BIOGRAPHICAL SKETCH

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NAME Eugenio Martinelli	POSITION TITLE Full Professor, University of Rome Tor Vergata
ERA COMMONS USER NAME (credential, e.g., agency login) emartinelli	

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Rome “Tor Vergata”, Italy	Electrical Engineering	1999	Electrical Engineering
University of Rome “Tor Vergata”, Italy	PhD	2000-2003	Artificial olfaction and Data Analysis
University of Rome “Tor Vergata”, Italy	Postdoctoral	2004-2008	Artificial olfaction for Space and Medical Application
University of Rome “Tor Vergata”, Italy	Assistant Professor	2008-2014	Electronic interfaces, Medical Applications, chemical sensors.
University of Rome “Tor Vergata”, Italy	Associate Professor	2015-2022	Electronic interfaces, Medical Applications, Chemical sensors, pattern recognition and Machine Learning, Lab on chip devices.
University of Rome “Tor Vergata”, Italy	Full Professor	2022-present	Electronic interfaces, Medical Applications, Machine learning, Lab-on-chip, and Organ on chip devices.

A. Personal Statement

He earned his honors degree in Electronic Engineering from the University of Rome Tor Vergata in 1999, presenting a thesis titled "Project and realization of a multisensory system for the identification of lung cancer." Subsequently, in 2003, he obtained his doctorate in Artificial Sensorial Systems and Learning from the same university, with a dissertation titled "Investigation on alternative approaches to chemical sensor data treatment." During his doctoral studies in 2002 and 2003, he served as a "visiting Ph.D. student" under the Marie Curie Fellowship at Linkoping University, collaborating with Professor Lundstrom.
From 2004 to 2008, he held a postdoctoral position at the Department of Electronic Engineering at the University of Rome Tor Vergata. Following this, he served as an assistant professor in the university's faculty of engineering from October 2008 to 2014. Since 2015, he has been appointed as an Associate Professor within the same department. His primary research interests encompass the development of sensors and sensorial systems, pattern recognition algorithms, Lab-on-chip technologies, and their applications across medical, industrial, and aerospace domains. He boasts an extensive publication record with over 240 contributions to international journals and conferences, accumulating more than 5,500 citations and achieving an H-index of 41. Additionally, he holds nine patents.
In 2000, he secured the 'Young Researchers Project' grant at Tor Vergata University. By 2005, he spearheaded two pivotal scientific endeavors: the 'Heartbeat Monitoring' and 'Electronic Nose Monitoring' projects for the ENEIDE Space Mission. The following year, in 2006, he took on the role of scientific lead for the “Electronic Nose” initiative, generously funded by the Italian Space Agency. Notably, in 2010, he served as

the Scientific Lead for the experiment “Italian Electronic Nose for Space Exploration (IENOS)” during the ST-134 Space Shuttle mission. This experiment deployed a network of electronic noses to oversee the air quality within the confines of the International Space Station.
His contributions were duly recognized in 2016 when he received the EUROSENSORS Fellowship Award for his exceptional accomplishments in signal processing and data analysis within the sensor domain. He has delivered numerous keynote addresses at both national and international conferences, underscoring his expertise and influence in the field. Since 2020, he has assumed the role of co-director at the Interdisciplinary Center of Advanced Study focusing on Organ-on-chip and Lab-on-Chip applications.

B. Positions and Project role.

2005: *Principal Investigator (PI) and Principal Developer of two experiments (Electronic Nose Monitoring, ENM Heart Beat Monitoring, HBM) in the space mission ENEIDE.*
2006: Scientific responsible for the project “Electronic Nose” funded by the Italian Space Agency.
2008: Invited speaker to the Gospel Summer School” organized by the Network of Excellence on olfaction GOSPEL.
2010: Principal Investigator (PI) and Principal Developer of the experiment Italian Electronic Nose for Space Exploration (IENOS) in the space shuttle mission STS-134 “DAMA”.
2011-2013: Principal Investigator (PI) for the project “Study of the VOCs associated to the cancer c proliferation with a gas sensor array” funded by “Veronesi Foundation”.
2014-2015 Co-PI of a grant of the National Institute of Health (NIH), USA (2014) : 1R21AI105611-01A1, “Determination of Exhaled Biomarkers for Low-Cost Diagnosis and Monitoring of Tubercolisis”.
2016-2019: Work Package Leader of a H2020 European project project “Portable photonic miniaturised smart system for on-the-spot food quality sensing (PHASMAFOOD) (H2020-ICT-2016-1 – RIA.”
2018: Co-PI: *Trust Board Grant: “MONITOR: A Self-Reparable Memristive Gas Sensor Array”.*
2018-2019 Co-PI of the project “C3PO – objeCtive Post-surgical Pain assessment PlatfOrm” funded by Lazio Region.
2020-now Co-director of Interdisciplinary Center of Advanced Study of Organ-on-chip and Lab-on-Chip applications
2021-2023 PI of the project “multidisciplinary Platform for NEuRodegenerative diSeases drug tEsting On-chip (PERSEO)” funded by Lazio Region.
2023-2025 PI of the project “Sarcopenia-on-chip: an integrated platform based on chemical sensors, microfluidic devices, and machine learning algorithms for the development and testing of personalized treatment for sarcopenia disease (SELENE)” funded by the Italian Minister of Research and University (MUR,PRIN)
2024-2026 co-PI of the project “AI-HEART: AI-guided generation of beating and sensing heart-on- chip for drug screening” funded by the Italian Minister of Research and University (MUR,PNRR-PRIN)

Expert advice:

2002-now : *reviewer of main scientific journals on sensors and its application (Sensors And Actuators B, IEEE Sensors Journal, etc..)*
2008-now: *reviewer of the International Symposium of Chemical Sensors (IMCS)*
2010-now: *reviewer of the World Conference on Computational Intelligence (WCCI)*
2012-now: Editorial Board Member of Journal of Sensors (IF 2.057)
2016-now: Associate Editor, Nanomaterials and Nanotechnology, ed. Intech (IF 1.1)
2017-now Editorial Board Member of Scientific Reports (Nature Pub., IF 4.011)
2018: Guest Editor of Special Issue of “Sensors” (IF 3.31) on the topic “Artificial Olfaction and Taste”
2018 –now Editorial Board Member of Internet of Things (Elseviers pub).
2020- now member of Scientific Committee of Fondazione Unicusano

Honors and Awards

2000: Award as young scientific Research (University of Rome Tor Vergata)
2002: Phd Student Marie Curie Fellows (University of Linkoping, Sweden)
2016: Eurosensors Fellowship Award.
2021: Vebleo Fellow Award.

Main International Scientific Collaborations

- Prof. G. Galizia, Dept. Neuroscience, University Konstanz (Germany). This collaboration aims to develop a bioinspired sensorial system based on Drosophila Melanogaster olfactory receptors.
- Prof. E. Llobet, University of Tarragona, (Spain). This collaboration aims at developing an algorithm to improve the performance of the temperature-modulated gas sensor array.
- Prof. D. Schild, Department of Neurophysiology and Cellular Biophysics University of Göttingen (Germany). The aim of this collaboration is the development of processing strategy for chemical sensor signals based on biological olfactory circuits
- Dr. N. Zetola, University of Pennsylvania (USA). The aim of this collaboration is the development of a sensorial system aimed at the identification of tuberculosis by breath analysis.
- Prof. G. Kroemer, Université Pierre et Marie Curie, Paris, France. The collaboration with the group of Prof. Kroemer is to develop algorithm and image processing strategies for the analysis of microfluidic devices.
- Dr. M.C. Parrini, Institut Curie - Section de recherche, Paris, (France). The development of novel descriptors of cell behaviors from cell trajectories obtained with the time lapse microscopy.
- Prof. M. Kersaudy-Kerhoas, Heriot-Watt University, School of Engineering and Physical Sciences, Edimburg, Scotland, UK. Design and fabrication of microfluidic devices and sensors for medical applications based on innovative materials.
- Prof. J. Samitier, Institute of BioEngineering of Barcelona (IBEC, Spain). Design and fabrication and data analysis measurements of novel organ-on-chip devices for medical applications.

Scientific Societies Membership and Related Activities:

2011-now Member of the IEEE Task Force on Computational Intelligence for Chemometric and Chemical Sensing

2011-now Member of the scientific committee of the National Conference on Sensors

2015-now Member of the Scientific Technical program committee of the International Symposium of Olfaction and Electronic Nose (ISOEN)

2020-now Co-director of Interdisciplinary Center of Advanced Study of Organ-on-chip and Lab-on-Chip applications

2022-now Vice-President of the Italian Society of Organ-on-Chip

Rome 13/01/2024

Eugenio Martinelli