Curriculum Vitae

Personal Informations

First name/Surname:	**Gianmatteo Cantoro**
Address:	Na spitalce 1927/9; 16000 Praha; czech republic
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E-mail	gianmatteo.c@hotmail.it
Date of Birth:	4th April 1982
Nationality:	Italian
Gender:	Male

Pubblicatons

2008-Understanding Plasma Fluid Dynamics Inside Plasma Torches Through Advanced Modeling
2011-High-Speed Imaging in PAC- Multiple View and Tomographic Reconstruction of Pilot Arcing Transients
2011-Plasma arc cutting technology- simulation and experiments
2011-Statistical Analysis of High-Speed Schlieren Imaging in PAC

Professional Experiences

Dates	**October 2021- present**
Occupation or position held	*Lead Engineer in Arc Simulation and Modelling, Centre of Excellence* – **Eaton Corporation plc** English (en-gb) (eaton.com)
Main activities and responsibilities	**Eaton Corporation plc** is an American Irish multinational power management company with 2021 sales of $19.63 billion, founded in the United States with global headquarters in Dublin, Ireland, and a secondary administrative center in Beachwood, Ohio. Eaton sells products to customers in more than 175 countries. The electrical sector's products include circuit breakers, switchgear, busway, UPS systems, power distribution units, panel boards, load centers, motor controls, meters, sensors, relays and inverters. The main markets are industrial, institutional, government, utility, commercial, residential, information technology and original equipment manufacturer customers. Since I joined Eaton I was focused on plasma arc simulation in circuit breaker and developing a toolkit (covered by a trade secret) to predict the condition for a breakdown, both direct and surface flashover. Thanks to this software, which use Ansys Maxwell to calculate the electrical field in complex 3D geometries, we were able to optimize the design of a circuit breaker for 24kV which is operating in air. That means reducing 352000 tons of CO2 per year in atmosphere. I`m also following a project to understand how exothermic chemical reaction of ablating plastic in plasma can increase the overpressure in outgassing from the vent of the devices. I`m also finding how to improve the functionality of a mini molded circuit breaker reducing the time on. All these projects are developed by using numerical simulations that permits to drastically reduce the time for developing and the time for prototyping and testing. Numerical simulations are performed coupling fluid dynamic, thermic and electromagnetic software to have a precise idea of the plasma behave.

Place of Employment	**Prague, Czech Republic**
Dates	**January 2018-September 2021**
Occupation or position held	*Mechanical Engineer in R&D Department* – **Cebora S.p.A.** https://www.cebora.it/home_welding.html
Main activities and responsibilities	Cebora is an Italian brand for plasma cutting and welding machine technologies for industrial processes. As R&D head I choose the project to be developed and plan experiments to be done to validate the project (DOE) with particular attention to costs reduction and results optimization. I'm working close to the production department to improve our planning in the way to reduce production time, I'm helping the production chief to implement the LEAN philosophy in our plant. My job, however, concerns coordination of the design of the new generators, electrical and electronical parts, and the mechanical design of the plasma cutting torch. To reduce the number of prototypes and for a better comprehension of the physics I'm performing fluid dynamic an electromagnetical simulation with OpenFOAM (compressible and incompressible fluid).This open source software permits to model everything using some user's define function, so it permits to predict how the plasma arc is growing, the temperature rising of the different components and the fluid dynamic inside the plasma torch. I've fixed some problems with relays during the pilot arc phase to improve their life time and to prevent their failure during the initial transitory phase. I'm also keeping in touch with ours strategic suppliers to improve the design of our products, make periodical audit to guarantee ours quality standard. When needed I also support our commercial department to give them a better understanding of our technical solutions for customers. I regularly visit customers plant to fix problems and to have a better feedback for ours product.
Place of Employment	**Bologna, Italy**
Dates	**June 2014-december 2017**
Occupation or position held	*Mechanical Engineer in R&D Department* – **Air Liquide Welding** http://www.airliquidewelding.com/en/welcome.html
Main activities and responsibilities	Company, which now belongs to Lincoln Electric group, is world-wide leader in plasma cutting and welding machine technologies for industrial processes. As R&D head I had to choose the right project to develop and the best experiences to validate new solutions. A very good knoledge of plasma physics led me got the TCL (Technical Career Leader https://www.airliquide.com/careers/customize-your-career) titled by Air Liquide, I realized different numerical models to predict the behaviour of the plasma arc to improve life time of different components, I also performed different electrical test to improve the generator quality, in the way to have a better reliable behaviour. Offered a continuous customers support to fix in-site technical issues in all the world. Very good knowledge in design of experiments and good skill in problem solving. Designed new geometrical solutions, participated in some patent pending consumables and developed new marketing strategy to improve company visibility. Good knowledge in mechanical design of the CNC machine and good skill in automation. Very good knowledge in fluid dynamics, knowledge of ANSYS Workbech, especially Fluent , good knowledge of OpenFOAM ,good skills in results interpretations.
Place of Employment	**Saint-Ouen-l'Aumône, Paris,France**
Dates	**January 2013 – june 2014**
Occupation or position held	*Mechanical Engineer in R&D Department* – **Bilfinger Water Technologies GmbH** https://www.aqseptence.com/app/en/keybrands/diemme-filtration/
Main activities and responsibilities	Bilfinger Water Technologies is the world-wide leader in solid-liquid separation technologies for industrial processes. Research and Development aims to improve the chemical process and the mechanical design of the filter presses. R&D projects scope includes full product lifecycle from concept phase to design mechanical simulation, with Solid Works frame, to validate the design, 3D models and drawings, commercialization, and continuous improvement. In this frame, I provide continuous support to Supply Chain, Manufacturing and Customer Service functions.

	I offer customer support services ranging from technology implementation to service quality improvement. I lead failure analysis activity; I participate in knowledge sharing between Bilfinger Water Technologies and customers. I regularly visit customers plant to control future installations and to verify filters capability to fulfill customers' needs.
Place of Employment	**Lugo**, **Ravenna,Italy**
Dates	**February 2007 – june 2014**
Occupation or position held	Freelance Engineer
Main activities and responsibilities	Regular member of the Engineers of the Ravenna Province since 26/02/2007 number 1672 and in accordance with articles 45 and 49 of DPR 5th June , 2001, n. 328, included in the section of Industrial Engineers. Improved and developed a new concrete plant to be mounted on trucks. Designed pneumatic and hydraulic circuit of the machine, checked the mechanical strength of the sub frame and the other connection between the chassis and the truck. Studied and designed a new prototype CNC machine for Plasma Cutting, installed in Cebora SpA (Bologna), including both mechanical design and implementation of electronic system to improve plasma cutting quality.
Place of Employment	**Ravenna,Italy**
Dates	**April 2007 – December 2012**
Occupation or position held	***P.C.S.*** *Ravenna*
Main activities and responsibilities	Owner Plasma Cutting System, individual Company in Ravenna in via G. Pastore 4. The core business was the design, development and technical implementation of mechanical components which were assembled by the customer. Manufacturing process of components included high-definition plasma cutting using a CNC machine integrating a high definition plasma cutting torch branded Cebora. I took care of setting the cutting parameters for both plasma torch and CNC machine to achieve the best cutting quality. The company, at the request of customers, also dealt with the design and structural analysis of various mechanical components, some studies have been done on buckets for earth moving components inside of automatic machines for the woodworking and interlocking components for offshore installations.
Place of Employment	**Ravenna,Italy**
Dates	September 2011 – Semptember 2012
Occupation or position held	**Teacher in I.P.S.I.A. Callegari di Ravenna**
Main activities and responsibilities	Technology and Mechanical Design Professor. The program concerned technology, materials and their physical, mechanical and technological properties. Metallic materials have been studied with special attention to the different types of steel and its designation. Most important tool machines such as lathing, milling and drilling have been analyzed, evaluating the working parameters, the power and time required for machining. Mechanical Design lectures concerned concepts of technical drawing like orthogonal projections, sections and the different methods of representation. Particular attention was give to mechanical tolerances. The course ended with the study of a high quality plasma cutting torch.
Place of Employment	**Ravenna,Italy**
Education and Training	

Dates	**November 2009 – Dicember 2010**
Title of qualification awarded	Post Doc, Research grant for training in project entitled*: Formation of Expert in thermal plasma cutting for Metallic Materials*
Principal subjects/occupational skills covered	I developed innovative geometries concerning the design of a new high definition plasma cutting torch. I gave presentations in various congresses of the Italian Association of Metallurgy, I took part to several lectures and conferences on various aspects concerning high-definition plasma cutting, like three-dimensional simulations, consumables life-time and new technologies or materials to improve components life.
Papers and Articles	2008-Understanding Plasma Fluid Dynamics Inside 2011-High-Speed Imaging in PAC- Multiple View and Tomographic Reconstruction of Pilot Arcing Transients 2011-Plasma arc cutting technology- simulation and experiments 2011-Statistical Analysis of High-Speed Schlieren Imaging in PAC
Name and type of organisation providing education and training	*University of Bologna*
Dates	**January 2007 - March 2010**
Title of qualification awarded	Ph. D. in *Mechanics of Materials and Process Technology*
Principal subjects/occupational skills covered	I have studied plasma cutting torches both automatic and manual using finite element simulations to develop and improve Cebora's products. Active participation in a technical partnership between Cebora and University of Bologna to solve specific customers problems. Mechanical and metallographic study of new consumable prototypes .
Name and type of organization providing education and training	*University of Bologna*
Dates	**26th October 2006**
Title of qualification awarded	Degree in Mechanical Engineering with evaluation 110/110 cum laude (5 years)
Principal subjects/occupational skills covered	Thesis title*: Design of Thermal Fluid Dynamics and Electromagnetic Sources for Innovative Plasma Cutting of High Amperage* Related to design a new plasma source and new plasma torch for 400 A cutting,I've performed three-dimensional computational model for the simulation of a transferred arc plasma torches using simultaneous solution of the coupled set of non-linear fluid dynamic, electromagnetic and energy transfer equations. Turbulence phenomena are taken into account by means of a k-ε realizable model in order to better describe the flow field inside the device.
Name and type of organization providing education and training	*University of Bologna*
Dates	**19th July 2001**
Title of qualification awarded	State Diploma of Technical Education
Principal subjects/occupational skills covered	Industrial Technician, Electronics and Telecommunications Specialization
Name and type of organization providing education and training	*Istituto Tecnico Industriale Statale "Nullo Baldini" di Ravenna*

Personal skills and competences

Mother tongue: Italian

Other languages

Self-assessment

	Understanding		Speaking		Writing
	Listening	Reading	Spoken interaction	Spoken production	
English	**C1**	**C1**	**B2**	**B2**	**B2**
French	**C1**	**C1**	**C1**	**C1**	**B2**

Technical skills and competences

Excellent knowledge in plasma cutting sources and plasma cutting torches.
Excellent knowledge in design of pneumatic and hydraulic circuits;
Excellent knowledge on the structural design of mechanical components, excellent knowledge of the design and development of CNC machines,

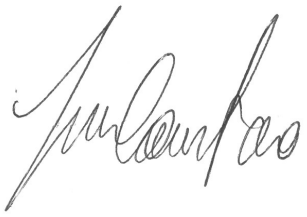
Computer skills and competences
Replace

Excellent knowledge of Autocad, Solid Edge, Solid Works, Fluent, Ansys Workbench, OpenFOAM and all Microsoft Office packet

Driving licence

Driving licence B, number RA5263385X, releasing date 30/06/2000, expiring date 04/04/2028

Signature



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