PERSONAL INFORMATION

Name and surname: **VANNONI ALBERTO**

EDUCATION AND TRAINING

• Dates (from – to): From November 2018

• Name and type of organization providing education and training: **PhD in Models, Machines and Systems Engineering for Energy, the Environment and Transports**
University of Genoa, Genoa, Italy

• Principal subjects/occupational skills covered: My research focuses on solutions for the flexibilization of energy systems, grids and power plants in high-RES penetrated scenarios, studying the opportunities in the present and long-term future markets, pursuing emissions reduction and energy efficiency. Mainly using MATLAB, as well Python and excel for developing models and analyse data. PhD activities are carried out within the Thermochemical Power Group (TPG) of the University of Genoa.

I have been involved in two projects in the field of sustainable development taking place in Lebanon and Zimbabwe. From November 2018 I started assistant activities of the Interfaculty course on International Cooperation and Development.

On March 25th – 28th 2019 I attended Winter School for PhD Students "Mobility and Energy Transition" issued by the University of Pisa.

From September 2019 I started teaching assistant activities of Geometry and Linear Algebra course.

As PhD student, I attended several courses, among which: Politics and Economics of International Energy, Python programming and Machine Learning techniques.

• Dates (from – to): From February 2016 to July 2018

• Name and type of organization providing education and training: **Master's degree in "Mechanical engineering – Energy and Aeronautics"**
University of Genoa, Genoa, Italy

• Title of qualification awarded: Final grade 110/110 cum laude.

• Principal subjects/occupational skills covered: Energetic sources and final uses. Energetic, entropic and exegetics balances. Compressible fluid dynamics and applications in turbomachinery and power plant fields. Heat transfer, particularly focused on energy conversion and aeronautics sectors. Energy systems based on gas turbines technology. Internal combustion engine (ICE), mainly focusing on automotive applications. Principles of operation and design procedure for turbomachinery.

While essaying the Final Thesis, entitled "*Study and development of a model for a Tesla turboexpander performance*" I contributed to develop a numeric model in MATLAB as a powerful tool for the performance description, and losses analysis of an innovative Tesla turboexpander (An innovative energy harvester devices also suitable for stand-alone applications).

• Dates (from – to): From March 2018 to May 2018

Name and type of organization providing education and training: **Interfaculty Course on Sustainability**
University of Genoa, Genoa, Italy

• Principal subjects/occupational skills covered: During the course, the concept of sustainability is addressed considering environmental, social, economic, energy and building-related aspects, in accordance with the UN Sustainable Development Goals "UN SDGs" as defined during the 2030 Agenda for Sustainable Development.

• Dates (from – to): From September 2017 to December 2017

Name and type of organization providing education and training: **Interfaculty course on International Cooperation and Development**
University of Genoa, Genoa, Italy

• Principal subjects/occupational skills covered: The course provides advanced methodological, cultural and professional knowledge in the political-social, historical, juridical, economic, geographic, anthropological and linguistic fields, suitable for analyzing and managing problems related to the international and geopolitical dimension of phenomena. The course includes, in addition, some modules to study specifically provided by the faculty of Engineering.

• Dates (from – to)	From October 2016 to February 2017
• Name and type of organization providing education and training	**Erasmus+ Program** **AGH-University of Science and Technology, Krakow, Poland**
• Principal subjects/occupational skills covered	I spent one semester abroad and I passed the six exams planned in English language, obtaining 27 ECTS overall.
• Dates (from – to)	From September 2012 a to February 2016
• Name and type of organization providing education and training	**Bachelor's in mechanical engineering** **University of Genoa, Genoa, Italy**
• Title of qualification awarded	Final grade 100/110.
• Principal subjects/occupational skills covered	Mechanical assisted design, Production, management, organization and construction of mechanical components and complex mechanical systems. Design of processes, systems and systems for energy. The object of final thesis was the development of a new tool developed in MATLAB for the performance analysis and the monitoring of a wave energy converter prototype.
• Dates (from – to)	From September 2007 to June 2012
• Name and type of organization providing education and training	**Liceo Scientifico Statale (Scientific High School) "G.D. Cassini"** **Genoa, Italy**
• Title of qualification awarded	Scientific Diploma. Final grade 79/100.
• Principal subjects/occupational skills covered	This High school aims to provide a solid grounding in basic science subjects but taking into consideration the social, historical and political context. Main subjects: Maths, Physics, Chemistry, Italian, English, Biology, History, Philosophy, Latin, Astronomy and Geology, Technical Drawing, History of Art.

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE	**ITALIAN**
OTHER LANGUAGES	**ENGLISH**
• Reading skills	Excellent
• Writing skills	Excellent
• Verbal skills	Good
	In 2016 my University certify me a B2 level, then I improved further my language skills during my semester spent abroad within the Erasmus program, caring out my PhD in an international context and publishing in English.
TECHNICAL AND COMPUTER SKILLS AND COMPETENCE	Familiarity in the use of Windows and OS X operating systems and use of the main software (MS Office, especially in Word Excel and Power Point, Photoshop, various browsers), knowledge of various software related to my academic path: Excellent command in MATLAB, due to current PhD activities and to the use of it in several university projects and in Master's and Bachelor's thesis, good knowledge also of Simulink (developed within the project required by the Master Course of Dynamics and modelling of Machines and Energy Systems), basic command also of programming in Python (from self-learning and online courses) and of other software seen during university courses, such as ANSYS, MSC software (Adams, Nasran, Patran, Marc), EES (Engineering Equations Solver). As a hobby and free-time activity I developed basic commands in images and videos editing.
SOCIAL AND ORGANISATIONAL SKILLS AND COMPETENCE	I consider myself a person with many interests and hobbies many of which gave me back skill and competencies that I can reuse in several fields for instances: As Scout Leader (from 2015 to present) in the Italian organization AGESCI I developed the attitude to long term projects and gained the relationship skills and the attention to other people required to an educator, as well the ability to manage a large number of people. As a member, until 2013 of the national level of UdS, a school student organization also a member of OBESSU (Organising Bureau of European School Student Unions), I think I grew up as a person interested in the social and political context in which he operates, considering the national and international, not only technical, implications of his own action and job. Moreover, this experience gave me the opportunity of representing people and being familiar with the institutional environment since my teenage.

LIST OF PUBLICATIONS

Peer-reviewed conference papers

Vannoni, Alberto, *Garcia, Jose Angel,* Mantilla, Weimar ,*Guedez*, *Rafael*, & Sorce, Alessandro. (2021)). Ancillary Services Potential For Flexible Combined Cycles. GT2021-59587 Proceedings of the ASME Turbo Expo 2021.

Vannoni, Alberto, Sorce, Alessandro, Traverso, Alberto, & Massardo, Aristide Fausto. (2021). Techno-Economic Analysis of Power-to-Heat Systems. E3S Web of Conferences, 238, 3003.

Vannoni, A., Sorce, A., Bosser, S., & Buddenberg, T. (2019). Heat recovery from Combined Cycle Power Plants for Heat Pumps. In E3S Web of Conferences (Vol. 113, p. 01011). EDP Sciences.

Peer-reviewed journal papers

Vannoni, Alberto, Giugno, Andrea, & Sorce, Alessandro. (2021). Thermo-Economic Assessment Under Electrical Market Uncertainties of a Combined Cycle Gas Turbine Integrated With a Flue Gas-Condensing Heat Pump. Journal of Engineering for Gas Turbines and Power, 143(4), Journal of engineering for gas turbines and power, 2021-04-01, Vol.143 (4).

Vannoni, A, Giugno, A, & Sorce, A. (2021). Integration of a flue gas condensing heat pump within a combined cycle: Thermodynamic, environmental and market assessment. Applied Thermal Engineering, 184, 116276.

Renuke, Avinash, Vannoni, Alberto, Pascenti, Matteo, & Traverso, Alberto. (2019). Experimental and Numerical Investigation of Small-Scale Tesla Turbines. Journal of Engineering for Gas Turbines and Power, 141(12), Journal of engineering for gas turbines and power, 2019-12-01, Vol.141 (12).