

BIOGRAPHICAL SKETCH

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NAME: Paola Losi

eRA COMMONS USER NAME (credential, e.g., agency login): -

POSITION TITLE: Researcher

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Pisa, Pisa		03/2000	Biological Sciences

A. Personal Statement

My research interests mainly focus on biocompatibility evaluation of synthetic materials and scaffolds either in vitro and in vivo. Moreover, I have longstanding expertise in processing of polymeric materials by spray phase-inversion technology for the preparation of microporous scaffolds, such as vascular graft and patch for wound healing application. Recently she gained expertise in electrospinning and biological 3D printer.

I collaborated in planning and execution of the research activities and technical report preparation concerning several international and national projects and I am currently responsible for the following project units:

- ATTITUDE (Pisa Foundation) involves the development of a 3D bioprinted construct based on alginate and hyaluronic acid modified with tyramine cross-linkable by radish peroxidase containing fibroblasts, keratinocytes and endothelial cells.

- PREMHYA (FESR Regione Toscana) involves the development of a 3D bioprinted construct based on alginate and hyaluronic acid cross-linked by BDDE with the addition of peptides and amino acids derived from collagen containing fibroblasts and keratinocytes.

- BIO-TESS (FESR Regione Toscana) involves the evaluation of the biocompatibility, morphology, mechanical properties and antibacterial activity of a composite fabric containing cork powder to be used in mattress textiles to prevent/improve bedsores.

B. Positions, Scientific Appointments, and Honors**Congress**

- International Conference on Advances of Biomaterials for Reconstructive Medicine. June 9-14, 2002, Capri, Italy.
- 17th European Conference on Biomaterials including the Second Young Scientists Forum. 11-14 September 2002, Barcelona, Spain.
- International Workshop "Univentricular circulation: from fluidodynamic analysis for surgical procedures". 25-26 October 2002, Massa (Oral Presentation).
- Corso Base Spettrofotometria FT-IR, Monza 25 marzo 2003.
- Bionova Forum and Exhibition on Biotechnology and Bioengineering, 20-22 Aprile 2005, Padova.
- 67° Congresso Nazionale della Società Italiana di Cardiologia. 16-19 Dicembre 2006, Roma.
- Tissue Engineering and Regenerative Medicine International Society European Meeting (TERMIS-EU), June 17-20, 2013 Istanbul, Turkey.

Honors

- The degree thesis "Evaluation of the haemocompatibility of small diameter vascular graft in relation to the microstructure of their internal surface" won the prize of the Italian Society of Cytometry (GIC 14th edition 2000).
- Best Poster of Advanced Treatments & Technologies in Wound Care (ATTWC2018 London): Biocompatible textile organic electrochemical transistor as pH detector for wound healing monitoring. Losi P, Coppedè N, Zappettini A, Buscemi M, Al Kayal T, Soldani G.

C. Contributions to Science

Publications of the last 10 years

- [1] Losi P, Briganti E, Sanguinetti E, Burchielli S, Al Kayal T, Soldani G. Healing effect of a fibrin-based scaffold loaded with platelet lysate in full-thickness skin wounds. *J Bioact Compat Pol* 2015 Mar;30(2):222-237.
- [2] Al Kayal T, Maniglio D, Bonani W, Losi P, Migliaresi C, Soldani G. A combined method for bilayered vascular graft fabrication. *J Mater Sci Mater Med.* 2015 Feb;26(2):5458.
- [3] Barsotti MC, Al Kayal T, Tedeschi L, Dinucci D, Losi P, Sbrana S, Briganti E, Giorgi R, Chiellini F, Di Stefano R, Soldani G. Oligonucleotide biofunctionalization enhances endothelial progenitor cell adhesion on cobalt/chromium stents. *J Biomed Mater Res A.* 2015 Mar 23.
- [4] Al Kayal T, Panetta D, Canciani B, Losi P, Tripodi M, Burchielli S, Ottoni P, Salvadori PA, Soldani G. Evaluation of the Effect of a Gamma Irradiated DBM-Pluronic F127 Composite on Bone Regeneration in Wistar Rat. *PLoS One.* 2015 Apr 21;10(4):e0125110.
- [5] Del Buffa S, Bonini M, Ridi F, Severi M, Losi P, Volpi S, Al Kayal T, Soldani G, Baglioni P. Design and characterization of a composite material based on Sr(II)-loaded clay nanotubes included within a biopolymer matrix. *J Colloid Interface Sci.* 2015 Jun 15;448:501-7.
- [6] Losi P, Mancuso L, Al Kayal T, Celi S, Briganti E, Gualerzi A, Volpi S, Cao G, Soldani G. Development of a gelatin-based polyurethane vascular graft by spray, phase-inversion technology. *Biomed Mater.* 2015 Aug 4;10(4):045014.
- [7] C. Avigo, A. Flori, P. Armanetti, N. Di Lascio, C. Kusmic, J. Jose, P. Losi, G. Soldani, F. Faita and L. Menichetti. Strategies for non-invasive imaging of polymeric biomaterial in vascular tissue engineering and regenerative medicine using ultrasound and photoacoustic techniques. *Polymer International Volume 65, Issue 7, pages 734-740, July 2016.*
- [8] E. Vignali, K. Capellini, S. Celi, P. Losi, G. Vivoli, E. Cerone, V. Positano, L. Landini, M. Murzi, S. Berti. A morphological and mechanobiological comparison between ascending thoracic aneurysms with bicuspid and tricuspid valves via invivo and exvivo investigation. *European Heart Journal, Volume 38, Issue suppl 1, 1 August 2017, 825826.*
- [9] E. Gasparotti, E. Vignali, P. Losi, M. Scatto, B.M. Fanni, G. Soldani, L. Landini, V. Positano, S. Celi. A 3D printed melt-compounded antibiotic loaded thermoplastic polyurethane heart valve ring design: an integrated framework of experimental material tests and numerical simulations. *International Journal of Polymeric Materials and Polymeric Biomaterials December 2018; 68: 01-10.* <https://doi.org/10.1080/00914037.2018.1525717>.
- [10] G. Soldani, M. Murzi, F. Faita, N. Di Lascio, T. Al Kayal, B. Canciani, R. Spanò, P. Losi. In vivo evaluation of an elastomeric small-diameter vascular graft reinforced with a highly flexible Nitinol mesh. *J Biomed Mater Res B Applied Biomaterials May 2019;107B:951-964.* <https://doi.org/10.1002/jbm.b.34189>.
- [11] Cafarelli, P. Losi, A.R. Salgarella, M.C. Barsotti, I.B. Di Cioccio, I. Foffa, L. Vannozzi, P. Pingue, G. Soldani, Leonardo Ricotti. Small-caliber vascular grafts based on a piezoelectric nanocomposite elastomer: mechanical properties and biocompatibility. *Journal of the Mechanical Behavior of Biomedical Materials May 2019; 97:138-148.* <https://doi.org/10.1016/j.jmbbm.2019.05.017>.
- [12] P. Losi, M. C. Barsotti, I. Foffa, M. Buscemi, C. V. De Almeida, M. Fabbri, S. Gabbriellini, F. Nocchi, S. Ursino, P. Urciuoli, A. Mazzoni, G. Soldani. In vitro human cord blood platelet lysate characterisation with potential application in wound healing. *International Wound Journal October 2019;1-8.* <https://doi.org/10.1111/iwj.13233>
- [13] A combined approach of numerical simulation and additive manufacturing technique for in-silico and in-vitro testing of a 3D printing-based aortic polymeric heart valve
- [14] A combined approach of numerical simulation and additive manufacturing technique for in-silico and in-vitro testing of a 3D printing-based aortic polymeric heart valve. Gasparotti, U Cella, E Vignali, E Costa, G

- Soldani, A Cavallo, P Losi, ME Biancolini, S Celi. Proceeding II International Conference on Simulation for Additive Manufacturing 2019, International Centre for Numerical Methods in Engineering (CIMNE) Barcelona, Spain, ISBN: 978-84-949194-8-0.
- [15] P. Losi, M.C. Barsotti, I. Foffa, M. Buscemi, C.V. De Almeida, M. Fabbri, S. Gabbriellini, F. Nocchi, S. Ursino, P. Urciuoli, A. Mazzoni, G. Soldani. In vitro human cord blood platelet lysate characterisation with potential application in wound healing. *Int Wound J.* Feb 2020;17(1):65-72.
 - [16] T. Al Kayal, P. Losi, S. Pierozzi, G. Soldani. A New Method for Fibrin-Based Electrospun/Sprayed Scaffold Fabrication. *Sci Rep.* 2020 Mar 20;10(1):5111. doi: 10.1038/s41598-020-61933-z.
 - [17] Losi P, Al Kayal T, Buscemi M, Foffa I, Cavallo A, Soldani G. (2020). Bilayered Fibrin-Based Electrospun-Sprayed Scaffold Loaded with Platelet Lysate Enhances Wound Healing in a Diabetic Mouse Model. *Nanomaterials*, 10(11), 2128.
 - [18] Cavallo A, Gasparotti E, Losi P, Foffa I, Al Kayal T, Vignali E, Celi S, Soldani G. (2020). Fabrication and in-vitro characterization of a polymeric aortic valve for minimally invasive valve replacement. *Journal of the Mechanical Behavior of Biomedical Materials*, 104294.
 - [19] Cavallo A, Beccatelli M, Favero A, Al Kayal T, Seletti D, Losi P, Soldani G, Coppedè N. (2021). A biocompatible pressure sensor based on a 3D-printed scaffold functionalized with PEDOT: PSS for biomedical applications. *Organic Electronics*, 106204.
 - [20] Al Kayal T, Buscemi M, Cavallo A, Foffa I, Soldani G, Losi P. (2022) Plasminogen-loaded fibrin scaffold as drug delivery system for wound healing applications. *Pharmaceutics*, 14(2), 251.
 - [21] Cavallo A, Losi P, Buscemi M, Al Kayal T, Beccatelli M, Soldani G, Coppedè N. (2022). Biocompatible organic electrochemical transistor on polymeric scaffold for wound healing monitoring. *Flexible and Printed Electronics*, 7(3), 035009.
 - [22] Cavallo A, Al Kayal T, Mero A, Mezzetta A, Pisani A, Foffa I, Vecoli C, Buscemi M, Guazzelli L, Soldani G, Losi P. (2023) Marine Collagen-Based Bioink for 3D Bioprinting of a Bilayered Skin Model. *Pharmaceutics*. 2023; 15(5):1331.
 - [23] De Almeida CV, Buscemi M, Cavallo A, Lulli M, Foffa I, Soldani G, Losi P. The Association of Propranolol with 2-Deoxy-D-Glucose Reduces the Metabolism and the Proliferation of Cutaneous Squamous Carcinoma A431 Cell Line. (2023) *Austin J Dermatolog.* 10(1): 1107.
 - [24] Cavallo A, Al Kayal T, Mero A, Mezzetta A, Guazzelli L, Soldani G, Losi P. (2023) Fibrinogen-Based Bioink for Application in Skin Equivalent 3D Bioprinting. *J. Funct. Biomater.* 14, 459.
 - [25] Al Kayal T, Giuntoli G, Cavallo A, Pisani A, Mazzetti P, Fonnesu R, Rosellini A, Pistello M, D'Acunto M, Soldani G, Losi P. (2023) Incorporation of Copper Nanoparticles on Electrospun Polyurethane Membrane Fibers by a Spray Method. *Molecules*. 28(16):5981.
 - [26] Ferrari IV, Giuntoli G, Pisani A, Cavallo A, Mazzetti P, Fonnesu R, Rosellini A, Pistello M, Al Kayal T, Cataldo A, Montanari R, Varone A, Castellino M, Antonaroli S, Soldani G, Losi P. (2023) One-step silver coating of polypropylene surgical mask with antibacterial and antiviral properties. *Heliyon*. 10(1):e23196.
 - [27] Cavallo A, Al Kayal T, Soldani G, Losi P, Tedeschi L. (2024) Riboflavin based setup as an alternative method for a preliminary screening of face mask filtration efficiency. *Sci Rep.* 14(1):8830.
 - [28] Buscemi M, Cavallo A, Fabbri M, Gabbriellini S, Ciabatti E, Mazzoni A, Soldani G, Rebulli P, Losi P. (2024) In vitro regenerative effects of a pooled pathogen reduced lyophilized human cord blood platelet lysate for wound healing applications. *Blood Transfusion* doi: 10.2450/BloodTransfus.755
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 - [30] Cavallo A, Radaelli G, Al Kayal T, Mero A, Mezzetta A, Guazzelli L, Soldani G, Losi P. (2025) Optimization of Gelatin and Crosslinker Concentrations in a Gelatin/Alginate-Based Bioink with Potential Applications in a Simplified Skin Model. *Molecules*, 30, 649. <https://doi.org/10.3390/molecules30030649>.

Complete List of Published Work: <https://www.scopus.com/authid/detail.uri?authorId=16316684600>

PATENT APPLICATION

- Robot for Minimally Invasive Surgery. Italian Patent Application N°102018000005507, Quaglia C, Farneti PA, Celi S, Tamadon I, Tognarelli S, Menciassi A, Condino S, Ferrari V, Soldani G, Losi P (18 May 2018).

- IT Patent pending: "Metodo per la fabbricazione di un patch medicale per il rilascio locale e controllato di sostanze bioattive per il trattamento di ulcere croniche, e patch medicale ottenuto con tale metodo" ID Number: 102021000025664 7 Ottobre 2021

BIBLIOMETRIC INDICATORS (www.scopus.com)

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