



Paola Saccomandi

Associate Professor of Mechanical and Thermal Measurement

Politecnico di Milano

Department of Mechanical Engineering

via La Masa 1, Milan (Italy)

[ERC grantee 2017, 2022 and 2025](#)

Head of Laboratory of Measurement for Biomedical Application (LAMBDA Lab)

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Paola Saccomandi is **Associate Professor** at the Department of Mechanical Engineering of Politecnico di Milano (POLIMI). She obtained this position at the **age of 31st, being 1 out of 5 youngest Italian professors in 2018**. In 2021, at the **age of 34th, she has obtained the National Academic Qualification as Full Professor** (Measurements).

She is the PI of 3 **European Research Council (ERC)** projects: **ERC StG LASER OPTIMAL**, **ERC PoC grant LEILA** and **HyperSKIN** and several national/international grants.

She is coauthor of **270+ scientific publications** ([google scholar](#)). She is **Associate Editor** for IEEE Sensors Review. She is serving as Guest/Reviewer Editor for many journals (e.g., IEEE Transactions on Biomedical Engineering, IEEE Transactions on Instrumentation and Measurements, IEEE Sensors Journal). Since 2018 she is appointed as reviewer for several international research foundations (Including Marie Curie Sklodowska Actions). She has been invited lecturer in international conferences and workshop on sensors, and in many leading Institutions, including EPFL (Switzerland), Technion (Israel), Politecnico di Torino (Italy), Università Cattolica del Sacro Cuore (Italy), Sungkyunkwan University (South Korea), Université Catholique de Louvain La Neuve, Polytechnique (Belgium), Inria Nancy Grand – Est (France), Institute of Image-guided Surgery (France).

Since 2012 she is member of IEEE and IEEE societies. Since 2020 she has been elevated to the grade of **IEEE Senior Member**. She is **the elected Chair of the IEEE EMBS Technical Community on Therapeutic Systems & Technologies, the Chair of the Chapter Engagement Committee, the past Chair of Women in Sensors (IEEE Sensors Council), and the elected vice-Chair of IEEE Women in Engineering (Italy AG)**. She is Co-founder and Officer of the IEEE Italy Sensors Chapter, which was awarded as IEEE Italy Section Best Chapter 2019 and Most Innovative Chapter 2020. She served as **Technical Program Chair** for IMEKO XXV World Congress, MetroInd4.0&IoT 2020 and 2021, and for MeMeA 2021. She is **Distinguished Lecturer for IEEE Sensors Council** (2024-2026).

She was recipient of several awards, including **Premio Italia Giovane**, field Biomedicine, and **Rosone d'oro Città di Pianella**, Science (2018), for which she was nominated without any spontaneous application. For the results of her research, in 2023 Paola has been listed among the **world's top 2% scientists**.

She is now the **Head of Laboratory of Measurements for Biomedical Applications** ([Lambda Lab](#)) where she has established a laboratory and an international research team with 10+ members, including young researcher, postdocs, PhD students, research fellows and MSc students. The main research interests of Paola and her team are in the field of modelling, sensors, imaging and measurements in medicine and life science. She specialises in sensors and techniques for monitoring minimally invasive surgery and physiological parameters.

Her group distinguishes for: fiber optic sensors and other techniques for temperature measurements during minimally invasive surgical procedures aided with nanoparticles; integrating sensors into the next generation of lower-limb prostheses for amputee patients, in collaboration with Centro Protesi INAIL; monitoring biomechanical parameters during physical activities, such as classical ballet, working on the design and development of new wearable measurement systems to study and prevent injuries in dancers during performance, in collaboration with Teatro alla Scala; development of monitoring platforms for toxic pollutants in water, such as PFAS and heavy metals.

Paola is also pioneering a cutting-edge research line employing hyperspectral imaging—an innovative optical technique capable of “seeing the invisible”—for applications ranging from tumor identification to assessing the health status of biological cells and tissues.

Within the ERC LASER OPTIMAL project, she developed the first patient-specific anatomical models for laser ablation of pancreatic tumors and launched the world's first clinical trial.

EDUCATION

- 2010-2014 PhD in Biomedical Engineering, Università Campus Bio-Medico di Roma (UCBM), Rome, Italy
- 2013-2014 Visiting PhD Student, Institute for Biophysics, and Clinics and Department of Radiology, Goethe University, Frankfurt am Main, Germany. 3 papers published (5 months fellowships)
- 2008-2010 Master Degree *cum laude* in Biomedical Engineering, UCBM
- 2005-2008 Bachelor Degree *cum laude* in Biomedical Engineering, UCBM

CURRENT POSITIONS

- 2018-today Associate Professor of Mechanical and Thermal Measurements, Department of Mechanical Engineering, Politecnico di Milano (POLIMI)

PREVIOUS POSITIONS

- 2016-2018 Post doctoral fellow & Research Engineer, IHU Institute of Image-Guided Surgery Strasbourg, France
- 2014-2016 Post doctoral fellow, UCBM

MAIN GRANTS

- 2025 **ERC Proof of Concept 2024 "HyperSKIN"**. European Research Council, Project PI
- 2025 vEiColo "ALTHEA". Fondazione Compagnia di San Paolo, Project PI
- 2024 "PFASense: detection of PFAS in drinking water by fiber optic sensors based on functionalized copper oxide nanoparticles". The Ministry of Foreign Affairs and International Cooperation (MAECI). Project PI (Italian partner)
- 2024 "Foot prostheses with adaptive/responsive mechanisms and integrated sensing", INAIL. Task leader on Monitoring systems for artificial limb monitoring
- 2024 "Optical fiber-based sensing platform for monitoring heavy metals pollution in water", Fondazione Cariplo. Supervisor
- 2023 **PRIN 2022 "Augmented Robotic Touch and hyperspectral Imaging Senses (ARTIS)"**, Ministry of University and Research. Unit PI
- 2023 **Marie Skłodowska-Curie Actions** Post-doctoral Fellowship "IN-situ Thermometry gUidance In photomedicine (INTUIT)". Supervisor
- 2022 **ERC Proof of Concept 2022 "Closed-loop and multisensing delivery tool for controlled Laser Ablation of tumors (LEILA)"**. European Research Council, Project PI
- 2021 Movyon Innovation Lab. Autostrade per l'Italia. Project key person
- 2021 Regional Hub for Circular Economy. Lombardy Region. Project key person
- 2020 "Multi-material filaments for design of highly performant artificial limb for adaptive sport (ProFIL)", INAIL. Task leader on Fiber optic sensors for artificial limb monitoring
- 2020 Call FARE "HyperSpectral ImaginG of tHermaL Treatments (HyperSIGHT)", MIUR. Project PI
- 2018 **ERC Starting Grant 2017 "Laser Ablation: SElectivity and monitoRIng for OPTImal tuMor removal (LASER OPTIMAL)"**, European Research Council, <http://www.laseroptimal.polimi.it/>. Project PI
- 2018 Call ERC 2017 (type A): **LASER OPTIMAL@POLIMI**, Regione Lombardia and Fondazione Cariplo. Project PI
- 2017 Endo GT. USIAS-Institut d'Etudes Avancées de l'Université de Strasbourg. Project PI
- 2016 I-Thermo LAP. IHU. Project PI

MAIN FELLOWSHIPS AND AWARDS

- 2025 IEEE Women in Sensors Family Care Grant
- 2022 Best Student Paper award presented by a young researcher, IEEE MeMeA
- 2020 Best paper award presented by a young researcher, IEEE MetroInd4.0&IoT
- 2019 Travel grant award (only 3 awards in Europe) won by PhD Student Martina De Landro with her paper supervised by Saccomandi, IEEE EMBC
- 2018 **Award Italia Giovane 2018**, V edition, field Biomedicine, Luiss Business School, Rome
- 2018 **National award "Città di Pianella"**, Rosone d'oro, sezione Scienze
- 2004 Fellowship at **Princeton University** (Gran Sasso-Princeton Physics Summer School 2004) patronized by Istituto Nazionale di Fisica Nucleare of Gran Sasso. Only 20 participants, >200 applicants

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

- 2024 Training program Enhanced PhD Supervision (Mentorship, Well-being, Ethics, and Leadership)
- 2018-today 7 postdocs, 7 PhD students (the first PhD of the group obtained the PhD title *cum laude*), 3 research assistants, 3 MSc theses (+7 graduated) ongoing, 50 BSc theses, 2 visiting PhD and MSc students
- 2011-2018 23 MSc theses, 10 BSc theses
- 2018-2019 Tutor for Alta Scuola Politecnica, progetto "Theralight", partners: POLIMI, POLITO
- 2016-2018 Supervisor of 4 MSc students in project "Torno Subito" funded by Lazio region
Partners: IHU, UCBM and ENEA Frascati, INRIA

TEACHING ACTIVITIES

2024	Chair of Mechanical and Thermal Measurements, Master (10 ECTS), POLIMI
2022	Expert Teacher in the program "Program high-end foreign experts", University of Shanghai for Science and Technology (USST)
2019-today	Master ENI in Energy Innovation – I and II levels, ENI
2019-today	Chair of New Sensors and Measurement Systems Course, Master (6 ECTS), POLIMI
2019-today	Chair of Industrial Measurements and Instruments, Bachelor (5 ECTS), POLIMI
2018-2019	Assistant Professor for New Sensors and Measurement Systems Course, Master (6 ECTS), POLIMI
2012-2018	Teaching assistant – Laboratory of Measurements and Bioengineering, Bachelor, UCBM
2012-2016	Teaching assistant – Acceptance Tests of Medical Devices, Master, UCBM

QUALIFICATIONS AND CERTIFICATIONS

2022	Certification for animal experimentation (<i>niveau I, Concepteur</i>), IHU
2022	Certified Mimics User, Materialise Mimics Innovation Suite
2021	National Academic Qualification as Full Professor (Call D.D. 2175/2018) in 09/E4 (Measurement)
2018	Certification for animal experimentation (<i>niveau II</i>), IHU
2018	EMBO Laboratory Leadership Course for Group Leaders, Gesellschaft zur Foerderung der Lebenswissenschaften Heidelberg GmbH, Leimen, Germany
2017	National Academic Qualification as Associate Professor (Call D.D. 1532/2016) in 09/E4 (Measurement) and 09/G2 (Bioengineering)
2017	National Academic Qualification as Maître de Conférences , French Ministry for Education, University and Research

ORGANISATION AND DUTIES FOR IEEE SCIENTIFIC MEETINGS

2025-2027	Technical Program Chair IMEKO XXV World Congress
2024-today	Chair/co-organizer of panels at IEEE Sensors Council conferences: BIOSENSORS 2024, SENSORS 2024, APSCON 2025, FLEPS 2025, BIOSENSORS 2025, SENSORS 2025, APSCON 2026, FLEPS 2026, SENSORS 2026
2023	Chair and organizer of the Special Session "Fiber optic-based measurement instruments for living environment monitoring", IEEE MetroLinEnv 2023
2022	Organizer and speaker of the Workshop "New trends of hyperthermia and ablation techniques: progresses, challenges and practical guides", IEEE EMBC 2022
2022	Chair, organizer and speaker in Special Session "User-driven approaches to the design of inclusive and gender-aware innovative measurement and IoT systems", IEEE MetroInd4.0&IoT
2021	Organizer of the Workshop "Precision medicine", funded by Bando Cassini Junior and sponsored by IEEE Italy Sensors Chapter
2020	Organizer of the Workshop "SenseIT: research activities and outlooks from Italian women in Sensors", funded by IEEE Women in Sensors
2021	Technical Program Chair IEEE MeMeA 2021
2020, 2021	Technical Program Chair IEEE MetroInd4.0&IoT
2020,2021	Chair, organizer and Speaker in Special Session "Gender-Inspired Approaches to the Design of Measurement Systems and IoT Applications", IEEE MetroInd4.0&IoT
2016-today	Chair and organizer of +10 Special Sessions and Tutorials during for several IEEE Conferences
2017-today	Technical Program Committee member IEEE MeMeA

INSTITUTIONAL RESPONSIBILITIES

2023	Member of Doctoral Board, Department of Mechanical Engineering, POLIMI
2023-today	Delegate of the Head of Department of Mechanical Engineering for Talent Development Program
2018-today	Head of the LAMBDA Lab (Laboratory of Measurements for Biomedical Applications), POLIMI
2020-today	Member of the Doctoral School committee at Department of Mechanical Engineering, POLIMI
2020-today	Responsible of Erasmus Exchange program at Department of Mechanical Engineering POLIMI
2018-2021	Scientific Committee Member "Centre for Endoscopic Research, Therapeutics and Training (CERTT)" Università Cattolica del Sacro Cuore, Rome
2014-2016	Vice-chairman, Commission of Biomedical Engineering at Order of Engineers, Rome

COMMISSIONS OF TRUST

2026	Member (junior) of Academy of Engineering and Technology (ITATEC)
2026	Chair of the IEEE Chapter Engagement Committee (CEC) - IEEE Sensors Council
2026-2027	Engineering in Medicine and Biology Society (EMBS) Representative at IEEE Sensors Council
2025-today	Associate Editor for IEEE Sensors Review Journal

2024-2026	<u>Distinguished Lecturer - IEEE Sensors Council</u>
2024-2025	Chair of the IEEE Women in Sensors (WiSe) Committee - IEEE Sensors Council
2023-today	Guest Editor of the Special Issue on Sensors Journal "Fiber Optic and Photonic Sensors for Healthcare Monitoring: Technology and Applications"
2023-today	vice-Chair of the IEEE Women in Engineering (WIE)-Italy Affinity Group
2022-today	Chair of the IEEE EMBS Technical Community (TC) on Therapeutic Systems & Technologies
2021-today	Guest Editor in: IEEE Transactions on Instrumentation and Measurements, Frontiers in Medical Technology, Frontiers in Oncology, Sensors
2021-today	Member of the Scientific Committee, Italy Untold - Think Tank
2021-today	Associate Editor, Journal of Circuits, Systems, and Computers
2020-today	Certified Reviewer for Optical Society of America (OSA)
2018-2021	Co-founder and Officer of the IEEE Italy Sensors Chapter (recognized with the "IEEE Italy Section Best Chapter Award 2019" and with the "IEEE Italy Section Most Innovative Chapter Award 2020"
2018-today	Associate Editor, Sensors MDPI
2017-today	Reviewer of research proposals submitted for Marie Curie Sklodowska Actions, Italy, Netherlands, Cyprus, Latvia Council of Science
2014-today	Member of committees for awarding PhD, MSc and BSc degrees at UCBM, POLIMI, POLITO, Scuola Superiore Sant'Anna di Pisa, Università degli Studi di Roma La Sapienza, Indian Institute of Technology
2011-today	Reviewer for 30+ scientific journals and conferences, including IEEE Sensors Journal, IEEE Transactions on Instrumentation and Measurements, IEEE Transactions on Biomedical Engineering, Sensors, Measurement Journal, Scientific Reports.
INVITED TALKS	
2025	IEM Distinguished Lecturers Seminar "Fiber Optic Sensors for Healthcare: Fundamentals, Applications and Frontiers", École polytechnique fédérale de Lausanne (EPFL), invited by Prof Sandro Carrara, Lausanne, Switzerland
2025	Distinguished Lecturer, Muffakham Jah College of Engineering and Technology, Hyderabad, India, invited by Prof. Fauzia Salma
2025	Distinguished Lecturer, Vardhaman College of Engineering, Hyderabad, India, invited by Dr. Sangeeta Singh
2024	"Fiber optic sensors for biomedical applications" and "New Thermometry with light", Conference IEEE Seasonal School on OS & ISOS 2024, invited by Prof. Minghong Yang, National Engineering Research Center for Fiber Optic Sensing Technology and Networks (NERC-FOST), Wuhan University of Technology, Whuan, China
2024	"Fiber optic sensors for biomedical applications" PhD School Italo Gorini, invited by Prof. Marco Mugnaini, Università di Siena, Italy
2024	"Fiber optic sensors for biomedical applications" I International Workshop on Applied Biosensing, Women in Sensors 2024, UDESC Joinville, Brazil
2023	"Fiber optic sensors for monitoring thermal treatments of tumors", 4 th International Electronic Conference on Applied Sciences (ASEC 2023), invited by Prof. Nunzio Cennamo, University of Campania Luigi Vanvitelli, Italy
2023	"The New Thermometry with Light: Fiber Optic Sensors and Hyperspectral Imaging for Monitoring Thermal-Based Therapies for Localized Tumors" OPTICA Biosensors Group
2022	University of L'Aquila, invited by Prof. Giuseppe Ferri
2022	"Le STEM..Roba da ragazze", Marie Curie College, Italy
2021	"Ways to Promote and support women in sensors", IEEE Sensors Council funded initiative: "Sensors based Innovations and Start ups - Opportunities and Challenges"
2021	Meeting on Research Advancements in Lombardy Region (with the Ministry of University) "Stati Generali della Ricerca e dell'Innovazione" (Italy)
2020	Technion, Department of Biomedical Engineering (Israel), Prof. Haim Azhari
2019	Women in STEM (Catania, Italy), International Federation of Business and Professional Women
2019	Keynote Invited speaker, IEEE SENSORS chapter France Annual Workshop (France)
2019	Reflex, Chi ricerca, trova! Dialoghi sull'attività scientifica in Italia e all'estero (Italy)
2019	Thermometry during thermal ablation. Workshop on Minimally invasive thermal techniques for cancer removal: a journey through state-of-the-art, research and clinical application, UCBM (Italy)
2018	Università Cattolica del Sacro Cuore (Italy), invited by Prof. Guido Costamagna
2018	Politecnico di Torino (Italy), invited by Prof. Guido Perrone

Curriculum Vitae - Paola Saccomandi

2017	Sungkyunkwan University (South Korea), invited by Prof. Taesung Kim
2017	Inria Nancy Grand – Est (France)
2016	Université Catholique de Louvain La Neuve, Polytechnique (Belgium), invited by Prof. Pierre Dupont
2016	Chemnitz, Nanotechnology for Instrumentation and Measurement (Germany)
2015-2017	Institute of Image-guided Surgery (France), invited by Prof. Jacques Marescaux

PRESS

Featured on: national daily newspapers, such as Il Corriere della Sera, Il Giornale, Libero; Italian National TV, such as Italia Uno, Rai 2 and Sky TV; radio, like Radio24 and Fizzshow.

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2021-today	Life member SPIE. IEEE Senior Member. Member of: IEEE Engineering in Medicine and Biology Society, IEEE Instrumentation and Measurement Society, IEEE Sensors Council, IEEE Women in Engineering, IEEE Women in Sensors, European Society for Hyperthermic Oncology, International Society for Medical Innovation and Technology.
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Milan, 28/07/2026