

CURRICULUM VITAE
of
Alessandro Serpi

Alessandro Serpi got the master's degree in electrical engineering at the University of Cagliari (UNICA) on December 9, 2004. Subsequently, in 2005, he collaborated as a contract researcher to the activities carried out by the research group "Power Electronics, Electrical Machines and Drives" of the Department of Electrical and Electronic Engineering (DIEE) of UNICA. In December 2005, he won a scholarship for the PhD Course in Industrial Engineering at UNICA. He thus received the title of Doctor of Philosophy on February 27, 2009, discussing a dissertation entitled "Predictive Control of Electrical Drives".

Alessandro Serpi did research at DIEE from 2009 to 2015 as a Post-Doc Researcher and from 2015 to 2021 as Assistant Professor. His activity has focused mainly on the development and implementation of advanced control strategies and Model Predictive Control algorithms for electrical drives and power electronic converters by means of FPGA-based control boards, as well as on the development and implementation of optimal management and control algorithms for electrical drives and energy storage systems. His research activity included also some topics related to Electrical Machines, Power Electronics, Electrical Energy Management and Electromagnetic Compatibility.

Since November 5, 2021, Alessandro Serpi has been an Associate Professor at DIEE. His research activity currently concerns the development and implementation of optimal management and control algorithms for electrical drives and energy storage systems. Alessandro Serpi is co-author of 112 scientific publications (24 in international journals, 88 in international conference proceedings) and two book chapters. He was a speaker at several international conferences (IECON, ICEM, SPEEDAM, VPPC, etc.).

SCIENTIFIC SUPERVISIONS

Scientific supervisor of the following research fellowships:

- Design and implementation of management and control algorithms for hybrid energy storage systems (Nov. 2018-May 2019)
- Design and characterization of an experimental setup for implementing management and control strategies of energy storage systems for microgrids (Apr. 2019-Oct. 2019)
- Design and development of permanent magnet synchronous machine for flywheel energy storage systems (Oct. 2019-May 2020)
- Development of monitoring, management and control systems for the integration of energy storage systems into smart grids (Apr. 2021-Sept. 2021)
- Modelling, sizing, management and control of hybrid energy storage systems (Apr. 2021-Nov. 2021)
- Development of a multi-source electric propulsion system test bench for vehicle-to-X applications (Sept. 2021-Sept. 2022)
- Development of monitoring, management and control systems for the connection of energy storage systems to smart grids (Apr. 2022-Jul. 2022)

TECHNOLOGY TRANSFER ACTIVITY

Proposing associate, co-founder, Chief Executive and Technology Officer of NEPSY srl (Novel Electric Propulsion System), an academic spin-off company of the University of Cagliari, whose main activity is the development, production and marketing of innovative components and systems of high technological value for electric propulsion through the development of new highly integrated topological configurations from hardware and software points of view and/or advanced management and control systems.

MAIN EDITORIAL ACTIVITIES

- Associate Editor of the international journal "IEEE Transactions on Industrial Electronics"
- Member of the Editorial Board of the international journals "Science Journal of Energy Engineering" and "Smart Science"
- Member of the Technical Program Committee of "two international conferences (ICEEIE 2015, AUTOMOTIVE 2017)

- Co-organizer of the Special Session “Modeling, management and control of energy storage systems in electric vehicles” at the international conferences IECON 2017-2019
- Academic Editor of the book titled “Propulsion Systems” by Intech Open (ISBN 978-1-83962-279-3, 2019)
- Treasurer of the international conference IESES 2020
- Reviewer for several international conferences (IECON, ICEM, IEVC, etc.) and journals (IEEE Trans. Ind. Electron., IEEE Trans. Ind. Informat., Energies, etc.).

MEMBERSHIPS

- Member of “Institute of Electrical and Electronics Engineers” (IEEE) and of some of its societies (IAS, IES, MAG, PELS, PES, VTS)
- Member of the Committee of the PhD course on Electronic Computer Engineering of the University of Cagliari
- Member of the Italian association on Power Electronics, Electrical Machine and Drives (CMAEL)
- Member of the Italian inter-university consortium on energy and power systems (EnSiEL)

MAIN HONOURS AND AWARDS

- March 2022, winner of the competition “IEEE VTS Motor Vehicles Challenge 2022: Sizing and Energy Management of Hybrid Dual-Energy Storage System for a Commercial Electric Vehicle”, organized by IEEE Vehicular Technology Society, Hanoi University of Science and Technology (Vietnam), University of Sherbrooke (Canada), University of Bourgogne Franche-Comté (France), University of Québec at Trois-Rivières (Canada), and University of Lille (France)
- May 2021, National Scientific Qualification for Full Professor in Power Electronics, Electrical Machines and Drives
- August 2020, ICEM Best Poster Presentation Award from ICEM Awards Committee for the presentation of the paper “Design and Performance Assessment of an Integrated Flywheel Energy Storage Systems based on an Inner-Rotor Large Airgap SPM”, ICEM 2020, Virtual Conference, Gothenburg (Sweden), Aug. 23-26, 2020
- March 2020, second place in the competition “IEEE VTS Motor Vehicles Challenge 2020: Energy Management of a Fuel Cell/Ultracapacitor/Lead-Acid Battery Hybrid Electric Vehicle”, organized by IEEE Vehicular Technology Society, Universidad Industrial de Santander (Colombia), University of Bourgogne Franche-Comté (France), University of Quebec at Trois-Rivieres (Canada), and Universidad Nacional de Rafaela (Argentina)
- September 2019, Publons Peer Review Awards 2019 as one of the top 1 per cent reviewers in Engineering and Cross-Field
- September 2018, Publons Peer Review Awards 2018 as one of the top 1 per cent reviewers in Engineering
- September 2017: three Publons Peer Review Award 2017 for being the 2nd most prolific contributing peer reviewer on Publons for the international journal “Energies” and one of the top 1% reviewers in Engineering and Computer Science
- March 2017: National Scientific Qualification for Associate Professor in Power Electronics, Electrical Machines and Drives
- February 2017, third place in the competition “IEEE VTS Motor Vehicles Challenge 2017: Energy Management of a Fuel Cell/Battery Vehicle”, organized by IEEE Vehicular Technology Society, the University of Quebec à Trois-Rivières, L2EP laboratory, FCLAB Research federation, FEMTO-ST Institute and the French network on HEVs
- November, 2013: Second “Prize Paper Award” from The Power Electronics Technical Committee of the IEEE Industrial Electronics Society for the technical competence displayed in the paper entitled “A Suitable PWM for DC-link Voltage Equalization of Three-Level Neutral-Point Clamped Converters” presented at the 39th IECON, Vienna (Austria), Nov. 10-13, 2013



- June, 2013: “2011 Best PhD Thesis in Power Engineering” Award from the IEEE PES Italian Chapter PE31 for the PhD dissertation entitled “Predictive Control of Electrical Drives”