

ING. LUCA MASTROPASQUA, PH.D

PERSONAL INFORMATION

BIRTHPLACE *Milan (Italy), 27th October 1989*
ADDRESS *Via Tommaseo 2, 20090 Cesano Boscone (Milan) - Italy*
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WORK EXPERIENCE

<i>Visiting Post-doctoral Research Associate</i>	MAY 2017 PRESENT	<i>Princeton University</i>	 PRINCETON UNIVERSITY
	<i>Andlinger Center for Energy and Environment within the Princeton E-filiates Partnership, with funding by ExxonMobil TOPIC: Applications of Carbonate Fuel Cells in CO₂ Capture</i>		
<i>Post-doctoral Research Associate</i>	MAY 2017 PRESENT	<i>Politecnico di Milano</i>	 POLITECNICO MILANO 1863
	<i>School of Industrial Engineering TOPIC: Development of modelling tools for simulation of power systems based on high temperature fuel cells</i>		
<i>Teaching Assistant</i>	SEPT 2017 PRESENT	<i>Teaching Assistant in Power Production from Renewable Energy</i>	
	<i>Design and analysis of renewable energy systems including market and subsidy systems. Prof. Paolo Silva</i>		
<i>Teaching Assistant</i>	MARCH 2017 JULY 2017	<i>Teaching Assistant in Power Generation Systems</i>	
	<i>Review of basic principles for the analysis of energy conversion systems and the modelling the performance of conventional as well as innovative systems. Prof. Marco Binotti</i>		
<i>Visiting Research Associate</i>	MARCH 2016 DEC. 2016	<i>University of California Irvine (USA)</i>	 UCIRVINE
	<i>School of Mechanical and Aerospace Engineering TOPIC: Solid Oxide Fuel Cells research: multi-scale modelling and experimental activities on high temperature test stands and CHP systems SUPERVISORS: Prof. Jack Brouwer</i>		
<i>Teaching Assistant</i>	OCT 2014 MARCH 2016	<i>Teaching Assistant in Energy Conversion</i>	
	<i>Electricity generation in modern power plants, focusing on the inherent relation among working fluids, thermodynamic cycles and plant equipment. Prof. Gianluca Valenti</i>		
<i>Scientific Tutor</i>	MAY 2014 MAY 2017	<i>"Master RIDEF 2.0 - Reinventare l'energia"</i>	
	<i>Focus on cogeneration and renewable plants and technologies.</i>		

EDUCATION

	MAY 2014 OCT. 2017	<i>Politecnico di Milano (Italy)</i>		POLITECNICO MILANO 1863
<i>Ph.D in Energy and Nuclear Science and Technology, Cum Laude</i>		School of Industrial Engineering – Department of Energy TOPIC: <i>Clean Energy Conversion Systems: High Temperature Solid Oxide Electrochemical Membranes in Advanced Energy Systems</i> SUPERVISORS: Prof. Stefano CAMPANARI & Prof. Paolo CHIESA SPONSOR: Edison S.p.a. Research Development & Innovation		
	SEPT. 2011 APR. 2014	<i>Politecnico di Milano (Italy)</i>		POLITECNICO MILANO 1863
<i>MSc in Power Generation Engineering</i>		· School of Industrial Engineering – Department of Energy THESIS: <i>Modelling of SOFC for performance simulation of advanced power cycles</i> SUPERVISORS: Prof. Stefano CAMPANARI & Prof. Yiguang LI		
	MARCH 2013 FEB. 2014	<i>Cranfield University (UK)</i>		<i>Cranfield</i> UNIVERSITY
<i>MSc in Thermal Power</i>		<i>Gas Turbine Technology Specialisation</i> · School of Engineering THESIS: <i>Modelling of SOFC for performance simulation of advanced power cycles</i> SUPERVISORS: Prof. Stefano CAMPANARI & Prof. Yiguang LI		
	SEPT. 2008 SEPT. 2011	<i>Politecnico di Milano</i>		
<i>BSc in Energy Engineering</i>		School of Industrial Engineering – Department of Energy		
	SEPT. 2003 JULY 2008	<i>Scientific High School “G.B.Vico”, Corsico (Milan)</i>		
<i>Scientific High School Diploma</i>				

ADDITIONAL COURSES

	6 TH -17 ST Nov. 2017	<i>Politecnico di Milano</i>		
<i>ATC 2017</i>		Advanced Training Course in collaboration with Res4Med and Enel Foundation · Deployment of Renewable Energy Solutions: challenges and opportunities		
	19 TH -21 ST SEPT. 2017	<i>University of Pisa</i>		
<i>Summer School</i>		1 ST Ph.D. Summer School in Fluid Machinery and Energy Systems Engineering · Department of Energy, Systems, Territory and Construction Engineering		

HONOURS & AWARDS

	MAY 2014	<i>PhD Scholarship</i>		
<i>Edison S.p.a</i>		Edison S.p.a Research Development & Innovation scholarship in collaboration with Politecnico di Milano		
	MARCH 2014	<i>R-MC Power Recovery Ltd Prize</i>		
<i>Cranfield University – MSc Thermal Power</i>		The R-MC prize was awarded to me on account of my project having particular relevance to the industrial gas turbine field.		
	MAY 2012	<i>Erasmus Scholarship</i>		
<i>Erasmus</i>		Funding for the Double Degree program between Cranfield University and Politecnico di Milano		
	AUG. 2012	<i>MSc Departmental Grant</i>		
<i>Cranfield University</i>		Grant for full coverage of MSc course tuition fees		

RESEARCH PROJECTS AND COLLABORATIONS

*Ene.Field H2020
FCH-JU European
funded*

Commissioning and testing of four Solid Oxide Fuel Cell micro-CHP systems at the Micro-Cogeneration Laboratory at Politecnico di Milano. Project planning and management. Customer facing and final product delivery.

*ASCENT FP7
European funded*

Modelling and simulation of advanced SOFC-based plants with Carbon Capture and Storage. 16 industrial and academic international partners.

*Engine System
Symposium*

Member of the editing team of the symposium organisation comity. Published and presented a paper on low emission gas turbine combustors.

*Group Design
Project - Variable
Cycle Engine*

10-member international team - Leader and responsible of the intake duct and combustor design group. Additional support to the performance modelling team.

TUTORING AND MENTORING

Co-advisor of the following MSc theses:

- *Development of a oxygen transport membrane model for the simulation of reactors in pre-combustion CO₂ capture systems (in Italian)*
- *Testing and modelling analysis of a 2.5 kW_{el} SOFC-based unit for micro-CHP applications (in Italian)*
- *Simulation of oxygen transport membranes in small and medium-scale hydrogen and syngas production systems (in Italian)*
- *System modelling and comparison of diverse advanced Carbon Capture techniques applied to ultra-high efficiency SOFC power cycles*
- *Effect of ejectors operation on SOFC systems performance (in Italian)*
- *A one-dimensional, distributed charge-transfer model for HT and IT-SOFCs with composite electrodes*
- *Regenerative Solid Oxide Cells (RSOCs) for energy storage applications*

ORGANISATIONS

*Professional
Society*

Professional Society of Engineers of the Milan Province. Young member No A31221

ASME

Student member of the American Society of Mechanical Engineers

ECS

Student member of the Electrochemical Society

CERTIFICATIONS

OCT. 2014 *Politecnico di Milano*



**POLITECNICO
MILANO 1863**

*Certification for
professional
qualification*

License in Industrial Engineering
Grade 80/100

DEC. 2012 *Cambridge University*



**UNIVERSITY OF
CAMBRIDGE**

*Certification of
language
knowledge*

Certificate of Proficiency in English (CPE)
Council of Europe Level C2 - Grade C

COMPUTER SKILLS

*Programming
Languages*

FORTRAN, VBA

*CAD Programs for
3D and P& ID
Design*

AUTOCAD INVENTOR, Solid Works, Solid Edge, AUTOCAD PLANT 3D – P& ID

Technical software

- VISUAL STUDIO
- ASPEN PLUS, ASPEN DYNAMICS, ASPEN CUSTOM MODELLER
- MATLAB
- OPEN FOAM, Fluent, CFX – CFD Simulations

Office L^AT_EX, Microsoft Office package

OS Linux, Windows

OTHER INFORMATION

Languages ITALIAN · Mothertongue
 ENGLISH · Proficient

*Social and
 Communication
 Skills* July 2017 · Oral Presentation at the ASME Turbo Expo Conference
 July 2016 · Oral Presentation at the ASME Power and Energy Conversion
 Conference
 July 2015 · Oral Presentation at the ASME Power and Energy Conversion
 Conference
 April 2014 · Oral Presentation at the Fuel Cells Science & Technology
 Conference
 Feb. 2014 · Thesis poster presentation at Cranfield University
 Sept. 2013 · 39th Engine Systems Symposium, Cranfield University
 2013 · Group Design Project (GDP), Cranfield University

*Personal
 Experiences* 2008 · Life Guard Licence for First Aid in swimming pools
 2011 · Nautical Licence and Course and Exam – Lead sailing and motor boats
 up to 24 meters without any limit from the coast

Interests Sailing

Artistic Skills Guitar · Painting · Photography · Pyrography

Hobbies Fish-keeping · Gardening

Sports Fitness · Basketball · Skiing · Water Sports

May 14, 2018