



FILIPPO SUZZI

Email: filippo.suzzi@cnr.issmc.it

Professional profile

Graduate in energy engineering, with a good theoretical background in fluid mechanics and solid oxide fuel cells (SOFC), gained thanks to his studies and internships. Basic approach on fluid dynamic modelling by ANSYS Fluent software and data elaboration with Python. Motivated and flexible, and ready to face new challenges in a reality where I can grow and put into practice what I have learned until today.

Work and professional experiences

Research fellow, 02/05/2024 – in progress

Angela Gondolini - Faenza, RA

Research fellow at ISSMC-CNR institution of Faenza for the regional project H2-Synergy, to make deposition of catalyst for trireforming by dip-coating on porous metallic substrates and for fluid dynamics simulation of the gasification reactor developed in the project.

Intern, 10/2023 - 02/2024

Angela Gondolini - Faenza, RA

Internship at the ISSMC-CNR institution in Faenza to carry out the experimental activity of the thesis work entitled "development of components for LT-SOFC cells". Study on the manufacturing of SOFC components for low-temperature SOFC (LT-SOFC) by screen printing and sinterization with innovative materials.

Intern, 04/2021 - 05/2021

Amedeo Massocco - Borello, FC

Internship carried out at the company BOTTEGA 7 S.R.L. with support from the tutor in carrying out the activities foreseen by the training project, in solid edge drawing for the design of components for public lighting.

Instruction and formation

Master's degree in energy engineering: Energy Engineering, 03/2024

University of Bologna - Bologna

Specialist degree in energy engineering, University of Bologna, grade 110 out of 110 with honors. Degree thesis entitled "Development of components for LT-SOFC cells" carried out at the ISSMC CNR institute in Faenza. Good theoretical knowledge on fluid mechanics from the course "Fluid Dynamics of Convective flows-M" and two-phase fluids from the course "Two-Phase and System Thermohydraulics-M". Good theoretical knowledge on steam reforming and electrolyzers in the course "Sustainable Technologies for Energy Resources-M" and on fuel cells in the course "Innovative Technologies for the Transport and Storage of Electrical Energy-M".

Three-year degree in mechanical engineering: mechanical engineering, 07/2021

University of Bologna – Forlì

Three-year degree courses in mechanical engineering, University of Bologna, score 104 out of 110. Compilatory degree thesis entitled "Analysis of plants for the production of hydrogen by electrolysis." Basic knowledge of fluid mechanics from the course "Fluid Mechanics", basic CAD knowledge with SolidWorks from course "Computer Aided Design" and achieved basic MATLAB programming.

Diploma di Perito Industriale elettronico: Elettronica, 06/2016

I.T.I.S – Cesena

Diploma in Industrial Electronics Expert with a score of 96/100 at the "Blaise Pascal" technical-technological institute. Knowledge of elementary electronic circuits, analog/digital conversion, telecommunication, and basic knowledge of C++ programming.

Skills and competences

SOFT SKILLS

- Predisposition for learning
- Motivation for professional growth
- Ability to concentrate
- Flexibility
- Perseverance
- PC use
- Punctuality
- Listening skills

LANGUAGE AND COMPUTER SKILLS

- Basic Knowledge of Computational Fluid Dynamics with ANSYS Fluent software
- Basic knowledge of the Python language
- Good knowledge of office package software (Word, Excel, PowerPoint)
- Basic knowledge of Matlab
- Basic knowledge of Autocad (SolidWorks, Solid Edge).
- Knowledge of the C++ programming language
- Knowledge of the English language: B2 level

TECHNICAL SCIENTIFIC SKILLS

- Synthesis and characterization of ceramic nano-powders with ionic conductivity for SOFC applications via precipitation reaction
- Both uniaxial and isostatic pressing process for forming ceramic powders.
- Development of heat treatments (sintering) to produce dense and porous ceramic materials.
- Production technique of micrometric ceramic films for silk-screen printing for SOFC fuel cells
- Study and optimization of ceramic suspensions for silk-screen deposition.
- Study and optimization of colloidal suspension for dip-coating
- Deposition by dip-coating of porous metallic substrate

Material characterization techniques:

- Microstructural: SEM scanning electron microscope.
- Thermal properties: differential scanning calorimetry (DSC) and thermogravimetry (TG).
- Rheology of suspensions and ceramic inks: flow curves, thixotropy.
- XRD analysis
- Measure of contact angle and surface tension
- Granulometric analysis by LDS and Sedigraph