



PERSONAL INFORMATION	Ornella Chiavola	
		
		
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	Sex ...F.....   Date of birth 21/10/1968   Nationality italian.....	
CURRENT POSITION SSD (if applicable)	Full professor .....	
RESEARCH TOPICS / EXPERIENCES	<ul style="list-style-type: none"> <li>▪ internal combustion engines</li> <li>▪ after-treatment devices for exhaust gases</li> <li>▪ intake and exhaust systems</li> <li>▪ development of control algorithms for engine management</li> <li>▪ combustion analysis</li> <li>▪ renewable fuels</li> <li>▪ injection systems</li> </ul>	
SCIENTIFIC / TECHNICAL QUALIFICATION (source: Scopus)	▪ <a href="#">H-index:</a>	▪ 14
	▪ <a href="#">No. publications:</a>	▪ 94
	▪ <a href="#">No. citations:</a>	▪ 641
THEMATIC AREA KEYWORDS (it is possible to select one or more than one thematic area)	▪ <a href="#">Energy transition:</a>	▪ X
	▪ <a href="#">Digital transition:</a>	▪
	▪ <a href="#">Bio-pharma &amp; health:</a>	▪

## EDUCATION AND TRAINING

1999/04/24	PhD Mechanical Engineering, University 'La Sapienza'
1994/07/08	Master degree in Mechanical Engineering, University 'La Sapienza'

## WORK EXPERIENCE

since 2020/11/01	Full professor
	Roma Tre University – Industrial, Electric and Mechanical Engineering Dept
since 2011/01/01	Associate professor
	Roma Tre University – Industrial, Electric and Mechanical Engineering Dept
since 2002/07/01	Assistant professor
	Roma Tre University – Industrial, Electric and Mechanical Engineering Dept

## MAIN ROLES AND RESPONSIBILITIES

From 2022/02/01 To now	Coordinator of the PhD in Industrial and Mechanical Engineering - ROMA TRE University
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From 2013/11/01 To now	Academic coordinator for Erasmus Program - Industrial, Electronic and Mechanical Engineering Dept - ROMA TRE University
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## TEACHING EXPERIENCE

From 2022/11/01 To now	'Renewable Marine Energies' - 6CFU Master Degree in Mechanical Engineering for Marine Resources, ROMA TRE University
From 2021/11/01 To now	'Volumetric Thermal Engines and Turbogas' - 6CFU Master Degree in Mechanical Engineering for Marine Resources, ROMA TRE University
From 2018/11/01 To now	'Internal Combustion Engines' – 9 CFU Master Degree in Mechanical Engineering, ROMA TRE University
From 2002/11/01 To now	'Interaction between machines and environment' – 9 CFU Master Degree in Mechanical Engineering , ROMA TRE University

## MAIN RESEARCH EXPERIENCE

2023	PRIN 2022 PNRR "REWARM" (30/11/2023 – 30/11/2025), cofiring residual marine feedstock with residual agriculture biomass
2019	Aster Energetica, "COMPOSTEAM", POR FESR 2014/2020 Regione Lazio Avvi "Circular Economy e Energia" - Prot. 0012287 del 15/05/2019 – Codice CUP F81G19000010007
2015	Contract of technological cooperation between the Engineering Dept - ROMA TRE University and COMPRESSION SERVICE TECHNOLOGY – CST Srl, research activity for the development of fluid dynamic and acoustic models and interface algorithms
2009	Contract of cooperation between the Engineering Dept – ROMA TRE University and Lombardini Srl, research activity on the control strategies to manage the transient conditions of LDW442CRS engines connected to a CVT gearbox

## HONOURS, AWARDS, MEMBERSHIPS, OTHER QUALIFICATIONS

2000	'ESSO' award for the PhD Thesis .....
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**ADDITIONAL  
INFORMATION****List of publications (2009-2023)**

- Chiavola O, Frattini E, Palmieri F, Fioravanti A, Marani P (2023) On the efficiency of mobile hydraulic power packs operating with new and aged eco-friendly fluids. *Energies*, 16(15), 5681
- Chiavola O, Palmieri F, Cavallo DM (2023) On the Increase in the Renewable Fraction in Diesel Blends using Aviation Fuel in a Common Rail Engine. *Energies*, 16(12), 4624
- Cavallo DM, Chiavola O, Palmieri F, Mancaruso E, Vaglieco BM (2023) Experimental study on the effect of loading and regeneration for an optimized management of the DPF. *Results in Engineering*. 2023, 18, 101048
- Cavallo DM, Chiavola O, Frattini E, Palmieri F (2022) Modelling of DOC Behavior under DPF Active Regeneration. SAE Technical Paper 2022-01-1018. doi: 10.4271/2022-01-1018
- Cavallo DM, Chiavola O, Frattini E, Palmieri F (2022) On the Modeling of Single-Piston CR Pump. SAE Technical Paper 2022-01-0502. doi: 10.4271/2022-01-0502
- Chiavola O, Frattini E, Palmieri F (2022) Performance Assessment of Hydraulic Micro Relief Valve. *Journal of Physics: Conference Series* 2385(1), 012032
- Cavallo DM, Chiavola O, Frattini E, Palmieri F (2022) A Novel Approach for Hydraulic Valve Experimental Assessment under Cavitating Condition. *International Journal of Fluid Power*, 23(2) pp 183-204
- Chiavola O, Frattini E, Lancione S, Palmieri F (2021) Operation cycle of Diesel CR Injection Pump via Pressure Measurement in Piston Working Chamber. *Energies*. 2021, 14(17):5385; doi:10.3390/en14175385
- Chiavola O, Palmieri F, Cavallo M, Mancaruso E, Vaglieco B M (2020) Experimental Study on the Combustion Monitoring via the Turbocharger Speed Fluctuations by Vibration Measurement. *SAE Int. J. Engines*. 2020,13(5); doi:10.4271/03-13-05-0045
- Chiavola O, Chiatti G, Cavallo D, Mancaruso E, Vaglieco B M(2020). Modeling of Soot Deposition and Active Regeneration in Wall-flow DPF and Experimental Validation. SAE Paper 2020-01-2180. doi: 10.4271/2020-01-2180
- Chiatti G, Chiavola O, Palmieri F (2019). Impact on Combustion and Emissions of Jet Fuel as Additive in Diesel Engine Fueled with Blends of Petrol Diesel, Renewable Diesel and Waste Cooking Oil Biodiesel. *Energies*. 2019, 12:2488; doi:10.3390/en12132488
- Chiatti G, Chiavola O, Sirhan N (2019). Impact of Particulate Size during Deep Loading on DPF Management. *Appl. Sciences*. 2019, 9:3075; doi:10.3390/app9153075
- Chiatti G, Chiavola O, Palmieri F (2019). Turbocharger Speed Monitoring based on Vibration Measurements for Diesel Engine Management. 2019 Proceedings of the ASME Internal Combustion Engine Division Fall Technical Conference. ICEF 2019-7178
- Chiatti G, Chiavola O, Palmieri F (2019). Needle Displacement Visualization with Simultaneous Measurement of Injection Rate for CR Diesel Injector: a Novel Experimental Technique. 2019 Proceedings of the ASME Internal Combustion Engine Division Fall Technical Conference. ICEF 2019-7179
- Chiavola O, Dominici M, Palmieri F(2019). Indirect measurement of turbocharger instantaneous velocity for multi-cylinder combustion diagnosis. 74° Congresso Nazionale ATI Modena, 11-13 settembre 2019
- Chiavola O, Frattini E, Palmieri F, Possentia G (2019). Poppet Valve Performance under Cavitating Conditions. 74° Congresso Nazionale ATI Modena, 11-13 settembre 2019
- Chiavola O, Palmieri F, Recco E (2018). Vibration analysis to estimate turbocharger speed fluctuation in diesel engines. *Energy Procedia*. 2018, 148:876-883
- Chiavola O, Palmieri F (2018). Investigating the fuel type influence on Diesel CR pump performance. *Energy Procedia*. 2018, 148:908-915
- Chiavola O, Recco E (2018). Emission performance of a Diesel engine fuelled with petrol diesel, green diesel, and waste cooking oil blends. *Journal of Combustion*. 2018, article ID 4819175

- Chiatti G, Chiavola O, Palmieri F, Pompei R (2018) On the Influence of the Slot Orifice in Diesel Common Rail Nozzle. *The Open Fuels & Energy Science Journal*. 2018, 11:55-69
- Chiatti G, Chiavola O, Palmieri F (2018) Impact of Waste Cooking Oil in Biodiesel Blends on Particle Size Distributions from a City-Car Engine. *Journal of the Energy Institute*. 2018, 91:262-269
- Chiavola O, Chiatti G, Recco E (2018) Remote combustion sensing in Diesel engine via vibration measurements. Chapter 5 in the book 'Internal Combustion Engines'. InTech - open science. <http://dx.doi.org/10.5772/intechopen.69761>
- Chiavola O, Chiatti G, Recco E (2018) Effect of waste cooking oil biodiesel blends on performance and emissions from a CRDI diesel engine. Chapter 2 in the book 'Internal Combustion Engines'. InTech - open science. <http://dx.doi.org/10.5772/intechopen.69740>
- Chiatti G, Chiavola O, Conti E, Recco E (2017) Automotive turbocharger speed estimation via vibration analysis for combustion optimization. *International Journal of Mechanical Engineering & Technology (IJMET)*. 2017, 8(10):153-163
- Chiavola O, Palmieri F, Recco E (2017) Turbocharger speed estimation via vibration measurements for combustion sensing. *Energy Procedia*. 2017, 126:842-849
- Chiavola O, Palmieri F (2017). On a Modified VCO Nozzle Layout for Diesel Common Rail Injectors under Actual Needle Displacement. *Energy Procedia*. 2017, 126:1027-1034
- Chiavola O, Chiatti G, Recco E (2017) Turbocharging a small displacement diesel engine for urban vehicles. *International Journal of Mechanical Engineering & Technology (IJMET)*. 2017, 8(7):1916-1928
- Chiatti G, Chiavola O, Frezzolini P, Palmieri F (2017) On the Link between Diesel Spray Asymmetry and Off-Axis Needle displacement. *Appl. Sciences*. 2017,7:375. doi:10.3390/app7040375
- Chiavola O, Chiatti G, Recco E (2017) Combustion monitoring through vibrational data in a turbocharged city car engine. *International Journal of Mechanical Engineering & Technology (IJMET)*. 2017, 8(3):197-208
- Chiavola O, Chiatti G, Recco E, Magno A, Mancaruso E, Vaglieco B M (2017) Accelerometer measurement for MFB evaluation in multi-cylinder diesel engine. *Energy*. 2017, 133:843-850
- Chiatti G, Chiavola O, Palmieri F (2017) Vibration and Acoustic Characteristics of a City-Car Engine Fueled with Biodiesel Blends. *Applied Energy*. 2017, 185(1):664–670
- Chiatti G, Chiavola O, Recco E, Palmieri F (2016) Soot Particles Experimental Characterization during Cold Start of a Micro Car Engine. *Energy Procedia*. 2016, 101:662-669.
- Chiatti G, Chiavola O, Conforto S, Amalfi M (2015) Engine Block Dynamic Response via Combustion Noise Radiation. SAE Paper 2015-01-2234. doi: 10.4271/2015-01-2234
- Chiatti G, Chiavola O, M. Palazzoni, Palmieri F (2015) Diesel Spray Modeling Under Off-Axis Needle Displacement. SAE Paper 2015-01-0922. doi: 10.4271/2015-01-0922
- Chiatti G, Chiavola O, Palmieri F, Piolo A (2015) Diagnostic Methodology for Internal Combustion Diesel Engines via Noise Radiation. *Energy Conversion and Management*. 2015, 89:34–42
- Chiatti G, Recco E, Chiavola O, Conforto S (2014) Acoustic Assessment in a Small Displacement Diesel Engine. SAE Paper 2014-32-0129. doi: 10.4271/2014-32-0129
- Chiatti G, Chiavola O, Palmieri F (2014) Diesel nozzle flow investigation in non-radial multi hole geometry. 2014 Proceedings of the ASME Internal Combustion Engine Division Fall Technical Conference. ISBN: 978-0-7918-4617-9, doi:10.1115/ICEF2014-5556
- Chiatti G, Chiavola O, Palmieri F, Albertini S (2014) Combustion and Emissions Characterization of Biodiesel Blends in a City-Car Engine. *Energy & Fuels*, 2014, 28(8):5076–5085
- Chiatti G, Chiavola O, Recco E (2014). Analysis of the Relationship between Noise Emission and In-Cylinder Pressure in a Small Displacement Diesel Engine. SAE Paper 2014-01-1364. doi: 10.4271/2014-01-1364
- Chiatti G, Chiavola O, Recco E (2014) Combustion diagnosis via block vibration signal in common rail diesel engine. *International Journal of Engine Research*. 2014, 15(6):654–663

- Chiatti G, Chiavola O, Recco E (2013) Diesel Combustion Analysis via Block Vibration during Engine Transient Operation. SAE Paper 2013-24-0147. ISBN: 978-88-907870-3-4, doi: 10.4271/2013-24-0147
- Chiatti G, Chiavola O, Recco E (2013) Combustion and Vibration Characteristics in a Small Displacement Diesel Engine Fueled with Biodiesel Blends. SAE Paper 2013-01-1902. doi: 10.4271/2013-01-1902
- Chiatti G, Chiavola O, Recco E (2012) Accelerometer Measurements to Optimize the Injection Strategy. SAE Paper 2012-01-1341. doi: 10.4271/2012-01-1341
- Chiatti G, Chiavola O, Recco E (2012) Accelerometer signal to characterize the combustion development in multiple injection diesel engine. 2012 Proceedings of the ASME Internal Combustion Engine Division Spring Technical Conference. ISBN:978-0-7918-4466-3, doi:10.1115/ICES2012-81235
- Chiavola O, Recco E (2011) Caratterizzazione del processo di combustione in motori diesel mediante misure di vibrazioni. 66° Congresso Nazionale ATI. ISBN: 9788895267111
- Chiatti G, Chiavola O, Recco E (2011) Vibration Processing to Optimize Pressure Development in CR Diesel Engine. SAE Paper 2011-01-1560. ISBN: 978-0-7680-6433-9, doi: 10.4271/2011-01-1560
- Chiatti G, Chiavola O, Palmieri F (2010) Modeling the effect of nozzle hole geometry on diesel injection and combustion. 2010 Proceedings of the ASME Internal Combustion Engine Division Fall Technical Conference. ISBN: 978-0-7918-4944-6, doi:10.1115/ICEF2010-35067
- Chiatti G, Chiavola O (2010) Performance Improvement of a Multi-Cylinder CR Diesel Engine for Mini-Car Application. SAE Paper 2010-32-0113. ISBN: 978-0-7680-3498-1, doi:10.4271/2010-32-0113
- Botta F, Cerri G, Chennaoui L, Chiatti G, Chiavola O, De Lieto Vollaro R, Di Francesco G, Fanchiotti A, Giovannelli A, La Battaglia V, Marini S, Miglioli M, Palmieri F, Recco E, Salvini C, Sciuto S A, Scorza A (2010) Le attività della Meccanica a Roma Tre. In 1st National Congress of the Italian Mechanics. ISBN:9788890510007, Palermo
- Chiavola O, Chiatti G, Arnone L, Manelli S (2010) Combustion Characterization in Diesel Engine via Block Vibration Analysis. SAE Paper 2010-01-0168. doi:10.4271/2010-01-0168
- Chiatti G, Chiavola O, Palmieri F (2010) Phenomenological Approach for Common Rail Diesel Engine Emission and Performance Prediction. SAE Paper 2010-01-0874. ISBN: 978-0-7680-3420-2, doi:10.4271/2010-01-0874
- Arnone L, Boni M, Manelli S, Chiavola O, Conforto S, Recco E (2009) Block Vibration Measurements for Combustion Diagnosis in Multi-Cylinder Common Rail Diesel Engine. Combustion and Flow Diagnostics and Fundamental Advances in Thermal and Fluid Sciences. ISBN: 978-0-7680-2134-9, doi: 10.4271/2009-01-0646
- Arnone L, Manelli S, Chiatti G, Chiavola O (2009) Engine Block Vibration Measures for Time Detection of Diesel Combustion Phases. SAE Paper 2009-24-0035. doi: 10.4271/2009-24-0035
- Arnone L, Boni M, Manelli S, Chiatti G, Chiavola O (2009) In-Cylinder Pressure Analysis through Accelerometer Signal Processing for Diesel Engine Combustion Optimization. SAE Paper 2009-01-2079. ISBN: 978-0-7680-2164-6, doi: 10.4271/2009-01-2079
- Chiatti G, Chiavola O, Palmieri F (2009) Phenomenological Multi-Step Modeling of Diesel Injection and combustion. SAE Paper 2009-24-0007. doi: 10.4271/2009-24-0007
- Chiatti G, Chiavola O, Falcucci G (2009) Soot morphology effects on DPF performance. Diesel Exhaust Emission Control Modeling. ISBN: 978-0-7680-2151-6, doi:10.4271/2009-01-1279
- Chiatti G, Chiavola O, Palmieri F (2009) Spray modelling for diesel engine performance analysis. Diesel Fuel Injection and Sprays. ISBN: 978-0-7680-2136-3, doi:10.4271/2009-01-0835
- Arnone L, Boni M, Manelli S, Chiavola O, Conforto S, Recco E (2009) Diesel Engine Combustion Monitoring through Block Vibration Signal Analysis. SAE Paper 2009-01-0765. doi: 10.4271/2009-01-0765

