LORENZO BONETTI

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SHORT BIO & RESEARCH INTERESTS

Dr. Lorenzo Bonetti is currently a Postdoctoral Research Fellow at the University of Pavia (Italy) and member of the ERC CoDe4Bio project.
He obtained his MSc in Biomedical Engineering and a PhD in Materials Engineering at the Politecnico di Milano (Italy). While completing his PhD, he had experience as a Visiting Researcher at the Faculty of Mechanical Engineering at the Ottawa University (Canada).
The well-rounded scientific experience gained in different workplaces and countries has shaped Dr. Bonetti's independent, creative, and critical thinking. This, along with a relatively broad portfolio of soft and hard (technical) skills that Dr. Bonetti has honed thus far, give him a competitive edge in the multidisciplinary field of biomaterials. As evidenced by his publication records, Dr. Bonetti's research activities have dealt with topics related to materials science and bioengineering. The main research activities are about:

a. understanding fundamental properties of stimuli-responsive biomaterials using both traditional and innovative materials characterization techniques

b. advanced design strategies for stimuli-responsive biomaterials for tissue engineering and regenerative medicine

c. 3D and 4D (bio)fabrication for tissue engineering and regenerative medicine.

His research has been awarded with several national and international awards, among which the Julia Polak European Doctorate Award 2022 from the European Society for Biomaterials. With an H-index of 14 (Scopus), he is co-author of 25+ research articles, 25+ conference contributions, 1 Book, and 1 Patent. He has also been actively engaged in teaching activities across all academic levels, from undergraduate to doctoral programs.

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1. EDUCATION AND TRAINING

1.1 Academic experience

2021 **PhD** in **Materials Engineering**, Politecnico di Milano (Italy). Thesis discussion: 29 Jul 2021. Title: Chemically crosslinked methylcellulose hydrogel platforms: from design to smart applications.
Mark: cum Laude. Advisor: S. Farè (Politecnico di Milano). Tutor: L. De Nardo (Politecnico di Milano).

2017 **Master's degree** in **Biomedical Engineering**, Politecnico di Milano (Italy). Thesis discussion: 28 Apr 2017. Title: 3D printing of methylcellulose-based thermo-responsive hydrogels: an innovative approach to cell sheet engineering.
Mark: 110/110 cum Laude. Advisor: S. Farè (Politecnico di Milano).

2014 **Bachelor's degree** in **Mathematical Engineering**, Politecnico di Milano (Italy). Thesis discussion: 30 Sep 2014. Title: Geometrical mechanics and wave mechanics.
Advisor: C. Morosi (Politecnico di Milano).

1.2 Qualifications

Nov 2024 **National scientific qualification to function as Associate Professor in 09/D1 Sector** (Materials Science and Technology). Abilitazione Scientifica Nazionale al ruolo di Professore Associato nel settore concorsuale 09/D1 (Scienza e tecnologia dei materiali).

Jan 2018 **Italian Professional Engineering License (Abilitazione alla professione di Ingegnere)** from Ordine degli Ingegneri di Milano c/o Politecnico di Milano (Italy).

1.3 Other (selected training courses and schools)

School: Summer School in Flow Cytometry, University of Pavia, Pavia (Italy), 4-24 Jun 2025.
Training course: Care and use of laboratory animals: mice and rats, University of Pavia, Pavia (Italy), 13 Mar, 19 Jun 2025.
Training course: 4-Days Full Immersion Training on Technology Transfer in the Life Sciences, Human Technopole, Milan (Italy), 15-18 Oct 2024.
School: Bioprinting Winter School, University of Pavia, Pavia (Italy), 12-16 Feb 2024.
School: Bio & Nanomaterials for Clinical Translation, CAMaR, University of Ottawa, Ottawa (Canada), 17-20 Jun 2019.
School: Antimicrobial Coatings, Amsterdam UMC, Amsterdam (Netherlands), 8-12 Apr 2019.
School: Nanocellulose: relationship between fundamentals and applications, Aalto University, Helsinki (Finland), 20-24 Aug 2018.

2. RESEARCH AND PROFESSIONAL EXPERIENCE

2.1 Academic experience

Jan 2023 - current **Postdoctoral Research Fellow** in **Materials Science and Technology** (SSD: IMAT-01/A ex. ING-IND/22), Department of Civil Engineering and Architecture, University of Pavia (Italy). Main activities: 4D biofabrication and characterization of shape-memory polymers and stimuli-responsive hydrogels. Advisor: G. Scalet (University of Pavia).

Jul 2021 - Dec 2022 **Postdoctoral Research Fellow** in **Materials Science and Technology** (SSD: ING-IND/22), Department of Chemistry, Materials, and Chemical Engineering, Politecnico di Milano (Italy). Main activities: design and characterization of novel stimuli-responsive hydrogels based on natural polymers for advanced biomedical and food packaging applications. Advisor: L. De Nardo (Politecnico di Milano).

May 2019 - Aug 2019 **Visiting PhD Student**, Department of Mechanical Engineering, Ottawa University (Canada). Main activities: physicochemical and nanomechanical characterization of stimuli-responsive methylcellulose hydrogels assessed by Raman spectroscopy and atomic force microscopy. Advisor: F. Variola (Ottawa University).

Nov 2017 - Jul 2021 **PhD Student** in **Materials Engineering**, Department of Chemistry, Materials, and Chemical Engineering, Politecnico di Milano (Italy). Main activities: design and characterization of stimuli-responsive methylcellulose hydrogels for tissue engineering and regenerative medicine. Advisor: S. Farè (Politecnico di Milano).

May 2017 - Oct 2017 **Graduate Research Fellow**, National Interuniversity Consortium of Materials Science and Technology (INSTM), Local Unit Politecnico di Milano (Italy). Main activities: production and characterization of thermoplastic polyurethane membranes for the development of a new medical device for breast cancer detection (collaboration with Novaura Health Solutions s.r.l., Cinisello Balsamo, Milan (Italy). Advisor: L. De Nardo (Politecnico di Milano).

2.2 Periods abroad and research visits

May 2019 - Aug 2019 **Visiting PhD Student**, Department of Mechanical Engineering, Ottawa University (Canada).

3. HONORS, AWARDS, FELLOWSHIPS

3.1 Awards

2025 **Travel award** from *Gels (MDPI)* as financial contribution to support the participation to the 34^{th} Annual Meeting of the European Society for Biomaterials (ESB), Turin (Italy), 7-11 Sep 2025.

2022 **Julia Polak European Doctorate Award** from the *European Society for Biomaterials (ESB)* as a recognition for the outstanding doctoral track record, Boreaux (France), 6 Sep 2022.

2022 **Honorable mention** from *INSTM/Polymers Award* for scientific communication in the field of polymers, Florence (Italy), 23 May 2022.

2021 **Travel award** from the *Italian Society for Biomaterials (SIB)* as financial contribution to support the participation to the 31^{st} Annual Meeting of the European Society for Biomaterials (ESB), Porto (Portugal), 5-9 Sep 2021.

2018 **Best poster award** from the *European Society for Biomaterials (ESB)* on the 29^{th} Annual Meeting of the European Society for Biomaterials (ESB), Maastricht (Netherlands), 13 Sep 2018.

3.2 Competitive scholarship

2020 **Scholarship** from the *Trieste Next Academy* as Financial contribution to support the partecipation to the Trieste Next, Trieste (Italy), 25-27 Sep 2020.

2019 **Scholarship for mobility** from *Politecnico di Milano* as Financial contribution to support the PhD visiting period at Ottawa University, Ottawa (Canada), May – Aug 2019.

2019 **Scholarship** from the *COST Action CA15114* as Financial contribution to support the participation to the Training School on "Antimicrobial Coatings", Amsterdam (Nedtherlands), 8-12 Apr 2019.

2017 - 2021 **Scholarship** from *Ministero dell'Istruzione e del Merito (MIUR)* as 3 years doctoral scholarship at Politecnico di Milano, Milan (Italy).

3.3 Journal covers

2024 **Inside front cover** in *Soft Matter*, IF: 3.4
https://pubs.rsc.org/en/content/articlelanding/2024/sm/d4sm00304g

2023 **Front cover** in *Biomaterials Science*, IF: 7.590
https://pubs.rsc.org/en/content/articlelanding/2023/BM/D2BM01540D

2021 **Front cover** in *Soft Matter*, IF: 4.046
https://pubs.rsc.org/en/content/articlelanding/2021/sm/d0sm02170a

2020 **Front cover** in *Soft Matter*, IF: 3.679
https://pubs.rsc.org/en/content/articlelanding/2020/sm/d0sm00269k

4. TEACHING AND ADVISING ACTIVITY

4.1 Teaching activity

PhD courses

2024 - 2025 **Professor** in the PhD course **Design of smart soft materials: from modeling to experimental characterization towards 4D printing** (ENG, 6 CFU, 7 students, SSD: IMAT-01/A, IBIO-01/A, 08/CEAR-06), Frontal teaching: 24 hours, PhD course in Design, Modeling and Simulation in Engineering, 6-22 May 2025, University of Pavia (Italy).

2023 - 2024 **Professor** in the PhD course **Design of smart soft materials: from modeling to experimental characterization towards 4D printing** (ENG, 6 CFU, 9 students, SSD: ING-IND/22, ING- IND/34, ICAR/08), Frontal teaching: 24 hours, PhD course in Design, Modeling and Simulation in Engineering, 14-22 May 2024, University of Pavia (Italy).

Schools & seminars

2023 - 2024 **Assistant lecturer** in the Summer School **Mechanics of active soft materials: experiments, theory, numerics, and applications** (ENG, 32 students, SSD: ING-IND/22), Frontal teaching: 3.5 hours, Lake Como School of Advanced Studies, 1-5 Jul 2024, Como (Italy).

Teaching assistance

2022 - 2023 **Teaching assistant** for **Trends in food industry lab A** (ENG, 5 CFU, 64 students, SSD: ING-IND/22), Frontal teaching: 9 hours, M.Eng. in Food Engineering, Politecnico di Milano (Italy). Prof: L. De Nardo.

Teaching assistant for **Food Packaging materials** (ENG, 5 CFU, 88 students, SSD: ING-IND/22), Frontal teaching: 16 hours, M.Eng. in Food Engineering, Politecnico di Milano (Italy). Prof: L. De Nardo.

Teaching assistant for **Proprietà generali dei materiali** (ITA, 3 CFU, 236 students, SSD: ING-IND/22), Frontal teaching: 8 hours, B.Sc. in Fashion Design, Politecnico di Milano (Italy). Prof: L. Altomare.

2021 - 2022 **Teaching assistant** for **Trends in food industry lab A** (ENG, 5 CFU, 72 students, SSD: ING-IND/22), Frontal teaching: 13 hours, M.Eng. in Food Engineering, Politecnico di Milano (Italy). Prof: L. De Nardo.

Teaching assistant for **Proprietà generali dei materiali** (ITA, 3 CFU, 219 students, SSD: ING-IND/22), Frontal teaching: 6 hours, B.Sc. in Fashion Design, Politecnico di Milano (Italy). Prof: L. Altomare.

Teaching assistant for **Tecnologie dei materiali per la moda** (ITA, 3 CFU, 49 students, SSD: ING-IND/22), Frontal teaching: 8 hours, B.Sc. in Fashion Design, Politecnico di Milano (Italy). Prof: L. De Nardo.

2020 - 2021 **Teaching assistant** for **Food packaging materials** (ENG, 5 CFU, 94 students, SSD: ING-IND/22), Frontal teaching: 12 hours, M.Eng. in Food Engineering, Politecnico di Milano (Italy). Prof: L. De Nardo.

Teaching assistant for **Proprietà generali dei materiali** (ITA, 3 CFU, 189 students, SSD: ING-IND/22), Frontal teaching: 8 hours, B.Sc. in Fashion Design, Politecnico di Milano (Italy). Prof: L. Altomare.

Teaching assistant for **Tecnologie dei materiali per la moda** (ITA, 3 CFU, 57 students, SSD: ING-IND/22), Frontal teaching: 7 hours, B.Sc. in Fashion Design, Politecnico di Milano (Italy). Prof: L. De Nardo.

Teaching assistant for **Strutture bioartificiali e biomimetiche** (ITA, 5 CFU, 238 students, SSD: ING-IND/34), Frontal teaching: 4 hours, M.Eng. in Biomedical Engineering, Politecnico di Milano (Italy). Prof: S. Farè.

Teaching assistant for **Bioingegneria chimica** (ITA, 5 CFU, 188 students, SSD: ING-IND/34), Frontal teaching: 12 hours, B.Eng. in Biomedical Engineering, Politecnico di Milano (Italy). Prof: S. Farè.

Teaching assistant for **Materiali e dispositivi biomedici** (ITA, 6 CFU, 9 students, SSD: ING-IND/34), Frontal teaching: 4 hours, B.Sc. in Industrial Design, Politecnico di Milano (Italy). Prof: M.C. Tanzi.

2019 - 2020 **Teaching assistant** for **Bioateriali per dispositivi protesici** (ITA, 6 CFU, 13 students, SSD: ING-IND/34), Frontal teaching: 5 hours, B.Sc. in Industrial Design, Politecnico di Milano (Italy). Prof: M.C. Tanzi.

2018 - 2019 **Teaching assistant** for **Biomateriali per dispositivi protesici** (ITA, 6 CFU, 18 students, SSD: ING-IND/34), Frontal teaching: 5 hours, B.Sc. in Industrial Design, Politecnico di Milano (Italy). Prof: M.C. Tanzi.

Teaching assistant for **Biomateriali** (ITA, 5 CFU, 279 students, SSD: ING-IND/34), Frontal teaching: 6 hours, M.Eng. in Biomedical Engineering, Politecnico di Milano (Italy). Prof: S. Farè.

Teaching assistant for **Bioingegneria chimica** (ITA, 5 CFU, 247 students, SSD: ING-IND/34), Frontal teaching: 12 hours, B.Eng. in Biomedical Engineering, Politecnico di Milano (Italy). Prof: S. Farè.

4.2 Co−advising activity

2019 - current **13 Master student's thesis** - M.Eng in Biomedical Engineering, M.Eng. in Materials Science and Nanotechnology, M.Eng. in Food Engineering.

8 Bachelor student's thesis (2 ongoing) - B. Eng. in Biomedical Engineering, B. Eng. in Civil Engineering.

5.FUNDING , PROJECTS AND COLLABORATIONS

5.1 National and international funding

2025 - current **Co-Principal Investigator**. *Research program with EssilorLuxottica S.A., Sedico (IT)*, Duration: 4 months (ongoing), Total amount: €25.000. Project PIs: Dr. Lorenzo Bonetti, Prof. Giulia Scalet.

5.2 Research and industrial projects

2023 - current **Collaborator**. *Computational Design for 4D Biofabrication: harnessing programmable materials for dynamic pre-clinical cancer models (CoDe4Bio)* (ID: 101039467), European Research Council (ERC) under Horizon Europe program.

2022 **Collaborator**. *CustOm-made aNTibacterical/bioActive/bioCoated prosTheses (CONTACT)* (ID: ARS01_01205), Regional operational program of the European Regional Development Found – PON FESR 2014-2020.

2019 - 2022 **Collaborator**. *Advanced injectable nano-composite biomaterials with dual therapeutic/regenerative behaviors for bone cancer (ACTION)* (ID: 2017SZ5WZB), Progetti di Rilevante Interesse Nazionale - PRIN 2017.

2017 - 2019 **Collaborator**. *FastBreastCheck* (ID: 145207), Regional operational program of the European Regional Development Found – PON FESR 2014-2020.

2017 - 2019 **Collaborator**. *Hot&Cold: tecnologie innovative per un consumo sicuro dei cibi in ambito domestico* (ID: 244823), Regional operational program of the European Regional Development Found – PON FESR 2014-2020.

5.3 Research collaborations

2023 - current **Research Collaboration**. Prof. N.S. Pellegata, University of Pavia (IT).
Aim: design of novel 3D/4D dynamic in vitro models for preclinical screening of solid and liquid tumors.

2023 - current **Research Collaboration**. Dr. C. Scielzo, IRCCS San Raffaele Hospital, Division of Experimental Oncology (IT).
Aim: development and analysis of novel 4D bioprinted in vitro models for the study of chronic lymphocytic leukemia.

2023 - current **Research Collaboration**. Prof. G. Scalet, Department of Civil Engineering and Architecture, University of Pavia (IT) and related international collaborators (e.g., University of Bologna, Chinese University of Hong Kong).
Aim: synthesis, characterization, and fabrication (3D/4D printing) of new shape-memory polymers.
Outcomes: 5 publications in peer-reviewed international journals, 6 oral presentations at national/international conferences.

2021 - 2022 **Research Collaboration**. Dr. C. Arrigoni, Ente Ospedaliero Cantonale (CH).
Aim: design and characterization of hydrogels mimicking the cartilage matrix for the development of an osteoarthritis model (organ-on-a-chip).
Outcomes: 1 publication in a peer-reviewed international journal.

2021 - 2022 **Research Collaboration**. Prof. F. Malpei, Department of Civil and Environmental Engineering, Politecnico di Milano (IT) and Prof. C. Feng, Department of Civil Engineering, Sun Yat-sen University (CN).
Aim: recovery of biopolymers from sludge, characterization, and application as coatings in the food sector.
Outcomes: 1 publication in a peer-reviewed international journal.

2019 - 2022 **Research Collaboration**. Prof. F. Variola, Department of Mechanical Engineering, Ottawa University (CA).
Aim: study, characterization, and fabrication of stimuli-responsive biopolymers for advanced applications in the field of biomaterials.
Outcomes: 3 publications in peer-reviewed international journals, 3 oral/ poster presentations at national/international conferences.

2017 - 2022 **Research Collaboration**. Prof. L. De Nardo, Prof. S. Farè, Prof. L. Altomare, Department of Chemistry, Materials and Chemical Engineering, Politecnico di Milano (IT).
Aim: stimuli-responsive biopolymers for advanced applications in different fields (e.g., tissue engineering, regenerative medicine, food engineering).
Outcomes: 20 publications in peer-reviewed international journals, 12 oral/ poster presentations at national/international conferences.

5.4 Collaborations with Companies

2021 - 2022 **Industrial Collaboration**. Dr. Etienne Piantanida, Dr. Alessandro Bonifacio, EssilorLuxottica S.A., Sedico (IT).
Aim: design and implementation of strategies for the plasticization of cellulose acetate for the eyewear industry.
Outcomes: 1 publication in a peer-reviewed international journal.

2021 - 2022 **Industrial Collaboration**. Dr. Mauro Sangiovanni, Lumson S.P.A. (IT).
Aim: design and testing of primary cosmetic packaging made from biopolymers.

2018 **Industrial Collaboration**. Dr. Firas Bunni, Greenrail Group S.R.L. (IT).
Aim: development and testing (both in a lab setting and on site) of piezoelectric materials for energy recovery integrated into train sleepers.

2017 - 2022 **Industrial Collaboration**. Dr. Danilo Gennari, Dr. Alberto Urban, Novaura S.R.L. (IT).
Aim: selection and testing of polyurethane membranes as part of a new medical device for breast cancer detection. Design and testing of optical phantoms of breast tissue.

2017 - 2021 **Industrial Collaboration**. Dr. Laura Giorgia Rizzi, Directa Plus S.P.A. (IT).
Aim: design and testing of nanocomposite membranes based on polyurethane and graphene nanoplatelets to improve thermal comfort in functional textiles.
Outcomes: 1 publication in a peer-reviewed international journal.

6. PUBLICATIONS

28	Papers in peer-reviewed international journals.
1	Books and book chapters.
1	Planned books and book chapters.
3	Theses.

Indexes at 2025/10/30

Scopus (Author ID: 57201496275)

h-index:	14
№ citations:	657

Scholar (Lorenzo Bonetti)

h-index:	15
№ citations:	822

6.1 Papers in peer−reviewed international journals

Note 1: Corresponding author(s) underlined.
Note 2: Co-first authors denoted by †.

1. M. Goswami, M. Arricca, **L. Bonetti**, S. Pandini, G. Scalet, K. Volokh, Failure of shape-memory polymers: Experimentation and modeling. Journal of the Mechanics and Physics of Solids (2026), 115, 105820.

   Journal Rank in 2024 (SJR): Q1 - Mechanics of Materials.

   Impact Factor in 2024: 6.0.

   Paper topic: In this study a theoretical model to predict the deformation and failure of SMPs is provided and experimentally validated on TPU.

2. **L. Bonetti**, D. Natali, S. Pandini, M. Messori, M. Toselli, G. Scalet, Tailoring the shape-memory performance of 2D and 3D fabricated semi-crystalline PCL networks via optimal crosslinking. Macromolecular Rapid Communications (2025), e00631.

   Journal Rank in 2024 (SJR): Q1 - Polymers and Plastics; Q1 - Materials Chemistry.

   Impact Factor in 2024: 4.3.

   Paper topic: This study investigates the impact of key photo-crosslinking parameters as well as the fabrication method on the properties of polycaprolactone (PCL)-based semi-crystalline polymer networks.

3. **L. Bonetti**, G. Scalet 4D fabrication of shape-changing systems for tissue engineering: state of the art and perspectives. Progress in Additive Manufacturing (2025), 10, 1913-1943.

   Journal Rank in 2024 (SJR): Q1 - Industrial and Manufacturing Engineering.

   Impact Factor in 2024: 5.4.

   Paper topic: This review proposes an overview of the state of the art of 4D fabrication technology for the obtainment of cellularized constructs, with a focus on shape-changing soft materials.

4. **L. Bonetti**, D. Natali, S. Pandini, M. Messori, M. Toselli, G. Scalet 4D printing of semi-crystalline crosslinked polymer networks with two-way shape-memory effect. Materials & Design (2024), 238, 112725.

   Journal Rank in 2024 (SJR): Q1 - Materials Science (miscellaneous).

   Impact Factor in 2024: 7.9.

   Paper topic: This paper introduces a novel approach to 4D printing tailored PCL-based structures with reversible two-way shape-memory effect through material extrusion technology.

5. **L. Bonetti**, D. Natali, S. Pandini, M. Messori, M. Toselli, G. Scalet Solvent-triggered shape change in gradient-based 4D printed bilayers: case study on semi-crystalline polymer networks. Soft Matter (2024), 20, 4544-4547.

   Journal Rank in 2024 (SJR): Q2 - Chemistry (miscellaneous).

   Impact Factor in 2024: 2.8.

   Paper topic: This paper proposes a novel approach to 4D print solvent-triggered, gradient-based bilayers made of PCL-based semi-crystalline polymer networks.

6. E.M. Varoni, L. Altomare, **L. Bonetti**, F. Viganò, A. Scalia, M. Manfredi, L. De Nardo, L. Rimondini, A. Cochis, Bilayer chitosan-based patches for steroidal drug delivery on the oral mucosa. Journal of Drug Delivery Science and Technology (2024), 99, 105919.

   Journal Rank in 2024 (SJR): Q1 - Pharmaceutical Science.

   Impact Factor in 2024: 4.9.

   Paper topic: This paper investigates innovative mucoadhesive patches based on chitosan for the delivery of clobetasol proprionate on the oral mucosa, useful for the treatment of immune-mediated muco-cutaneous diseases.

7. D. Petta, D. D'Arrigo, S. Salehi, G. Talò, **L. Bonetti**, M. Vanoni, L. Deabate, L. De Nardo, G. Dubini, C. Candrian, M. Moretti, S. Lopa, C. Arrigoni, A Personalized osteoarthritic joint-on-a-chip as a screening platform for biological treatments. Materials Today Bio (2024), 26, 101072.

   Journal Rank in 2024 (SJR): Q1 - Biomaterials; Q1 - Biomedical Engineering.

   Impact Factor in 2024: 10.2.

   Paper topic: This study proposes a joint-on-a-chip model, consisting of cartilage and synovial compartments, to test therapies for osteoarthritis in a personalized human setting.

8. **L. Bonetti**, S. Borsacchi, A. Boccali, L. Calucci, M. G. Raucci, L. Altomare, Injectable in situ gelling methylcellulose-based hydrogels for bone tissue regeneration. Journal of Materials Chemistry B (2024), 12, 4427-4440.

   Journal Rank in 2024 (SJR): Q1 - Materials Science (miscellaneous); Q1 - Biomedical Engineering.

   Impact Factor in 2024: 5.8.

   Paper topic: In this work, thermo-responsive injectable bone substitutes based on methylcellulose and calcium phosphates are designed for application in bone regeneration both under physiological and pathological conditions.

9. C. Feng, **L. Bonetti**, H. Lu, Z. Zhou, T. Lotti, M. Jia, G. Rizzardi, L. De Nardo, F. Malpei Extracellular polymeric substances as paper coating biomaterials derived from anaerobic granular sludge. Environmental Science and Ecotechnology (2024), 21, 100397.

   Journal Rank in 2024 (SJR): Q1 - Environmental Engineering: Q1 - Environmental Science (miscellaneous).

   Impact Factor in 2024: 14.3.

   Paper topic: In this work, extracellular polymeric substances derived from anaerobic granular sludges are investigated as biomaterials useful for the development of novel coatings in paper production.

10. R. Casalini, F. Ghisoni, **L. Bonetti**, A. Fiorati, L. De Nardo Development of acid-free chitosan films in food coating applications: Provolone cheese as a case study. Carbohydrate Polymers (2024), 331, 121842.

    Journal Rank in 2024 (SJR): Q1 - Environmental Engineering: Q1 - Materials Chemistry; Q1 - Polymers and Plastics.

    Impact Factor in 2024: 12.5.

    Paper topic: This study proposes a novel method for formulating chitosan coatings for food use, replacing organic acids with carbon dioxide, and validates the approach using a cheese model.

11. **L. Bonetti**, L. De Nardo, S. Farè Crosslinking strategies in modulating methylcellulose hydrogel properties. Soft Matter (2023), 19, 7869.

    Journal Rank in 2023 (SJR): Q1 - Chemistry (miscellaneous).

    Impact Factor in 2023: 2.9.

    Paper topic: This review offers a perspective on the main chemical crosslinking approaches reported in the literature for methylcellulose-based hydrogels, as strategies to increase their stability and mechanical properties.

12. A. Bonifacio, **L. Bonetti**, E. Piantanida, L. De Nardo, Plasticizer design strategies enabling advanced applications of cellulose acetate. European Polymer Journal (2023), 197, 112360.

    Journal Rank in 2023 (SJR): Q1 - Materials Chemistry; Q1 - Polymers and Plastics.

    Impact Factor in 2023: 5.8.

    Paper topic: This review provides an overview of current plasticizers for cellulose acetate and clarifies the internal and external plasticization mechanisms, offering a foundation for the rational design of new plasticizers.

13. D. Ribezzi, R. Pinos, **L. Bonetti**, M. Cellani, F. Barbaglio, C. Scielzo, S. Farè, Design of a novel bioink suitable for the 3D printing of lymphoid cells. Frontiers in Biomaterials Science (2023), 2, 1081065.

    Journal Rank in 2023 (SJR): -.

    Impact Factor in 2023: -.

    Paper topic: This study reports the design of new natural polymer-based bioink formulations for extrusion-based bioprinting, for the successfully bioprinting of chronic lymphocytic leukemia cells and primary peripheral mononuclear cells.

14. **L. Bonetti**, A. Caprioglio, N. Bono, G. Candiani, L. Altomare, Mucoadhesive chitosan–methylcellulose oral patches for the treatment of local mouth bacterial infections. Biomaterials Science (2023), 11, 8, 2699-2710.

    Journal Rank in 2023 (SJR): Q1 - Materials Science (miscellaneous); Q1 - Biomedical Engineering.

    Impact Factor in 2023: 5.8.

    Paper topic: In this work, methylcellulose is originally used to enhance the mucoadhesive properties of chitosan in the fabrication of gentamicin sulfate-loaded patches, produced via electrophoretic processing, for the treatment of localized oral bacterial infections.

15. **L. Bonetti**, C. Demitri, L. Riva, Editorial on the Special Issue "Advances in Cellulose-Based Hydrogels. Gels (2022), 8, 12, 790.

    Journal Rank in 2022 (SJR): Q2 - Polymers and Plastics; Q3 - Biomaterials.

    Impact Factor in 2022: 4.6.

    Paper topic: This editorial highlights the growing interest in cellulose-based hydrogels, emphasizing their versatility and potential applications across various fields such as biomedical engineering, smart systems, agriculture, and water purification. The editorial also features a collection of studies that demonstrate the diverse applications and innovations in this rapidly evolving area.

16. V. Ruta, A. Sivo, **L. Bonetti**, M.A. Bajada, G. Vilè, Structural Effects of Metal Single-Atom Catalysts for Enhanced Photocatalytic Degradation of Gemfibrozil. ACS Applied Nano Materials (2022), 5, 10, 14520-14528.

    Journal Rank in 2022 (SJR): Q1 - Materials Science (miscellaneous).

    Impact Factor in 2022: 5.9.

    Paper topic: This work systematically studies the degradation of gemfibrozil, a persistent pollutant, on a series of carbon nitride photocatalysts, investigating both the effect of catalyst textural properties and metal single atoms on the contaminant degradation.

17. **L. Bonetti**, A. Fiorati, A. D'Agostino, C.M. Pelacani, R. Chiesa, S. Farè, L. De Nardo, Smart Methylcellulose Hydrogels for pH-Triggered Delivery of Silver Nanoparticles. Gels (2022), 8, 5, 298.

    Journal Rank in 2022 (SJR): Q2 - Polymers and Plastics; Q3 - Biomaterials.

    Impact Factor in 2022: 4.6.

    Paper topic: This work proposes a novel methylcellulose-based hydrogel designed for the topical release of silver nanoparticles via an intelligent mechanism activated by the pH variations in infected wounds.

18. **L. Bonetti**, L. De Nardo, S. Farè, Chemically Crosslinked Methylcellulose Substrates for Cell Sheet Engineering. Gels (2021), 7, 3, 141.

    Journal Rank in 2021 (SJR): Q1 - Polymers and Plastics; Q2 - Biomaterials.

    Impact Factor in 2021: 4.432.

    Paper topic: This paper introduces a citric acid-based crosslinking strategy to fabricate thermo-responsive methylcellulose hydrogels with varying crosslinking densities, exploring for the first time their potential as substrates for cell sheet engineering.

19. D.J. Lomboni, A. Steeves, S. Schock, **L. Bonetti**, L. De Nardo, F. Variola, Compounded topographical and physicochemical cueing by micro-engineered chitosan substrates on rat dorsal root ganglion neurons and human mesenchymal stem cells. Soft Matter (2021), 17, 5284-5302.

    Journal Rank in 2021 (SJR): Q1 - Chemistry (miscellaneous).

    Impact Factor in 2021: 4.046.

    Paper topic: In this study, micro-engineered chitosan substrates featuring arrays of parallel channels with variable widths are fabricated using electrophoretic processing and tested with rat dorsal root ganglion neurons and human mesenchymal stem cells to investigate their potential for modulating cell fate.

20. **L. Bonetti**, A. Fiorati, A. Serafini, G. Masotti, F. Tana, A. D'Agostino, L. Draghi, L. Altomare, R. Chiesa, S. Farè, M. Bianchi, L.G. Rizzi, L. De Nardo, Graphene nanoplatelets composite membranes for thermal comfort enhancement in performance textiles. Applied Polymer Science (2021), 138, 2, 49645.

    Journal Rank in 2021 (SJR): Q2 - Materials Chemistry; Q2 - Polymers and Plastics.

    Impact Factor in 2021: 3.057.

    Paper topic: In this work, an innovative family of nanocomposite membranes based on polyurethane and graphene nanoplatelets are designed to improve thermal comfort in functional textiles.

21. **L. Bonetti**, L. De Nardo, S. Farè, Thermo-responsive methylcellulose hydrogels: from design to applications as smart biomaterials. Tissue Engineering Part B: Reviews (2021), 27, 5, 486-513.

    Journal Rank in 2021 (SJR): Q1 - Biomaterials; Q1 - Biomedical Engineering.

    Impact Factor in 2021: 7.376.

    Paper topic: This review explores the preparation, properties, and thermo-responsive behavior of methylcellulose hydrogels, highlighting their applications in 3D bioprinting, in situ gelling systems, and smart culture surfaces for tissue regeneration, while also discussing current limitations, emerging multi-responsive strategies, and clinical advancements.

22. **L. Bonetti**, L. De Nardo, F. Variola, S. Farè, Evaluation of the subtle trade-off between physical stability and thermo-responsiveness in crosslinked methylcellulose hydrogels. Soft Matter (2020), 16, 5577-5587.

    Journal Rank in 2020 (SJR): Q1 - Chemistry (miscellaneous).

    Impact Factor in 2020: 3.679.

    Paper topic: This study introduces an innovative citric acid-based crosslinking strategy, optimized via a design of experiment approach, to tune the stability, mechanical properties, and thermo-responsiveness of methylcellulose hydrogels for smart system applications.

23. **L. Bonetti**, L. De Nardo, F. Variola, S. Farè, In-situ Raman spectroscopy: An effective technique for the quantification of LCST transition of methylcellulose hydrogels. Materials Letters (2020), 274, 1, 128011.

    Journal Rank in 2020 (SJR): Q1 - Mechanical Engineering; Q2 - Materials Science (miscellaneous).

    Impact Factor in 2020: 3.423.

    Paper topic: In this work, in-situ Raman spectroscopy is unveiled for the first time to investigate the thermo-responsive sol-gel transition of methylcellulose-based hydrogels at their lower critical solution temperature.

24. **L. Bonetti**, L. Altomare, N. Bono, E. Panno, C.E. Campiglio, L. Draghi, G. Candiani, S. Farè, A.R. Boccaccini, L. De Nardo, Electrophoretic processing of chitosan based composite scaffolds with Nb-doped bioactive glass for bone tissue regeneration. Journal of Materials Science: Materials in Medicine (2020), 31, 1-12.

    Journal Rank in 2020 (SJR): Q2 - Biomaterials; Q2 - Biomedical Engineering.

    Impact Factor in 2020: 3.896.

    Paper topic: In this study, a one-pot electrophoretic deposition strategy is originally explored to co-deposit chitosan, gelatin, and niobium-doped bioglass, aiming to develop antibacterial substrates for unloaded bone regeneration.

25. A. Ghalayani Esfahani, L. Altomare, **L. Bonetti**, F. Nejaddehbashi, F. Boccafoschi, R. Chiesa, F. Boschetti, V. Bayati, L. De Nardo, Micro-Structured Patches for Dermal Regeneration Obtained via Electrophoretic Replica Deposition. Applied Sciences (2020), 10, 14, 5010.

    Journal Rank in 2020 (SJR): Q2 - Materials Science (miscellaneous).

    Impact Factor in 2020: 2.679.

    Paper topic: This study presents an optimized electrophoretic replica deposition technique to fabricate chitosan-based 3D scaffolds with tailored architectures and mechanical properties suitable for skin tissue, demonstrating their biocompatibility and regenerative potential in vivo for full-thickness wound healing.

26. L. Altomare, **L. Bonetti**, C.E. Campiglio, L. De Nardo, L. Draghi, F. Tana, S. Farè, Biopolymer-based strategies in the design of smart medical devices and artificial organs. International Journal of Artificial Organs (2018), 41, 6, 337-359.

    Journal Rank in 2018 (SJR): Q3 - Biomaterials. Q3 - Biomedical Engineering.

    Impact Factor in 2018: 1.232.

    Paper topic: This review discusses recent developments involving the use of biopolymers as smart materials, in terms of material properties and stimulus-responsive behavior, in the presence of environmental physico-chemical changes.

27. A. Cochis†, **L. Bonetti**†, R. Sorrentino, N. Contessi Negrini, F. Grassi, M. Leigheb, L. Rimondini, S. Farè, 3D Printing of Thermo-Responsive Methylcellulose Hydrogels for Cell-Sheet Engineering. Materials (2018), 11, 4, 579.

    Journal Rank in 2018 (SJR): Q2 - Materials Science (miscellaneous).

    Impact Factor in 2018: 2.972.

    Paper topic: This study introduces for the first time the use of extrusion-based 3D printing of methylcellulose hydrogels to fabricate ring-shaped cell sheets, highlighting the potential of this technique for regenerating complex tissues in cell sheet engineering.

28. N. Contessi Negrini, **L. Bonetti**, L. Contili, S. Farè, 3D printing of methylcellulose-based hydrogels. Bioprinting (2018), 10, e00024.

    Journal Rank in 2018 (SJR): Q1 - Biomedical Engineering.

    Impact Factor in 2018: -.

    Paper topic: This study presents a novel 3D bioprinting approach for methylcellulose-based bioinks to create complex, geometry-controlled constructs with suitable rheological properties and high cell viability.

6.2 Books and book chapters

1. C. Demitri, **L. Bonetti**, L. Riva, Advances in Cellulose-Based Hydrogels. MDPI 2023, ISBN 978-3-0365-7111-9.

6.3 Planned books and book chapters

1. **L. Bonetti**, L. De Nardo, S. Farè, *Fundamentals of Shape Memory Polymers* in Handbook of 4D Printing of Shape Memory Polymers. Elsevier - In Preparation.

6.4 Theses

1. **L. Bonetti**. '*Chemically crosslinked methylcellulose hydrogel platforms: from design to smart applications*'. PhD Thesis in Materials Engineering, Politecnico di Milano (Italy), 2021.

2. **L. Bonetti**. '*3D printing of methylcellulose-based thermo-responsive hydrogels: an innovative approach for cell sheet engineering*'. M.Eng. Thesis in Biomedical Engineering, Politecnico di Milano (Italy), 2017.

3. **L. Bonetti**. '*Geometrical and wave mechanics*'. B.Eng. Thesis in Mathematical Engineering, Politecnico di Milano (Italy), 2014.

7. CONFERENCES, PRESENTATIONS, AFFILIATIONS

9 Poster presentations (**5** as speaker).
19 Oral presentations (**13** as speaker).

7.1 Poster presentations

Note: The name of the speaker is underlined.

1. F. Ghisoni, R. Casalini, **L. Bonetti**, A. Fiorati, L. De Nardo, *Acid-free chitosan coatings for cheese.* 11th Shelf Life International Meeting (SLIM), 20-24 May 2024, Reggio Emilia (Italy).

2. E.M. Varoni, A. Cochis, **L. Bonetti**, A. Scalia, M. Manfredi, L. De Nardo, L. Rimondini, L. Altomare, *Mucoadhesive patches for topical application of steroids on the oral mucosa.* 33rd Annual Conference of the European Society for Biomaterials (ESB), 4-8 Sep 2023, Davos (Switzerland).

3. **L. Bonetti**, A. Fiorati, A. D'Agostino, C.M. Pelacani, R. Chiesa, S. Farè, L. De Nardo, *Methylcellulose-based responsive hydrogels for controlled delivery of silver nanoparticles.* 32nd Annual Conference of the European Society for Biomaterials (ESB), 4-8 Sep 2022, Bordeaux (France).

4. **L. Bonetti**, L. De Nardo, S. Farè, *Citric acid crosslinked methylcellulose hydrogels for cell sheet engineering.* 31thAnnual Conference of the European Society for Biomaterials (ESB), 5-9 Sep 2021, Virtual.

5. E.M. Varoni, L. Altomare, M. Manfredi, A. Cochis, **L. Bonetti**, L. Rimondini, *Clobetasol-loaded chitosan patches for the treatment of autoimmune diseases affecting the oral mucosa.* 31thAnnual Conference of the European Society for Biomaterials (ESB), 5-9 Sep 2021, Virtual.

6. **L. Bonetti**, L. De Nardo, S. Farè, *Chemically crosslinked methylcellulose substrates for cell sheet engineering.* Congresso Nazionale Biomateriali (SIB), 11-14 Jul 2021, Lecce (Italy).

7. **L. Bonetti**, L. De Nardo, F. Variola, S. Farè, *Citric acid crosslinked methylcellulose-based hydrogels.* 11th World Biomaterials Congress (WBC), 11-15 Dec 2020, Virtual.

8. L. Altomare, F. Viganò Rivera, **L. Bonetti**, M. Manfredi, A. Cochis, L. Rimondini., E.M. Varoni, *Bilayer chitosan-based patches for clobetasol transmucosal drug delivery in the oral cavity.* 11th World Biomaterials Congress (WBC), 11-15 Dec 2020, Virtual.

9. **L. Bonetti**, A. Cochis, R. Sorrentino, N. Contessi Negrini, F. Grassi, M. Leigheb, L. Rimondini, S. Farè, *3D printing of methylcelluose-based hydrogels as substrates for cell sheet engineering.* 29th Annual Conference of the European Society for Biomaterials (ESB), 9-13 Sep 2018, Maastricht (Netherlands).

7.2 Oral presentations

Note: The name of the speaker is underlined.

1. **L. Bonetti**, D. Natali, S. Pandini, M. Messori, M. Toselli, G. Scalet, *4D printed bilayer actuators: programming bending via thermal cues.* Workshop - From 3D Printing to 3D Bioprinting: an opportunity for preclinical and clinical applications at GSD, 27 Oct 2025, Milano (Italy) - Invited.

2. **L. Bonetti**, D. Natali, S. Pandini, M. Messori, M. Toselli, G. Scalet, *4D printing of crosslinked polycaprolactone systems with one-way and two-way shape-memory behavior.* INSTM Young Researchers' Forum, 9-10 Oct 2025, Napoli (Italy).

3. **L. Bonetti**, *Tailoring the shape-memory performance of 4D printed semi-crystalline PCL networks.* Workshop - Tumor Microenvironment and Resistance to Drugs: The Role of Biomaterials, In Silico and In Vitro Modeling, 19 Sep 2025, Pavia (Italy) - Invited.

4. **L. Bonetti**, D. Natali, S. Pandini, M. Messori, M. Toselli, G. Scalet, *4D printed bilayer actuators: programming bending via solvent and thermal cues.* 34$^{\text{th}}$ Annual Conference of the European Society for Biomaterials (ESB), 7-11 Sep 2025, Turin (Italy).

5. M. Arricca, **L. Bonetti**, G. Scalet, *Photo-cross-linking in semi-crystalline polymer networks for 4D fabrication: experiments and modeling.* 34$^{\text{th}}$ Annual Conference of the European Society for Biomaterials (ESB), 7-11 Sep 2025, Turin (Italy).

6. M. Arricca, N. Inverardi, **L. Bonetti**, D. Natali, S. Pandini, M. Messori, G. Scalet, *Shape memory effects in multi-phase semi-crystalline networks: from phenomenological modeling to 4D printing.* 12$^{\text{th}}$ European Solid Mechanics Conference (ESMC), 7-11 Jul 2025, Lyon (France).

7. A. Fiorati, R. Casalini, F. Ghisoni, **L. Bonetti**, L. De Nardo, *Development of acid-free chitosan films in food coating applications: provolone cheese as a case study.* XIV Congress of the National Interuniversity Consortium of Materials Science and Technology (INSTM), 9-12 Jun 2024, Cagliari (Italy).

8. **L. Bonetti**, D. Natali, S. Pandini, M. Messori, M. Toselli, G. Scalet, *4D printing of crosslinked poly(ε-caprolactone) networks with one-way and two-way shape memory behavior.* 12$^{\text{th}}$ World Biomaterials Congress (WBC), 26-31 May 2024, Daegu (South Korea).

9. **L. Bonetti**, D. Natali, S. Pandini, M. Messori, M. Toselli, G. Scalet, *4D printed PCL-based scaffolds with two-way shape memory effect.* Bioprinting Winter School, 12-16 Feb 2024, Pavia (Italy) - Invited.

10. A. Fiorati, M. Cordara, **L. Bonetti**, L. De Nardo, *Chitosan-based porous microspheres for tuning food packaging films permeability.* XVII Congress of the Italian Association for Materials Engineering (AIMAT), 28 May - 01 Jun 2023, Catania (Italy).

11. **L. Bonetti**, A. Caprioglio, N. Bono, G. Candiani, L. Altomare, *Novel mucoadhesive chitosan-methylcellulose buccal patches with broad antibacterial activity.* 32$^{\text{nd}}$ Annual Conference of the European Society for Biomaterials (ESB), 4-8 Sep 2022, Bordeaux (France).

12. **L. Bonetti**, A. Boccali, L. Altomare, *Methylcellulose-based composites for bone tissue engineering.* Congresso Nazionale Biomateriali (SIB), 11-14 Jul 2021, Lecce (Italy).

13. **L. Bonetti**, L. De Nardo, F. Variola, S. Farè, *Citric acid crosslinking of methylcellulose hydrogels.* 26$^{\text{th}}$ Congress of the European Society of Biomechanics (ESBiomech), 11-14 Jul 2021, Virtual.

14. D. Ribezzi, F. Barbaglio, R. Pinos, **L. Bonetti**, S. Farè, C. Scielzo, *Design of a novel bioink suitable for 3D printing of lymphoid cells.* 26th Congress of the European Society of Biomechanics (ESBiomech), 11-14 Jul 2021, Virtual.

15. **L. Bonetti**, L. Altomare, N. Bono, E. Panno, C.E. Campiglio, L. Draghi, G. Candiani, S. Farè, A.R. Boccaccini, L. De Nardo, *Composite scaffolds with Nb-doped bioactive glasses for bone tissue regeneration.* 11th World Biomaterials Congress (WBC), 11-15 Dec 2020, Virtual.

16. **L. Bonetti**, L. De Nardo, F. Variola, S. Farè, *Novel hydrophilic-hydrophobic thermo-responsive platforms from citric acid crosslinked methylcellulose hydrogels.* Fall Meeting - Materials Research Society (MRS), 1-6 Dec 2019, Boston (USA).

17. **L. Bonetti**, A. Fiorati, A. Serafini, G. Masotti, F. Tana, A. D'Agostino, L. Draghi, L. Altomare, R. Chiesa, S. Farè, M. Bianchi, L.G. Rizzi, L. De Nardo, *Graphene nanoplatelets-based membranes for thermal comfort enhancement in performance textiles.* Fall Meeting - Materials Research Society (MRS), 1-6 Dec 2019, Boston (USA).

18. **L. Bonetti**, A. Cochis, R. Sorrentino, N. Contessi Negrini, F. Grassi, M. Leigheb, L. Rimondini, S. Farè, *3D printing of thermo-responsive hydrogels for regenerative medicine.* Congresso Nazionale Biomateriali (SIB), 24-26 May 2017, Milan (Italy).

19. A. Ghalayani Esfahani, M. Soleimanzade, C.E. Campiglio, **L. Bonetti**, L. Altomare, L. Draghi, L. De Nardo, *Electrophoretic deposition of chitosan/Bioglass composite scaffolds with oriented micropatterns: fabrication process and in vitro biological properties.* Congresso Nazionale Biomateriali (SIB), 24-26 May 2017, Milan (Italy).

7.3 Organization/advisory activities in conferences and technical sessions

Organizer: Symposium "Novel frontiers in 4D fabrication: materials, methods and biomedical applications", 34th Annual Conference of the European Society for Biomaterials (ESB 2025), Turin (Italy), 7-11 Sep 2025.
Member: International Advisory Committee, 34th Annual Conference of the European Society for Biomaterials (ESB 2025), Turin (Italy), 7-11 Sep 2025.
Member: International Advisory Committee, 8th China-Europe Symposium on Biomaterials in Regenerative Medicine (CESB 2024), Nuremberg (Germany).
Chairman: Symposium "Materials for Additive Manufacturing 3 (Novel materials, 4D printing)", 12th World Biomaterials Congress (WBC 2024), Daegu (South Korea), 26-31 May 2024.
Chairman: Workshop session, Bioprinting Winter School, Pavia (Italy), 12-16 Feb 2024.

7.4 Affiliations (2019 - current)

European Society for Biomaterials (ESB).
Materials Research Society (MRS).
European Society of Biomechanics (ESBiomech).
Italian Society for Biomaterials (SIB).
National Interuniversity Consortium of Materials Science and Technology (INSTM).

8. EDITORIAL AND PEER-REVIEWING ACTIVITY

8.1 Editorial activity

Guest editor: Gels (MDPI), Advances in Cellulose-based Hydrogels, Volume IV, Oct 2025 - current, *https://www.mdpi.com/journal/gels/special_issues/30LH92853Q*
Topic editor: MDPI journals, Recent Advances in Smart Soft Materials: From Theory To Practice, Jul 2025 - current, *https://www.mdpi.com/topics/3L4U1609PJ*
Guest editor: Gels (MDPI), Advances in Cellulose-based Hydrogels, Volume III, Dec 2023 - Sep 2025, *https://www.mdpi.com/journal/gels/special_issues/4C2SKS0X6B*
Topical advisory panel member: Gels (MDPI), Jul 2022 - current, *https://www.mdpi.com/journal/gels/topical_advisory_panel*
Guest editor: Gels (MDPI), Advances in Cellulose-based Hydrogels, Volume II, Jun 2022 - Nov 2023, *https://www.mdpi.com/journal/gels/special_issues/Cellulose_Hydrogels_II*
Guest editor: Gels (MDPI), Advances in Cellulose-based Hydrogels, Volume I, Nov 2021 - May 2022, *https://www.mdpi.com/journal/gels/special_issues/Cellulose_Hydrogels*

8.2 Referee of National and International Grants (2025 - current)

Reviewer: OSF - National Science Centre, Poland (PL). PRELUDIUM 24 scheme, Panel ST11 (Materials Engineering) *https://www.ncn.gov.pl/en/ogloszenia/konkursy/preludium24*

8.3 Peer-reviewing for international journals (2019 - current)

Advanced Materials (John Wiley and Sons Inc.), ISSN: 1521-4095.
Bioactive Materials (Elsevier Sci. Ltd), ISSN: 2452-199X.
Carbohydrate Polymers (Elsevier Sci. Ltd), ISSN: 0144-8617.
Acta Biomaterialia (Elsevier Sci. Ltd), ISSN: 1742-7061.
Tissue Engineering Part B: Reviews (Mary Ann Liebert Inc.), ISSN: 1937-3368.
Biomedical Materials (IOP Publishing), ISSN: 1748-6041.
Scientific Reports (Nature portfolio), ISSN 2045-2322.
International Journal of Biological Macromolecules (Elsevier), ISSN: 0141-8130.
Materials Research Express (IOP Publishing), ISSN: 2053-1591.
Cellulose (Springer), ISSN: 0969-0239.
Soft Matter (RSC), EISSN: 1744-683X.
Journal of Applied Polymer Science (John Wiley and Sons Inc.), ISSN: 1097-4628.
Journal of Applied Biomaterials and Functional Materials (SAGE), ISSN: 2280-8000.
Frontiers in Bioengineering and Biotechnology (Frontiers), ISSN: 2296-4185.
Frontiers in Biomaterials Science (Frontiers), EISSN: 2813-3749.
Progress in Additive Manufacturing (Springer Nature), ISSN: 2363-9512.
Pharmaceutics (MDPI), EISSN: 1999-4923.
Cells (MDPI), EISSN: 2073-4409.
Polymers (MDPI), EISSN: 2073-4360.
Biomimetics (MDPI), EISSN: 2313-7673.
Gels (MDPI), EISSN: 2310-2861.
Micromachines (MDPI), EISSN: 2072-666X.
Coatings (MDPI), EISSN: 2079-6412.
European Medical Journal, EISSN: 2397-6764.

9. SCIENTIFIC OUTREACH

9.1 Workshops and other activities

2023 - current **Collaborator**. Organization and scientific activities for the European Researchers' Night, Department of Civil Engineering and Architecture (University of Pavia) during , Pavia (Italy).

2025 **Collaborator**. Organization of the workshop - Tumor Microenvironment and Resistance to Drugs: The Role of Biomaterials, In Silico and In Vitro Modeling, 19 Sep 2025, Pavia (Italy).

2024 **Collaborator**. Organization of the International Summer School - Mechanics of active soft materials: experiments, theory, numerics, and applications, 1-5 Jul 2024, Como (Italy).

2017 - 2022 **Collaborator**. Organization of experimental hands-on sessions for prospective students by the School of Biomedical Engineering (Politecnico di Milano) during the Open Day, Milano (Italy).

10. PATENTS

1. *Dispositivo meccanico per il tensionamento di materiali soffici, tessuti biologici e tessuti biologici ingegnerizzati.* Patent pending application (n. 102025000007590), IT. Inventors: G. Scalet, **L. Bonetti**, Date of Receipt: 08/04/2025.

11. COMPETENCES

11.1 Technical competences

Smart hydrogels: design of thermo- and pH-responsive hydrogels, bioinks, biomaterial inks.

Shape memory polymers: semi-crystalline polymer networks (PCL, PEG), TPU.

Fabrication techniques: 3D (bio)printing (FDM, FPF, DIW, DLP), electrophoretic deposition (EPD).

Materials characterization techniques: optical microscopy, SEM, AFM, FT-IR and Raman spectroscopy, uniaxial tensile/compression tests, DMA, rheology, TGA, DSC, DLS.

Mammalian cells and tissue culture: freezing/thawing and storage, handling, indirect/direct cytotoxicity, live/dead assay, immunostaining, fluorescence microscopy.

Cell sheet engineering.

11.2 Computer skills

Operative systems: MS Windows, MacOS.

Processing applications: MS Office, iWork, LaTeX.

Statistical and programming softwares: R, GraphPad Prism, MiniTab, Origin Pro, Design-Expert, Matlab.

Image processing: Adobe Illsutrator, Image J.

CAD: Solidworks, Rhinoceros, Autodesk Fusion

3D printing software: Slic3r, DNA Studio4, Asiga Composer.

11.3 Language skills

Italian	Mother language.
English	Speaking: C1. Writing: C1. Reading: C1. Oral comprehension: C1. TOEIC - Educational Testing Service, Score: 945/990, Aug 2014.

In accordance with Regulation (EU) 2016/679 (GDPR), I consent to the processing of my personal data for the purposes of recruitment and selection.

Pavia, 2025/10/30