

Monica SANDRI Ph.D.

Research Director (I Level Researcher) at the Institute of Science, Technology and Sustainability for Ceramics - National Research Council of Italy (ISSMC-CNR, former-ISTEC) from 01/01/2023

Address: Via Granarolo 64, 48018 - Faenza (RA) Italy

Phone (Office): + 39 0546 699761

E-mail: monica.sandri@issmc.cnr.it monica.sandri@cnr.it

Home page: www.issmc.cnr.it

Scopus Author ID: 35327959900

Research ID: AAY-4322-2020

ORCID ID <https://orcid.org/0000-0001-5782-3137>

Research Director at the National Research Council of Italy (CNR), Institute of Science, Technology and Sustainability for Ceramics (ISSMC, ex ISTEC), with expertise on the design and development of ceramic, polymeric and hybrid biomaterials as biomatrices mimetic of the native ECMs, and suitable for tissue regeneration, for the development of in vitro organoids for the discovery of personalized therapies. Coordinator of the research activity aimed at the study of biomineralization processes to produce biomimetic nanostructured hybrid and polymer hydrogels and bioinks processable by 3D-printing technologies, finalized at the development of three-dimensional scaffolds for tissues regeneration (bone, tooth, cartilage, skin tissues) with geometry, porosity and structural and mechanical properties customized by means of 3D printing and mold-freeze-casting techniques. Development of biomimetic and medicated membranes for chronic wound management capable of simultaneously fighting infections and guiding tissue healing and regeneration. Design and development of biomatrices for 3D in vitro predictive models, through 3D bioprinting and co-cultures approaches, aimed at the study of personalized targeted pharmacological therapies in the field of tumor and infectious diseases (e.g. investigation on osteosarcoma, leukemia, osteomyelitis). Scientific responsible for many funded European Projects, Coordinator of National, Regional and PNRR Research Projects. Graduated in Chemistry in 2001 from the Alma Mater Studiorum, University of Bologna, Italy and obtained the PhD degree in Material Science in 2006. She has authored 140 papers published in international peer-reviewed journals, 13 book chapters and 4 Patents. H-index = 44, total citations > 6536.

Member of the Institute Scientific Board of CNR-ISSMC (from December 2021 to Present)

Member of the Board of Teachers of the PhD School in *Materials Science and Technology* at the University of Parma (from March 2016 to Present) Prot. ISTEC-CNR N. 0000802 (28/04/2017)

Training and Education

2001 - **M.Sc.** in Pure Chemistry (109/110)

University of Bologna, Department of Chemistry *G. Ciamician*, Italy

2003 - **National qualification to pursue professional works as Chemist**

University of Bologna, Department of Chemistry *G. Ciamician*, Italy

2006 - **PhD in Chemical Sciences**

University of Bologna, Department of Chemistry *G. Ciamician*, Italy

2016 - **Advanced short course on BioEntrepreneurship and “Biobusiness”**

University of Italian Switzerland, Lugano (CH) 13-17/06/2016

Previous Positions and Professional experiences

June 2021: **Qualification as Research Director (I Level)** at the Institute of Science and Technology for Ceramics - National Research Council of Italy (ISTEC-CNR), at the *fifteenth position* of the ranking. BANDO N. 315.35 DR - Strategic Area "CHIMICA E MATERIALI PER LA SALUTE E LE SCIENZE DELLA VITA" Prot. AMMCEN n. 38415/2021 of 26/05/2021 - Pub. web site URP-CNR 26/05/2021. and Prot. AMMCEN n. 54535/2023 of 23/02/2023 - Pub. web site URP-CNR 24/02/2023.

From November 2019 to December 2022: **Lead Researcher (II Level)** at the Institute of Science and Technology for Ceramics - National Research Council of Italy (ISTEC-CNR), Prot. ISTEC-CNR N. 0002154/2019 (21/10/2019)

June 2018: Qualification as Lead Researcher (II Level) at the Institute of Science and Technology for Ceramics - National Research Council of Italy (ISTEC-CNR), at the *ninth position* of the ranking. BANDO N. 367.185 PR - AREA STRATEGICA MATERIALI AVANZATI Prot. AMMCEN N. 0042243/2018 (14/06/2018)

From January 2014 to November 2019: **Permanent Researcher (III Level)** at the Institute of Science and Technology for Ceramics - National Research Council of Italy (ISTEC-CNR) prot. CNR-ISTEC N. 0000001 (02/01/2014)

From 17th January 2007 to December 2013: **Researcher (III Level) (R.T.D.)** at the Institute of Science and Technology for Ceramics - National Research Council of Italy (ISTEC-CNR) prot. ISTEC-CNR N. 0000057 (18/01/2007), N. 0062622 (02/09/2008), N. 0031883 (14/04/2009), N. 0018316 (03/03/2010), N. 0020348 (04/03/2011), N. 0058039 (03/08/2011), N. 0008006 (09/02/2012), prot. AMMCEN N. 0013160 (06/03/2013)

March 2002 to December 2006: **Fellow Researcher** at the Institute of Science and Technology for Ceramics - National Research Council of Italy (ISTEC-CNR) Prot. ISTEC-CNR N. 0000210 (15/05/2007)

Scientific responsibilities

- Laboratories Responsibility:**

2008 to 2020: Scientific Responsible of the **Laboratory of Synthesis of Biomaterials** at ISTEC-CNR of Italy Prot. ISTEC-CNR N. 0000672 (30/12/2008)

2010 to 2015: Scientific responsible of the **Laboratory of Nano-Bio-Magnetism** at ISTEC-CNR of Italy Prot. ISTEC-CNR N. 0000983 (20/12/2010)

- CNR Research Lines Responsibility:**

January 2010 to December 2015: Scientific Responsible of the Research Line **ME.P06.018.001 Biomineralization processes and development of nanostructured functionalized bio-hybrid composites for the regenerative medicine** at ISTEC-CNR of Italy. (verificabile sul portale SIGLA <http://contab.cnr.it/>)

From December 2015 to 2024: Scientific Responsible of CNR Project **DCM.AD003.012 Development of ceramics and hybrids porous materials for neurosurgery and orthopedics** at ISTEC-CNR of Italy (verificabile sul portale CNR, SIGLA <http://contab.cnr.it/>)

- **Research Industrial Contracts Responsibility:**

From December 2016 to 2018: Scientific Responsible of CNR Research Project **DCM.AD001.223 INTERCOS - Formulazioni innovative per gli ambiti cosmetico, sun-care e make-up** at ISTE-CNR of Italy. (verificabile sul portale SIGLA <http://contab.cnr.it/>)

Scientific responsible of the R&D Contract of ISTE-CNR with INTERCOS S.p.A. Research activity focused on the development of inventive long lasting make-up and sun-care products of new generation based on bio-polymers and apatitic phases. (2016-2018) Protocol ISTE – CNR N. 0003158 del 24/10/2016. (Budget: EUR 100.000).

2010 to 2020: Scientific responsible of the R&D Contract of ISTE-CNR with **Finceramica S.p.A.** Research activity focused on the development of innovative bio-hybrid bio-mimetic scaffold, for bone and osteochondral regeneration (CO-2012-17 and Addendum of 21/03/2013, Prot. ISTE CNR N. 0001556 of 14/12/2012 and N. 0000646 of 05/04/2013) (CO-2017-16 and Addendum of 10/10/2017, Prot. ISTE CNR N. 0003649 of 17/10/2017 and N. 0000517 of 14/03/2019) (Total Budget: EUR 190.000).

- **Scientific Committee:**

2021-2022: Member of the scientific committee of the 32nd edition of the International Congress “**BIOCERAMICS 32- The 32nd Symposium & Annual Meeting of the International Society for Ceramics in Medicine**”, <https://bioceramics32.org/> held in Venezia (Mestre), Italy, 20-23 October 2022.

2012-2013: Member of the Local Organizing Committee of the **International Congress MiMe – Materials in Medicine** (<http://mime.centuria-agenzia.it>). Prot. ISTE CNR N.0000825 del 31/03/2015.

- **Grants - Scientific Responsibility in Research Projects, from 2007 to present:**

Responsible of the research activity on the development of Bioceramic and Hybrid Biomaterials for Regenerative Medicine and Nanomedicine at the Department of Bioceramics and Bio-hybrid Composites of ISSMC/ISTE-CNR in the following **funded European, International and National Research Projects**:

- i. Principal Investigator of the **PNRR** Project **GRAM** “*GR*een manufactured *AntiMicrobial* porous matrices for antibiotic-free cell cultures” funded from the National Recovery and Resilience Plan (PNRR). Total Budget 365.000€, ISSMC-CNR Budget 90.000€. Lettera d’incarico Prot. N. 496286 del 12.12.2024 (2024-2025).
- ii. Scientific responsible of the project **PRIN-PNRR UNITED** “*Sustainable recycling of fruit pomace and substandard pulses towards food and non-food solution*” Scientific Responsible of the design and development of biopolymer membranes functionalized with antimicrobial bioceramic particles as environmentally sustainable packaging solution obtained by means of SSbD approaches polymers and molecules extracted from food waste. Coordinator Università degli Studi di Udine Dipartimento di Scienze AgroAlimentari, Ambientali e Animali (2025-2027). Total budget 269.300 €, ISSMC-CNR Budget 84.900 €.
- iii. Principal Investigator of the **CNR** project **Models** - DCM.AD007.358 ISSMC-CNR “Materiali compositi per la Salute: bio-matrici multifunzionali per la rigenerazione di tessuti e la creazione di modelli per la medicina personalizzata” (2023-2026). https://intranet.cnr.it/intranet/istituti/pdgp/progprev2024-2026/Anagrafica_progetto_intra.html?id_prog=59217
- iv. Scientific responsible for ISSMC-CNR Spoke 1 (WP4), involvement in Spoke 3 and Spoke 5 of the Research **PNRR** Project **Ecosister** - National Recovery and Resilience Plan (PNRR). Project for Strengthening of Research Structures and Creation of R&D "Innovation ecosystems". Research activity: Development of biomatrices for in vitro models functional at the research of personalized therapies. Financed from the European Union - NextGenerationEU. Lettera d’incarico Prot. N. 0265646 del 12/09/2023 (2022-2025).

- v. Scientific responsible of ISTEC-CNR for the Project **3DPRENT** “3D Printed Engineered Nano-Composite Templates for Bone Regeneration” financed from the National Research Council of Norway. Total Budget 1.037.135,00 €. Autorizzazione Dipartimento RS DSCTM 394 Prot. N. 0027759/2020 del 27/04/2020. C.A. Prot. N: 0001299/2020 del 14/07/2020 (2020-2025).
- vi. Principal Investigator of ISTEC-CNR for 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. Budget 74.000 €. Assegnazione Prot. CNR 0001103/2021 del 11/01/2021, Accettazione Prot. CNR-ISTEC N.0000009/2021 del 11/01/2021. (2021-2022).
- vii. Scientific responsible of ISTEC-CNR Project financed from 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). 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 (2020-2022).
- viii. Principal Investigator of **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” Total Budget: 1.117.125 €, ISTEC Budget: 575.000 €. Prot. CNR-ISTEC N. 0001414 (05/07/2019) www.medfil.it (2019-2022).
- ix. Scientific responsible 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. CNR-ISTEC N. 0001457 (12/07/2019) <https://mat2rep.it/> Coordinamento Scientifico del personale AdR assunto sul progetto. Atto di conferimento AdR Prot. 0002413/2019 del 18/11/2019
- x. CNR-UNIT Leader in the H2020 European Project **SCREENED** *A multistage model of thyroid gland function for screening endocrine-disrupting chemicals in a biologically sex-specific manner*. “Task 5.3: Development of magnetized cells to provide control over cell spatial arrangement”. Grant Agreement number: 825745 (20.10.2018) - SCREENED (Call: **H2020-SC1-BHC-27-2018-2020-Single-Stage-RTD** New testing and screening methods to identify endocrine disrupting chemicals.) Total Budget 5.655.088 €, ISTEC Budget: 400.000 €. Prot. CNR-ISTEC N. 0000380 del 26/02/2019 <https://www.screened-project.eu/> (2018-2024).
- xi. Coordinator of “Bioceramics” course financed from the National Project **PON** 10.2.5A-FSEPON-EM-2017-7 Ceram-lab, Programma Operativo Nazionale "Per la scuola competenze

e ambienti per l'apprendimento" Liceo Ballardini Torricelli (2018-2019) Prot. CNR-ISTEC N. 0000187 (01/02/2019).

- xii. Coordinator of a Project “*Studio di processi biologicamente ispirati per la progettazione e lo sviluppo di biomateriali nano strutturati e multifunzionali per la medicina rigenerativa*” financed from Emilia-Romagna Region in the framework of “Piano Triennale Alte Competenze per la Ricerca, il Trasferimento tecnologico e l’Imprenditorialità – **POR-FSE 2014/2020**. OBIETTIVO TEMATICO 10. Fondo sociale Europeo.” Ambito: Clust-ER SALUTE E BENESSERE; MedReR - Medicina Rigenerativa e Riparativa. Finanziamento di Borsa di Dottorato di Ricerca in Scienza e Tecnologia dei Materiali dell’Università di Parma. Budget 86.700 €. Prot. CNR-ISTEC N. 0001318 (05/06/2018) (2018-2021).
- xiii. Task Manager in the European Research and Innovation Staff Exchange (RISE) Project, Call: H2020-MSCA-RISE-2014. Acronym: **VIVOIMAG** (2015-2019) GA N. 645757 (02/02/2018). Aim of the project is to develop bone implants including a new contrast agent sensitive to enzymatic activity of metalloproteases, which will permit to follow their integration with bone tissue using existing non-invasive magnetic resonance imaging techniques. Total Project Budget 472.500,00€, ISTEC Budget: 42.250,00 € Prot. CNR-ISTEC N. 0000427 del 23.02.2018.
- xiv. Key personnel in the European Project **BIORIMA** “*BIOMaterial Risk Management*”. Involved n. 43 European and not European Partners. Aim of the project is to develop an Integrated Risk Management framework for Nano-Biomaterials of the latest generation used in Advanced Therapy Medicinal Products or Medical Devices. Responsibility in the research activity focused on the development of Nano-Biomaterials. Grant Agreement number: 760928-2 – BIORIMA – H2020-NMBP-2016-2017/H2020-NMBP-12-2017 RIA-two-stage (2018-2021). ISTEC Budget: 200.000 €. Prot. N. 0004136 del 14.11.2017
- xv. Scientific Responsible of the research activity of ISTEC-CNR in the H2020 European Project **CUPIDO** “*Cardio Ultraefficient nanoParticles for Inhalation of Drug prOducts*” The research activity is focused on the development of superparamagnetic nanoparticle fully bioresorbable as carrier for drugs specific for cardiac function restoration. Grant Agreement number: 720834 del 14/01/2016 — CUPIDO — H2020-NMBP-2016-2017/H2020-NMBP-2016 RIA-two-stage (2017-2020). Total Budget 6.094.781,00 €, ISTEC Budget: 580.725,00 €. Prot. CNR-IRGB N. 0000169 del 20/01/2017.
- xvi. Scientific Responsible of the research activity of ISTEC-CNR in the Regional Project **NIPROGEN** POR-FESR 2014-2020 (2016). Total budget: 999.767 €; Budget ISTEC: 320.000 €. (Prot. CNR N. 001003 of 07/04/2016)
- xvii. Scientific Responsible of the research activity of ISTEC-CNR in the Regional Project **NANOCOATIGS** POR-FESR 2014-2020 (2016). Budget ISTEC: 160.000 €. (Prot. CNR N. 001003 of 07/04/2016)
- xviii. Scientific Responsible of the research activity of ISTEC-CNR of **NORCEL: The Norwegian Nanocellulose Technology Platform**. Research Council of Norway. Responsibility in WP4 for the research activity focused on the design and development of polymeric nanocomposites, involving cellulose nanofibrils as biocompatible reinforcing phase, for tissue regeneration. Contr.Nr.228147/O70 (2013-2018) Coordinator: Syverud K. PFI Norwegian Institute. Total budget: 3.035.000 €. ISTEC Budget: 85.500 €. Prot. n. 0000494 del 05/03/2014
- xix. Scientific Responsible of ISTEC-CNR in the European Project **BIO-INSPIRE**. *Marie Curie Initial Training Network (ITN) on bone regenerative therapies: Bio inspired bone regeneration*. Responsibility: Tutor of a PhD student whose activity was dedicated to the development of

- bio-hybrid scaffold for bone regeneration by means of biomineralization process. PITN-GA-2013-607051 (2013-2017). Project coordinator: Bouwstra J. FUJIFILM Life Science Europe. Total Budget 3.807.344,97 €, Prot n. 0002160 del 11/11/2013
- xx. WP Leader of the Small Collaborative European Project FP7 **SMILEY**: *Smart Nano-structured Devices Hierarchically Assembled by Mineralization Processes*. Development of Biomineralization processes performed on different polymeric phases for application in EHS, Regenerative Medicine and Energy production. Grant Agreement NMP4-SL-2012-310637 del 28/11/2012 Call: FP7-NMP-2012-SMALL-6 (2013-2015), ISTEC-CNR Project Coord. Total budget: 3.996.000 €. ISTEC Budget: 1.417.360 €. Prot n. 0001422 del 29/11/2012
 - xxi. Scientific Responsible of the research activity of ISTEC-CNR in the National Italian Project **PRIN 2011 – 2010L9SH4K** *Innovative chemical methodologies for smart biomaterials*. Development of smart biomaterials by innovative chemical methodologies allowing the bioactivation of material scaffolds of different chemical natures with biomolecules able to stimulate the desired cell response toward the regeneration of damaged tissues. (Coordinator: Nicotra F. - University of Milan-Italy). (2012-2015) Total Budget 825.600 €, ISTEC Budget 40.000 €.
 - xxii. WP Leader in the FP7 European Project **OPHIS**: *Composite phenotypic triggers for bone and cartilage repair*. Responsibility: development of biomimetic hybrid composite for the design of multilayer scaffold for osteochondral regeneration. Grant agreement no: 246373. Call FP7-NMP-2009-2.3-1 [Biomimetic gels and polymers for tissue repair] (2010-2014). (ISTEC-CNR Project Coordinator). [Declaration signed from the Project Coordinator Dr. Tampieri Anna] Total budget: 3.939.708,00 €. ISTEC Budget: 704.366,00 €. Repertorio contratti SIGLA: 2010 - 2418 del 16/09/2010
 - xxiii. Task Leader in the FP7 European Project **MAGISTER**: *Magnetic scaffold for in vivo tissue engineering*. Responsibility: development of superparamagnetic biomimetic and fully biodegradable nanoparticles and hybrid composite and for bone and cartilage regeneration. Call: Large Scale Integrating Project FP7-NMP-2007-4.2.3.-1: Highly porous bioactive scaffolds favouring angiogenesis for tissue engineering. Project: NMP3-LA-2008-214685 (2008-2012). [Declaration signed from the Project Coordinator Dr. Dediu Valentin Alek] Total budget: 8.278.091,00 €. CNR Budget: 1.575.606,00 €. Repertorio contratti SIGLA: 2008-3885 del 27/10/2008
 - xxiv. Task Leader in the FP7 European Project **TEM-PLANT**: *New Bio-ceramization processes applied to vegetable hierarchical structures*. Responsibility: development of polymeric scaffold for tendon regeneration. Contract N. NMP4-CT-2006-033277 del 20/09/2006 (2006-2010). (ISTEC Project Coordinator). Total budget: 2.600.000,00 €. CNR Budget: 519.399,00 €. [Declaration signed from the Project Coordinator Dr. Tampieri Anna] Repertorio contratti SIGLA: 2006-4473 del 27/10/2006
 - xxv. Scientific Responsible of the research activity for the development of hybrid scaffold for bone regeneration. FP6 European STREP Project **AUTOBONE**: *Production unit for the decentralized engineering of autologous cell-based osteoinductive bone substitutes*. Responsibility: development of hybrid nanocomposites mimicking the native bone features for tissue regeneration. (NMP3-CT-2003-505711-1 (2003-2007), ISTEC-CNR Project Coordinator). Total budget: 4.818.442,60 €. CNR Budget 698.819,00 €. [Declaration signed

from the Project Coordinator Dr. Tampieri Anna] Repertorio contratti SIGLA: 2004-611 del 10/08/2005.

- xxvi. Scientific Responsible of the research activity che ha per obiettivo lo sviluppo di dispositivi biomedici per la rigenerazione tissutale. **Progetto Premiale CNR “Personalized Medicine”** (2013-2014) Coordinated from CNR Medicine Department. ISTEC Budget 300.000 €
- xxvii. Scientific Responsible of the research activity of ISTEC-CNR in CNR Flagship Project **“Nanomax” – miRnano** (PNR-CNR 2011-2015) *Face up Cardiac Hypertrophy via micro-RNA carried by Electrically Charged Nanoparticles* Nanomax. Total Budget 827.000 €, ISTEC Budget 225.00 €.
- xxviii. Scientific Responsible of the research activity for the development of implants for osteochondral regeneration in OA patients. PNR-CNR **Ageing** Program (Project of Interest) (2012-2019), ISTEC Coordinator of the Sub-Project "Regenerative Medicine in Ageing". ISTEC Budget: 685.000 €.
- xxix. Scientific Responsible of the research activity for the development of innovative ceramic and hybrid devices with high nano-particles filtering capability in the research project financed form the Ministry of the Military Defence of Italy **BATNAN** (2010-2012). *Development of a filtering system for bacteria and micro- nano-powders*. (Coordinator Gatti A, UniMo).
- xxx. Scientific Responsible of the research activity for the development of reinforced graded osteochondral scaffold for osteochondral regeneration, project FIRB **Bioprotesi: Materiali innovativi per lo sviluppo di bio-protesi articolari** (RBIP068JL9 (2007-2012)). (ISTEC Project Coordinator). [Declaration signed from the Project Coordinator Dr. Tampieri Anna]
- xxxi. Scientific Responsible of the research activity for the development of innovative tissue for cardiac tissue regeneration. Project FIRB ref. RBPR05RSM2 (2007-2010) **Tissuenet** National research network. [Declaration signed from the Project Coordinator Dr. Ambrosio Luigi]

2005 to present:

Tutoring of B.Sc., M.Sc. and Ph.D. students at ISTEC/ISSMC-CNR:

- **Relator and Scientific Supervisor of 12 PhD thesis at the Faculty of Chemistry and Industrial Chemistry of Bologna University, and Faculty of Chemistry of Parma University:**
 1. PhD student Scientific Supervisor – Teresa D’Alessandro (I) Cycle XXV (2010-2012) *“Development of newly conceived biomimetic nano-structured biomaterials as scaffolds for bone and osteochondral regeneration”* University of Bologna, Faculty of Chemistry.
 2. PhD student Scientific Supervisor - Silvia Minardi (I) Cycle XXVII (2012-2014) *“Biomimetic Scaffolds for the Controlled Release of Bioactive Molecules for Tissue Engineering Applications”* University of Bologna, Faculty of Chemistry.
 3. PhD student Relator - Elisa Savini (I) Cycle XXVIII (2013-2015) *“Design and development of biomineralized nanostructured devices from natural sources for biomedical applications”* University of Bologna, Faculty of Chemistry.
 4. PhD student Relator - Gloria Belen Ramirez Rodriguez (S) Cycle XXIX (2014-2016) *“Biomineralization of apatite in the presence of collagen-like peptide as a versatile route for obtaining bone-like scaffolds”* University of Bologna, Faculty of Chemistry.

5. PhD student Relator - Elisabetta Campodoni (I) PhD in Materials Science and Technology Cycle XXXI (2016-2018) *"Hybrid composites developed by bio-inspired processes for multiple functions and applications in medicine"* University of Parma, Faculty of Chemistry.
6. PhD student Relator - Lorenzo Degli Esposti (I) PhD in Materials Science and Technology Cycle XXXII (2017-2019) *"Sintesi e caratterizzazione di materiali a base di calcio fosfato per applicazioni in nanomedicina"* University of Parma, Faculty of Chemistry. Research Fellowship Financed from MiUR (Ministry of University and Research).
7. PhD student Relator - Manuela Mulazzi (I) PhD in Materials Science and Technology Cycle XXXIII (2018-2020) *"Functionalized biomimetic hybrid scaffolds for bone tissue regeneration and prevention of infectious diseases"* University of Parma, Faculty of Chemistry.
8. PhD student Relator - Margherita Montanari (I) PhD in Materials Science and Technology Cycle XXXIV (2019-2021) *"Design and Development of Printable and Injectable Bio-Hybrid inks for Tissue Engineering and Regeneration"* University of Parma, Faculty of Chemistry. Financed from "Piano Triennale Alte Competenze per la Ricerca, il Trasferimento tecnologico e l'Imprenditorialità - POR FSE 2014/2020. OBIETTIVO TEMATICO 10".
9. PhD student Relator - Chiara Artusi (I) PhD in Materials Science and Technology Cycle XXXVI (2021-2023) *"Design of eco-sustainable hybrid and polymeric biomaterials for health: from respiratory protection to skin protection"* University of Parma, Faculty of Chemistry. Research Fellowship Financed from POR-FESR "MEDFil" and PoC "ProtecTHA" Projects.
10. PhD student Relator – Sara Bernardoni (I) PhD in Materials Science and Technology Cycle XXXVII (2022-2024) *"Design of biomedical devices for innovative approaches in the treatment of difficult-to-heal dermatological wounds"* University of Parma, Faculty of Chemistry. Research Fellowship Financed from MiUR.
11. PhD student Relator – Gaia Vicinelli (I) PhD in Materials Science and Technology Cycle XL (2024-2027) *"Mimetic Composite Biomaterials for Health: design of multifunctional bio-matrices for tissue regeneration and development of bone organoids for drug screening and personalized therapies"* University of Parma, Faculty of Chemistry. Research Fellowship Financed from MUR-UNIPR.
12. PhD student Relator – Alessia Panocchia (I) PhD in Materials Science and Technology Cycle XLI (2025-2028) *"Multifunctional injectable biomaterials for 3D printing processes: from tissue regeneration to the development of in vitro organoids"* University of Parma, Faculty of Chemistry. Research Fellowship Co-financed from CNR and MUR-UNIPR.

- **Co-relator and Supervisor of 20 B.Sc. thesis at the University of Bologna, Parma and Ferrara Faculty of Industrial Chemistry and Biomedical Engineering.**
- Yearly seminar for Ph.D. students in Chemistry: "Bioceramics in regenerative medicine", general topic: "Processes and applications of ceramics", University of Bologna, Faculty of Industrial Chemistry, 2010-2014.

September 2006 to December 2006:

Research stage at the **Hospital for Special Surgery (HSS)**, Musculoskeletal Integrity Program, Research Division, at *Boskey Adele PhD* Laboratory. New York, New York, USA.

Reviewer of the following international journal:

- ✓ Biomaterials
- ✓ Scientific Report
- ✓ Acta Biomaterialia
- ✓ Journal of Materials Chemistry B

- ✓ ACS Applied Materials & Interfaces
- ✓ Biomacromolecules
- ✓ Materials Chemistry and Physics
- ✓ Journal of Material Science: Materials in Medicine
- ✓ International Journal of Molecular Sciences
- ✓ Bioinspired, Biomimetic and Nanobiomaterials

Research Skills

Expertise on Material Science: synthesis methodologies, forming methods for the production of prototypes, investigation of the relations between micro- nano-structural properties and material performance involved in the field of life sciences.

23 years of experience in the development of biomineralization processes towards nanostructured hybrid biomimetic composites for the development of 3D porous scaffold aimed to the regeneration of bone, osteochondral and periodontal tissue. Development of injectable multifunctional biomaterials and 3D scaffolds, obtained through biomineralization and blending processes, for the regeneration of not mineralized tissue like cardiac tissue, tendon, ligament, cartilage. Development of bioactive biomimetic and superparamagnetic nanoparticles and hybrid beads as drug delivery systems.

Recent activities are focused on:

- design of 3D printed and bio-printed construct for the obtainment of 3D in vitro models predictive of healthy and pathological tissues aimed at the discovery of personalized pharmacological approaches;
- development of multilayer medicated devices for the local dressing and healing of extensive and difficult to heal infected skin wounds;
- 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;
- development of bio-hybrid scaffolds exhibiting mineralization gradients, obtained through interpenetration of bio-hybrid composites for the selective regeneration of bone, osteo-cartilaginous tissues and periodontal regions;
- development of porous bio-hybrid scaffold endowed with intrinsic magnetic properties;
- development of polymeric functionalized scaffolds, obtained through blending processes, for the regeneration of not mineralized tissue like cardiac tissue, tendon, ligament, cartilage;
- development of 3D structures suitable as HMEf devices fully biodegradable and low cost obtained starting from waste material by eco-sustainable processes;
- development of intrinsically superparamagnetic iron doped hydroxyapatite suitable for applications in tissue regeneration, nanomedicine and theranostic (imaging with MRI, hyperthermia therapy);
- development of doped apatite for application in cosmetic field: SPF booster for sunscreen lotions more safe for human and for environment, raw materials for make-up formulations.

Chemical-Physic-Morphological characterization of the developed materials with the technique: XRD, FT-IR, ICP, UV-VIS, TG-DSC, SEM-FEG, ESEM-EDS, DMTA.

Membership

Since 2002: Member of the Italian Ceramic Society (I.Ecer.S)

Since 2002: Member of the Italian Society of Biomaterials

Since 2011: Member of the American Ceramic Society

Since 2020: Member of the European Society for Biomaterials (ESB)

Awards and Honors

2022

The scientific paper *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., Francesca B., Gentilomi G.A., Tampieri A., **Sandri M.*** **Pharmaceutics** (2021) 13, 1090, was selected between the top paper of 2022-2021. It was awarded and included in the “Editor's Choice collection” link: https://www.mdpi.com/journal/pharmaceutics/editors_choice

2021

Winner of Podcast and **Blood** Cover with the paper published in May 2021 “*Targeting mesenchymal stromal cells plasticity to reroute acute myeloid leukemia course*” Borella G, **Sandri M**, Pigazzi M. <https://doi.org/10.1182/blood.2020009845>

2018

Winner of a PhD fellow financed from Emilia-Romagna Region in the framework of “Piano Triennale Alte Competenze per la Ricerca, il Trasferimento tecnologico e l’Imprenditorialità” Budget 86.700 € Prot. CNR-ISTEC N. 0001318 del 05/06/2018

2014

Winner of the **Small** Cover Competition 2014. Published in October 2014 the Image entitle “*Multiscale Patterning of a Biomimetic Scaffold Integrated with Composite Microspheres*” S. Minardi, **M. Sandri**, J. O. Martinez, I. K. Yazdi, X. Liu, M. Ferrari, B. K. Weiner, A. Tampieri, E. Tasciotti.

2012

Winner of the **Materials Today** Cover Competition 2011. Published in May 2012 the Image entitle “*Bio-inspired artificial scaffolds and the quest to replicate biology*” C. Cunha, S. Panseri, **M. Sandri**, M. Marcacci and A. Tampieri.

2011

The article “*A conceptually new type of bio-hybrid scaffold for bone regeneration*” A. Tampieri, E. Landi, F. Valentini, **M. Sandri**, T. D’Alessandro, V. Dediu, M. Marcacci **Nanotechnology** 22; (2011) 015104 (8pp) has been selected for the Nanotechnology Highlights 2011.

2008

The article “*Design of graded biomimetic osteochondral composite scaffolds*” A. Tampieri, **M. Sandri**, E. Landi, D. Pressato, S. Francioli, R. Quarto, I. Martin. 2008 **Biomaterials** 29 (26), 3539 has been selected by the Literature Awareness System (UK) as one of the most important articles of the year.

Member of Commission for public selections

Commission for the admission exam to PhD courses and Research fellow assignment:

- Bando di concorso pubblico, per titoli ed esami, per l’ammissione ai corsi di Dottorato di Ricerca 40° ciclo pubblicato con D.R. n. 1449 del 19.06.2024. Ruolo: Membro esperto effettivo della Commissione Giudicatrice per l'esame di ammissione al 40° ciclo del corso di Dottorato di Ricerca in SCIENZA E TECNOLOGIA DEI MATERIALI Università di Parma.
- Bando di concorso pubblico, per titoli ed esami, per l’ammissione ai corsi di Dottorato di Ricerca 36° ciclo pubblicato con D.R. 840 del 22.07.2020; Prot. 0157671 D.R. 852 del 23/07/2020. Ruolo: Membro esperto effettivo della Commissione Giudicatrice per l'esame di ammissione al 36° ciclo del corso di Dottorato di Ricerca in SCIENZA E TECNOLOGIA DEI MATERIALI Università di Parma.
- Bando di concorso pubblico, per titoli ed esami, per l’ammissione ai corsi di Dottorato di Ricerca 35° ciclo pubblicato con D.R. 1682 del 16.07.2019; D.R. N. 1746 del 22/07/2019. Ruolo: Membro esperto supplente della Commissione Giudicatrice per l'esame di ammissione al 35° ciclo del corso di Dottorato di Ricerca in SCIENZA E TECNOLOGIA DEI MATERIALI Università di Parma.

Research contracts assignment:

- Bando di selezione n. 331.1 ISSMC RIC. del 12/07/2023 per 1 Ricercatore TD, Prot. n. 259173/2023 del 06/09/2023. Ruolo: Segretario.
- Bando di selezione n. 400.7 ISSMC-CNR PNRR ECS_00000033 del 06/02/2023 per 1 Ricercatore TD, Prot. n. 0123817 del 26/04/2023. Ruolo: Segretario.
- Bando di selezione n. 400.2 ISSMC-CNR PNRR ECS_00000033 del 29/12/2022 per 1 Ricercatore TD, Prot. n. 0064631 del 03/03/2023. Ruolo: Segretario.
- Bando di selezione n. 400.1 ISOF PNRR prot. n. 3190 del 29/12/2022 per 1 Ricercatore TD, Prot. n. 85545 del 22/03/2023. Ruolo: Componente della Commissione.
- Bando di selezione n. 380.3 ISTEC RIC.

Del 28/01/2020 per 1 Ricercatore TD, Prot. n. 0000695 del 30.3.02020. Ruolo: Componente della Commissione. • Bando di selezione n. ISTE.C.073.17.01.04 - Cod. Bando ISTE.C-004-2017-RA del 28.03.2017 per 1 Ricercatore TD, Prot. n. 0001651 del 02/05/2017. Ruolo: Componente della Commissione. • Bando di selezione n. ISTE.C.073.17.01.06 - Cod. Bando ISTE.C-006-2017-RA del 28.03.2017 per 1 Ricercatore TD, Prot. n. 0001647 del 28/04/2017. Ruolo: Membro supplente. • Bando di selezione n. ISTE.C.073.17.01.01 - Cod. Bando ISTE.C-001-2017-RA del 21/02/2017 per 1 Ricercatore TD, Prot. n. 0001268 del 30/03/2017. Ruolo: Componente della Commissione. • Bando di selezione n. ISTE.C.073.16.01.03, Cod. Bando ISTE.C-003-2016-RA del 31/05/2016 per 1 Ricercatore TD, Prot. n. 0002386 del 27/07/2016. Ruolo: Componente della Commissione. • Bando di selezione n. ISTE.C.073.14.01.02, Cod. Bando ISTE.C-002-2014-RA del 27/06/2014 per 1 Ricercatore TD, Prot. n. 0002386 del 27/07/2016. Ruolo: Componente della Commissione

Research fellows assignment:

• Bando CNR-ISTEC n°073.21.03.08 del 21.09.2021 per N.1 Assegni di Ricerca professionalizzanti, Prot. n. 0001849/2021 del 11/10/2021. Ruolo: Membro di Commissione. • Bando CNR-ISTEC n°073.21.03.07 del 19.09.2021 per N.2 Assegni di Ricerca professionalizzanti, Prot. n. 0001800/2021 del 05/10/2021. Ruolo: Presidente di Commissione. • Bando CNR-ISTEC n°073.20.03.12 del 13.10.2020 per N.2 Assegni di Ricerca professionalizzante, Prot. n. 0002246/2020 del 04/11/2020. Ruolo: Presidente di Commissione. • Bando CNR-ISTEC n°073.19.03.18 del 18.11.2019 per N.1 Assegno di Ricerca professionalizzante, Prot. n. 0002582/2019 del 09/12/2019. Ruolo: Membro di Commissione. • Bando CNR-ISTEC n°073.19.03.17 del 13.11.2019 per N.1 Assegno di Ricerca professionalizzante, Prot. n. 0002538 del 05/12/2019. Ruolo: Membro di Commissione. • Bando CNR-ISTEC n°073.19.03.11 del 23.09.2019 per N.1 Assegno di Ricerca professionalizzante, Prot. n. 0002165 del 21/10/2019. Ruolo: Membro di Commissione. • Bando CNR-ISTEC n°073.19.03.09 del 10.09.2019 per N.1 Assegno di Ricerca professionalizzante, Prot. n. 0001984 del 01/10/2019. Ruolo: Membro di Commissione. • Bando CNR-ISTEC n° 073.19.03.07 del 02.08.2019 per N.1 Assegno di Ricerca professionalizzante, Prot. n. 0001773 del 05/09/2019. Ruolo: Presidente della Commissione. • Bando CNR-ISTEC n°073.18.03.04 del 30.07.2018 per N.1 Assegno di Ricerca professionalizzante, Prot. n. 0001920 del 03/09/2018. Ruolo: Membro di Commissione. • Bando CNR-ISTEC n° 073.18.03.02 del 20.07.2018 per N.1 Assegno di Ricerca professionalizzante, Prot. n. 0001894 del 28/08/2018. Ruolo: Presidente della Commissione. • Bando CNR-ISTEC n°073.18.03.01 del 26.03.2018 per N.1 Assegno di Ricerca professionalizzante, Prot. n. 0000855 del 13/04/2018. Ruolo: Membro di Commissione. • Bando CNR-ISTEC n°073.17.03.06 del 23.05.2017 per N.1 Assegno di Ricerca professionalizzante, Prot. n. 0002268 del 13/06/2017. Ruolo: Membro di Commissione. • Bando CNR-ISTEC n°073.17.03.04 del 08.02.2017 per N.1 Assegno di Ricerca professionalizzante, Prot. n. 0001253 del 29/03/2017. Ruolo: Membro di Commissione. • Bando CNR-ISTEC n°073.17.03.01 del 10.01.2017 per N.1 Assegno di Ricerca professionalizzante, Prot. n. 0000316 del 01/02/2017. Ruolo: Membro di Commissione. • Bando CNR-ISTEC n°073.16.03.07 del 17.11.2016 per N.1 Assegno di Ricerca professionalizzante, Prot. n. 0003615 del 06/12/2016. Ruolo: Membro di Commissione.

Main international collaborations

- HMRI – Houston Methodist Research Institute (TX, USA) (Dr. E. Tasciotti, Dr. M. Ferrari)
- University of Basel (Switzerland) (Dr. A. Banfi) (Dr. I. Martin)
- Columbia University NY, NY (USA) (Dr. C. Hung)
- University of York (UK) (Dr. R. Kröger)
- University of Dresden (Germany) (Dr. M. Gelinsky)
- University of Brighton, UK (Dr. M. Santin)
- Friedrich-Schiller Universität Jena (Germany) (Dr. F. Müller)
- University of Leeds (UK) (Dr. F. Meldrum)
- University of Edinburgh (England) (Dr. D. Salter)
- University of Santiago de Compostela (Spain) (Dr. J. Rivas)
- FORSCHUNGSZENTRUM ROSSENDORF EV (Germany) (Dr. T. Herrmannsdoerfer)
- Central Institute of Orthopedics and Traumatology of Russia (Russia) (Dr. A. Kupryakov)

Publications

Author of more than 149 papers published in international peer-reviewed journals: **H-index = 44, total**

citations > 6521 [Source: Scopus]. Scopus Author ID: 35327959900;

ORCID ID <https://orcid.org/0000-0001-5782-3137>

[monica sandri - Google Scholar](#)

Author of 3 International Patents and 3 National Patent in the field of Biomaterials for Biomedical Applications. Author of 13 Book Chapters in the field of biomaterials for tissue regeneration.

Papers in refereed international journals

1. Artusi C., Campodoni C., Montanari M., Ziosi P., Vertuani S., Manfredini S., Sandri M. *Safe-by-Design Approach to Sunscreens: Synthesis and Validation of Biomimetic Hybrid Particles for an Eco-Sustainable UV Protection*. **Materials Today Communication** (2025) **IF 4.5**
2. Bernardoni S., Campodoni E., Vicinelli G., Saqawa M., Bonvicini F., Pulze L., Baranzini N., Costantini G., Montesi M., Gentilomi G.A., Grimaldi A., Sandri M. *From wound dressing to tissue regeneration: bilayer medicated patches for personalized treatment of chronic wounds*. **ACS Applied Materials & Interfaces** (2025), 17, 35240–35261 <https://doi.org/10.1021/acsami.5c06444> **IF 8.5**
3. Aydin M.S., Nicolae C.V., Campodoni E., Mohamed-Ahmed S., Kadousaraei M.J., Yassin M.A., Gjerde C., Sandri M., Stancu I.C., Rashad A., Mustafa K. *Osteogenic Potential of 3D-Printed Porous Poly(Lactide-co-Trimethylene Carbonate) Scaffolds Coated with Mg-Doped Hydroxyapatite*. **ACS Applied Materials & Interfaces** (2025), 17, 31411–31433 <https://doi.org/10.1021/acsami.5c03945> **IF 8.5**
4. Artusi C., Campodoni E., Tarlati L., Vazquez Iglesias B., Sansone A., Ferreri C., Belosi F., Vandini A., Monticelli P., Sandri 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), 30, 101108 <https://doi.org/10.1016/j.mtsust.2025.101108> **IF 7.1**
5. Montanari M., Korkeamäki J. T., 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** (2025), 8, 535–547 <https://doi.org/10.1021/acsabm.4c01418> **IF 4.6**
6. Furlani F., Malfatti M.C., 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, 60 <https://doi.org/10.1186/s13036-024-00458> **IF 5.7**
7. Bernardoni S., Ferrazzano L., Palladino C., Artusi C., Bonvicini F., Campodoni E., Gentilomi G.A., 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 <https://doi.org/10.1002/mabi.202400375> **IF 4.4**
8. Bassi G., Rossi A., Campodoni E., Sandri M., Sarogni P., Fulle S., Voliani V., Panseri M., Montesi M. *3D Tumor-Engineered Model Replicating the Osteosarcoma Stem Cell Niche and In Vivo Tumor Complexity*. **ACS Applied Materials & Interfaces** (2024), 16, 55011–55026 <https://doi.org/10.1021/acsami.4c02567> **IF 9.5**
9. 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 nanoplatforms to support wound*

- healing and skin regeneration: Mg-Hydroxyapatite meets melanins. Colloids and Surfaces B: Biointerfaces* (2024), 235, 113756 <https://doi.org/10.1016/j.colsurfb.2024.113756> IF 5.8
10. Moynihan E., Galiana-Cameo M., Sandri M., Ruffini A., Panzeri S., Velasco-Torrijos T., Montesi M., Montagner D. *2D and 3D anticancer properties of C2-functionalised glucosamine-Pt(IV) prodrugs based on cisplatin scaffold. Frontiers in Chemistry* (2024), 12, 1388332 <https://doi.org/10.3389/fchem.2024.1388332> IF 5.5
 11. Campodoni E., Montanari M., Artusi C., Bergamini L., Bassi G., Destro E., Fenoglio I., Panzeri S., Tampieri A., Sanson A., Sandri M. *Biomaterialization: A new tool for developing eco-sustainable Ti-doped hydroxyapatite-based hybrid UV filters. Biomaterials Advances* (2023), 151, 213474 <https://doi.org/10.1016/j.bioadv.2023.213474> IF 8.45
 12. Campodoni E., Artusi C., Vazquez Iglesias 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 <https://doi.org/10.1021/acsapm.3c00140> IF 4.855
 13. Tampieri A., Kon E., Sandri M., Campodoni E., Dapporto M., Sprio S. *Marine-Inspired Approaches as a Smart Tool to Face Osteochondral Regeneration. Marine Drugs* (2023), 21(4), 212; <https://doi.org/10.3390/md21040212> IF 6.085
 14. Furlani F., Campodoni E., Sangiorgi N., Montesi M., Sanson A., Sandri M., Panzeri S. *Electroconductive scaffolds based on gelatin and PEDOT:PSS for cardiac regeneration. International Journal of Biological Macromolecules* (2023), 224, 266–280 <https://doi.org/10.1016/j.ijbiomac.2022.10.122>. IF 8.025
 15. Guimarães B., Gomes S. I. L., Campodoni E., Sandri M., Sprio S., Blois M., Costa A. L., Amorim M. J. B. and Scott-Fordsmand J. J. *Environmental Hazards of Nanobiomaterials (Hydroxyapatite-Based NMs)—A Case Study with Folsomia candida—Effects from Long Term Exposure. Toxics* (2022), 10, 704. <https://doi.org/10.3390/toxics10110704> IF 4.47
 16. Gomes S. I. L., Guimarães B., Campodoni E., Sandri M., S. Simone, B. Magda, Costa A. L., Scott-Fordsmand J. J., Amorim M. J. B. *Safer and Sustainable-by-design hydroxyapatite nanobiomaterials for biomedical applications: assessment of environmental hazards. Nanomaterials* (2022), 12, 4060. <https://doi.org/10.3390/nano1224060> IF 5.719
 17. Montanari M., Sangiorgi A., Campodoni E., Bassi G., Gardini D., Montesi M., Panzeri S., Sanson A., Tampieri A., Sandri M. *Additive-Free Gelatine-Based Devices for Chondral Tissue Regeneration: Shaping Process Comparison among Mould Casting and Three-Dimensional Printing. Polymers* (2022) 14(5), 1036 <https://doi.org/10.3390/polym14051036> IF 4.329
 18. Furlani F., Montanari M., Sangiorgi N., Saracino E., Campodoni E., Sanson A., Benfenati V., Tampieri A., Panzeri S., Sandri M. *Electroconductive and injectable hydrogels based on gelatin and PEDOT:PSS for a minimally invasive approach in nervous tissue regeneration. Biomaterials Science* (2022), 10, 2040-2053 <https://doi.org/10.1039/d2bm00116k> IF 6.843
 19. Campodoni E., Velez M., Fragogeorgi E., de la Presa P., Stanicki D., Dozio S.M., Rouchota M., Loudos G., Marín P., Laurent S., Montesi M., Tampieri A., Sandri M. *Magnetic and radio-labeled bio-hybrid scaffolds to promote and track in vivo the progress of bone regeneration. Biomaterials Science* (2021) 9, 7575-7590 <https://doi.org/10.1039/D1BM00858G> IF 6.843
 20. Cioffi V., Bocchetti A., Nataloni A., Canella V., Sandri M., De Falco R. *Anterior cervical fusion using magnesium-enriched hydroxyapatite: a two-year follow-up in 75 cases. Progress in Neuroscience* (2021), 6, 1-4

21. Campodoni E., Montanari M., Artusi C., Bassi G., Furlani F., Montesi M., Panzeri S., Sandri M., Tampieri A. *Calcium-Based Biomineralization: A Smart Approach for the Design of Novel Multifunctional Hybrid Materials*. **Journal of Composites Science** (2021) 5, 278. <https://doi.org/10.3390/jcs5100278> IF 3.49
22. Ruffini A., Sandri M., Dapporto M., Campodoni E., Tampieri A. and Sprio S. *Nature-Inspired Unconventional Approaches to Develop 3D Bioceramic Scaffolds with Enhanced Regenerative Ability*. **Biomedicines** (2021) 9, 916. <https://doi.org/10.3390/biomedicines9080916> IF 6.081
23. Mulazzi M., Campodoni E., Bassi G., Montesi M., Panzeri S., Francesca B., Gentilomi G.A., Tampieri A., Sandri M. *Medicated Hydroxyapatite/Collagen Hybrid Scaffolds for Bone Regeneration and Local Antimicrobial Therapy to Prevent Bone Infections*. **Pharmaceutics** (2021) 13, 1090. <https://doi.org/10.3390/pharmaceutics13071090> IF 6.321
24. Parente R., Possetti V., Schiavone M.L., Campodoni E., Menale C., Loppini M., Doni A., Bottazzi B., Mantovani A., Sandri M., Tampieri A., Sobacchi C., Inforzato A. *3D Cocultures of Osteoblasts and Staphylococcus aureus on Biomimetic Bone Scaffolds as a Tool to Investigate the Host–Pathogen Interface in Osteomyelitis*. **Pathogens** (2021), 10, 837. <https://doi.org/10.3390/pathogens10070837> IF 3.492
25. 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. *Targeting the plasticity of mesenchymal stromal cells to reroute the course of acute myeloid leukemia*. **Blood** (2021) 138(7), 557-570. <https://doi.org/10.1182/blood.2020009845> IF 22.113
26. Helgeland E., Rashad A., Campodoni E., Pedersen T.O., Sandri M., Rosén A. and Mustafa K. *Dual-crosslinked 3D printed gelatin scaffolds with potential for temporomandibular joint cartilage regeneration*. **Biomedical Materials** (2021) 16, 035026 <https://doi.org/10.1088/1748-605X/abe6d9> IF 4.103
27. Ramírez-Rodríguez G.B., Pereira A.R., Herrmann M., Hansmann J., Delgado-López J.M., Sprio S., Tampieri A. and Sandri M. *Biomimetic Mineralization Promotes Viability and Differentiation of Human Mesenchymal Stem Cells in a Perfusion Bioreactor*. Special Issue "Cell-biomaterial interaction 2020" **International Journal of Molecular Sciences**. (2021) 22(3), 1447, <https://doi.org/10.3390/ijms22031447> IF 4.556
28. Sangiorgi N., Bendoni R., Sangiorgi A., Aversa L., Tatti R., Verucchi R., Adamiano A., Sandri M., Tampieri A., Sanson A. *Titanium-doped hydroxyapatites photoanodes for Dye-Sensitized Solar Cells* **Ceramics International** (2021) Volume 47, Issue 7, Part A, Pages 9701-9710 IF 3.830
29. Fernandes Patrício T.M., Mumcuoglu D., Montesi M., Panzeri S., Witte-Bouma J., Fahmy Garcia J., Sandri M., Tampieri A., Farrell E., Sprio S. (2020) *Bio-inspired polymeric iron-doped hydroxyapatite microspheres as a tunable carrier of rhBMP-2*. **Materials Science & Engineering C, Biomimetic materials, sensors and systems**. 119 (2021) 111410 IF 5.880
30. Bassi G., Panzeri S., Dozio S.M., Sandri M., Campodoni E., Dapporto M., Sprio M., Tampieri A. Montesi M. *Scaffold-based 3D cellular models mimicking the heterogeneity of osteosarcoma stem cell niche*. **Scientific Reports**. (2020) 10:22294 | <https://doi.org/10.1038/s41598-020-79448-y> IF 4.576
31. Kovtun A., Campodoni E., Favaretto L., Zambianchi M., Salatino A., Amalfitano S., Navacchia M.L., Casentini B., Palermo V., Sandri M., Melucci M. *Multifunctional graphene oxide/biopolymer composite aerogels for microcontaminants removal from drinking water*. **Chemosphere**, vol. 259, p. 127501 (2020) <https://doi.org/10.1016/j.chemosphere.2020.127501> IF 5.778

32. Dellaquila A., Campodoni E., Tampieri A., Sandri M. *Overcoming the Design Challenge in 3D Biomimetic Hybrid Scaffolds for Bone and Osteochondral Regeneration by Factorial Design*. **Frontiers in Bioengineering and Biotechnology**, Research Topic Title: Biomimicry in 3D Nanomaterial Design: Implications for Regenerative Medicine Editors: Taraballi, Cipolla, Tasciotti (2020) 8:743. <https://doi.org/10.3389/fbioe.2020.00743> IF 3.644
33. Campodoni E., Dozio S.M., Panzeri S., Montesi M., Tampieri A., Sandri M. *Mimicking Natural Microenvironments: Design of 3D-Aligned Hybrid Scaffold for Dentin Regeneration*. **Frontiers in Bioengineering and Biotechnology**, Research Topic Title: Biomimicry in 3D Nanomaterial Design: Implications for Regenerative Medicine. (2020) 8:836 <https://doi.org/10.3389/fbioe.2020.00836> IF 5.890
34. Toni R., Di Conza G., Barbaro F., Zini N., Consolini E., Dallatana D., Antoniel M., Quarantini E., Quarantini M., Maioli S., Bruni C. A., Elviri L., Panzeri S., Sprio S., Sandri M. and Tampieri A. *Microtopography of Immune Cells in Osteoporosis and Bone Lesions by Endocrine Disruptors*. (2020) **Frontiers in Immunology** 11:1737. <https://doi.org/10.3389/fimmu.2020.01737> IF 6.43
35. Moroni L., Babaro F., Caiment F., Costagliola S., Di Conza G., Elviri L., Giselsbrecht S., Krause C., Mota C., Pennington S., Ringwald A., Sandri M., Thomas S., Toni R. *SCREENED: A multistage model of thyroid gland function for screening endocrine-disrupting chemicals in a biologically sex-specific manner*. **International Journal of Molecular Sciences** (2020) 21, 3648; <https://doi.org/10.3390/ijms21103648> IF 4.183
36. Campodoni E., Montanari M., Dozio S.M., Heggset E.B., Panzeri S., Montesi M., Tampieri A., Syverud K., Sandri M. *Blending gelatin and cellulose nanofibrils: biocomposites with tunable degradability and mechanical behavior*. **Nanomaterials** (2020) 10, 1219; <https://doi.org/10.3390/nano10061219> IF 4.034
37. Carlström I.E., Rashad A., Campodoni E., Sandri M., Syverud K., Bolstad A.I., Mustafa K. *Cross-Linked Gelatin-Nanocellulose Scaffolds for Bone Tissue Engineering* **Materials Letters** (2020) 127326 <https://doi.org/10.1016/j.matlet.2020.127326> IF 3.204
38. Dellaquila A., Greco G., Campodoni E., Mazzocchi M., Mazzolai B., Tampieri A., Pugno N., Sandri M. *Optimized production of a high-performance hybrid biomaterial: biomineralized spider silk for bone tissue engineering*. **Journal of Applied Polymer Science** (2020) 137, 48739. <https://doi.org/10.1002/app.48739> IF 2.18
39. Dozio S.M., Montesi M., Campodoni E., Sandri M., Piattelli A., Tampieri A., Panzeri S. *Differences in osteogenic induction of Human Mesenchymal Stem cells between a tailored 3D hybrid scaffold and a 2D standard culture*. **Journal of Materials Science: Materials in Medicine** (2019) 30:136 <https://doi.org/10.1007/s10856-019-6346-3> IF 2.467
40. Tampieri A., Sandri M., Iafisco M., Panzeri S., Montesi M., Adamiano A., Dapporto M., Campodoni E., Dozio S.M., Degli Esposti L., Sprio S. *Nanotechnological approach and bio-inspired materials to face degenerative diseases in aging*. **Aging Clinical and Experimental Research** 33, pages 805–821 (2021) <https://doi.org/10.1007/s40520-019-01365-6> IF 3.638
41. Ding M., Koroma K.E., Sorensen J.R., Sandri M., Tampieri A., Jespersen S.M. and Overgaard S. *Collagen-hydroxyapatite composite substitute and bone marrow nuclear cells on posterolateral spine fusion in sheep*. **Journal of Biomaterials Applications**. (2019) 1-10 <https://doi.org/10.1177/0885328219851315> IF 2.082
42. Bortolomai I., Sandri M., Draghici E., Fontana E., Campodoni E., Marcovecchio G.E., Ferrua F., Perani L., Spinelli A., Canu T., Di Tomaso T., Sergi L., Esposito A., Lombardo A., Naldini L., Tampieri A., Hollander G.A., Villa A. and Bosticardo M. *Gene modification and 3D scaffolds as novel tools to*

- allow the use of postnatal thymic epithelial cells for thymus regeneration approaches. **Stem Cells Translational Medicine** 00 (2019) 1–16; <http://dx.doi.org/10.1002/sctm.18-0218> **IF 4.92**
43. Filardo G., Roffi A., Fey T., Fini M., Giavaresi G., Marcacci M., Martínez-Fernández J., Martini L., Ramírez-Rico J., Salamanna F., Sandri M., Sprio S., Tampieri A., Kon E. *Vegetable hierarchical structures as template for bone regeneration: New bio-ceramization process for the development of a bone scaffold applied to an experimental sheep model*. **Journal of Biomedical Materials Research Part B: Applied Biomaterials** (2019) 1–12. <https://doi.org/10.1002/jbm.b.34414> **IF 3.373**
 44. Roffi A., Kon E., Perdisa F., Fini M., Di Martino A., Parrilli A., Salamanna F., Sandri M., Sartori M., Sprio S., Tampieri A., Marcacci M., Filardo G. *A Composite Chitosan-Reinforced Scaffold Fails to Provide Osteochondral Regeneration*. **International Journal of Molecular Sciences** - Special Issue Molecular and Tissue Engineering Approaches in Musculoskeletal Regenerative Medicine 20(9) (2019) 2227; <https://doi.org/10.3390/ijms20092227> **IF 3.687**
 45. Rashad A., Suliman S., Mustafa M., Pedersen T.O., Campodoni E., Sandri M., Syverud K., Mustafa K. *Inflammatory Responses and Host Tissue Reactions to Wood-Based Nanocellulose Scaffolds* **Material Science and Engineering C** 97 (2019) 208–221 **IF 5.080**
 46. Campodoni E., Heggset E.B., Rashad A., Ramírez-Rodríguez G.B., Mustafa K., Syverud K., Tampieri A., Sandri M. *Polymeric 3D scaffolds for tissue regeneration: evaluation of biopolymer nanocomposite reinforced with cellulose nanofibrils*. **Material Science & Engineering C** 94 (2019) 867–878 <https://doi.org/10.1016/j.msec.2018.10.026> **IF 5.080**
 47. Fernandes Patrício T.M., Panseri S., Montesi M., Iafisco M., Sandri M., Tampieri A., Sprio S. *Superparamagnetic hybrid microspheres affecting osteoblasts*. **Materials Science & Engineering C** 96 (2019) 234–247 **IF 5.080**
 48. Sprio S., Campodoni E., Sandri M., Preti L., Keppler T., Müller F. A., Pugno N. M., Tampieri A. *A Graded Multifunctional Hybrid Scaffold with Superparamagnetic Ability for Periodontal Regeneration*. **International Journal of Molecular Sciences** 19 (2018) 3604 <https://doi.org/10.3390/ijms19113604> **IF 3.687**
 49. Menale C., Campodoni E., Palagano E., Mantero S., Erreni M., Inforzato A., Fontana E., Schena F., van't Hof R., Sandri M., Tampieri A., Villa A., Sobacchi C. *MSC-seeded biomimetic scaffolds as factory of soluble RANKL in Rankl-deficient osteopetrosis*. **Stem Cells Translational Medicine** (2018) 9999:1 www.StemCellsTM.com **IF 4.929**
 50. Adamiano A., Iafisco M., Sandri M., Basini M., Arosio P., Canu T., Sitia G., Esposito A., Iannotti V., Ausanio G., Fragogeorgi E., Rouchota M., Loudos G., Lascialfari A., Tampieri A. *On the use of superparamagnetic calcium phosphate nanoparticles as contrast agent for liver MRI*. **Acta Biomaterialia** 73 (2018) 458–469 **IF 6.319**
 51. Krishnakumar G.S., Gostynska N., Dapporto M., Campodoni E., Montesi M., Panseri S., Tampieri A., Kon E., Marcacci M., Sprio S., Sandri M. *Evaluation of different crosslinking agents on hybrid biomimetic collagen-hydroxyapatite composites for regenerative medicine*. **International Journal of Biological Macromolecules** 106 (2018) 739–748 **IF: 3.671**
 52. Ramírez-Rodríguez G. B., Montesi M., Panseri S., Sprio S., Tampieri A. and Sandri M. *Biomaterialized recombinant collagen-based scaffold mimicking native bone to enhance mesenchymal stem cell interaction and differentiation*. **Tissue Engineering Part A** 08/2017 <https://doi.org/10.1089/ten.tea.2017.0028> **IF: 3.9**
 53. Adamiano A., Sangiorgi N., Ruffini A., Sandri M., Sanson A., Gras P., Grossin D., Francès C., Chatzipanagis K., Kröger R., Bilton M., Marzec B., Meldrum F., Varesano A., Sprio S., Tampieri A.

- Biom mineralization of a titanium-modified hydroxyapatite semiconductor on conductive wool fibers. Journal of Material Chemistry B* 5 (2017) 7608-7621 **IF: 4.543**
54. Gostynska N., Krishnakumar G.S., Campodoni E., Panzeri S., Montesi M., Sprio S., Kon E., Marcacci M., Tampieri A. and Sandri M. *3D porous collagen scaffolds reinforced by glycation with ribose for tissue engineering application. Biomedical Materials* 12(5) (2017) 055002 **IF:2.46**
 55. Giorgi P., Schirò G. R., Capitani D., Sprio S., Sandri M., Tampieri A., Canella V., Nataloni A. *A new bio-inspired collagen-hydroxyapatite biomaterial as bone graft substitute in adult scoliosis surgery: results at 3 years follow up. Journal of Applied Biomaterials & Functional Materials* 15(3) (2017) e262-e270 DOI: 10.5301/jabfm.5000366 **IF: 1.069**
 56. Iannotti V., Adamiano A., Ausanio G., Lanotte L., Aquilanti G., Coey J., Lantieri M., Spina G., Fittipaldi M., Margaritis G., Trohidou K., Sprio S., Montesi M., Panzeri S., Sandri M., Lafisco M., Tampieri A. *Fe-Doping-Induced Magnetism in Nano-Hydroxyapatites. Inorganic Chemistry* 56 (2017) 4446–4458 DOI: 10.1021/acs.inorgchem.6b03143 **IF: 4.8**
 57. Piconi C., Sandri M. *New Materials for Dental Implantology. Key Engineering Materials* ISSN: 1662-9795, 750 (2017) 189-194. doi:10.4028/www.scientific.net/KEM.750.189 [Proceeding]
 58. Sprio S., Panzeri S., Adamiano A., Sandri M., Uhlarz M., Herrmannsdorfer T., Landi E., Pineiro-Remondo Y., Tampieri A. *Porous hydroxyapatite-magnetite composites as carriers for guided bone regeneration. Frontiers in Nanoscience and Nanotechnology.* 3(1) (2017) 1-9 doi: 10.15761/FNN.1000145, ISSN: 2397-6527 **IF: 1.2**
 59. Patricio T., Panzeri S., Sandri M., Tampieri A., Sprio S. *New bioactive bone-like microspheres with intrinsic magnetic properties obtained by bio-inspired mineralisation process. Material Science and Engineering C* 77 (2017) 613–623 **IF: 3.2**
 60. Krishnakumar G.S., Gostynska N., Campodoni E., Dapporto M., Montesi M., Panzeri S., Sprio S., Kon E., Marcacci M., Tampieri A. and Sandri M. *Ribose mediated cross-linking of collagen-hydroxyapatite hybrid scaffolds for bone tissue regeneration using biomimetic strategies. Materials and Engineering C* <https://doi.org/10.1016/j.msec.2017.03.255> 77 (2017) 594–605 **IF: 3.2**
 61. Pistone A., Iannazzo D., Espro C., Galvagno S., Tampieri A., Montesi M., Panzeri S., Sandri M. *Tethering of Gly-Arg-Gly-Asp-Ser-Pro-Lys Peptides on Mg-Doped Hydroxyapatite. Engineering* 3 (2017) 55–59 **IF: 12.83**
 62. Schena F., Menale C., Caci E., Diomede L., Palagano E., Recordati C., Sandri M., Tampieri A., Bortolomai I., Capo V., Pastorino C., Bertoni A., Gattorno M., Martini A., Villa A., Traggiai E., Sobacchi C. *Murine Rankl^{-/-} Mesenchymal Stromal Cells display an osteogenic differentiation defect improved by a RANKL-expressing lentiviral vector. STEM CELLS* 35(5) (2017) 1365–1377 <https://doi.org/10.1002/stem.2574> **IF: 6.17**
 63. Minardi S., Taraballi S., Wang X., Cabrera F. J., Van Eps J. L., Robbins A., Sandri M., Moreno M. R., Weiner B. K., Tasciotti E. *Biomimetic Collagen/Elastin Meshes for Ventral Hernia Repair in a Rat Model. ACTA Biomaterialia* 50 (2017) 165-177 **IF: 6.01**
 64. Krishnakumar G.S., Gostynska N., Montesi M., Panzeri S., Sprio S., Kon E., Marcacci M., Tampieri A. and Sandri M. *Investigation of different cross-linking approaches on 3D gelatin scaffolds for tissue engineering application: a comparative analysis. International Journal of Biological Macromolecules* 95 (2017) 1199–1209 **IF: 3.2**
 65. Chatzipanagis K., Baumann C. G., Sandri M., Sprio S., Tampieri A., Kröger R. *In situ mechanical and molecular investigations of collagen/apatite biomimetic composites combining Raman spectroscopy and stress-strain analysis. ACTA Biomaterialia* 46 (2016) 278–285 **IF: 6.01**

66. Campodoni E., Adamiano A., Dozio S.M., Panzeri S., Montesi M., Sprio S., Tampieri A., Sandri M. *Development of Innovative Hybrid and Intrinsically Magnetic Nanobeads as Drug Delivery System. Nanomedicine – Future Medicine* (Special Focus | Nanotechnology for the diagnosis & treatment of diseases) 11(16) (2016) 2119-2130 IF: **4.717**
67. Ramírez-Rodríguez G.B., Delgado-López J.M., Iafisco M., Montesi M., Sandri M., Sprio S. and Tampieri A. *Biomimetic mineralization of recombinant collagen type I derived protein to obtain hybrid matrices for bone regeneration. Journal of Structural Biology* 196 (2016) 138–146 doi: 10.1016/j.jsb.2016.06.025 IF: **2.57**
68. Sandri M., Filardo G., Kon E., Panzeri S., Montesi M., Iafisco M., Savini E., Sprio S., Giavaresi G., Veronesi F., Fini M., Salvatore L., Sannino A., Marcacci M., Tampieri A. *Fabrication and pilot in vivo study of a Collagen-BDDGE-elastin core-shell scaffold for tendon regeneration. Frontiers in Bioengineering and Biotechnology*. Vol. 4, Article 52 (2016). DOI: 10.3389/fbioe.2016.00052 IF: **5.122**
69. Panzeri S., Montesi M., Dozio S.M., Savini E., Tampieri A. and Sandri M. *Biomimetic Scaffold with Aligned Microporosity Designed for Dentin Regeneration. Frontiers in Bioengineering and Biotechnology*. Vol. 4, Article 48 (2016). DOI: 10.3389/fbioe.2016.00048 IF: **5.890**
70. Sprio S., Sandri M., Iafisco M., Panzeri S., Adamiano A., Montesi M., Campodoni E., Tampieri A. *Bio-inspired assembling/mineralization process as a flexible approach to develop new smart scaffolds for the regeneration of complex anatomical regions. Journal of the European Ceramic Society* 36 (12) (2016) 2857–2867 <http://dx.doi.org/10.1016/j.jeurceramsoc.2016.01.005> IF: **2.93**
71. Guarino V., Veronesi F., Marrese M., Giavaresi G., Ronca A., Sandri M., Tampieri A., Fini M., Ambrosio L. *Needle-like ion doped hydroxyapatite crystals influence osteogenic properties of PCL composite scaffolds*. doi:10.1088/1748-6041/11/1/015018 **Biomed. Mater.** 11 (2016) 015018. IF: **3.36**
72. Panzeri S., Montesi M., Sandri M., Iafisco M., Adamiano A., Ghetti M., Cenacchi G., Tampieri A. *Magnetic labelling of mesenchymal stem cells with iron-doped hydroxyapatite nanoparticles as tool for cell therapy. Journal of Biomedical Nanotechnology* 12 (2016) 909-921. <https://doi.org/10.1166/jbn.2016.2248> IF: **5.068**
73. Russo A., Bianchi M., Sartori M., Parilli A., Panzeri S., Ortolani A., Sandri M., Boi M., Salter D., Maltarello M.C., Giavaresi G., Fini M., Dediu V., Tampieri A., Marcacci M. *Magnetic forces and magnetized biomaterials provide dynamic flux information during bone regeneration. Journal of Materials Science: Materials in Medicine*, (2016) 27:51. DOI 10.1007/s10856-015-5659-0. IF: **2.27**
74. Minardi S., Corradetti B., Taraballi F., Sandri M., Martinez J.O., Powel S.T., Tampieri A., Weiner B.K., Tasciotti E. *Biomimetic Concealing of PLGA Microspheres in a 3D Scaffold to Prevent Macrophage Uptake. Small* (2016), 12(11), 1479-1488 DOI 10.1002/smll.201503484 IF: **8.315**
75. Minardi S., Corradetti B., Taraballi F., Sandri M., Van Eps J., Cabrera F., Weiner B.K., Tampieri A., Tasciotti E. *Evaluation of the osteoinductive potential of a bio-inspired scaffold mimicking the osteogenic niche, for bone augmentation. Biomaterials* 62, (2015), 128–137. IF: **8.31**
76. Bortolomai I., Sandri M., Di Tomaso T., Catucci M., Lombardo A., Sergi L.S. *Thymic Tissue Regeneration Using Natural Collagen Scaffolds. J Tissue Sci Eng* 2014, 5:3 [Proceedings]
77. Veronesi F., Giavaresi G., Guarino V., Raucci M.G., Sandri M., Tampieri A., Ambrosio L., Fini M. *Bioactivity and bone healing properties of biomimetic porous composite scaffold: in vitro and in vivo studies. Journal of Biomedical Materials Research: Part A*. 103(9) (2015) 2932–2941 IF: **3.26**
78. De Santis R., Russo A., Gloria A., D'Amora U., Russo T., Panzeri S., Sandri M., Tampieri A., Marcacci M., Dediu V.A., Wilde C.J., Ambrosio L. *Towards the design of 3D fiber-deposited poly(e-*

- caprolactone)/iron-doped hydroxyapatite nanocomposite magnetic scaffolds for bone regeneration. Journal of Biomedical Nanotechnology* 11(7) (2015) 1236-1246 **IF: 7.6**
79. Vazquez B., Nicosia A., Belosi F., Santachiara G., Monticelli P., Sandri M., Savini E., Tampieri A. *Natural polymers as Heat and Moisture Exchange devices for medical applications. Advances in Science and Technology* Vol. 96 (2014) 39-44. [Proceeding]
 80. Tampieri A., Iafisco M., Sandri M., Panseri S., Cunha C., Sprio S., Savini E., Uhlarz M., Herrmannsdörfer T. *Magnetic bio-inspired hybrid nanostructured collagen-hydroxyapatite scaffolds supporting cell proliferation and tuning regenerative process. ASC Applied Materials & Interfaces* 6 (2014) 15697-15707. **IF: 7.145**
 81. Zamparelli A., Zini N., Cattini L., Spaletta G., Dallatana D., Bassi E., Barbaro F., Iafisco M., Mosca S., Parrilli A., Fini M., Giardino R., Sandri M., Sprio S., Tampieri A., Maraldi N.M., Toni R. *Growth on poly(L-lactic acid) porous scaffold preserves CD73 and CD90 immunophenotype markers of rat bone marrow mesenchymal stromal cells. Journal of Materials Science: Materials in Medicine* 25(10) (2014) 2421-2436. DOI 10.1007/s10856-014-5259-4 **IF: 2.32**
 82. Banobre-Lopez M., Pineiro-Redondo Y., Sandri M., Tampieri A., De Santis R., Dediu A.V., Rivas J. *Hyperthermia induced in magnetic scaffolds for bone tissue engineering. Special INTERMAG issue of IEEE Transactions on Magnetics.* 50(11) (2014) 1-7 [Proceeding] **IF: 1.363**
 83. Guarino V., Scaglione S., Sandri M., Alvarez-Perez M.A., Tampieri A., Quarto R., Ambrosio L. *MgCO₃-doped HA particles dispersion in porous PCL scaffolds: in vitro mineralization and in vivo bone formation. Journal of Tissue Engineering and Regenerative Medicine* - (2012) DOI: 10.1002/term.1521. **IF: 3.53**
 84. Minardi S., Sandri M., Martinez J. O., Yazdi I. K., Liu X., Ferrari M., Weiner B. K., Tampieri A., Tasciotti E. *Multiscale Patterning of a Biomimetic Scaffold Integrated with Composite Microspheres. Small* 10(19) (2014) 3943-3953 DOI: 10.1002/sml.201401211. **IF: 8.315**
 85. Riminucci A., Dionigi C., Pernechele C., De Pasquale G., De Caro T., Ingoc G.M., Mezzadri F., Bock N., Solzi M., Padeletti G., Sandri M., Tampieri A., Dediu V.A. *Magnetic and morphological properties of ferrofluid-impregnated hydroxyapatite/collagen scaffolds Science of Advanced Materials* 6(12) 2014, 2679-2687 DOI: 10.1166/sam.2014.1986. **IF: 1.812**
 86. Russo L., Taraballi F., Lupo C., Poveda A., Jiménez-Barbero J., Sandri M., Tampieri A., Nicotra F., Cipolla L. *Carbonate hydroxyapatite functionalisation: a comparative study toward (bio)molecules fixation. Interface Focus*, 4(1) (2014) 20130040. **IF: 2.206**
 87. Filardo G., Kon E., Tampieri A., Cabezas-Rodríguez R., Di Martino A., Fini M., Lelli M., Martínez-Fernández J., Martini L., Ramírez-Rico J., Salamanna F., Sandri M., Sprio S., Marcacci M. *New bio-ceramization process applied to vegetable hierarchical structures for bone regeneration: an experimental model in sheep. Tissue Engineering Part A* 20(3-4) (2014) 763-773 doi:10.1089/ten.tea.2013.0108. **IF: 3.892**
 88. Incerti Parenti S., Panseri S., Gracco A., Sandri M., Tampieri A., Alessandri Bonetti G. *Effect of low-level laser irradiation on osteoblast-like cells cultured on porous hydroxyapatite scaffolds. Ann Ist Super Sanità* 49(3) (2013) 255-260 DOI 10.4415/ANN_13_03_04. **IF: 0.94**
 89. Iafisco M., Sandri M., Panseri S., Delgado-Lopez J.M., Gomez-Morales J., Tampieri A. *Magnetic bioactive and biodegradable hollow Fe-doped hydroxyapatite coated poly(l -lactic) acid microspheres. Chemistry of Materials* 25(13) (2013) 2610-2617 <http://dx.doi.org/10.1098/rsif.2012.0833>. **IF: 8.238**
 90. Russo T., D'Amora U., Gloria A., Tunesi M., Sandri M., Rodilossid S., Albanid D., Forlonid G., Giordano C., Cigada A., Tampieri A., De Santis R., Ambrosio L. *Systematic analysis of injectable*

materials and 3D rapid prototyped magnetic scaffolds: from CNS applications to soft and hard tissue repair/regeneration. Procedia Engineering 59 (2013) 233–239. [Proceeding]

91. Panseri S., Russo A., Sartori M., Giavaresi G., Sandri M., Fini M., Maltarello M.C., Shelyakova T., Ortolani A., Visani A., Dediu A., Tampieri A., Marcacci M. *Modifying bone scaffold architecture in vivo with permanent magnets to facilitate fixation of magnetic scaffolds. Bone* 56, (2013) 432-439 <http://dx.doi.org/10.1016/j.bone.2013.07.015>. IF: **3.823**
92. Gloria A., Russo T., D'Amora U., Zeppetelli S., D'Alessandro T., Sandri M., Banobre-Lopez M., Pineiro-Redondo Y., Uhlarz M., Tampieri A., Rivas J., Herrmannsdorfer T., Dediu V.A., Ambrosio L., De Santis R. *Magnetic poly(1-caprolactone)/iron-doped hydroxyapatite nanocomposite substrates for advanced bone tissue engineering. J. R. Soc. Interface* (2013) 10 (80). IF: **3.818**
93. Cunha C., Panseri S., Sandri M., Marcacci M., Tampieri A. Inspired by nature: Bio-inspired artificial scaffolds and the quest to replicate biology. *Materials Today* (2012), 15(5): 223. IF: **6.265 [Editorial]**
94. Panseri S., Cunha C., D'Alessandro T., Sandri M., Giavaresi G., Marcacci M., Hung C.T., Tampieri A. *Intrinsically superparamagnetic Fe-Hydroxyapatite nanoparticles positively influence osteoblast-like cell behaviour. Journal of Nanobiotechnology.* (2012), 10:32. DOI: 10.1186/1477-3155-10-32. IF: **4.946**
95. Sandri M., Rizzi R., Schiattarella G., Levialdi Ghiron J.H., Latronico M.V.G., Pironti G., Chiariello G.A., Esposito G., Tampieri A., Condorelli G. *A Collagen Membrane-based Engineered Heart Tissue Improves Cardiac Function in Ischemic Rat Hearts. Bioinspired, Biomimetic and Nanobiomaterials* (2012) Vol 2(1) 20-27 <https://doi.org/10.1680/bbn.12.00028> IF: **0.98**
96. Nicoletti A., Fiorini M., Paolillo J., Dolcini L., Sandri M., Pressato D. *Effects of different crosslinking conditions on the chemical-physical properties of a novel bio-inspired composite scaffold stabilised with 1,4-butanediol diglycidyl ether (BDDGE). Journal of Materials Science: Materials in Medicine* (2013) 24(1): 17–35 <https://doi.org/10.1007/s10856-012-4782-4> IF: **2.32**
97. Russo L., Zanini S., Giannoni P., Landi E., Villa A., Sandri M., Riccardi C., Quarto R., Doglia S.M., Nicotra F., Cipolla L. *The influence of plasma technology coupled to chemical grafting on the cell growth compliance of 3D hydroxyapatite scaffolds. Journal of Materials Science: Materials in Medicine* (2012) 23:2727–2738 IF: **2.32**
98. Sprio S., Sandri M., Panseri S., Cunha C., Tampieri A. *Hybrid scaffolds for tissue regeneration: chemotaxis and physical confinement as sources of biomimesis. Journal of Nanomaterials* (2012) DOI:10.1155/2012/418281. IF: **1.38**
99. Panseri S., Russo A., Giavaresi G., Sartori M., Veronesi F., Fini M., Salter D.M., Ortolani A., Strazzari A., Visani A., Dionigi C., Bock N., Sandri M., Tampieri A., Marcacci M. *Innovative magnetic scaffolds for orthopedic tissue engineering. J Biomed Mater Res Part A* 100(9) (2012) 2278-2286 DOI: 10.1002/jbm.a.34167. IF: **3.044**
100. Panseri S., Cunha C., D'Alessandro T., Sandri M., Russo A., Giavaresi G., Marcacci M., Hung C.T., Tampieri A. *Magnetic Hydroxyapatite Bone Substitutes to Enhance Tissue Regeneration: Evaluation In Vitro Using Osteoblast-Like Cells and In Vivo in a Bone Defect. PLoS ONE* 7(6) (2012) e38710. doi:10.1371/journal.pone.0038710.g001. IF: **4.411**
101. Scaglione S., Giannoni P., Bianchini P., Sandri M., Marotta R., Firpo G., Valbusa U., Tampieri A., Diaspro A., Bianco P., Quarto R. *Order versus Disorder: in vivo bone formation within osteoconductive scaffolds Scientific Reports (NATURE PUBLISHING GROUP) Publ. 2, (2012) 274; https://doi.org/10.1038/srep00274 IF: 5.525*

102. Babiker H., Ding M., Sandri M., Tampieri A., Overgaard S. *The effects of bone marrow aspirate, bone graft and collagen composites on fixation of titanium implants.* **Journal of Biomedical Materials Research: Part B** 100B (2012) 759–766. **IF: 2.22**
103. Scaglione S., Guarino V., Sandri M., Tampieri A., Ambrosio L., Quarto R. *In vivo lamellar bone formation in fibre coated MgCHA-PCL composite scaffolds.* **Journal of Materials Science: Materials in Medicine** 23; (2012) 117-28. **IF: 2.32**
104. Tampieri A., D'Alessandro T., Sandri M., Sprio S., Landi E., Bertinetti L., Panseri S., Pepponi G., Goettlicher J., Bañobre-López M., Rivas J. *Intrinsic magnetism and hyperthermia in bioactive Fe-doped hydroxyapatite.* **Acta Biomaterialia** 8(2) (2012) 843-851. **IF: 6.01**
105. Sprio S., Ruffini A., Valentini F., D'Alessandro T., Sandri M., Panseri S., Tampieri A. *Biomimesis and biomorphic transformations: New concepts applied to bone regeneration* **Journal of Biotechnology** 156 (4); (2011) 347-355. **IF: 2.97**
106. Tampieri A., Landi E., Valentini F., Sandri M., D'Alessandro T., Dediu V., Marcacci M. *A conceptually new type of bio-hybrid scaffold for bone regeneration* **Nanotechnology** 22; (2011) 015104 (8pp). **IF: 3.65**
107. Tampieri A., Sprio S., Sandri M., Valentini F. *Mimicking natural biomineralization processes: a new tool for osteo-chondral scaffold development.* **Trends in Biotechnology** 29 (2011) pp 526-535. DOI: 10.1016/j.tibtech.2011.04.011. **IF: 9.64**
108. Toni R., Tampieri A., Zini N., Strusi V., Sandri M., Dallatana D., Spaletta G., Bassoli E., Gatto A., Ferrari A., Martin I. *Ex situ bioengineering of bioartificial endocrine glands: A new frontier in regenerative medicine of soft tissue organs.* **Annals of Anatomy** 193 (2011) pp. 381-394. **IF: 1.66**
109. Sandri M., Natalello A., Bini D., Gabrielli L., Cipolla L., Nicotra F. *Sweet and Salted: sugars meet hydroxyapatite* **SYNLETT** 13 (2011) pp. 1845-1848. **IF: 2.323**
110. Sandri M., Tampieri A., Salvatore L., Sannino A., Ghiron J. H. L. and Condorelli G. *Collagen based scaffold for biomedical applications.* **Journal of Biotechnology**. 150 Supplement: 1; (2010) S29-S29 DOI:10.1016/j.jbiotec.2010.08.084. **IF: 2.97** [supplement]
111. Kon E., Delcogliano M., Filardo G., Fini M., Giavaresi G., Francioli S., Martin I., Pressato D., Arcangeli E., Quarto R., Sandri M., Marcacci M. *Orderly Osteochondral Regeneration in a Sheep Model Using a Novel Nano-Composite Multilayered Biomaterial.* **Inc. J Orthop Res** 28 (2010) pp.116–125 **IF: 2.81**
112. Arcelli A., Balducci D., Porzi G., Sandri M. *Chiral 2,5-diketopiperazine derivatives as effective β -glucosidase inhibitors. Part 4,* **Chemistry and Biodiversity** 225, 7 (2010) **IF: 1.444**
113. Tampieri A, Sandri M, Landi E, Sprio S, Valentini F, Boskey AL. *Synthetic bio-mineralization yielding HA / Collagen hybrid composite,* **Adv Appl Cer** (2008) 107, n°5, 298-302.
114. A. Arcelli, G. Porzi, S. Rinaldi, M. Sandri. *Electrostatic interactions effect in the aminolysis of some β -lactams in the presence of Poly(ethyleneimine): structure-reactivity.* **Journal of Physical Organic Chemistry** 163, 21, (2008) **IF:1.515**
115. Landi E., Sprio S., Sandri M., Tampieri A., Bertinetti L., Martra G. *Development of Multisubstituted Apatites for Bone Reconstruction,* **Key Eng Mat** (2008) 361-363: 171-174.
116. Tampieri A., Sandri M., Landi E., Pressato D., Francioli S., Quarto R., Martin I. *Design of graded biomimetic osteochondral composite scaffolds.* 2008 **Biomaterials** 29 (26), 3539-3546. **IF: 8.387**
117. Sandri M., Tampieri A., Bertinetti L., Boskey A. *In vitro bio-mineralization process.* 2008 **Key Engineering Materials** 361-363 I, 543-546.

118. Tampieri A., Sandri M., Landi E., Pressato D. *Biomimetic hybrid composites to repair osteochondral lesions*. **Key Eng Mater** (2008) 361-363 II: 927-930.
119. Sprio S., Tampieri A., Landi E., Sandri M., Martorana S., Celotti G., Logroscino G. *Physico-chemical properties and solubility behaviour of multi-substituted hydroxyapatite powders containing silicon*. **Mater. Sci. Eng. C** 28 (2008) pp. 179-187. **IF: 2.18**
120. Logroscino G., Proietti L., Landi E., Tampieri A., Sandri M., Bertinetti L., Sprio S. *Biomimetic Mg-substituted Hydroxyapatite: from synthesis to in vivo behaviour*. **Journal of Materials Science: Materials in Medicine** 19 (2008) pp.239-247. **IF: 2.32**
121. Landi E., Sprio S., Sandri M., Celotti G., Tampieri A. *Development of Sr and CO₃ co-substituted hydroxyapatites for biomedical applications*. **Acta Biomater** 4 (2008) pp.656-663. **IF: 6.01**
122. Sandri M., Tampieri A., Landi E. *New morphosynthetic processes for biomaterials development*. **J Appl Biomater Biomech** (2007) 5 (3): 208. **IF: 1.42**
123. Sprio S., Sandri M., Landi E., Tampieri A. *Synthesis and characterization of multi-substituted apatites and bio-hybrid composites containing silicon*. **J Appl Biomater Biomech** 5 (2007) 220.
124. Landi E., Tampieri A., Celotti G., Sprio S., Sandri M., Logroscino G. *Sr - substituted hydroxyapatites for osteoporotic bone replacement*. **Acta Biomaterialia** 3 (2007) pp.961-969 **IF: 6.01**
125. Arcelli A., Balducci D., Estevao Neto S., Porzi G., Sandri M. *Synthesis of new chiral 1,4-morpholin-2,5-dione derivatives and evaluation as α -glucosidase inhibitors. Part 3* **Tetrahedron: Asymmetry** 18 (2007) pp. 562-568 **IF: 2.108**
126. Landi E., Tampieri A., Mattioli-Belmonte M., Celotti G., Sandri M., Gigante A., Fava P., Biagini G. *Biomimetic Mg- and Mg, CO₃⁻ substituted Hydroxyapatites: Synthesis, Characterization and in Vitro Behaviour*. **J. Eur.Cer. Soc.** 26(13) (2006) pp. 2593-2601
127. Tampieri A., Sandri M., Landi E., Celotti G., Roveri N., Mattioli Belmonte M., Virgili L., Gabbanelli F., Bigini G. *HA/alginate hybrid composites prepared through bio-inspired nucleation* **Acta Biomaterialia** 1 (2005) pp. 343-351 **IF: 6.01**
128. Palazzo B., Sidoti M.C., Roveri N., Tampieri A., Sandri M., Bertolazzi L., Galbusera F., Dubini G., Vena P., Contro R. *Controlled drug delivery from porous hydroxyapatite grafts: An experimental and theoretical approach*, **Material Science and Engineering C** 25 (2005) pp. 207-213 **IF: 1.812**
129. Landi E., Tampieri A., Celotti G., Langenati R., Sandri M., Sprio S. *Nucleation of biomimetic apatite in synthetic body fluids: dense and porous scaffold development* **Biomaterials** 26 (2005) pp. 2835-2845 **IF: 8.387**
130. Arcelli A., Balducci D., Grandi A., Porzi G., Sandri M., Sandri S. *Chiral 1,4-morpholin-2,5-dione derivatives as α -glucosidase inhibitors: Part 2*, **Tetrahedron: Asymmetry** 16 (2005) pp. 1495-1501 **IF: 2.108**
131. Arcelli A., Cecchi R., Porzi G., Sandri M. *Benzylpenicilline cleavage with polyelectrolytes*. **Journal of Physical Organic Chemistry** 255, 18 (2005) pp.255-263 **IF:1.515**
132. Celotti G., Landi E., Sandri M., Tampieri A. *New method to prepare natural-like carbonate apatite for bone replacement*. **Key Engineering Materials** Vols.264-268 (2004) pp. 2071-2074
133. Tampieri A., Celotti G., Landi E., Sandri M., Roveri N., Falini G. *Biologically inspired synthesis of nanocomposites for bone tissue regeneration*, **Key Engineering Materials** Vols.264-268 (2004) pp. 1937-1940
134. Tampieri A., Celotti G., Landi E., Sandri M. *Magnesium doped hydroxyapatite: synthesis and characterization*, **Key Engineering Materials** Vols.264-268 (2004) pp. 2051-2054

135. Landi E., Tampieri A., Celotti G., Vichi L., Sandri M. *Influence of synthesis and sintering parameters on the characteristics of carbonate apatite*, **Biomaterials** 25 (2004) pp. 1763-1770 **IF: 8.387**
136. Shu Chin Ma, Costa A.L., Landi E., Ravaglioli A., Sandri M., Tampieri A. *In vitro characterization of hydroxyapatite microparticles as gene carriers*. 9th **Ceramics, Cells and Tissues** Meeting, Faenza 29 Sett-1 Ott 2004. [Proceedings]
137. Arcelli A., Balducci D., Grandi A., Porzi G., Sandri M., Sandri S. *Chiral 1,4-morpholin-2,5-diones. Synthesis and Evaluation as Glucosidase Inhibitors*, **Monatshefte fur Chemie** 135 (2004) pp. 951-958 **IF: 1.222**
138. Roveri N., Falini G., Sidoti M.C., Tampieri A., Landi E., Sandri M., Parma B. *Biologically inspired growth of hydroxyapatite nanocrystals inside self-assembled collagen fibers*, **Materials Science and Engineering C** 23 (2003) pp. 441-446 **IF: 1.812**
139. Tampieri A., Celotti G., Landi E., Sandri M., Roveri N., Falini G. *Biologically inspired synthesis of bone-like composite: Self-assembled collagen fibers/hydroxyapatite nanocrystals*. **Journal of Biomedical Materials Research Part A** 67A (2003) pp. 618-625 **IF: 3.04**
140. Piccinelli F., Porzi G., Sandri M., Sandri S. *Stereocontrolled synthesis of enantiomerically pure unsaturated analogues of 2,6-DAP. Part5 Tetrahedron: Asymmetry* 14 (2003) pp. 393-398. **IF: 2.108**

Patents

1. 102017000022625: *Filtro per lo scambio di calore ed umidità per applicazione in campo medicale e procedimento per la sua produzione*.
Inventors: Sandri Monica, Sprio Simone, Tampieri Anna
Registration date (priority date): 28/02/2017 - Italian patent
Filter for the exchange of heat and moisture for application in the medical field and procedure for the production thereof.
International Filing Date: 27/02/2018; International Application No.: PCT/IB2018/051234
International publication Date: 07/09/2018
Pub. No.: WO2018/158684
2. 102016000023614: *Filtro solare fisico costituito da idrossiapatite sostituita in una matrice organica*.
Inventors: Sandri Monica, Sprio Simone, Tampieri Anna
Registration/priority date: 07/03/2016 - Italian patent
Physical solar filter consisting of substituted hydroxyapatite in an organic matrix
International Filing Date: 06/03/2017; International Publication Date: 14/09/2017
International Application No.: PCT/IB2017/051290
Nationalized in: Europe, USA, China, Brasil, Canada and South Korea
Pub. No.: WO2017/153888
3. 102016000023596: *Materiale composito costituito da supporti organici e idrossiapatite sostituita con titanio e/o ferro per uso in celle solari a colorante organico*.
Inventors: Sandri Monica, Sprio Simone, Tampieri Anna, Alessandra Sanson
Registration date: 07/03/2016
Italian patent
4. RM2014A000326: *Cemento iniettabile apatitico ionicamente multi-sostituito per vertebroplastica rigenerativa*.
Inventors: Sprio Simone, Tampieri Anna, Sandri Monica, Panseri Silvia, Logroscino Giandomenico

Registration date: 19/06/2014

Italian patent

5. WO2012014172: *Intrinsically Magnetic Hydroxyapatite*.

Inventors: Tampieri Anna, Landi Elena, Sandri Monica, Pressato Daniele, Rivas Rey José, Banobre López Manuel, Marcacci Maurilio.

Registration date (priority date): 29/07/2010; International Application No.: PCT/IB2011/053362

Designated States: ITMI20101420 (A1) IT1401487 (B1) AU2011284364 (A1) AU2011284364 (B2)

BR112013002030 (A2) CA2806680 (A1) CA2806680 (C) CN103038161 (A) CN103038161 (B)

EP2598437 (A1) EP2598437 (B1) IL224432 (A) JP2013538775 (A) JP5822927 (B2) KR20140009968 (A)

KR101854380 (B1) KR20140009968 (A) MX2013001169 (A) MX349464 (B) NZ607003 (A) RU2013109226

(A) SG188186 (A1) US2013129634 (A1) US9327027 (B2) ZA201301272 (B)

6. WO2007045953: *A composite based on an apatite and a polysaccharide, method for its preparation and uses thereof*.

Inventors: Landi Elena, Tampieri Anna, Sandri Monica, Di Fede Sergio, Pressato Daniele. Serial n°: PCT/IB2006/002843

Registration date: 12/10/2006

- Supporting reviewer for the defence of the following international patent:

1. WO2006092718: *Cartilaginous and osteochondral substitute comprising multilayer structure and use thereof*. Inventors: Tampieri Anna, Pressato Daniele, De Luca Claudio, Di Fede Sergio, Landi Elena. Registration date: 08/09/2006. Serial n°: PCT/IB2006/000452

2. WO2007045954: *A plurisubstituted hydroxyapatite and the composite thereof with a natural and/or synthetic polymer, their preparation and uses thereof*. Inventors: Landi Elena, Tampieri Anna, Celotti Giancarlo, Sprio Simone, Pressato Daniele, De Luca Claudio. Registration date: 26/04/2007. Serial n°: PCT/IB2006/002844

3. WO2005082780: *Biomimetic compounds containing hydroxyapatites substituted with magnesium and carbonate, and the processes used to obtain them*. Inventors: Altamura Maria, Biagini Graziella, Goso Cristina, Roveri Norberto, Tampieri Anna, Tosetti Alessandro. Registration date: 09/09/2005. Serial n°: PCT/EP2005/050815

4. EP1447104: *"Process to synthesize artificial bone tissue"*. Inventors: Tampieri Anna, Celotti Giancarlo, Roveri Norberto, Landi Elena. Registration date: 18/08/2004
Designated States: EP1447104 (A1); EP1447104 (B1); ES2334503 (T3); DK1447104 (T3); AT444766 (T). Licensed to FINCERAMICA from 01/06/2010 a S.p.A. Faenza (RA)

Book chapters

1. Tampieri A., Sprio S., Sandri M., Campodoni E., Ruffini A., Mengozzi L., Panseri S. *Unconventional, Nature-Inspired Approaches to Develop Bioceramics for Regenerative Medicine*. Reference Module in Materials Science and Materials Engineering, Elsevier (2020) <https://doi.org/10.1016/B978-0-12-803581-8.12102-2> (ISBN 9780128035818)

2. Campodoni E., Dozio S.M., Mulazzi M., Montanari M., Montesi M., Panseri S., Sprio S., Tampieri A., Sandri M. *Biomimetic approaches for the design and development of multifunctional bioresorbable layered scaffolds for dental regeneration*. Current Advances in Oral and Craniofacial Tissue Engineering, Edited By Vincenzo Guarino, Marco Antonio Alvarez-Perez. In a Taylor & Francis Group. Chapter 8, (pp.104-119) 2019; <https://doi.org/10.1201/9780429423055-8>
3. Guarino V., Scaglione S., Sandri M., Sprio S., Tampieri A., Ambrosio L. *Composite scaffolds for bone and osteochondral defects*. In Alina-Maria Holban and Alexandru Mihai Grumezescu ed: Materials for Biomedical Engineering: Hydrogels and Polymer-based Scaffolds. Elsevier Publishing, Chapter 10, 2019, 297-337. <https://doi.org/10.1016/B978-0-12-816901-8.00010-9>
4. Preti L, Lambiasi B, Campodoni E, Sandri M, Ruffini A, Pugno N, Tampieri A and Sprio S. *Nature-inspired processes and structures: new paradigms to develop highly bioactive devices for hard tissue regeneration*. In Ruby Srivastava ed: Bio-Inspired Technology. Published by IntechOpen. DOI: 10.5772/intechopen.82740. Online 02/2019.
5. Campodoni E, Patricio T, Montesi M, Tampieri A, Sandri M, Sprio S. *Biom mineralization process generating hybrid nano- and micro-carriers*. In Focarete ML and Tampieri A ads: Core-Shell Nanostructures for Drug Delivery and Theranostics, Woodhead Publishing, Chapter I, 2018, 19-34.
6. Sprio S, Sandri M, Iafisco M, Panseri S, Montesi M, Ruffini A, Adamiano A, Ballardini A and Tampieri A. *Nature-Inspired Nanotechnology and Smart Magnetic Activation: Two Groundbreaking Approaches Toward a New Generation of Biomaterials for Hard Tissue Regeneration*. In Alessandro Rozim Zorzi and Joao Batista de Miranda eds: Advanced Techniques in Bone Regeneration, ISBN 978-953-51-2539-6. <http://dx.doi.org/10.5772/63229>, Chapter 7, 2016.
7. Tampieri A, Sandri M, Panseri S, Adamiano A, Montesi M, Sprio S. *Biologically-inspired nanomaterials and nano-bio-magnetism: a synergy among new emerging concepts in Regenerative Medicine*. In Tampieri A, Sprio S eds: Bio-inspired Regenerative Medicine: Materials, Processes and Clinical Applications, PAN Stanford Publishing, Singapore, Chapter 1, 2016.
8. Toni R, Bassi E, Zini N, Zamparelli A, Barbaro F, Dallatana D, Mosca S, Lippi G, Spaletta G, Bassoli E, Denti L, Gatto A, Parrilli A, Fini M, Giardino R, Sandri M, Sprio S, Tampieri A. *Bioartificial endocrine organs: at the cutting edge of translational research in endocrinology*. In Tampieri A, Sprio S eds: Bio-inspired Regenerative Medicine: Materials, Processes and Clinical Applications, PAN Stanford Publishing, Singapore, Chapter 15, 2016.
9. Tampieri A, Iafisco M, Sprio S, Ruffini A, Panseri S, Montesi M, Adamiano A, Sandri M. *Hydroxyapatite: From Nanocrystals to Hybrid Nanocomposites for Regenerative Medicine*. In "Handbook of Bioceramics and Biocomposites", Ed. Antoniac I. Meteor Springer International Publishing, Chapter 6, 2016. (ISBN 978-3-319-09230-0). DOI 10.1007/978-3-319-09230-0_6-1.
10. Sprio S, Sandri M, Iafisco M, Panseri S, Filardo G, Kon E, Marcacci, M, Tampieri A. *Composite biomedical foams for engineering bone tissue*. In Netti PA, editor. Biomedical foams for tissue engineering applications, Woodhead Publishing Limited, Cambridge (UK), (2014) 249-280.
11. Sprio S, Sandri M, Panseri S, Iafisco M, Ruffini A, Minardi S, Tampieri A. *Bone substitutes based on biomineralization*. In Mallick KK, editor. Bone substitutes biomaterials, Woodhead Publishing, 2014.
12. Sprio S, Sandri M, Iafisco M, Panseri S, Cunha C, Ruffini A, Zini N, Toni R, Tampieri A. *Biomimetic materials in regenerative medicine*. In Ruys AJ, editor. Biomimetic biomaterials: Structure and applications. Woodhead Publishing Limited, Cambridge (UK) 3-45 (2013).

13. Tampieri A, Sprio S, Landi E, Sandri M. *Developing biocomposites as scaffolds in regenerative medicine*. In L. Ambrosio ed. Biomedical composites. Woodhead Publishing, Abington Hall, Abington, Cambridge, CB21 6AH, United Kingdom, (2009) 547-572.

Invited and Plenary Oral Presentations

1. 3Bs MaterialsTech 2025 Biomaterials, biomimetics and biomedical engineering. Joint International Conferences, held in Albufeira, Portugal April 16-18, 2025. "3D printing technology for bone tissue engineering: biomimetic apatites as osteoinductive ingredient for nanocomposite inks design".
2. 3rd International Conference on Bioengineering and Polymer Science. 7-10 June 2023. Bucarest-Romania. Invited Plenary Communication: "Bio-printing technology for Bone Tissue Engineering: Biomimetic Hydroxyapatites as Osteoinductive Ingredient for Nanocomposite Bioinks Design"
3. LXI National Congress of SNO (Scienze Neurologiche Ospedaliere) Riva del Garda - November 2022. Invited Oral Communication: "Pathogens involved and properties of prosthetic materials"
4. SIFB - Italian Society of Photobiology XXXII Annual Conference. 23-24 June 2021. Invited Oral Communication: "Novel bioinspired UV-filters for safer and eco-sustainable sunscreen formulations".
5. Biomateriali e Biotecnologie in chirurgia vertebrale held in Bologna, Italy. 17 February 2017. Invited Oral communication entitled "Bio-inspired collagen/hydroxyapatite nano-composites in posterolateral spine fusion: form the lab to the clinic".
6. GRIBOI the 24th Interdisciplinary Research Conference on Injectable Osteoarticular Biomaterials and Bone Augmentation Procedures, Nantes, France. 5-7 May 2014. Invited lecture "Magnetic Bioactive and Biodegradable Hollow Fe-doped Hydroxyapatite coated Poly(L-Lactic) acid Micro-Nanospheres".
7. MiMe Conference on Materials in Medicine, Faenza, Italy. 8th – 11th October 2013. Invited lecture "Bio-inspired nano-composites for osteochondral regeneration".
8. Lecture at the Nanotechnology Day – *NANO is better*, October 2013 at Pala-Playstation, Italia in Miniatura (RM, Italy) "Materiali Intelligenti Nano-strutturati: l'arte di riparare tessuti e organi".
9. WBC – World Biotechnology Congress, Boston – USA. June 2013. Invited Lecture "New magnetic nanobeads fully biodegradable for biomedical applications".
10. Lecture "Collagen based scaffold for tissue regeneration" March 2012 at The Methodist Hospital Research Institute. Houston, Texas – USA.

Oral presentations

1. 13th WC 2025 which will be held in Rio de Janeiro (Basil) August 29 – September 04 2025. "Composite Injectable Formulations for 3D Printing of Biomimetic Bone Matrices: Customised Tools for the Bioengineering of Organotypic Bone Models".
2. 12th World Biomaterials Congress (WBC), which will be held in Daegu, South Korea, May 26-31 2024. "3D printing technology for bone tissue engineering: biomimetic hydroxyapatites as osteoinductive ingredient for nanocomposite bioinks design".
3. 14th World Meeting on Pharmaceutics, Biopharmaceutics and Pharmaceutical Technology 18 - 21 March 2024 in Vienna "Novel Approach to Investigate In Vivo Pharmacodynamics and Toxicology of Nanoparticles Directly in Skin Tissue".
4. 33rd Annual Conference of the European Society for Biomaterials, 4-8 September 2023 Davos, Switzerland. "Looking at scaffold-based strategy for bone disease management: from drug loading to alternative antimicrobial agents".

5. Giornate di Dipartimento DSCTM-CNR 26-28 October 2022 Aci Castello – Catania. “Medicated 3D hybrid patches designed for disinfection and healing of deep and infected skin wounds”.
6. Bioceramics 32 – Venezia - Mestre 23-26 September 2022. Oral communication “Medicated hybrid regenerative membranes for synergistic dressing and healing of deep and infected skin wounds”.
7. Materials.it 2018 - Italian National Conference on Materials Science and Technology held in Bologna, Italy. October 22nd – 26th 2018. Oral communication entitled “Ti and Fe doped hydroxyapatite: novel biomimetic UV-filter for sunscreen formulation”.
8. Bioceramics 29 - Toulouse, France, 25-27th October 2017. Oral communication entitled “Hybrid magnetic nanocomposite supporting cell proliferation and tuning regenerative process”.
9. Materials.it 2016 - Italian National Conference on Materials Science and Technology held in Catania, Italy. December 12th – 16th 2016. Oral communication entitled “Biomaterialized magnetic hybrid nanocomposite supporting cell proliferation and tuning regenerative process”.
10. NICE - 3rd International Conference on Bioinspired and Biobased Chemistry and Materials that is held in Nice, France. October 16th – 19th 2016. Oral communication entitled “Biopolymeric porous material: Nature inspires a new generation of Heat and Moisture exchange device for medical applications”.
11. MedTech Business - Advance short program on MedTech Entrepreneurship at Università della Svizzera Italiana, Lugano. 13th – 17th June 2016. Oral communication entitled “Smart biodegradable particles will take care of you: prevent, detect and treat diseases”.
12. GIS: XXXIX Congresso Nazionale della Società di Italiana di Chirurgia vertebrale e gruppo Italiano Scoliosi, Firenze, Italy. 5th – 7th May 2016. Oral Presentation “Effects of bio-inspired collagen-hydroxyapatite nano-composites on posterolateral spine fusion in sheep: from the lab to the clinic”.
13. SIB, Lecce, Italy. 18th – 20th June 2012. Oral Presentation “Superparamagnetic bio-mimetic hybrid composites”.
14. SIB, 24th May 2010. Oral Presentation “Biomimetic Fe Hydroxyapatite endowed with intrinsic magnetization”.
15. IBS, 14th International Biotechnology Symposium and Exhibition, Rimini, Italy. 14th – 18th September 2010. Oral Presentation “Collagen based scaffold for biomedical applications”.
16. ESB - 19th European Conference on Biomaterials, Sorrento, Italy. 11th – 15th September 2005. Oral Presentation: “Biohybrid Composites for tissue engineering”.
17. Ceramics, Cells and Tissues, 9th Annual Seminar & Meeting, Faenza, Italy. 28th September - 01st October 2004. Oral Presentation: “Biohybrid HA/ALG composite as bone substitute with drug delivery function”.
18. Congresso Nazionale Biomateriali. Biomateriali: Ricerca e Industria, Ischia (NA), Italy. 8th – 10th September 2003. Oral Presentation: “Sintesi biologicamente ispirata di compositi sostitutivi del tessuto osseo”.
19. 2nd Workshop on Pharmacobiometallics, held at la Certosa di Pontignano, Siena, Italy. 29th November – 01st December 2002. Oral Presentation: “Design and synthesis of biologically inspired composite”.

Signature
October 01st 2025
Monica Sandri