



Dr. Lorenzo Degli Esposti

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ResearcherID: AFE-1890-2022



CV:

Education: 2019, PhD in Materials Science and Technology at the Institute of Science and Technology for Ceramics (ISTEC CNR) and the University of Parma.

Professional experiences:

09/2023 – current:

Fixed-Term Researcher (III Level) at the Institute of Science, Technology and Sustainability for Ceramics (ISSMC CNR) within the NextGenerationEU – Italian PNRR research project CN00000041

11/2022 – 08/2023: Postdoctoral Research fellow at the Institute of Science, Technology and Sustainability for Ceramics (ISSMC CNR).

11/2019 – 11/2022: Research Fellow at the Institute of Science and Technology for Ceramics (ISTEC CNR) within the research project "BIOBOS"

Research field:

Synthesis and characterisation of calcium phosphate nanomaterials for application in medical, environmental, agricultural and cosmetic field.

Publications: 44 peer-reviewed scientific articles published on international journals, 1 patent

Congress contributions: several oral and poster presentations at national and international meetings (2 invited)

Awards:

2023: Translational Award for the best contribution at the "33th Annual Conference of the European Society for Biomaterials – ESB 2023".

2022: Best Oral Presentation Award for young researchers at the "BioMaH - Biomaterials and Novel Technologies for Healthcare, International Conference".

Mercoledì 29 Novembre 2023

Aula 3 - Ore 14:30

Calcium phosphate nanoparticles: from biomineralization to advanced materials for medicine, environment, and industry

Abstract

The study of biogenic materials' formation is becoming more and more relevant for the design of new, advanced substances necessary to tackle modern challenges to materials science. My research focuses on studying the biomineralization of calcium phosphates (CaPs), and to harness its principles to design bio-inspired CaP nanoparticles with tailored properties. I will present my base research on the formation of amorphous and crystalline CaPs by using biomineralization-inspired approaches that mimic bone formation. In connection to these works, I will show the results of my applied research on the rational design of CaP nanoparticles for application in medicine – treatment of cardiovascular diseases, antibiotic-resistant infections, and caries – in environment and agriculture – smart fertilizers, recovery of waste materials –, and for industry – new materials for cosmetics and catalysis.