PAOLA SERENA GINESTRA CURRICULUM VITAE

PERSONAL INFORMATION

Name	PAOLA GINESTRA
Office	Via Branze 38, 25123 Brescia, Italy
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Nationality	Italian
Birth date	Milan, 06/01/1987
Languages	Italiano (MT), English (C1), Portuguese (B2).

EDUCATION

2014-2017	**PhD (Dr.-Ing.), Mechanical and Industrial Engineering,** dissertation titled "Biomanufacturing technologies for tissue engineering and in-vitro applications", University of Brescia, Italy.
2010-2012	**M.Sc., Master of Science in Biomedical Engineering,** Biomaterials and Biomechanics, Polytechnic Institute of Milan, Italy. 110/110
2006-2009	**B.Sc., Bachelor of Science in Biomedical Engineering,** Polytechnic Institute of Milan, Italy.
2001-2006	**High-School degree** in Classical disciplines.

ACADEMIC ROLES

2020	**National Academic Qualification as Associate Professor**
Present	**Assistant Professor:** Teaching role in MECHANICAL TECHNOLOGY, University of Brescia, undergraduate 6 CFU. Teaching role in PRODUCTION TECHNOLOGIES, University of Brescia, undergraduate 3 CFU. Teaching role in PRODUCTION TECHNOLOGIES FOR BIOMANUFACTURING, University of Brescia, graduate 3 CFU.
from 01/04/2019 to 31/08/2021	**Lecturer:** Teaching role in MECHANICAL TECHNOLOGY, University of Brescia, undergraduate 6 CFU. Teaching role in PRODUCTION TECHNOLOGIES FOR BIOMANUFACTURING, University of Brescia, graduate 3 CFU.
from 01/09/2018 to 31/03/2019	**Post-doctoral fellowship:** "Study and Optimization of additive manufacturing techniques for metals, polymers and biological materials. Universityy of Brescia, IT.
from 16/09/2017 to 31/08/2018	**Research fellow EPSRC funded Healthcare Impact Partnership - Process Design to Prevent Prosthetic Infections.** University of Birmingham, UK.
from 01/01/2017 to 15/09/2017	**Post-doctoral fellowship:** "Additive Manufacturing techniques for the production of biocompatible and implantable devices." University of Brescia, IT.

OTHER ACADEMICS ROLES

From December 2020 to today	**Member of the Board of Directors** of the Italian Association of Fixed-Term Researchers (ArteD)
From November 2020	Member of the **Academic Senate** of the University of Brescia as a **representative of fixed-term researchers.**
From September 2020	Member of the **Culture and Research Commission** of the Department of Mechanical and Industrial Engineering.
Participation in the Board of Professors of Research Doctorates	
From April 2020	**PhD in "MECHANICAL AND INDUSTRIAL ENGINEERING" –** Cycle XXXVI – University of Brescia.
INTERNATIONAL ACTIVITIES	
11/2022	**Visiting young researcher.** Visit to the Advanced steels and application Lab at the Department of mechanical engineering of the Aalto University, on the characterization and design of metallic lattice structures by additive manufacturing The project focuses on the computational modeling of the lattice structures under monotonic loading and further optimization of the loading conditions and computational costs of the simulations. Prof. Junhe Lian.
11/2019	**Visiting young researcher.** Visit to the Innovative Design and Integrated Manufacturing Lab of the Dept of Mechanical Engineering in the Seoul National University where they deal with the development of metal casting techniques and to the POSTECH Institute in Pohang where it was possible to work with the bioprinters developed by the institute that allow the production of multi-organ systems. Prof. Dong-Woo Cho and Prof. Sung-Hoon Ahn.
From 09/2017 to 08/2018	**Research Fellow.** Researcher at the University of Birmingham (UK). Research work on the treatment of samples produced using additive powder bed fusion techniques in collaboration with Renishaw (UK) for bacterial infection prevention applications following cranioplasty operations. Resp. Prof Liam Grover.
From 05/2016 to 09/2016	**Visiting PhD student.** Visit to UCI University of Irvine (CA, USA). Use of near field electrospinning, photolithography and pyrolysis technologies for the production and characterization of biomedical devices for microfluidics and carbon-based materials for neuronal engineering applications. Prof. Marc Madou
From 05/2015 to 08//2015	**Visiting PhD student.** Visit to the research institute of **Campinas CTI (Sao Paulo, BR)** as part of the Biomanufacturing program. Use of material extrusion technologies with design of different polymer printheads.. Prof Jorge Da Silva
01/2014-03/2014	**Visiting fellowship student**. PhD scholarship obtained following a funding application procedure within the biomedical research section of NUI Galway, IR. The PhD student position involved the use of finite element models (in particular with Abaqus and Ansys software) for the mechanical modeling of implanted bone devices with evaluation of the mechanical performance of in-vivo prostheses. Peter McHugh
Research projects funded and coordinated with national and international research institutions	
2022	**MOST National Center (CUP D83C22000690001) is the National Center for Sustainable Mobility funded under Mission 4 Component 2 Investment 1.4 - Strengthening research facilities and creation of "national R&D champions" on some Key Enabling Technologies of the PNRR (MUR Notice no. 3138 of 16-12-2021).**

2021	**Artes 4.0 research project funded by ARTES 4.0 Advanced Robotics and enabling digital TEchnologies & Systems 4.0 and the Ministry of Economic Development for the development of a** research project on the design study of a bioreactor for dynamic cell cultures sensorized with TEER patches. Project developed in collaboration with the company IVTech Srl.
2021-2024	**Erasmus+ KA107 international mobility project funded by the European Union** in collaboration with Bar-Ilan University - BIU PIC # 999886574 and Israel Institute of Technology - TECHNION.
2018-2021	**Research project Optimization of 3D printed Metal implants biocompatibility for faster osseointegration and healing funded by the Ministry of Foreign Affairs, for Italy and the Innovation Authority for Israel** for the development of a research project on the study of the biocompatibility of 3D printed metal implants in collaboration with the Israeli research institute Technion of Haifa and the Israeli company Kanfit 3D.
2019-2020	**Research project "Development of special steels through innovations in the implementation of the manufacturing process, characterization of materials and integrated control of the entire production chain" – Steelpro – Lombardy region call**. Role: **participant** in the project as a member of the "University of Brescia" unit.
2017-2018	**Research project "Process Design to Prevent Prosthetic Infections (PREVENTION)." EPSRC funded Healthcare Impact Partnership 2018-2021.** Role: **Project researcher** as a member of the unit of the School of Chemical Engineering within the College of Engineering and Physical Sciences in collaboration with the company Accentus Medical.
Responsibility for third mission activities	
2021	**Research contract** "Study of the design and manufacture of biocompatible patches with integrated TEER electrodes". Budget: 12.000,00€.
2021	**Activities for third parties** "Production of vial racks for anti-covid 19 vaccines", requested by the company Sol Spa.
Affiliations to recognized associations, prizes and awards for scientific activity	
From 2014 to today	Member of the Italian Association of Manufacturing Technologies (**A.I.Te.M.**).
2018	**Best paper award 2018** – AITEM General Assembly.
Audit activities	
Auditor of competitive funded calls	**Science Fund of the Republic of Serbia**
Review of scientific articles	Reviewer of numerous international scientific journals including:
From 2019 to today	Metals (MDPI)
From 2019 to today	Engineering Failure Analysis (Elsevier)
From 2019 to today	Micromachines (MDPI)
From 2018 to today	Materials Letters (Elsevier)
From 2018 to today	Journal of the Mechanical Behavior of Biomedical Materials (Elsevier)

From 2017 to today	Current Drug Targets (Bentham Science)
Participation in scientific and editorial committees	
Editorial boards -2020 – today	Member of the Editorial Board of the international scientific journal "Journal of Modern Mechanical Engineering and Technology – EBM". Publisher: Zeal Press. ISSN (online): 2409-9848. Subject area: Engineering; Mechanical Engineering. Member of the Editorial Board of Biofabrication (specialty section of Frontiers in Bioengineering and Biotechnology), Frontiers.
2022	Organizing Committee of the 5th Cirp Biomanufacturing Conference 2022 Organizer of the Open Track Biomanufacturing of the ISN International Conference 2022 Organizer of the Open Session Biomanufacturing 4.0 of the ISIEA International Conference 2023
2022	Scientific Committee of the upcoming Cirp Biomanufacturing Conference and International Conference on Materials Science, Engineering and Technology
PROFESSIONAL ACTIVITIES	
2020	**President of the commission** for the 2020 session of the maturity exams at the Olivieri Art School in Brescia.
From 2019 to today	**Adjunct professor at the institute of higher education LUIGI CEREBOTANI** of Lonato del Garda (BS).
2013	**Technical Support Engineer at Audinova Italy.**
2012-2014	**Biomedical Engineer at the SC Laboratory of Biomechanics and Technological Innovation and SC Orthopedic and Traumatological Clinic II of the Rizzoli Hospital in Bologna**. European research project entitled: "Composite phenotypic triggers for bone and cartilage repair" (grant agreement n. 246373 - ohpis), funded by the European Union. Resp. Prof. Maurilio Marcacci.
DIDACTIC ACTIVITY	
Ownership and co-ownership of university courses	
From 2019 to 2021	Course holder Production Technologies for Biomanufacturing, Graduates. Department of Mechanical and Industrial Engineering, University of Brescia. **3 ECTS**
From 2019 to 2021	Co-owner of the course Mechanical Technology, Undergraduates. Department of Mechanical and Industrial Engineering, University of Brescia. **6 credits**
From 2017 to 2019	Collaborator of the Industrial Quality Management course, Department of Mechanical and Industrial Engineering, University of Brescia.
Supervision and tutoring of theses, graduation commissions, exam boards	

From 2019 to today	Supervisor and tutor of **5 PhD theses** including **2 Joints PhDs** in collaboration with KU Leuven (BL) and The University of Girona (ES).
From 2019 to today	**Supervisor of about 20 theses** of three-year degrees and master's degrees.
From 2017 to today	**Co-supervisor of about 20** theses of three-year degrees and master's degrees.
-From 2019 to today	Participation in numerous degree commissions of the Bachelor's and Master's degree courses in Mechanical, Management and Materials Engineering.
-From 2014 to today	Participation in commissions for exams of numerous courses in the scientific sector of affiliation.
ATTACHMENTS	Annex A – List of publications

I authorize the processing of personal data contained in my curriculum vitae based on art. 13 of Legislative Decree no. 196/2003 and art. 13 GDPR 679/16.

Brescia, 22/02/2023

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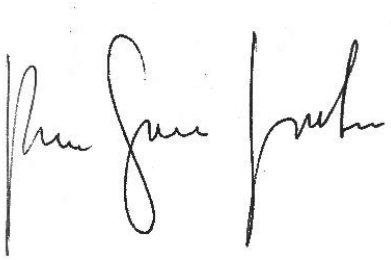

Annex A: LIST OF PUBLICATIONS

Below is the complete list of indexed and non-indexed publications of Dr. Paola Ginestra which consist of:

INTERNATIONAL JOURNALS

R1. P. Ginestra, E. Ceretti and A. Fiorentino. Potential of modeling and simulations of bioengineered devices: endoprostheses, prostheses and orthoses, Journal of Engineering in Medicine; ID JOEIM-15-0128, 2015.

R2. E. Ceretti, Paola S. Ginestra, Maziar Ghazinejad ,Antonio Fiorentino, Marc Madou. Electrospinning and characterization of polymer-graphene powder scaffolds. Cirp Annals 2017; 66(1).

R3. D. Gastaldi, G. Parisi, R. Lucchini, S. Bignozzi, P.S. Ginestra, G. Filardo, R. Contro, E.Kon, P.Vena. A Predictive Model for the Elastic Properties of a Collagen-Hydroxyapatite Porous Scaffold for Multi-Layer Osteochondral Substitutes, International Journal of Applied Mechanics; Vol. 7, No. 4 (2015) 1550063.

R4. P.Ginestra, S. Pandini, A. Fiorentino, P. Benzoni, P. Dell'Era, E. Ceretti. Microstructured scaffold for cellular guided orientation : PCL electrospinning on laser ablated titanium collector. CIRP Journal of Manufacturing Science and Technology. 2017; 19, pp. 147-157.

R5. P. S. Ginestra, M. Madou, E. Ceretti. Production of carbonized micro-patterns by photolithography and pyrolysis. Precision Engineering 55, 137-143.

R6. Morgan Lowther, Sophie Louth, Amy Davey, Azad Hussain, Paola Ginestra, Luke Carter, Neil Eisenstein, Liam Grover, Sophie Cox. Clinical, industrial, and research perspectives on powder bed fusion additively manufactured metal implants. Additive Manufacturing 28, 565-584.

R7. G Allegri, A Colpani, PS Ginestra, A Attanasio. An experimental study on micro-milling of a medical grade Co-Cr-Mo alloy produced by selective laser melting. Materials 12 (13), 2208.

R8. P. Ginestra. Manufacturing of polycaprolactone-Graphene fibers for nerve tissue engineering. Journal of the Mechanical Behavior of Biomedical Materials 100, 103387.

R9. Dey, K., Agnelli, S., Serzanti, M.b, Ginestra, P, Scarì, G., Dell'Era, P., Sartore, L. Preparation and properties of high performance gelatin-based hydrogels with chitosan or hydroxyethyl cellulose for tissue engineering applications. International Journal of Polymeric Materials and Polymeric Biomaterials. 2018, Pages 1-10.

R10. M Seiti, P Ginestra, RM Ferraro, and Ceretti, and Ferraris. Nebulized jet-based printing of bio-electrical scaffolds for neural tissue engineering: a feasibility study. Biofabrication 12 (2), 025024.

R11. PS Ginestra, and Ceretti. Stress-induced stabilization of pyrolyzed polyacrylonitrile and carbon nanotubes electrospun fibers. International Journal of Advanced Manufacturing Technology, 2020, 108(1-2), pp. 117–127.

R12. A Fiorentino, PS Ginestra, A Attanasio, and Ceretti. Numerical optimization of the blank dimensions in tube hydroforming using line-search and bisection methods. Materials 13 (4), 945.

R13. D. Lobo, P. Ginestra. Cell Bioprinting: The 3D-Bioplotter™ Case. Materials, 2019, 12(23), 4005.

R14. P Ginestra, S Pandini, and Ceretti. Hybrid multi-layered scaffolds produced via grain extrusion and electrospinning for 3D cell culture tests. Rapid Prototyping Journal, 2019, 26(3), pp. 593–602.

R15. Riva, L., Ginestra, P.S., Ceretti, E. Mechanical characterization and properties of laser-based powder bed–fused lattice structures: a review. International Journal of Advanced Manufacturing Technology, 2021, 113(3-4), pp. 649–671

R16. Ginestra, P., Ferraro, R.M., Zohar-Hauber, K., Abeni, A., Giliani, S., Ceretti, E. Selective laser melting and electron beam melting of Ti6Al4V for orthopedic applications: A comparative study on the applied building direction (2020) Materials, 13 (23), art. No. 5584, pp. 1-23.

R17. Tsai, H.-Y., Ceretti, E., Rizzi, D., Ginestra, P., Kao, T.-H., Leu, M.C. Laser induced metallization on flexible polymer coating: Analysis and application (2021) Journal of Materials Processing Technology, 290, art. No. 116986.

R18. Lobo, D.A., Ginestra, P., Ceretti, E., Miquel, T.P., Ciurana, J. Cancer cell direct bioprinting: A focused review (2021) Micromachines 12(7),764

R19. M Seiti, P Ginestra, RM Ferraro, and Ceretti, and Ferraris. Aerosol Jet® Printing of Poly(3,4-Ethylenedioxythiophene): Poly(Styrenesulfonate) onto Micropatterned Substrates for Neural Cells In Vitro Stimulation (2022) International Journal of Bioprinting, 8(1), pp. 50-65.

R20. Cao, X., Carter, L.N., Villapún, V.M., Ginestra, P., Cox, S.C. Optimisation of single contour strategy in selective laser melting of Ti-6Al-4V lattices (2022) Rapid Prototyping Journal, 28(5), pp. 907-915

R21. Cantaboni, F., Ginestra, P.S., Tocci, M., Avanzini A., Ceretti, E., Pola, A. Compressive behavior of Co-Cr-Mo radially graded porous structures under as-built and heat-treated conditions (2022) Frattura ed Integrita Strutturale, 16(62), pp. 490-504

R22. Riva, L., Mazzoldi, E.L., Ginestra, P.S., Ceretti, E., Giliani, S.C. Eye model for floaters' studies: production of 3D printed scaffolds (2022) Progress in Additive Manufacturing 7(6), pp. 1127-1140

R23. Ransenigo, C., Tocci, M., Palo, F., (...), Gelfi, M., Pola, A. Lasers in Manufacturing and Materials Processing, 9(4), pp. 481-502

R24. Seiti, M., Ginestra, P.S., Ceretti, E., Ferraris, E., Ranga, A. Emerging Three-Dimensional Integrated Systems for Biomimetic Neural In Vitro Cultures (2022) Advanced Materials Interfaces 9(7),2101297

PROCEEDINGS OF INTERNATIONAL CONFERENCES

CI1. P.S. Ginestra, M. Ghazinejad, M. Madou, E. Ceretti. Fabrication and characterization of polycaprolactone-graphene powder electrospun nanofibers. Proc. SPIE 9932, Carbon Nanotubes, Graphene, and Emerging 2D Materials for Electronic and Photonic Devices IX, 99320A. 2016.

CI2. P. Ginestra, A. Fiorentino, E. Ceretti. Micro-structuring of titanium collectors by laser ablation technique: a novel approach to produce micro-patterned scaffolds for tissue engineering applications. Procedia Cirp 65, 19-24.

CI3. P. S. Ginestra, R.M. Ferraro, G. Lanzi, S. Giliani, E. Ceretti. Production of micro-patterned substrates to direct human iPSCs-derived neural stem cells orientation and interaction. Procedia Cirp 65, 225-230.

CI4. E. Ceretti, P. Ginestra, P.I. Neto, A. Fiorentino, JVL Da Silva. Multi-layered scaffolds production via Fused Deposition Modeling (FDM) using an open source 3D printer: process parameters optimization for dimensional accuracy and design reproducibility. Procedia Cirp 2017.

CI5. P. Ginestra, E. Ceretti, A. Fiorentino. Electrospinning of poly-caprolactone for scaffold manufacturing: experimental investigation on the process parameters influence, Procedia CIRP 2016; 49: pp. 8-13.

CI6. P. Benzoni, P. Ginestra, L. Altomare, A. Fiorentino, L. De Nardo , E. Ceretti, P. Dell'Era. Biomanufacturing of a chitosan/collagen scaffold to drive adhesion and alignment of human cardiomyocyte derived from stem cells, Procedia CIRP 2016; 49: pp. 113-120.

CI7. Inverardi N, Ginestra P.S., Ferraro R.M., Tonello S., Marziano M., Merlettini A., Gualandi, C. Shape memory electrospun nonwovens based on crosslinked poly(ε-caprolactone) for multifunctional biological applications. AIP Conference Proceedings. Volume 1981, 11 July 2018, Article number 020006.

CI8. Paola Ginestra, Elisabetta Ceretti, David Lobo, Morgan Lowther, Sam Cruchley, Sarah Kuehne, Victor Villapun, Sophie Cox, Liam Grover, Duncan Shepherd, Moataz Attallah, Owen Addison, Mark Webber. Post Processing of 3D Printed Metal Scaffolds: a Preliminary Study of Antimicrobial Efficiency. Procedia Manufacturing 47, 1106-1112

CI9. RM Ferraro, PS Ginestra, S Giliani, and Ceretti. Carbonization of polymer precursors substrates to direct human iPSC-derived neurons differentiation and maturation. Procedure CIRP 89, 39-44

CI10. PS Ginestra, R Rovetta, A Fiorentino, and Ceretti. Bioprinting process optimization: evaluation of parameters influence on the extrusion of inorganic polymers. Procedure CIRP 89, 104-109

CI11. P Ginestra, L Riva, A Fiorentino, D Zappa, E Comini, E Ceretti. Electrospinning of Poly (vinyl alcohol)-Graphene oxide aligned fibers. Procedure CIRP 89, 110-115

CI12. Ginestra, P., Riva, L., Ceretti, E., (...), Shepherd, D., Webber, M. Surface finish of additively manufactured metals: Biofilm formation and cellular attachment. ESAFORM 2021 - 24th International Conference on Material Forming 2089

CI13. Mazzoldi, E.L., Riva, L., Ferraro, R.M., Ginestra, P.S., Giliani, S.C. 3D Printing of Biocompatible Scaffolds for Eye Tissue Engineering (2022) Procedia CIRP 110(C), pp. 214-219

CI14. Rovetta, R., Pallavicini, A., Ginestra, P.S. Bioprinting process optimization: case study on PVA (Polyvinyl Alcohol) and Graphene Oxide biocompatible hydrogels (2022) Procedia CIRP 110(C), pp. 145-149

CI15. Riva, L., Ginestra, P.S., Pandini, S., Pasini, C. Production and characterization of the Poisson's ratio of cellular structured metamaterials by additive manufacturing (2022) Procedia CIRP 110(C), pp. 380-384

CI16. Ferraro, R.M., Seiti, M., Ginestra, P.S., (...), Ceretti, E., Giliani, S. Biocompatibility evaluation of encapsulated silver-based printed circuits for in-vitro long-term sensing devices (2022) Procedia CIRP 110(C), pp. 99-104

CI17. Lobo, D.A., Ginestra, P., Ceretti, E., (...), Palomeras, S., Puig, T. Three-dimensional hydrophobic platforms for in vitro tumoroid culture (2022) Procedia CIRP 110(C), pp. 319-324

CI18. Cantaboni, F., Ginestra, P., Tocci, M., (...), Pola, A., Ceretti, E. Modelling and FE simulation of 3D printed Co-Cr Lattice Structures for biomedical applications (2022) Procedia CIRP 110(C), pp. 374-379

CI19. Abeni, A., Cappellini, C., Ginestra, P.S., Attanasio, A. Analytical modeling of micro-milling operations on biocompatible Ti6Al4V titanium alloy (2022) Procedia CIRP 110(C), pp. 8-13

CI20. Cantaboni, F., Ginestra, P., Tocci, M., (...), Louth, S., Cox, S.C. Selective Laser Melting of Ti-6Al-4V Lattices: Case Study on a Spinal Cage Prosthesis (2022) Key Engineering Materials 926 KEM, pp. 147-158

CI21. Seiti, M., Ginestra, P.S., Verma, A., Ceretti, E., Ferraris, E. Aerosol Jet® Printing on stereolithography resin substrates for in-vitro dual bioreactor sensing (2022) Procedia CIRP 110(C), pp. 174-179

PROCEEDINGS OF NATIONAL CONFERENCES

Cn1. P. S. Ginestra, M. Madou, E. Ceretti. Production of carbonized micro-patterns by photolithography and pyrolysis. Proceedings of XIII AITeM Conference. Pisa, Italy, September 11-13, 2017. Italian Association of Mechanical Technology. Published in an international journal (see R5).

BOOK CHAPTERS

BC1. PS Ginestra, L Riva, G Allegri, L Giorleo, A Attanasio, and Ceretti. Analysis of 3D printed 17-4 PH stainless steel lattice structures with radially oriented cells. Industry 4.0 – Shaping The Future of The Digital World. 1st Edition, 2020, CRC Press, ISBN9780367823085, 6 pages.

BC2. Abeni, A., Ginestra, P.S., Attanasio, A. Micro-milling of Selective Laser Melted Stainless Steel. Lecture Notes in Mechanical Engineering, 2021, pp. 1–12.