

International Conference and Exhibition

30TH
EDITION

SIA POWERTRAIN ROUEN 2018

The New Compression Ignition Engine, Electrification
and Sustainable Fuels for Passenger Cars and
Commercial Vehicles

16 - 17 MAY
2018

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INTRODUCTION



Dr Noureddine Guerrassi

Chief Engineer Advanced Injection &
Combustion Engineering -
Delphi Technologies

Dear participant,

It is my great pleasure to extend to you all a very warm welcome on behalf of the SIA and the organization committee of this 30th SIA Powertrain Conference on New Compression Ignition Engine, Electrification & Sustainable Fuels. We are very grateful to all our sponsors, exhibitor companies and partners for the tremendous support they have provided.

As a result of continuous improvements in efficiency and emissions, Diesel technology still has a key role to play in future sustainable mobility. In particular, Diesel technology remains an attractive powertrain option, both for Total Cost of Ownership and for meeting the challenging fleet CO₂ emissions targets. This unique worldwide event focused on Diesel engines intends to address many new development topics. The scientific programme is composed of 59 presentations; a panel session with high level management participants from various automotive companies; several vehicle technology demonstrators, a student forum and more than 37 exhibitors.

Reflecting the ongoing focus shift in transportation decarbonisation towards a well-to wheel basis, new topics are introduced on alternative powertrain energy types (sustainable liquid and gaseous fuels) and fuel cells. This unique technical event will support you to build an overall picture of state-of-the-art powertrain technologies and to anticipate future development challenges. Due to the continuous growth in the number of conference participants and exhibitors, this 30th edition is now located in the Parc des Expositions of Rouen, giving access to larger conference rooms, a larger exhibition area and a vehicle test track.

I sincerely hope you will enjoy these two days of debate and networking. Thank you for your participation.

Yours sincerely,

Dr Noureddine Guerrassi
Conference Chair

**SAVE
THE DATE!**

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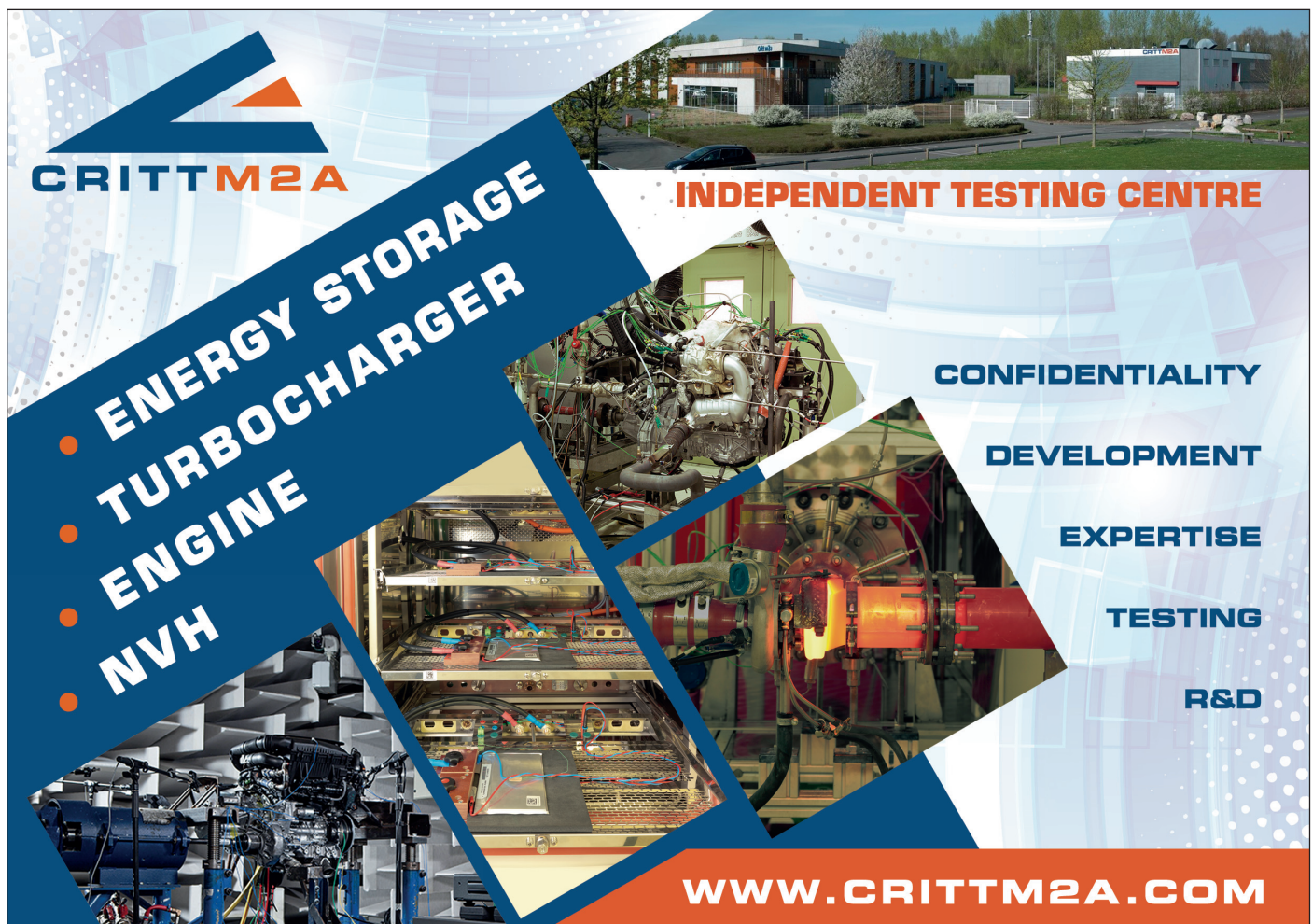
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PANEL SESSION

16 MAY, MARIE CURIE ROOM - 17:00



Christophe AUFRERE
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Chief Technology Officer
& French Automotive
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Powertrain Project
Alliance Global Director



Philippe DIVRY
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Moderator:
Laurent Meillaud
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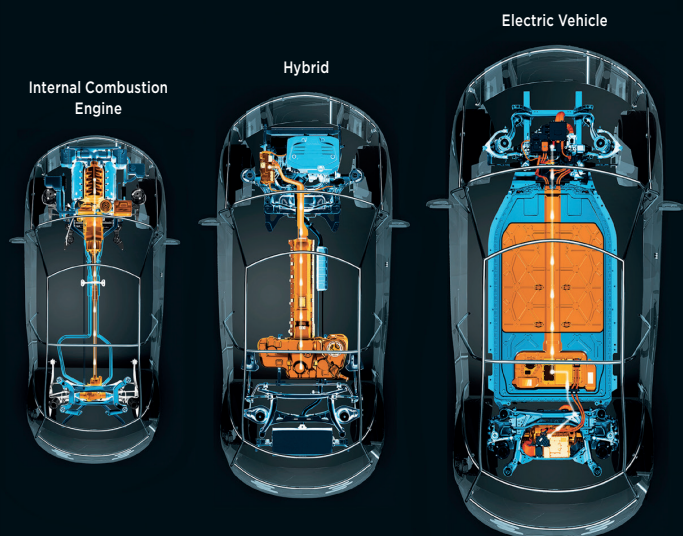
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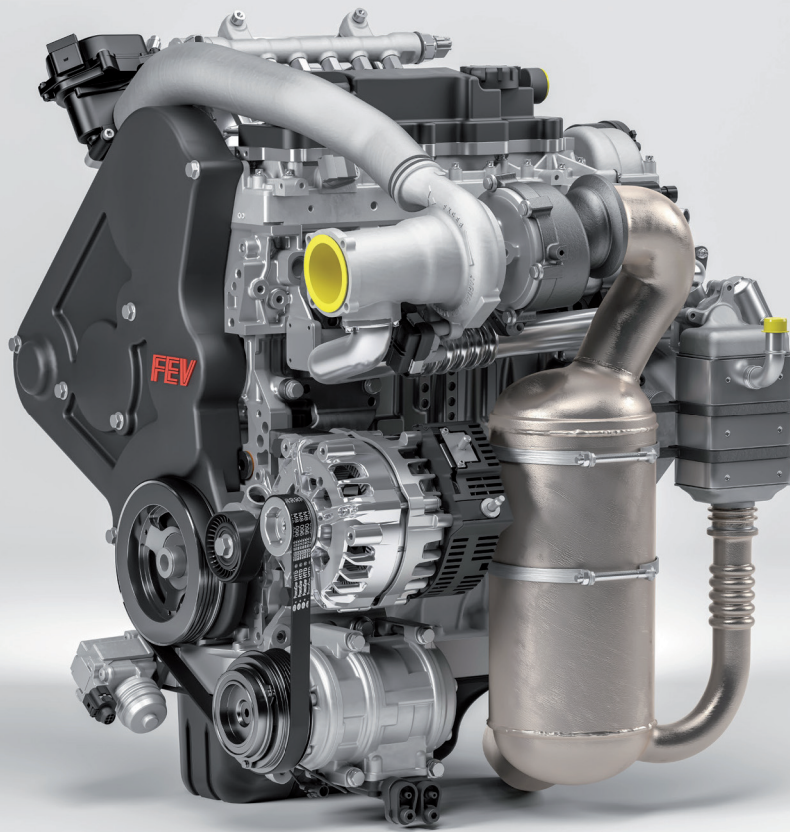


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PROGRAMME 16 MAY 2018

07:30 > Attendees Registration & Coffee in the Exhibition

OPENING PLENARY SESSION

- 08:30 > **Welcome Introduction**
Hervé GROS, Chief Executive & Jacques GRAIZON, President, *Société des Ingénieurs de l'Automobile*
- 08:35 > **Opening address by the Conference Chair**
Noureddine GUERRASSI, *Delphi Technologies*
- 08:45 > **The Energy mix and its impact on multiple automotive topics**
Jean-Luc BROSSARD, R&D Director, *PFA - French Automotive Industry & Mobilities*
- 09:00 > **Impacts of Emission from Car Exhaust on Air Quality**
Barbara D'ANNA, Research Director, *CNRS French National Centre for Scientific Research*
- 09:15 > **Promoting technological advances in a climate of distrust**
Colette GENIN, Manager, *Taddeo - Technologies & Mobilité*
- 09:30 > **Alternative fuels for sustainable mobility**
Agnès DUMESGES, VP Product Marketing, *Total*
- 09:45 > **Future evolutions of Diesel Engine technology and its powertrain trends influencing CO₂ emissions in Europe**
Vijay SUBRAMANIAN, Romain GILLET, *IHS MARKIT* & Gaetano DE PAOLA, *IFP Energies Nouvelles*
- 10:00 > Panel discussion with the Keynote Speakers

10:30 > COFFEE BREAK IN THE EXHIBITION // TEST-DRIVE

	NEW ENGINE TECHNOLOGY #1 Pierre DURET - IFP-School Jesus BENAJES - CMT Universitat Politecnica de Valencia	RDE TESTS & CALIBRATION #1 Juergen MANNS - IAV Hans NUGLISCH - Continental	EXHAUST AFTERTREATMENT #1 Bertrand DEMORTIER - Continental Michael WEISSBÄCK - AVL	WASTE HEAT RECOVERY Geoffroy MARTIN - Mov'eo Gaëtan MONNIER - IFP Energies Nouvelles
11:30 >	The New RENAULT 200hp 2.0L Diesel engine evolution C. Bergeris, J. Thibonnet, L. Ouhayoun, A. Hollemaert, E. Aguado, <i>Renault</i>	Model Based Engine Calibration for RDE Y. Murata, Y. Nishio, Y. Yamaya, M. Kikuchi, <i>Honda</i>	High Performance Commercial Vehicle SCR Compact Mixer E. Alano, E. Kinnaird, M. Lambrecht, <i>Faurecia</i>	Waste heat recovery (WHR) assessment in complete truck simulation environment F. Galuppo, T. Reiche, X. Huin, <i>AB Volvo</i> V. Lemort University of Liège P. Dufour, M. Nadri, <i>University of Lyon</i>
12:00 >	The New 1.5L BlueHDI Engine F. Coudrain, J-P. Chemisky, <i>Groupe PSA</i>	Tomorrows Emission Calibration Environment – "Simulated Real World Driving meets engine test-bench" J. Gerstenber, S. Tafel, S. Sterzing-Oppel, B. Seidel, C. Fischer, <i>Bosch</i>	Optimal NOx Reduction in all driving conditions J. Op De Beeck, P. Galabert, <i>Plastic Omnium</i>	Development of an ORC turbo-pump for Waste Heat Recovery in the Coolant of Automotive Engines A. Leroux, G. Levêque, N. Hollaïnd, A-C. Mints, G. Henry, <i>Enogia</i> P. Smague, P. Pagnier, P. Leduc, <i>IFP Energies Nouvelles</i>
12:30 >	The Liebherr New in-line Engines Family N. Auffret, M. Moretti, <i>LIEBHERR</i>	Transient RDE Gaseous Emissions from a Modern Plug-in Hybrid Electric Vehicle M. Duckhouse, M. Peckham, B. Masson, H. Bradley, M. Irwin, <i>Cambustion</i>	Ammonia Mixer Optimization for SCR Systems: A Combined Experimental and Numerical Approach M. Lecompte, P. Schiffman, O. Laget, <i>IFP Energies Nouvelles</i>	Rankine cycle, from thermodynamic equation to road test T. Fouquet, J. Roussilhe, <i>Faurecia</i>

13:00 > LUNCH BREAK IN THE EXHIBITION // TEST-DRIVE

	FUEL INJECTION SYSTEMS Thomas KÖRFER - FEV Marc LEJEUNE - AB VOLVO	EXHAUST AFTERTREATMENT #2 Olivier IMBERDIS - IAV Philippe PELLETIER - Renault	SUSTAINABLE ENERGY POWERTRAIN #1 Nadim ANDRAOS - FEV Philippe CHINA - Total	POWERTRAIN EFFICIENCY IMPROVEMENT Philippe BERNET - Renault Kyoungdoug MIN - Seoul National University
14:30 >	Next Generation of Fuel Injection Systems for Small & Medium Size Diesel Engines G. Meissonnier, P. Bercher, C. Cardon, C. Daveau, M. Graham, N. Guerrassi, <i>Delphi Technologies</i>	Electrical enhanced aftertreatment system to address passenger cars real life emissions M. Capircchia, E. Jean, <i>Faurecia</i>	Zero Emission Urban Trucks versus Diesel T. Justin, C. Tridon, P. Hanarp, <i>AB Volvo</i>	Optimization of Powertrain Architectures under Aspects of Fleet Requirements R. Troeger, C. Danzer, W. Wukisiewitsch, T. Voigt, <i>IAV</i>



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PROGRAMME 16 MAY 2018

15:00	<p>➤ RDE Step 2 and beyond - Bosch Diesel FIE System contribution T. Wintrich, S. Rothe, K. Bucher, <i>Robert Bosch</i></p>	<p>1D/3D simulation of urea dosing – Deposit Formation and NOx Reduction in Real Driving J. Wurzenberger, A. Nahtigal, T. Mitterfellner, <i>AVL</i></p>	<p>eFuels and Electrification: Enablers for Reduction of Well-to-Wheel CO₂ and local NOx emissions G. Avolio, G. Rosel, J. Grimm, O. Maiwald, R. Bruck, O. Kastner, <i>Continental</i></p>	<p>Base Engine friction and efficiency optimization and impact of electrified auxiliaries – Simulation approach for quantification in future driving cycles W. Schoeffmann, H. Sorger, C. Priestner, H. Petutschnig, M. Huetter, M. Weissbaeck, <i>AVL</i></p>
15:30	<p>➤ Analysis of spray characteristics on a counter-bore fuel injector nozzle for diesel engine application F. Pesce, A. Vassallo, <i>GM</i> R. Payri, J. De la Morena, J. Monsalve-Serrano, V. Pagano, <i>CMT-Motores</i></p>	<p>Model-Based Exhaust After-treatment Technology Robustness Testing using Monte Carlo Generated RDE Cycles R. King, R. Cantalops-Jimezez, J. Seabrook, A. Ward, R. Sellers, <i>Ricardo</i></p>	<p>Future potentials for diesel combustion engines by using e-fuels B. Becker, R. Marohn, P. Rolke, <i>IAV</i></p>	<p>Thermal Optimisation of e-drives Using Moving Particle Semi-implicit (MPS) Method L. Martinelli, M. Hole, <i>Drive System Design</i> D. Pesenti, M. Galbiati, <i>EnginSoft</i></p>
16:00	<p>➤ COFFEE BREAK IN THE EXHIBITION // TEST-DRIVE</p> <p>PANEL SESSION Christophe AUFRERE, Chief Technology Officer, <i>Faurecia</i> Pierrick CORNET, Powertrain Project Alliance Global Director, <i>Renault Nissan Mitsubishi</i> Philippe DIVRY, SVP Group Truck Strategy, <i>AB Volvo</i> Paul FARRELL, SVP Strategy and Product Marketing, <i>Delphi Technologies</i> Alain RAPOSO, Powertrain and Chassis Engineering SVP, <i>Groupe PSA</i></p>			
18:30	<p>➤ COCKTAIL IN THE EXHIBITION // TEST-DRIVE</p>			
19:30	<p>➤ GALA DINNER AT THE PARC DES EXPOSITIONS</p>			

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PROGRAMME 17 MAY 2018

08:00 > WELCOME COFFEE IN THE EXHIBITION

	EXHAUST AFTERTREATMENT #3 Jean-Florent GENIES - Groupe PSA Emmanuel JEAN - Faurecia	DIESEL COMBUSTION SYSTEMS Gaetano DE PAOLA - IFP Energies Nouvelles Andy WARD - Ricardo	TURBOCHARGING & EGR Jérôme MORTAL - Valeo Rémy SCHMITT - Robert Bosch	SUSTAINABLE ENERGY POWERTRAIN #2 Fabrice FOUCHER - University of Orléans Erwann SAMSON - Groupe PSA
08:30 >	Exhaust Aftertreatment Technology Approaches to cover upcoming RDE requirements F. Bunar, M. Diezemann, S. Nippert, R. Scholz, M. Brauer, IAV M. Maalouf, F. Mönkeberg, BASF	Reduced soot emissions by piston bowl-shape guided late cycle oxidation in low-swirl heavy-duty diesel engine combustion J. Eismark, A. Karlsson, AB Volvo & M. Andersson, I. Denbratt, Chalmers University of Technology	Electric boosting architectures comparison for light vehicle diesel engines P. Rathmann, S. Vankayala, E. Bouvier, J.-S. Roux, D. Jeckel, P. Davies, D. Zecchetti, Honeywell	Alternative powertrain options for non-road mobile machinery V. Rajamani, G. Topfer, Deutz
09:00 >	Future Advanced Diesel Emission Concepts to meet worldwide ultra-low emission standards for global applications T. Körfer, M. Kötter, M. Schönen, M. Panda, J. Berquez, M. Yumak, FEV	Holistic Diesel Combustion System Design – optimizing fuel-air mixing, heat transfer and combustion at low emissions level P. Anselmi, J. Galpin, G. De Paola, IFP Energies Nouvelle	Switchable Valve Train Components for PC Diesel Engines as Contribution to RDE Legislation Compliance F. Himsel, W. Christgen, T. Werblinski, M. Elicker, Schaeffler M. Brauer, R. Pohlke, IAV	Clean and Closed CO ₂ -Cycle-Mobility based on CI-Powertrain applying Sustainable fuels (DME) W. Willems, Ford M. Zubel, B. Heuser, RWTH Aachen
09:30 >	Diesel Exhaust Systems development in regards of RDE challenge B. Bassou, P. Servais, J. Barron, I. Grissted, C. Tomanik, U. Goebel, Umicore C. Beidl, J. Hipp, TU Darmstadt	Introduction to Delphi's DF17 Dynamic Rate Shaping - One Injector for all Combustion Strategies A. Mercer, K. Sullivan, R. Gibson, S. Tullis, Delphi Technologies	Potential of Variable Valve Train in Partial Load Operation of Diesel Engines P. Maniatis, U. Wagner, T. Koch, Karlsruhe Institute of Technology	Investigation on the effect of engine control parameters to optimize a light duty engine in dual fuel NG/Diesel configuration C. Guido, V. Fraioli, P. Napolitano, C. Beatrice, N. Del Giacomo, Istituto Motori CNR

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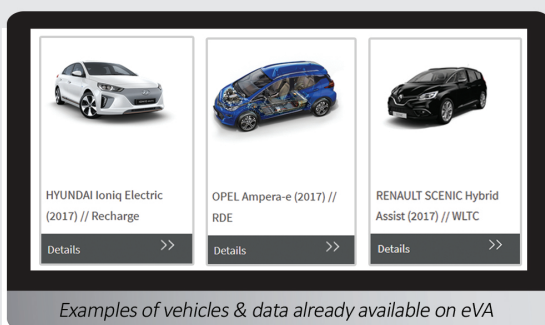
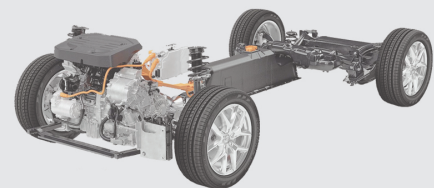
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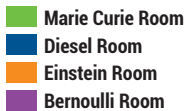


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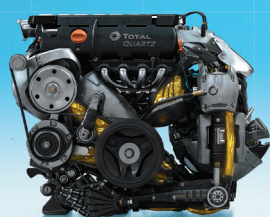
	HYBRID POWERTRAIN SYSTEMS Thomas KOCH - KIT Luc MULLER - Schaeffler	NEW ENGINE TECHNOLOGY #2 Jean-Marc BOULARD - AVL Steffen MEYER - Borgwarner	RDE TESTS & CALIBRATION #2 Sébastien POTTEAU - EMC-MTT Daniel ROETTGER - Ford	GASOLINE COMPRESSION IGNITION & DUAL FUEL Omar HADDED - Drive System Design Virginie MOREL - Aramco Overseas
11:00 >	Electrified Diesel Powertrains – Clean Air meets High Efficiency J. Schaub, M. Kötter, K. Vogt, Th. Körfer, J. Berquez, <i>FEV</i>	High performance diesel engine beyond 100 kW/lit for E-class PC with quiescent combustion concept H. Ofner, M. Wieser, M-S. Gande, <i>AVL</i> S. Bohatsch, H. Persson, M. Stenfeldt, <i>Volvo</i>	A Framework for Advanced Powertrain Controls with focus on optimal Real Driving Performance E. Pérez Guzmán, C. Vigild, F. De Smet, D. Röttger, <i>Ford</i>	Advanced Gasoline Fuel on a GCI Vehicle Demonstration as an Enabler for Lowering CO ₂ Footprint of Mobility A. Bouet, C. Chaillou, H. Won, <i>Aramco</i> F. Duffour, J. Kermani, M. Castagne, <i>IFP Energies Nouvelles</i>
11:30 >	Strategic Benefits of 48V Mild-Hybridisation for Light-Duty Diesel R. Sellers, P. Revereault, <i>Ricardo</i>	Innovative Technologies to Realize a Diesel System with High Efficiency and Low Emissions S. Visser, B. van Moergastel, O. Hermann, T. Yoshida, K. Higuchi, <i>DENSO</i> E. Neumann, <i>IAV</i>	Engine transient corrections calibration for real driving conditions: a holistic statistical approach D. Taindjis, G. Dober, N. Guerrassi, <i>Delphi Technologies</i> W. Baumann, <i>IAV</i>	Air reactivity on the demand for Low Temperature Combustion Engine N. Seignour, P. Pinazzi, F. Foucher, <i>PRISME - University of Orléans</i>
12:00 >	Reasonable hybrid entry solutions with E-Clutch N. Funalot, M. Kneissler, M. Baumann, <i>Schaeffler</i>	Lightweight Cylinder Block and Lubrication Circuit Thermal Management Solutions for Low CO ₂ Emissions A. Morris, S. Porteous, C. Rouaud, <i>Ricardo</i> F. Claydon, M. Gambling, <i>GRM Consulting</i>	FEV Virtual Calibration Platform VCAP, Efficient Methodologies for Diesel Powertrain Calibration P. Gautier, M. Kötter, N. Drecq, B. Kinoo, R. Lorette, T. Körfer, S. Trampert, <i>FEV</i>	Experimental Study of Load Expansion on Dual-fuel Premixed Compression Ignition S. Chu, J. Kang, K. Min, <i>Seoul National University</i> H. Jung, H. Kim, Y. Chi, <i>Hyundai</i>
12:30 >	Optimal Design and Sizing of Through-The-Road Hybrid Vehicle Powertrain B. Kabalan, Y. Cheng, E. Vinot, C. Dumand, R. Trigui, <i>Groupe PSA</i> W. Bou Nader, <i>IFSTTAR</i>	Asymmetric inlet valve opening to reduce NO _x and soot from a High-Speed Light-Duty Diesel Engine F. Leach, M. Davy, <i>University of Oxford</i> B. Cooper, <i>Jaguar Land Rover</i>	RDE Testing Methodology On Hybrid Vehicles A. Valleron, S. Olevier, <i>V-Motech</i>	Dual-mode dual-fuel combustion for low NO _x and soot emissions and high efficiency A. Garcia, J. Benajes, J. Monsalve-Serrano, <i>CMT-Motores</i> I. Balloul, <i>AB Volvo</i>

13:00 > LUNCH BREAK IN THE EXHIBITION // TEST-DRIVE

	PLENARY SESSION Federico MILLO - Politecnico di Torino // Amin VELJI - KIT			
14:30 >	Life Cycle Assessment Activities in Automotive Industries & Mobility Stéphane MOREL, <i>Renault</i> & Sophie RICHET, <i>Groupe PSA</i>			
15:00 >	Powertrain efficiency status and improvements for Medium Duty applications Nicolas TOURTEAUX, Chief Engineer Medium Duty, <i>AB Volvo</i>			
15:30 >	Fuel efficient powertrains evolution outlook Axel PLASSE, Maxime BAYON DE NOYER, <i>Renault</i>			
16:00 >	Closing Remarks by the Conference Chair Noureddine GUERRASSI, <i>Delphi Technologies</i>			
16:15 >	STUDENTS POSTER AWARD CEREMONY !			
16:30 >	END OF THE CONFERENCE			



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> **Ouverts à tous**



ERTS²

SIA - 3AF & SEE Conference

31 January - 2 February, Toulouse - France

- Co-organised by 3AF, SEE and SIA
- 100 presentations // 400 attendees
- Exhibition and sponsoring opportunities



Occitanie MonJob@FuturAuto

SIA Symposium Etudiants

29 mars, Toulouse - France

- 500 étudiants
- Exposition et démonstrateurs



Norme ISO 26262

SIA Journée d'Etude

4 Avril, Paris La Défense - France

- 12 présentations // 100 participants
- Exposition et offres de sponsoring



Powertrain - Rouen

SIA Conference

16 & 17 May, Rouen - France

- 50 presentations // 700 attendees
- Exhibition and sponsoring opportunities
- Exposition and Test Drive's cars



Big Data

SIA Congrès

6 & 7 Juin, Palaiseau - France

- 25 présentations // 200 participants
- Exposition et offres de sponsoring



Véhicule Autonome : Regards croisés

SIA & URF Congrès

25 & 26 Juin, Paris - France

- 50 présentations // 300 participants
- Exposition et offres de sponsoring

> A la suite de ce congrès nous organisons une journée d'étude dédiée à la simulation :



Simulation - Validation du Véhicule Autonome

27 Juin, Paris - France

- 12 présentations // 100 participants
- Exposition et offres de sponsoring



Les Matériaux Polymères

SIA & SFIP Congrès

19 & 20 Septembre, Sud-Ouest de la France

- 20 présentations // 150 participants
- Exposition et offres de sponsoring



MonJob@FuturAuto

SIA Students Symposium Etudiants

4 October, Paris - France (Mondial de l'Auto)

- 800-1000 étudiants
- Exposition et démonstrateurs



VISION

SIA Conference

9 & 10 October, Paris - France

- 40 presentations // 600-700 attendees
- Exhibition and sponsoring opportunities // Night Drive Tests



Automotive NVH Comfort

SIA - CTTM Conference

17 & 18 October, Le Mans - France

- Co-organised by CTTM and SIA
- 30 presentations // 250 attendees
- Exhibition and sponsoring opportunities



Simulation - Optimisation

SIA Journée d'Etude

14 Novembre, Paris - France

- 12 présentations // 100 participants
- Exposition et offres de sponsoring



CESA 5.0

SIA Conference

5 & 6 December, Versailles - France

- 50 presentations // 350 attendees
- Exhibition and sponsoring opportunities

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