




ISABELLI PASQUALE

CURRICULUM VITAE


PERSONAL INFORMATION

 13/04/1994

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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.

PERIOD ABROAD

- 03/2024-05/2024 - Department of Applied Physics (Laboratory for Elementary Processes in Gas Discharges), Eindhoven University of Technology (TU/e), Netherlands. Research activity focuses on the diagnostics of plasma systems for air decontamination.

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. et al.**, Cold atmospheric pressure plasma - A novel approach for virus treatment through reactive oxygen and nitrogen species, in Bekeschus, S., & von Woedtke, T. (Eds.). (2024), Redox Biology in Plasma Medicine (1st ed.). CRC Press. Ch. 7, <https://doi.org/10.1201/9781003328056>
- **Isabelli P. et al.**, Rotating Dielectric Barrier Discharge (RDBD) plasma source for effective bacterial decontamination of bioaerosols, Plasma Medicine, 2024, doi.org/10.1615/PlasmaMed.2024053628.
- **Isabelli P. et al.**, Cold atmospheric plasma decontamination of SARS-CoV-2 bioaerosols, Plasma Processes and Polymers, 2022, 19, Article number: e2100133, pp. 1 – 1, doi.org/10.1002/ppap.202100133.
Citations (scopus): 13
- **Isabelli P. et al.**, 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, doi.org/10.1002/ppap.202000154
Citations (scopus): 69

DISSEMINATIONS

- **Isabelli P. (oral presenter)**, et al., “Cold plasma systems for bioaerosol decontamination: scale-up of a portable room scale device”, 10th International Conference on Plasma Medicine, Portorož-Portorose, Slovenia, September 8-13, 2024.
- **Isabelli P. (oral presenter)**, et al., “Diagnostic of cold plasma systems for bioaerosol decontamination”, 3rd Annual Meeting CA20114 PlasTHER, Budapest, Hungary, June 11-13, 2024.
- **Isabelli P. (poster presenter)**, et al., “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.**, et al., “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.**, et al., “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. (oral presenter)**, et al., “Cold plasma systems to reduce airborne transmission of Hospital Acquired Infections & COVID-19” 9th International Conference on Plasma Medicine, Utrecht, Netherlands, 27/06/2022 – 1/07/2022
- A. Bisag, N. Contaldo, F. Capelli, M. Gherardi, **P. Isabelli**, et al., – “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**, et al., – “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 (oral presenter)**, et al., “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 (oral presenter)**, et al., “Non-equilibrium atmospheric pressure plasma assisted inactivation of bioaerosols” 8th International Conference on Plasma Medicine, Songdo Convensia, Incheon, Korea, 3-6/08/2021
- Laurita R., Bisag A., **Isabelli P.**, et al., “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.**, et al., “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.

GRANTS

- 03-05/2024 - Short-Term Scientific Mission Grant founded by Cost Action 20114 PlasTHER. project title: “Diagnostic of cold atmospheric plasma systems for air decontamination”.
- 10/2023 - Virtual mobility grant founded by Cost Action 20114 PlasTHER. project title: “Methodologies for characterizing and validating the antimicrobial efficacy of CAP and PTL treatments in scientific literature”.
- 10/2022 Virtual mobility grant founded by Cost Action 20114 PlasTHER, project title: “Data and experimental set-up in the cold atmospheric plasma & virus field”.

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 5 courses at University of Bologna.
- 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.