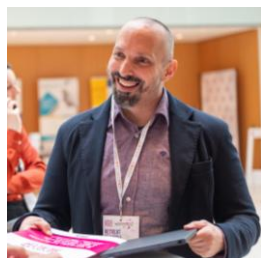


Curriculum Alessio Bucciarelli

Personal Information



Nationality Italian
Current Affiliation BIOTech Research Center, Department of Industrial Engineering, University of Trento, Italy.
Current Position Tenure Track Assistant Professor

Contacts

Email Alessio.Bucciarelli@unitn.it
Number Office: +39 0461 282771
Personal: +39 3297741204

Personal Pages

Orthopedic Institute <https://www.ior.it/ricerca-e-innovazione/dr-bucciarelli-alessio>
Google Scholar <https://scholar.google.it/citations?user=38-dsKMAAAAJ&hl=en>
Orcid <https://orcid.org/0000-0001-5719-4617>

Languages

Fluent in English (C2) and in Italian (Mother language).

Professional Experiences in Academy:

- **October 2022-Now; Full Researcher.**
RAMSES research group; Orthopedic Institute Rizzoli; Bologna; Italy
- **April 2021-September 2022; Senior Post-Doc.**
CNR-Nanotec; National Council of Research; Lecce; Italy
- **April 2019-April 2021; Full Researcher.**
Microsystem Technology Group (MST); Fondazione Bruno Kessler; Trento; Italy
- **2016-2019; Enrolled in the PhD program of material; mechatronics; and systems engineering.**
Department of Industrial Engineering; University of Trento; Trento; Italy
- **2013-2014; Research Fellow; European Social Found (FSE).**
Academic partner: University Ca'Foscari; Venice; Italy
Industrial partner: Global Display Solution (GDS); Cornedo Vicentino; Italy

Education and Certifications

Education

- **October 2019; PhD in material; mechatronics; and systems engineering with excellent evaluation**
Department of Industrial Engineering, University of Trento; Italy
- **2013; MSc degree in Material Science (110 cum laudae)**
University Ca' Foscari; Venice; Italy
- **2010; BSc degree in Material Science (110 cum laudae)**
University Ca' Foscari; Venice; Italy

Period of research abroad:

- **March-August 2016, Virginia Commonwealth University, Richmond VA, USA.**
Secondment in the BioNano Laboratory. Development of a green method to produce silk fibroin micropatterns avoiding the use of harsh chemicals. Improvement of the superficial properties of silk photoresist films.
- **September-December 2019, Chonbuk National University, Jeonju, South Korea.**
Secondment period for the Research Innovation Staff Exchange programme (RISE) under the Marie Skłodowska-Curie grant agreement MSCA-RISE 778078 (REMIX project). Development of a porous scaffold for tissue engineering based on silk fibroin, statistical characterization of materials properties.
- **January-February 2026, Chulalongkorn University, Bangkok, Thailand.**
Secondment period for the Research Innovation Staff Exchange programme (SHIFT) under the Marie Skłodowska-Curie grant agreement MSCA-RISE 101008041 (SHIFT project).

Postgraduate Courses

I completed several courses regarding dynamic systems certified by the **Santa Fe' Institute for Complexity**.

- 2015; Introduction to Complexity
- 2015; Fractals and Scaling
- 2015; Non linear Dynamics; A computational approach

Programming Skills

I am able to program using several programming languages (**R, MATLAB, Python and C++**). I completed several programming courses certified by MATLAB and Harvard X.

- 2017; MATLAB for data processing and visualization
- 2017; MATLAB Fundamentals
- 2019; R Fundamentals
- 2019; R Probability
- 2019; Visualization in R
- 2019; Probability with R
- 2020; Inference and modelling with R

Quality Systems

To meet the standards of my role as a researcher at an ISO 9001:2015 compliant institute, I had to attend various courses led by Dr. Petra Mittermaier, who oversees the institute's ISO 9001 accreditation.

- 2023, IRCCS Istituto Ortopedico Rizzoli, Management of non-conformities, corrective, preventive and improvement actions 1.
- 2023, IRCCS Istituto Ortopedico Rizzoli, Management of non-conformities, corrective, preventive and improvement actions 2.
- 2024, IRCCS Istituto Ortopedico Rizzoli, Management of the system of operating procedures and instructions.
- 2024, IRCCS Istituto Ortopedico Rizzoli, Introduction to the Quality system ISO 9001:2015.

Teaching and Tutoring

Tutoring Activity

Over the years, I have mentored several students, including bachelor's and master's candidates, during their thesis projects. In my view, students can be a valuable resource when properly trained and motivated. Many who actively participated in my research were co-authors on scientific publications. Their involvement also helped them gain access to PhD programs. I supervised and coordinated internships for high school students in the biomaterial laboratory as part of the “schoolwork alternance,” and I also volunteered as a judge for the “Trentino Young Scientist” competition, which promotes scientific knowledge in middle schools through student projects.

1. Tutor of William Zanin; BSc in Material Engineering (Engineered Materials and Biomedical Applications), University of Trento. Thesis Title: “Analysis of the energy transfer process of fluorescent molecules dispersed in Silk Fibroin”.
2. Tutor of Valentino Janigro; MSc in Material Engineering (Engineered Materials and Biomedical Applications), University of Trento. Thesis Title: “Optimization of sintered silk fibroin by genipin mediated crosslinking”.
3. Tutor of Matteo Saviano; MSc in Material Engineering (Engineered Materials and Biomedical Applications), University of Trento. Thesis Title: “Solid silk fibroin biosubstrate crosslinked with genipin”.
4. Tutor of Andrea Valentini; MSc in Material Engineering (Engineered Materials and Biomedical Applications), University of Trento. Thesis Title: “Design and production of biomedical devices inspired by Kirigami approach”.
5. Tutor of Michela Vesco; MSc in Material Engineering (Engineered Materials and Biomedical Applications). University of Trento. Thesis Title: “Refractive index determination of Silk protein photoresist films”.
6. Tutor of Elisa Biada; MSc in Biotechnology, University of Trento. Thesis Title: “Methacrylated silk fibroin scaffolds for bone tissue regeneration applications”.
7. Tutor of Alessandro Pedranz; MSc in Material Engineering (Engineered Materials and Biomedical Applications), University of Trento. Thesis Title: “A method to fragment human bone particles into the submicrometer diameter”.
8. Tutor of Nicola Vighi; MSc in Material Engineering (Engineered Materials and Biomedical Applications), University of Trento. Thesis Title: “A sintered porous silk fibroin crosslinked scaffold with high mechanical performances in physiological environment”.
9. Tutor of Xenia Paoletti; PhD in Nanotechnology, University of Salento. Thesis Title: “DLP printing of organ on chips devices”.
10. Tutor of Amber Van der Beek, MSc in Biotechnology, Technical University of Eindhoven (TU/e). Thesis Title: “Development and evaluation of silk fibroin methacrylate (SilMA)-based biomaterials for acetabular labrum regeneration and repair”.
11. Tutor of Laura Maturi, MSc in biotechnology, University of Padua. Thesis Title: “Silk fibroin plates by sintering for maxillofacial osteofixation”.
12. Supervisor of PhD, Assia Mauro, University of Bologna.

Teaching Activity

- **Laboratory Assistant** of “Biomimetic and bioinspired materials”; University of Trento 2017-2018. Official Language: English.
I worked as a teaching assistant in the yearly Biomimetic and Functional Materials course in the years 2017 and 2018, led by Professor Devid Maniglio. Students were required to participate in practical activities that explored biomimicry concepts, which complemented the theoretical course. The main emphasis was on recreating natural structures in a laboratory environment through experiments on replica molding using PDMS and 3D printing with an FDM or resin 3D printer. This also included the complete characterization of the generated object and a try and error or a design of experiment approach to optimize the process.
- **Lecturer** of “Statistical process optimization through design of experiment”; Aquasense PhD Summer School; Marie Curie H2020 813680 FBK; September 2019. Official Language: English.
I served as a main instructor during the Aquasense summer school (Marie Curie H2020 813680) related to a project on the assessment of the water quality, and particularly the detection of the presence of endocrine disruptor. During this short introduction I showed several examples on how to apply design of experiment on the optimization of clean room processes including the lithographic processes in the development of Organ on Chip and Lab on Chip devices.
- **Lecturer** of “Design of experiment” 16h PhD level course; FBK; December 2019. Official Language: English.
I took on the role of the main instructor of a PhD-level module on Design of Experiment. This module integrated the teaching of statistical concepts with the practical application of data analysis using the programming language R. The course served as an introduction, encouraging students to systematically apply statistical approaches to their research problems.
- **Lecturer** of a 4h module on “biomaterials and scaffold development”, Tissue Engineering course, University of Trento, April 2024. Official Language: English.
I started delivering during this year a 4h module part of a larger “Tissue Engineering” course leaded by prof. Antonella Motta. In this module I introduced polymeric biomaterials starting from polymer chemistry explaining the relationship among chemical structure and material properties and then moving to their applications in the biomedical field. In the second part of this module, I explained some of the techniques that can be used to develop a scaffold for tissue engineering applications focusing on bone tissue engineering.
- **Lecturer** of a module on “3D bioprinting technologies and their possible applications in the orthopedic field” (Tecnologie di biostampa e possibili applicazioni in campo Ortopedico), IRCCS Istituto Ortopedico Rizzoli. May 2024. Official Language: Italian.
- **Course Coordinator** of “Medical Devices quality and safety” a 96 hrs course of the master’s degree program in “Bioengineering for Personalized Medicine”. On an annual basis.
- **Course Coordinator** of “Biomateriali” a 60h course of the bachelor’s degree program in “Ingegneria dei sistemi medicali per la persona” at Università di Verona. On annual basis.
- **Course Coordinator** of “Strumentazione Biomedicale”, a 60h course of the bachelor’s degree program in “Ingegneria dei sistemi medicali per la persona” at Università di Verona. On an annual basis.

- **Course Lecturer** of the “Dispositivi Ibridi” module (3 credits, 24 h) of the course “Design di dispositivi medici” of the master’s degree program in “Bioingegneria per l’innovazione in medicina” at Università di Modena Reggio Emilia. On an annual basis.

Editorial and Reviewing Activities

Reviewing activities

I serve as reviewer for several journals, the list of revisions is available in the ORCID profile. Since 2017, I have reviewed more than 60 papers for 17 different journals, among them Advanced Materials Interfaces, ACS Nano, ACS Applied Nanomaterials, Journal of Biomaterial Science, Advanced Functional Materials, ACS Applied Materials and Interfaces, Biomaterials Advances, and **Materials and Design**.

Reviewing Editor:

1. Frontiers in Bioengineering and Biotechnology
2. Frontiers in Nanobiotechnology

Guest Editor:

1. “Advanced three-dimensional platforms for tissue regeneration: when microenvironment matters”; **Frontiers in Bioengineering and Biotechnology**.

Editorial Board Member

I am an editorial board member of **BMC Biomedical Engineering** (Springer-Nature) and young editorial board member of **International Journal of Bioprinting** (ACC Science Publishing).

Society Membership

Member of the Tissue Engineering and Regenerative Medicine International Society (**TERMIS**).

Member of the Italian Society of Biomaterials (**SIB**).

Member of the Italian Organ on Chip Society (**SIOoC**).

Projects, Patents and Awards

Projects

- **PI of the Italy-India MAECI Project 2023-2025 Staff exchange, 4D bioprinting of silk-based magneto responsive hydrogel to model cartilage in osteoarthritic conditions.**

I was actively involved in drafting the following founded projects:

- 5x1000 Anno2021 Redditi 2020, **Preclinic Evaluation of bone particles from bone bank as biomimetic material for bone regeneration.** (Valutazione preclinica dell'osso di banca morcellizzato quale materiale "biomimetico" per la rigenerazione ossea). Euro 425.000
- Regional Project POS-FESR 2023 (38053), **REMAP Development of a Roadmap to the safety and biocompatibility evaluation of nanostructured medical devices with applications in orthopedics.** (REMAP Costruzione di una Roadmap per la valutazione di sicurezza e biocompatibilità di dispositivi medicali nanostrutturati per applicazione in ortopedia). Euro 641.000

European projects participation:

Several scientific outcomes were found by the following three projects in which I was actively involved:

- **European Social Fund (FSE) Project nr. 2120/1/4/1148/2013** with Global Display Solutions.
- **REMIX Project** founded by the Research Innovation Staff Exchange programme (RISE) under the Marie Skłodowska-Curie grant agreement **MSCA-RISE 778078**.
- **CHEDDAR Project** founded by the European Union's Horizon 2020 research and innovation programme under grant agreement **777222 (Attract project)**.
- **SHIFT Project** founded by the Research Innovation Staff Exchange programme (RISE) under the Marie Skłodowska-Curie grant agreement **MSCA-RISE 101008041**.

Approved Human Studies by Ethical Committee

- **µBone CE AVEC 5692023S.** Development of micrometric human bone particles through ultrasonic fragmentation and their inclusion on electrospun scaffolds to evaluate their osteogenic potential.

Patents

1. **European Patent EP3965000A1;** "RFID tag, reader and method of encoding a rfid tag"; inventors: Infantina Francesco Antonio; Ghisa Giuseppe; Mulloni Viviana; Marchi Giada; Bucciarelli Alessio; Resta Giuseppe.

Awards

- **Best Project EIT Top Star Raw Material School;** Winner of the industrial challenge "La Frenotecnica"; Trento; 6-15/10/2017.
- **Scientific Excellence in Emilia Romagna,** Prize for the advancement on biomaterials and 3D bioprinting, Clus-ER Health Emilia Romagna; Rimini; 04-05/04/2024.

Journal Covers:

Four of my papers were awarded with the journal cover.

1. **ACS Biomaterials Science and Engineering; Main Cover;** April 12; 2021; Volume 7; Issue 4; Pages 1278-1721.
2. **ACS Applied Material and Interfaces; Internal Cover;** July 14; 2021; Volume 13; Issue 27; Pages 31321-326

3. **Advanced Materials Technologies, Back Cover**; December 21; 2023; Volume 8; Issue 24; Pages 2300635.
4. **Journal of Materials Chemistry B, Main Cover**; October 28; 2024; Volume 12; Issue 40; Pages 10113 to 10436
5. **Nano Research, Main Cover**; March 14; 2025, Volume 18, Issue 3, Pages: 94907366

Institutional Activities

- I am responsible for communications for the master's program in Bioengineering for Personalized Medicine and the Bioengineering sector within the Department of Industrial Engineering at the University of Trento.
- I am responsible for the selection of international students for the master's program in Bioengineering for Personalized Medicine and for the Bioengineering sector within the Department of Industrial Engineering at the University of Trento.
- Member of the organizing committee of the "Orienta DII" event on 14/05/2026 at the Department of Industrial Engineering at the University of Trento, an activity to present the Master's Degree programs to bachelor students.

Conferences

Symposia and School organization

1. **ESB 2025**, Chair of the Symposium “**Silk Proteins: Pioneering Advances in Biomedical Devices and Applications**” Turin 7-11 September 2025.
2. **TERMIS 2026**, Chair of the Symposium “**Natural and Human-Derived Biopolymers as Translational Scaffolds: Advances in Chitosan, Silk Fibroin, Collagen, Alginate, Elastin, and Tissue-Derived Materials**” Palma de Mallorca, 21-24 April, 2026.
3. **SHIFT- LIFE4HUB International Summer School 2026**, Member of the Organizing Committee, Trento, 15 - 18 June 2026.

Oral presentations

1. **Eagles: International conference in rare-earth doped glass materials and fiber lasers**; Oral presentation: “Fabrication of Nanoscale Patternable Films of Silk Fibroin Using Benign Solvents” Fondazione Bruno Kessler; Trento 18-19/09/**2016**.
2. **Macrogiovani 2017**; Oral presentation: “Optical proprieties of silk protein films”; University of Trento; Trento 22-23/06/**2017**
3. **SIF 2017**; Oral presentation: “Optical properties of silk protein films”; University of Trento; Trento 10-15/09/**2017**
4. **EIT RAW MATERIAL 2018**; Oral presentation of the TOP STAR RAW MATERIAL SCHOOL winning project; Berlin; 29-31/11/**2017**
5. **ESB 2019**; Oral presentation: “Preparation of a porous solid fibroin scaffold based on a foaming and UV crosslinking procedure of a methacrylate fibroin solution: evaluation of the influence of the composition on the sponge properties”; Dresden 9-13/09/**2019**
6. **ESB 2019**; Oral presentation: “A low-temperature; high-pressure sintering procedure for the rapid fabrication of bio substrates starting from dry silk fibroin”; Dresden 9-13/09/**2019**
7. **FLEPS 2020**; Oral presentation: “Multivariable optimization of inkjet printing process of Ag nanoparticle ink on Kapton”; Online conference 16-19/08/**2020**.
8. **Materials 2022**; Oral presentation; “Chitosan-based hydrogels: a family of materials for Tissue Engineering applications”; Boston; 18-22/04/**2022**.
9. **International Conference on Micro/Nanoelectronics Devices; Circuits and Systems (MNDCS-2022)**; Oral presentation: “Statistic methods encountering simulations: an application of the Response Surface Method to the understanding of RF-MEMS Reconfigurable Power Attenuators”; National Institute of Technology Silchar; 29-31/01/**2022**.
10. **SIB2024**; Oral presentation “Methacrylate silk fibroin sponges as candidates for bone tissues” Faenza; 8-10/07/**2024**.

Invited speaker:

1. **PHOTONICS 2019 workshop**; Invited speaker: “Silk Fibroin: from the material to the optical application”; University of Trento; 10/12/**2019**
2. **Aquasense PhD Summer School**; Marie Curie H2020 813680 FBK Instructor of “Statistical process optimization through design of experiment”; Fondazione Bruno Kessler; Trento 25-27/07/**2019**
3. **Biotech Seminar Series**; Invited speaker: “Design of experiment: An introduction with applications”; Online Seminar.
4. **Advanced Material Conference 2021**; Invited speaker: “A new approach to the production of a high-performance silk bioplastic”; Stockholm; 24-26/08/**2021**.
5. **CLUST-ER HEALTH 2024**; Invited speaker: “Applicazioni della piattaforma di 3D bioprinting in ambito muscoloscheletrico”, Rimini; 04-05/04/**2024**.
6. **RIT days research and assistance a possible path**, Invited speaker: “3D bioprinting technologies and their applications in orthopaedics”; Bologna; 02/05/**2024**.

Poster presentations

1. **ESB 2017**; Poster presentation: “Optical properties of silk protein films”; Megaron International Conference Center; Athens 4-8/09/**2017**
2. **SQUAD 2017**; Poster presentation: "A comparative study of the refractive index of silk protein thin films towards biomaterial based optical devices"; Fondazione Bruno Kessler; Trento 16-18/10/**2017**
3. **PHOTONICS 2017**; Poster presentation: “A comparative study on the Refractive Index of Silk Protein Thin Films and Silk Protein Resist Thin Films”; Fondazione Bruno Kessler; Trento 17/11/**2017**
4. **ESB 2018**; Poster presentation: “Silk fibroin bio-sintering as a new route to produce solid bulk components”; Maastricht 9-13/09/**2018**
5. **TICME International Silk Conference 2019**; Poster presentation: “Preparation of a porous solid fibroin scaffold based on a foaming and UV crosslinking procedure of a methacrylate fibroin solution”; Trento 12-15/06/**2019**
6. **ESB 2022**; poster presentation “Digital Light Processing 3D printing optimization of high aspect ratio structures for rapid prototyping of chips towards biomedical applications”; Bordeaux; 2-8/09/**2022**.
7. **TERMIS EU 2023**; Poster presentation “Modeling the osteogenic potential of decellularized human bone particles by tuning their size distribution through a sonic microfragmentation approach” Manchester; 27-31/10/**2023**.

List of publications

2017

1. **Alessio Bucciarelli**; Ramendra K. Pal; Devid Maniglio; Alberto Quaranta; Viviana Mulloni; Antonella Motta; Vamsi K. Yadavalli; "Fabrication of Nanoscale Patternable Films of Silk Fibroin Using Benign Solvents" in **Macromolecular Material and Engineering**; (2017). (IF: 3.853).
DOI: 10.1002/mame.201700110
ISSN: 1438-7492

2018

2. **Alessio Bucciarelli***; Viviana Mulloni; Devid Maniglio; Ramendra K. Pal; Vamsi K. Yadavalli; Antonella Motta; Alberto Quaranta; "A comparative study of the refractive index of silk protein thin films towards biomaterial based optical devices" in **Optical Materials**; (2018). (IF: 2.779).
DOI: 10.1016/j.optmat.2018.02.058
ISSN: 0925-3467
3. Yuejiao Yang; Danaa. Ganbat; Pornanong Aramwit; **Alessio Bucciarelli**; J. Chen; Claudio Migliaresi; Antonella Motta*; "Processing keratin from camel hair and cashmere with ionic liquids" in **Express Polymer Letters**; (2018). (IF: 3.083).
DOI: 10.3144/expresspolymlett.2019.10
ISSN: 1788-618X

2019

4. **Alessio Bucciarelli***; Silvia Chiera; Alberto Quaranta; Vamsi Yadavalli; Antonella Motta; Devid Maniglio; "A thermal-reflow based high-pressure low-temperature sintering of lyophilized silk fibroin for the fast fabrication of bio-substrate" in **Advanced Functional Materials**; (2019). (IF: 16.836).
DOI: 10.1002/adfm.201901134
ISSN: 1616-3028
5. **Alessio Bucciarelli***; Muthukumar Thangavelu; Jin Su Kim; Won Kyung Kim; Alberto Quaranta; Devid Maniglio; Gilson Khang; Antonella Motta; "Preparation and Statistical Characterization of Tunable Porous Sponge Scaffolds using UV Cross-linking of Methacrylate-Modified Silk Fibroin" in **ACS applied biomaterials science and engineering**; (2019). (IF: 4.152).
DOI: 10.1021/acsbiomaterials.9b00814
ISSN: 2373-9878

2020

6. Won Kyung Kim; Hun Hwi Cho; Gi Won Lee; Jin Su Kim; Myeong Eun Shin; **Alessio Bucciarelli**; Jeong Eun Song; Gilson Khang*; "Alleviated Side Effects and Improved Efficiency of Omeprazole Using Oral Thin Films: In Vitro Evaluation" in **Macromolecular Research**; (2020). (IF: 1.758).
DOI: 10.1007/s13233-020-8060-x
ISSN: 1598-5032
7. Won Kyung Kim; Jin Su Kim; Myeong Eun Shin; Jong Seon Baek; David Kim; **Alessio Bucciarelli**; Jeong Eun Song; Gilson Khang*; "Sustained-Released Formulation of Nifedipine Solid Dispersion with Various Polymers" in **Macromolecular Research**; (2020). (IF: 1.758).
DOI: <https://doi.org/10.1007/s13233-020-8099-8>
ISSN: 1598-5032
8. **Alessio Bucciarelli***; Andrea Adami; Chandrakanth Reddy Chandaiahgari; Leandro Lorenzelli; "Multivariable optimization of inkjet printing process of Ag nanoparticle ink on Kapton"; in **FLEPS 2020 IEEE proceeding**; (2020).

DOI: 10.1109/FLEPS49123.2020.9239474
ISBN: CFP20T72-POD

9. **Alessio Bucciarelli***; Chandrakanth Reddy Chandraiahgari; Andrea Adami; Viviana Mulloni; Leandro Lorenzelli; “Precise dot inkjet printing thought multifactorial statistical optimization of the piezoelectric actuator waveform”; in **IOP flexible and printed electronics**; (2020). (IF:3.589).
DOI: <https://doi.org/10.1088/2058-8585/abbb7e>
ISSN: 2058-8585

2021

10. Artem Arkhangelskiy; Devid Maniglio; **Alessio Bucciarelli**; Vamsi K Yadavalli; Alberto Quaranta*; “Plasma-Assisted Deposition of Silk Fibroin on Different Surfaces” in **Advanced Material Interfaces**; (2021). (IF: 6.147).
DOI: <https://doi.org/10.1002/admi.202100324>
ISSN: 2196-7350
11. Hun Hwi Cho; Su Young Been; Woo Youp Kim; Jeong Min Choi; Joo Hee Choi; Cheol Ui Song; Jeong Eun Song; **Alessio Bucciarelli** and Gilson Khang*; “Comparative Study on the Effect of the Different Harvesting Sources of Demineralized Bone Particles on the Bone Regeneration of a Composite Gellan Gum Scaffold for Bone Tissue Engineering Applications” in **ACS Applied Biomaterials**; (2021). (IF: 3.25).
DOI: <https://doi.org/10.1021/acsabm.0c01549>
ISSN: 2576-6422
12. **Alessio Bucciarelli***; Emanuele Olivetti; Andrea Adami; Leandro Lorenzelli; “Design of experiment rational optimization of an inkjet deposition of silver on Kapton” in **IEEE Sensors Journal**; (2021). (IF: 3.076).
DOI: <http://doi.org/10.1109/JSEN.2021.3058543>
ISSN: 1558-1748
13. **Alessio Bucciarelli***; Gabriele Greco; Ilaria Corridori; Nicola M Pugno; Antonella Motta; “A Design of Experiment Rational Optimization of the Degumming Process and Its Impact on the Silk Fibroin Properties” in **ACS Biomaterials Science and Engineering**; (2021). (IF: 4.749).
DOI: <https://doi.org/10.1021/acsbiomaterials.0c01657>
ISSN: 2373-9878
14. Suyoung Been; Jeongmin Choi; Pil Yun Kim; Won Kyung Kim; **Alessio Bucciarelli**; Jeong Eun Song; Gilson Khang*; “Release Behavior of Telmisartan/Amlodipine Combination Drug According to Polymer Type” in **Macromolecular Research**; (2021). (IF: 1.758).
DOI: <https://doi.org/10.1007/s13233-021-9029-0>
ISSN: 1598-5032
15. Suyoung Been; Jeongmin Choi; Hunhwi Cho; Gayeong Jeon; Jeong E Song; **Alessio Bucciarelli**; Gilson Khang*; “Preparation and characterization of a soluble eggshell membrane/agarose composite scaffold with possible applications in cartilage regeneration” in **Journal of Tissue Engineering and Regenerative Medicine**; (2021). (IF:3.963).
DOI: <https://doi.org/10.1002/term.3178>
ISSN: 1932-7005
16. Suyoung Been; Jeongmin Choi; Young Hun Lee; Pil Yun Kim; Won Kyung Kim; Hun Hwi Cho; Ji Eun Lee; **Alessio Bucciarelli**; Dae Hoon Lee; Jeong Eun Song; Gilson Khang*; “Improvement of Medication Adherence and Controlled Drug Release by Optimized Acetaminophen Formulation” in **Macromolecular Research**; (2021). (IF: 1.758).
DOI: <https://doi.org/10.1007/s13233-021-9040-5>
ISSN: 1598-5032
17. **Alessio Bucciarelli***; Alberto Quaranta; Devid Maniglio; “Imaging the Morphological Structure of Silk Fibroin Constructs through Fluorescence Energy Transfer and Confocal Microscopy” in **MDPI Electronic Materials**; (2021).

DOI: <https://doi.org/10.3390/electronicmat2020015>
ISSN: 2673-3978

18. Alessandra Maria Bossi*; **Alessio Bucciarelli**; Devid Maniglio; “Molecularly Imprinted Silk Fibroin Nanoparticles” in **ACS Applied Materials and Interfaces**; (2021). (IF: 9.229).
DOI: <https://doi.org/10.1021/acsami.1c05405>
ISSN: 1944-8244
19. Andrea Gaiardo*; David Novel; Elia Scattolo; Michele Crivellari; Antonino Picciotto; Francesco Ficorella; Erica Jacob; **Alessio Bucciarelli**; Luisa Petti; Paolo Lugli; Alvise Bagolini; “Optimization of a Low-Power Chemoresistive Gas Sensor: Predictive Thermal Modelling and Mechanical Failure Analysis”; in **MDPI Sensors**; (2021). (IF: 3.275).
DOI: <https://doi.org/10.3390/s21030783>
ISSN: 1424-8220
20. Previdi Anita*; Piazzoni Claudio; Borghi Francesca; Lorenzelli Leandro; Giacomozzi Flavio; **Bucciarelli Alessio**; Schulte Carsten; Malgaroli Antonio; Lamanna Jacopo; Moro Andrea; Racchetti Gabriella; Podesta Alessandro; Lenardi Cristina; Milani Paolo; “Micropatterning of substrates for the culture of cell networks by stencil-assisted additive nanofabrication”; in **Micromachines**; (2021). (IF: 2.141).
DOI: <https://doi.org/10.3390/mi12010094>
ISSN: 2072-666X
21. Andrea Gaiardo*; David Novel; Elia Scattolo; **Alessio Bucciarelli**; Pierluigi Bellutti; Giancarlo Pepponi; “Dataset of the Optimization of a Low Power Chemoresistive Gas Sensor: Predictive Thermal Modelling and Mechanical Failure Analysis” in **MDPI Data**; (2021).
DOI: <https://doi.org/10.3390/data603003024>
ISSN: 2306-5729
22. **Alessio Bucciarelli***; Gabriele Greco; Ilaria Corridori; Antonella Motta; Nicola Pugno; “Tidy Dataset of the Experimental Design of the optimization of the alkali degumming process of Bombyx mori Silk” in **Data-in-Brief**; (2021). (IF: 1.13).
DOI: <https://doi.org/10.1016/j.dib.2021.107294>
ISSN: 2352-3409
23. **Alessio Bucciarelli***; Valentino Janigro; Yuejiao Yang; Giulia Fredi; Alessandro Pegoretti; Antonella Motta; Devid Maniglio; “A genipin crosslinked silk fibroin bulk material by compression molding with self-recovering mechanical properties in physiological conditions” in **Cell Reports: Physical Science**; (2021).
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