

Curriculum Vitae and Track Record

Leonardo Ricotti

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1. Personal Information



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2. Key Figures

77 Journal papers

43 papers on International Conferences proceedings

28 abstracts/posters at national or international Conferences

6 book chapters

15 patents

Parameter	Scholar	Scopus	ISI WoS
No. of articles	129	97	91
No. of citations	2316	1624	1391
H-index	28	23	21

I obtained the Italian qualification for the profession of Associate Professor of Bioengineering (*Abilitazione scientifica nazionale, Professore di II fascia, settore disciplinare 09/G2*) in December 2014.

I obtained the Italian qualification for the profession of Full Professor of Bioengineering (*Abilitazione scientifica nazionale, Professore di I fascia, settore disciplinare 09/G2*) in December 2020.

The licenses were issued by MIUR (*Ministero dell'Istruzione, dell'Università e della Ricerca*).

3. Short bio: professional and scientific highlights

I obtained a M.Sc. Degree in Biomedical Engineering at University of Pisa in 2007 (full marks, cum laude). In 2008 I was hired as Research Assistant at the CRIM Lab (Center of Research In Micro-bio-robotics) of Scuola Superiore Sant'Anna (SSSA) and I obtained a Ph.D. in Biorobotics (full marks, cum laude) at the same institution, in 2012. I am currently Associate Professor at the BioRobotics Institute at SSSA, where I lead the “Micro-Nano-Bio Systems and Targeted Therapies” Lab. Here, I carry on an intense research activity and a high-level education activity for M.Sc. students in Biomedical Engineering and Bionics Engineering and for Ph.D. students in Biorobotics. My scientific activity has been featured from the beginning by a strongly interdisciplinary and curiosity-driven approach. This allowed me to carry out innovative research efforts at the interface between different disciplines, such as robotics and mechatronics, materials science, molecular biology and micro/nanotechnologies. At the beginning of my scientific path, I faced mathematical modeling issues, as well as the design of modular robots and the integration of mechatronic systems. At a later stage, I oriented my scientific interests towards the design and development of systems at the meso-, micro- and nanoscale, featured by innovative materials and micro/nano-components, with the aim of achieving smart devices for minimally invasive therapy, nanomedicine and regenerative medicine. In parallel, my original “robotic/mechatronic” education allowed me to invent novel solutions concerning mechatronic systems for bionic organs, advanced medical/surgical therapies and systems for monitoring patients’ health conditions and athletes’ sport performances. Furthermore, I have attempted, during my scientific path, to create innovative (and potentially disruptive) “match points” between the different mentioned disciplines. A paradigmatic example is the research line on bio-hybrid systems and bio-robots, for which I recently received numerous awards and that allowed me to have a solid and recognized reputation at International level. Nowadays, my research efforts focus on bio-robots, advanced materials and responsive

nanoparticles featured by piezoelectric and magnetic properties, advanced materials for regenerative medicine, bionic organs and implantable devices. In conclusion, my distinctive feature is the ability to promote a cross-fertilization between different disciplines, with the aim of creating innovative knowledge substrates from which generating novel technological solutions for diagnosis and therapy. This approach has the potential to open new scenarios and to expand the applications of Bioengineering, Biorobotics and Bionics and it represents the major contribute that I can bring to such fields.

4. Education

Academic Degrees

11/2008 – 04/2012	Ph.D. in Biorobotics (100/100 cum laude) at SSSA, Pisa (Italy). Ph.D. Thesis entitled “ <i>Development of Bio-Hybrid Actuators</i> ”, defended on 18/04/2012.
10/2004 – 07/2007	M.Sc. Degree (Laurea Specialistica) in Biomedical Engineering, “Industrial” curriculum (110/110 cum laude) , at University of Pisa (Italy). The Thesis, discussed on 26/07/2007, was entitled “Development of an oligonucleotides-based sensor for applications in reconfigurable robotics” and it was based on a 7-months research activity carried out abroad, at the Barcelona Science Park of the University of Barcelona (http://www.pcb.ub.edu/homepcb/live/en/pl.asp), in Barcelona (Spain).
10/2001 – 10/2004	B.Sc. Degree (Laurea Triennale) in Biomedical Engineering, “Industrial” curriculum (110/110) , at University of Pisa (Italy). The Thesis, discussed on 13/10/2004, was entitled “ <i>Design of a multicompartmental bioreactor for in vitro simulation of human metabolism</i> ” and it was based on a research activity carried out at the Bioengineering and Robotics Research Center “E. Piaggio” of the University of Pisa (http://www.centropiaggio.unipi.it/), Pisa (Italy).

Other Education





01/2011 - 07/2011	Visiting Ph.D. student (6 months) at Biocant (Center of Innovation and Biotechnology) (www.biocant.pt) in Coimbra (Portugal).
02/2010 – 12/2010	Master in “High-Tech Entrepreneurship” at SIAF (Scuola Internazionale di Alta Formazione), Volterra (PI, Italy). This 1 st level master aimed at providing young researchers with the knowledge and instruments needed to create and manage new high-tech spin-off and start-up companies.
14/06/2010 - 21/06/2010	“Spin Your Thesis!” program , promoted by the European Space Agency (ESA). The program consisted in carrying out experiments in hypergravity conditions at the ESA facilities, in Noordwijk (The


	Netherlands).
09/1996 – 07/2001	High School Degree (100/100) at the Scientific Lyceum “G. Carducci”, Volterra (PI, Italy)

Summer Schools

02/11/2009 - 07/11/2009	Summer School on BioRobotics WSK’09 , held at Waseda University, Tokyo (Japan).
23/08/2009 - 12/09/2009	European School on Nanosciences and Nanotechnologies (ESONN’09) , held at the Université de Grenoble (France).
31/08/2008 - 05/09/2008	Summer School on BioRobotics WSK’08 , organized by SSSA and held in Volterra (Italy).

5. Employment history

<p><u>From 01/10/2017 - today</u></p> 	<p>Associate Professor at the BioRobotics Institute of SSSA. Head of the “<i>Micro-Nano-Bio Systems and Targeted Therapies</i>” Lab.</p>
<p><u>01/01/2014 – 30/09/2017</u></p> 	<p>Assistant Professor at the BioRobotics Institute of SSSA. Head of the “<i>Micro-Nano-Bio Systems and Targeted Therapies</i>” Lab. [Contratto da ricercatore a tempo determinato di tipo A, art. 24, comma 3, lett. a), della Legge n. 240/2010. Settore concorsuale: 09/G2 – Bioingegneria]</p>
<p><u>01/12/2012 – 31/12/2013</u></p> 	<p>Postdoctoral fellow in Bioengineering and Biorobotics at the BioRobotics Institute of SSSA. Research topic: “<i>Study and development of bioengineering platforms and advanced technological solutions for targeted therapeutic actions</i>”. [Assegno di ricerca ex art. 22 L. 240/2010. Settore scientifico disciplinare: ING-IND/34]</p>
<p><u>15/12/2011 – 13/11/2012</u></p> 	<p>Postdoctoral fellow in Bioengineering and Biorobotics at the BioRobotics Institute of SSSA, within the MicroVAST project (MICROsystems for Vascular diagnosticS and inTerventions, http://www.microvast.it/). Research topic: “<i>Development and characterization of flexible and nanostructured polymeric devices for the realization of therapeutic systems</i>”. [Assegno di ricerca ex art. 22 L. 240/2010. Settore scientifico disciplinare: ING-IND/34]</p>
<p><u>12/09/2011 – 11/04/2012</u></p> 	<p>Collaboration contract at the BioRobotics Institute of SSSA, within the EU-funded (FP7) CA-RoboCom project (Coordination Action for the design and description of the FET Flagship Candidate Robot Companions for Citizens, www.robotcompanions.eu). Role: senior ICT analyst. [Contratto di collaborazione (co.co.co)]</p>
<p><u>01/11/2008 – 01/11/2011</u></p> 	<p>Ph.D. Scholarship, SSSA. International Doctoral School in Innovative Technologies of Information & Communication Engineering and Robotics, Curriculum: Biorobotics (XXIV Ph.D. cycle). Double affiliation: SSSA and Center for Micro-Bio-Robotics of the Italian Institute of Technology (IIT). Research topic: “<i>Development of bio-hybrid actuators</i>”.</p>
<p><u>09/01/2009 – 08/11/2009</u></p> 	<p>Collaboration contract at the Center of Research In Micro-bio-engineering (CRIM) Lab of SSSA, within the EU-funded (FP7) REPLICATOR project (Robotic Evolutionary Self-Programming and Self-Assembling Organisms, http://symbion.org/tiki-index.php). Research topic: “<i>Study and development of reconfigurable robotic systems for inspection of non-structured</i>”</p>

	environments”. [Contratto di collaborazione (co.co.co)]
<u>01/01/2008 – 31/10/2008</u> 	Research assistant in Bioengineering and Biorobotics at the CRIM Lab of SSSA. Position funded within the REPLICATOR project. Research topic: “Study and development of reconfigurable robotic platforms”. [Assegno di ricerca ex art. 51 comma 6 L. 449/1997. Settore scientifico disciplinare: ING-IND/34]

6. Awards and distinctions

30/11/2018

Most innovative spin-off company in Italy – 1st place. Assigned during the Piano Nazionale per l’Innovazione PNICube – Verona (Italy) – 29th – 30th November 2018, to the spin-off company Relief s.r.l. (of which Leonardo Ricotti was the CEO)

31/10/2018

Most innovative spin-off company in Tuscany – 1st place. Assigned during the Start Cup Toscana event – Florence (Italy) – 31/10/2018, to the spin-off company Relief s.r.l. (of which Leonardo Ricotti was the CEO)

26/01/2016

Best Poster Presentation Award – 3rd place. Assigned during the IEEE Life Sciences Grand Challenges Conference - Abu Dhabi (UAE) - 25th – 26th January 2016

31/07/2014

European Biomaterials and Tissue Engineering Doctoral Award. Assigned during the European Biomaterials Society (ESB) Conference – Liverpool (UK) – 31th August – 3rd September 2014

01/08/2013

Best Oral Presentation Award at The International Conference on Biomimetic and Biohybrid systems (Living Machines 2013) – London (UK) – 29th July – 2nd August 2013. Title: “Three-dimensional tubular self-assembling structure for bio-hybrid actuation”

05/06/2013

Best Oral Presentation Award at the Italian Biomaterials Society Conference (SIB 2013), affiliated with the European Society for Biomaterials (ESB) – Baveno (VB) – 3rd – 5th June 2013. Title: “Engineered materials for the development of bio-hybrid actuators”

21/09/2012

“Massimo Grattarola” 2012 Award for the Best Ph.D. Thesis in Bioengineering. Assigned during the XXXI Annual School of the Italian Bioengineering Group (Gruppo Nazionale di Bioingegneria, GNB), in Bressanone (Bz, Italy)

14/06/2010

Winner of the “Spin Your Thesis! Campaign 2010”, promoted by the European Space Agency (ESA), with the project “*Investigation of hypergravity on proliferation metabolism and differentiation of muscle cells*” (G. Ciofani, L. Ricotti, J. Rigosa ; Advisors: Prof. A. Menciassi, Dr. M. Monici)

15/05/2010

Selected as a finalist for the program “Fly Your Thesis 2010” promoted by ESA. The project (MuSpace2010) was within the 12 best proposals promoted by European research groups

10/05/2009

Selected as a finalist for the program “Fly Your Thesis 2009” promoted by ESA. The project (MuSpace) was within the 16 best proposals promoted by European research groups

15/12/2006

“MICRO NANO 25 – The technologies of Tomorrow” Award, appointed for the development of multicompartmental bioreactors (topic of the B.Sc. Thesis). The prize was assigned to the Bioengineering and Robotics Research Center “E. Piaggio” of the University of Pisa. Selected from the Editors of “*R&D Magazine*” and “*Micro Nano Newsletter*” as one of the most innovative products of the year.

28/09/2005

“LaBS 2005” Award for the best B.Sc. Thesis in Bioengineering. The prize was promoted by the Politecnico of Milano and it was assigned during the XXV Annual School of the Italian Bioengineering Conference (Congresso Nazionale di Bioingegneria, GNB), in Bressanone (Bz, Italy).

7. Publications and Patents

Papers on peer-reviewed Journals (J)

* = *these authors equally contributed to this work*

2020:

- [J1]. A. Sorriento, A. Poliziani, A. Cafarelli, G. Valenza, and **L. Ricotti**. A novel quantitative and reference-free ultrasound analysis to discriminate different concentrations of bone mineral content. *Sci. Rep.* Doi: 10.1038/s41598-020-79365-088c38f34-06b8-4f2a-9925-f4b715dc6982 (2020) [I.F. 2019: **3.998**]
- [J2]. J.O. Alcaide, Y. Huan, N. Gabrieli, A. Firrincieli, **L. Ricotti**, P. Dario, and G. Ciuti. Tether-colon interaction model and tribological characterization for front-wheel driven

colonoscopic devices. *Tribology Int.* Doi: 10.1016/j.triboint.2020.106814 (2020) [I.F. 2019: 4.271]

- [J3]. S. Pane, T. Mazzocchi, V. Iacovacci, **L. Ricotti**, and A. Menciacsi. Smart Implantable Artificial Bladder: an integrated design for organ replacement. *IEEE Trans. Biomed. Eng.* Doi: 10.1109/TBME.2020.3023052 (2020) [I.F. 2019: 4.424]
- [J4]. L. Garcia-Hevia, I. Roehrer, T. Mazzocchi, A. Menciacsi, and **L. Ricotti**. Cytotoxicity of pristine and functionalized tungsten disulfide particles in the urinary system. *J. Nanop. Res.* 22(9): 1-10 (2020) [I.F. 2019: 2.132]
- [J5]. L. Vannozzi, T. Mazzocchi, A. Hasebe, S. Takeoka, T. Fujie, and **L. Ricotti**. A coupled FEM-SPH modeling technique to investigate the contractility of biohybrid thin films. *Adv. Biosys.* Doi: 10.1002/adbi.201900306 (2020)
- [J6]. L. Vannozzi, P.J. Gouveia, P. Pingue, C. Canale, and **L. Ricotti**. Novel ultra-thin films based on a blend of PEG-b-PCL and PLLA and doped with ZnO nanoparticles. *ACS Appl. Mater. Interf.* Doi: 10.1021/acsami.0c00154 (2020) [I.F. 2019: 8.758]
- [J7]. S. Ciancia, A. Cafarelli, A. Zahoranova, A. Menciacsi, and **L. Ricotti**. Pulsatile drug delivery system triggered by acoustic radiation force. *Front. Bioeng. Biotechnol.* Doi: 10.3389/fbioe.2020.00317 (2020) [I.F. 2019: 3.644]
- [J8]. M. Ibrahim, L. Paternò, **L. Ricotti**, and A. Menciacsi. A layer jamming actuator for tunable stiffness and shape-changing devices. *Soft Rob.* Doi: 10.1089/soro.2019.018 (2020) [I.F. 2019: 6.160] – **Cover Page**
- [J9]. G. Lucarini, A. Vizzoca, C. Cinti, **L. Ricotti**, and A. Menciacsi. Design of an innovative platform for the treatment of cerebral tumors by means of erythro-magneto-HA-virosomes. *Biomed. Phys. Eng. Expr.* Doi: 10.1088/2057-1976/ab89f1 (2020)
- [J10]. L. Marziale, G. Lucarini, T. Mazzocchi, **L. Ricotti**, and A. Menciacsi. Comparative analysis of occlusion methods for artificial sphincters. *Artif. Org.* Doi: 10.1111/aor.13684 (2020) [I.F. 2019: 2.259]
- [J11]. F. Dedola, F.P. Ulloa Severino, N. Meneghetti, T. Lemaire, A. Cafarelli, **L. Ricotti**, A. Menciacsi, A. Cutrone, A. Mazzoni, and S. Micera. Ultrasound stimulations induce prolonged depolarization and fast action potentials in leech neurons. *IEEE Open J. Eng. Med. Biol.* 1: 23-32 (2020)
- [J12]. F. Iberite, I. Gerges, L. Vannozzi, A. Marino, M. Piazzoni, T. Santaniello, C. Lenardi, and **L. Ricotti**. Combined effects of electrical stimulation and protein coatings on myotube formation in a soft porous scaffold. *Ann. Biomed. Eng.* 48(2): 734-746 (2020) [I.F. 2019: 3.324]

2019:

- [J13]. V. Iacovacci, A. Blanc, H. Huang, **L. Ricotti**, R. Schibli, A. Menciassi, M. Behe, S. Pané, and B.J. Nelson. High-resolution SPECT imaging of stimuli-responsive soft microrobots. *Small*. Doi: 10.1002/sml.201900709 (2019) [I.F. 2019: [11.459](#)]
- [J14]. A. Cafarelli, P. Losi, A.R. Salgarella, M.C. Barsotti, I.B. Di Cioccio, I. Foffa, L. Vannozzi, P. Pingue, G. Soldani, and **L. Ricotti**. Small-caliber vascular grafts based on a piezoelectric nanocomposite elastomer: Mechanical properties and biocompatibility. *J. Mech. Behav. Biomed. Mater.* 97: 138 (2019) [I.F. 2019: [3.372](#)]
- [J15]. S. Ugolini, T. Mazzocchi, M. Ghionzoli, F. Facchini, **L. Ricotti**, G. Ciuti, A. Menciassi, and A. Messineo. Sensorized orthosis for non-operative treatment of *Pectus Carinatum* in pediatric patients. *IEEE Trans. Med. Rob. Bion.* 1(2): 115 (2019)
- [J16]. A. Hasebe, Y. Suematsu, S. Takeoka, T. Mazzocchi, L. Vannozzi, **L. Ricotti**, and T. Fujie. Biohybrid actuators based on skeletal muscle-powered microgrooved ultra-thin films consisting of poly (styrene-block-butadiene-block-styrene). *ACS Biomater. Sci. Eng.* Doi: 10.1021/acsbio.8b01550 (2019) [I.F. 2019: [4.152](#)]
- [J17]. S. Rosa, C. Praça, P.R. Pitrez, P. José Gouveia, X.L. Aranguren, **L. Ricotti**, and L. Silva Ferreira. Functional characterization of iPSC-derived arterial- and venous-like endothelial cells. *Sci. Rep.* 9: 3826 (2019) [I.F. 2019: [3.998](#)]

2018:

- [J18]. A. Cardona, V. Iacovacci, T. Mazzocchi, A. Menciassi, and **L. Ricotti**. Novel nanostructured coating on PDMS substrates featuring high resistance to urine. *ACS Appl. Bio Mater.* 2(1): 255-265 (2018)
- [J19]. V. Iacovacci, **L. Ricotti**, E. Sinibaldi, G. Signore, F. Vistoli, and A. Menciassi. Intravascular magnetic catheter enables the retrieval of nanoagents from the bloodstream. *Adv. Sci.* Doi: 10.1002/advs.201800807 (2018) [I.F. 2019: [15.840](#)] – **Cover Page**
- [J20]. A.R. Salgarella, A. Zahoranová , P. Šrámková , M. Majerčíková , E. Pavlova , R. Luxenhofer , J. Kronek , I. Lacik, and **L. Ricotti**. Investigation of drug release modulation from poly(2-oxazoline) micelles through ultrasound. *Sci. Rep.* 8: 9893 (2018) [I.F. 2019: [3.998](#)]
- [J21]. D. Trelova, A.R. Salgarella, **L. Ricotti**, G. Giudetti, A. Cutrone, P. Sramkova, A. Zahoranova, D. Chorvat, D. Hasko, C. Canale, S. Micera, J. Kronek, A. Menciassi, and I. Lacik. Soft hydrogel zwitterionic coatings minimize fibroblast and macrophage adhesion on polyimide substrates. *Langmuir*. Doi: 10.1021/acs.langmuir.8b00765 (2018) [I.F. 2019: [3.557](#)]
- [J22]. R. Grifantini, M. Taranta, L. Gherardini, I. Naldi, M. Parri, A. Grandi, A. Giannetti, S. Tombelli, G. Lucarini, **L. Ricotti**, S. Campagnoli, E. De Camilli, G. Pelosi, F. Baldini, A.

Menciassi, G. Viale, P. Pileri, and C. Cinti. Magnetically driven drug delivery systems improving targeted immunotherapy for colon-rectal cancer. *J Contr Rel*. Doi: 10.1016/j.jconrel.2018.04.052 (2018) [I.F. 2019: 7.727]

[J23]. L. Marziale, G. Lucarini, T. Mazzocchi, E. Gruppioni, S. Castellano, A. Davalli, R. Sacchetti, D. Pistolesi, L. Ricotti, and A. Menciassi. Artificial sphincters to manage urinary incontinence: a review. *Artif Org*. Doi: 10.1111/aor.13164 (2018) [I.F. 2019: 2.259]

[J24]. L. Vannozzi, V. Iacovacci, A. Menciassi, and L. Ricotti. Nanocomposite thin films for triggerable drug delivery. *Exp Opin Drug Deliv*. Doi: 10.1080/17425247.2018.1451512 (2018) [I.F. 2019: 4.838]

[J25]. L. Vannozzi, I.C. Yasa, H. Ceylan, A. Menciassi, L. Ricotti, and M. Sitti. Self-folded hydrogel tubes for implantable muscular tissue scaffolds. *Macromol Biosci*. Doi: 10.1002/mabi.201700377 (2018) [I.F. 2019: 3.416]

[J26]. L. Paternò, M. Ibrahim, E. Gruppioni, A. Menciassi, and L. Ricotti. Sockets for limb prostheses: a review of existing technologies and open challenges. *IEEE Trans Biomed Eng*. Doi: 10.1109/TBME.2017.2775100 (2018) [I.F. 2019: 4.424]

[J27]. G. Lucarini, V. Iacovacci, P.J. Gouveia, L. Ricotti, and A. Menciassi. Design of a novel magnetic platform for cell manipulation. *J Micromech Microeng*. 28: 025009 (2018) [I.F. 2019: 1.739]

2017:

[J28]. L. Ricotti, Barry Trimmer, Adam W. Feinberg, Ritu Raman, Kevin K. Parker, Rashid Bashir, Metin Sitti, Sylvain Martel, Paolo Dario, and Arianna Menciassi. Bio-hybrid actuators for robotics: a review of devices actuated by living cells. *Science Robotics*. 2(12): eaaq0495 (2017) [I.F. 2019: 18.684]

[J29]. L. Vannozzi, L. Ricotti, T. Santaniello, T. Terencio, R. Oropesa-Nunez, C. Canale, F. Borghi, A. Menciassi, C. Lenardi, I. Gerges. 3D porous polyurethanes featured by different mechanical properties: characterization and interaction with skeletal muscle cells. *J Mech Behav Biomed Mater*. 75: 147-159; 2017 [I.F. 2019: 3.372]

[J30]. P.J. Gouveia, S. Rosa, L. Ricotti, B. Abecasis, H.V. Almeida, L. Monteiro, J. Nunes, F. Sofia Carvalho, M. Serra, S. Luchkin, A. Leonidovitch Kholkin, P. Marques Alves, P. Jorge Oliveira, R. Carvalho, A. Menciassi, R. Pires Neves, L. Silva Ferreira. Flexible nanofilms coated with aligned piezoelectric microfibers preserve the contractility of cardiomyocytes. *Biomaterials*. Doi: 10.1016/j.biomaterials.2017.05.048; 2017 [I.F. 2019: 10.317]

[J31]. A. Salgarella, A. Cafarelli, L. Ricotti, L. Capineri, P. Dario, A. Menciassi. Optimal ultrasound exposure conditions for maximizing C2C12 muscle cell proliferation and differentiation. *Ultrasound Med Biol*. 43: 1452-1465; 2018 [I.F. 2019: 2.514]

- [J32]. L. Morelli, M.A. Cappelluti, **L. Ricotti**, C. Lenardi, I. Gerges. An injectable system for local and sustained release of antimicrobial agents in the periodontal pocket. *Macromol Biosci*. Doi: 10.1002/mabi.201700103; 2017 [I.F. 2019: [3.416](#)]
- [J33]. **L. Ricotti**, T. Fujie. Thin polymeric films for building biohybrid microrobots. *Bioinsp. Biomim*. 12(2): 021001; 2017 [I.F. 2019: [3.062](#)]
- [J34]. A. Cafarelli, A. Verbeni, A. Poliziani, P. Dario, A. Menciassi, and **L. Ricotti**. Tuning acoustic and mechanical properties of biomaterials for ultrasound phantoms and smart substrates for cell cultures. *Acta Biomater*. 49: 368-378; 2017 [I.F. 2019: [7.242](#)]
- [J35]. T. Mazzocchi, **L. Ricotti**, N. Pinzi, and A. Menciassi. Magnetically controlled endourethral artificial urinary sphincter. *Ann. Biomed. Eng.* 45: 1181-1193; 2017 [I.F. 2019: [3.324](#)]
- 2016:
- [J36]. **L. Ricotti**, G. Gori, D. Cei, J. Costa, G. Signore, A. Ahluwalia. Polymeric microporous nanofilms as smart platforms for in vitro assessment of nanoparticle translocation and Caco-2 cell culture. *IEEE Trans. Nanobiosci*. 15: 689-696; 2016 [I.F. 2019: [2.791](#)]
- [J37]. V. Iacovacci, **L. Ricotti**, A. Menciassi, P. Dario. The bioartificial pancreas (BAP): biological, chemical and engineering challenges. *Biochem. Pharmacol*. 100: 12-27; 2016 [I.F. 2019: [4.960](#)]
- [J38]. L. Vannozzi, **L. Ricotti**, C. Filippeschi, S. Sartini, V. Coviello, V. Piazza, P. Pingue, C. La Motta, P. Dario and A. Menciassi. Nanostructured ultra-thin patches for ultrasound-modulated delivery of anti-restenotic drug. *Int. J. Nanomed*. 11: 69-92; 2016 [I.F. 2019: [5.115](#)]
- [J39]. I. Gerges, M. Tamplenizza, S. Lopa, C. Recordati, F. Martello, A. Tocchio, **L. Ricotti**, C. Arrigoni, P. Milani, M. Moretti, C. Lenardi. Creep-resistant dextran-based polyurethane foam as a candidate scaffold for bone tissue engineering: Synthesis, chemico-physical characterization, and in vitro and in vivo biocompatibility. *Int. J. Polym. Mater. Polym. Biomater*. doi: 10.1080/00914037.2016.1163565; 2016 [I.F. 2019: [1.982](#)]
- [J40]. I. Baldoli, T. Mazzocchi, C. Paoletti, **L. Ricotti**, P. Salvo, V. Dini, C. Laschi, F. Di Francesco, A. Menciassi. Pressure mapping with textile sensors for compression therapy monitoring. *Proc. Inst. Mech. Eng. Part H: J. Eng. Med*. 230(8): 795-808; 2016
- 2015:
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- [C27]. P.J. Gouveia, S. Rosa, **L. Ricotti**, R.N. Carvalho, A. Menciassi, L. Ferreira. Cardiokit: a system for cardiac tissue engineering and toxicity assessment. *TERMIS (Tissue*

Engineering and Regenerative Medicine International Society) Conference, 2014, December 13-16, Washington D.C. (USA). Published in: *Tissue Eng: Part A*. 20: S124-S124; 2014

[C28]. (*) **L. Ricotti**, T. Ranzani, V. Calarota, and A. Menciassi. Thin and flexible pressure/deformation sensors based on piezoelectric nanocomposites. *IEEE Sensors*, 2014, November 2-5, Valencia (Spain)

[C29]. (*) **L. Ricotti**, and A. Menciassi. Biomaterials for 2D and 3D bio-hybrid robotic devices. *ESB (26th European Conference on Biomaterials)*, 2014, August 31 – September 3, Liverpool (UK)

2013:

[C30]. V. Iacovacci, **L. Ricotti**, P. Dario, and A. Menciassi. Mechatronic refilling device for long-term implantable artificial organs. *SMIT (International Conference of the Society for Medical Innovation and Technology)*, 2013, September 5-7, Baden Baden (Germany)

[C31]. (*) **L. Ricotti**, G. Ciofani, V. Mattoli, P. Dario, and A. Menciassi. Engineered materials for the development of bio-hybrid actuators. *SIB (Congresso della Società Italiana di Biomateriali)*, 2013, June 3-5, Baveno (Italy) – **Best Oral Presentation Award**

[C32]. (*) **L. Ricotti**, L. Vannozzi, P. Dario, and A. Menciassi. Three-dimensional tubular self-assembling structure for bio-hybrid actuation. *Living Machines (The International Conference on Biomimetic and Biohybrid systems)*, 2013, July 29 – August 2, London (UK) - **Best Oral Presentation Award**

2012:

[C33]. G. Ciofani, S. Danti, **L. Ricotti**, D. D'Alessandro, S. Moscato, A. Menciassi, and V. Mattoli: Applications of ceramic nanoparticles in nanomedicine. *Thermec (7th International Conference on Advanced Materials)*, 2011, August 1-5, Quebec City (Canada). Published on the Proceedings of Materials Science Forum. 706-709: 467-471; 2012

2011:

[C34]. G. Ciofani, **L. Ricotti**, J. Rigosa, A. Menciassi, and M. Monici: Hypergravity effects on proliferation and differentiation of C2C12 muscle-like cells. *IAC (62nd International Astronautical Congress)*, 2011, October 3-7, Cape Town (South Africa)

[C35]. G.G. Genchi, **L. Ricotti**, G. Ciofani, V. Mattoli, and A. Menciassi: C2C12 muscle cell patterning for biorobotics applications. *ESB (24th European Conference on Biomaterials)*, 2011, September 4-8, Dublin (Ireland)

[C36]. (*) **L. Ricotti**, T. Assaf, A. Menciassi, and P. Dario: A novel strategy for long-term implantable artificial pancreas. *EMBC (33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society)*, 2011, August 30 – September 3, Boston, Massachusetts (USA)

[C37]. (*) **L. Ricotti**, A. Polini, G.G. Genchi, G. Ciofani, D. Iandolo, V. Mattoli, A. Menciassi, P. Dario, and D. Pisignano: Nanostructured, highly aligned poly(hydroxy butyrate) electrospun fibers for differentiation of skeletal and cardiac muscle cells. *EMBC (33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society)*, 2011, August 30 – September 3, Boston, Massachusetts (USA)

[C38]. (*) **L. Ricotti**, and A. Menciassi: Novel fully implantable artificial pancreas with insulin refilling system based on swallowable capsules. *ATTD (4th International Conference on Advanced Technologies & Treatments for Diabetes)*, 2011, February 16-19, London (UK)

2010:

[C39]. G. Ciofani, S. Danti, **L. Ricotti**, D. D'Alessandro, S. Moscato, V. Mattoli, and A. Menciassi: Potential applications of barium titanate nanoparticles in nanomedicine: a preliminary study. *IEEE Nano (10th International Conference on Nanotechnology)*, 2010, August 17-20, Seoul (Korea)

2009:

[C40]. G. Ciofani, **L. Ricotti**, A. Menciassi, S. Danti, S. Moscato, C. Nesti, and M. Petrini: Investigation of interactions between boron nitride nanotubes and C₂C₁₂ cells. *IEEE Nano (9th International Conference on Nanotechnology)*, 2009, July 26-30, Genova (Italy)

[C41]. S. Kernbach, E. Meister, O. Scholz, R. Humza, J. Liedke, **L. Ricotti**, J. Jemai, J. Havlik, and W. Liu: Evolutionary robotics: the next-generation-platform for on-line and on-board artificial evolution. *CEC (IEEE Congress on Evolutionary Computation)*, 2009, May 18-21, Trondheim (Norway)

2008:

[C42]. S. Kernbach, E. Meister, F. Schlachter, K. Jebens, M. Szymanski, J. Liedke, D. Laneri, L. Winkler, T. Schmickl, R. Thenius, P. Corradi, and **L. Ricotti**: Symbiotic robot organisms: REPLICATOR and SYMBRION projects. *PerMIS (Performance Metrics for Intelligent Systems)*, 2008, August 19-21, Gaithersburg, Maryland (USA)

[C43]. S. Kernbach, **L. Ricotti**, J. Liedke, P. Corradi, and M. Rothermel: Study of macroscopic morphological features of symbiotic robotic organisms. *IROS (International Conference on Intelligent Robots and Systems)*, 2008, September 22-26, Nice (France)

Abstracts or posters presented at National and International Conferences (Ab)

(*) = Leonardo Ricotti was the presenter / speaker

2020:

- [Ab1]. T. Minuti, P. Cigni, A. Mannini, M. Costagli, A. Cucini, S. Melotto, S. Rapetti, and **L. Ricotti**. An innovative exoskeleton to measure the isometric strength of lower limbs: retrospective study to investigate the correlation with injuries on professional soccer players. *Costa Blanca Sports Science Events*, December 18-19, 2020, held remotely
- [Ab2]. L. Vannozzi, D. Trucco, E. Teblum, M. Telkhozhayeva, S. Affatato, G. Lisignoli, G.D. Nessim, and **L. Ricotti**. Development of a bilayered hydrogel with cartilage-mimicking mechanical and lubrication properties. MRS (*Materials Research Society Fall Meeting and Exhibit*), November 27 – December 4, 2020, held remotely
- [Ab3]. D. Luchetta, I. Bernardeschi, T. Mazzocchi, and **L. Ricotti**. Innovative materials for dialysate regeneration: towards a miniaturized wearable artificial kidney. ESAO (*World Congress for Artificial Organs*), 2020, held remotely. Published in *Int. J. Artif. Org.* 43(8): 506-555, 2020
- [Ab4]. F. Iacoponi, F. Iberite, F. Fontana, and **L. Ricotti**. Biological evaluation of highly controlled low-intensity pulsed ultrasound stimulation (LIPUS) set-ups. ESAO (*World Congress for Artificial Organs*), 2020, held remotely. Published in *Int. J. Artif. Org.* 43(8): 506-555, 2020
- [Ab5]. A. Cafarelli, A. Poliziani, **L. Ricotti**, A. Sorrienti, and G. Valenza. Non-invasive and quantitative assessment of tissue composition based on radio-frequency ultrasound data analysis. ESAO (*World Congress for Artificial Organs*), 2020, held remotely. Published in *Int. J. Artif. Org.* 43(8): 506-555, 2020
- [Ab6]. (*) **L. Ricotti**, A. Russo, I. Bernardeschi, and G. Lisignoli. ADMAIORA: a potentially ground-breaking approach for cartilage regeneration and osteoarthritis treatment. WCO-IOF-ESCEO (*World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases*), 2020, held remotely.
- [Ab7]. T. Mazzocchi, S. Pane, V. Iacovacci, **L. Ricotti**, and A. Menciassi. A mechatronic approach for bladder replacement: Towards a long-term fully implantable artificial bladder. *36th Annual European Association of Urology Congress*, 2020, July 9-12, Milan (Italy)

2019:

- [Ab8]. M. Ibrahim, L. Paternò, **L. Ricotti**, and A. Menciassi. Variable stiffness/shape band to enhance fitting and comfort in wearable devices. *World Congress of the International Society for Prosthetics and Orthotics (ISPO)*, 2019, October 5-8, Kobe (Japan)
- [Ab9]. F. Vistoli, E. Kauffmann, V. Iacovacci, **L. Ricotti**, and A. Menciassi. Towards a novel fully-implantable artificial pancreas: site of implant and surgical procedure. *Conference of the European Society for Organ Transplantation (ESOT)*, 2019, September 15-18, Copenhagen (Denmark)

[Ab10]. F. Campacci, G. Ciuti, **L. Ricotti**, and F. Vicini. RhinoFit. *National Congress of the Italian Society of Otorhinolaryngology (SIOeChCF)*, 2019, May 29 – June 1, Rimini (Italy)

2018:

[Ab11]. G. Lucarini, L. Marziale, **L. Ricotti**, A. Menciassi, C. Polito, A. Tognarelli, T. Di Vico, and D. Pistolesi. Magnetically-controlled artificial urinary sphincters. SIUD (*National Congress of the Urodynamic Italian Society*), 2018, June 7-9, Naples (Italy)

2017:

[Ab12]. V. Iacovacci, **L. Ricotti**, I. Tamaddon, G. Tortora, P. Dario, and A. Menciassi. Towards a fully implantable autonomous artificial pancreas. ESAO (*World Congress for Artificial Organs*), 2017, September 6-9, Vienna (Austria)

[Ab13]. T. Mazzocchi, V. Iacovacci, A. Cadorna, A. Milani, N. Pinzi, **L. Ricotti** and A. Menciassi. Novel long-term urine-resistant artificial bladder. ESAO (*World Congress for Artificial Organs*), 2017, September 6-9, Vienna (Austria)

[Ab14]. T. Mazzocchi, L. Marziale, G. Lucarini, P. Dario, **L. Ricotti**, and A. Menciassi. Magnetically-controlled artificial urinary sphincters. ESAO (*World Congress for Artificial Organs*), 2017, September 6-9, Vienna (Austria)

[Ab15]. A. Zahoranová, D. Treľová, A.R. Salgarella, **L. Ricotti**, G. Giudetti, A. Cutrone, P. Šramková, D. Chorvát Jr., D. Haško, C. Canale, S. Micera, J. Kronek, A. Menciassi, and I. Lacík. Soft and non-fouling polizwitterionic coatings for neural interfaces. DVSPM (*Danube Vltava Sava Polymer Meeting*), 2017, September 5-8, Vienna (Austria)

[Ab16]. A. Hasebe, L. Vannozzi, T. Mazzocchi, **L. Ricotti**, S. Takeoka, and T. Fujie. Engineered bio-hybrid actuators consisting of microgrooved nanosheets and skeletal muscle cells. ACS (*254th ACS National Meeting & Exposition*), 2017, August 20-24, Washington DC (USA)

[Ab17]. (*) A. Cadorna, V. Iacovacci, T. Mazzocchi, N. Pinzi, A. Menciassi, and **L. Ricotti**. Urine-resistant nanocoatings on elastomeric substrates for achieving a reliable long-term artificial bladder. MRS (*Materials Research Society Fall Meeting and Exhibit*), 2017, November 26-December 1, Boston (USA)

[Ab18]. (*) **L. Ricotti**, I. Di Cioccio, A.R. Salgarella, A. Cafarelli, P. Losi, M.C. Barsotti, I. Foffa, P. Dario, A. Menciassi, and G. Soldani. Nanocomposite small diameter vascular graft stimulated by ultrasound waves. MRS (*Materials Research Society Fall Meeting and Exhibit*), 2017, November 26-December 1, Boston (USA)

2016:

[Ab19]. (*) L. Vannozzi, S. Alyassi, **L. Ricotti**, K. Khalaf, A. Menciassi, and P. Dario. Bio-hybrid systems and their building blocks: new frontiers of biorobotics and bionics. *IEEE Life Sciences Grand Challenges Conference*, 2016, January 25-26, Abu Dhabi (UAE) **Best Poster Presentation Award – 3rd place**

2015:

[Ab20]. L. Vannozzi, **L. Ricotti**, A. Menciassi. Muscle-neuron co-culture on poly (lactic acid) co-cultured ultra-thin films for biohybrid actuation. *Biofabrication (International Conference on Biofabrication)*, 2015, November 7-9, Utrechth (The Netherlands)

[Ab21]. G. Gori, **L. Ricotti**, D. Cei, D. Giacomelli, A. Menciassi, and A. Ahluwalia. Development of a biohybrid thin-film-based device, reproducing *in vitro* the permeability and the peristalsis of the intestinal barrier. *Advances in Cell and Tissue Culture*, 2015, June 15-17, Tirrenia (Pisa, Italy)

2014:

[Ab22]. **L. Ricotti**, G. Ciuti, M. Ghionzoli, A. Menciassi, and A. Messineo. Metal-polymer composite Nuss bar for “minimally” invasive bar removal after Pectus Excavatum treatment. *IPEG (International Pediatric Endosurgery Group)*, 2014, July 22-26, Edimburgh (Scotland)

2013:

[Ab23]. M. Ghionzoli, **L. Ricotti**, G. Ciuti, R. Lo Piccolo, F. Tocchioni, A. Menciassi, and A. Messineo. Is a shorter bar the solution to avoid bar dislocation? *IPEG (International Pediatric Endosurgery Group)*, 2013, June 17-22, Beijing (China)

2012:

[Ab24]. (*) **L. Ricotti**, T. Fujie, G. Ciofani, V. Mattoli, and A. Menciassi. Novel technologies for bio-hybrid actuators based on living cell co-culture. *Terzo Congresso Nazionale di Bioingegneria (GNB)*, 2012, June 26-29, Rome (Italy)

2011:

[Ab25]. F. Greco, T. Fujie, S. Taccola, **L. Ricotti**, A. Menciassi, and V. Mattoli. Macro and nanowrinkled conductive polymer surface on shape-memory polymer substrates: tuning of surface microfeatures towards smart biointerfaces. *MRS (Materials Research Society)*, 2011, November 28 – December 2, Boston, Massachussets (USA)

[Ab26]. T. Fujie, F. Greco, S. Taccola, **L. Ricotti**, A. Menciassi, and V. Mattoli: Anisotropic cellular alignment on nano-wrinkled polymeric surface. *MRS (Materials Research Society)*, 2011, November 28 – December 2, Boston, Massachussets (USA)

2010:

- [Ab27]. G. Ciofani, S. Danti, D. D'Alessandro, L. Ricotti, S. Moscato, M. Petrini, and A. Menciassi. Cellular stimulation mediated by boron nitride nanotubes. Secondo Congresso Nazionale di Bioingegneria (GNB), 2010, July 8-10, Torino (Italy)
- [Ab28]. (*) L. Ricotti, S. Taccola, V. Pensabene, V. Mattoli, A. Menciassi, and P. Dario. Biocompatibility and functionality of PLA nanosheets. Secondo Congresso Nazionale di Bioingegneria (GNB), 2010, July 8-10, Torino (Italy)

8. Editorial activity

Associate Editor / Editorial Board Member roles

- Associate Editor of the IEEE Transactions on Medical Robotics and Bionics (from November 2018) (<https://www.ieee-ras.org/publications/t-mrb/editorial-board>)
- Associate Editor of the IEEE Transactions on Nanobioscience (I.F. 1.969) (from January 2016) (<http://tnb.embs.org/editorial-board/associate-editors/>)
- Editorial Board Member of Chemosensors (I.F. 3.108) (from September 2020) (<https://www.mdpi.com/journal/chemosensors/editors>)
- Associate Editor for the IEEE International Conference on Robotics and Automation (ICRA) 2016.
- Associate Editor for the IEEE Engineering in Medicine and Biology Conference (EMBC) 2019
- Editorial Board Member of the Journal of Regenerative Medicine (from November 2015) (<http://www.scitechnol.com/editorialboard-regenerative-medicine.php>).
- Editorial Board Member of the International Journal of Nanomaterials, Nanotechnology and Nanomedicine (from November 2015) (<http://www.peertechz.com/Nanomaterials-Nanotechnology-Nanomedicine/editorialboard.php>)

Guest Editor roles

- Guest Editor of a Special Issue on Journal of Visualized Experiments, entitled: “Bioprinting strategies for the regeneration of musculoskeletal tissues”, published in 2021
- Guest Editor of a Focused Section on IEEE Transactions on Medical Robotics and Bionics, entitled: “Bionic Organs and Tissues”, published in 2021
- Guest Editor of a Special Issue on Biomedical Microdevices (I.F. 2.227), entitled: “Biohybrid Systems and Living Machines”, published in 2012
- Guest Editor of a Special Issue on Journal of Nanoparticle Research (I.F. 2.101), entitled: “Nanotechnology in Biorobotic Systems”, published in 2015

9. Invited presentations and scientific meeting organization

Invited presentations

03/07/2020	Invited talk at the Mini-Symposium “ <i>Low Intensity Focused Ultrasound: engineering developments and therapeutic applications</i> ”, organized in the framework of EMBC 2020 (Montreal, Canada). Talk title: “ <i>Low intensity pulsed ultrasound for regenerative medicine</i> ”.
19/06/2019	Invited lecture at TU Dresden (Dresden, Germany), Microswimmers

	Lecture Series. Title: <i>“Integrating biological and artificial components into small scale bio-hybrid robots”</i>
13/05/2019	Invited Keynote talk at the World Congress on Functional Materials (Valencia, Spain). Talk title: <i>“Ultrasound and responsive materials for biomedical applications: direct and indirect effects”</i>
30/01/2018	Invited talk at the International Workshop “From insulin mimetics to the artificial pancreas”, organized by Bar-Ilan University (Tel-Aviv, Israel). Talk title: <i>“Fully implantable robotic pancreas refilled by smart pills”</i> .
23/01/2018	Invited talk at the III International Symposium on Nanoparticles / Nanomaterials and Applications (ISN ² A 2018) (Capariça, Portugal). Talk title: <i>“Ultrasound-responsive nanomaterials for biomedical applications”</i> .
08/12/2017	Invited talk at the Italy-Japan Workshop on “Robotics and sports science” (Tokyo, Japan). Talk title: <i>“Analysis of balance and other performance-related parameters in soccer players”</i> .
05/12/2017	Invited seminar at Waseda University (Tokyo, Japan). Seminar title: <i>“Miniaturized robots and biorobots for advanced therapies”</i> .
11/07/2017	Invited lesson at the XIX International School of Materials Science and Technology (Ischia, Italy). Lesson title: <i>“Multiscale materials for biohybrid actuators”</i> .
01/06/2016	Invited seminar at Biocant (Center of Innovation and Biotechnology), University of Coimbra (Coimbra, Portugal). Presentation title: <i>“Miniaturized robots for advanced therapies”</i> .
26/01/2016	Invited seminar at Khalifa University (Abu Dhabi, UAE). Presentation title: <i>“Milli, micro and nano therapeutic systems”</i> .
28/09/2015	Invited talk at the IROS Conference (<i>IEEE/RSJ International Conference on Intelligent Robots and Systems</i>), 2015, September 28 - October 02, Hamburg (Germany), in the framework of a Workshop entitled <i>“From Plants and Animals to Robots: Movements, Sensing, and Control: Two worlds in comparison”</i> . Presentation title: <i>“Bio-hybrid muscle cell-based actuators”</i> .
31/08/2014	Invited talk at the ESB Conference (<i>26th European Conference on Biomaterials</i>), 2014, August 31 - September 3, Liverpool (UK). Title: <i>“Biomaterials for 2D and 3D bio-hybrid robotic devices”</i> .

Organization of scientific meetings

26/07/2019	Organizer of a Mini-Symposium on <i>“Physical triggers and nano-biomaterials for tissue regeneration”</i> , held at EMBC (<i>41st Annual International Conference of the IEEE Engineering in Medicine and Biology</i>
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	Society), 2019, July 23-27, Berlin (Germany).
19/07/2018	Organizer of a Mini-Symposium on “Fully implantable biomechatronic organs”, held at EMBC (40 th Annual International Conference of the IEEE Engineering in Medicine and Biology Society), 2018, July 17-21, Honolulu (USA).
17/07/2018	Organizer of a Workshop on “Bio-hybrid organic machines: an ambitious bridge between bioengineering and robotics”, held at EMBC (40 th Annual International Conference of the IEEE Engineering in Medicine and Biology Society), 2018, July 17-21, Honolulu (USA).
18/07/2017	Organizer of a Special Session on “Multistimuli responsive untethered microsystems: Towards biomedical applications”, held at MARSS (International Conference on Manipulation, Automation and Robotics at Small Scales), 2017, July 17-21, Montréal (Canada).
02/06/2017	Organizer of a Workshop on “Biohybrid Machine by Small-scale Robotics and Systems”, held at ICRA (IEEE International Conference on Robotics and Automation), 2017, May 29 – June 3, Singapore.
16/08/2016	Organizer of a Workshop on “Endoluminal Robots: Advanced Diagnosis and Targeted Therapies”, held at EMBC (38 th Annual International Conference of the IEEE Engineering in Medicine and Biology Society), 2016, August 16-20, Orlando (USA).
27/08/2015	Organizer of a Mini-Symposium on “Bio-Hybrid Systems: Enabling Technologies for Quasi-Living Robots”, held at EMBC (37 th Annual International Conference of the IEEE Engineering in Medicine and Biology Society), 2015, August 25-29, Milan (Italy).

10. Teaching and supervision activities

Teaching activity

<p>Academic year: 2020/2021</p>	<p>Holder of the course “<i>Micro-Nano Robotics and Biomaterials</i>” (M.Sc. in Bionics Engineering, jointly offered by University of Pisa and SSSA): 60 h of lectures.</p> <p>Teaching activity for the course “<i>Principles of Bionics Engineering</i>” (M.Sc. in Bionics Engineering, jointly offered by University of Pisa and SSSA): 5 h of lectures.</p>
<p>Academic year: 2019/2020</p>	<p>Holder of the course “<i>Micro-Nano Robotics and Biomaterials</i>” (M.Sc. in Bionics Engineering, jointly offered by University of Pisa and SSSA): 60 h of lectures.</p> <p>Teaching activity for the course “<i>Principles of Bionics Engineering</i>” (M.Sc. in Bionics Engineering, jointly offered by University of Pisa and SSSA): 5 h of lectures.</p>
<p>Academic year: 2018/2019</p>	<p>Holder of the course “<i>Micro-Nano Robotics and Biomaterials</i>” (M.Sc. in Bionics Engineering, jointly offered by University of Pisa and SSSA): 60 h of lectures.</p> <p>Teaching activity for the course “<i>Principles of Bionics Engineering</i>” (M.Sc. in Bionics Engineering, jointly offered by University of Pisa and SSSA): 10 h of lectures.</p> <p>Holder of the course “<i>Microfabrication through soft lithography and SEM/AFM characterization</i>” (Course delivered to undergraduate students of Scuola Superiore Sant’Anna “<i>Allievi Ordinari</i>” and to PhD students in Biorobotics): 20 h of lectures.</p>
<p>Academic year: 2017/2018</p>	<p>Holder of the course “<i>Miniaturized therapeutic and regenerative systems</i>” (M.Sc. in Bionics Engineering, jointly offered by University of Pisa and SSSA): 60 h of lectures.</p> <p>Teaching activity for the course “<i>Principles of Bionics Engineering</i>” (M.Sc. in Bionics Engineering, jointly offered by University of Pisa and SSSA): 15 h of lectures and constant support for the organization and delivery of the entire course (60 h).</p>
<p>Academic year: 2016/2017</p>	<p>Holder of the course “<i>Miniaturized therapeutic and regenerative systems</i>” (M.Sc. in Bionics Engineering, jointly offered by University of</p>

	<p>Pisa and SSSA): 60 h of lectures.</p> <p>Teaching activity for the course “<i>Principles of Bionics Engineering</i>” (M.Sc. in Bionics Engineering, jointly offered by University of Pisa and SSSA): 7 h of lectures and constant support for the organization and delivery of the entire course (60 h).</p> <p>Teaching activity for the course “<i>Robotics for minimally invasive therapy</i>” (M.Sc. in Bionics Engineering, jointly offered by University of Pisa and SSSA): 5 h of lectures.</p> <p>Teaching activity for the course “<i>Medical robotics</i>” (M.Sc. in Biomedical Engineering, University of Pisa): 3 h of lectures.</p>
Academic year: 2015/2016	<p>Holder of the course “<i>Micro-nano-bio systems for medical and technological applications</i>”, in the framework of the Ph.D. program in BioRobotics of SSSA: 35 h of lectures.</p> <p>Teaching activity for the course “Biomechanics”, module of “Biomechatronics” (M.Sc. in Biomedical Engineering, University of Pisa): 8 h of lectures. Officially nominated as subject expert: “Cultore della Materia”.</p> <p>Teaching activity for the course “<i>Principles of Bionics Engineering</i>” (M.Sc. in Bionics Engineering, jointly offered by University of Pisa and SSSA): 5 h of lectures and constant support for the organization and delivery of the entire course (60 h).</p>
Academic year: 2014/2015	<p>Holder of the course “<i>Micro-nano-bio systems for medical and technological applications</i>”, in the framework of the Ph.D. program in BioRobotics of SSSA: 35 h of lectures.</p> <p>Teaching activity for the course “Biomechanics”, module of “Biomechatronics” (M.Sc. in Biomedical Engineering, University of Pisa): 5 h of lectures. Officially nominated as subject expert: “Cultore della Materia”.</p> <p>Teaching activities for the course “Rehabilitation Bioengineering” (M.Sc. in Biomedical Engineering, University of Pisa): 3 h of lectures.</p>
Academic year: 2013/2014	<p>Teaching activity for the course “Biomechanics”, module of “Biomechatronics” (M.Sc. in Biomedical Engineering, University of Pisa): 5 h of lectures. Officially nominated as subject expert: “Cultore della Materia”.</p> <p>Teaching activities for the course “Rehabilitation Bioengineering”</p>

	(M.Sc. in Biomedical Engineering, University of Pisa): 5 h of lectures. 31/10/2013: Invited lecture for the Ph.D. course in “ <i>Medical Nanotechnology</i> ” of the European School of Molecular Medicine (Milano). Title: “ <i>Micro/nano fabrication technologies and applications to miniaturized artificial and living systems</i> ” – 2 h of lectures
Academic year: 2012/2013	Teaching activity for the course “Biomechanics”, module of “Biomechatronics” (M.Sc. in Biomedical Engineering, University of Pisa): 8 h of lectures. Teaching activities for the course “Rehabilitation Bioengineering” (M.Sc. in Biomedical Engineering, University of Pisa): 5 h of lectures.
Academic year: 2011/2012	Teaching activity for the course “Biomechanics”, module of “Biomechatronics” (M.Sc. in Biomedical Engineering, University of Pisa): 8 h of lectures. Teaching activities for the course “Rehabilitation Bioengineering” (M.Sc. in Biomedical Engineering, University of Pisa): 3 h of lectures.

Supervision activity

Supervision of Ph.D. students	<ol style="list-style-type: none"> 1. Main supervisor of Hind Al-Haddad, PhD student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research program: “Miniaturized technologies for artificial organs”. Research activity started in October 2020. 2. Main supervisor of Diego Trucco, PhD student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research program: “<i>Biomaterials and 3D printing technologies for osteoarticular tissue regeneration</i>”. Research activity started in October 2019. 3. Main supervisor of Sabrina Ciancia, PhD student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research program: “<i>Biomedical and mechatronic solutions for laboratory automation</i>”. Research activity started in October 2019. 4. Main supervisor of Francesco Fontana, PhD student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research program: “<i>Physical stimulation and smart materials for tissue healing and regeneration</i>”. Research activity started in October 2018. 5. Main supervisor of Federica Iberite, PhD student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research program: “<i>3D bioprinting strategies and stem cells for bio-hybrid</i>”
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	<p><i>systems</i>". Research activity started in October 2017.</p> <ol style="list-style-type: none"> 6. Co-supervisor of Adil Farooq, PhD student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research program: "<i>Design and development of electronic solutions for implantable artificial organs</i>". Research activity to be started in October 2017. 7. Co-supervisor of Sozer Canberk, PhD student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research program: "<i>Mechatronic solutions for minimally invasive devices</i>". Research activity started in October 2017. 1. Co-supervisor of Linda Paternò, PhD student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research program: "<i>Fluidic mechanisms for the development of hybrid actuators and innovative biomedical systems</i>". Research activity started in October 2016. Best Ph.D. Thesis Award, GNB Annual School, 2020 8. Co-supervisor of Izadyar Tamaddon, Ph.D. student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research program: "<i>Development of implantable and intraoperative medical devices</i>". Research activity started in October 2015. 9. Co-supervisor of Giulia Gori, Ph.D. student in Bioengineering at the Bioengineering and Robotics Research Center "E. Piaggio" of University of Pisa. Collaboration topic: "<i>Development of an in vitro biomimetic device aimed at reproducing the intestinal barrier</i>". Research activity started in January 2015. 10. Main supervisor of Alice Salgarella, Ph.D. student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research program: "<i>Living/non-living interfaces for medical and technological applications</i>". Research activity started in November 2014. 11. Main supervisor of Lorenzo Vannozzi, Ph.D. student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research program: "<i>Biohybrid microsystems actuated by living cells</i>". Research activity started in November 2013. 2. Main supervisor of Veronica Iacovacci, Ph.D. student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research program: "<i>Milli- and Micro-scale Endovascular Therapeutic Vectors</i>". Research activity started in November 2013. Best Ph.D. Thesis Award, GNB Annual School, 2017 12. Co-supervisor of Andrea Cafarelli, Ph.D. student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research
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	<p>program: “<i>Study of direct and mediated effects of ultrasound on biological tissues</i>”. Research activity started in November 2013.</p> <p>13. Co-supervisor of Rossella Fontana, Ph.D. student in Biorobotics at the BioRobotics Institute of SSSA. Title of the 3-years research program: “<i>Electronics and control algorithms for artificial organs</i>”. Research activity started in November 2012.</p>
Tutoring of M.Sc. and B.Sc. students (Theses)	<p>3. Francesco Rocco Restaino: “Development of an interface to improve usability of an artificial sphincter”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2020-2021</p> <p>4. Daniele Iachetta: “3D bioprinting for vascularization of large-scale tissues”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2020-2021</p> <p>5. Elena Drago: “Control of biohybrid actuators through ultrasound”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2020-2021</p> <p>6. Claudia Paci: “3D bioprinting of nanocomposite hydrogels for skeletal muscle engineering”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2020-2021</p> <p>7. Alessio Siliberto: “Novel bioprinting strategies for in situ delivery of hydrogels on the cartilage tissue”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2019-2020</p> <p>8. Francesco Iacoponi: “Ultrasound stimulation for osteoarthritis treatment”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2019-2020</p> <p>9. Denise Luchetta: “Novel materials enabling an implantable/wearable artificial kidney”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2019-2020</p> <p>10. Tommaso Minuti: “Force and balance monitoring on soccer players”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2019-2020</p> <p>11. Laura Riacci: “Injectable gellan gum hydrogels for cartilage regeneration”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2018-2019</p> <p>12. Arturo Castillo: “Design, modeling and development of 3D hierarchical bioactuators”, M.Sc. Thesis in Bionics Engineering (SSSA and University of Pisa), a.y. 2018-2019</p> <p>13. Alberto Niosi: “Electronic nose for recognition of odorants in</p>

	<p>industrial environments”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2018-2019</p> <p>14. Hind Al-Haddad: “Nanocomposites for cartilage regeneration”, M.Sc. Thesis in Bionics Engineering (SSSA and University of Pisa), a.y. 2018-2019</p> <p>15. Angela Mazzeo: “Development of a bioartificial kidney”, M.Sc. Thesis in Bionics Engineering (SSSA and University of Pisa), a.y. 2018-2019 – Best M.Sc. Thesis Award, GNB Annual School, 2019</p> <p>16. Federica Campacci: “Development of novel polymeric nasal fillers”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2017-2018</p> <p>17. Irene Roherer: “Development and testing of urine-resistant polymeric valves for artificial sphincters”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2017-2018</p> <p>18. Sabrina Ciancia: “<i>Development of an ultrasound-triggered on-demand drug delivery system</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2017-2018 – Best M.Sc. Thesis Award, GNB Annual School, 2018</p> <p>19. Giulia Mariotti: “<i>Piezoelectric cardiac patch for the treatment of myocardial infarction</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2017-2018</p> <p>20. Alice Milani: “<i>Design of a sensing architecture for artificial bladder</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2017-2018</p> <p>21. Angelo Cadorna: “<i>Development of urine-resistant nanocoatings for artificial bladder</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2017-2018</p> <p>22. Ilaria Di Cioccio: “<i>Development of smart vascular grafts based on nanodoped biomaterials</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2016-2017</p> <p>23. Michele Ibrahimi: “<i>Design and development of a smart socket for lower limb prostheses</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2016-2017</p> <p>24. Leonardo Marziale: “<i>Development of a minimally invasive extraurethral artificial urinary sphincter</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2016-2017</p> <p>25. Carmine Perri: “<i>Wireless power transfer technology for a fully</i></p>
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	<p><i>implantable artificial pancreas</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2016-2017</p> <p>26. Alessio Vizzoca: “<i>Development of magnetic microvectors for cancer therapy</i>”, M.Sc. Thesis in Biotechnology (University of Pisa), a.y. 2016-2017</p> <p>27. Francesca Sbaraglia: “<i>Development of an electromagnetic system for the localization of magnetic herythrocytes</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2016-2017</p> <p>28. Martina Lucignani: “<i>Development of thin microgrooved polyacrylamide films for cell co-cultures and bioactuation</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2015-2016</p> <p>29. Aliria Poliziani: “<i>Development of polymers and nanocomposites for phantoms and cell culture substrates</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2015-2016</p> <p>30. Matteo Rocchi: “<i>Development of a polymeric coating for insulin clotting prevention in implantable artificial pancreas</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2015-2016</p> <p>31. Sara Ugolini: “<i>Custom-fitted orthotic brace in nonoperative treatment of Pectus Carinatum: our experience</i>”, M.Sc. Thesis in Medicine and Surgery (University of Florence), a.y. 2014-2015</p> <p>32. Valerio Calarota: “<i>Development of a nano-doped matrix as stiffening sensor for applications in soft robotics</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2014-2015</p> <p>33. Rosanna D’Andrea: “<i>Development of a novel device for the treatment of Pectus Excavatum</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2014-2015</p> <p>34. Alice Salgarella: “<i>Design, fabrication and preliminary evaluation of a new bio-hybrid tactile transducer</i>”, M.Sc. Thesis in Biomedical Engineering (Politecnico di Torino), a.y. 2013-2014</p> <p>35. Giulia Gori: “<i>Development of a bio-hybrid nanomembrane for cell co-culture: an in vitro drug screening tool</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2013-2014 – Best M.Sc. Thesis Award, GNB Annual School, 2014</p> <p>36. Ilaria Sanzari: “<i>Multifunctional device for scaffold stimulation: protein electroadsorption on nanostructured conductive polymers</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2012-2013</p>
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	<p>37. Veronica Iacovacci: “<i>Design and development of a mechatronic implantable system for the refilling of artificial organs</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2012-2013. – Best M.Sc. Thesis Award, GNB Annual School 2013</p> <p>38. Lorenzo Vannozzi: “<i>Design and development of a 3D system for bio-hybrid actuation</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2012-2013</p> <p>39. Stefano Betti: “<i>Design and development of an implantable sensorized medical device for the correction of Pectus Excavatum</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2012-2013</p> <p>40. Alberto Niosi: “<i>Balance analysis and talent recognition in amateur and professional soccer players</i>”, B.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2011-2012</p> <p>41. Irene Bernardeschi: “<i>Ultra-thin film for cell culture, growth and differentiation</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2009-2010</p> <p>42. Giada Graziana Genchi: “<i>Development and characterization of a novel bio-hybrid robotic actuator driven by C2C12 skeletal muscle cells</i>”, M.Sc. Thesis in Industrial and Environmental Biotechnologies (University of Bari), a.y. 2009-2010</p> <p>43. Paola Devilla: “<i>Interaction between boron nitride nanotubes and cell cultures for biomedical applications</i>”, M.Sc. Thesis in Biomedical Engineering (University of Pisa), a.y. 2008-2009</p>
Supervision of internships	<p>1. Yoshitaka Suematsu (Waseda University, Japan). Theme: “<i>Bio-hybrid robots based on SBS thin films</i>”. Period: from 14/02/2018 to 27/02/2018</p> <p>2. Anna Zahoranova (Slovak Academy of Sciences, Slovakia). Theme: “<i>Ultrasound mediated drug release from polymeric micelles</i>”. Period: from 01/10/2017 to 15/02/2018</p> <p>3. Martin Alonso Muñoz Medina (University of Cauca, Colombia). Theme: “<i>Magnetic composite materials and advanced simulation tools for controllable microrobots</i>”. Period: from 12/06/2017 to 14/07/2017</p> <p>4. Arihiro Hasebe (Waseda University, Japan). Theme: “<i>Elastomeric thin film assembly for bio-hybrid robots</i>”. Periods: from 01/09/2016 to 30/09/2016, from 18/11/2017 to 25/11/2017 and from 14/02/2018 to 27/02/2018</p> <p>5. Aurélie Leroux (Strasbourg University, France). Theme: “<i>Magnetic</i></p>

	<p><i>microrobots</i>". Period: from 06/06/2016 to 26/08/2016</p> <p>6. Matteo Guidi (Polytechnic of Milan). Theme "<i>Development of hydrogels for drug delivery</i>". Period: from 30/03/2016 to 30/04/2016</p> <p>7. Pedro Gouveia (University of Coimbra, Portugal). Theme: "<i>Development of flexible nanofilms for cardiac tissue engineering</i>". Period: from 15/07/2014 to 22/09/2014</p> <p>8. Shaikha Alyassi (Khalifa University, UAE). Theme: "<i>This films for bio-hybrid actuators</i>". Period: from 23/06/2014 to 04/08/2014</p>
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11. Other Education initiatives

From 01/2015 to today	Member (and SSSA referent) of the working group dedicated to the preparation of the proposal for a new Master Degree in Bionics Engineering , jointly proposed to MIUR by the University of Pisa and SSSA. The new Master Degree started in September 2015.
From 09/2013 to today	Participation to the organization and delivery of Education activities for local high school students. Some examples are: <ul style="list-style-type: none"> • "<i>Festa della Robotica</i>", at the <i>Istituto Tecnico Industriale</i> of Pomarance (Pisa); • Dissemination events organized with the "<i>Liceo Scientifico G. Carducci</i>" of Volterra (Pisa); • Involvement of high school students in laboratory research activities (<i>alternanza scuola-lavoro</i>) organized with the "<i>Liceo Scientifico Il Pontormo</i>" of Empoli.

12. Involvement in research projects

Throughout my career, I have been involved in the following national and international research projects, with a significant technical role:

12/2011 – 12/2013	MicroVAST project (MICROsystems for Vascular diagnosticS and inTerventions, http://www.microvast.it/), funded by the Fondazione Cassa di Risparmio di Pisa. Role: R&D developer.
09/2011 – 04/2012	EU-funded (FP7) CA-RoboCom project (Coordination Action for the design and description of the FET Flagship Candidate Robot Companions for Citizens, www.robotcompanions.eu). Role: senior ICT analyst.
01/2008 – 11/2009	EU-funded (FP7) REPLICATOR project (Robotic Evolutionary Self-Programming and Self-Assembling Organisms, http://sssa.bioroboticsinstitute.it/projects/Replicator). Role: R&D

13. Fund raising

I was able to attract competitive funds: research projects that I partly or fully devised and that I currently manage are listed in the following:

1. **MIO-PRO** (*Muscoli Ingegnerizzati Paziente-specifici per il Ripristino di Canali Mioelettrici e il Controllo di Protesi*), funded by INAIL. Funding: 1.5 M€ (budget for my group: 1 M€) November 2020 – October 2023. Role: Project Coordinator
2. **FORGETDIABETES** (*A Bionic Invisible Pancreas to Forget Diabetes*), funded by the European Commission, FETPROACT-EIC-05-2019. Funding: 3.9 M€ (SSSA budget: 750 k€). October 2020 – April 2025. Role: PI of the SSSA Unit
3. **ImmUniverse** (*Better control and treatment of immune-mediated diseases by exploring the universe of microenvironment imposed tissue signatures and their correlates in liquid biopsies*), funded by the European Commission, H2020-JTI-IMI2-2018-15. Funding: 15.5 M€ (SSSA budget: 360 k€). January 2020 – December 2024. Role: PI of the SSSA Unit
4. **ADMAIORA** (*ADvanced nanocomposite MAterIals fOr in situ treatment and ulTRAsound-mediated management of osteoarthritis*), funded by the European Commission, H2020-NMBP-TR-IND-2018-2020. Funding: 5.4 M€ (SSSA budget: 1.0 M€). February 2019 – February 2023. Role: Project Coordinator and PI of the SSSA Unit
5. **ALA** (*Advanced Laboratory Automation*), funded by Inpeco AS. Funding: 3.7 M€ (budget for my WP: 850 k€). December 2018 – December 2021. Role: WP Leader
6. **UltraHeal** (*Combined low-intensity Ultrasound and electromagnetic fields for the treatment of neuropathies*), funded by BAC Technology s.r.l. Funding: 32 k€. October 2018 – October 2019. Role: Project Coordinator.
7. **ROBO-IMPLANT** (*Dispositivo ROBOtico IMPIantabile per riLAscio controllato di farmaci a livello iNTraperitoneale*), funded by Tuscany Region. Started on 03/04/2017. Duration: 2 years. Funding: 1.3 M€ (budget dedicated to SSSA: 680 k€). Role: Project Manager.
8. **FORGETDIAB** (*Forget Diabetes: Adaptive Physiological Artificial Pancreas*), funded by MIUR (*Ministero dell'Istruzione, dell'Università e della Ricerca*). Started on 27/02/2017. Duration: 3 years. Funding: 293 k€ (budget dedicated to SSSA: 56 k€). Role: Project Manager.
9. **MOTU** (*Protesi Robotica di Arto Inferiore con Smart Socket ed Interfaccia Bidirezionale per Amputati di Arto Inferiore*), funded by INAIL. Started on 04/05/2017. Duration: 3

years. Funding: 3.9 M€. (budget dedicated to our WP: 850 k€). Role: WP co-Principal Investigator.

10. **RELIEF** (*Ripristino della continEnza urinaria e del controllO della minzIonE mediante sFintere artificiale*), funded by INAIL (*Istituto nazionale Assicurazione Infortuni sul Lavoro*). Started on 21/02/2017. Duration: 3 years. Funding: 600 k€. Role: Co-Principal Investigator.
11. **VESPRO** (*Protesi di VEscica e Sfintere per il riPristino funzionale dell'apparato uRinariO*), funded by Fondazione Cassa di Risparmio di Lucca. Started on 19/08/2016. Duration: 2 years. Funding: 60 k€. Role: Project Manager.
12. **Bio-Enable** (*Integrated infrastructure for supporting industry-oriented research on bioactive molecules, biomolecules, biomaterials, in vitro and in vivo*), funded by Tuscany Region (*Bando IR 2015 – sostegno alle infrastrutture di ricerca*). Started in September 2015. Duration: 5 years. Funding: 2.4 M€ (budget dedicated to SSSA: 350 k€). Role: Technical Project Manager.
13. **Micro/nano robotic coordinated manipulation for cell analysis and 3D assembly**, joint project between SSSA and the Beijing Institute of Technology (BIT), funded by the international collaborative Natural Science Foundation of China (NSFC). Started in May 2016. Duration: 5 years. Funding: 350 k€. Role: Member of the SSSA working group.
14. **Smart APP** (*Smart Artificial Pancreas refilled by mechatronic Pills*), funded by Scuola Superiore Sant'Anna. Started in January 2015. Duration: 1 year. Funding: 15 k€. Role: Project Coordinator.
15. **M2Neural** (*Multifunctional Materials for Advanced Neural Interfaces*), funded by the M-ERA.NET Transnational framework. Started in November 2014. Duration: 3 years. Funding: 355 k€ (budget dedicated to SSSA: 293 k€). Role: Project Manager.
16. **SUAVES** (*Artificial Urinary System based on bladder and sphincter endoprotheses*), funded by Fondazione Cassa di Risparmio di Lucca. Started in June 2014. Duration: 2 years. Funding: 90 k€. Role: Project Manager.
17. **GeT Small** (*TarGeted Therapy at Small Scale*), funded by Scuola Superiore Sant'Anna. Started in November 2013. Duration: 2 years. Funding: 40 k€. Role: Project Manager.

14. Referee appointments

I regularly serve as a reviewer for the following Journals and Conferences:

1. Nature Communications
2. Science Robotics
3. Science Advances
4. ACS Nano
5. Biomaterials
6. Advanced Healthcare Materials
7. PLoS ONE
8. Lab on a Chip
9. ACS Applied Materials and Interfaces
10. Biofabrication
11. Biomedical Microdevices
12. Soft Robotics
13. Scientific Reports
14. Bioinspiration & Biomimetics
15. IEEE Transactions on Mechatronics
16. IEEE Transactions on Biomedical Engineering
17. IEEE Transactions on Robotics
18. IEEE Robotics and Automation Letters
19. Robotics and Autonomous Systems
20. Sensors and Actuators B: Chemical
21. International Journal of Nanomedicine
22. Journal of Nanoparticle Research
23. Acta Biomaterialia
24. Biomacromolecules
25. Ultrasound in Medicine and Biology
26. Journal of The Royal Society Interface
27. Biomedical Materials
28. Journal of Materia Chemistry B
29. Journal of Biosciences
30. Journal of Biomaterials and Tissue Engineering
31. Journal of Biomaterials Science: Polymer Edition
32. Polymers
33. Regenerative Medicine
34. Bio-Design and Manufacturing
35. Bioprinting
36. Journal of Motor Behavior
37. Artificial Organs
38. Sensors
39. Actuators

40. Applied Bionics and Biomechanics
41. International Journal of Molecular Sciences
42. Journal of Human Sport and Exercise
43. Journal of Sport and Health Science
44. Research in Sports Medicine
45. Physiotherapy Quarterly
46. Sports Biomechanics
47. Journal of Visualized Experiments
48. IEEE International Conference on Robotics and Automation (ICRA)
49. Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)
50. IEEE/RSJ International *Conference* on Intelligent Robots and Systems (IROS)
51. IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob)
52. EMBS Micro and Nanotechnology in Medicine Conference (MNM)
53. IEEE International Conference on Cyborg and Bionic Systems (ICBS)

I served as **reviewer of Grant Proposals** for the **European Research Council (ERC)** as follows: 1 ERC Consolidator proposal in 2013, 1 ERC Consolidator proposal in 2014, 2 ERC Starting proposal in 2018, 1 ERC Starting proposal in 2020.

I signed a contract as **remunerated expert evaluator** for H2020 proposals in the following calls: H2020-NMBP-TO-IND-2020-twostage, H2020-NMBP-TR-IND-2020-twostage, H2020-NMBP-STIND-2020-twostage (11 proposals evaluated).

I regularly serve as **reviewer** of grant proposals and periodic technical reports for the Università Campus Bio-Medico (Rome, Italy), for the Dutch Research Council (NWO) and for the Swiss National Science Foundation.

I served as external reviewer for the Italian Ministry of Research and Education (MIUR), evaluating some papers for the VQR (*Italian Research Quality Evaluation*) 2011-2014.

15. Academic roles/services memberships and qualifications

Academic roles

From 21/12/2016 to today	Formal delegate of the BioRobotics Institute Director for teaching and other didactic activities in connection with University of Pisa.
From 10/2015 to today	Member of the evaluation committee for the undergraduate students' excellence path within SSSA.
From 01/2014 to today	Member of the selection committee for the admission of PhD students to the PhD program in Biorobotics, at the BioRobotics

	Institute of SSSA.
From 01/2014 to today	Member of the examination board for the assignment of PhD degrees in Biorobotics, at the BioRobotics Institute of SSSA. From January 2014, I took part of the examination boards of 17 PhD students. I also received an invitation from University of Coimbra to serve as external member for the PhD examination board of such University.
From 01/2014 to today	Member of the “Collegio dei Docenti”, dedicated to the PhD program steering (PhD in Biorobotics, the BioRobotics Institute of SSSA).
From 01/2014 to today	Faculty Member of The BioRobotics Institute, SSSA.

Service activities

From 08/2015 to today	Scientific secretariat activity dedicated to steer the creation of a new highly interdisciplinary journal (IEEE Transactions on Medical Robotics & Bionics) , in the framework of the Biorobotics Technical Committee, within the EMBS Society. The proposal was enthusiastically accepted by the EMBS AdCom and it is now targeting to bridge EMBS and RAS communities.
From 03/2014 to today	Member of the working group dedicated to the preparation of the Italian delegation contribution (Country Review) at the Annual World Micromachine Summit (http://www.mms2015.org/) (Chief of the delegation: Prof. Paolo Dario (SSSA); other members: ST Microelectronics, FBK and IMM-CNR).
From 04/2012 to 06/2013	Member of the working group dedicated to the preparation of the FET Flagship project proposal “Robot Companions for Citizens” (planned project duration: 10 years, planned funding: 1 Billion €). The proposal was scored 3rd, after “Graphene” and “Human Brain Project”, thus resulting the first proposal between the non-funded ones.

Memberships and qualifications

Member of the Institute of Electric and Electronics Engineers (IEEE) - # 90475534
Member of the IEEE Engineering in Medicine and Biology Society (EMBS)
Member of the EMBS Technical Committee on Biorobotics
Member of the IEEE Nanotechnology Council

Member of the International Society of Bionic Engineering (ISBE)	
Ordinary Member of the European Society of Biomaterials (ESB)	
12/2020	Italian qualification for the profession of Full Professor of Bioengineering (Abilitazione scientifica nazionale, Professore di I fascia, settore disciplinare 09/G2) obtained in December 2020. The license was issued by MIUR (Ministero dell'Istruzione, dell'Università e della Ricerca).
12/2014	Italian qualification for the profession of Associate Professor of Bioengineering (Abilitazione scientifica nazionale, Professore di II fascia, settore disciplinare 09/G2) obtained in December 2014. The license was issued by MIUR (Ministero dell'Istruzione, dell'Università e della Ricerca).
11/2007	Italian qualification (<i>abilitazione</i>) for the profession of Industrial Engineering, obtained after a written and oral exam (<i>Esame di Stato</i>), held on November 2007. The license was issued by MIUR (Ministero dell'Istruzione, dell'Università e della Ricerca) on 03/07/2012.