CURRICULUM VITAE:

LUCA MONTORSI

PERSONAL DETAILS

Name	Luca Montorsi
Address	Office: via Amendola 2, Pad. Morselli - 42122 Reggio Emilia - ITALY
Phone	Office: +39 0522 523 502
Fax	Office: +39 0522 522 609
E-mail	**luca.montorsi@unimore.it**
Nationality	Italian
Date of birth	May the 23rd 1972
Family	Married, two daughters

WORK EXPERIENCE

• Date (from – to)	*November 11, 2015 - present*
• Employee	Department of Sciences and Methods for Engineering – University of Modena and Reggio Emilia - Via Amendola 2, Pad. Morselli, 42122 Reggio Emilia, Italy
• Sector	*Academia*
• Job tile	Associate Professor
• Main activity	Research and teaching in the sector of Fluid Power, Systems for Energy Conversion and Environment.
• Date (from – to)	*December 20, 2012 – October 30, 2015i*
• Employee	Department of Sciences and Methods for Engineering – University of Modena and Reggio Emilia - Via Amendola 2, Pad. Morselli, 42122 Reggio Emilia, Italy
• Sector	*Academia*
• Job tile	Assistant Professor
• Main activity	Research and teaching in the sector of Fluid Power, Systems for Energy Conversion and Environment.
• Date (from – to)	*January 1, 2007 - December 19, 2012*
• Employee	Department of Sciences and Methods for Engineering – University of Modena and Reggio Emilia - Via Amendola 2, Pad. Morselli, 42122 Reggio Emilia, Italy
• Sector	*Academia*
• Job tile	Post Doc Researcher
• Main activity	Research and teaching in the sector of Fluid Power, Systems for Energy Conversion and Environment.
• Date (from – to)	*January 1, 2005 - December 31, 2006*
• Employee	Applied Mechanics Department – Chalmers University of Technology S-412 96 Gothenburg, Sweden
• Sector	*Università*
• Job tile	Researcher
• Main activity	Research and teaching in the sector of Internal Combustion Engine, Energy Efficiency and Environmental Impact.
• Date (from – to)	*January 1, 2003 - December 31, 2004*
• Employee	Department of Mechanical and Civil Engineering – University of Modena and Reggio Emilia - Via Vignolese 2, 41100 Modena, Italy
• Sector	*Academia*

• Job tile	Post Doc Researcher
• Main activity	Research and teaching in the sector of Internal Combustion Engine, Energy Efficiency and Environmental Impact.

EDUCATION AND TRAINING

• Date	*March 2003*
• Title	*Philosophy Doctoral Degree in Materials Engineering*
• Organization	Department of Mechanical and Civil Engineering – University of Modena and Reggio Emilia - Via Vignolese 2, 41100 Modena, Italy
• Judgment	Optimum

• Date	*September 10, 2001 – March 15, 2002*
• Position	*European Community Grant: Marie Curie Fellowship*
• Organization	Combustion Physics Division – University of Lund, Sweden

• Date	*October 21, 1999*
• Title	*M.S. Degree in Mechanical Engineering*
• Organization	Faculty of Engineering – University of Modena and Reggio Emilia - Via Vignolese 2, 41100 Modena, Italy
• Judgment	106/110

PERSONAL SKILLS AND COMPETENCES

LANGUAGES ABILITY

Self-assessment	Understanding				Speaking				Writing	
European level (*)	Listening		Reading		Interaction		Production			
ENGLISH	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user
GERMAN	A1	Basic user	A1	Basic user	A1	Basic user	A1	Basic user	A1	Basic user

(*) Common European Framework of Reference for Languages

PROGRAMMING AND PC TOOLS

Familiar with most common operating systems (Windows and Linux)

Excellent knowledge of the following Computational Fluid Dynamic codes:

Excellent knowledge of Fortran and C++ programming languages

- WAVE	(1-D CFD code, Ricardo Software)
- GT-POWER	(1-D CFD code, Gamma Technologies, Inc.)
- AMESim	(1-D CFD code, LMS Imagine)
- IGNITION	CODE (Detailed chemical kinetic code, Lund University)
- STAR-CD	(3-D CFD code, CD-Adapco Group)
- ES-ICE	(Moving Mesh Generator, CD-Adapco Group)
- KIVA3V2	(Combustion process simulation code, Los Alamos National Laboratory, University of California, U.S.)
OpenFOAM	(3-D CFD code, open source)

ADDITIONAL COURSES

1995: German course for business, at The Oxford Institute, mark 30/30, Parma.

1996: Fluid power applications course, organized by DemoCenter(CTM), Modena

1999: Unix Training course, at CICAIA Laboratory, University of Modena and Reggio Emilia.

2000: STAR – CD Basic Training course, at CICAIA Laboratory, University of Modena and Reggio Emilia.

2000: ES – ICE Basic training course, at CD-Adapco Group, New York, USA.

2001: GT-Power Basic Training Course, organized by Gamma Technologies at Democenter (CTM), Modena.

2002: GT-Power Advanced Training Course, organized by Gamma Technologies, Frankfurt, Germany.

2003: Turbulent Combustion VKI Lectures Series, at Von Karman Institute, Brussels, Belgium.

2010: Distributed Co-generation from biomasses, Department of Engineering – University of Ferrara

2014: LabVIEW Base Course, Course Core 1 - Course Core 2, DISMI – University of Modena and Reggio Emilia

2014: LabVIEW Development Course, Course Real Time - Course Core FPGA, DISMI – University of Modena and Reggio Emilia

TEACHING

ACADEMIC YEAR	2010 – 2011	ECTS	9
TITLE	Energy Conversion Systems		
LEVEL	Master Degree in Management Engineering		

ACADEMIC YEAR	2011 – 2012	ECTS	9
TITLE	Energy Conversion Systems		
LEVEL	Master Degree in Management Engineering		

ACADEMIC YEAR	2013 – 2014	ECTS	9
TITLE	Energy Conversion Systems		
LEVEL	Master Degree in Management Engineering		

ACADEMIC YEAR	2014 – 2015	ECTS	9
TITLE	Energy Conversion Systems		
LEVEL	Master Degree in Management Engineering		

ACADEMIC YEAR	2015 – 2016	ECTS	4
TITLE	Laboratory of Hydraulic Systems Design		
LEVEL	Master Degree in Mechatronics Engineering		

ACADEMIC YEAR	2015 – 2016	ECTS	5
TITLE	Energy Conversion Systems		
LEVEL	Master Degree in Management Engineering		
ACADEMIC YEAR	2016 – 2017	ECTS	4
TITLE	Energy Conversion Systems and Machine		
LEVEL	Bachelor Degree in Mechatronics Engineering		
ACADEMIC YEAR	2016 – 2017	ECTS	5
TITLE	Energy Conversion Systems		
LEVEL	Master Degree in Management Engineering		
ACADEMIC YEAR	2017 – 2018	ECTS	4
TITLE	Energy Conversion Systems and Machine		
LEVEL	Bachelor Degree in Mechatronics Engineering		
ACADEMIC YEAR	2017 – 2018	ECTS	9
TITLE	Energy Conversion Systems		
LEVEL	Master Degree in Management Engineering		
ACADEMIC YEAR	2018 – 2019	ECTS	4
TITLE	Energy Conversion Systems and Machine		
LEVEL	Bachelor Degree in Mechatronics Engineering		
ACADEMIC YEAR	2018 – 2019	ECTS	9
TITLE	Energy Conversion Systems		
LEVEL	Master Degree in Management Engineering		
ACADEMIC YEAR	2018 – 2019	ECTS	6
TITLE	Laboratory of Hydraulic Systems Design		
LEVEL	Master Degree in Mechatronics Engineering		
ACADEMIC YEAR	2019 – 2020	ECTS	9
TITLE	Energy Conversion Systems and Machine		
LEVEL	Bachelor Degree in Mechatronics Engineering		
ACADEMIC YEAR	2019 – 2020	ECTS	9
TITLE	Energy Conversion Systems		
LEVEL	Master Degree in Management Engineering		
ACADEMIC YEAR	2019 – 2020	ECTS	6
TITLE	Laboratory of Hydraulic Systems Design		
LEVEL	Master Degree in Mechatronics Engineering		

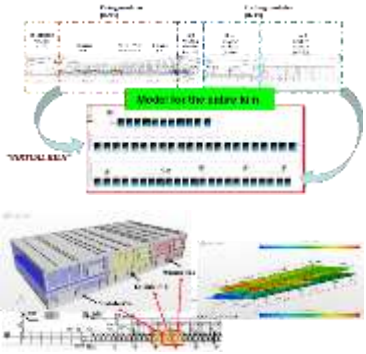
PH. D. SUPERVISION

ACADEMIC YEAR	2010 – 2012
NAME OF THE STUDENT	Mr. Stefano Mercati
ACADEMIC YEAR	2014 – 2016
NAME OF THE STUDENT	Mr. Matteo Stefani
ACADEMIC YEAR	2011 – 2017
NAME OF THE STUDENT	Mr. Stefano Terzi

ACADEMIC YEAR 2019 – 2021
NAME OF THE STUDENT Mr. Matteo Venturelli

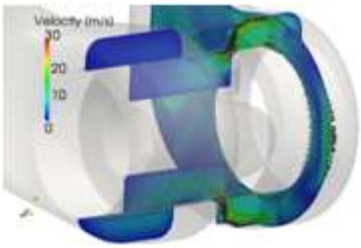
ACADEMIC YEAR 2020 – 2022
NAME OF THE STUDENT Mr. Gabriele Muzzioli

RESEARCH INTERESTS



Numerical analysis of the energy efficiency of industrial processes

The research activity is devoted to develop numerical approaches that can simulate the performance of industrial processes in terms of energy consumption, environmental impact and product quality. Both lumped and parameter (0D/1D) numerical approach and full CFD modeling are used to investigate the thermo-fluid dynamic behavior of the considered processes. The modeling includes all details required to predict the performance of the real systems, such as geometrical features, insulation and leakages, burners, fans, valves and the control strategies adopted in the real machines. The modeling approach is tailored to account for the prediction of the primary energy consumption of the system and the related pollutant emissions while simulating the quality of the final product as the main reference for the energy and environmental impact assessment.



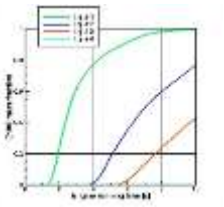
CFD Analysis of Multi-Phase, Multi-Component Flows

The research is devoted to the analysis of multi-phase multi-component flows in confined geometries, when real fluids are submitted to strong pressure and temperature gradients. The study involves the development and the tailoring of analytical, numerical and semi-empirical models for the multi-dimensional CAE/CFD analysis (with both commercial and open-source code), with particular attention dedicated to aeration and cavitation in liquids, and to liquid-liquid and liquid-gaseous mixtures behaviour.

Injection Systems for Standard and Alternative Fuels

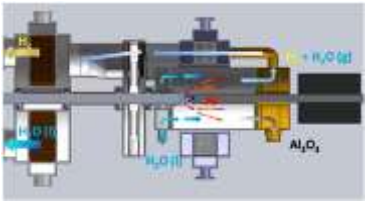
In this area the lumped and distributed numerical approach is coupled with the multidimensional CFD analysis to study the fluid dynamic behaviour of industrial injection systems submitted to actual and off-range operating conditions.

Particular interest is devoted to the design of injection system main components (like the electro-hydraulic injectors, the pressure regulators or the variable displacement high pressure pumps), with reference to operating condition involving both standard fuels



(gasoline, diesel, CH4) and alternative liquid and gaseous mixtures (ethanol-gasoline blends, bio-diesels, CNG and H2).

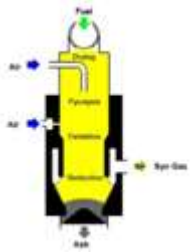
ULEV and ZEV Co-Generation Systems



Franzoni F, Milani M, Montorsi L. Cogeneration system based on the combustion of a metallic fuel. Italian patent MO2008A000249, September 2008. Extended to European patent PCT/EP2009/062334; September 2009.

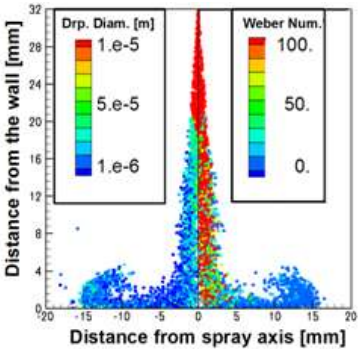
This research topic deals with the conceptual design and the performance numerical prediction of ultra-low and zero emissions value co-generation system based on the combustion of metallic powder in water. In particular, starting from the heat of reaction consequent to the combustion of aluminum powder in water, a co-generation system which allows to produce four different secondary energy terms (namely heat, hydrogen, mechanical work and technological steam) has been conceptually developed.

Energy Conversion Systems from Biomass and Waste

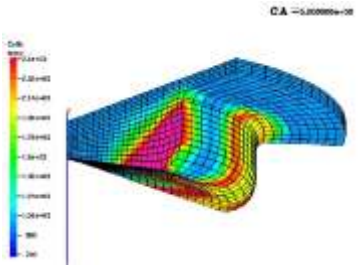


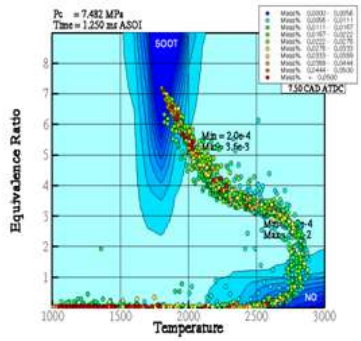
This research topic covers the study of the energy conversion systems used for exploiting biomass and waste for power generation. Different processes are investigated such as thermochemical, biochemical and mechanical transformations. In particular gasification, combustion and anaerobic digestion are accounted for in order to address the quality of the produced syngas and its effects on the performance of adopted energy conversion unit (i.e. Internal Combustion Engine, Gas Turbine, Steam Generator, etc.)

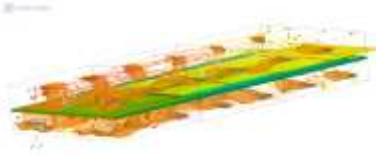
Spray – combustion analysis



The research activity focuses on 1-D/3-D CFD simulation of internal combustion engine and in particular on the investigation of the spray – combustion processes. Alternative combustion modes are also addressed such as the Homegeneus Charge Compression Ignition (HCCI) combustion and Modulated Kinetics (MK) regime. In the analysis, detailed kinetic mechanisms for the adopted fuels are implemented in the simulation codes (both one-dimension and multi-dimension ones). The integrated use of chemical kinetics, cycle simulation and CFD tools leads to the construction of dynamic parametric equivalence ratio – temperature maps that depict







combustion trajectories helping to navigate between the regions of emissions formation by varying any hardware and injection parameters. Furthermore, the research activity includes also the investigation of the diesel fuel spray – wall interaction and soot formation in cooperation with other research laboratories.

Thermo-fluid dynamic analysis of industrial processes and systems for the energy efficiency improvement and the reduction pollutant emissions

The research activity is focused on the fuel consumption, energy efficiency and emissions of industrial processes and systems. Different industrial sectors are investigated and in particular heat recovery and energy efficiency analysis in food and ceramic plants is addressed. Ad-hoc numerical models are constructed by means of lumped and distributed parameter and CFD approaches.

LIST OF PUBLICATIONS

International Journal Publications:

[1] M. Borghi, E. Mattarelli, L. Montorsi, "Integration of 3D-CFD and engine cycle simulations: application to an intake plenum", SAE 2001-01-2512. Published also by "**SAE – 2001 Transactions – Journal of Engines**", pp. 1962 – 1975, ISBN 0-7680-0875, 2001.

[2] Bhave, M. Kraft, L. Montorsi, F. Mauss, "Sources of CO Emissions in an HCCI Engine: A Numerical Analysis", **J. Combustion and Flame**, 144 (3) pp. 634-637, ISSN: 0010-2180, , I.F. 1 year 2.160 – 5 year 20657 2006.

[3] V. Golovitchev, M. Bergman, and L. Montorsi, "CFD Modeling Of Diesel Oil And DME Performance in a Two-Stroke Free Piston Engine", **J. Combustion Science and Technology**, 179, pp. 417 - 436, ISSN 0010-2202, I.F. 1 year 0.877 – 5 year 0.936, 2007.

[4] V. I. Golovitchev, L. Montorsi, I. Denbratt, "Numerical Evaluation of a New Strategy of Emissions Reduction by Urea Direct Injection for Heavy Duty Diesel Engines", **J. Engineering Applications of Computational Fluid Mechanics**, 1 (3), pp. 189 – 206, ISSN 1994-2060, 2007.

[5] F. Franzoni, M. Milani and L. Montorsi, "A CFD Multidimensional Approach to Hydraulic Components Design", SAE 2007-01-4196; Published also by "**SAE – 2007 Transactions – Journal of Commercial Vehicles**", pp. 246 – 259, ISBN 978-0-7680-1981-0, 2007.

[6] F. Franzoni, M. Milani and L. Montorsi, "Cavitating Flows in Hydraulic Multidimensional CFD Analysis", SAE 2008-01-2678; Published also by "**SAE International Journal of Commercial Vehicles**", pp. 424 – 436, ISSN 1946-3928, 2008.

[7] D. Bottazzi, F. Franzoni, M. Milani and L. Montorsi, "Metering Characteristics of a Closed Center Load – Sensing Proportional Control Valve", SAE 2009-01-2850; Published also by "**SAE International Journal of Commercial Vehicles**", 2(2), pp. 66 – 74, ISSN 1946-3928, 2009.

[8] F. Franzoni, M. Milani, L. Montorsi, V. I. Golovitchev, "Combined hydrogen production and power generation from aluminum combustion with water: Analysis of the concept", **International Journal of Hydrogen Energy**, 35, pp. 1548 – 1559, ISSN: 0360-3199, I.F. 1 year 3.452 – 5 year 4.028, 2010.

[9] F. Franzoni, S. Mercati, M. Milani and L. Montorsi, "Operating Maps of a Combined Hydrogen Production and Power Generation System Based on Aluminum Combustion with Water", **International Journal of Hydrogen Energy**, 36, pp. 2803 – 2816, ISSN: 0360-3199, I.F. 1 year 3.452 – 5 year 4.028, 2011.

[10] S. Mercati, M. Milani, L. Montorsi, F. Paltrinieri, "Design of the steam generator in an energy conversion system based on the aluminum combustion with water", **Applied Energy**, 97,pp. 686 – 694, I.F. 1 year 5.106 – 5 year 4.456, 2012.

[11] D. Bottazzi, S. Farina, M. Milani, L. Montorsi, "A numerical approach for the analysis of the coffee roasting process", **Journal of Food Engineering**, 112 (3), pp. 243 – 252, I.F. 1 year2.414– 5 year 2.805, 2012.

[12] F. Grasselli, M. Milani, L. Montorsi, F. Paltrinieri , "A Transient Multidimensional CFD Approach to the Analysis of a Control Valve Using Non-Newtonian Fluids", **Journal of Energy and Power Engineering**, 6 (9), pp 1398 – 1407, ISSN: 1934-8975, 2012

[13] S. Mercati, M. Milani, L. Montorsi, F. Paltrinieri, "Optimization of the working cycle for a hydrogen production and power generation plant based on aluminum combustion with water", **International Journal of Hydrogen Energy,** 38, pp 7209 – 7217, ISSN: 0360-3199, 2013

[14] A. Corcoran, S. Mercati, H. Nie, M. Milani, L. Montorsi, E. L. Dreizin, "Combustion of Fine Aluminum and Magnesium Powders in Water", **Combustion and Flame**, 160 (2013) 2242–2250, ISSN: 0010-2180, 2013

[15] F. Grasselli, M. Milani, L. Montorsi, F. Paltrinieri, "Modeling the Axial Balancing Mechanism of Orbit Annular Hydraulic Machines", **Journal of Energy and Power Engineering**, 7 (10), pp 1946 – 1956, ISSN: 1934-8975, 2013

[16] R. Babbone, M. Milani, L. Montorsi, F. Paltrinieri, "Improving the Performance of an Electro-Hydraulic Load-Sensing Proportional Control Valve", **Journal of Energy and Power Engineering**, 7 (12), pp 2336 – 2346, ISSN: 1934-8975, 2013

[17] M. Milani, L. Montorsi, F. Paltrinieri, M. Stefani, "Experimental and numerical analysis of the combustor for a cogeneration system based on the aluminum/water reaction", **Energy Conversion and Management**, 87, pp 1291 – 1296, ISSN: 0196-8904, 2014

[18] M Milani, L Montorsi and M Stefani, "An integrated approach to energy recovery from biomass and waste: Anaerobic digestion–gasification–water treatment", **Waste Management & Research**, 32 (7), pp 614–625, ISSN: 1096-3669, 2014

[19] Francia M. Milani M. Montorsi L. An Innovative Approach to Kinematic Analysis of Multibody Hydraulic Actuation Systems (2016), **SAE International Journal of Commercial Vehicles** Volume: 9 , 2 , , pp. 313 - 320

[20] Milani M. Montorsi L. Lai D. Zoffoli L. Numerical analysis of the interaction between high-pressure resin spray and wood chips in a vapour stream (2016), **Advances in Mechanical Engineering** Volume: 8 , 4 , , pp. 1 - 13

[21] Francia M. Milani M. Montorsi L. An innovative approach to kinematic analysis of multibody hydraulic actuation systems (2016), **SAE International Journal of Commercial Vehicles** Volume: 9 , 2 , , pp. 1 - 8

[22] Bassi A. Milani M. Montorsi L. Terzi S. Dynamic analysis of the lubrication in a wet clutch of a hydromechanical variable transmission (2016), **SAE International Journal of Commercial Vehicles** Volume: 9 , 2 , , pp. -

[23] Milani M. Montorsi L. Terzi S. Numerical analysis of the heat recovery efficiency for the post-combustion flue gas treatment in a coffee roaster plant (2017), **Energy** Volume: 141 , pp. 729 - 743

[24] Milani M. Montorsi L. Stefani M. Saponelli R. Lizzano M. Numerical analysis of an entire ceramic kiln under actual operating conditions for the energy efficiency improvement (2017), **Journal of Environmental Management** Volume: 203 , pp. 1026 - 1037

[25] Milani M. Montorsi L. Energy recovery of the biomass from livestock farms in italy: The case of Modena province (2018), **Journal of Sustainable Development of Energy, Water and Environment Systems** Volume: 6 , 3 , , pp. 464 - 480

[26] Montorsi L. Milani M. Stefani M. Terzi S. Numerical analysis of the exhaust gases recovery from a turbine CHP unit to improve the energy efficiency of a ceramic kiln (2018), **Thermal Science and Engineering Progress** Volume: 5 , pp. 444 - 453

[27] Delpech B. Milani M. Montorsi L. Boscardin D. Chauhan A. Almahmoud S. Energy efficiency enhancement and waste heat recovery in industrial processes by means of the heat pipe technology: Case of the ceramic industry (2018), **Energy** Volume: 158 , pp. 656 - 665

[28] Montorsi L. Milani M. Venturelli M. Economic assessment of an integrated waste to energy system for an urban sewage treatment plant: A numerical approach (2018), **Energy** Volume: 158 , pp. 105 - 110

[29] Cantore G. Milani M. Montorsi L. Paltrinieri F. Energy efficiency analysis of an entire ceramic kiln: A numerical approach (2018), **Modelling, Measurement and Control B** Volume: 87 , 3 , , pp. 159 - 166

[30] Kılkış, Ş, Krajačić, G., Duić, N., Montorsi, L, Wang, Q., Rosen, M.A., Ahmad Al-Nimr, M., Ffrontiers in sustainable development of energy, water and environment systems in a time of climate crisis (2019), **Energy Conversion and Management**, Volume 199, 1 November 2019, Article number 111938

[31] Milani, M., Montorsi, L., Venturelli, M., Tiscar, J.M., García-Ten, J., A numerical approach for the combined analysis of the dynamic thermal behaviour of an entire ceramic roller kiln and the stress formation in the tiles, (2019), **Energy**, Volume 177, 15 June 2019, Pages 543-553

[32] Malinauskaite, J., Jouhara, H., Ahmad, L., Milani, M., Montorsi, L., Venturelli, M., Energy efficiency in industry: EU and national policies in Italy and the UK, (2019), **Energy**, Volume 172, 1 April 2019, Pages 255-269

International Conference Proceedings with peer review:

[33] G. Cantore, L. Montorsi, F. Mauss, P. Amnéus, O. Erlandsson, B, Johansson, T. Morel, “Analysis of a 6 cylinder turbocharged HCCI engine using a detailed kinetic mechanism”, **ICES2002-457**, pp. 135-146, ISBN: 0-7918-1688-5, 2002.

[34] L. Montorsi, F. Mauss, G. M. Bianchi, A. Bhave, M. Kraft, “Analysis of the HCCI combustion of a turbocharged truck engine using a Stochastic Reactor Model”, **ICES2003-0681**, pp. 235-246, ISBN: 0-7918-3678-9, 2003.

[35] A.Gogan, B. Sunden, L. Montorsi, F. Mauss, “Numerical analysis of knocking cycles by means of a detailed kinetik mechanism”, **SAE-NA 2003-01-10**, “ICE2003, 6th International Conference on Engines for Automobile” proceedings, Naples, 2003.

[36] A.Gogan, L. Montorsi, F. Mauss, S. S. Sayeed, B. A. Sunden, “Knock modelling: an integrated tool for detailed chemistry and engine cycle simulation”, **SAE 2003-01-3122**, ISSN 0148 – 7191, 2003.

[37] Bhave, M. Kraft, L. Montorsi, F. Mauss, “Modelling a Dual-fuelled Multi-cylinder HCCI Engine Using a PDF based Engine Cycle Simulator”, **SAE 2004-01-0561**, , ISSN 0148 – 7191, 2004.

[38] G. Cantore, S. Fontanesi, L. Montorsi, P. Ortolani, “Comparison Between Steady And Unsteady CFD Simulations Of Two Different Port Designs In A Four Valve HSDI Diesel Engine: Swirl Intensity And Engine Permeability”, **ICEF2004-0908**, pp. 335-346, ISBN: 0-7918-3746-7, 2004.

[39] S. Fontanesi, E. Mattarelli, L. Montorsi, “Numerical Analysis of Swirl Control Strategies in a Four Valve HSDI Diesel Engine”, **ICEF2004-0909**, pp. 581-592, ISBN: 0-7918-3746-7, 2004.

[40] V. I. Golovitchev, J. Gustavsson, G. Cantore, L. Montorsi, F. E. Corcione, "Large-scale CFD Approach for Spray Combustion Modeling in Compression Ignited Engines", **SAE 2005-24-052**, ISSN 0148 – 7191, 2005

[41] G. Cantore, C. A. De Marco, L. Montorsi, F. Paltrinieri, C. A. Rinaldini, "Analysis of a HSDI Diesel Engine Intake System by Means of Multi-Dimensional Numerical Simulations: Influence of Non Uniform EGR Distribution", **ICES2006-1359**, pp. 289-301, ISBN: 0-7918-4206-1, 2006.

[42] L. Montorsi, A. Magnusson, S. Andersson, "A Numerical and Experimental Study of Diesel Fuel Sprays Impinging on a Temperature Controlled Wall", **SAE 2006-01-3333**, ISSN 0148 – 7191, 2006.

[43] V. I. Golovitchev, L. Montorsi and I. Denbratt, "Towards a New Type of the Hybrid Engine: Two-Stroke Free – Piston Compression Ignited Engine", FISITA 2006 World Automotive Congress, **F2006P421**, Yokohama, Japan, 2006

[44] J. Kusaka, L. Montorsi, V. I. Golovitchev and I. Denbratt, "A Numerical Simulation of Combustion In a Heavy Duty Diesel Engine", FISITA 2006 World Automotive Congress, **F2006P398**, Yokohama, Japan, 2006

[45] V. I. Golovitchev, L. Montorsi, C. A. Rinaldini and A. Rosetti, "CFD Combustion and Emission Formation Modeling for a HSDI Diesel Engine Using Detailed Chemistry", **ICEF2006-1506**, pp. 349-358, ISBN: 0-7918-4260-6, 2006

[46] L. Montorsi, A. Magnusson, S. Andersson, S. Jedrzejowski, "Numerical and Experimental Analysis of the Wall Film Thickness for Diesel Fuel Sprays Impinging on a Temperature-Controlled Wall", **SAE 2007-01-0486**, ISSN 0148 – 7191, 2007

[47] V. I. Golovitchev, A. T. Calik and L. Montorsi, "Analysis of Combustion Regimes in Compression Ignited Engines Using Parametric φ -T Dynamic Maps", **SAE 2007-01-1838**, ISSN 0148 – 7191, 2007

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