Short Curriculum Vitae

Alberto Tessarolo, University of Trieste, Italy

EDUCATION

- M.Sc. (Laurea) Degree cum laude in Electrical Engineering from the University of Trieste, Italy (2000)
- Qualification as a Professional Engineer in Italy (2000)
- Ph.D. Degree in Electrical Engineering from the University of Padova, Italy (2011)
- National Scientific Qualification as an Associate Professor in Electric Machines, Converters and Drives (2013)
- National Scientific Qualification as a Full Professor in Electric Machines, Converters and Drives (2017)

WORK EXPERIENCES IN THE INDUSTRY

- R&D Engineer with Galileo Avionica – Finmeccanica Group, Ronchi dei Legionari, Italy (2000-2003). Roles: responsible for the system integration of the first fully-digital Unmanned Air Vehicle; dimensioning and selection of onboard electric actuators.
- Design and Product Development Engineer with NIDEC-ASI (formerly Ansaldo Sistemi Industriali), Monfalcone, Italy (2003-2006). Roles: responsible for the electromagnetic design of a 45 MW 12-phase synchronous motor; responsible for the design of high-speed multi-phase alternator for shipboard DC power system prototype demonstrators for the Italian Navy. Development and design of custom-made large medium-voltage motors and generators for shipboard and oil-and-gas applications.

ACADEMIC POSITIONS AND SHORT-TERM PERSPECTIVES IN THE ACADEMIA

- Research fellow (2007-2010).
- Assistant professor (2011-2015) ex lege 230/2005.
- Faculty Board member for the PhD Program in Industrial Engineering and Information Technology (2014-present).
- Tenure-track assistant professor (2016-2019) ex lege 240/2010.
- Head of the Non-destructive Test Laboratory “Domenico di Santolo” at the University of Treiste for defect detection in metallic components through magneto-inductive diagnostic technology (2018-present).
- Head of the Electric Machine Analysis and Design (EMAD) Laboratory at the University of Trieste (2018-present).
- Associate professor (2019-present).
- Coordinator-elect of the Degree Course in Industrial Engineering at the University of Trieste, Italy (2019-present).
- Coordinator-elect of the PhD Program in Industrial Engineering and Information Technology at the University of Trieste, Italy (effective as from November 2021).
- Evaluative procedure for appointment as full professor with industry funding support to take place by the end of 2021 ex lege 240/2010, art. 24, based on presently signed agreements.

ACADEMIC TEACHING ACTIVITY

- Teaching responsibility for the post-graduate course of Electric Machine Design, 72 hours/year (2010-present).
- Teaching responsibility for the under-graduate course of Electric Machines, 96 hours/year (2019-present).
- Partial teaching responsibility (24 hours) for the post-graduate course of Electric Drives effective as from September 2021.
- Supervisor for over 70 theses of degree (2011-present) in the field of electric machines and drives.

PHD STUDENT AND RESEARCH FELLOW TUTORSHIP

- Scientific supervisor for 9 PhD students (2011-present)
- Scientific supervisor and funder for 12 annual research fellow contracts (2011-present)

RESEARCH GRANT ACQUISITION AND MANAGEMENT

- Scientific responsibility for a total of 30 funded research projects with overall managed budget of approx. 1.300.000 euros (2011-present)
- Scientific responsibility for research grants funded through competitive calls:
    - Development of innovative high-performance electric drive for light hybrid or full-electric road vehicles – Regional grant – budget: 161.000 euros (2014-2016)
    - Design and implementation of a software tool for size, weight and efficiency estimation of shipboard electric machinery based on ratings – National grant from Italian Navy – budget: 60.000 euros (2015-2016)
    - Design and development of innovative electric direct-drive actuators for naval vessel heavy-duty applications – National grant from Italian Navy – budget: 215.000 euros (2015-2016)
    - Rotary linear electric motor technology demonstrator – Regional grant – budget: 30.000 euros (2015-2016)
    - Rotary electric motor with linear geometry for shipboard applications – Regional grant – budget: 121.000 euros (2017-2018)
    - Reversible electric propulsion motor for small boats – Regional grant – budget: 100.000 euros (2017-2018)
    - Development of an optimized micro-cogeneration system from biomass based on Stirling motor – Regional grant – budget: 24.000 euros (2018-2019)
    - Induction motor efficiency improvement through optimal electromagnetic design solutions – international grant from Ministry of Research of Montenegro – budget: 32.000 euros (2019-2020).

SCIENTIFIC PUBLICATIONS

- 2 chapters in international books:
    - Engineering Education and Research Using MATLAB, InTech (2011)
    - Diagnosis and Fault Tolerance of Electrical Machines, Power Electronics and Drives, IET Books, London, UK (2018)

- 38 papers published in journals included in the 2020 Journal Citation Report
- 130 papers published in international conference proceedings indexed in Scopus

INTERNATIONAL AWARDS

- Outstanding paper award – Industry Category at the 2009 IEEE Electric Ship Technologies Symposium, ESTS, April 2009, Baltimora, US.
- 2014 Electric Machinery Committee (EMC) Prize Award of the IEEE Power and Energy Society (PES), for the paper "Accurate computation of multiphase synchronous machine inductances based on winding function theory", IEEE Transactions on Energy Conversion, vol. 27, no. 4, 2012, pp. 895-904.
- Best paper award on ecological vehicles and Program Committee Award at the International Conference on Ecological Vehicles and Renewable Energies, EVER 2014, April 2014, Montecarlo, Monaco.
- Appointment as Senior Member of the IEEE (2015).
- Best paper award on renewable energies at the International Conference on Ecological Vehicles and Renewable Energies, EVER 2015, April 2015, Montecarlo, Monaco.
- Best paper award on ecological vehicles at the International Conference on Ecological Vehicles and Renewable Energies, EVER 2016, April 2016, Montecarlo, Monaco.
- Pleanry Session Speaker Award at the International Conference on Ecological Vehicles and Renewable Energies, EVER 2018, April 2018, Monte Carlo, Monaco.
- 2020 Electric Machinery Committee (EMC) Prize Award of the IEEE Power and Energy Society (PES), for the paper "A. Tessarolo, C. Ciriani, M. Bortolozzi, M. Mezzarobba, and N. Barbini, "Investigation into multi-layer fractional-slot concentrated windings with unconventional slot-pole combinations," IEEE Trans. Energy Conv., vol. 34, no. 4, pp. 1985–1996, Dec. 2019".

EDITORIAL POSITIONS FOR INTERNATIONAL JOURNALS

- Associate Editor for IEEE Transactions on Energy Conversion (IF=4.50) and IEEE Power Engineering Letters (2013-2019).
- Associate Editor for IEEE Transactions on Industry Applications (IF=3.49) and IEEE Industry Applications Magazine (2015-present).
- Associate Editor for IET Electric Power Applications (IF=2.83) (2015-present).
- Leading Guest Editor for the Special Issue "Advances in High-speed Machines for Electric Drives, Power Generation and Energy Storage Systems" in IET Electric Power Applications (2017-2018).
- Guest Editor for the Special Section "Emerging Electric Machines and Drives for Smart Energy Conversion" in IEEE Transactions on Energy Conversion (2017-2018).
- Editor-in-Chief of IEEE Transactions on Energy Conversion (IF=4.50) (2019-present).
- Steering Committee Member for IEEE Journal on Emerging and Selected Topics on Industrial Electronics (2019-present).
- Member of IEEE Thesaurus Editorial Board (2020-present).

CONTRIBUTIONS TO INTERNATIONAL CONFERENCES

Contribution to 32 international conferences sponsored or co-sponsored by IEEE (2009-present) as session chair, technical track co-chair, special session organizer, technical program committee member, invited speaker, publicity chair.

INVITED SPEECHES AT INTERNATIONAL CONFERENCES

- IEEE Workshop on Electrical Machines Design, Control and Diagnosism WEMDCD (2015).
- IEEE International Electrotechnical and Computer Science Conference, IEEE ERK (2016).
- IEEE Workshop on Electrical Machines Design, Control and Diagnosis, WEMDCD (2017).
- IEEE PES General Meeting (2017).
- International Conference on Ecological Vehicles and Renewable Energies (2018).
- 5th International Symposium on Environment Friendly Energies and Applications, EFEA (2018).

ROLES IN NATIONAL AND INTERNATIONAL STANDARDISATION COMMITTEES

- Member the International Electrotechnical Commission (IEC) - Tecnhincal Committee TC 2 (Rotating machinery) - Maintenance Team MT 9 ("Converter fed AC motors") (2017-present) and Working Group 28 ("Electric Machine Performance as Determined by Tests") (2017-present).
- IEEE Power and Energy Society, Electric Machinery Committee – Motors subcommittee – Working group 1812 (Guide for Testing Permanent Magnet Machines) (2019-present).
- Member (2019-2021) and National Coordinator (2021-present) for the Working Group 28-1 ("Determination of synchronous machine parameters from tests") of "Comitato Elettrotecnico Italiano" (CEI).