Università di Genova

# Mario Marchesoni

Full Professor

## EDUCATION AND TRAINING

1990
**Ph.D. degree in Electrical Engineering in Power Electronics - Curriculum Power Electronics**
Multilevel Voltage Source Converters with High Dynamic Response
University of Genova - Genova – IT

1986
**M.S. degree in Electrical Engineering**
Microprocessor control strategy for induction motor drives: design and implementation
110/110 cum laude and honor of publication
University of Genova - Genova – IT

## PROFESSIONAL HISTORY

2005 - IN PROGRESS
**Full Professor**
University of Genova - Genova – IT

1998
**Full Professor**
University of Cagliari - Cagliari – IT

1995
**Extraordinary Professor**
University of Cagliari - Cagliari – IT

1992
**Researcher**
University of Genova - Genova – IT

1991
**CNR (Italian Research National Council) graduate grant holder**
Robotics Finalized Project, general theme “Sensors and Actuators”
University of Genova - Genova – IT

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# ACADEMIC APPOINTMENTS

2017 - 2022
**Coordinator of the PhD Program in Sciences and Technologies for Electrical Engineering, Naval Engineering and Complex Mobility Systems**
University of Genova - Genova – IT

2019 - IN PROGRESS
**Coordinator of the PhD Program in Sciences and Technologies for Electrical Engineering and Complex Mobility Systems**
University of Genova - Genova – IT

2005 - IN PROGRESS
**Head of the Operational Unit (U.O.) PETRA (Power Electronics, TRansportation and Automation) of DITEN (Department of Naval, Electrical, Electronic, and Telecommunications Engineering)**
University of Genova - Genova – IT

# EXPERIENCE

### MAIN SEMINARS

2019 General Chairman of the 21th EPE-ECCE Europe Conference
The 21st Conference on Power Electronics and Applications, with about 1000 participants from Europe and all over the world, organized by me, was held in Genoa in September 2019.
European Power Electronics (EPE) Association - University of Genova - Genova – IT

1987 - IN PROGRESS
Participation in about a hundred international and national conferences and seminars around the world, often as a speaker, mainly on topics related to Power Converters, Electric Machines and Drives

### SCIENTIFIC RESPONSIBILITY FOR RESEARCH PROJECTS ACCEPTED FOR FUNDING ON THE BASIS OF COMPETITIVE CALLS INVOLVING PEER REVIEW

2010-2012 Scientific Research Program of Significant National Interest (PRIN 2008)
“Fault-tolerant power converters for high power ac drives” (in collaboration with the Universities of Catania and Messina)
MIUR

2007-2009 Scientific Research Program of Significant National Interest (PRIN 2006)
“Performance optimization of general-purpose ac motor drives with sensors minimization” (in collaboration with the Universities of Catania, Messina and Pavia)

2007 High-performance drives with low energy impact for high power industrial applications
Research Project funded under the Italian Legislative Decree no. 297/97, in collaboration with ASIRobicon S.p.A. and the University of Napoli “Federico II”, of Catania and of Cassino
MIUR

2003-2005 Scientific Research Program of Significant National Interest (PRIN 2003)
"Optimization of modular multilevel conversion structures for medium voltage ac motor drives" (in collaboration with the Universities of Catania, Messina, Roma Tre and Torino)
MIUR

2002-2004 Scientific Research Program of Significant National Interest (PRIN 2002)
"Optimization of the energy static conversion structures and of the energy flows in fuel-cell based electrical vehicles" (in collaboration with the Universities of Catania, Messina, Pavia, Roma and Napoli)
MIUR

**EDITORSHIP OR PARTICIPATION IN EDITORIAL BOARDS OF JOURNALS, PUBLISHING SERIES, ENCYCLOPAEDIAS AND TREATISES**

2016-2022 Editorial Board of International EPE Journal
Wos and Scopus Indexed
European Power Electronics (EPE) Association

**PRIZES AND ACCOLADES FOR SCIENTIFIC ACTIVITY, INCLUDING MEMBERSHIP OF ACADEMIES**

2022 EPE Outstanding Service Award
For constant support to EPE activities, to EPE and now EPE ECCE Europe Conferences, and in particular for being the General Chairman of the EPE ECCE Europe 2019 Conference
European Power Electronics (EPE) Association

**PARTICIPATION IN THE CREATION OF NEW BUSINESS ENTITIES (SPIN-OFFS), DEVELOPMENT, USE AND COMMERCIALISATION OF ACADEMIC PATENTS**

2010-2025 Owner of two patents
Low Frequency Controlled (LFC) boost per inverter polifase modulari a ponte-H"
"Convertitore multiporta DC/DC a n Tasti"

**OTHER EXPERIENCES**

2001-2025 Principal Investigator of Research Contracts
More than two dozen research contracts with national and international companies, awarded to the Investigator based on direct knowledge of the research group he coordinates.

1987-IN PROGRESS Author and co-author of scientific articles
Approximately 250 scientific publications in international journals and conference proceedings.

1987- IN PROGRESS Scientific Interests
His technical and scientific work focuses primarily on power electronics, electrical systems for transportation, electrical drives, electrical machines and automatic control.
More specifically, his research interests can be better described as follows:
• High dynamics performance ac motor drives (asynchronous, synchronous)
• Fuel cell generating systems and energy storage systems (ultracapacitors, batteries) for transportation systems
• Electrical drives for electrical/hybrid road vehicles, for railway traction and for naval propulsion
• Medium voltage energy static conversion
• Digital architectures for ac motor drives control

• Control techniques for ac motor drives in robotics applications
• Conversion system structures for power conditioning
• Power converters: analysis and performance optimization by means of modulation and control strategies
• Conversion systems for reactive power and harmonic distortion minimization
• Multilevel converter structures
• Conversion systems for reactive power generation
• Voltage source converters for HVDC (High Voltage Direct Current) systems