



Daniele Bosich is currently an Assistant Professor (RTDa) at the University of Trieste (Italy). He received the M.Sc. degree (with honors) in Electrical Engineering from the University of Trieste (Italy) in 2010, and the Ph.D. degree in Industrial Engineering (curriculum Energy Engineering) at the University of Padua (Italy) in 2014. He is involved as researcher in the ING-IND/33 sector (Energy Electrical Systems), lecturing in “Electrical Power Systems” (B.Sc. in Industrial Engineering), “Principles of Marine Electrical Power Systems” (B.Sc. in Naval Engineering), “Marine Electrical Power Systems” (M.Sc. in Naval Engineering), “Management and Control of Power Systems” (M.Sc. in Electrical Energy and Industrial Automation Engineering). From the 2019-2020 academic year, Dr. Bosich is the lecturer and responsible for the course in “Microgrids for Sustainable Energy” (M.Sc. in Electrical Energy and Industrial Automation Engineering). He has authored more than 40 scientific papers, mainly in the field of marine shipboard power systems, microgrid modeling, voltage control and nonlinear systems analysis.

Research activities

The activities of Dr. Bosich can be grouped into three main research lines of inquiry: a) control of microgrids and PEPDS (Power Electronics Power Distribution Systems); b) marine power systems; c) High Voltage Shore Connections (HVSC). In the first topic, Dr. Bosich has studied the control techniques for regulating frequency/voltage in islanded Medium Voltage AC power systems. Several studies have been focused on the Medium Voltage DC power systems, where Dr. Bosich has developed nonlinear Lyapunov analysis of a DC filtered system feeding a Constant Power Load (CPL), and nonlinear control for solving the CPL destabilizing effect. Regarding marine power systems, the research focus has been placed on the early-stage design of shipboard power systems and on hybrid-electric power systems for reducing ship consumption/emission. As regards the High Voltage Shore Connections (HVSC), Dr. Bosich has studied the interconnection among the shipboard power system and the terrestrial grid. Important studies have been conducted on electrical safety when the HVSC bonded ship behaves as a ground rod during phase-to-ground faults in the shore power system.

Research projects

Dr. Bosich is actually involved in the METRO project (Maritime Environment-friendly TranspOrt systems) - Interreg Italy Croatia, which is aimed at enhancing the environmental sustainability of maritime transportation. Particularly, hybrid propulsion systems, cold ironing infrastructures and optimized logistics will be analyzed in this project for reaching the eco-friendliness goal. From 2017 to 2018, Dr. Bosich has worked on the GEI project (namely Generazione Elettrica Innovativa, i.e. Innovative Electrical Generation), which has been financed by the Italian Minister of Transport (MIT). In such a project, he has given his contribution in studying possible Medium Voltage Direct Current redesign for the power system distribution of large ships. In the past, he has been a post-doctoral research fellow for several years (from 2014 to 2017) working both at the Technische Universiteit Eindhoven in the Netherlands (from 2014 to 2015, research project “EDisON DC Grid JIP, Technical and Economic Feasibility of an Onboard Low Voltage DC Microgrid for Ship Applications”) and at the University

	of Trieste in Italy (from 2015 to 2017, research project named “Advanced methods for study, calculation, management and control of electric energy shipboard applications”). During the first years at University of Trieste, Dr. Bosich has contributed to several research activities: a PNRM project in 2011 (“Study and simulation of the interactions between propulsion drives and the onboard Integrated Power System in large naval vessels”), a POR-FESR project in partnership with Fincantieri from 2010 to 2014 for the study of Medium Voltage DC distribution in large cruise vessels (“MVDC Large Ship”) and a MIUR project from 2016 to 2017 (“TRIM–Technology and Industrial Research for the Marine Mobility”).
Conferences, seminars as invited speaker, journals reviewing	Over the last few years, Dr. Bosich has presented his research achievements in several conferences, such as: IEEE Electric Ship Technologies Symposium (ESTS) in 2011/2013/2017, IEEE Energy Conversion Congress and Exposition (ECCE) in 2012, Annual Conference of the IEEE Industrial Electronics Society (IECON) in 2017/2018, Int. Conf. on Electrical Systems for Aircraft, Railway and Ship Propulsion (ESARS) in 2012/2015, IEEE ESARS-ITEC in 2016/2018, IEEE Power&Energy Society General Meeting (PES GM) in 2013/2018, International Conference on Ecological Vehicles and Renewable Energies (EVER) in 2013/2014/2017, IEEE International Electric Vehicle Conference (IEVC) in 2014, AEIT International Annual Conference (AEIT) in 2014/2015, IEEE Second International Conference on DC Microgrids (ICDCM) in 2017. In 2019 he has been lecturer at the Industrial/PhD Course on Maritime Microgrids 2019 (Aalborg University, Denmark), while in 2017 Dr. Bosich has taken part as an invited speaker in the seminar “DC microgrids of tomorrow: Constant Power Load stability issue, voltage control techniques and model parameters estimation” (Technische Universiteit Eindhoven, The Netherlands). Since 2016 he has been serving as a reviewer for international journals such as: IET Electric Power Applications, IEEE JESTPE, IEEE Trans. on Transportation Electrification, IEEE Power Engineering Letters, IEEE Access, IEEE Trans. on Power Systems, IEEE Trans. on Industrial Electronics, Int. Journal of Electrical Power&Energy Systems (Elsevier), MDPI Energies-Sustainability-Electronics.
Co-chairman activities, awards, memberships	Dr. Bosich has been the co-chairman of the Special Session “DC Shipboard Power Systems Future Electric Ships” at IEEE IECON 2017 (Oct. 29-Nov. 1, 2017, Beijing, China) and at IEEE IECON 2018 (Oct. 21-23, 2018, Washington, D.C, USA). At IECON 2017 he has also co-chaired the Special Session “DC Shipboard Power Systems and High Speed Electrical Machines”. Moreover, in 2018 Dr. Bosich has served as co-chairman for the Special Session “Power Electronics Power Distribution Systems for transportation electrification” at IEEE ESARS-ITEC in Nottingham, UK (Nov. 9-11 2018). Dr. Bosich has been the recipient of the following awards: “premio nazionale AEIT Volta-Badoni 2014” for the “Postdoctoral Research Work at the Technical University of Eindhoven” (2015); best session paper “Linearizing voltage control of MVDC power systems feeding constant power loads: Stability analysis under saturation” at IEEE PES GM (2013); “AEIT award” as the best student during the high-school last year (2003). Bosich is Member of AEIT (from 2004), IEEE (from 2007) and ATENA (from 2017).