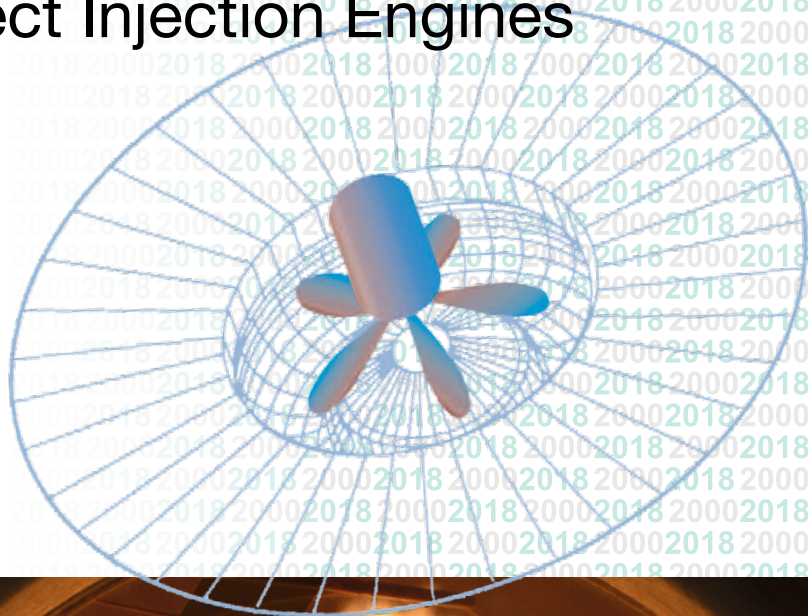


THIESEL 2018

Conference on Thermo-and Fluid Dynamic Processes in Direct Injection Engines

X ANNIVERSARY



11th ~ 14th September 2018 Valencia (Spain)



UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA



The 50th anniversary of the Universitat Politècnica is approaching and September also marks the celebration of the tenth anniversary of the **THIESEL international conference on Thermo-and Fluid Dynamic Processes in Direct Injection Engines**. With this 10th edition, Thiesel consolidates its leading position as a global meeting point from which to share the latest developments and innovations related to the combustion engine.

The **Universitat Politècnica de València** is honoured to be holding this year's event which culminates in 20 years of bringing together experts from industry, academia and research institutes to find and disseminate the latest solutions to the needs and demands raised by the consumer of the automotive industry. As a rapidly evolving sector, R+D is an essential part of its development and as ever, this edition of Thiesel will bring us the latest advances in areas related to Engine Modelling, New Concepts, Experimental Techniques and Direct Injection Engines and Environment.

Yet again, this year Thiesel counts on the participation of renowned keynote speakers from all over the globe and this, combined with the presence of international members in the scientific and advisory committee, as well as presentations from members of various countries, provides a valuable perspective and a wealth of information that undoubtedly reinforces the outstanding international reputation maintained by the Thiesel International conference.

On behalf of the Universitat Politècnica de València, I would like to convey a warm welcome to all those attending Thiesel 2018, and I take this opportunity to express my sincere congratulations and my appreciation to everyone involved in the organization of Thiesel 2018 and to the participants who have contributed with their expert knowledge.

On this **10th anniversary of THIESEL**, I would like to congratulate the organization team including the lecturers and researchers from the **CMT-Motores Térmicos** and all the people who have contributed to its success over the years. Following Thiesel's second decade, I wish to express my best wishes for more years of continued success and a prosperous future.

Francisco José Mora Mas

RECTOR

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

Se aproxima el 50 aniversario de la Universitat Politècnica de València y además, este septiembre se celebra el décimo aniversario de la conferencia internacional de **THIESEL sobre procesos y fluidos dinámicos en motores de inyección directa**. Con esta décima edición, Thiesel consolida su posición líder como punto de encuentro mundial para compartir los últimos desarrollos e innovaciones relacionadas con el motor de combustión.

La **Universitat Politècnica de València** se enorgullece de celebrar este año el evento que culmina los 20 años de la reunión de expertos de la industria, la academia y los institutos de investigación para encontrar y difundir las últimas soluciones a las necesidades y demandas planteadas por el consumidor de la industria automovilística. Siendo un sector de rápida evolución, la I+D es una parte esencial de su desarrollo y, como siempre, esta edición de Thiesel nos brindará los últimos avances en áreas relacionadas con el modelado de motores, nuevos conceptos, técnicas experimentales y motores de inyección directa y su menor impacto en el medioambiente.

Una vez más, este año Thiesel cuenta con la participación de ponentes reconocidos de todo el mundo, y esto combinado con la presencia de miembros internacionales en el comité científico y asesor, así como las presentaciones de miembros de diversos países, proporciona una perspectiva valiosa y una gran cantidad de información que sin duda refuerza la excelente reputación internacional mantenida por la conferencia internacional Thiesel.

En nombre de la Universitat Politècnica de València, me gustaría transmitir una cálida bienvenida a todos los asistentes a Thiesel 2018, y aprovecho esta oportunidad para expresar mi sincera enhorabuena y mi agradecimiento a todos los que participaron en la organización del congreso, y a los participantes que han contribuido con su experto conocimiento.

En este **décimo aniversario de THIESEL**, me gustaría felicitar al equipo de organización, incluidos los profesores e investigadores del **CMT-Motores Térmicos** y a todas las personas que han contribuido a su creciente y dilatado éxito a lo largo de los años. Cumplida la segunda década de Thiesel, expreso mis mejores deseos de continuidad y un venturoso porvenir.

OVERVIEW AND OBJECTIVES

THIESEL 2018 is the tenth edition of the THIESEL Conference on Thermo-and Fluid Dynamic Processes in Direct Injection Engines and this anniversary is worth a celebration! It indicates that Thiesel has acquired over the past 20 years a consolidated position as a meeting point between industry, research institutions and academia involved in R&D for automotive engines. And naturally, it strives to remain a reference forum for the next 20 years.

It is true that combustion engines are not at their peak popularity nowadays, and the environmental challenges to be faced by manufacturers in the near future will surely be even tougher than the current ones. However, there is no doubt either that combustion engines, even if mainly in the context of hybrid and electrified vehicles, will remain an important propulsion system in transport for the next 20 to 50 years, at least for as long as alternative solutions cannot provide the flexibility expected by customers of the 21st century.

Without any significant breakthrough in sight, research is becoming somewhat asymptotic, but no less interesting. On the contrary, any possibility to reduce consumption and emissions even by a small amount is worth being explored, and topics considered as marginal not many years ago are now moving to the forefront. On the combustion side, further development of advanced concepts able to fully exploit the control potential offered by modern injection hardware will be required. Regarding other engine processes, progress in the air management of the engine will also be necessary, most notably in turbo-charging system operation and exhaust gas recirculation (EGR), but also in exhaust waste heat recovery. This last topic needs to be addressed in the context of the overall thermal management of the engine: new ideas for a precise control of heat flows are being proposed, and old ideas for the reduction of heat losses are constantly being reexamined. Finally, advances are also required regarding new after-treatment technologies and engine noise control.

In summary, there is considerable margin for improvement and potential for new research in combustion engine technologies. Obviously, the success of these efforts depends on the willingness of the automotive industry to invest in medium-to-long term basic research and on the capability of academic researchers to provide due and timely responses to its demands and challenges.

THIESEL 2018 aims at providing the ideal setting for the high tech exchanges of knowledge and experience between the main actors of the automotive R&D sector that will lead to engine concepts adapted to the new societal needs.

THIESEL's 10th Anniversary coincides with the **50th Anniversary of our striving and modern Universitat Politècnica de València**. If today we are celebrating the success of Thiesel 2018 it is also thanks to the continuing support of UPV and its open vision of the world. The Organization Committee of Thiesel 2018 wishes to acknowledge this.

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Dr. W. ZHUGE	TSINGHUA UNIVERSITY ~ CHINA

SESSION MATRIX

TUESDAY · SEPT 11 TH	WEDNESDAY · SEPT 12 TH	THURSDAY · SEPT 13 TH	FRIDAY · SEPT 14 TH
	07:30 ~ 08:30		
	CONFERENCE REGISTRATION		
	08:30 ~ 10:30	08:30 ~ 10:30	08:30 ~ 10:30
	SESSION A.1. Fuel injection & sprays	SESSION C.1. Engine modelling · I	SESSION E.1. Emissions & aftertreatment · I
	10:30 ~ 11:00	10:30 ~ 11:00	10:30 ~ 11:00
	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
	11:00 ~ 13:00	11:00 ~ 13:00	11:00 ~ 13:00
	SESSION B.1. Combustion · I	SESSION C.2. Engine modelling · II	SESSION E.2. Emissions & aftertreatment · II
	13:00 ~ 14:15	13:00 ~ 14:15	13:00 ~ 15:00
	LUNCH	LUNCH	LUNCH
	14:15 ~ 15:30	14:15 ~ 15:30	
	Poster session · I Visits to CMT LABS + EXHIBITION TALKS	Poster session · II Visits to CMT LABS + EXHIBITION TALKS	
	15:30 ~ 17:00	15:30 ~ 17:00	15:00 ~ 17:00
	SESSION B.2. Combustion · II	SESSION D.1. Thermal management · I	SESSION F.1. Air management
	17:00 ~ 17:30	17:00 ~ 17:30	17:00 ~ 17:30
	COFFEE BREAK	COFFEE BREAK	CLOSURE ADDRESS
18:00 ~ 19:30	17:30 ~ 19:00	17:30 ~ 19:00	
CONFERENCE REGISTRATION	SESSION B.3. Combustion · III	SESSION D.2. Thermal management · II	
19:30 ~ 20:00			
WELCOME ADDRESS			
20:00 ~ 21:30			20:30 ~ 24:00
WELCOME COCKTAIL			GALA DINNER



WEDNESDAY

SEPTEMBER 12th

CONFERENCE REGISTRATION

07:30 ~ 08:30

SESSION A.1. FUEL INJECTION & SPRAYS

CHAIRPERSON S. EDWARDS RICARDO (GERMANY)

08:30 ~ 10:30

● Is it really the end of IC Engines and Petroleum in Transport?

G. KALGHATGI Saudi Aramco (Saudi Arabia)

KEYNOTE LECTURE

● Measurement of Sauter mean diameter (SMD) in Diesel sprays using a scattering-absorption measurement ratio (SAMR) technique

G.L. MARTÍNEZ, F. POURSADEGH, G.M. MAGNOTTI, B.W. KNOX, C.L. GENZALE Georgia Institute of Technology (USA)

K.E. MATUSIK, D.J. DUKE, C.F. POWELL, A.L. KASTENGREN Argonne National Laboratory (USA)

● Prediction of spray collapse in multi-hole gasoline direct injection (GDI) fuel injectors

S. RACHAKONDA, A. PAYDARFAR, D.P. SCHMIDT University of Massachusetts Amherst (USA)

● Direct gas injection for prechamber combustion

J. ZELENKA, G. KAMMEL, A. WIMMER LEC (Austria) · K. PICHKALA Graz University of Technology (Austria)

G. KOGLER Hoerbiger Ventilwerke (Austria)

COFFEE BREAK

10:30 ~ 11:00

SESSION B.1. COMBUSTION · I

CHAIRPERSON B. VAGLIECO ISTITUTO MOTORI (ITALY)

11:00 ~ 13:00

● Accordic (ACTively Controlled Rate of Diesel Combustion) update: Simultaneous improvements in brake thermal efficiency and heat loss in a heavy-duty Diesel engine with multiple fuel injectors

N. UCHIDA New A.C.E. Institute (Japan) · H. WATANABE SOKEN (Japan)

● Investigation of the spray and combustion characteristics of four multi-component Diesel surrogate fuels relative to their commercial target fuel

K. YASUTOMI, C.J. MUELLER, L.M. PICKETT, S.A. SKEEN Sandia National Laboratories (USA)

● Impact of counter-bore nozzle on the combustion process and exhaust emissions for light-duty Diesel engine application

R. PAYRI, J. DE LA MORENA, J. MONSALVE-SERRANO Universitat Politècnica de València (Spain)

F.C. PESCE, A. VASSALLO General Motors Global Propulsion Systems, Torino (Italy)

● Enhancing Diesel engine efficiency by combustion rate shaping

H BUSCH Coventry University (UK) · M. SCHOENEN, H. ROHS FEV Europe (Germany) · T. KOERFER FEV Group Holding (Germany)

LUNCH

13:00 ~ 15:30

SESSION B.2. COMBUSTION · II

CHAIRPERSON M. LAGE AUTOMOTIVE & FUELS CONSULTANT (SPAIN)

15:30 ~ 17:00

● Advances in spray diagnostics and modeling through the Engine Combustion Network

KEYNOTE LECTURE

L. PICKETT Sandia National Laboratories (USA)

● In-cycle closed-loop combustion controllability with pilot-main injections

C. JORQUES, O. STENLÅÅS Scania CV AB (Sweden) · P. TUNESTÅL Lund University (Sweden)

● Experimental and numerical spray investigations of synthetic fuels for sustainable CI engines

M. BODE, Y. KAYA, M.A. REDDEMANN, D. GOEB, V. KIRSCH, R. KNEER H. PITSCH RWTH Aachen (Germany)

U. REUTER, D. VAN BEBBER, C. HERUDEK, A. SOMMERHOFF, W. WILLEMS Ford Research and Innovation Center Aachen (Germany)

COFFEE BREAK

17:00 ~ 17:30

SESSION B.3. COMBUSTION · III

CHAIRPERSON F. PESCE GM PROPULSION SYSTEMS TORINO (ITALY)

17:30 ~ 19:00

● Flame quenching during dual-fuel operation investigated in experiments and simulation

A. PETER, M. WENSING FAU Erlangen-Nürnberg (Germany) ·

J. FRUEHHABER, S. SCHUH, T. LAUER, F. WINTER TU-Wien (Austria) · P. PRIESCHING AVL List (Austria)

● Spark ignited flame propagation of lean stratified air-gasoline mixture in a constant volume combustion chamber

S. PARK, J. SHIN, C. BAE Korea Advanced Institute of Science and Technology (Republic of Korea)

● Fuel kinetic effects on pre-spark heat release and engine knock limit

A. GILLIAM, J.B. GHANDHI University of Wisconsin-Madison (USA) · D.A. SPLITTER, J.P. SZYBIST Oak Ridge National Laboratory (USA)

THURSDAY

SEPTEMBER 13th

SESSION C.1. ENGINE MODELLING · I

CHAIRPERSON C. ANGELBERGER IFP ENERGIES NOUVELLES (FRANCE)

08:30 ~ 10:30

● How high fidelity simulation and diagnostic tools can be used for the development of hybrid powertrains

C. KRÜGER Daimler (Germany)

KEYNOTE LECTURE

● Virtual engine model for analysis-driven pre-calibration

J. GAO, V. GOPALAKRISHNAN, R. DIWAKAR, A. WAREY General Motors Research and Development (USA)

A. RODIO, R. ARDANESE General Motors Global Propulsion Systems (USA)

● Interactions among 3D, 1D and 0D models for natural gas fueled two-stroke SI engines

A.U. BAJWA, A. MASHAYEKH, T. JACOBS Texas A&M University (USA) · M. PATTERSON Baker Hughes (USA)

● CFD-based development of an ignition chamber for a lean and high efficient CNG combustion

G. LUCAS, G. TALLU, M. WEISSNER Volkswagen (Germany)

COFFEE BREAK

10:30 ~ 11:00

SESSION C.2. ENGINE MODELLING · II

CHAIRPERSON B. BARCIELA MAN TRUCK & BUS (GERMANY)

11:00 ~ 13:00

● Optimized strategies to simulate cyclic variability in gasoline spark-ignited engines using large-eddy simulation

J. KODAVASAL, R. SCARCELLI, S. SOM Argonne National Laboratory (USA)

D. PROBST, S. WIJEYAKULASURIYA, E. POMRANING Convergent Science (USA)

● Computational modeling and analysis of Diesel-fuel injection and autoignition at transcritical conditions

M. IHME, P.C. MA Stanford University (USA) · L. BRAVO US Army Research Laboratory (USA)

● CFD simulations of port water injection benefits in a GDI engine under knock-limited conditions

J. ZEMBI, M. BATTISTONI University of Perugia (Italy) · F. RANUZZI, N. CAVINA University of Bologna (Italy)

M. DE CESARE Magneti Marelli Powertrain (Italy)

● A comprehensive engine study: from surrogate chemistry formulation to engine simulations

M. JAASIM, N. ATEF, B. MOHAN, A. SOW, F.E. HERNANDEZ, S.M. SARATHY, H.G. IM. King Abdullah University of Science and Technology (Saudi Arabia)

J.A. BADRA, J. SIM Saudi Aramco (Saudi Arabia)

LUNCH

13:00 ~ 15:30

SESSION D.1. THERMAL MANAGEMENT · I

CHAIRPERSON N. AUFFRET LIEBHERR MACHINES BULLE (SWITZERLAND)

15:30 ~ 17:00

● Tools and activities for increased combustion system efficiency

KEYNOTE LECTURE

D. NORLING Scania (Sweden)

● The classification of gasoline/Diesel dual-fuel combustion on the basis of HRR shapes and its application toward low emissions and high thermal efficiency in a light-duty single cylinder engine

J. LEE, S. CHU, J. KANG, K. MIN Seoul National University (Republic of Korea)

H. JUNG, H. KIM, Y. CHI Hyundai Motor Group (Republic of Korea)

● Thermal efficiency improvement with super-charging and cooled EGR in semi-premixed Diesel combustion with a twin peak shaped heat release

K. INABA, Y. OJIMA, Y. MASUKO, Y. KOBASHI, G. SHIBATA, H. OGAWA Hokkaido University (Japan)

COFFEE BREAK

17:00 ~ 17:30

SESSION D.2. THERMAL MANAGEMENT · II

CHAIRPERSON T. MORITA NISSAN TECHNICAL CENTRE EUROPE (SPAIN)

17:30 ~ 19:00

● Experimental measurements of piston temperature and evaluation of heat flux in engine at transient conditions

E. MANCARUSO, L. SEQUINO, B.M. VAGLIECO Istituto Motori (Italy) · F. MAROTEAUX Université de Versailles UVSQ (FRANCE)

● Modeling investigation of thermal insulation approaches for low heat rejection Diesel engines using a conjugate heat transfer model

A. POUBEAU, A. VAUVY, F. DUFFOUR, J.-M. ZACCARDI, G. DE PAOLA IFP Energies Nouvelles (France) · M. ABRAMCZUK Renault (France)

● Performance enhancement potential of a racing engine with ERS through optimized thermal management

P. HÖLZ, E. CHEBLI Porsche Motorsport (Germany) · T. BÖHLKE Karlsruhe Institute of Technology (Germany)

FRIDAY

SEPTEMBER 14th

SESSION E.1. EMISSIONS & AFTERTREATMENT · I

CHAIRPERSON C. SOTERIOU CONSULTANT (UK)

08:30 ~ 10:30

● Future role of flexible high-pressure injection systems for sustainable light-duty Diesel engines

C. BEATRICE Istituto Motori (Italy)

KEYNOTE LECTURE

● Effects of injector fouling of gasoline direct injection engines in exhaust emissions and compliance of normative limits

F. OLIVA, J. ARIZTEGUI Repsol Technology Centre (Spain)

● Proposal of innovative Diesel combustion concept using GTL-emulsion fuel. Drastic decrease in emissions by smoke-less diffusive combustion

K. INAGAKI, J. MIZUTA, Y. TAKATORI, K. KUGIMOTO, R. UEDA Toyota Central R&D Labs. (Japan)

● The effects of fuel-air mixing and injector dribble on Diesel UHC emissions

C. KOCI, R. FITZGERALD, V. IKONOMOU, K. SUN Caterpillar (USA)

COFFEE BREAK

10:30 ~ 11:00

SESSION E.2. EMISSIONS & AFTERTREATMENT · II

CHAIRPERSON G. KALGHATGI SAUDI ARAMCO (SAUDI ARABIA), NOW RETIRED

11:00 ~ 13:00

● Experimental assessment of the sources of regulated and unregulated nanoparticles in GDI engines

M. BARDI, G. PILLA, X. GAUTROT IFP Energies nouvelles (France)

● CFD analysis applied to the design of aqueous urea SCR dosing system with reduced risk of solid deposit formation

G. MONTENEGRO, F. PAVIRANI, A. ONORATI, A. DELLA TORRE Politecnico di Milano (Italy)

N. RAPETTO FPT Industrial (Italy) · J. CAMPBELL, E. TAFFORA FPT Motorenforschung (Switzerland)

● Towards zero emission engines through the adoption of combustion lead engine design realised using a split cycle topology

R. MORGAN, F. KHALID, S. HARVEY, FIRMANSYAH, D. MASON, K. VOGIATZAKI, M. HEIKAL University of Brighthon (UK)

A. ATKINS Ricardo Innovations (UK)

● Experiments on the wall wetting limit of AdBlue on surfaces at high temperatures

M. QUISSEK, T. LAUER Vienna University of Technology (Austria) · O. GARCIA-AFONSO, S. FOWLES Jaguar Land Rover (UK)

LUNCH

13:00 ~ 15:00

SESSION F.1. AIR MANAGEMENT

CHAIRPERSON A. BROATCH CMT-UNIVERSITAT POLITÈCNICA VALÈNCIA (SPAIN)

15:00 ~ 17:00

● New challenges and key technologies of air system for future Diesel and gasoline engines

S. GUILAIN Renault (France)

KEYNOTE LECTURE

● Exhaust temperature reduction with intake pressure wave action control

V. RAIMBAULT, D. CHALET Ecole Centrale de Nantes (France)

J. MIGAUD Mann+Hummel France (France) · S. GUILAIN, B. PERESSINI Renault (France)

T. GÜNTHER, M. BARGENDE Forschungsinstitut für Kraftfahrwesen und Fahrzeugmotoren Stuttgart (Germany)

● Experimental investigations of variable valve trains in combination with a second opening of an exhaust valve in partial load operation of a passenger car single-cylinder Diesel engine

P. MANIATIS, U. WAGNER, T. KOCH Karlsruhe Institute of Technology (Germany)

● High-pressure versus low-pressure EGR in a Euro 6 Diesel engine with LNT. Effectiveness to reduce NOx emissions

M. LAPUERTA, Á. RAMOS, D. FERNÁNDEZ-RODRÍGUEZ, I. GONZÁLEZ-GARCÍA University of Castilla-La Mancha (Spain)

CLOSURE ADDRESS

17:00 ~ 17:30

GALA DINNER

20:30 ~ 24:00



IJER SPECIAL ISSUE

A selection of papers from THIESEL2018 will be published by the International Journal of Engine Research (IJER) in a special issue



Two poster sessions are planned to enable the presentation of interesting work that could not be included in the Conference regular sessions. Abstracts of these works are included in the Conference Proceedings.

The poster sessions are planned after lunch on Wednesday 12th and Thursday 13th September, between 2:30 pm and 3:30 pm. The exact timetable for the poster presentations will be established once all posters are confirmed.

Conference participants are invited to visit the poster session and discuss the issues with their authors.

LIST OF POSTERS TO BE PRESENTED

> P1 Time-resolved simultaneous visualization of liquid and gas-phase fuel and combustion by retro-reflection of pulsed LED light in an optically accessible Diesel engine

M. ZHAO, S. A. KAISER UNIVERSITY OF DUISBURG-ESSEN (GERMANY)

> P2 Ultra-low NO_x combustion in the Z-engine

T. JANHUNEN AUMET OY (FINLAND)

> P3 Analysis of the in-cylinder flows induced by fuel injection

B. SCOTT, C. WILLMAN, R. STONE UNIVERSITY OF OXFORD (UK)
D. RICHARDSON JAGUAR LAND ROVER (UK)

> P4 Spray development with in-cylinder pressure and particulate matter measurements in a GDI engine: effects of fuel volatility

S. HANIS, J. CAMM, M. DAVY, R. STONE UNIVERSITY OF OXFORD (UK)

> P5 Performance and emission characteristics of dual fuel compression ignition engine fueled with syngas and Diesel

J. LEE, T. CHUNG, Y. LEE, S. OH KOREA UNIVERSITY OF SCIENCE AND TECHNOLOGY (REPUBLIC OF KOREA)
C. KIM KOREA INSTITUTE OF MACHINERY AND MATERIALS (REPUBLIC OF KOREA)

> P6 A novel transient-pulsating flow rig for engine air system research and development

A.W. COSTALL, W.S. CHEONG, H. FLORA, A. MUNASINGHE IMPERIAL COLLEGE LONDON (UK)
R. IVANOV R-FLOW (BULGARIA)
R.W. KRUISWYK, J.R. MCDONALD CATERPILLAR (UK)

> P7 Investigating the effect of multi-variable interactions in modelling high speed reactive spray break up injected in high pressure elevated temperature environment

D. NSIKANE, K. VOGIAZAKI, R. MORGAN UNIVERSITY OF BRIGHTON (UK)
K. MUSTAFA, N. WINDER, A. WARD RICARDO INNOVATIONS (UK)

> P8 Multi-objective optimization of fuel consumption and NO_x emissions using a stochastic reactor model

T. FRANKEN, F. MAUSS BRANDENBURG UNIVERSITY OF TECHNOLOGY COTTBUS-SENFTENBERG (GERMANY)
A. DUGGAN ESTECO NORTH AMERICA (USA)
F. TAO CUMMINS INC (USA)
A. BORG, H. LEHTINIEMI, A. MATRISCIANO LOGE AB (SWEDEN)

> P9 High speed optical characterization of evaporating sprays for medium-speed marine engines.

R. VERSCHAEREN, S. VERHELST UNIVERSITY OF GENT (BELGIUM)

> P10 Effects of ambient O₂ concentration on soot formation and oxidation characteristics of Diesel jet flame in an optically accessible small sized constant volume combustion chamber

A. AZETSU, Y. SAITO, T. KASHIMA, D. KOMASAKI TOKAI UNIVERSITY (JAPAN)

> P11 Effect of injection pressure on fuel adhesion of flat wall-impinging spray under high ambient temperature condition

H. LUO, S. UCHITOMI, T. WATANABE, K. NISHIDA, Y. OGATA UNIVERSITY OF HIROSHIMA (JAPAN)
W. ZHANG, T. FUJIKAWA MAZDA MOTOR CORPORATION (JAPAN)

> P12 Comparisons of engine performances on advanced combustion technologies in a HD diesel engine

E. SHIM DOOSAN INFRACORE (REPUBLIC OF KOREA)
H. PARK, C. BAE KAIST (REPUBLIC OF KOREA)

> P13 Soot characterization: combined sampling and optical techniques

D. EMBERSON, K. O. P. BJØRGEN, T. LØVÅS NTNU (NORWAY)

> P14 Ignition and combustion behavior of sprays from fossil Diesel and alternative fuels

S. RIESS, L. WEISS, A. PETER, M. WENSING FRIEDRICH-ALEXANDER-UNIVERSITY ERLANGEN-NÜRNBERG (GERMANY)

> P15 Development and validation of a quasi-dimensional spray model for DI-SI engines

F. PELLEGRINO, D. VEYNANTE UNIVERSITÉ PARIS SACLAY (FRANCE)
A. DULBECCO IFP ENERGIES NOUVELLES (FRANCE)

> P16 Internal GDI-based injector dynamics employing neutron radiography

M.L. WISSINK, C.E.A. FINNEY, E.J. NAFZIGER, D.A. SPLITTER, T.J. TOOPS OAK RIDGE NATIONAL LABORATORY (USA)

> P17 Modelling and experimental validation of an exhaust heat exchanger for thermoelectric generators in light-duty diesel engines

P. FERNÁNDEZ-YAÑEZ, S. EZZITOUNI, L. SÁNCHEZ, O. ARMAS UNIVERSIDAD DE CASTILLA-LA MANCHA (SPAIN)

> P18 Exhaust gas reforming to enable «single-fuel» reactivity controlled compression ignition combustion modes

W.F.NORTHROP, S. KANE, D. DASRATH UNIVERSITY OF MINNESOTA (USA)

> P19 On the design of novel access and methodology for optical diagnostics inside internal combustion engines under severe operating conditions

R. OUNG, B. DELAPORTE DANIELSON ENGINEERING (FRANCE)
Y. CAO, A. KEROMNES, L. LE MOYNE UNIVERSITÉ DE BOURGOGNE (FRANCE)

> P20 High-sensitivity laser-induced incandescence measurements for next-generation engines

J. MANIN, W.D. BACHALO, M.J. FIDRICH, G.A. PAYNE ARTIUM TECHNOLOGIES (USA)

> P21 Fuel nozzle asymmetry effects on internal flow and spray distribution

B. A. SFORZO, K. E. MATUSIK, H. J. SEONG, A. L. KASTENGREN, C. F. POWELL ARGONNE NATIONAL LABORATORY (USA)

> P22 LES investigation of turbulence interaction with the multiphase dynamics of high speed in nozzle flows and evaporating sprays

C. LI, P. MCGINN, C. CRUA, R. MORGAN, M. HEIKAL, K. VOGIATZAKI UNIVERSITY OF BRIGHTON (UK)

> P23 Toward CFD modeling calibration for E10 gasoline partially pre-mixed combustion

Y. BLACODON, V. MOREL, P.O. CALENDINI ARAMCO RESEARCH AND INNOVATION (FRANCE)

CONFERENCE LOCATION

The conference will take place in the Rectorate Building, Paraninfo Hall, of the Universitat Politècnica de València, Valencia (Spain) on September 11th-14th, 2018.



ACCOMMODATION

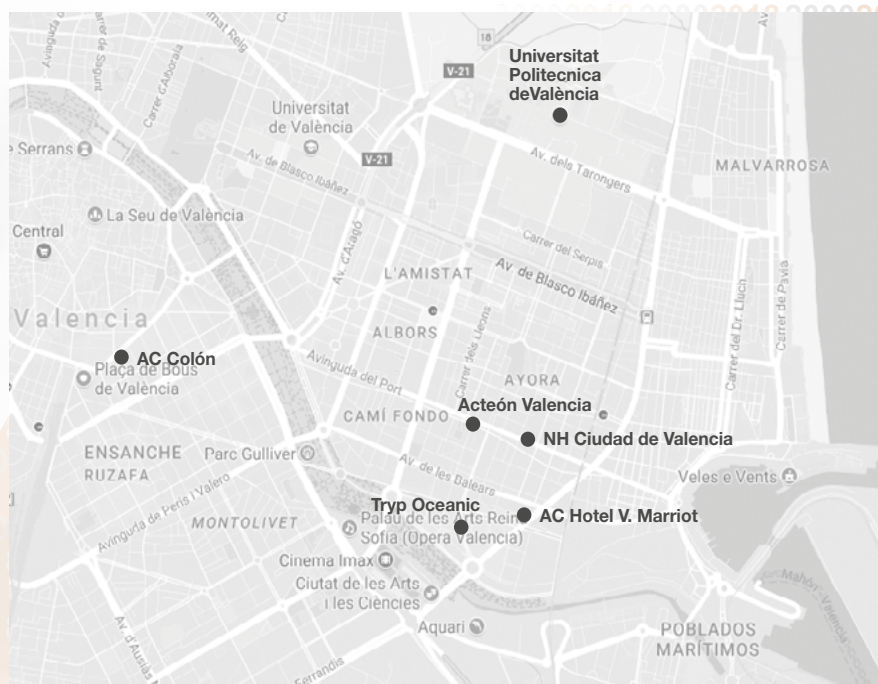
The Conference organisation in collaboration with the Congress Agency Pacific World proposes a short list of hotels located within walking distance of main touristic locations. Agreed special rates will be applied if you book your hotel via the Congress Agency, using the on-line facility provided on the website:

https://www.cmt.upv.es/Thiesel2018/Thiesel03_05.aspx

There will be free bus transport to and from these proposed hotels to the conference location.

Hotels recommended by the Conference Organisation are:

HOTEL NAME	★	SINGLE	DOUBLE	LOCATION	DESCRIPTION
Hotel Tryp Oceanic	IV	95 €	105 €	Carrer Pintor Maella, 35	Close to City of Arts and Science and commercial centre
Hotel Acteón Valencia	IV	75 €	85 €	Carrer de Vicente Beltrán Grimal, 2	Close to the Marina
AC Hotel Valencia Marriott	IV	104,50 €	115,50 €	Av. de Francia, 67	Close to the Marina
Hotel AC Colón		127 €	138 €	Carrer de Colón, 6	In the heart of the city centre and commercial area. Very close to the old city centre
Hotel NH Ciudad de Valencia	III	72 €	81 €	Av. del Port, 214	Close to the Marina



Prices are per room and night and include breakfast and taxes. Early booking is recommended to ensure availability of a room in the hotel of your choice.

The special rates are available for arrivals and departures within the dates 9th September 2018 (earliest arrival) and 16th September 2018 (latest departure). To check availability at different dates please contact our congress agency Pacific World at:

thiesel@pacificworld.com

HOW TO REACH VALENCIA

By plane

Valencia has an international airport, Manises, located at approximately 4 kms. from the city centre. There are regular scheduled national and international flights from several European airlines. A regular bus line links the airport to the Central train station of Valencia, located in the heart of the city. In addition, two metro lines link the airport to all major city points in Valencia.

By road

The city of Valencia also offers excellent communication by road. The A-7 Mediterranean Motorway that runs north to south provides easy connection to Catalonia and France in the north and to Alicante, Murcia and Andalucía in the south. There are also good road connections to the rest of Spain, in particular the A-3 dual motorway to Madrid.

By rail

Valencia has also very good train connections. The high speed train Euromed links several times a day Barcelona to Valencia in approximately 3 hours. The journey between Madrid and Valencia by the regular high speed link AVE takes about 1 hour and 40 min.

ABOUT VALENCIA

Valencia is a cosmopolitan and lively city on the East Coast of Spain, within easy access to some splendid holiday resorts such as those on the Costa Blanca and Costa de Azahar, and not far from the Balearic Islands. Valencia itself is a fascinating place, with a characteristic blend of historical tradition –with interesting examples of Middle Age and Renaissance architecture and modern architecture– the City of Arts and Science. It has a varied cultural offer (Oceanographic museum, museum of Modern Arts...) and an exciting nightlife, excellent weather and world-renowned festivals and regional cuisine. Taste some of the typical 'tapas' in one of the numerous restaurants outside tables and the traditional 'Paella Valenciana' or one of the dozen rice dishes that Valencian people have invented.

Valencia's beach is an ideal place to spend time sunbathing and swimming. You may also enjoy a nice walk in the shadow of the palm trees of the 'Paseo Marítimo' that lines the sea, or along the new harbour, built for the 32nd America's Cup. We hope that you will enjoy your stay in this sunny Mediterranean city.

Valencia



CONFERENCE EXHIBITION

Please visit the booths of the following companies and **note the timetable of their presentations.**

CONVERGENT SCIENCE GmbH

HAUPTSTRASSE 10 · 4040 LINZ (AUSTRIA) · TEL.: + 43 720 010 660 0 · WEBSITE: convergescf.com

Wednesday, 12th September, 2:30 pm, in Main Conference Hall

> **CONVERGE: Update on New Capabilities and Applications.** C. RILEY



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PALLARS 6 · 08402 GRANOLLERS (SPAIN) · TEL.: 938 60 33 24 · E-MAIL: info.es@kistler.com · WEBSITE: www.kistler.com

Thursday, 13th September, 2:30 pm, in Main Conference Hall

> **Combustion Analysis based on Chamber Pressure Measurement.** N. ALONSO



HORIBA EUROPE GmbH

LANDWEHRSTRASSE 55 · 64293 DARMSTADT (GERMANY)

TEL.: +49 (0)6151-5000-2451 · E-MAIL: odile.gambier@horiba.com · WEBSITE: www.horiba.com

Wednesday 12th and Thursday 13th September, 2:30 pm, in CMT Labs

> **Horiba will make a demonstration of its altitude simulator in engine test cells of CMT labs during the lunch breaks of the Conference.** J. GÓMEZ



AVL

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TEL.: 937 55 48 85 · E-MAIL: comercial@avl.com · WEBSITE: www.avl.com

Wednesday, 12th September, 3:00 pm, in Main Conference Hall

> **AVL Advanced Simulation Technologies for 3D Combustion Modelling.** F. TAP

Thursday, 13th September, 3:00 pm, in Main Conference Hall

> **AVL X-lon – Adapts, Acquires, Inspires.** G. MORDELT



Main objective > Improve the energy efficiency of European road transport vehicles by developing a **highly efficient gasoline engine adapted for future electrified powertrains**



EU funding > 5,993,062.74 €

Start date > 1 October 2016

Duration > 42 months

Coordinator Dr. Jean-Marc Zaccardi · IFP Energies nouvelles · Powertrain and Vehicle Division
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Dissemination Activities Dr. Xandra Margot · CMT-Motores Térmicos · Universitat Politècnica de València
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COORDINATED BY:



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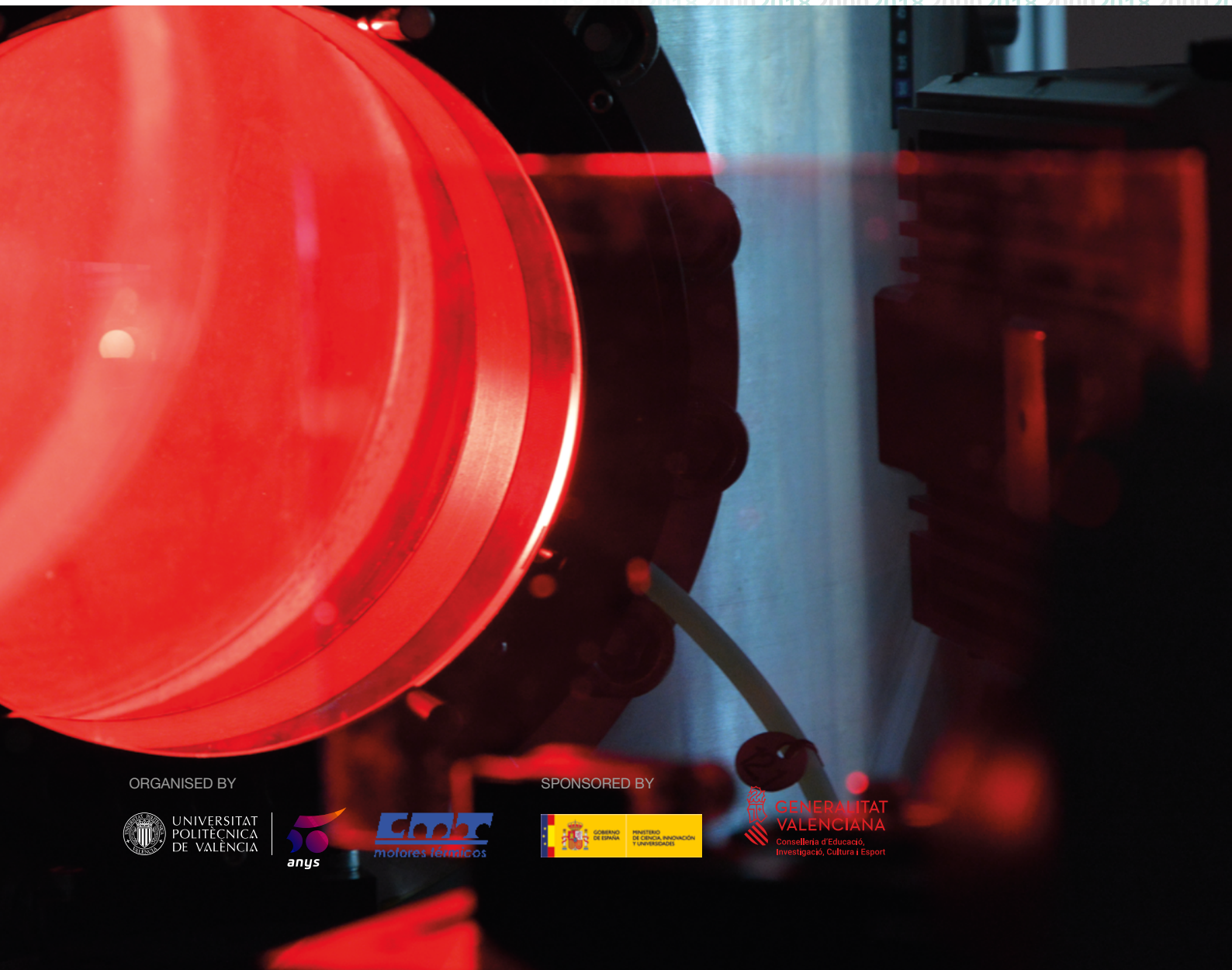
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For updated information about the Conference please visit the web site:

<https://www.cmt.upv.es/Thiesel2018/Thiesel.aspx>



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