use high-profile sponsored speaking platforms or focused technical workshops to effectively demonstrate your skills and expertise within a chosen sector

Deliver high-profile and relevant brand exposure

Promote your products and services as market leaders in front of our influential audiences

Generate new business leads

Capture contact data from our highly qualified delegates to fuel your sales teams

CONTACT THE SPONSORSHIP TEAM ON:

T: +44 (0)20 7973 1309

E: sponsorship@imeche.org

BOOK YOUR PLACE TODAY

WWW.IMECHE.ORG/SIMMOD2018

TERMS AND
CONDITIONS
APPLY

HOW TO BOOK YOUR PLACE

FEES AND CHARGES

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

Seminar	Early Bird Rate Until 27 July 2018	STANDARD RATE
MEMBER, IMEche/SUPPORTING ORGANISATION	£349 + VAT = £418.80	£419 + VAT = £502.80
NON-MEMBER	£529 + VAT = £634.80	£529 + VAT = £634.80
STUDENT/RETIRED	£209 + VAT = £250.80	£249 + VAT = £298.80

THREE WAYS TO BOOK

- 1 Online:
www.imeche.org/simmod2018
- 2 Email:
eventenquiries@imeche.org
- 3 Phone:
+44 (0)20 7973 1251

Please read the information listed below as each booking is subject to the Institution's standard terms and conditions.

CONDITIONS OF BOOKING

Completed application forms should be returned to the address above, along with the correct payment. Attendance at the event will be confirmed on receipt of the full balance. All participants are advised to bring a copy of their confirmation with them on the day, to ensure the fastest possible entry.

SPECIAL REQUIREMENTS

Please inform us of any special requirements, ie dietary or access, on the relevant section of the booking form or email eventenquiries@imeche.org

Cancellation

For a refund (minus £25+VAT admin charge), cancellations must be received at least 30 days prior to the event. Replacement delegates are welcome at any time. The Institution reserves the right to cancel any event. In this case, the full fee will be refunded unless a mutually convenient transfer can be arranged. In the event that the Institution postpones an event for any reason and the delegate is unable or unwilling to attend on the rescheduled date, they will receive a full

refund of the fee paid. The Institution is not responsible for any loss or damage as a result of a substitution, alteration or cancellation/postponement of an event. The Institution shall assume no liability whatsoever if this event is cancelled, rescheduled or postponed due to a fortuitous event, Act of God, unforeseen occurrence or any other event that renders performance of this conference impracticable, illegal or impossible. For the purposes of this clause, a fortuitous event shall include, but not be limited to: war, fire, labour strike, extreme weather or other emergency.

Please note that while speakers and topics were confirmed at the time of publishing, circumstances beyond the control of the organisers may necessitate substitutions, alterations or cancellations of the speakers and/or topics. The Institution reserves the right to alter or modify the advertised speakers and/or topics if necessary without any liability to you whatsoever. Any substitutions or alterations will be updated on the event's webpage as soon as possible.

LIABILITY

The organisers do not accept liability for any injuries or losses of any nature incurred by delegates and/or accompanying persons, nor for loss or damage to their luggage and/or personal belongings.

CONFERENCE VENUE

De Vere Colmore Gate
6 Colmore Row
Birmingham
B3 2QX

SPONSORSHIP & EXHIBITION OPPORTUNITIES

GET INVOLVED

Attending this event as either an exhibitor or sponsor will give you the opportunity to display your solutions, services and products to the right people at the right time.

BENEFITS OF SPONSORING

- **Showcase** new products
- **Raise** awareness of your operation
- **Improve** perception of your brand
- **Influence** other organisations' spending plans

This is an excellent way to enhance your company profile and communicate effectively to your target audience.

For more information please call

+44 (0)20 7973 1309

or email sponsorship@imeche.org

PE
DOWNLOAD
THE PE APP

Access
the latest
engineering
news

www.imeche.org/peapp



Institution of
**MECHANICAL
ENGINEERS**

The Institution of Mechanical Engineers
is a registered charity (no 206882)
VAT No GB29930493.

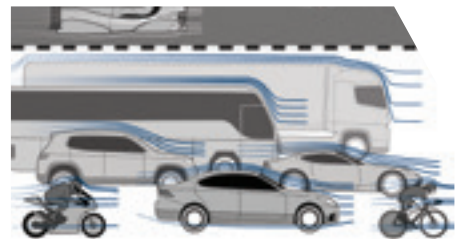
1 Birdcage Walk
Westminster
London
SW1H 9JJ

T +44 (0)20 7222 7899
www.imeche.org

FORWARD THINKING

We are the market leader among professional engineering bodies. We've been supporting engineers since 1847 and have 120,000 members in over 140 countries, working in the world's most dynamic and important industries. Our comprehensive events programme brings you the latest research and best practice from industry and academia.

OTHER EVENTS TO LOOK FOR



INTERNATIONAL CONFERENCE ON VEHICLE AERODYNAMICS 2018

16-17 October 2018, Birmingham

The 12th International Conference on Vehicle Aerodynamics will cover the latest developments in aerodynamics, aeroacoustics and aerothermal design, test and development.

www.imeche.org/icva2018



INTERNATIONAL EV BATTERIES 2018

6-7 November 2018, London

International EV Batteries 2018 brings you cutting-edge technical updates from leading OEMs, international researchers and regulators.

www.imeche.org/evbatteries

The Institution of Mechanical Engineers organises over 120 events a year, including free-to-attend lectures as well as conferences, seminars, annual luncheons and dinners. Please visit www.imeche.org/events for the complete list of events.

Follow us on Twitter

 twitter.com/imecheevents