



# ISABELLI PASQUALE

## CURRICULUM VITAE

### PERSONAL INFORMATION

13/04/1994

Nationality: Italian

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### STUDIES

- 11/2021 - ongoing  
Alma Mater Studiorum - University of Bologna  
PhD student in Health and Technology - PhD project  
“Design, development and functional characterization of Cold Plasma Systems to reduce airborne transmission of Hospital Acquired Infections & COVID-19”
- 09/2017–03/2020  
Master’s Degree in Energy Engineering  
Alma Mater Studiorum - University of Bologna (Italy)  
Grade: 110 / 110 cum laude  
Thesis: Development and characterization of a Dielectric Barrier Discharge plasma source for Plasma agriculture.  
Supervisor: Prof. Vittorio Colombo  
Co-supervisor: Dr. A. Bisag, Dr. C. Bucci, Dr. F. Capelli, Dr. M. Gherardi, Dr. R. Laurita, Dr. N. Oveisi
- 09/2013–03/2017  
Bachelor’s Degree in Mechanical Engineering  
University of Calabria, Rende (Italy)  
Grade: 104/110  
Thesis: "Biocompatible materials for hip, shoulder and knee arthroplasty: technological aspects. Number of prosthetic surgeries in Europa".  
Supervisor: Prof. Domenico Umbrello  
Co-supervisors: Dr.Sergio Rinaldi

### WORK EXPERIENCES

- 12/2020-10/2021 University of Bologna, Research fellow, “Innovative plasma-assisted solutions to contrast airborne transmission of bacteria and viruses”
- 09/2020-10/2020 University of Bologna, stage to support the Research project “Project VIKI (Virus Killer) — Plasma inactivation device to contrast bioaerosol indoor transport”. Design, realization, and characterization of cold atmospheric plasma sources.
- 06/2020-7/2020 AlmaPlasma s.r.l. - participation in research and innovation projects for contrast solutions to spread of COVID-19: “Application of cold plasma treatments for surface decontamination of food and MOCA (materials and objects in contact with food) from COVID-19
- 06/2020-03/2021 Participation in research and innovation projects for contrast solutions to spread of COVID-19, Emilia Romagna, Region: “Project VIKI (Virus Killer) — Plasma inactivation device to contrast bioaerosol indoor transport”.
- 04/2022 - 07/2020 AlmaPlasma s.r.l. - Internship - Design, realization, and characterization of cold atmospheric plasma sources. “Application of cold plasma treatments for surface decontamination of food and MOCA (materials and objects in contact with food) from COVID-19”
- 09/2019-02/2020 University of Bologna, internship in the laboratories of the Research group for Industrial Applications of Plasmas about technical design of plasma source prototypes, electrical characterization of plasma sources, chemical characterization of liquid phase. Inactivation of bioaerosols by plasma-assisted treatments.
- 03/2019-05/2019 AlmaPlasma s.r.l., internship – Design of Cold atmospheric plasma sources.

### INFORMATIC SKILLS

- Software cad: Solidworks, Solidedge, Autocad.
- 3D printing, Z-Suite.
- Microsoft Office (word, excel, access, power point)
- Matlab
- Cloud systems

### TECHNICAL SKILLS

- Chemical analysis of gas phase
- Chemical analysis of liquids
- Optical Absorption Spectroscopy
- Oscilloscope
- Voltage and Current probes
- Conductivity Meter
- pH-meter
- Chematest 20 Swan analytical instruments

### BIOLOGICAL SKILLS

- Microbiological procedures and protocols for microbiological tests with bacteria and SARS-CoV-2 at the “Langmuir BioPlasma Bacteria Lab” (class II) (Department of Industrial Engineering) and at the Unit of Microbiology of The Great Romagna Hub Laboratory, Italy.
- Bioaerosols sampling using Impactors and BioSamplers
- Bacterial viability analysis by bacterial counting methods
- Morphological analysis of bacteria by scanning electron microscopy

## FOREIGN LANGUAGE

- Cambridge Preliminary English Test (B1).
- B2 English exam at University of Bologna.

## PUBLICATIONS

- **Isabelli P.\***, De Baerdemaeker K., Devlieghere F., Gherardi M., Laurita R., Rotating Dielectric Barrier Discharge (RDBD) plasma source for effective bacterial decontamination of bioaerosols, IEEE Transaction on Radiation and Plasma Medical Sciences, 2023, under review.
- **Isabelli P.\***, Bisag A.\*, Laghi G.\*, Laurita R., Dirani G., Taddei F., Bucci C., Capelli F., Gherardi M., Paglianti A., Sambri V., Colombo V., Cold atmospheric plasma decontamination of SARS-CoV-2 bioaerosols, Plasma Processes and Polymers, 2022, 19, Article number: e2100133, pp. 1 – 11  
\*contributed equally to this study.  
Citation (scopus): 7
- **Isabelli P.\***, A.Bisag\*, Laurita R., Bucci C., Capelli F., Dirani G., Gherardi M., Laghi G., Paglianti A., Sambri V., Colombo V., Cold atmospheric plasma inactivation of aerosolized microdroplets containing bacteria and purified SARS-CoV-2 RNA to contrast airborne indoor transmission, 2020, Plasma Processes and Polymers, e2000154, <https://doi.org/10.1002/ppap.202000154>  
\* contributed equally to this study.  
Citations (scopus): 57

## DISSEMINATIONS

- **Isabelli P. (presenter)**, De Baerdemaeker K., Devlieghere F., Gherardi M., Laurita R., “Cold plasma systems for bioaerosol decontamination: comparison between a Rotating Dielectric Barrier Discharge plasma source and a commercial device”, XXXV International Conference on Phenomena in Ionized Gases, Egmond aan Zee, Netherlands, July 9-14,2023.
- De Baerdemaeker K., **Isabelli P.**, Devlieghere F., Laurita R. “Using Cold Atmospheric Plasma (CAP) for bacterial decontamination of bioaerosol, abstract for International Association for Food Protection European Symposium, Aberdeen, Scotland, May 3-5, 2023
- Montalbetti R., Bisag A., Capelli F., **Isabelli P.**, Laghi G., Gherardi M., Laurita R., “Design, development, implementation, and functional characterization of atmospheric pressure cold plasma sources for thin film deposition” poster for 1st Summer School in the frame of “Novel Green Polymeric materials for medical packaging and disposables to improve hospital sustainability” project, Szczecin, Poland, September 19-21, 2022
- **Isabelli P.** (presenter), Bisag A., Laghi G., Laurita R., Dirani G., Taddei F., Bucci C., Capelli F., Gherardi M., Paglianti A., Sambri V., Colombo V., “Cold plasma systems to reduce airborne transmission of Hospital Acquired Infections & COVID-19” abstract for 9th International Conference on Plasma Medicine, Utrecht, 27/06/2022 – 1/07/2022
- A. Bisag (presenter), N. Contaldo, F. Capelli, M. Gherardi, **P. Isabelli**, R. Montalbetti, I. Pagan, V. Colombo, F. Orsini, A. Bertaccini, R. Laurita – “On the use of plasma activated water (PAW) for agricultural purposes” – abstract for 9th Central European Symposium on Plasma Chemistry CESPC-9, 5-9/09/2022
- A. Bisag, R. Laurita, F. Capelli, E. Mezzofanti, C. Gorinati, **P. Isabelli**, G. Laghi, C. Bucci, V. Colombo, M. Gherardi – “Cold atmospheric pressure plasma-assisted inactivation of *Staphylococcus aureus* and *Pseudomonas aeruginosa* biofilms” abstract for 1st Training school “Fundamentals aspects on Plasma Medicine”, Caparica, Portugal 14-16/02/2022
- **P. Isabelli** (presenter), A.Bisag, C. Bucci, G. Laghi, F. Capelli, G. Dirani, R. Laurita, M.Gherardi, V. Sambri, V.Colombo, “Cold atmospheric pressure plasma assisted inactivation of bioaerosols containing bacteria, purified SARS-CoV-2 RNA and SARS-CoV-2” abstract for 19th International Conference on Plasma Physics and Applications, Magurele-Bucharest, Romania, 31/08 – 3/09/2021
- **P. Isabelli** (presenter), A.Bisag, C. Bucci, F. Capelli, G. Laghi, V. Colombo, M.Gherardi, R. Laurita, “Non-equilibrium atmospheric pressure plasma assisted inactivation of bioaerosols” abstract per 8th International Conference on Plasma Medicine, Songdo Convensia, Incheon, Korea, 3-6/08/2021
- Laurita R., Bisag A., **Isabelli P.**, Bucci C., Capelli F., Dirani G., Gherardi M., Laghi G., Paglianti A., Tappi S., Sambri V., Rocculi P., Suffredini E., Colombo V. “Plasma systems and processes for the containment of SARS-CoV-2 diffusion through bioaerosol and fomite routes” abstract for 8th International Conference on Plasma Medicine, Songdo Convensia, Incheon, Korea, 3-6 /08/2021
- Laurita R., Bisag A., **Isabelli P.**, Bucci C., Capelli F., Dirani G., Gherardi M., Laghi G., Paglianti A., Sambri V., Tappi S., Sambri V., Rocculi P., Suffredini E., and Colombo V. “Development of plasma systems for the containment fo SARS-CoV-2 diffusion through bioaerosol and fomite routes”. Invited talk at 12th EU-Japan Joint Symposium on Plasma Processing (JSPP-12) and 15th Asia-Pacific Conference on Plasma Science and Technology (APCPST-15), 29 March – 2 April 2021.

## INTERNATIONAL AND NATIONAL PROJECTS

- PRIN 2022 (RESEARCH PROJECTS OF MAJOR NATIONAL INTEREST) - Project title: PAA-FOOD Plasma activated aerosol for the preservation and decontamination of fresh and minimally processed plant foods (2023 - ongoing)
- COST ACTION CA20114 - Therapeutical applications of cold plasmas (2021 – ongoing)
- Member of the AlmaPlasma team proposing the project EIC – 2021 - Path Finder – Pulse Proposal on the realization of cold plasma sources
- COST ACTION CA19110 - Plasma applications for smart and sustainable agriculture, PIAgri (2020 – ongoing)

## TRAINING SCHOOLS

- Summer school on Plasma medicine of the 9th International Conference on Plasma Medicine – Training school - Utrecht – 25,26/06/2022
- COST Action CA CA20114 1st Training School – “Fundamental aspects on Plasma Medicine – Training school - Caparica, Portugal – 14,15,16/02/2022
- Training School CA19110 “Plasma applications for smart and sustainable agriculture” PIAgri, 17-19/03/2021

## EDUCATIONAL ACTIVITIES

- Academic tutor of “Laboratory of general technologies of materials and industrial applications of plasmas T” course at University of Bologna
- Academic tutor of “Laboratory of general technologies of materials and industrial applications of plasmas M” course at University of Bologna
- Co-Supervisor of 3 master degree thesis and 17 bachelor degree in Energy Engineering at University of Bologna
- Co-Supervisor of 3 curricular internship in the Research Group for Industrial Application of Plasma laboratories
- Member of examination committees for the following courses at University of Bologna: “Applicazioni industriali dei Plasmi M”, “Tecnologie plasma per applicazioni energetiche ambientali e biomedicali T”, “Laboratorio di tecnologie dei materiali e applicazioni industriali dei plasmi T”; “Laboratorio di Tecnologie dei materiali e applicazioni industriali M”, “Metodi numerici per l’energetica M”
- A seminar on “How to do a systematic review” during “Laboratory of general technologies of materials and industrial applications of plasmas T” course, December 2022.
- A seminar on “Gas plasma technology & COVID-19” during “Laboratorio di tecnologie dei materiali e applicazioni industriali dei plasmi T”, November 2021.