



Camilla Fusacchia

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WORK EXPERIENCE

ISSMC-CNR and Università degli Studi di Parma

City: Faenza (RA) | Country: Italy

[01/11/2023 – Current] **PhD in Materials Science**

Study of calcium phosphate nanoparticles based systems for the development of drug delivery formulations with cardio-specific action.

Istituto di Scienza Tecnologia e Sostenibilità per lo Sviluppo dei Materiali Ceramici, ISSMC-CNR

City: Faenza (RA) | Country: Italy

[15/12/2022 – 31/10/2023] **Research fellow**

EDUCATION AND TRAINING

[15/09/2025 – Current] **Internship Laboratory**

Radboud University Medical Center

City: Nijmegen | Country: Netherlands |

Study of calcium phosphate nanoparticles-based systems for the development of non-viral gene delivery systems.

[29/09/2025 – 02/10/2025] **Internship Laboratory**

University of Duisbur-Essen, Faculty of Chemistry, Inorganic Chemistry Department

City: Essen | Country: Germany |

[05/10/2020 – 24/10/2022] **Master's Degree in Materials Science**

Università degli studi di Torino, Scuola di Scienze della Natura, Dipartimento di Chimica

City: Torino (TO) | Country: Italy | | Final grade: 110 L/110 | Thesis: Experimental thesis: Synthesis and characterization of Cu-functionalized nanohydroxyapatites

[07/03/2022 – 24/10/2022] **Internship Laboratory**

Università degli studi di Torino, Scuola di Scienze della Natura, Dipartimento di Chimica

City: Torino (TO) | Country: Italy |

Main activity: Preparation of nanohydroxyapatites with a co-precipitation method. Cu-functionalization of nanohydroxyapatites with ion-exchange method. Characterization of nanoparticles by X-ray Powder Diffraction (XRPD), Transmission Electron Microscopy (TEM), Fourier Transform Infrared spectroscopy (FTIR), UV-vis-NIR spectroscopy and low temperature N₂ adsorption (determination of SSA by BET model).

[06/09/2021 – 11/02/2022] **ERASMUS + Project**

École nationale supérieure d'ingénieurs de Caen (ENSICAEN)

City: Caen | Country: France |

Acquisition of 20 ECTS with a grade point average of 29/30. Deepening on Functional and Structural Ceramics Materials and on Transmission Electron Microscopy technique.

[03/10/2017 – 17/07/2020]

Bachelor's Degree in Science and Technology of Materials

Università degli studi di Torino, Scuola di Scienze della Natura, Dipartimento di Chimica

City: Torino (TO) | **Country:** Italy | | **Final grade:** 110 L /110 | **Thesis:** Thesis: Il titanio come biomateriale in impianti dentali (Titanium as biomaterial in dental implants)

[09/2012 – 07/2017]

High School Diploma

Istituto Tecnico Industriale Statale "Mario Delpozzo"

City: Cuneo (CN) | **Country:** Italy | | **Final grade:** 88/100

PARTECIPATION IN PROJECTS

Industrial PhD Project at ISSMC-CNR, University of Parma in collaboration with NanoPhoria S.r.l.

Study of calcium phosphate nanoparticles based systems for the development of drug delivery formulations with cardio-specific action.

[20/05/2024 – 24/05/2024]

INBREATH, Joint Research Center, Ispra (VA), Italy

Project aim: Study the association between calcium phosphate nanoparticles (CaP NPs) and a therapeutic peptide, MP, loaded within CaP NPs. Elucidate the encapsulation efficiency and the strength of association of MP to several types of CaP NPs. Use advanced separation and quantification techniques to assess the association state of MP and CaP NPs.

PRIN 2020 - 202085RFNY "AppliCare -Antimicrobial peptides loaded inhalable calcium phosphates nanoparticles for the counteraction of antibiotic resistance: towards a new therapy for respiratory infections"

Project aim: development of innovative inhalable calcium phosphate nanoparticles for treatment of antibiotic-resistant infections. Synthesis and characterization of calcium phosphate nanoparticles with tailored physicochemical properties functionalized with suited peptides designed to have strong antibacterial activity. In vitro and in vivo testing of the best candidates towards the treatment of cystic fibrosis.

POST-GRADUATED COURSES AND SCHOOLS

[07/07/2025 – 11/07/2025]

BIOMAT international summer school

Entering a New Era in Regenerative Medicine: Challenges and Strategies of Tissue Engineering

[29/01/2024 – 02/02/2024]

STRIKE training course: Technology Transfer, Entrepreneurship and European Funding Schemes to Support Innovation, Faenza (RA), Italy

Organizer: STEM innovation srl and ISSMC-CNR of Faenza, Project 101072462-STRIKE-HORIZON-MSCA-2021-DN-01

The 5-days intensive course consisted of interactive training sessions and practical exercises concerning:

- Biomaterials.
- Targeted drug delivery systems.

- Overview of European Funding schemes to support Innovation, Technology Transfer and Entrepreneurship (Horizon europe, EIT, EIC).
- How to built a competitive application for low-medium TRL financing schemes: EIC pathfinder and RIAs under Horizon Europe.
- How to built a competitive application for medium-high TRL financing schemes: EIC acceleraor and EIT Health.
- Innovation, Technology Transfer, IPR management and entrepreneurship for ESRs.
- How to manage a high-tech medical startup company in the early-stage phases.

[19/06/2023 – 23/06/2023] **National School of Physical Chemistry, Verbania (VB), Italy**

Frontiers in Materials Physical Chemistry: Nanostructures and Nanomaterials

Organizer: University of Piemonte Orientale (NanoMAT group of DISIT department), University of Genova (nM²-Lab group of DCCI department) and Institute of Structure and Matter (ISM-CNR)

[03/2023 – 05/2023] **Official GMSL S.r.l. inter-company courses: Minitab software**

Introduction to the main mathematical, statistical or qualitative research techniques. Application using appropriate Minitab software, focusing on Design of Experiment approach

Attended courses:

-Fast Learning of Essential I: focused on descriptive statistics and then on inferential statistics by analyzing several tests aimed to validate data and assumptions.

-Fast Learning of Essential II: Introduction to Analysis of Variance (ANOVA) and to regression methods.

-Factorial Designs: development of the necessary skills to achieve efficiently and effective experimental objectives, to reduce variability within a process, accelerate research and development projects, improving products and processes, and identifying critical factors that significantly affect the response variables.

-Formulations and Mixture designs: principles of experimental design used in mixing processes typical of chemical/pharmaceutical and food & beverage industries

[15/05/2025] **Guided visit at Biomaterial laboratory at ISSMC-CNR, Faenza (RA), Italy**

Open day at ISSMC-CNR

[27/09/2024] **European Researchers Night at ISSMC-CNR, Faenza (RA), Italy**

Open day at ISSMC-CNR.

[15/05/2024 – 29/05/2024] **Dissemination lesson at Istituto Comprensivo Statale "A. Baccarini", Russi (RA)**

Dissemination lessons to students with practical demonstrations on nanomaterials inspired to nature for biomedical applications.

[13/04/2023] **Open Day at ISSMC-CNR, Faenza (RA), Italy**

Open day for secondary school students.

[30/03/2023 – 31/03/2023] **Guided visit at Biomaterial laboratory at ISSMC-CNR, Faenza (RA), Italy**

PUBLICATIONS

Copper-functionalized hydroxyapatite nanoparticles to counteract fungal infections. Surfaces and Interfaces. (2025)

Escolano Casado, G., **Fusacchia, C.**, Degli Esposti, L., Cacaci, M., Squitieri, D., Bugli, F., Iafisco, M., Mino, L.

Bioinspired oriented calcium phosphate nanocrystal arrays with bactericidal and osteogenic properties. Acta Biomaterialia. (2024)

Authors: Degli Esposti, L., Squitieri, D., **Fusacchia, C.**, Bassi, G., Torelli, R., Altamura, D., Manicone, E., Panseri S., Adamiano A., Giannini C., Montesi M., Bugli F. and Iafisco, M.

PRESENTATIONS AT CONFERENCES AND SCHOOLS

[09/09/2025] **Oral presentation at the ESB congress, Turin (TO), Italy**

Calcium phosphate nanoparticles as a therapeutic system for the cardio delivery of small interfering RNAs. Camilla Fusacchia, L. Degli Esposti, D. Catalucci, T. M. Formica, L. Grisorio, R. Bongianino, S. G. Priori & M. Iafisco

[09/07/2025] **Flash talk presentation at the BIOMAT summer school, Cergy-Paris, France**

Calcium phosphate nanoparticles as a therapeutic system for the cardio delivery of small interfering RNA. Fusacchia Camilla, DEGLI ESPOSTI Lorenzo, CATALUCCI Daniele, FORMICA Maria Teresa, GRISORIO Luca, BONGIANINO Rossana, PRIORI Silvia Giovanna, IAFISCO Michele

[09/12/2024 – 10/12/2024]

Poster Presentation at the 2nd Progress Meeting Spoke 8" (ProMeet-Spoke), Napoli (NA), Italy

Development of calcium phosphates-based nanoplatforms for nucleic acid delivery. Camilla Fusacchia, Lorenzo Degli Esposti, Hina Inam, Simone Sprio, Michele Iafisco, Anna Tampieri

[18/12/2023]

Poster presentation at the XXIII edition of Chemistry Day, Emilia Romagna, Parma (PR), Italy,

Bioinspired bactericidal oriented hydroxyapatite nanocrystal arrays. Camilla Fusacchia, Lorenzo Degli Esposti, Davide Altamura, Riccardo Torelli, Damiano Squitieri, Francesca Bugli, Alessio Adamiano, Maurizio Sanguinetti, Cinzia Giannini, Michele Iafisco.

[18/10/2023 – 20/10/2023]

Poster Presentation at the 2023 edition of CNR-DSCTM conference, Sestri Levante (GE), Italy

Extraction Of Calcium Phosphate And Collagen From Fish Industry By-Products: A Design Of Experiment Approach. C. Fusacchia, S. Gandolfi, L. Degli Esposti, S. Panseri, A. Adamiano, C. Piccirillo, S. Manfredini, P. Ziosi, A. Vitali, T. Sibillano, C. Giannini, M. Iafisco

[19/06/2023 – 23/06/2023]

Poster presentation at the National School of Physical Chemistry, Verbania (VB), Italy

Growth of oriented apatite nanocrystal arrays with bactericidal properties. Camilla Fusacchia, Lorenzo Degli Esposti, Davide Altamura, Riccardo Torelli, Francesca Bugli, Alessio Adamiano, Maurizio Sanguinetti, Cinzia Giannini, Michele Iafisco

PROFESSIONAL SKILLS

Analytical techniques/instruments

Fourier-Transformation Infrared Spectroscopy (FTIR), Dynamic Light Scattering (DLS, Z-potential), High Performance Liquid Chromatography (HPLC), UV-VIS Spectroscopy, Scanning Electron Microscopy (SEM) and Energy Dispersive X-ray Spectroscopy (EDX).

SKILLS

Microsoft Office (Word , Excel and Power Point) | OriginLab data analysis and graphing software | OPUS spectroscopy software | Minitab

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s): English (Advanced, B2) , French (A1-A2)