

Curriculum of the overall scientific and teaching activity of Andrea Vicenzutti

Personal data

- Name: Andrea
- Surname: Vicenzutti
- Place and date of birth: Cividale del Friuli (UD), il 15/05/1985
- Nationality: Italiana
- Mail address: avicenzutti@units.it

Current work position

- Assistant professor (IT law - art. 24 comma 3-a L240/10) at University of Trieste, Dept. of Engineering and Architecture, from 01/02/2018 (in course). Contract for conducting research activities, teaching, integrative teaching and service to students, as per IT law art. 24, comma 3, lett. a) of L. 30 dec. 2010, n. 240. Scientific disciplinary sector ING-IND/33 – Electrical power systems.

Training and qualifications

Ph.D

- From 01 Jan. 2013 to 12 Dec. 2015 Ph.D Course in Energy Engineering, Doctoral School in Industrial Engineering, University of Padua.
Winner of a bounded theme Ph.D grant.
Ph.D qualification obtained on 15 April 2016, with the discussion of the thesis “Innovative Integrated Power Systems for All Electric Ships”.
Research activity about innovative Integrated Power Systems for All Electric Ships. In particular, research about the integration into the design process of modern All Electric Ship’s Integrated Power Systems of innovative technologies (e.g. Medium Voltage Direct Current distribution) and tools and techniques taken from Dependability theory. Work aimed at introducing the onboard power system behavior in response to faults among the conventional ship design driver, and aimed at improving the de-risking of innovative electrical technologies for ships.

Degrees

- Master Degree in Electrical and Industrial Automation Engineering (summa cum laude) obtained at University of Trieste on 13 July 2012, discussing the thesis “Multimachine MVDC power system voltage control”.
- Bachelor’s Degree in Industrial Engineering, curriculum Electric Power Systems (96/110), obtained at University of Trieste on 10 June 2009, discussing the thesis “Design and building of a power supply unit for electrochemical machining systems”.

Other training activities

- From 22 May 2017 to 26 May 2017 participation at 18th edition of “European PhD School: Power Electronics, Electrical Machines, Energy Control and Power Systems”, organized by University of Cassino and the Southern Lazio at Castello Angioino in Gaeta (LT).
- From 25 May 2015 to 29 May 2015 participation at 16th edition of “European PhD School: Power Electronics, Electrical Machines, Energy Control and Power Systems”, organized by University of Cassino and the Southern Lazio at Castello Angioino in Gaeta (LT).

- From 26 May 2014 to 30 May 2014 participation at 15th edition of “European PhD School: Power Electronics, Electrical Machines, Energy Control and Power Systems”, organized by University of Cassino and the Southern Lazio at Castello Angioino in Gaeta (LT).
- From 27 May 2013 to 31 May 2013 participation at 14th edition of “European PhD School: Power Electronics, Electrical Machines, Energy Control and Power Systems”, organized by University of Cassino and the Southern Lazio at Castello Angioino in Gaeta (LT).
- From 25 June 2012 to 29 June 2012 participation at Summer School Giacomo Ciamician “Energy for the Future”, organized by University of Trieste at Sexten Center for Astrophysics Sesto Pusteria (BZ), IT.

Scientific Activity

The scientific activity mainly concerns three areas: A) onboard electrical power systems; B) electrical power distribution systems' dependability; C) dc and hybrid ac/dc electrical power distribution systems. The research activities are currently carried out at the EPGC lab. (Electric Power Generation and Control) in the Department of Engineering and Architecture of the University of Trieste.

Area A) onboard electrical power systems. The research activities in this field began during the master degree thesis work at the University of Trieste. These were carried out in the context of the MVDC Large Ship research project (leader Fincantieri Cantieri Italiani S.p.A.). During the PhD course, this research activity continued, thus allowing the updating of the personal state of the art and the production of new research results (as demonstrated by symposium and international journals papers, published in this technical area over the years). In particular, the research activities concerned the electrical systems on board the marine vessels (ships, offshore platforms, etc ..), and have been developed in coordination with relevant academic institutions (La Sapienza University of Rome, Milan Polytechnic, etc .) and with several public and private bodies in the sector (Fincantieri Cantieri Italiani SpA, Italian Navy, Nidec ASI SpA, etc.). The activity was focused (but not limited) to: the interaction of electric propulsion drives with the on-board electrical system; the voltage and frequency control in onboard systems and its impact on the Quality of Service; integrated design aspects, in collaboration with other engineering fields (naval engineering); voltage stability in onboard electrical power systems with high penetration of static conversion.

Area B) electrical power distribution systems' dependability. The research activity in this technical area began during the PhD at the University of Padua. It started during a collaboration with a company (Fincantieri Oil & Gas SpA), and then continued to be developed in a scientific research project (Naval Smart Grid, client IT Ministry of Defense). The research activity focused on the study and development of techniques and processes capable of predicting the behavior of an electrical power system in case of faults and errors. Furthermore, the possibility of integrating these techniques into the conventional design processes was analyzed, taking as an example other branches of technology and engineering where these issues are currently addressed (aerospace engineering, chemistry, nuclear, etc.). The aim is to improve electrical power systems performance in the fields of reliability, maintainability, availability and safety, while at the same time assessing the impact of possible corrective solutions on the other conventional design drivers. One particular application to be reported in this research area is related to the safety of people onboard passenger ships, promoted by recent regulations regarding the behavior of the ship in response to fire and flooding events. In this regard, given the current trend towards the electrification of maritime transport, the study of the response of the onboard electrical power system to damaging events becomes of primary importance not only for compliance with the law, but also for ensuring the safety of people.

Area C) dc and hybrid ac/dc electrical power distribution systems. Research activities in this field are carried out at the EPGC lab. (Electric Power Generation and Control), in the Department of Engineering and Architecture of the University of Trieste. The research activities are being performed in collaboration with relevant Italian and foreign academic institutions (Polytechnic of Milan, University of Wisconsin - Milwaukee) and with public and private sector bodies (Ministry of Defense, Wartsila Italia SpA, ABB SpA, Fincantieri Cantieri Italiani SpA). The activities have been developed not only during both past and currently ongoing research projects (e.g. Naval Smart Grid, client IT Ministry of Defense), but also independently. In particular, the issues addressed concerned: the determination of short-circuit currents in mixed ac/dc power distribution systems and the definition of the protections to be used; the management of interface converters in mixed ac/dc networks in order to guarantee the compliancy with Power Quality requirements; the static and hybrid devices for the interruption of dc short-circuit currents.

Since 2012, the year of the first work published at an international conference with peer-review, Andrea Vicenzutti has published 28 papers in international and national venues, both at symposiums and on scientific journals. Of these, 25 are currently on the Scopus database, leading to a total of 83 citations and h-index = 5.

Current position in the field of research

- Assistant professor (IT law - art. 24 comma 3-a L240/10) at University of Trieste, Dept. of Engineering and Architecture, from 01/02/2018 (in course). Contract for conducting research activities, teaching, integrative teaching and service to students, as per IT law art. 24, comma 3, lett. a) of L. 30 dec. 2010, n. 240. Scientific disciplinary sector ING-IND/33 – Electrical power systems

Past positions in the field of research

- Research grant at the University of Trieste, Department of Engineering and Architecture, from 11 Oct. 2017 to 31 Jan. 2018 (renewal of the past grant). Research grant for the disciplinary sectors ING-IND / 33 and ING-IND / 32, for carrying out research activities regarding the "Study and analysis of reliability of electrical systems integrated into medium voltage of large ships with electric propulsion".
- Research grant at the University of Trieste, Department of Engineering and Architecture, from 11 Oct. 2016 to 10 Oct. 2017. Research grant for the disciplinary sectors ING-IND / 33 and ING-IND / 32, for carrying out research activities regarding the "Study and analysis of reliability of electrical systems integrated into medium voltage of large ships with electric propulsion".
- Coordinated and Continuous Collaboration Contract at the University of Trieste, Department of Engineering and Computer Science, from 07 April 2016 to 07 Aug. 2016. Contract within the project "TRIM - Technology and industrial research for marine mobility" for the activity of "Study of techniques for the management and control of microgrids on board".

Participation in research projects

- From April 2016 to August 2016 participation in the research project "TRIM - Technology and industrial research for marine mobility" (Call for MIUR - National Technology Cluster Program "Trasporti Italia 2020"). Project dedicated to the development of systems for simulation and monitoring of energy efficiency, analysis and fluid dynamics tests on insufflated hulls, architectural design of engine rooms for onboard safety, reduction of NOx emissions.
Contract within the DITENAVE technological district (now Maritime Technology Cluster FVG – Mare^{TC} FVG).
Performed activity:
 - Study of techniques for the management and control of ships' onboard microgrids.
- During 2013-2014 and 2016-2018 participation in the research project "Naval Smart Grid (NaSG) - Integrated power system with control and reliability characteristics for electric propelled military vessels" - Phase 1 and Phase 2 (PNRM - National Military Research Project).
Project dedicated to the study of innovative integrated power systems for military ships.
Financing body: IT Ministry of Defence.
Performed activities:
 - Study of the interactions between electric propulsion drives and onboard power system for a reference military naval unit and study of the possible layout for the integrated power system, based on preliminary studies of the Italian Navy;
 - Measurement campaign onboard IT Navy ship "Nave Cavour";
 - Definition of the onboard power generation system, study of the methods for managing the onboard generation system according to the ship's operating conditions;
 - Definition of the possible architectures for the onboard power system, including both ac and hybrid ac/dc solutions;
 - Preliminary evaluations on: system's dependability, earth management onboard the ship, supply of high power pulsed electrical loads, electromechanical transients relevant to the ship's operation.
 - Studies about the onboard voltage and frequency regulation systems (evaluation of the possible issues related to the use of the hybrid propulsion system as a generation system, simulation of electromechanical transients relevant for the definition of control and protection systems, assessment

- of the impact of onboard motor-generator frequency conversion systems on Power Quality, in relation to the contractual requirements);
 - Analysis of the possible methods of application of the tools of the dependability theory to the integrated design of high performance military naval electrical power systems;
 - Analysis of the possibility of using dc islands to feed pulsed loads, in coordination with control and energy storage systems.
- During 2011-2013 participation in the “MVDC Large Ship” research project (POR FESR 2007 – 2013). Project dedicated to the evaluation of the introduction of a dc medium voltage distribution system onboard all electric ships.

Lead partner: FINCANTIERI Cantieri Navali Italiani S.p.A.

Performed activities:

- Study of the dependability approach application to the design of integrated power systems for cruise ships: decomposition of the electrical system into elementary components, application of qualitative analysis techniques (Fault Tree Analysis - FTA, Failure Mode and Effects Analysis - FMEA), application of quantitative analysis techniques (Reliability Block Diagram - RBD, Dynamic Reliability Block Diagram - DRBD);
- Analysis of the impact of different conversion architectures on voltage control in shipboard MVDC systems;
- Analysis of the state of the art in the field of static and hybrid electromechanical/static devices for the interruption of short circuit currents in direct current;
- Collaboration in the preparation of a book containing all the research results.

Publications in journals of international relevance

- [1] A. Vicenzutti, D. Bosich, R. Pelaschiar, R. Menis and G. Sulligoi, "Increasing the Safety of Modern Passenger Ships: A Comprehensive Approach for Designing Safe Shipboard Integrated Electrical Power Systems," in IEEE Electrification Magazine, vol. 5, no. 3, pp. 40-54, Sept. 2017.
- [2] G. Sulligoi, A. Vicenzutti and R. Menis, "All-Electric Ship Design: From Electrical Propulsion to Integrated Electrical and Electronic Power Systems," in IEEE Transactions on Transportation Electrification, vol. 2, no. 4, pp. 507-521, Dec. 2016.
- [3] G. Sulligoi, A. Vicenzutti, V. Arcidiacono and Y. Khersonsky, "Voltage Stability in Large Marine-Integrated Electrical and Electronic Power Systems," in IEEE Transactions on Industry Applications, vol. 52, no. 4, pp. 3584-3594, July-Aug. 2016.
- [4] Cupelli, M.; Ponci, F.; Sulligoi, G.; Vicenzutti, A.; Edrington, C.S.; El-Mezyani, T. Monti, A., "Power Flow Control and Network Stability in an All-Electric Ship," in Proceedings of the IEEE, vol. 103, no. 12, pp.2355-2380, 2015.
- [5] Vicenzutti, A.; Bosich, D.; Giadrossi, G.; Sulligoi, G., "The Role of Voltage Control in Modern All Electric Ships: Towards the all electric ship" in IEEE Electrification Magazine, vol. 3, no. 2, pp. 49-65, June 2015.

Publication in conferences with international relevance

(The publications highlighted with # were presented personally in the respective conference.)

- [1] A. Vicenzutti, U. la Monaca, D. Bosich, V. Bucci, A. Marinò, G. Sulligoi, R. Pelaschiar "Early-Stage Design of shipboard Integrated Power Systems: CSI-based multiple solutions comparison", in IEEE Electric Ship Technologies Symposium, 15-17 Aug 2017. #
- [2] D. Bosich, A. Vicenzutti, G. Sulligoi "Robust Voltage Control in Large Multi-Converter MVDC Power Systems on Ships using Thyristor Interface Converters", in IEEE Electric Ship Technologies Symposium, 15-17 Aug 2017.
- [3] D. Bosich, V. Bucci, U. la Monaca, A. Marinò, G. Sulligoi, A. Vicenzutti, G. Lipardi, "Early-stage design of integrated power and energy systems for naval vessels electrification: Advanced modeling using CSI," 2017 IEEE Transportation Electrification Conference and Expo (ITEC), Chicago, IL, 2017, pp. 387-392.

- [4] V. Bucci, F. Mauro, A. Marinò, D. Bosich, A. Vicenzutti and G. Sulligoi, "Integrated design of a hybrid-electric power system for coastal-navigation multipurpose crafts," 2017 Twelfth International Conference on Ecological Vehicles and Renewable Energies (EVER), Monte Carlo, 2017, pp. 1-6.
- [5] A. Vicenzutti, G. Sulligoi, R. Cuzner and V. Singh, "Simplified analytical modeling and experimental validation of diode bridge rectifier operation during rail-to-rail short-circuit faults in synchronous generator-fed DC distribution systems," 2017 IEEE Second International Conference on DC Microgrids (ICDCM), Nuremberg, 2017, pp. 596-601. #
- [6] A. Vicenzutti, R. Menis, G. Sulligoi "Dependable design of all electric ships integrated power system: New design process," 2016 International Conference on Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles & International Transportation Electrification Conference (ESARS-ITEC), Toulouse, 2016, pp. 1-6. #
- [7] Sulligoi G, Vicenzutti A, Arcidiacono V, Khersonsky Y, "Voltage stability in large marine integrated electrical and electronic power systems", in IEEE Petroleum and Chemical Committee Conference. Houston, TX, USA, 5-7 Nov. 2015.
- [8] Vicenzutti A, Tosato F, De Din E, Sulligoi G, "Studies on asymmetrical short circuit currents in shipboard medium voltage direct current distribution systems fed by AC generators", in IEEE Electric Ship Technologies Symposium, Olt Town Alexandria, USA, 21-24 June 2015. #
- [9] Vicenzutti A, Tosato F, Sulligoi G, Lipardi G, Piva L, "High voltage ship-to-shore connection for electric power supply support in landing operations: An analysis" In: IEEE Electric Ship Technologies Symposium. Olt Town Alexandria, USA, 21-24 June 2015. #
- [10] Lipardi, G.; Piva, L.; Piegari, L.; Tironi, E.; Lamedica, R.; Ruvio, A.; Sulligoi, G.; Vicenzutti, A., "Electric loads characterization in an aircraft carrier with ring-bus distribution system," Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles (ESARS), 2015 International Conference on , vol., no., pp.1,6, Aachen, DE, 3-5 March 2015. #
- [11] Chiandone, M.; da Rin, A.; Menis, R.; Sulligoi, G.; Vicenzutti, A., "Dependable oriented design of complex integrated power systems on ships," Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles (ESARS), 2015 International Conference on , vol., no., pp.1,6, Aachen, DE, 3-5 March 2015. #
- [12] Vicenzutti, A.; De Din, E.; Sulligoi, G., "Transient short circuit analysis in DC on-board distribution systems fed by synchronous generators through 6-pulse diode rectifiers," Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles (ESARS), 2015 International Conference on , vol., no., pp.1,6, Aachen, DE, 3-5 March 2015. #
- [13] Baret, M.; Ferrero, C.; Giulivo, D.; Vicenzutti, A.; Bosich, D.; Sulligoi, G.; Giuliano, M.; Piva, L., "Amerigo Vespucci: Retrofitting of propulsion and generation systems on the italian training's tall ship," Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM), 2014 International Symposium on , vol., no., pp.319,326, 18-20 June 2014.
- [14] Menis R.; da Rin A.; Vicenzutti A.; Sulligoi G.; "All electric ships dependable design: Integrated Power System analysis using dynamic reliability block diagram", IMarEST Marine Electrical and Control Systems Safety Conference (MECSS '13), October 2-3, 2013, Amsterdam, the Netherlands.
- [15] Sulligoi, G.; Bosich, D.; Vicenzutti, A.; Piva, L.; Lipardi, G.; Mazzuca, T; "Studies of Electromechanical Transients in FREMM Frigates Integrated Power System using a Time-domain Simulator", IEEE ESTS 2013, April 22-24, 2013, Arlington (VA), USA. #
- [16] Vicenzutti, A.; Bosich, D.; Sulligoi, G.; "MVDC Power System Voltage Control through Feedback Linearization Technique: application to different Shipboard Power Conversion Architectures", IEEE ESTS 2013, April 22-24, 2013, Arlington (VA), USA. #
- [17] Menis, R.; da Rin, A.; Vicenzutti, A.; Sulligoi, G.; "Dependable Design of All Electric Ships Integrated Power System: Guidelines for System Decomposition and Analysis ", IEEE ESARS 2012, October 16-18, 2012, Bologna, Italy. #

Publication in conferences of national importance

(The publications highlighted with # were presented personally in the respective conference.)

- [1] A. Vicenzutti, V. Bucci, G. Sulligoi and R. Pelaschiar, "Impact of Safe Return to Port rules on passenger ships power systems design," 2016 AEIT International Annual Conference (AEIT), Capri, 2016, pp. 1-7. #
- [2] D. Bosich, A. Vicenzutti, R. Pelaschiar, R. Menis and G. Sulligoi, "Toward the future: The MVDC large ship research program," 2015 AEIT International Annual Conference (AEIT), Naples, 2015, pp. 1-6
- [3] Sulligoi, G.; Vicenzutti, A.; Tironi, E.; Corti, M.; Lamedica, R.; Ruvio, A.; Lipardi, G.; Piva, L., "Naval smart grid: Integrated Power System for all electric naval vessels with control and reliability characteristics," AEIT Annual Conference - From Research to Industry: The Need for a More Effective Technology Transfer (AEIT), 2014 , vol., no., pp.1,6, 18-19 Sept. 2014. #
- [4] Menis, R.; da Rin, A.; Sulligoi, G.; Vicenzutti, A., "All electric ships dependable design: Implications on project management," AEIT Annual Conference - From Research to Industry: The Need for a More Effective Technology Transfer (AEIT), 2014 , vol., no., pp.1,6, 18-19 Sept. 2014.
- [5] Sulligoi G.; Vicenzutti A.; Chiandone M.; Bosich D.; Arcidiacono V.; "Generators electromechanical stability in shipboard grids with symmetrical layout: dynamic interactions between voltage and frequency controls", 105° Convegno nazionale AEIT, October 3-5, 2013, Mondello (PA), Italy.
- [6] Bosich, D.; Vicenzutti, A.; Sulligoi, G.; "Sistemi elettrici integrati con distribuzione in corrente continua per navi a propulsione elettrica", Convegno Nazionale AEIT 2012, June 13-14, 2012, Rome, Italy.

Other activities

- On 04 April 2017, participation as Invited Speaker at the "Cyber-enabled ships seminar" event, with an intervention entitled "Digital Twins for Enabling Dependable Shipboard Integrated Power System". Event organized by Wartsila Italia SpA and Lloyd's Register.
- From 18 April 2016 to 20 April 2016 measurement campaign onboard "Viking Sea" ship (Viking Cruises), sailing the Naples-Livorno route. Measurement campaign aimed at studying the possible causes of flicker in onboard lighting systems during normal system operation, and at evaluating the possible relationship of the issue with the onboard variable levels of harmonic disturbance.
- From 11 Feb. 2014 to 14 Feb. 2014 Visiting Researcher at NAVARM, Naval Armaments Directorate, Italian Navy, at Palazzo Marina (Rome). Activities: analysis of the retrofitting of the electric generation and distribution plant, and of the electric propulsion system, of the "Amerigo Vespucci" ship of the Italian Navy; workshop with personnel of the Italian Navy, General Electric and Fincantieri S.p.A. naval vessels division; data exchange for ongoing research projects (Naval Smart Grid).
- From 25 June 2013 to 27 June 2013 measurement campaign onboard IT Navy "Nave Cavour" ship, at Taranto naval base. Measurement campaign aimed at analyzing the propagation of electromechanical transients and harmonic disturbance in an onboard electrical power system.
- From 13 May 2013 to 17 May 2015 Visiting Researcher at NAVARM, Naval Armaments Directorate, Italian Navy, at Palazzo Marina (Rome). Activities: study of theoretical and technological aspects of dc naval electrical distribution systems; analysis of techniques and technologies for interrupting DC fault currents using electromechanical and/or static devices; critical examination of regulations for the classification of naval vessels (RINAMIL, STANAG).

Participation in scientific symposiums in Italy or abroad:

(participation as a speaker highlighted by the symbol #)

1. IEEE "Electric Ship Technologies Symposium (ESTS)". Arlington, VA, USA, 15-17 Agosto 2017. #
2. IEEE "International Conference on DC Microgrids (ICDMC)". Nurnberg, Germany, 27-29 Giugno 2017. #
3. IEEE "International Conference on Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles (ESARS)". Toulouse, France, 2-4 Novembre 2016. #
4. IEEE "Petroleum and Chemical Committee Conference". Houston, TX, USA, 5-7 Nov. 2015
5. IEEE "Electric Ship Technologies Symposium (ESTS)". Old Town Alexandria, VA, USA, 21-24 Giugno 2015. #
6. IEEE "International Conference on Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles (ESARS)". Aachen, Germany, 3-5 Marzo 2015. #
7. IEEE "International Electric Vehicle Conference (IEVC)". Firenze, Italia, 17-19 Dec 2014.
8. AEIT Annual Conference - From Research to Industry: The Need for a More Effective Technology Transfer (AEIT). Trieste, 18-19 Settembre 2014. #
9. IMarEST "Marine Electrical and Control Systems Safety Conference (MECSS '13)". Amsterdam, the Netherlands, 2-3 Ottobre. 2013.
10. IEEE "Electric Ship Technologies Symposium (ESTS)". Arlington (VA), USA, 22-24 Aprile 2013. #
11. IEEE "International Conference on Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles (ESARS)". Bologna, 16-18 Ottobre. 2012. #

Participation in the organization of scientific symposiums in Italy or abroad:

- 18° edition of "European PhD School: Power Electronics, Electrical Machines, Energy Control and Power Systems", Gaeta (LT), 22-26 May 2017 – *Staff Member*.
- IEEE "International Conference on Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles (ESARS)". Toulouse, France, 2-4 Nov. 2016 – *Staff Member*.
- 16° edition of "European PhD School: Power Electronics, Electrical Machines, Energy Control and Power Systems", Gaeta (LT), 25-29 May 2015 – *Staff Member*.
- IEEE "International Conference on Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles (ESARS)". Aachen, Germany, 3-5 March 2015 – *Staff Member*.
- IEEE "International Electric Vehicle Conference (IEVC)". Firenze, Italia, 17-19 Dec 2014 – *Staff Member*.
- AEIT Annual Conference - From Research to Industry: The Need for a More Effective Technology Transfer (AEIT). Trieste, 18-19 Sept. 2014 – *Staff Member*.
- 15° edition of "European PhD School: Power Electronics, Electrical Machines, Energy Control and Power Systems", Gaeta (LT), 26-30 May 2014 – *Staff Member*.
- 14° edition of "European PhD School: Power Electronics, Electrical Machines, Energy Control and Power Systems", Gaeta (LT), 27-31 May 2013 – *Staff Member*.
- IEEE "International Conference on Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles (ESARS)". Bologna, 16-18 Oct. 2012 – *Staff Member*.

Reviewer for the following international journals:

- IET Power Electronics;
- IEEE Transaction on Transportation Electrification;
- IEEE Journal of Emerging and Selected Topics on Power Electronics;
- Elsevier International Journal of Electrical Power and Energy Systems.

Reviewr for various IEEE international conferences.

Teaching activity

The teaching activity of Andrea Vicenzutti mainly concerns two areas: A) electrical systems (terrestrial and onboard); B) management and control of electrical systems. These teaching activities were carried out at the University of Trieste and the Istituto Tecnico Superiore "Accademia Nautica dell'Adriatico" based in Trieste.

Regarding the university level teaching activity, carried out at the University of Trieste, it mainly consists of lectures and exercises for the courses of "Impianti Elettrici" (Electric power systems) for the Three-year Degree Course in Industrial Engineering; "Impianti Elettrici Navali" (Onboard electric power systems) for the Master's Degree Course in Naval Engineering; and lectures for the course "Gestione e Controllo degli Impianti Elettrici" (Management and Control of Electrical Power Systems) for the Master's Degree Course in Electrical Energy and Systems Engineering. For all three courses, participation in the examination commissions, as an expert in the subject in the SSD ING-IND/33, is to be noted, as well as participation as a correlator for both Master's and Three-year degree theses. In particular, the topics covered during the lectures and exercises are: cable line technologies; overhead line technologies; low voltage electrical safety (protection against indirect contacts without opening the circuit); calculation of voltage drops in short electrical lines; power factor correction; short-circuit currents calculation; management and control of onboard generators; power factor correction and harmonic filters onboard ships; electromechanical oscillations in grid-connected power generation systems and Power System Stabilizers.

Regarding the teaching activity carried out at the ITS "Accademia Nautica dell'Adriatico", it consists of for the teaching module "Managing electrical and electronic systems and onboard automatic controls", held during the post-graduate specialization course in "Higher technician for the mobility of people and goods". In particular, it is a specialized training course reserved for merchant machine officers, built in compliance with the Decreto Interministeriale 7 febbraio 2013, using the format of the minimum standard of competences IFTS (Istruzione e Formazione Tecnica Superiore - Higher Technical Education and Training). The lecture topics cover the whole spectrum of electrical engineering, being divided into the following learning units: 1) generators; 2) power distribution systems; 3) electric motors; 4) high voltage installation; 5) lighting, cables, batteries.

University level teaching activities

- Lectures (15h) of "Impianti Elettrici" (Electric power systems) for the Three-year Degree Course in Industrial Engineering of the University of Trieste in the AY 2017/18.
Topics covered: cable line technologies; overhead line technologies; low voltage electrical safety (protection against indirect contacts without opening the circuit); calculation of voltage drops in short lines; power factor correction; calculation of short-circuit currents.
- Lectures (6h) and exercises (12h) of "Impianti Elettrici" (Electric power systems) for the Three-year Degree Course in Industrial Engineering of the University of Trieste in the AY 2016/17.
Topics covered: cable line technologies; overhead line technologies; low voltage electrical safety (protection against indirect contacts without opening the circuit); calculation of voltage drops in short lines; power factor correction; calculation of short-circuit currents.
- Lectures (5h) and exercises (1h) of "Impianti Elettrici Navali" (Onboard electric power systems) for the Master's Degree Course in Naval Engineering of the University of Trieste in the AY 2016/17.
Topics covered: cable line technologies; management and control of onboard generators; power factor correction and harmonic filters onboard ships.
- Lecture (2h) on "Electromechanical Oscillations and Power System Stabilizers" in "Gestione e Controllo degli Impianti Elettrici" (Management and Control of Electrical Power Systems) course for the Master's Degree Course in Electrical Energy and Systems Engineering of the University of Trieste in AY 2016/17.
- Lectures (4h) and exercises (1h) of "Impianti Elettrici Navali" (Onboard electric power systems) for the Master's Degree Course in Naval Engineering of the University of Trieste in the AY 2015/16.
Topics covered: cable line technologies; management and control of onboard generators; power factor correction and harmonic filters onboard ships.

- Lecture (2h) on "Electromechanical Oscillations and Power System Stabilizers" in "Gestione e Controllo degli Impianti Elettrici" (Management and Control of Electrical Power Systems) course for the Master's Degree Course in Electrical Energy and Systems Engineering of the University of Trieste in AY 2015/16.

Other teaching activities

- Contract lecturer at the ITS "Accademia Nautica dell'Adriatico" based in Trieste from 13 March 2017 to 31 July 2017. Teaching activity for a total of 60 hours for the module "Managing electrical and electronic systems and on-board automatic controls", held as part of the post-graduate specialization course in "Higher Technician for the Mobility of People and Goods" (Program FSE/OR1664605001).
- Contract lecturer at the ITS "Accademia Nautica dell'Adriatico" based in Trieste from 30 March 2016 to 27 June 2016. Teaching activity for a total of 60 hours for the module "Managing electrical and electronic systems and on-board automatic controls", held as part of the post-graduate specialization course in "Higher Technician for the Mobility of People and Goods" (Program FSE/OR1588374001).

Master and Bachelor's thesis collaboration

- Participation as a correlator to the following degree theses:
 - Master's thesis in Electrical and Systems Engineering, AY 2016/2017, titled "Studio e simulazione delle interazioni tra la propulsione ibrida-elettrica e il sistema elettrico integrato di grandi navi military" (Study and simulation of the interactions between hybrid-electric propulsion and the integrated power system of large military ships);
 - Three-year thesis in Industrial Engineering at the University of Trieste, AY 2016/17, titled "Modellizzazione ad Alta Frequenza degli Avvolgimenti dei Trasformatori di Potenza Operanti nei Sistemi di Propulsione Navale" (High Frequency Modeling of Power Transformers Winding in Ship Propulsion Systems);
 - Bachelor's thesis in Industrial Engineering at the University of Trieste, AY 2015/16, titled "Studio per il dimensionamento di sistemi di distribuzione in bassa tensione in corrente continua per navi passeggeri" (Study for the sizing of low voltage direct current distribution systems for passenger ships);
 - Bachelor's thesis in Industrial Engineering at the University of Trieste, AY 2015/16, titled "Analisi dei transitori nei sistemi di propulsione navale" (Analysis of transients in naval propulsion systems);
 - Bachelor's thesis in Industrial Engineering at the University of Trieste, AY 2015/16, titled "Gestione e controllo del sistema elettrico integrato in unità navali con requisiti di posizionamento dinamico" (Management and control of the electrical integrated power system for ships with dynamic positioning requirements);
 - Master's thesis in Electrical Energy and Systems Engineering at the University of Trieste, AA 2015/16, titled "Early stage design di sistemi elettrici navali con distribuzione in corrente continua" (Early stage design of naval electrical systems with direct current distribution);
 - Three-year thesis in Industrial Engineering at the University of Trieste, AA 2014/15, titled "Studio di applicabilità di sistemi di distribuzione in bassa tensione in corrente continua per navi da crociera" (Applicability study of low voltage direct current distribution systems in cruise ships).

Other titles and awards

- Nomination as “cultore della materia” in the SSD ING-IND/33, for participation in the examination commissions of the teachings of:
 - “Gestione e Controllo degli Impianti Elettrici” (Management and Control of Electrical Power Systems) course for the Master's Degree Course in Electrical Energy and Systems Engineering of the University of Trieste.
 - “Impianti Elettrici” (Electric power systems) for the Three-year Degree Course in Industrial Engineering of the University of Trieste.
 - “Impianti Elettrici Navali” (Onboard electric power systems) for the Master's Degree Course in Naval Engineering of the University of Trieste.
- Finalist, among the first 7 at national level, of the call for the Seafuture Awards 2016. Award held in order to valorize experimental Master or PhD thesis developed in industries or laboratories of University Departments, Research Centers, and directed towards products or processes in the field of marine technologies which may possibly be used in different sectors (Dual Use) and/or have a low environmental impact.
- Qualification to the profession of Industrial Engineer, obtained in the II session of the year 2013 at the University of Trieste, with vote 205/240.
- IEEE member since 2013, Italian Section, enrolled in the following societies/groups:
 - IEEE Young Professionals;
 - IEEE Industry Applications Society;
 - IEEE Power & Energy Society;
 - IEEE Reliability Society;
 - IEEE Smart Grid Community.
- AEIT (Associazione Italiana di Elettrotecnica, Elettronica, Automatica, Informatica e Telecomunicazioni) member since 2012.
- ATENA (Associazione Italiana di Tecnica Navale) – Sezione FVG member since 2017.

Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 “Codice in materia di protezione dei dati personali”.