



SIA

SOCIÉTÉ  
DES INGÉNIEURS  
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## PROGRAMME

# NVH Challenges of Modern Efficient Automotive Powertrains

Conference



IFP ENERGIES NOUVELLES / RUEIL-MALMAISON, FRANCE  
October 22<sup>nd</sup>, 2015

## CONTEXT & OBJECTIVES

The modern powertrains should be efficient, have to respect the CO<sub>2</sub> strategy of carmaker by minimizing fuel consumption and have to meet high performances in final pollutant emission while still reaching the drivability and the NVH targets.

In order to fulfill all these requirements some technology breakthroughs are introduced recently:

- Downsizing and downspeeding of IC engines
- Diminishing number of cylinders
- Cylinder deactivation and variable compression
- Stop and Start devices and hybridization
- Assisted and other innovative turbocharging technologies
- Innovative torque irregularity filtering and vibration decoupling
- New automatized transmissions
- New combustion technologies
- Innovative powertrain suspensions
- Range extender
- Energy recovery
- Application of roller bearing in powertrain
- Engine encapsulation

The conference will deal with the NVH problems induced by the new technologies mentioned above. The SOUND RADIATION, TORQUE IRREGULARITY and VIBRATION as well as the INTEGRATION within the vehicle of powertrains equipped with such recent technology will be addressed.

CONFERENCE LANGUAGE: 

## ORGANISING COMMITTEE

### CHAIRMAN



**LÉON GAVRIC**  
SENIOR EXPERT IN NVH  
PSA PEUGEOT CITROËN

### COMMITTEE MEMBERS

- PASCAL BOUVET** - VIBRATEC
- ARNAUD COURJAL** - SIEMENS
- NICOLAS DAUCHEZ** - UTC
- ARNAUD DUVAL** - FAURECIA
- JEAN GRATADOUR** - SIA
- DANIEL JUVE** - ECOLE CENTRALE DE LYON
- SAÏD NAJI** - VALEO
- LAURENT POLAC** - RENAULT
- KRESIMIR TRDAK** - AUTONEUM
- CHARLES ZHANG** - RENAULT

## SPONSORING & ADVERTISING

Rates (exc.VAT)	Back cover	Inside page
Ad in the book of conference <sup>(1)</sup>	800 €	500 €
Insertion of 1 booklet or 1 flyer in the conference bag	600 €	
Your company conference bag for all attendees	600 €	
Your lanyard for all attendees	600 €	

(1) The book of conference will be given to all the attendees



# PROGRAMME

08:30	Attendees registration
09:00	<b>Introduction : Modern Efficient Automotive Powertrains – Overview of NVH challenges</b> Léon Gavric, PSA Peugeot Citroën
	<b>SESSION 1</b> <b>Powertrain torsional vibrations and related NVH issues</b> Jean Gratadour, SIA
09:20	<b>Challenges and solutions to improve engine start/stop comfort</b> Christoph Steffens, FEV
09:50	<b>Engine down-sizing and down-speeding: a new challenge for torsional vibration filtration</b> Hervé Mahé, Valeo
10:20	<b>Torsional vibration damping in automatic transmissions</b> Matthieu Hiard, PUNCH Powerglide
10:50	COFFEE BREAK
	<b>SESSION 2</b> <b>Hybridization technologies and new engines architectures</b> Charles Zhang, Renault
11:20	<b>NVH of Hybrid Vehicles – Key Challenges and Conceptual Approaches</b> Stephan Brandl, AVL
11:50	<b>Hybrid Air Technology and (some) NVH issue</b> Laurent Gagliardini, PSA Peugeot Citroën
12:20	<b>MCE-5 VCRI demo engine NVH preliminary analysis</b> François Besson, MCE-5 Développement
12:50	LUNCH BREAK
	<b>SESSION 3</b> <b>Engine efficiency enhancement and related sound radiation issues</b> Arnaud Duval, Faurecia
14:30	<b>A new generation of Turbochargers for future gasoline engines to meet highest NVH requirements in high power and – high pulsating engines</b> Rolf Sauerstein, BorgWarner
15:00	<b>Engine encapsulation solutions and methods to support NVH and Thermal desing optimization</b> Davide Caprioli, Autoneum
15:30	<b>Component sound power emission on an efficient diesel engine using 3D acoustic imaging techniques</b> Sebastien Paillasseur, MicrodB
	<b>SESSION 4</b> <b>Engine technologies and NVH optimization challenges</b> Said Naji, Valeo
16:00	<b>NVH optimisation of modern automotive powertrains: examples of new technologies and optimization methods</b> Shanjin Wang, Renault
16:30	<b>Robust optimization of a truck timing gear cascade: numerical and experimental results</b> Alexandre Carbonelli, Vibrattec
17:00	<b>Delivering Competitive NVH from Low CO<sub>2</sub> Powertrain Solutions</b> Matt Maunder, Ricardo
17:30	END OF CONFERENCE

Only speakers name are given

## USEFUL INFORMATION



4, avenue de Bois-Préau  
92852 Rueil-Malmaison Cedex, France  
Tel: +33 1 47 52 60 00



### HOW TO GET THERE

#### By car

From Paris, exit Porte Maillot, D913 direction La Défense - Saint-Germain-en-Laye

#### By public transportation

RER Line A, direction Saint-Germain-en-Laye, two options (see map):

- get off at Rueil-Malmaison, take bus 244\*, get off at Geneviève Couturier, or bus 27, get off at Bois-Préau. You can also use lines 144 and 467, get off at Rueil-Ville;
- get off at Grande Arche de la Défense, take bus 258 (direction La Jonchère or Saint-Germain-en-Laye), get off at Bois-Préau.

\* In the event of roadworks or if the bus is not following its usual route, ask the driver whether it stops at Geneviève Couturier. If it does not, get off at Rueil-Ville.

## HOTEL ACCOMMODATION

### IBIS BUDGET\*\*

147 Boulevard National  
92500 Rueil-Malmaison  
Tel: 08 92 68 12 78

### HOTEL DES ARTS\*\*

3 boulevard du Marechal Joffre  
92500 Rueil-Malmaison  
Tel: 01 47 52 15 00

### INTER-HOTEL RUEIL CENTRE\*\*\*

1 place Richelieu  
92500 Rueil-Malmaison  
Tel: 01 47 08 20 20

### IBIS HOTEL\*\*\*

16 boulevard de l'hôpital Stell  
92500 Rueil-Malmaison  
Tel: 01 47 32 96 96

# REGISTRATION FORM

One-day conference NVH Challenges of Modern Efficient Automotive Powertrains - October 22<sup>nd</sup>, 2015  
Réf: 2015-07

## PLEASE COMPLETE AND RETURN THIS FORM TO:

SIA - 79, rue Jean-Jacques Rousseau - F-92158 Suresnes Cedex / Fax: +33 (0)1 41 44 93 79 / pauline.senis@sia.fr

## REGISTER DIRECTLY ON LINE: WWW.SIA.FR



### Please use BLOCK CAPITALS

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### Registration fees

- 468 € VAT Incl.** (390 € VAT Excl.) - SIA Members
- 576 € VAT Incl.** (480 € VAT Excl.) - Non Members
- 312 € VAT Incl.** (260 € VAT Excl.) - Co-authors\* Researchers\*, Labs\* and Small Firms\* (< 100 employees)
- Speakers free** (one only)

Preferential rates for students, retired people and groups • For further information, contact pauline.senis@sia.fr

*\*Small firms, Researchers and laboratories must not come under the control of big firms (> 100 employees).*

### Payment Please precise the invoice address

- By check in Euros** made payable to: "Société des Ingénieurs de l'Automobile"
- By bank transfer in Euros** made payable to: "Société des Ingénieurs de l'Automobile" (please enclose a copy)  
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#### REGISTRATION CONDITIONS

- Registration fees include participation in the conference, proceedings, book of abstracts, refreshment breaks and lunches .
- Where it is not possible to send the payment together with the form, each registration should be accompanied by an official purchase order. Failing reception of an official purchase order or payment on the day of the congress, we regret that you will not be allowed entry to the congress.
- When we have received the registration form, we will send you a confirmation message and an invoice. Please indicate the accounts department address where necessary.
- In case of cancellation before September 22<sup>nd</sup> 2015, 30% of the registration fees will be retained. After this date, the entire registration fee will be retained. Registered participants not able to attend may nominate a substitute. Written notice must be provided.



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