PERSONAL INFORMATION

Gian Marco Bianchi

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https://www.unibo.it/sitoweb/gianmarco.bianchi

Sex Male | *Date of birth* 08/07/1968 | *Nationality* Italian

Enterprise	University	EPR
☐ Management Level	☒ Full professor	☐ Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
☐ Mid-Management Level	☐ Associate Professor	☐ Level III Researcher and Technologist
☐ Employee / worker level	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

03/05/2024 – Current

Director of Department of Industrial Engineering

Alma Mater Studiorum Università di Bologna - Bologna (Italy)

01/09/2022 – 31/03/2024

Scientific coordinator of PNRR Unibo Research Unit (Spoke 2, MOST)

07/04/2021 – 06/04/2024

Director of the First and Second Cycle Degree in Mechanical Engineering

Alma Mater Studiorum Università di Bologna - Bologna (Italy)

09/11/2020 – Current

Full Professor of Fluid Machinery (Academic discipline: ING-IND/08)

Alma Mater Studiorum Università di Bologna - Bologna (Italy)

01/03/2005 – 08/11/2020

Associate Professor of Fluid Machinery (Academic discipline: ING-IND/08)

Alma Mater Studiorum Università di Bologna - Bologna (Italy)

▪ Supervisor of research assistants, assistant professor and PhD students.

01/07/2000 – 28/02/2005

Assistant Professor of Fluid Machinery (Academic discipline: current ING-IND/08)

Alma Mater Studiorum Università di Bologna - Bologna (Italy)

▪ Involved in fundamental research on CFD methods for ICE application and supervisor of graduating and students

EDUCATION AND TRAINING

1999

Doctoral Degree in 'Fluid Machinery'

Politecnico of Bari (Italy)

1994

Degree in Mechanical Engineering (five year degree)

Università degli Studi di Bologna

RESEARCH

Research and Technology Transfer

A) 2007-current: Co-Founder and Co-Owner of NAIS Srl, an Alma Mater Studiorum University of Bologna appointed Spin-Off company (https://site.unibo.it/idea/it/le-nostre-imprese-innovative)

B) Scientific Leader of research contracts signed by the University of Bologna with world leader companies, among all: Ferrari, Ducati, Lamborghini, Piaggio & C, Pierburg Pump Technologies, Ansys Germany Gmbh, Magneti Marelli, FCA, CNR.

Most of the research projects have been funded by companies.

Topic of research	
	1. Fuel cell powertrain modelling
	2. Development of brand new computing methodologies
	3. Machine Learning application to CFD problems
	4. Chemistry and thermo-physical modelling applied to industrial system/components
	5. Renewable fuel and energy conversion systems simulation and assessment
	6. In-depth CFD methodology and physical models experience
	7. Heat transfer simulation of battery packs, CD-CD heat sinks and electric motors
	8. Heat transfer simulation of open-foam catalysts
	9. Powertrain and vehicle energetic models
	10. Powertrain and vehicle fluid-dynamic models, including thermal management
	11. CFD simulation and optimization of the structured catalyst for methanation reaction, including the porous medium modelling, the transfer of mass, the chemical reactions and their diffusivity
	12. CFD simulation of Turbomachinery including multi-phase application

Skills and experience Very high level in scientific programming (Fortran), in CFD 3D and 0D modelling, in the application of pneumatic and hydraulic codes, including those related to the simulation of both the powertrain and the vehicle

Keywords Sustainable powertrain, Renewable Energy, Thermal and Cooling Systems Simulation, Vehicle and Systems modelling, 3D and 0D modelling, A.I. application

ADDITIONAL INFORMATION

Selected Publications

1 - Mariani, V., Pulga, L., Bianchi, G.M., Falfari, S., Forte, C., Machine learning-based identification strategy of fuel surrogates for the CFD simulation of stratified operations in low temperature combustion modes, Energies 2021, 14(15), 4623; https://doi.org/0.3390/en14154623

2 - Mariani, V. Pulga, L., Bianchi, G.M., Cazzoli, G., 2020, A Bayesian neural network methodology to predict the liquid phase diffusion coefficient, Int. J. of Heat and Mass Transfer, Volume 161, November 2020, https://doi.org.ezproxy.unibo.it/10.1016/j.ijheatmasstransfer.2020.120309

3 - Pulga, L. Bianchi, G. M., Falfari, S., and Forte, C., A machine learning methodology for improving the accuracy of laminar flame simulations with reduced chemical kinetics mechanisms, Combustion and Flame 216 (72–81), 2020, https://doi.org/10.1016/j.combustflame.2020.02.021

4 - Ricci, M., Pulga, L., Bianchi, G.M., Falfari, S., Forte, C. (2019). Numerical Aspects Affecting Heat Transfer in ICE Applications and Definition of a Temperature Wall Function Accounting for the Boundary Layer Compressibility. SAE International Journal of Engines, https://doi.org/10.4271/03-12-05-0034

5 - Falfari S., Micci G., Bianchi G.M., Brusiani F., Montenegro G., Torre A.D., Onorati A. (2016). Design of catalytic devices by means of genetic algorithm: Comparison between open-cell foam and honeycomb type substrates. SAE International Journal of Engines, vol. 9, p. 1686-1695, ISSN: 1946-3936, https://doi.org/10.4271/2016-01-0965

Scientific impact ORCID ID: https://orcid.org/0000-0002-9139-5946
Source: Scopus (Author ID: 7203067911)
Authored Papers (overall): 1127 (Journal and Peer Reviewed International Conf. Papers)
Citations: 1456
h-index: 22 (19 w/o self-citations)

Scientific qualification Currently fulling all the ASN 2021-23 qualification criteria issued by MUR according to art.16 of the Italian law 30 December 2010, n.240.

Funded projects Leader of Research Unit in project PRIN 2010-2011 2010XFT2BB – "Intensification of Catalytic Processes for Clean Energy, Low-Emission Transport and Sustainable Chemistry using Open-Cell Foams as Novel Advanced Structured Materials (IFOAMS)" – PRIN Call issued on 2012 – Project execution time window from 01/2013 to 01/2016.

Teaching More than 2200 hours of teaching topic related to fluid machinery, energy conversion and I.C.E.

PERSONAL SKILLS

Mother tongue(s)	Italian
Other language(s)	English - B2

Bologna, June 21st 2024

Prof. Gian Marco Bianchi