Alessandro Soldati

Curriculum vitae

Personal information

- Spoken languages: Italian, English, Spanish

Research activity

- Tenure-track researcher [**Ricercatore in tenure track**, RTT], from 01/07/2024 to 30/06/2027 (ongoing), on the topic of **power electronics converters, energy management and condition monitoring** of power electronic devices and components (SSD IIND-08/A).
- Fixed-term researcher with teaching responsibilities [**Ricercatore a tempo determinato** L. 240/2010, art. 24, comma 3, lettera a)] at the University of Parma, from 01/04/2019 to 31/03/2024 (5 years), on the topic of **power electronics converters for static and dynamic energy conversion**, for applications including industrial, renewable energies, and automotive (SSD ING/IND-32).
- **Research assistant** [Assegnista di ricerca] at the University of Parma, from 01/11/2017 to 31/03/2019 (1 year and 5 months), on the topic of **power electronics converters**, targeting automotive applications in full-electric and hybrid vehicles (SSD ING/IND-32).
- **Research grant holder** [Borsista di ricerca] at the University of Parma, from 01/04/2024 to 30/06/2024, on the topic of **multilevel converters** for the electrification in the **marine transportation**.

Professional titles

- National Scientific qualification as associate professor in the Italian higher education system [**Abilitazione scientifica nazionale (ASN) alle funzioni di professore universitario di seconda fascia**], achieved on 17/12/2023, in the call 2021/2023 (Ministerial Decree n. 553/2021 and 589/2021) for the disciplinary field of 09/E2 – Electrical energy engineering. Validity: 12 years (expiring on 17/12/2035).
- Professional qualification of Information Technology Engineer, section A, [**Abilitazione all'esercizio della professione di Ingegnere** dell'Informazione], achieved in September 2014. Perpetual.

Ph.D. Activity

- **Ph.D. course in "Information Technology"** at the University of Parma, from 01/11/2014 to 31/10/2017 (3 years), on the topic of active gate drivers for wide band-gap devices (SSD ING/IND-32). The thesis, entitled "Active Gate Drivers and Wide Band-Gap Devices: Architectures, Applications and Limits", has been discussed on the 27/03/2018, and the Ph.D. title awarded the same day.
- **Visiting Ph.D. student at Aalborg University**, Aalborg (DK), from 02/01/2017 to 12/04/2017, on the topic of gate voltage patterns for the thermal control of power switches, with the aim of improving reliability. That activity made possible the achievement of the "**Doctor Europaeus**" certification, as defined by the European University Association.

Teaching activities

1. **Teaching responsibility** (from 01/07/2024, ongoing) for the courses of the University of Parma: "Applicazioni industriali elettriche" (B.Sc. in Mechanical Engineering, 6 CFU), "Applicazioni industriali elettriche" (B.Sc. in Informatics Technologies, 6 CFU), "Advanced Elements of Electronic Power systems" (M.Sc. in Electronic Engineering, 6 CFU).

2. **Erasmus+ STA professor at the University of Seville**, Seville (ES), from 22/04/2024 to 03/05/2024, on the topics of numerical simulation of power converters (B.Sc.), modeling of batteries for their use in power electronics applications (Ph.D.), processing of infrared thermal image for contact-less temperature measurement (Ph.D.). Reference: Prof. Sergio Vázquez-Pérez.

3. **Adjunct Professor** [Professore a contratto] at the University of Parma, for the course "Applicazioni industriali elettriche" (B.Sc. in Mechanical Engineering, 6 CFU), from 19/04/2024 to 30/09/2024 (ongoing).

4. **Teaching responsibility** (from 01/04/2019 to 31/03/2024) for the courses of the University of Parma: "Applicazioni industriali elettriche" (B.Sc. in Mechanical Engineering, 6 CFU), "Applicazioni industriali elettriche" (B.Sc. in Informatics Technologies, 6 CFU), "Advanced Elements of Electronic Power systems" (M.Sc. in Electronic Engineering, 6 CFU).

5. **Adjunct Professor** [Professore a contratto] at the University of Parma, for the course "Embedded systems design for industrial electronics" and laboratory (M.Sc. in Electronic Engineering, 6+3 CFU), from 21/03/2018 to 30/09/2018.

6. Post-graduate tutor at the University of Parma (from 01/11/2015 to 31/10/2017), supporting teaching activities in Electric engineering, Renewable sources energy conversion, Analog electronics.

7. Undergraduate tutor at the University of Parma (from 01/11/2012 to 30/06/2013), supporting teaching activities in Analog electronics.

Research projects

For all these projects I have fulfilled as **principal investigator of the whole project or of the local unit**, with both the roles of coordinating the research activities during the project and preparing the preliminary work (proposal submission for publicly funded projects, negotiation and contract preparation for privately funded projects). Many of the projects carry the end date of the 31st of March 2024, because in that date my contract as researcher expired and I was not entitled to have the role of principal investigator anymore; however, the projects that were not terminated at that time are going on. **The total amount of funds managed in the last five years sums up to more than € 300.000**.

❖ Competitive research (public funds)

1. Coordinator of the project "**Energy Efficient Embedded Electronics for PhotoVoltaics** (E4PV)" funded by NRRP internal call of project ECOSISTER, (from 01/12/2024 to 30/10/2025, ongoing). The project aims at developing distributed optimizers for PV panels, based on GaN technology and with temperature and aging monitoring features. Beyond the University of Parma, also the University of Modena and Reggio Emilia and CNR-IMM of Catania are part of the research team. The overall project budget is € 353.529, out of which € 111.010 pertain to UNIPR.

2. Principal investigator of the project "PSEudo-COgeneration for **Battery heating on electric and hybrid Boats** (PSECOB2)", funded by "OISAIR Proof of Concept Call" inside the international research Interreg ADRION program (27/11/2019 - 30/09/2020). Total budget: € 18.500. That project allowed the development of the "Heater-in-Converter (HiC)" technique, together with the company 4E Consulting s.r.l., Ferrara (FE); it resulted in one journal paper (https://doi.org/10.3390/en14041022), one patent (n. 102021000003269) and one full-time scholarship for a post-graduate student.

3. Local leader for University of Parma of Work Package 1 of Spoke 3 of the project PNRR - I. 1.5 M4C2 - Avviso MUR 3277/2021 "Ecosystem for Sustainable Transition in Emilia-Romagna" (ECOSISTER), codice ECS00000033, funded by the European Union under the NextGenerationEU program (01/10/2022 - 31/03/2024). Total funding: € 22.000. The full duration of the project is of three years and my tasks cover the topics of **optimization of energy**

conversion for industrial applications by means of innovative control and management **of drives employing electric machines with reduced content of permanent magnets**. So far, this project has generated one journal and one conference paper, and it is funding an 18-month post-doc research assistant position.

4. Local leader for the University of Parma unit of the project "Highly-iNtegrated **all-Electric Propulsion-charging system on zero-emissions TUgboats** for NExt-generation harbours (NEPTUNE)" (code 2022RFS73J) by Italian Ministry of Research PRIN 2022 program (29/09/2023 - 31/03/2024). Total funding: € 69.000. The duration of the project is of two years and foresees a collaboration with both the University of Cagliari (Prof. Alessandro Serpi) and the University of Padua (Prof. Fabio Tinazzi). My activities in the project pertain to the research of innovative powertrain architectures for electric boats, namely, electric tugboats. **Modular architectures** are considered, facing the problems of a complex control structure, parallelization of different units and the use of **distributed energy storage inside the converter**.

5. Principal investigator of the project "REduced-BAllast **distributed power converters** for Safety, Efficiency and power Density (REBASED)", funded by University of Parma and Fondazione Cariparma on a competitive, yet local, basis (01/10/2021 - 30/09/2022). Total funding: € 15.000, duration: one year. The research activity focused on an innovative way to put **converters in parallel, to improve modularity of complex systems and current capability**, without penalty in terms of design time and efficiency. The project yielded a journal paper and a post-graduate scholarship.

6. Principal investigator of the project "Driver Enhancement by Command preprocessing for Energy saving, Low Emission and high comfort RATE (DECELERATE)", funded by University of Parma and Fondazione Cariparma on a competitive, yet local, basis (01/05/2023 - 31/10/2024). Total funding: € 9.000, duration: 18 months. The research activity focuses on the acquisition of energy consumption and commands data on real vehicles and the subsequent optimal strategy to preprocess the commands, to **lower the energy consumption of the vehicles**.

7. Principal investigator of the project for the technological advancement of the patent "**Sistema per riscaldare una batteria o un pacco batterie, in particolare per impiego in veicoli elettrici**" funded by the University of Parma program "SPEED PARMA PoC - Strengthen Parma Patents Effectiveness and further Expedite their Development through PoC projects" as funded by PNRR, Missione 1 "Digitalizzazione, innovazione competitività, cultura e turismo" - Componente 2 "Digitalizzazione, innovazione e competitività nel sistema produttivo" – Investimento 6 "Sistema della proprietà industriale" by European Union NextGenerationEU funds (01/11/2023 - 31/03/2024). Total funding: € 15.500, duration: 18 months. Funding awarded on a competitive yet local basis.

❖ Industrial research (private funds)

1. "Architetture circuitali e metodologie di **misura della temperatura di giunzione per convertitori ad alta densità di potenza** per caricatori veicolari (MITECAVE)", for Metasystem s.p.a. Total budget: € 190.000, duration: 18 months, starting from 24/10/2024 (ongoing).

2. "Sviluppo e realizzazione di un **prototipo di convertitore DAB**", for NEPSY s.r.l. (07/09/2020 - 06/05/2021). Total funding: € 11.000, duration: eight months. The activity was about the design of a DAB DC/DC converter for **battery conditioning** in telecommunication applications; it led to a conference publication and to a full-time scholarship for a post-graduate student.

3. "Self-commissioning per motori a induzione (SECIM)", for Startec Automazioni s.r.l. (08/10/2021 - 07/10/2022). Total funding: € 24.000, duration: one year. The research and development activity targeted the development of specific hardware and algorithms for the **self-commissioning of the control of an induction-machine drive**, for fast door applications.

4. "Sviluppo di Inverter per il controllo di motori elettrici per generatori in ambito marino" (JETDRIVE), for eDriveLAB s.r.l., funded by the company through the Smart & Start Italia - PON Imprese e competitività 2014-2020 program (22/04/2022 - 21/12/2022). Total funding: € 15.000; duration: eight months. This project deals with the development of a very **high-power-dense drive to be used for the electric propulsion of boats**. It funded a scholarship for a post-graduate student.

Scientific collaborations

The cooperation activities described here are supported by papers (journal or conference) co-authored with other members of the research groups.

1. Participation to the research group of the project EU-FP7 ALEA (**Accelerated Life tests for Electric drives in Aircrafts**) [https://cordis.europa.eu/project/id/641496], with international cooperation with University of Nottingham, UK and University of Nottingham-Ningbo, CN (01/11/2015 - 31/07/2016). In this group I oversaw developing a custom power converter, with the functionality of controlling the output waveforms by means of an active gate driver. Reference: Proff. Christopher Gerada, Michael Galea.

2. Participation to the research group with University of Bologna and ETH Zurich (CH) (01/01/2017 - 31/12/2018), on the topic of **partial discharges in inverter-operated electric machines**. In this group I developed the experimental inverter to stress the windings with sharp voltage rate of change. Reference: Prof. Andrea Cavallini.

3. Participation to the research group CORPE (**Centre of Reliable Power Electronics**) [https://www.corpe.et.aau.dk/], at Aalborg University, DK, during the visiting Ph.D. student period (02/01/2017 - 12/04/2017). During this collaboration, I developed several gate modulation techniques to control the efficiency of the power switch and, subsequently, its temperature. Reference: Proff. Francesco Iannuzzo, Frede Blaabjerg.

4. Participation to the national research group with University of Padova (01/01/2018 - 31/12/2018). My activity was the development of the numerical optimization algorithm for the design of **innovative electric motors**. Reference: Prof. Nicola Bianchi.

5. Cooperation with the Faculty of Engineering and Technology of Palestine Technical University-Kadoorie (PTUK) (13/07/2018 - 29/02/2020). During this activity I started developing the algorithm for the **parallelization of power converters** with reduced output filters and the related synchronization technique. Reference: Prof. Basim A. Alsayid.

6. Participation to the research group of the project EVC1000 (Horizon 2020, GA 824250), with the University of Surrey, UK (01/01/2020 - 30/06/2020). Here I developed the **energy model of the vehicle** to support the MPC energy-aware dynamic control. Reference: Prof. Aldo Sorniotti.

7. Participation to the national research group with the University di Cagliari (01/01/2021 - 31/10/2021), for the development of a **DAB converter for telecommunication applications**. During this activity, I designed and implemented the control of the converter, while supervising the schematic and layout authoring. Reference: Proff. Alessandro Serpi, Alfonso Damiano.

8. Participation to the research group with National University of Singapore and University "La Sapienza" of Rome (01/01/2021 - 13/10/2022). In this group I made part of a review about power **converters for the efficient power supply of datacenters**. Reference: Prof. Seeram Ramakrishna.

Patents

1. Italian patent N. 102017000122136 "**METODO DI PILOTAGGIO DI UN MEZZO PONTE ATTIVO** COMPRENDENTE ALMENO DUE TRANSISTORI, CIRCUITO DI PILOTAGGIO DI CIASCUN TRANSISTORE DEL MEZZO PONTE E RELATIVO SCHEMA DI MODULAZIONE PERIODICO DI SEGNALI DI COMANDO", application 26/10/2017, granted 28/01/2020, owner EDRIVELAB S.r.l.,

as unique inventor. This patent protects a specific gate-driver architecture and the modulation scheme for the gate signal to control actively the temperature of the power device.

2. Italian patent N. 102017000139860, "**RISCALDATORE OHMICO** E METODO DI FUNZIONAMENTO", application 04/12/2017, granted 11/02/2020, owner CFT S.P.A., as co-inventor. This patent describes the operating principles and control technique of an ohmic heater device; pending PCT application (WO2019111143A1), for EU and US.

3. International patent N. 102017000139856/EP3721677B1/US11510287B2, "**OHMIC HEATER**", application 04/12/2017, granted 10/03/2020 (Italy), 06/10/2021 (EU), 22/11/2022 (US), owner CFT S.P.A., as co-inventor. This patent describes all the control algorithms that are needed to operate the power converter inside the heater and is the basis for the protection of one product line of the owning company.

4. Italian patent N. 102020000028487, "**TRASDUTTORE ASSOLUTO DI POSIZIONE** E METODO DI MISURA DELLA POSIZIONE", application 26/11/2020, granted 07/12/2022, owner EDRIVELAB S.r.l., as unique inventor. This patent describes a position transducer giving absolute angular information but with a reduced number of tracks, exploiting the nonius principle. Pending PCT application (WO2022112856A1).

5. Italian patent N. 102021000003269, "**SISTEMA PER RISCALDARE UNA BATTERIA** O UN PACCO BATTERIE, IN PARTICOLARE PER IMPIEGO IN VEICOLI ELETTRICI", application il 12/02/2021, granted 22/02/2023, owner University of Parma, as co-inventor. This is the result of the international Interreg-ADRION "PSECOB2" project, for which I have been the Principal Investigator. That patent describes a system that can heat batteries in cold-start conditions by means of an appropriately designed and operated power converter.

6. Italian patent N. 102020000029324, "**METODO E CIRCUITO DI PILOTAGGIO DI UN MEZZO PONTE**", application 01/12/2020, granted 16/12/2022, owner EDRIVELAB S.r.l., as unique inventor. This patent exploits the Controlled Shoot-Through technique to achieve an estimation of the internal temperature of the power device. Pending PCT application (WO2022118089A1).

Speaker at international conferences

For all the conferences mentioned below, I am co-author of the presented papers; all these conferences have international visibility and audience; most of them are sponsored or co-sponsored by relevant IEEE societies, such as PELS, IAS or IES.

1. "41st Annual Conference of the IEEE Industrial Electronics Society" - IECON 2015, Yokohama, JP (09/11/2015 - 12/11/2015). I presented three papers: A. Soldati et al., "A voltage controlled power resistor circuit for active gate driving of wide-bandgap power devices", A. Soldati et al., "Comparing control topologies for wide-bandgap power-device drivers: A simulation study", A. Soldati et al., "Design of a control unit for advanced gate drivers featuring adaptive dead-time and diagnostics".

2. "PCIM Europe Conference 2016" in Nuremberg, DE (10/05/2016 - 12/05/2016). The presented paper is A. Soldati et al., "Stability and Performance Analysis of a Voltage Controlled Resistor Circuit for Wide Band-gap Device Gate Drivers".

3. "42nd Annual Conference of the IEEE Industrial Society" - IECON 2016, in Firenze, IT (24/10/2016 - 27/10/2016). Presented paper: A. Soldati et al., "Implementing discrete PID controllers: Benchmarking manual vs. Automatic generation of embedded code".

4. "2017 IEEE Energy Conversion Congress and Exposition (ECCE)", in Cincinnati, USA (01/10/2017 - 05/10/2017). I presented two papers: A. Soldati et al., "Thermal stress mitigation by Active Thermal Control: Architectures, models and specific hardware", G. Pietrini et al. "Wavelet-based prognostic-oriented temperature sensing with sigma-delta ADCs in power applications".

5. "2020 IEEE Energy Conversion Congress and Exposition (ECCE)", in Detroit, MI, USA (11/10/2020 - 15/10/2020). Remotely presented paper (due to COVID): A. Soldati et al., "In-circuit Shoot-

through-based Characterization of SiC MOSFET TSEP Curves for Junction Temperature Estimation".

6. "25th European Conference on Power Electronics and Applications" (EPE'23 ECCE Europe), Aalborg, Denmark (04/09/2023 - 08/09/2023). I presented two papers: A. Soldati et al., "Investigation on the Thermal Stability of Silicon-carbide MOSFETs operating in Controlled Shoot-through mode", A. Musetti et al., "Reliability Study on Front-end Capacitors in Boost PFC Architectures".

7. "2025 IEEE International Workshop on Metrology for Automotive" (MetroAutomotive 2025), Parma, Italy (25/06/2025 – 27/06/2025). I presented one paper: A. Soldati et al., "Robust Multidimensional Temperature Sensing for Noisy Environments".

Technology transfer

- **Co-founder of the spin-off eDriveLAB s.r.l.** (27/03/2017), **operating in the field of vehicle electrification**. The company designs, produces and sells products and services related to the electrification of road, off-road, agricultural, construction and marine vehicles. The company, initially participated by the University of Parma, is now partly owned by Sealence s.p.a. s.b., and now operates mostly in the electrification of boats. It still maintains links with the University of Parma, such as cofunding a Ph.D. scholarship (for which I was the scientific responsible person) through the PNRR program following MUR decree DM 352/2022, about high-power converters for marine electric boats.

Other activities

- **Reviewer for various journals and conferences** (from 01/11/2015 up to now), including, but not limited to: IEEE Journal of Emerging and Selected Topics in Power Electronics (Q1, IF: 5.462), IEEE Access (Q1, IF: 3.476), IEEE Transactions on Power Electronics (Q1, IF: 5.967), IEEE Transactions on Industrial Electronics (Q1, IF: 8.162), IEEE Transactions on Transportation Electrification (Q1, IF: 6.519).
- **Official member of the board of the Ph.D. course** in Information Technology of the University of Parma and member of the evaluation committee, from 01/11/2021 to 31/10/2022.
- **Supervisor of four Ph.D. students** (from 01/11/2019 up to now), two graduated and other two in progress. Research topics: Gate driver modulations for thermal control; Smart drives for industrial applications; Control of machines with low permanent-magnet content; High-power-density drives for marine transportation applications.
- **Thesis supervisor or co-supervisor** [relatore o correlatore] **of more than 20 B.Sc. or M.Sc. candidates**, with topics ranging from control of drives to model-based design of vehicles, from converter design to electric vehicles control.
- **Recipient of two Best Presentation Recognition at IECON 2015** in Yokohama, JP (November 2015) for the presentation of the two papers "Design of a control unit for advanced gate drivers featuring adaptive dead-time and diagnostics" and "A voltage controlled power resistor circuit for active gate driving of wide-bandgap power devices".
- **Invited speaker** at the conference "Applications of Multi-Megawatt Power-Electronic Systems (AMPS-2020)" (from 01/12/2020 to 05/12/2020), organized by the Power Electronics and Hydro-Electric Machines Laboratory of Water Resources Development and Management Department at Indian Institute of Technology (IIT) Roorkee; remote participation due to COVID. Topics: active thermal control for power converters, parallel operation of power converters, multilevel converters. Reference: Prof. Thanga Raj Chelliah.

Bibliometrics

- ORCID ID: 0000-0001-7662-9815

- Scopus ID: 56704752500
- Number of Scopus-indexed products: 47
- 10-year number of journal articles: 19
- 10-year number of citations: 364
- 10-year H-index: 9

Full list of publications

[1] Hussain, M.A., Soldati, A., Sozzi, G., "Impact of constant and pulsed active balancing current patterns on the aging of lithium-ion batteries", Microelectronics Reliability, Volume 171, 2025, 115814, ISSN 0026-2714, doi: 10.1016/j.microrel.2025.115814.

[2] Musetti, A., Soldati, A., Fernandez, P., Arias Perez de Azpeitia, M., "From Space to Industrial Applications: the Latching Current Limiter as Active Current Protection". The 26th European Conference on Power Electronics and Applications, GDR SEEDS France & EPE Association, Mar 2025, Paris, France. Doi: 10.34746/epe2025-0257.

[3] Panciroli, E., Musetti A. and Soldati, A., "Revisiting On-State Resistance as TSEP for Discrete SiC MOSFETs: Steps Towards the In-Circuit Approach," in IEEE Open Journal of Power Electronics, vol. 6, pp. 681-692, 2025, doi: 10.1109/OJPEL.2025.3560768.

[4] Dalboni M. and Soldati A., "Distributed Controller for the Parallel Operation of Power Converters With Small Output Filters," in IEEE Open Journal of Power Electronics, vol. 5, pp. 1297-1308, 2024, doi: 10.1109/OJPEL.2024.3437637.

[5] Dalboni, M., Soldati, A., "On the Synchronization of Parallel Power Converters via Emulation of Linear Mechanical Oscillators", 2024, IEEE/ASME Transactions on Mechatronics, 29 (2), pp. 1088-1099. http://doi.org/10.1109/TMECH.2023.3292534

[6] Dalboni, M., Martins, G., Tavernini, D., Montanaro, U., Soldati, A., Concari, C., Dhaens, M., Sorniotti, A., "On the Energy Efficiency Potential of Multi-Actuated Electric Vehicles", 2024, IEEE Transactions on Vehicular Technology, pp. 1-16. http://doi.org/10.1109/TVT.2024.3378154

[7] Moscatelli, E., Soldati, A., Dalboni, M., Concari, C., "Feasibility Analysis of a More Sustainable Urban E-Vehicle: Combining Compressed Air Storage with Supercapacitor", 2023, 2023 IEEE Vehicle Power and Propulsion Conference, VPPC 2023 - Proceedings. http://doi.org/10.1109/VPPC60535.2023.10403194

[8] Moscatelli, E., Soldati, A., Dalboni, M., Concari, C., "Model-Based Optimization of a Series-Hybrid High-Performance Vehicle Powertrain with Hybrid Energy Storage System", 2023, 2023 IEEE Vehicle Power and Propulsion Conference, VPPC 2023 - Proceedings. http://doi.org/10.1109/VPPC60535.2023.10403264

[9] Musetti, A., Panciroli, E., Lafmejani, H.S., Soldati, A., "A High-efficiency Resonant Driver and Soft Decoder Interface with Fast-dynamics PLL-Type Angle and Speed Tracking Observer for Resolvers", 2023, 2023 IEEE Energy Conversion Congress and Exposition, ECCE 2023, pp. 5087-5092. http://doi.org/10.1109/ECCE53617.2023.10362295

[10] Soldati, A., Undre, V.S., Menozzi, R., "Investigation on the Thermal Stability of Silicon-carbide MOSFETs operating in Controlled Shoot-through mode", 2023, 2023 25th European Conference on Power Electronics and Applications, EPE 2023 ECCE Europe. http://doi.org/10.23919/EPE23ECCEEurope58414.2023.10264232

[11] Musetti, A., Lafmejani, H.S., Soldati, A., "Reliability Study on Front-end Capacitors in Boost PFC Architectures", 2023, 2023 25th European Conference on Power Electronics and Applications, EPE 2023 ECCE Europe. http://doi.org/10.23919/EPE23ECCEEurope58414.2023.10264474

[12] Lodi Rizzini, G., Bassani, M., Concari, C., Soldati, A., "Exploitation of an Industrial Low-Bandwidth Communication Line for Modulation-Level Synchronization of Voltage Source Converters", 2023, Applied Sciences (Switzerland), 13 (1), art. no. 230. http://doi.org/10.3390/app13010230

[13] Dalboni, M., Soldati, A., "Absolute Two-Tracked Optical Rotary Encoders Based on Vernier Method", 2023, IEEE Transactions on Instrumentation and Measurement, 72, art. no. 9501412. http://doi.org/10.1109/TIM.2022.3225052

[14] Musetti, A., Sadegh Lafmejani, H., Soldati, A., "Control and Design of a Boost-Based Electrolytic Capacitor-Less Single-Phase-Input Drive", 2022, Energies, 15 (16), art. no. 5929. http://doi.org/10.3390/en15165929

[15] Soldati, A., Dalboni, M., Menozzi, R., Concari, C., "In-place characterization of on-state voltage for sic mosfets: Controlled shoot-through vs. film heater", 2021, Electronics (Switzerland), 10 (22), art. no. 2745. http://doi.org/10.3390/electronics10222745

[16] Manganelli, M., Soldati, A., Martirano, L., Ramakrishna, S., "Strategies for improving the sustainability of data centers via energy mix, energy conservation, and circular energy", 2021, Sustainability (Switzerland), 13 (11), art. no. 6114. http://doi.org/10.3390/su13116114

[17] Dalboni, M., Tavernini, D., Montanaro, U., Soldati, A., Concari, C., Dhaens, M., Sorniotti, A., "Nonlinear Model Predictive Control for Integrated Energy-Efficient Torque-Vectoring and Anti-Roll Moment Distribution", 2021, IEEE/ASME Transactions on Mechatronics, 26 (3), art. no. 9405483, pp. 1212-1224. http://doi.org/10.1109/TMECH.2021.3073476

[18] Fusai, D., Soldati, A., Lusignani, D., Santarelli, P., Patroncini, P., "Model-based design of a pseudo-cogenerative heating system for e-boat battery cold start", 2021, Energies, 14 (4), art. no. 1022. http://doi.org/10.3390/en14041022

[19] Dalboni, M., Manganelli, M., Soldati, A., "Assessing the Economic Feasibility of PV-BESS Systems in Connection with Pandemic-induced Loads", 2021, 21st IEEE International Conference on Environment and Electrical Engineering and 2021 5th IEEE Industrial and Commercial Power System Europe, EEEIC / I and CPS Europe 2021 - Proceedings. http://doi.org/10.1109/EEEIC/ICPSEurope51590.2021.9584730

[20] Porru, M., Serpi, A., Soldati, A., Tassi, L., Damiano, A., "Design, Control and Prototyping of a Bidirectional Dual Active Bridge Converter for integrating a Sodium Metal Halide Battery into a Telecom Station", 2021, 2021 IEEE Energy Conversion Congress and Exposition, ECCE 2021 - Proceedings, pp. 160-167. http://doi.org/10.1109/ECCE47101.2021.9595546

[21] Mangoni, D., Soldati, A., "Model-based simulation of dynamic behaviour of electric powertrains and their limitation induced by battery current saturation", 2021, International Journal of Vehicle Performance, 7 (1-2), pp. 156-169. http://doi.org/10.1504/IJVP.2021.113426

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