

Elisabetta CAMPODONI

Current Position

August 2023 to present:

Researcher (T.D.) at the Institute of Science and Technology and Sustainability for Ceramics - National Research Council of Italy (ISSMC-CNR) Prot. ISSMC-CNR N. 216181 of 11.07.2023

The research theme is 'Development of biomimetic and nanostructured ceramic composites and hybrid biomaterials for medical applications; production of 3D devices obtained by biomineralisation, cross-linking and freeze-casting and 3D printing techniques for regenerative medicine and for the creation of in vitro models for personalised drug therapies within the Project PNRR ECS_00000033 ECOSYSTEM FOR SUSTAINABLE TRANSITION IN EMILIA-ROMAGNA (ECOSISTER).

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Professional experience

August 2023 to present:

Researcher (T.D.) at the Institute of Science and Technology and Sustainability for Ceramics - National Research Council of Italy (ISSMC-CNR) Prot. ISSMC-CNR N. 216181 of 11.07.2023

February 2022 to July 2023:

Research fellow at the Institute of Science and Technology for Ceramics - National Research Council of Italy (ISTEC-CNR) Prot. ISTEC-CNR N. 0000143 of 04.02.2022

Research topic: **Biologically-inspired processes for the design and development of nanostructured and multifunctional biomaterials.**

June 2020 to February 2022:

Researcher (T.D.) at the Institute of Science and Technology for Ceramics - National Research Council of Italy (ISTEC-CNR) prot. ISTEC-CNR N. 0001051 of 08.06.2020. Research topic: **Sviluppo di nuovi dispositivi HMEf multifunzionali e diagnostici.**

November 2018 - May 2020:

Research fellow at the Institute of Science and Technology for Ceramics -National Research Council of Italy (ISTEC-CNR) Prot. ISTEC-CNR N. 0002067 of 02.10.2018.

Research topic: **Processi biologically-inspired per la progettazione e lo sviluppo di biomateriali nanostrutturati e multifunzionali.**

October 2018

Research stage at the Department of Biomedical Engineering, University of West Attica, Athens, Greece; it was within the European project H2020-MSCA-RISE-2014 "VIVOIMAG". The research theme was the

development and characterization of bone implant made of hydroxyapatite (HA) mineralized on Type I Collagen fibers functionalized with magnetic nanoparticles (MNPs) to follow for the first time the integration and cell differentiation activity in bone tissue bioreactors in vitro and in grafts in vivo using existing non-invasive magnetic resonance imaging techniques (MRI).

March 2018 - April 2018

Research stage at the Institute de Catálisis y Petroleoquímica of the Consejo Superior de Investigaciones Científicas (ICP-CSIC), Madrid, Spain; it was within the European project H2020-MSCA-RISE-2014 “VIVOIMAG”. The research theme was the development and characterization of bone implant made of hydroxyapatite (HA) mineralized on Type I Collagen fibers functionalized with magnetic nanoparticles (MNPs) to follow for the first time the integration and cell differentiation activity in bone tissue bioreactors in vitro and in grafts in vivo using existing non-invasive magnetic resonance imaging techniques (MRI).

November 2015 - october 2018

Ph. D. student at the Institute of Science and Technology for Ceramics - National Research Council of Italy (ISTEC-CNR). Supervisor: Dr. Monica Sandri. Focus: Design and Development of bio-hybrid multifunctional materials for the regenerative medicine. Description: synthesis methodologies and characterization to investigate biomimetic materials such as 3D scaffolds, hydrogel or beads for tissue regeneration. In particular, hybrid materials (composed of doped hydroxyapatite and polymer matrices) are synthesized mimicking the natural biomineralization process to create a ECM-like hydrogels that can be customized in order to obtain materials with different shape and size. Due to the flexibility of these bio-hybrid systems, they find application on several fields such as tissue regeneration, nanomedicine, drug delivery systems, cancer therapy, cosmetic, water/air purification, heat and moisture exchanger.

June 2015 - October 2015

Research fellow at ISTEC-CNR in Faenza. The research theme is ‘Design and development of bio-hybrid composites and multifunctional nanosystems for regenerative medicine and theranostic’ in the research program SMILEY “Smart nanostructures devices hierarchically assembled by bio-mineralization processes “. Prot. ISTEC-CNR N. 0001355 del 29.05.2015.

March 2015 - May 2015

Formative period after Master degree at Fin-Ceramica S.p.A in Faenza. The stage, carried out in collaboration with ISTEC-CNR, was based on the study of bioinspired process of biomineralization to develop hybrid composites formed by a mineral phase and a polymeric phase.

September 2013 - July 2014

Formative period during Master degree at Laboratory of Organic Chemistry in the department of Industrial Chemistry Toso Montanari at the University of Bologna.

The stage led by the Prof. Mauro Comes Franchini was based on the synthesis and the characterization of polymeric micelles for drug delivery containing drugs or metallic nanoparticles.

March 2012 - July 2012

Formative period at Eurocolor SPA in Castelbolognese. The stage was based on the regulation REACH and the quality control of the products.

Training and Education

From 29 January – 02 February 2024

Training course on Technology transfer, entrepreneurship and european funding schemes to support innovation. The 5-days intensive course consisted of interactive training sessions and practical exercises. It has been organized by Tommaso Foglia provided in Faenza (Italy)

From June 2018:

Partecipation in **safety training courses** (part A certificate n. 002865/2021; part B certificate n. 005912/2021);

Partecipation in **specific training courses** for workers on:

use and handling of pure and cryogenic technical gases (certificate n. 005502/2021);

specific risk (certificate n. 000869/2019; certificate n.002241/2024);

exposure to mutagenic and biological carcinogens (certificate n. 002375/2018; certificate n. 007817/2023).

Effects of ionising radiation and radiation protection procedures (organized by Claudio Ferrari, 4.12.2024).

November 2015 – October 2018

PhD in Materials Science and Technology (XXXI cycle) at the University of Parma in collaboration with ISTEC-CNR of Faenza (prot. 101260 of 03.11.2015), in the Biomaterials research group. Tutor Monica Sandri.

Development of the project entitled 'Design and Development of bio-hybrid multifunctional materials for the regenerative medicine'. **PhD thesis** defended on 15.03.2019.

During PhD project, participation to several training courses and schools:

1. Science Communication School, Trieste 16-19.09.2019
2. Comprehensive advanced program on BioEntrepreneurship "Biobusiness", Lugano, 12-16.11.2018
3. 6th International School of Crystallization: Drugs, Foods, Agrochemicals, Minerals, New Materials, ISC2018, Granada, 20-26.05.2018
4. National school on Materials Science and Technology INSTM, Ischia, 9-12.07.2017
5. Cristallography training course, Parma, 29.05-01.06.2017
6. Training course on " Biomateriali e Biotecnologie in chirurgia vertebrale ", Bologna, 17.02.2017

November 2014

National qualification test for Professional Chemist (section A) at the University of Bologna.

July 2014

Master Degree in Industrial Chemistry, LM-71, University of Bologna (110/110). Thesis entitled "Synthesis and characterization of biocompatible nanosystems for drug delivery in the treatment of Alzheimer." Conducted at department of Industrial Chemistry 'Toso Montanari'.

July 2012

Bachelor degree in Chemistry of Materials and Ceramics Technologies, L-27, University of Bologna (106/110). Thesis entitled "Studies of molecular characterization within REACH regulation: literature research; 'in silico' methods QSAR; analytical methods" conducted at Eurocolor SPA, Castelbolognese.

Assignments and Responsibilities

- **Scientific Responsible** of the Laboratory of Synthesis of Biomaterials at ISSMC-CNR of Italy.
Prot ISSMC-CNR N. 243968 of 04.08.2023
Prot. ISTEC-CNR N. 0001068 of 09.06.2020.
- From 2020: **Foster instruments** of Dynamic Mechanical Analyzer (DMA Q800, TA Instrument), NanoDrop OneC spectrophotometer (Thermo Fisher Scientific), micronization system (PILOTMILL-2, FPS), freeze-dryer LIO 3000 PLT (Cinquepascal S.r.l (Trezzano-MI); 3D bioprinting instrument (BioX, CellLink).
- **Commission member** for candidates' selection for fellowships
Prot. ISSMC-CNR N. 0392523 of 12.12.2023
Prot. ISTEC-CNR N. 0002246 of 04.11.2020
Prot. ISTEC-CNR N. 0000038 of 14.01.2021

From 2015:

- Training and support to the scientific activity of B.Sc., M.Sc. and Ph.D. students at ISSMC-CNR: Co-relator of **1 B.Sc. thesis** at the University of Bologna, Faculty of Biomedical Engineering. Co-relator of **2 M.Sc. thesis** at the University of Parma, of Urbino. Co-relator of **6 PhD thesis** at the University of Parma, Faculty of Chemistry
- **Dissemination to children and students** during institute open days.(at least once a year).
Prot. ISSMC-CNR N 0129797 of 02.05.2023
Prot. ISTEC-CNR N. 0001144 of 17.05.2018
- **Organization of practical demonstrations on nanomedicine** to students (at least once a year).
Prot. ISSMC-CNR N.0100001 of 31.03.2025
Prot. ISSMC-CNR 0095388 of 27.03.2025
Prot. ISSMC- CNR N. 0424349 of 06.11.2024
Prot. ISSMC-CNR N. 0092363 of 28.03.2023
- **Yearly seminar** for Ph.D. students in Chemistry: “smart nature-inspired bioceramics and hybrid composites for regenerative medicine”, general topic: “Processes and applications of ceramics”, University of Bologna, Faculty of Industrial Chemistry.
- Supporting in the writing of research product at ISTEC-CNR:
 1. Italian patent n. 102017000022625. Sandri Monica, Sprio Simone, Tampieri Anna. “Filtro per lo scambio di calore e umidità per applicazione in campo medicale e procedimento per la sua produzione.” Registration date: 28/02/2017;
 2. Italian patent n. 102016000023614. Sandri Monica, Sprio Simone, Tampieri Anna. “Filtro solare fisico costituito da idrossiapatite sostituita in una matrice organica.” Registration date: 07/03/2016.

- Reviewer of the following international journal: BioMed Research International; Acta Biomaterialia; Advances in Materials Science and Engineering; Stem cells international; International Journal of Molecular Sciences; Scientific report; Nanomaterials

R&D Projects involvement

Scientific operator of the research activity on the development of bioceramic and/or polymeric composites for Regenerative Medicine at the Department of Bioceramics and Bio-hybrid Composites of ISSMC-CNR in the following funded European and National Research Projects and R&D contracts:

1. Key personnel in the project **UNITED** “Sustainable recycling of fruit pomace and substandard pulses towards food and non-food solution” codice Progetto 2022P8ZAHW. Tot. budget : Euro 269345.00 ISSMC budget 84909.00.
2. Key personnel in the project **GRAM** “GReen manufactured AntiMicrobial porous matrices for antibiotic-free cell cultures”. Internal project of **ECOSISTER** ECS_00000033”
3. Key personnel in the Project **ECOSISTER** ECS_00000033“ECOSYSTEM FOR SUSTAINABLE TRANSITION IN EMILIA-ROMAGNA of 29/12/2022 prot. n.2623, in particular involved in the Spoke 1 “Materials for sustainability and ecological transition”.
4. Key personnel in the Project **3DPRENT** “3D Printed Engineered Nano-Composite Templates for Bone Regeneration” financed from the National Research Council of Norway. (2020-2024) Total Budget 1.037.135,00 €; ISTEC Budget 23.787,50 €. Autorizzazione delega Dipartimento RS DSCTM 394 Prot. N. 0027759/2020 del 27/04/2020. C.A. Prot. N: 0001299/2020 del 14/07/2020.
5. Key personnel in the project **STRIKE** HORIZON-MSCA–2021–DN, grant N.: 101072462. Comprehensive STRategies to tackle malignant tumors: from nanomedicine and theranostic to precision medicine (2023-2026). Euro 2,106,835.2 (Euro 259437.60 ISTEC-CNR)
6. Key personnel in the project **RE.ME.DI.U.M. – BIO.PRO.** (2021-2023). Development of hybrid scaffolds functionalized with blood products for the regeneration of the skin affected by serious degenerative diseases in collaboration with UniCamillus.
7. Key personnel in the Project **ProtectHA** “Filtri solari innovativi per una PROTEzione più sicura ed ecosostenibile: le titanio-apatiti (TiHAPol) come filtri fisici di raggi UV” Bando MiSE per il cofinanziamento di Proof of Concept (PoC) 2020. Programma CNR AMICO, programma di incentivo e sostegno alle attività di Applicazione, Miglioramento e Costruzione dei trovati brevettati. (2021-2022) Budget 74.000 €. Assegnazione Prot. CNR 0001103/2021 del 11/01/2021, Accettazione Prot. CNR-ISTEC N.0000009/2021 del 11/01/2021. Writing of Scientific Report.
8. Key personnel in the Project funded by the bank Fondazione del Monte di Bologna e Ravenna. Title: **Biomateriali antibiotici e nuovi dispositivi medici per “rapid infection mapping” e trattamento di lesioni cutanee cronicizzate**. Partners: Alma Mater Studiorum Università di Bologna (Dipartimento di Chimica Ciamician e FaBit). (2020-2022) Total Budget 24.000 € Autorizzazione delega Dipartimento RS DSCTM 485 del 25/05/2020 Prot. CNR-ISTEC N. 0001030/2020 del 03/06/2020. Convenzione Prot. CNR-ISTEC N. 0000010/2021 del 11/01/2021. Writing of Scientific Reports.
9. Key personnel in the development of a new generation of (Heat and Moisture Exchange Diagnostic Filter) HMEf devices, inspired by the natural composition of our respiratory system, totally biodegradable and produced by waste from the food chain. The research activity of ISTEC-CNR is within the POR-FESR Project **MEDFil** *Filtri multifunzionali con elevate capacità di scambio di calore ed umidità (HMEf) e per l’identificazione precoce di infezioni delle vie respiratorie*. Cofinanced from Emilia-Romagna Region with European Fund for Regional Development “Bando per progetti di ricerca industriale strategica rivolti agli ambiti prioritari della Strategia di Specializzazione Intelligente, **PG/2018/631599**, **POR-FESR** 2014-2020, Asse 1, Azione 1.2.2, Ambito di

specializzazione S3 - Industrie Della Salute E Del Benessere, Obiettivo strategico - Innovazione tecnologica al servizio della deospedalizzazione” (2019-2021) Total Budget: 1.117.125 €, ISTEC Budget: 575.000 €. Prot. ISTEC-CNR N. 0000483 of 26.02.2020. Writing of Scientific Reports.

10. Key personnel in the POR-FESR Project **Mat2Rep Biomateriali multifunzionali per l'autoriparazione di tessuti e organi**. Cofinanced from Emilia-Romagna Region with European Fund for Regional Development “Bando per progetti di ricerca industriale strategica rivolti agli ambiti prioritari della Strategia di Specializzazione Intelligente, **PG/2018/626605, POR-FESR 2014-2020, Asse 1, Azione 1.2.2, Ambito di specializzazione S3 - Industrie Della Salute E Del Benessere, Obiettivo strategico - Sviluppo e testing di terapie e strumenti per il “self-repair” mediante dispositivi elettromedicali e medicali, biomateriali, derivati tissutali, farmaci e prodotti combinatori**” (2019-2021) Total Budget: 1.117.015,00 €, ISTEC Budget: 84.000 €.Prot. ISTEC-CNR N. 0000483 of 26.02.2020. Writing of Scientific Reports.
11. Key personnel in the synthesis and characterization of superparamagnetic iron-doped hydroxyapatite nanoparticles (FeHA-NPs) obtained through a neutralization process suitable to produce hydroxyapatite nanoparticles very similar to the mineral phase of human bones. They were involved in the **SCREENED** project with the role of entering cells making them magnetic and therefore remotely guidable within the thyroid model with a magnet. The research activity of ISTEC-CNR is within the European Project SCREENED-A multistage model of thyroid gland function for screening endocrine-disrupting chemicals. Project: H2020-SC1-2018-Single-Stage-RTD-RIA 825745 (2019-2023) Total budget: € 5 655 088,75. Prot. ISTEC-CNR N. 0000483 of 26.02.2020. Writing of Scientific Reports.
12. Key personnel in the development of bone implant made of hydroxyapatite (HA) mineralized on Type I Collagen fibers functionalized with magnetic nanoparticles (MNPs) to follow for the first time the integration and cell differentiation activity in bone tissue bioreactors in vitro and in grafts in vivo using existing non-invasive magnetic resonance imaging techniques (MRI). The research activity of ISTEC-CNR is within the European project VIVOIMAG. Project: H2020-MSCA-RISE-2014 “**VIVOIMAG**” 645757 (2015-2019). Total budget: € 472 500. Prot. ISTEC-CNR N. 0000483 of 26.02.2020. Writing of Scientific Reports.
13. Key personnel in the synthesis and characterization of nanomaterials such as ions-doped hydroxyapatite alone and biomineralized on different polymeric matrix that represent real world needs of industry, regulators and further stakeholders working in the field of biomaterials ranging from TRL 4 and 9. The research activity of ISTEC-CNR in within the European Project **BIORIMA: Biomaterial Risk Management**. Prot. ISTEC-CNR N. 0002537 of 03.12.2018. Project: H2002-NMBP-2016-2017 760928 (2017-2021), Institute of occupational medicine Project Coordinator. Total budget: 7.999.981 €. Writing of Scientific Reports.
14. Key personnel of the development of inventive long lasting make-up and sun-care products of new generation based on bio-polymers and apatitic phases in the R&D Contract of ISTEC-CNR with **INTERCOS S.p.A.** (2016-2018) Prot. ISTEC – CNR N. 0003158 del 24.10.2016. (Budget: EUR 100.000). Writing of Technical Reports.
15. Key personnel of the development and characterization of innovative bio-hybrid bio-mimetic scaffold, for bone and osteochondral regeneration in the R&D Contract of ISTEC-CNR with Finceramica S.p.A. (CO-2017-16) Prot. ISTEC – CNR N. 0003649 del 07.10.2017 (Total Budget: EUR 80.000). Writing of Technical Reports.
16. Key personnel of the design and development of polymeric nanocomposites, involving cellulose nanofibrils as biocompatible reinforcing phase, for tissue regeneration in the research activity of ISTEC-CNR of **NorCel: The Norwegian Nanocellulose Technology Platform**. Research Council of Norway. Prot. ISTEC-CNR N. 0002536 of 03.12.2018. Contr.Nr.228147/O70 (2013-2018)

Coordinator: Syverud K. PFI Norwegian Institute. Total budget: 3.035.000 €. ISTEC Budget: 85.500 €. Writing of Scientific Reports.

17. Responsible of the development of biomineralization processes performed on different polymeric phases for application in EHS and Regenerative Medicine in the research activity of ISTEC-CNR in the European Project **SMILEY**: Smart Nano-structured Devices Hierarchically Assembled by Mineralization Processes. Prot. ISTEC-CNR N. 0002544 of 04.12.2018. Project: NMP.2012.1.4-2 FP7-CP-FP 310637 (2013-2015), ISTEC-CNR Project Coord. Total budget: 3.996.000 €. ISTEC Budget: 1.417.360 €. Writing of Scientific Reports.

Technical reports

Research and characterization activities and author of the related Technical reports within the following R&D contract:

1. Technical report RT2022/33 Prot. ISTEC-CNR N. 0001787 of 05.10.2022 with SAATI SpA (MS-2022/002). Campodoni Elisabetta, Sandri Monica. "Comparazione tramite micronizzatore di una manica filtrante di nuova generazione".
2. Technical report RT2012/04 Prot. ISTEC-CNR N. 0000076 of 19.01.2021 within R&D contract with GreenBone Ortho Srl (CO-2019/07). Campodoni Elisabetta, Sprio Simone. "Ottenimento di profili di rilascio di vancomicina".
3. Technical report Prot. ISTEC-CNR N. 0002003 of 02.10.2019 within R&D contract with GreenBone Ortho Srl (CO-2018/10). Campodoni Elisabetta, Sprio Simone. "Studi di rilascio di farmaco (vancomicina) da scaffolds Greenbone".
4. Technical report Prot. ISTEC-CNR N. 0002231 of 26.10.2018 within R&D contract with INTERCOS SpA (CO-2016/16). Campodoni Elisabetta, Sandri Monica. "Messa a punto di materiali ceramici utili per geometrie e dimensioni come "filler opachi" nelle formulazioni cosmetiche".
5. Technical report within R&D contract with Finceramica SpA (CO-2017/16). Sandri Monica, Sprio Simone, Montesi Monica, Panseri Silvia, Campodoni Elisabetta, Gardini Davide, Preti Lorenzo. "Formulazione e caratterizzazione di materiali innovativi ceramici ed ibridi per l'ambito biomedicale".

Research Skills

1. **10 years of experience in Material Science**, especially in the development of biocompatible and biomimetic materials from synthesis methodologies to characterization in order to investigate the relation between micro- nano- structural properties and material application of the **biomimetic materials** such as 3D scaffolds, hydrogel or beads for tissue regeneration. Recent activities are focused on:
 - Development of biomimetic and eco-sustainable approaches with advanced manufacturing technologies (3D printing, freeze-drying and solvent casting) and biocompatible cross-linking processes to develop injectable biomimetic hydrogel-based formulations designed to fabricate composite and polymeric 3D matrices. They will be designed and customised to interface with cells of various phenotypes, with the purpose of providing innovative healthcare solutions, from the development of organoids as valuable tools for the discovery of personalized therapies, to tissue regeneration, for both mineralized and non-mineralized tissues and organs.
 - development of bio-hybrid composites based on natural polymers (collagen, gelatin, alginate, chitosan, natural cellulosic fibers, fatty acids), mineralized with nanostructured biomimetic apatites developed following biologically inspired processes to obtain 3D structures or beads;

- development of polymeric functionalized scaffolds, obtained through blending processes, for the regeneration of not mineralized tissue like cardiac tissue, tendon, ligament, cartilage, skin;
 - development of 3D structures suitable as HMEf devices fully biodegradable and low cost obtained starting from waste material by green processes;
 - development of intrinsically superparamagnetic iron doped hydroxyapatite mineralized on different polymeric matrices suitable for applications in tissue regeneration, nanomedicine and theranostic (imaging with MRI, hyperthermia therapy);
 - development of doped-hydroxyapatite for application in cosmetic field: SPF booster in sunscreen lotions, raw materials for make-up formulations.
2. Expertise in several techniques useful for **Chemical-Physic-Morphological characterization** of the developed materials such as XRD, FT-IR, ICP, UV-VIS, TG-DSC, SEM-FEG, ESEM-EDS, DMTA, DLS, magnetic susceptibility.
 3. Preliminary knowledge on **biobusiness** obtained during the Comprehensive advanced program on BioEntrepreneurship “Biobusiness” in Lugano, 12-16.11.2018
 4. Good knowledge on **Soft Skill** obtained during the Science Communication School in Trieste 16-19.09.2019.
 5. Good knowledge of CNR’s **purchasing procedures** due to the role of purchasing responsibility within the Biomaterials group (Prot. ISSMC-CNR N. 0263949 of 11.09.2023)

Membership

Since 2016: Member of the Italian Ceramic Society

Since 2016: Member of the Italian Society of Biomaterials

Since 2017: Member of the European Society of Biomaterials

Awards and other

2025

Winner of WC13 Travel Awards for to the 13th World Congress on Alternatives and Animal Use in the Life Sciences, Rio de Janeiro (Brazil) with the presentation entitled “*Composite Injectable Formulations for 3D Printing of Biomimetic Bone Matrices: Customised Tools for the Bioengineering of Organotypic Bone Models*”.
Campodoni E, Vicinelli G, Bonvicini F, Grimaldi A, Sandri M.

2022

The article “Medicated Hydroxyapatite/Collagen Hybrid Scaffolds for Bone Regeneration and Local Antimicrobial Therapy to Prevent Bone Infections” Mulazzi M, Campodoni E, Bassi G, Montesi M, Panseri S, Bonvicini F, Gentilomi A. G, Tampieri A, Sandri M. **Pharmaceutics**, 2021 13(7), 1090 has been recognized as top articles 2020-2021 and selected for “**Editor’s choice**” collection.
(https://www.mdpi.com/journal/pharmaceutics/editors_choice)

Potential Nomination Candidate of **Nanomaterials 2022 Best Paper Award** with the paper entitled “*Blending Gelatin and Cellulose Nanofibrils: Biocomposites with Tunable Degradability and Mechanical Behavior*”
Campodoni E, Montanari M, Dozio S.M, Heggset E.B, Panseri S, Montesi M, Tampieri A, Syverud K, Sandri M.

2021

The article “*Targeting mesenchymal stromal cells plasticity to reroute acute myeloid leukemia course*” Borella G, Da Ros A, Borile G, Porcù E, Tregnago C, Benetton M, Marchetti A, Bisio V, Montini B, Michielotto B, Cani A, Leszl A, Campodoni E, Sandri M, Montesi M, Bresolin S, Cairo S, Buldini B, Locatelli F, Pigazzi M. **Blood**. 2021, 138(7), pp. 557–570 has been selected for the **Blood Cover and Podcast**.

2018

Winner of a **scholarship** to participate to “Comprehensive advanced program on BioEntrepreneurship “Biobusiness” in Lugano, 12-16.11.2018

2017

Winner of the **SIB Travel Grant** for the ESB2017 Conference (Athen) with a presentation entitled “*Bio-hybrid matrix-based aligned 3D porous dentin-like scaffold*” Campodoni E, Dozio S. M, Panseri S, Montesi M, Tampieri A and Sandri M.

2016

Winner of the **SIB Competition 2016** for the **Best oral presentation** entitle “*Gelatin/Nanocellulose Polymeric Blends to Develop 3D Scaffolds for Tissue Regeneration*” Campodoni E, Ramirez-Rodriguez GB, Elsbahy ARSM, Heggset EB, Mustafa K, Syverud K, Tampieri A, Sandri M.

Publications (* as corresponding author)

Author of more than 45 peer-reviewed papers published on international journals: **H-index = 20, total citations > 900** [source: Scopus].

Author of 3 Book Chapters in the field of biomaterials for Bone Regeneration

1. Artusi A, Campodoni E, Montanari M, Ziosi P, Vertuani S, Manfredini S, *Safe-by-Design Approach to Sunscreens: Synthesis and Validation of Biomimetic Hybrid Particles for an Eco-Sustainable UV Protection*, **Materials today communication**, accepted IF 4.5
2. Aydin MS, Nicolae CV, **Campodoni E**, Mohamed-Ahmed S, Kadousaraei MJ, Yassin MA, Gjerde C, Sandri M, Stancu IC, Rashad A, Mustafa K, *Osteogenic Potential of 3D-Printed Porous Poly(lactide-co-trimethylene carbonate) Scaffolds Coated with Mg-Doped Hydroxyapatite*, **ACS Applied Materials and Interface**. 2025. <https://doi.org/10.1021/acsami.5c03945> IF 8.5
3. Bernardoni S, **Campodoni E**, Vicinelli G, Saqawa M, Bonvicini F, Pulze L, Baranzini N, Costantini G, Montesi M, Gentilomi GA, Grimaldi A, Sandri M, *From wound dressing to tissue regeneration: bi-layer medicated patches for personalized treatments of chronic wounds*. **ACS Applied Materials and Interface**. 2025. IF 8.5
4. Artusi A, **Campodoni E**, Tarlati L, Vazquez Iglesias B, Sansone A, Ferreri C, Belosi F, Vandini A, Monticelli P, Sandria M, *Development and Validation of Eco-friendly Designed Heat and Moisture Exchange Filters for the Safeguard of the Respiratory Tract and of the Environment*, **Materials Today sustainability**, 2025, 101108. IF 7.7
5. Montanari M, Korkeamäki J, **Campodoni E**, Mohamed-Ahmed S, Mustafa K, Sandri M, Rashad A. *Effects of Magnesium-Doped Hydroxyapatite Nanoparticles on Bioink Formulation for Bone Tissue Engineering*. **ACS Applied Bio Materials**. 2024. IF 4.7
6. Furlani F, Malfatti MC, Rondinella A, **Campodoni E**, Sandri M, Fedrizzi L, Tell G. *Chitosan biomineralized with ions-doped nano-hydroxyapatite tunes osteoblasts metabolism and DNA damage*. **Journal of Biological Engineering**. 2024. 18(1), 60. IF 5.7

7. Žárská L, Moynihan E, Rossi A, Bassi G, Balatková P, **Campodoni E**, Cameo MG, Montesi M, Montagner D, Vaclav R, Panseri S. *Dual Drug Delivery in Cancer Therapy Using Graphene Oxide-Based Nanoplatfoms*. **Advanced NanoBiomed Research**. 2024. 4(9), 2400026. **IF 4**
8. Bernardoni S, Ferrazzano L, Palladino C, Artusi C, Bonvicini F, **Campodoni E**, Gentilomi GA, Tolomelli A, Sandri M. *Multiple-Layer Chitosan-Based Patches Medicated With LTX-109 Antimicrobial Peptide for Modulated Local Therapy in the Management of Chronic Wounds*. **Macromolecular Bioscience**. 2024. 2400375. **IF 4.4**
9. Bassi G, Rossi A, **Campodoni E**, Sandri M, Sarogni P, Fulle S, Voliani V, Panseri S, Montesi M, *3D Tumour Engineered model of osteosarcoma stem cell niche mimicking in vivo tumour complexity*. **ACS applied materials & interfaces**, 2024. 16(41), 55011-55026. **IF 8.5**
10. Furlani F, Pota G, Rossi A, Luciani G, **Campodoni E**, Mocerino F, D’Errico G, Pezzella A, Panseri S, Vitiello G, Sandri M, *Designing bioinspired multifunctional nanoplatfoms to support wound healing and skin regeneration: Mg-Hydroxyapatite meets melanins*, **Colloids and Surfaces B: Biointerfaces**. 2024; 235; 113756 **IF 5.8**
11. Tampieri A, Kon E, Sandri M, **Campodoni E**, Dapporto M, Sprio S. *Marine-derived, mechanically competent, bioactive scaffold for osteochondral regeneration*. **Marine drugs**. 2023. 21(4), 212. **IF 6.085**
12. **Campodoni E***, Artusi C, Vazquez B, Nicosia A, Belosi F, Vandini A, Monticelli P, Tampieri A, Sandri M. Nature-inspired heat and moisture exchanger filters composed of gelatin and chitosan for the design of eco-sustainable “artificial noses “, **ACS Applied Polymer Materials**, 2023, 5(5), 3468-3479. **IF 4.855**
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Chapter book

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Oral presentations

1. ESB2025 – 34th Conference of the European Society for Biomaterials - Torino (Italy). 2025. *“Upcycling Food Waste for Sustainable Biopolymer Production: Collagen Extraction from Marine Invertebrates for Bone Regeneration Scaffolds”*.
2. WC13 - 13th World Congress on Alternatives and Animal Use in the Life Sciences - Rio the Janeiro (Brazil). 2025. *“Composite Injectable Formulations for 3D Printing of Biomimetic Bone Matrices: Customised Tools for the Bioengineering of Organotypic Bone Models”*.

3. 3Bs Materials 2025 – Albufeira (Portugal), 2025. *“Development of Biomimetic Bi-Layered Hybrid Patches for Chronic Wound Management: Integrating Antimicrobial and Regenerative functions”*
4. BPC2023 - 3rd International Conference on Bioengineering and Polymer Science Bucharest (Romania), 2023. *“Eco-sustainable bio-polymeric biomedical HME filters: nature inspires the design of “artificial noses”.*
5. Bioceramics32, Venezia, Italia, 2022. *“Monitoring in vivo bone regeneration using biomimetic scaffolds functionalized with magnetic nanoparticles”.*
6. WBC2020 virtual – 11th World Biomaterials Congress, Glasgow, 2020, *“Biomimetic scaffolds functionalized with magnetic nanoparticles: a new approach to follow the in-vivo bone regeneration”.*
7. ESB - 27th European Conference on Biomaterials, Athens (Greece), 2017 *“Bio-hybrid matrix-based aligned 3D porous dentin-like scaffold”.*
8. SIB, Milano (Italy), 2017. *“Innovative hybrid and intrinsically magnetic nanobeads as drug delivery system.*
9. SIB, Ischia (Italy), 2016. *“Gelatine/Nanocellulose Polymeric Blends to Develop 3D Scaffolds for Tissue Regeneration”.*

Poster presentation

1. GEA 2025 – WORKSHOP Geopolymer for Environmental Remediation, *“Multifunctional filtering and absorbent porous polymeric aerogels for sustainable water and air purification”*
2. ESB - 33rd Conference of the European Society for Biomaterials, Davos Switzerland, 2023 *“Looking At Scaffold-Based Strategy For Bone Disease Management: From Drug Loading To Alternative Antimicrobial Agents”.*
3. DSCTM Conference Department 2019. *Following In Vivo Bone Regeneration Through A Magnetic Biomimetic Scaffold.*
4. 3rd international silk Conference, Trento (Italy), 2019. *“The role of Ti and Fe ions in the hydroxyapatite; can improve its ability as physical filter in sunscreen formulation?”*
5. ESB – 28th European Conference on Biomaterials, Maastricht (The Netherlands), 2018 *“Hybrid polymer composite made from gelatin and cellulose nanofibrils: a nanobiomaterial with tunable degradability and mechanical performances”.*
6. International School of Crystallization, ISC Granada, 2018. *“The role of Ti and Fe ions in the hydroxyapatite; can improve its ability as physical filter in sunscreen formulation?”.*
7. Bioceramics29, Toulouse, France, 2017. *“Bio-hybrid matrix-based aligned 3D porous dentin-like scaffold”.*
8. Materials.it 2016, Catania, Italy, 2016. *“Polymeric blend of gelatin and cellulose nanofibrils: a nanobiomaterial with controlled mechanical performances and degradability “.*
9. Biomineralization Gordon Conference, Girona (Spain), 2016. *“3D Porous Scaffolds with Oriented Microtubules designed for Dental Regeneration”.*
10. National Young Researchers’ Forum on Material Science and Technology, Ischia (Italy), 2016. *“Gelatin/Nanocellulose Polymeric Blends to Develop 3D Scaffolds for Tissue Regeneration”.*

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11. International Conference on Nanotechnology in Medicine, Manchester UK, 2015. *“Development of Innovative Hybrid Magnetic Nanobeads as Drug Delivery System”*.

Il presente Curriculum è reso sotto forma di dichiarazione sostitutiva di certificazione e di dichiarazione sostitutiva dell'atto di notorietà ai sensi degli artt. 46 e 47 del d.P.R. 445/2000. All'uopo il sottoscritto dichiara di essere consapevole della responsabilità penale prevista, dall'art. 76 del citato decreto per le ipotesi di falsità in atti e dichiarazioni mendaci ivi indicate.

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Signature

October 1st 2025

Elisabetta Campodoni