

SCIENTIFIC CURRICULUM VITAE

PROFESSOR ALBERTO TENCONI

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February 2023

Alberto Tenconi received the M. Sc. in 1986 and the PhD. in 1990, both in Electrical Engineering from the **Politecnico di Torino**, Torino, Italy.

From 1988 to 1993, he worked for the **Electronic System Division of FIAT Research Center**, where he was engaged in the development of electrical vehicle drive systems. He then joined the **Department of Electrical Engineering** at Politecnico di Torino where, from the year 2006, he is **Full Professor** (disciplinary science sector: ING-IND/32, Power electronic converters, electrical machines and drives). In 2015 he has been elected **Head of the Department of Energy**, Politecnico di Torino, for the mandate 2015-2019.

His fields of interest are non-conventional electric machines, high performance drives and power electronic converters for energy conditioning. In particular, his experience concerning the **electrification transportation** includes both the theoretical and the experimental aspect involved by the design, modeling and development of three-phase and multi-phase electric drives for vehicles and aircraft applications.

Alberto Tenconi is member of the steering committee of the **National Interuniversity Consortiums EL.MO.** “ELettrificazione della **MO**bilità”.

He is the responsible contact person for Politecnico di Torino and member of the **Thematic Committee for Institutional Research in MUR – National Technological Cluster – Energy**.

He has served as **expert for the evaluation of the academic research quality (VQR 2004-2010)** for the national agency for the evaluation of universities and research institutes.

He worked as scientific **expert in the evaluation of research and development programs** for the Ministry of Education, University and Research (MIUR) and other academic institutions.

He has been member of the **qualification committee for MUR - National Scientific Qualification (ASN)**.

Alberto Tenconi is member of the board of the Doctorate in Electrical, Electronics and Communications Engineering of Politecnico di Torino.

He has been member of the following boards in Politecnico di Torino:

- Academic Senate of Politecnico di Torino;
- Research and Technology Transfer Committee;
- Selection Committee of the Siebel Energy Institute “seed projects” award.

He has been **President of the Italian Association CMAEL (Power Converters, Electric Machines and Drives)** from 2014 to 2017.

Publication Activity

The research activity is documented by more than **60 International Journal papers** and more than **180 papers published on International Conference Records** (source Cineca-sito docente). The scientific production is **co-authored by more than 130 international researchers** (source Scopus) of several national and international research groups. The main **bibliometric indexes** are:

- Scopus (189 documents): **h-index 36, citations 5139**;
- Google Scholar (233 documents): h-index 41, citations 7797, i10-index 117.

In 1997 Alberto Tenconi received the Second Prize Paper Award from the Power Electronics Devices and Components Committee of the IEEE-Industry Applications Society and in 2005 he received the First Prize Paper Award from IEEJ-IPEC'05, Nigata, Japan and in 2015 the Third Prize Paper Award as published in the IEEE Transactions on Industry Applications.

Alberto Tenconi is **IEEE Senior Member** and **Professional Member** of the Italian chapter of IEEE-Eta Kappa Nu (HKN) honor society. He is reviewers for International Journals (IEEE Transactions on Industry Applications, IEEE Transactions on Industrial Electronics, IEEE Transactions on Power Electronics, IEE Proceedings – Electric Power Applications, EPE Journal, etc.), and International Conferences in the field of interest. From 2009 to 2011 he served as **Associate Editor** for the IEEE Transactions on Industrial Electronics where he has also served as **Guest Editor**.

Alberto Tenconi has served as special session organizer in IEEE Conferences, as member of the steering committee and organization committee of the IEEE Forum on Research and Technologies for Society and Industry 2015, and as technical program chair and member of the executive committee in the AEIT International Conference of Electrical and Electronic Technologies for Automotive 2017 and 2018.

Research Grants and Technology Transfer

Alberto Tenconi has participated at several Regional, National and European Research Programmes on competitive basis; he has also worked in research contracts committed by industrial companies.

- CARBOMECH s.r.l. (2021-2022), “Characterization and experimental optimization of an asynchronous motor for high frequency pneumostatic electrospindle”: **Scientific Responsible** of the contract.
- POWERTECH Engineering S.r.l. (2020-2021), “Development of Innovative Models for Electric Powertrain Simulation”: **Scientific Responsible** of the contract.
- FCA GROUP (2019-2021), Progetti Ricerca&Tesi “e-Drive components modelling for ePT system virtual validation” and “e-Motor and Inverter simplified energetic modeling for ePT system virtual validation”: **Deputy leader**.
- REGIONE PIEMONTE (2018-2020), “E-drive test new infrastructure for automotive and aerospace applications”: **Principal Investigator**.
- BREMBO (2017-2018), “Motor preliminary design tool specification”: **Scientific Responsible** of the contract.
- EUROPEAN UNION – H2020 (2016-2019), “RE-SERVE: Renewables in a Stable Electric Grid”: research staff.
- EUROPEAN UNION – H2020 (2015-2017), “FLEXMETER: flexible smart metering for multiple energy vectors with active prosumers”: research staff.
- MIUR – National Technological Cluster - Aerospace (2014-2017), “TIVANO Innovative Technologies for Aircraft (Tecnologie Innovative per Velivoli di Aviazione generale di Nuova generaziOne)”: **Project leader** Electrification of the propulsion systems.
- MINISTRY OF ECONOMIC DEVELOPMENT – ENEA – RSE (2013-2015), “V2G: energetic aspects of the power interface and impact on the storage system”: **Responsible of the research unit** of Politecnico di Torino.
- AERONAUTICAL SERVICE (2015), “Magnetic and energetic evaluations of SMC magnetic core in AC machines for aeronautical applications”: **Scientific Responsible** of the contract.
- EUROPEAN UNION - 7FP (2011-2014), “SESAME: Securing the European Electricity Supply Against Malicious and accidental thrEats”: **Steering Committee Member**.
- EUROPEAN UNION - ENIAC JU (2011-2013), “MOTORBRAIN: Nanoelectronics for Electric Vehicle Intelligent Failsafe PowerTrain”: **Responsible of the research unit** of the Department of Electrical Engineering.
- MIUR - PRIN 2009 (2011-2013), “Azionamenti Elettrici Multifase ad Elevata Affidabilità per Applicazioni More Electric Aircraft” **Principal Investigator**
- REGIONE PIEMONTE (2010-2013), “HyTC: Motopropulsore a Trasmissione Ibrida Innovativa per City Cars”: **Responsabile of the research unit** of Politecnico di Torino.
- REGIONE PIEMONTE (2010-2013), “AMPERE: Modular Buses on Ecological Platform with Energy Recovery”: **Responsible of the research unit of Department of Electrical Engineering**.

- REGIONE PIEMONTE (2009-2011), "GREAT 2020: Green Engine for Air Transport in 2020": **Responsible of the research unit** of Department of Electrical Engineering.
- REGIONE PIEMONTE (2007-2009), "VUMES: Multi-Eco Solar Urban Vehicle"; **Principal Investigator**.
- MAGNETI MARELLI (2007-2009), "Motor-generator for hybrid powertrains": **Scientific Responsible** of the contract.
- REGIONE PIEMONTE (2006-2009), "Development of electrically propelled micro/mini unmanned aerial vehicle with micro-fuel cells generation systems" **Responsible of the research unit of Department of Electrical Engineering**.
- GENERAL MOTORS – POWERTRAIN EUROPE (2006-2008), "Concept development, energy analysis and preliminary design of an e-AWD hybrid solution for European market": **Scientific Responsible** of the contract.
- TORINO WIRELESS (2007-2008), "High efficiency DC/AC Converter dedicated to an Electrical Booster Demonstrator": **Scientific Responsible** of the contract.
- TORINO WIRELESS (2006-2007), "Study and implementation of power converters and modulation techniques for electric/hybrid traction systems": **Scientific Responsible** of the contract.
- REGIONE PIEMONTE (2006-2008), "Promotion and development of the Piedmont industry in the field of components for fuel cells propulsion systems - FC Auto": **Responsible of the research unit** of Politecnico di Torino.
- REGIONE PIEMONTE (2006-2008), "Support at the development of the hydrogen technologies in Piedmont – HysyVision": **Responsible of the research unit** of Politecnico di Torino.
- ANSALDO RICERCHE (1999-2001), "Study and realization of DSP based digital control systems": **Scientific Responsible** of the contract.
- CENTRO RICERCHE FIAT (1999-2001), "Study and realization of multi-phase induction motor drives for automotive applications": **Scientific Responsible** of the contract.
- CENTRO RICERCHE FIAT (1997), "Design and realization of induction machine rotor-stator units for automotive applications": **Scientific Responsible** of the contract.
- A.R.I.S. (1995), "Prototype development of small electric car": **Scientific Responsible** of the contract.
- CENTRO RICERCHE FIAT – BMW - PILLER (1995-1996), "Induction motor optimised for electric vehicle traction systems", in the frame of the research project "Research and Evaluation of Innovative Technologies for High Efficiency, High Performance Drive Systems for the Application in Electric and Hybrid Vehicles (RITA)" UE JOULE II: **Responsible of the research unit** of Politecnico di Torino.

Teaching and Public Engagement Activity

The teaching activity of Alberto Tenconi at Bachelor and Master level has covered the courses of "Electric Machines", "Electric Drives", "Industrial Power Electronics" and "Electrical propulsion for transport systems"; he has supervised more than 120 thesis of students from 1996 up to today. He has tutored more than 15 Ph.D. students.

Alberto Tenconi has organised/participated several public engagement events. To mention the two most recent events:

- 10/11/2019 Festival della Tecnologia "Rivoluzione Auto Elettrica",
- 17/09/2020 A&T-Fiera "Mobilità elettrica: le tecnologie e le competenze per affrontare le sfide e le opportunità per l'industria europea".