

PERSONAL INFORMATION

Luca Romani



Sex Male | Date of birth
Italian

| Nationality

POSITION

Graduated technician

"DIEF" Department of Industrial Engineering, University of Florence

Via di Santa Marta 3, 50139 Firenze (Italy)

WORK EXPERIENCE

From 13/07/2020

Graduated technician

University of Florence, Faculty of Engineering - Department of Industrial Engineering - , via di Santa Marta 3, Florence, 50139, Italy

Coordinator of L.In.E.A laboratory, - Laboratory for Advanced Innovation in Energy -

Sector Research

- Advanced analysis on LTCs in gasoline engine with prechamber
- Advanced research on active noise reduction systems
- Experimental research on internal combustion engine efficiency and emission reduction
- Experimental research on innovative methodologies for the indirect measurement of in-cylinder pressure
- Experimental research on innovative turbocharged single cylinder engine
- Development of methodologies for engine fault analysis from the measurement of the instantaneous TC speed
- Experimental analysis on thermo-fluid dynamic behaviour of reciprocating compressors
- Development of numerical models for 0D simulation of reciprocating compressors

From 01/01/2014

Research Fellow

University of Florence, Faculty of Engineering - Department of Industrial Engineering - Reciprocating Engines and Advanced Systems for Energy (REASE) Group
3, via di Santa Marta, Florence, 50139, Italy

Sector Research

- Development of innovative injection systems for two-stroke SI engine
- Experimental research on internal combustion engine efficiency and emission reduction
- Experimental research on innovative methodologies for the indirect measurement of in-cylinder pressure
- Experimental research on innovative turbocharged single cylinder engine
- Development of methodologies for engine fault analysis from the measurement of the instantaneous TC speed
- Experimental analysis on thermo-fluid dynamic behaviour of reciprocating compressors
- Development of numerical models for 0D simulation of reciprocating compressors

EUCATIONAL AND TRAINING

1 Apr, 2014

Doctor of Philosophy in Energy Engineering and Innovative Industrial Technologies

University of Florence, Faculty of Engineering - Department of Energy Engineering -
Thesis title: "Advanced methodology for the characterization of reciprocating compressor"

01/01/2011 – 31/12/2013

PhD student in Energy Engineering and Innovative Industrial Technologies

"Sergio Stecco" Department of Energy Engineering, University of Florence

Via di Santa Marta 3 IT-50139 Firenze (Italy)

- Experimental research on the internal combustion engine particularly focused on thermal stress and global efficiency problems
- Design and realization of an experimental apparatus for the estimation of the fluid-dynamics losses in automatic valves of reciprocating compressors
- Numerical analysis applied to reciprocating compressors
- Formula SAE member as Engine chief

01/10/2007 - 22/07/2010

Master Degree in Mechanical Engineering (110/110)

"Sergio Stecco" Department of Energy Engineering, University of Florence

Via di Santa Marta 3 IT-50139 Firenze (Italy)

Thesis title: "Estimation of the exhaust valve temperature of an internal combustion engine. Numerical and Experimental analysis."

01/10/2003 - 18/07/2007

First Level Degree in Mechanical Engineering

"Sergio Stecco" Department of Energy Engineering, University of Florence

Via di Santa Marta 3 IT-50139 Firenze (Italy)

Thesis title: "Design of a pantograph for high speed trains"

15/09/1998 - 10/07/2003

School leaving certificate of Scientific High-school

Liceo scientifico Amedeo di Savoia Duca D'Aosta (High school)

Viale Adua 187, 51100 Pistoia

PERSONAL SKILLS

Communication skills

Excellent relationship skills deriving from the working experience at the university in constant cooperation with colleagues, students and industrial companies. The practice of team sport activities and individual sports (e.g. mtb, trekking, and ski) has increased my determination and stubbornness. I take care about technical issues, and I tend not to give up until I reach a satisfactory solution for the problem.

Organisational / managerial and job-related skills

During my university career I have led research both alone and as part of a team. I have worked in direct connection with several companies in the automotive sector, among which I quote Piaggio SpA, Ducati Motor Holding SpA, Yanmar R&D Europe, Magneti Marelli, Betamotor SpA, HPE Srl, VM Motori SpA, EDI Progetti Srl, Eldor Spa.. I have worked also with GE Nuovo Pignone and Dorin Spa in reciprocating compressor sector. I was also involved in a patent still under revision with Betamotor. Skilled in use and control of engine test bench and specific instrumentation related to the internal combustion engine measurements, such as instrumentation provided by AVL, Kistler, Scanivalve, HBM, PCB. Good experience in mapping engine control unit. Able to realize experimental set up in order to acquire high frequency signals. Experience in the experimental estimation of physics quantities such as the fluid-dynamics losses of reciprocating compressors and the emissivity coefficient of body surfaces.

From 2012 to 2016, I have been the engine chief of the Formula SAE team (Firenze Race Team) of Florence university leading the development of a single cylinder turbocharger engine provided with an electronic control of the waste gate valve. The FRT was qualified 3th in 2016 at FSAE competition at Varano (Italy).

From several years, I am the chief of the Linea Laboratory of Florence University; I manage all the experimental activities of the laboratory that is mainly focused on the research on internal combustion engines and on centrifugal compressors.

I manage a sport association mainly focused on the practice of ski.

Computer skills

- Excellent in use of Labview
- Excellent in use Solid Works
- Excellent in use of INCA
- Excellent in use MatLab
- Excellent command of Microsoft Office tools
- Experiences of using Altair Hyperworks (structural analysis)
- Experiences of using Ansys;
- Good command of Photoshop (photography)

Mother tongue

Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
Replace with name of language certificate. Enter level if known.					
French	A2	A1	A1	A1	A1
Replace with name of language certificate. Enter level if known.					

Driving licence A3, B

ADDITIONAL INFORMATION

<p>Memberships, awards and scientific responsibilities</p>	<p>2011 - now: Speaker at several national and international conferences</p>
<p>Publications Congress & Journal</p>	<p>Pratelli, G., Babbini, A., Balduzzi, F., Ferrara, G., Maleci, R., Romani, L., "CFD Evaluation of Pressure Losses on Reciprocating Compressor Components" Conference: 8th European Forum for Reciprocating Compressors (EFRC) Conference, At Düsseldorf, Germany.</p> <p>G. Vichi, L. Romani, L. Ferrari, G. Ferrara, "Development of an engine variable geometry intake system for a Formula SAE application", 69th Conference of the Italian Thermal Machines Engineering Association, ATI2014 Speaker at the congress</p> <p>Vichi, G., Romani, L., Ferrara, G., Carmignani, L., and Maiani, F., "Improvement of the Specific Fuel Consumption at Partial Load in SI Engines by Design Strategies based on High Compression Ratio," SAE Technical Paper 2014-32-0060, 2014, doi:10.4271/2014-32-0060 Speaker at the congress</p> <p>Romani, L., Ferrari, L., Ferrara, G., Carnevale, E., "Pyrometric Estimation of Exhaust Valve Temperature of an Internal Combustion Engine", Journal of Engineering for Gas Turbines and Power 136(4):041507, April 2013, DOI: 10.1115/1.4026048.</p> <p>Romani, L., Vichi, G., Ferrara, G., Balduzzi, F. et al., "Development of a Low Pressure Direct Injection System for a Small 2S Engine. Part II - Experimental Analysis of the Engine Performance and Pollutant Emissions," SAE Technical Paper 2015-01-1730, 2015, doi:10.4271/2015-01-1730 Speaker at the congress</p> <p>Balduzzi, F., Vichi, G., Romani, L., Ferrara, G. et al., "Development of a Low Pressure Direct Injection System for a Small 2S Engine. Part I - CFD Analysis of the Injection Process," SAE Int. Journal Engines 8(4):2015, doi:10.4271/2015-01-1727</p> <p>Stiaccini, I., Romani, L., Ferrari, L., Ferrara, G., "A Hybrid Time-frequency Domain Approach for Numerical Modeling of Reciprocating Compressors" Energy Procedia 81:1102-1112, December 2015 DOI: 10.1016/j.egypro.2015.12.132</p> <p>Balduzzi, F., Vichi, G., Romani, L., Ferrara, G., "CFD Analysis of the Effect of the Injection Pressure on a Small 2S LPDI Engine," JSAE 20159760 / SAE 2015-32-0760, 2015</p> <p>Romani, L., Balduzzi, F., Vichi, G., Ferrara, G., "An experimental methodology for the evaluation of the trapped air-fuel ratio of a small 2S LPDI engine," JSAE 20159762 / SAE 2015-32-0762, 2015</p> <p>L. Romani, G. Vichi, A. Bianchini, L. Ferrari, G. Ferrara, "Optimization of the Performance of a Formula SAE Engine by means of a Wastegate Valve Electronically Actuated", 71th Conference of the Italian Thermal Machines Engineering Association, ATI2016. Speaker at the congress</p> <p>Romani, L., Lenzi, G., Ferrari, L., Ferrara, G., " Indirect Estimation of In-Cylinder Pressure through the Stress Analysis of an Engine Stud," SAE Technical Paper 2016-01-0814, 2016, doi:10.4271/2016-01-0814 Speaker at the congress</p> <p>I. Stiaccini, L. Romani, E.A. Carnevale, L. Ferrari, G. Ferrara, "Analisi di compressori alternativi con approccio ibrido tempo-frequenza". La Termotecnica, Mazo 2016.</p>

	<p>L. Romani, G. Vichi, F. Balduzzi, A. Bianchini, G. Ferrara, "Fine-tuning of a two stroke engine in full power configuration provided with a Low Pressure Direct Injection system", 72th Conference of the Italian Thermal Machines Engineering Association, ATI2017. Speaker at the congress</p> <p>L. Romani, A. Bianchini, G. Vichi, A. Bellissima, G. Ferrara, "Experimental Assessment of a Methodology for the Indirect in-Cylinder Pressure Evaluation in Four-Stroke Internal Combustion Engines". <i>Energies</i>, 2018, 11, 1982; doi:10.3390/en11081982.</p> <p>N. Fiorini, L. Romani, A. Bellissima, G. Vichi, A. Bianchini, G. Ferrara, "An indirect in-cylinder pressure measurement technique based on the estimation of the mechanical strength acting on an engine head screw: development and assessment". 73th Conference of the Italian Thermal Machines Engineering Association, ATI2018. Speaker at the congress</p> <p>Balduzzi, F., Romani, L., Bosi, L., Ferrara, G., "On the effect of the injector position on fuel-air mixture preparation in a two-stroke GDI engine". SAE, Small Engine Technology Conference, Dusseldorf, 2018.</p> <p>Romani, L., Balduzzi, F., Bosi, L., Ferrara, G., "Experimental Investigation on the Potentiality of a GDI System Applied to a Two-Stroke Engine: Analysis on Pollutant Emission and Fuel Consumption Reduction". SAE, Small Engine Technology Conference, Dusseldorf, 2018. Speaker at the congress</p> <p>Becciani M.; Romani L.; Vichi G.; Bianchini A.; Asai G.; Minamino R.; Bellissima A.; Ferrara G., "Innovative control strategies for the diagnosis of injector performance in an internal combustion engine via turbocharger speed". <i>Energies</i>, 2019, 11, 1420; doi.org/10.3390/en12081420</p> <p>N. Fiorini, L. Romani, A. Bianchini, G. Vichi, A. Bellissima, G. Asai, R. Minamino, N. Ciuffi, G. Ferrara, "Application of a Methodology for the Indirect In-cylinder Pressure Measurement to a 4-cylinder Diesel Engine". 74th Conference of the Italian Thermal Machines Engineering Association, ATI2019.</p> <p>Ciampolini M.; Bigalli S.; Balduzzi F.; Bianchini A.; Romani L.; Ferrara G., "CFD analysis of the fuel-air mixture formation process in passive prechambers for use in a high- pressure direct injection (HPDI) Two-stroke engine". <i>Energies</i> 2020, 13(11), 2846; doi.org/10.3390/en13112846</p> <p>Bosi, L., Ciampolini, M., Romani, L., Balduzzi, F., Ferrara, G., "Experimental Analysis on the Effects of Passive Prechambers on a Small 2-Stroke Low-Pressure Direct Injection (LPDI) Engine". SAE, Small Engine Technology Conference, 2020.</p> <p>Balduzzi, F., Romani, L., Bosi, L., Ferrara, G., "Intermittent Injection for a Two-Stroke Direct Injection Engine". SAE, Small Engine Technology Conference, Hiroshima, 2019.</p> <p>Romani, L., Bosi, L., Baroni, A., Toni, L., Biliotti, D., Ferrara, G., and Bianchini A., "Detection of vaneless diffuser rotating stall by means of dynamic pressure sensors and acoustic measurements". 76th Conference of the Italian Thermal Machines Engineering Association, ATI2021.</p> <p>Taddei Pardelli, P., Mannelli A., Tempesti, C., Romani, L., Baroni, A., Bosi, L., Ferrara, G., "Design and development of three test facilities to evaluate heat transfer performances of advanced and low cost materials and coatings for geothermal application". 76th Conference of the Italian Thermal Machines Engineering Association, ATI2021</p> <p>Ciampolini, M., Bosi, L., Romani, L., Toniutti, A., Giglioli, M., Maccari, P., Farruggia, D., Ferrara G., "Experimental Investigation on the Potential of Feedback Active Noise Control for Use in Industrial Generator Sets". 76th Conference of the Italian Thermal Machines Engineering Association, ATI2021.</p> <p>Bosi, L., Ciampolini, M., Raspanti, S., Romani, L., Ferrara G., "Jet ignition in small two-stroke engines: an experimental survey on benefits and challenges". 76th Conference of the Italian Thermal Machines Engineering Association, ATI2021.</p>
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In compliance with the Italian Legislative Decree no. 196/2003, I hereby authorize you to use and process my personal details contained in this document.

Autorizzo il trattamento dei dati personali contenuti nel mio curriculum vitae in base all'art. 13 del D. Lgs. 196/2003 e all'art. 13 GDPR 679/16.