



# Eleonora PALKA BAYARD DE VOLO

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 ResearchGate |  linkedin

## TECHNICAL SKILLS

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**PROGRAMMING LANGUAGES** Python | C++

**CAD SOFTWARE** NX Siemens | Creo | SolidWorks | Fusion360

**CFD SOFTWARE** StarCCM+ Siemens | OpenFoam | SolidWorks Flow | Ansys - Fluent

## EDUCATION

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### PHD IN MECHANICS AND ADVANCED ENGINEERING SCIENCES

2021-2024

ALMA MATER STUDIORUM - UNIVERSITY OF BOLOGNA

- Thesis title: "CFD analysis of fluid-dynamics and heat transfer for HVAC systems and improvement of indoor thermal comfort"

### MASTER'S DEGREE IN ENERGY ENGINEERING (107/110)

2017-2020

ALMA MATER STUDIORUM - UNIVERSITY OF BOLOGNA

- Thesis title: "Numerical analysis of tunnel ventilation by means of OpenFOAM"
- Main subjects: turbomachinery, energy systems, fluid dynamics, CFD

### BACHELOR'S DEGREE IN ENERGY ENGINEERING (100/110)

2014-2017

ALMA MATER STUDIORUM - UNIVERSITY OF BOLOGNA

- Thesis title: "Application of asynchronous machines in electrical systems for energy"

## EXPERIENCE

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### SENIOR ENERGY & MECHANICAL ENGINEER

01/2026 Bologna - Italy

RADOFF SPA

- R&D on air ventilation systems; CFD simulations; FEM simulations; 3D printing

### CFD ENGINEER - TECHNICAL SALES SUPPORT SPECIALIST

05/2025 - 12/2025 Castel San Pietro Terme - Italy

OFFICINE VOLTA

- CFD analysis for air diffusion systems.

### CFD CONSULTANT

01/2024-10/2024 Bologna-Italy

LIBER SRL

- Thermo-Fluid Dynamics Study of a Temperature Control System in Modules with Cells for Battery Production Processes.

### VISITING PHD STUDENT

10/2023-04/2024 Nottingham-UK

UNIVERSITY OF NOTTINGHAM

- Contributed to a Royal Society project aimed at developing innovative cooling solutions for hot and humid climates, focusing on sustainable technologies and efficient energy use to enhance environmental adaptability

### TEACHING TUTOR

09/2023-09/2026 Bologna-Italy

UNIVERSITY OF BOLOGNA-DEPARTMENT OF INDUSTRIAL ENGINEERING

- Heat transfer and fluid - dynamics of convective flows. Degree program (LM) in Energy Engineering

### RESEARCH FELLOW

01/2021-11/2021 Bologna-Italy

CIRI MAM - ALMA MATER STUDIORUM BOLOGNA

- Fire tests according to ECE R100 Omologation;
- CFD Modelling of 2170 battery cells cooling system by means of StarCCM+ and OpenFoam;
- CFD Modelling of HVAC systems by means of StarCCM+

## MASTER THESIS INTERN

03/2020-08/2020 Innsbruck-Austria

ILF CONSULTING ENGINEERING

- Momentum Source, Heat Source and Soot particles modelling in OpenFOAM;
- Critical analysis and validation of OpenFOAM results through comparison with analytical approaches, measurement data, and STAR-CCM+ simulation results

## EXTERNAL COLLABORATOR FOR INDUSTRIAL ENERGY AUDIT

08/2019-02/2020 Bologna-Italy

SEASIDE S.R.L – ITALGAS SOCIETY

- Energy audit according to UNI EN ISO 11428 and UNI CEI EN 16247;
- Identification of energy and economic solutions to achieve a low emission future

## JOURNAL PAPERS

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- Vincenzo Ballerini, Eleonora Palka Bayard de Volo, Beatrice Pulvirenti, Eugenia Rossi di Schio, Paolo Valdiserri and Paolo Guidorzi. Influence of different heating systems on thermal comfort perception: a dynamic and CFD analysis. Journal of Physics: Conference Series, Volume 2685, 40th UIT International Heat Transfer Conference (UIT 2023) June 26 - 28 2023, Assisi, Italy.
- Palka Bayard de Volo, E.; Pulvirenti, B.; Jahanbin, A.; Guidorzi, P.; Semprini, G. Numerical Analysis on the Optimisation of Thermal Comfort Levels in an Office Located inside a Historical Building. Appl. Sci. 2023, 13, 2954. <https://doi.org/10.3390/app13052954>
- Falcone, M.; Palka Bayard De Volo, E.; Hellany, A.; Rossi, C.; Pulvirenti, B. Lithium-Ion Battery Thermal Management Systems: A Survey and New CFD Results. Batteries 2021, 7, 86. <https://doi.org/10.3390/batteries7040086>

## CONFERENCE PAPERS

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- Palka Bayard de Volo, E.; Casolari, A.; Pulvirenti, B.; Morini, G. Thermal comfort in a canteen with ceiling fan coils air conditioning. 39th International Conference on Heat and Mass Transfer (UIT) June 20-22, 2022, Gaeta, Italy
- Palka Bayard de Volo, E.; Pulvirenti, B.; Jahanbin, A.; Guidorzi, P.; Semprini, G. Thermal comfort in an office room located inside a typical historical building. 19th International Conference on Sustainable Energy Technologies – SET 2022 16th – 18th of August 2022, Istanbul, Turkey
- Palka Bayard de Volo, E.; Pulvirenti, B.; Silvestrini, M.; Salvi, F.; Casolari, A.; Assessing Thermal Comfort and Indoor Air Quality in an office room by means of CFD simulations. 40th International Conference on Heat and Mass Transfer (UIT) June 26-28, 2023, Assisi, Italy
- Eleonora Palka Bayard de Volo, Giovanni Semprini, Paolo Guidorzi, Beatrice Pulvirenti. Air Conditioning System Optimization for Historical Building Thermal Comfort: A CFD Analysis. 20th International Conference on Sustainable Energy Technologies – SET 2023 16th – 18th of August 2023, Nottingham, UK
- Eleonora Palka Bayard de Volo, Tianhong Zhang, Hasila Jarimi, Beatrice Pulvirenti, Saffa Riffat. Thermal Comfort: CFD insights into Radiant Cooling Panel Systems. 21th International Conference on Sustainable Energy Technologies – SET 2024 12th – 14th of August 2024, Shanghai, China

## SUMMER SCHOOLS

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- 19th UIT Summer School Heat and mass transfer in turbulent flows: Modelling and measurement techniques; Certosa di Pontignano, Siena; 29 August – 2 September, 2022
- XII Scuola della Fisica Tecnica Italiana: Energy transition; Certosa di Pontignano, Siena; 3 – 8 September, 2023

## EXTRA

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- English IELTS, University of Cambridge, ESOL, Level C1 (11/2023)
- Passed the government exam and licensed as a professional engineer (11/2020)
- Skilled in presenting results and ideas, honed through extensive experience during doctoral research.