

# INTERNATIONAL CONFERENCE ON TURBOCHARGERS AND TURBOCHARGING ASIA PACIFIC 2019

Institution of  
**MECHANICAL  
ENGINEERS**

12 PDUs approved by  
**Professional Engineers Board (PEB)**

**8–9 May 2019**  
PARKROYAL on Beach Road Singapore,  
Singapore

Powertrain Systems and Fuels Group  
**Conference**

## KEY SPEAKERS INCLUDE:

Carl William Burrell, Chief Designer – Concept Engines  
**Geely Powertrain Research Institute**

Peter Davies, Senior Director Powertrain  
**Garrett - Advancing Motion**

Koen Kramer, Chief Engineer Turbocharger Department  
**Great Wall Motors Engine R&D**

Azmi Osman, Head of Advanced Engineering  
**Proton**

Calogero Avola, Senior Technology System Engineer  
**General Motors**



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# INTERNATIONAL CONFERENCE ON TURBOCHARGERS AND TURBOCHARGING ASIA PACIFIC 2019

8-9 May 2019

PARKROYAL on Beach Road Singapore, Singapore

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## THE ASIA PACIFIC AUTOMOTIVE TURBOCHARGER MARKET WILL POSE OVER 8% CAGR BETWEEN 2017 AND 2024 OWING TO TIGHTENING FUEL ECONOMY TARGETS ACROSS ASIA

With this in mind, 2019 will see the Institution of Mechanical Engineers hold the inaugural conference on Turbochargers and Turbocharging Asia Pacific in Singapore. Attend to hear how leading OEMs in this region are preparing for the future of the turbocharging market, reflecting the growth of the hybrid and electric vehicle market and regulatory changes.

Featuring speakers from China, Japan, Malaysia, Singapore and Europe, this is a key forum to discuss the different technical developments and solutions to manage common engineering challenges.

Gain insight into the latest turbocharger design trends and research into turbocharger components, together with state-of-the-art performance testing and heat recovery systems to enhance your powertrain systems.

Network and discuss the future of the turbocharger including e-boosting with representatives from automotive and turbocharger manufacturers, research organisations and testing and design solution providers.

### KEY PROGRAMME HIGHLIGHTS:

- **Garrett- Advancing Motion** provide a technical presentation of their electrified turbocharger and latest applications
- **Lloyd's Register** give a classification society view of turbochargers for the marine industry
- **IHI Corporation** outline the next generation of variable geometry turbochargers
- **IAVF Karlsruhe** share ways to improve turbocharger performance and durability when oil specification and duty cycles are changing
- **MHI Engine & Turbocharger Ltd.** cover their two-stage boosting system using a 48 volt electric compressor

### WHAT TO EXPECT IN 2019:

- **17+ hours of technical presentations** with opportunities for questions to the speaker panel
- **20 presenting authors from 19 companies** including 4 keynote addresses
- **8 pioneering automotive OEMs** share latest developments, including **Geely, Great Wall Motors, Proton, Honda and General Motors**
- **Benefit from an international panel** of speakers across the region
- **9+ hours of networking time**
- **Peer reviewed** by industry experts and academic thought leaders
- **Build your network of contacts** and meet representatives and researchers

### ORGANISING/ADVISORY COMMITTEE:

Powertrain Systems and Fuels Group  
**Institution of Mechanical Engineers**

### MEMBERS CREDITS:

Ricardo Martinez-  
Botas  
**Imperial College**

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**Lloyd's Register  
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**Turbocharger and  
Engine Europe B.V.**

Mingyang Yang  
**Shanghai Jiao Tong  
University**

Takashi Otobe  
**Honda R&D**

# PROGRAMME

<b>WEDNESDAY 8TH MAY 2019</b>	
08:30	REGISTRATION AND REFRESHMENTS
09:00	<b>CHAIR'S OPENING REMARKS</b> Dietmar Filsinger, Engineering Division, IHI Charging Systems International GmbH
<b>LATEST TURBOCHARGER DESIGNS FOR GREATER EFFICIENCY</b>	
09:10 Keynote	<b>ROLE OF TURBOCHARGERS WITHIN NEXT GENERATION PASSENGER CAR POWER GENERATION PRODUCTS</b> Carl William Burrell, Chief Designer – Concept Engines, Geely Powertrain Research Institute
09:40	<b>THE NEXT GENERATION OF VARIABLE GEOMETRY TURBOCHARGERS FROM IHI</b> Kenichi Segawa, Manager, Product Development Group, IHI Corporation
10:05	<b>HOW TO IMPROVE TURBOCHARGER PERFORMANCE AND DURABILITY WHEN OIL SPECIFICATION AND DUTY CYCLES ARE CHANGING</b> Kurt Kirsten, Head of Advanced Engineering and Innovation, APL Group and Andreas Jäger, Officer, IAVF Karlsruhe
10:30	<b>QUESTIONS AND ANSWERS SESSION</b>
10:45	NETWORKING REFRESHMENT BREAK
<b>CUTTING-EDGE TURBOCHARGER COMPONENT DESIGN</b>	
11:15	<b>OPTIMISATION OF RADIAL-INFLOW TURBOEXPANDERS FOR MOBILE ORGANIC RANKINE CYCLE (ORC) APPLICATIONS</b> Miles Robertson, Research Associate in the Turbo Group, Imperial College London
11:40	<b>AERODYNAMIC OPTIMISATION OF COMPRESSORS AND TURBINES FOR ENGINE BOOSTING</b> Chris Robinson, Managing Director, PCA Engineers
12:05	<b>UNSTEADY RESPONSE OF CENTRIFUGAL COMPRESSOR PERFORMANCE TO PULSATING BACKPRESSURE</b> Mingyang Yang, Associate Professor in Mechanical Engineering School, Shanghai Jiao Tong University
12:30	<b>GRADIENT-FREE AND GRADIENT-BASED OPTIMISATION FOR AUTOMOTIVE TURBOCHARGER</b> Tadashi Kanzaka, Senior Researcher, MHI
12:55	<b>QUESTIONS AND ANSWERS SESSION</b>
13:15	NETWORKING LUNCH
14:15 Afternoon Keynote	<b>OPPORTUNITIES IN TAILORED DESIGN OF DIESEL ENGINE CHARGING SYSTEMS</b> Calogero Avola, Senior Technology System Engineer, General Motors
<b>STATE-OF-THE-ART PERFORMANCE MEASUREMENT TESTING AND ANALYSIS</b>	
14:45	<b>RELIABILITY TRENDS, OPERATING ISSUES AND ACCEPTANCE CRITERIA RELATED TO EXHAUST GAS TURBOCHARGERS USED IN THE MARINE INDUSTRY: A CLASSIFICATION SOCIETY VIEW</b> Kian Banisoleiman, Lead Specialist, Lloyd's Register
15:10	<b>EXPERIMENTAL AND COMPUTATIONAL OUTLOOK FOR COMPONENT-TO-SYSTEM LEVEL TURBOCHARGER PERFORMANCE ASSESSMENTS</b> Srithar Rajoo, Director, UTM Centre for Low Carbon Transport
15:35	<b>QUESTIONS AND ANSWERS SESSION</b>
15:50	NETWORKING REFRESHMENT BREAK
16:20	<b>MECHANICAL DEVELOPMENT OF TURBOCHARGERS USING "VIRTUAL TURBOCHARGER"</b> Mustafa Duyar, Product Manager, Virtual Dynamics, FEV Software and Testing Solutions
16:45	<b>QUESTIONS AND ANSWERS SESSION</b>
16:50 Panel discussion	<b>THE CHALLENGE OF MEETING FUEL ECONOMY TARGETS AND HOW TO GET THERE</b> <ul style="list-style-type: none"><li>• How can the industry as a whole work together to meet the new fuel economy targets in Asia?</li><li>• How can turbochargers be designed to meet these targets?</li><li>• How can we manage the impact of China VI combining emissions and fuel consumption targets?</li></ul>
17:20	<b>CHAIR'S CLOSING REMARKS</b>
17:30	END OF DAY ONE

# PROGRAMME

<b>THURSDAY 9TH MAY 2019</b>	
08:30	REGISTRATION AND REFRESHMENTS
	<b>THE FUTURE OF THE TURBOCHARGER WITH THE GROWTH OF FUEL CELLS</b>
<b>09:10</b> Keynote	<b>THE CHALLENGE OF FUEL CELL COMPRESSOR DEVELOPMENT</b> Koen Kramer, Chief Engineer Turbocharger Department, Great Wall Motors Engine R&D
<b>09:40</b>	<b>AIR SUPPLY SYSTEM FOR HONDA FUEL CELL VEHICLE</b> Tatsuya Sugawara, Assistant Chief Engineer, Honda
<b>10:05</b>	<b>RESEARCH ON KEY TECHNOLOGIES OF ELECTRIC TURBO COMPRESSOR FOR FUEL CELL ENGINES</b> Weilin Zhuge, Associate Professor, Department of Automotive Engineering, Tsinghua University
<b>10:30</b>	<b>QUESTION AND ANSWER SESSION</b>
10:45	NETWORKING REFRESHMENT BREAK
	<b>DEVELOPMENTS IN ELECTRICALLY ASSISTED TURBOCHARGING</b>
<b>11:15</b>	<b>TWO STAGE BOOSTING SYSTEM USING A 48 VOLT ELECTRIC COMPRESSOR</b> Naomichi Shibata, Senior Engineer, Turbocharger Division, MHI Engine & Turbocharger Ltd.
<b>11:40</b>	<b>ELECTRICALLY ASSISTED TURBOCHARGING AND HYBRID TURBOCHARGERS</b> Peter Davies, Senior Director Powertrain, Garrett - Advancing Motion
<b>12:05</b>	<b>QUESTION AND ANSWER SESSION</b>
12:20	NETWORKING LUNCH
	<b>METHODS TO IMPROVE THE DURABILITY AND PERFORMANCE OF THE TURBOCHARGER</b>
<b>13:20</b> Afternoon Keynote	<b>RECENT PROGRESS IN SIMPLIFIED SPLIT COOLING WITH INTEGRATED HEAT RECOVERY AND REUSE</b> Azmi Osman, Head of Advanced Engineering, Proton
<b>13:45</b>	<b>MULTI-INJECTION TURBINE HOUSING: AN EXPERIMENTAL VALIDATION FOR A NOVEL TIP-LEAKAGE MITIGATION CONCEPT</b> Alessandro Romagnoli, Assistant Professor, Nanyang Technological University
<b>14:10</b>	<b>QUESTION AND ANSWER SESSION</b>
14:20	NETWORKING REFRESHMENT BREAK
<b>14:50</b>	<b>TURBINE RESEARCH UPDATE</b> Tatsuya Kuboyama, Associate Professor, Chiba University
<b>15:15</b> Panel Discussion	<b>THE FUTURE OF BOOSTING SYSTEMS IN LIGHT OF THE ELECTRICAL REVOLUTION</b> Panellists: Koen Kramer, Chief Engineer Turbocharger Department, Great Wall Motors Engine R&D Peter Davies, Senior Director Powertrain, Garrett - Advancing Motion Weilin Zhuge, Associate Professor, Department of Automotive Engineering, Tsinghua University <ul style="list-style-type: none"><li>• How can we manage the impact the future hybrid technologies will have on the adoption of the turbocharger?</li><li>• What support is needed for the hybrid car market?</li><li>• How can the turbocharger be incorporated into the electrical revolution?</li></ul>
<b>16:25</b>	<b>CHAIR'S CLOSING REMARKS</b>
16:30	END OF CONFERENCE

**For the most up-to-date and detailed programme for the event, please visit:**  
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- This programme is subject to change.
- The Institution is not responsible for the views or opinions expressed by individual speakers.

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# FEEDBACK FROM 13TH INTERNATIONAL CONFERENCE ON TURBOCHARGERS AND TURBOCHARGING CONFERENCE:

“THANKS FOR THE GREAT EVENT!”

Chief Engineer, Great Wall Motors Engine R&D

“EXCELLENT ENVIRONMENT TO SEE THE TURBOCHARGING INDUSTRY AT WORK”

Technical Director, National Laboratory of Engine Turbocharging Technology, China

“THOROUGHLY ENJOYED THE EVENT, IT WAS VERY WELL PUT TOGETHER WITH A GOOD REPRESENTATION OF MANUFACTURERS, ACADEMICS, TECHNOLOGY COMPANIES. IT WAS TIME AND MONEY VERY WELL SPENT TO COME AWAY WITH GREAT IDEAS AND THE CONTACTS TO MAKE THEM HAPPEN.”

Mazda Motor Corporation

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## WHO SHOULD ATTEND?

All engineers and professionals who are directly and indirectly involved with these technologies should attend, including:

- Research Associate
- Head of Design
- Applications Engineer
- Performance Engineer
- Components Engineer
- General Manager Engineering
- Sales and Marketing Manager
- Technical Specialist
- Development Engineer
- Simulation Engineer
- Powertrain specialist
- Powertrain Manager
- Principal Engineer
- Aerodynamics Engineer
- Mechanical Design Engineer
- Global Strategies Manager
- Turbocharging Development Engineer
- Programme Manager
- Performance Engineer
- Systems Engineer
- Aerodynamicist
- Data Systems Engineer
- Product Engineer
- Advanced Processing Engineer
- Research and Development Engineer

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## HOW TO BOOK YOUR PLACE

### FEES AND CHARGES

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

Delegate Type	STANDARD RATE
Member, IMechE/supporting organisation	£520 + VAT = £624
Non-member	£620 + VAT = £744
Student/Retired	£200 + VAT = £240
Networking Reception and Dinner	£30 + VAT = £36

### THREE WAYS TO BOOK

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- 2 Email:  
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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.

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

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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

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#### CONFERENCE VENUE

PARKROYAL on Beach Road Singapore  
7500 Beach Rd  
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