

PERSONAL INFORMATION

Giacomo SCELBA



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Google Scholars: <https://scholar.google.com/citations?user=pjYTivQAAAAJ&hl=en>

Web of Science: <https://www.webofscience.com/wos/author/record/AAH-8863-2019>

| **Date of birth** 01/01/1976 | **Nationality** Italian

Associate professor of Power Electronic Converters, Electrical Machines and Drives

WORK EXPERIENCE

Nov. 2019 - Present

Associate Professor of Power Electronic Converters, Electrical Machines and Drives

Univ. of Catania – Department of Electrical, Electronics and Computer Engineering.

Nov. 2010 - Oct. 2019

Assistant Professor of Power Electronic Converters, Electrical Machines and Drives

Univ. of Catania – Department of Electrical, Electronics and Computer Engineering (Italy).

May 2006 - Oct. 2010

Research Associate of Power Electronic Converters, Electrical Machines and Drives

Univ. of Catania – Department of Electrical, Electronics and Computer Engineering (Italy).

EDUCATION AND TRAINING

March. 2006

Ph.D in Electrical Engineering

EQF Level 8

Univ. of Catania – Department of Electrical, Electronics and Computer Engineering (Italy).

July. 2002

M.S. in Electrical Engineering

EQF Level 7

Univ. of Catania – Department of Electrical, Electronics and Computer Engineering (Italy).

RESEARCH

Prof. Scelba's main areas of research:

1. Control Algorithms for Electric Drives

- Implementation of sensorless controls for different types of electric drives;
- Development of fault tolerant, single/multi-motor drives;
- Development of loss-minimization algorithms for electric drives.

2. Power Electronic Converters for electric mobility

- Development of isolated bidirectional DC/DC power converters for on-board battery chargers;
- Development of power converters for electric traction and grid connection;
- Characterization and Modeling of WBG-based power converters.

TEACHING

Prof. Scelba has taught the following courses:

2023

“Design of discrete power converters”, Master in Power Electronics Devices and Technologies.

2019-present

“Power Electronics”, 9 ECTS, for the Electrical Engineering Master Degree Course.

2020-present

“Renewable Generation and Energy Conversion”, 3 ECTS, for the Electrical Engineering Master Degree Course.

2013-present

“Electrical Machines and Power Systems”, 9 ECTS, for the Industrial Engineering Bachelor Degree Course.

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
Replace with name of language certificate. Enter level if known.					

ADDITIONAL INFORMATION

2008 - 2017: Co-founder of the Academic Spin-off “ Green Energy Innovation s.r.l.”, in the field of Electrical and electronics technologies for the energy conversion and industrial automation.

Patents

Dino Costanzo, Giacomo Scelba, Giuseppe Scarcella (Inventors); STMicroelectronics (Owner), “sensorless rotor angle detection circuit and method for a permanent magnet synchronous machine”, United States Patent Number 9325263. Concession date: 26/04/2016.

Honours and awards

- 2021** Outstanding Reviewer Award from IEEE Power Electronics Society.
- 2020** Best paper award for the paper: "Sensorless Rotor and Stator Temperature Estimation in Induction Motor Drives" presented at the 13th IEEE Conference Elektro 2020.
- 2018** Best paper award for the paper: "Real Time Emulation of a Three Phase Vienna Rectifier with Unity Power Factor Operation" presented at the 12th IEEE Conference Elektro 2018.
- 2017** IEEE IES Electrical Machines Committee Third Prize Paper Award for the paper “On-line Stator Winding Resistance and Rotor Permanent Magnet Flux Estimation for Dual-Three Phase PMSM drives” presented at the IEEE conference IECON 2017.
- 2016** IEEE IAS Industrial Drives Committee Third Prize Paper Award for the paper "Hall-Effect Sensor Fault Detection, Identification and Compensation in Brushless DC Drives", presented at IEEE ECCE 2015.
- 2016** Best paper award for the paper: "Hardware in the Loop for Failure Analysis in AC Motor Drives" presented at the 11th IEEE Conference Elektro 2016.
- 2014** IEEE IAS Industrial Drives Committee First Prize Paper Award for the paper “Fault Tolerant Rotor Position and Velocity Estimation Using Hall-Effect Sensors for Low Cost Vector Control Drives” presented at IEEE ECCE 2013.

- Reviewer** *Ad hoc reviewer for:*
- IEEE Trans. on Industry Applications.
 - IEEE Trans. on Power Electronics.
 - IEEE Trans. on Industrial Electronics.
 - IEEE Journal of Emerging and Selected Topics in Power Electronics.
 - IEEE Trans. on Energy Conversion.
 - IEEE Trans. on Transportation Electrification.
 - IEEE Trans. of the Institute of Measurement and Control.
- He is also reviewer for numerous conferences: EPE, ISIE, IEMDC, ECCE, ICEM, ELEKTRO, SLED, IECON.
- Editorial Board**
- Associate Editor for the international Journals IEEE Transactions on Industry Applications e IEEE Industry Applications Magazine, from IEEE IAS Electric Drives Committee.
 - Member of the editorial board of the international journal "Journal Communications - Scientific Letters of the University of Žilina".
- Memberships**
- Senior Member of the IEEE.
 - Secretary of the TC 3: Electrical Machines, Drives and Automation Committee of the IEEE Power Electronics Society.
 - Member of the International Scientific Committee of the Conference on Power Electronics and Applications (and Exhibition), EPE '23 ECCE Europe.
 - Member of the Industrial Drives Committee of the IEEE Industry Applications Society.
 - Member of the Electric Machines Committee of the IEEE Industrial Electronics Society
 - Member of the Industrial Power Converters Committee of the IEEE Industry Applications Society.
 - Member of the National Association of Researchers in Electrical Converters, Machines and Drives, CMAEL.
- Institutional responsibilities**
- 2014-present**
Member of the Ph.D board "Ingegneria dei Sistemi Energetici Informatici e delle Telecomunicazioni", Univ. of Catania.
- 2013-present**
Member of the Industrial Engineering Bachelors courses board, Univ. of Catania.
- 2019-present**
Member of the Electrical Engineering Master courses board, Univ. of Catania.
- Conferences organizing committee**
- Track Chair and Topic Chair for the International Conference ECCE in the years 2013-2023.
 - Session Chair for the International Conference IEEE EPE 2019 ECCE Europe.
 - Vice Chair for ECCE 2022.
 - Member of the Track Program Committee (Electrical Machines and Drives) of the conference IEEE ISIE 2023.
 - Member of the Local Organizing Committee of the conference IEEE EPE 2019 ECCE Europe.
 - Member of the Technical Program Committee of IEEE Conference SLED 2019.
 - Member of the Local Organizing Committee of IEEE Conference SLED 2017.

Main oral presentations
International Conferences

- IEMDC 2005, San Antonio, Texas (USA). Titolo dell'articolo: "Saturation Modulation in Voltage Zero Sequence-Based Encoderless Techniques - Part II: Implementation Issues", autori: A. Consoli; G. Scarcella; G. Scelba; S. Royak; M. M. Harbaugh. dal 15-05-2005 al 18-05-2005.
- SPEEDAM 2006 Taormina, Italia. Titolo dell'articolo: "Efficiency optimization techniques via constant optimal slip control of induction motor drives", autori: M. Cacciato; A. Consoli; G. Scarcella; G. Scelba; A. Testa. dal 23-05-2006 al 26-05-2006.
- IEMDC 2007 Antalya (Turchia). Titolo dell'articolo: "Zero-sequence Flux and Voltage of Induction Motors Supplied with Low-and High-frequency Currents", autori: Giovanni Bottiglieri; Alfio Consoli; Giuseppe Scarcella; Giacomo Scelba. dal 03-05-2007 al 05-05-2007.
- ACEMP 2007 Bodrum (Turchia), 10-12 Settembre 2007. Titolo dell'articolo: "A novel space-vector modulation technique for common mode emissions reduction", autori: M. Cacciato; A. Consoli; G. Scarcella; G. Scelba; A. Testa. dal 10-09-2007 al 12-09-2007.
- SPEEDAM 2008 Ischia, 11-13 Giugno 2008. Titolo dell'articolo: "Comparison of low-cost-implementation sensorless schemes in vector controlled adjustable speed drives", autori: M. Cacciato; G. Scarcella; G. Scelba; S. M. Bille; D. Costanzo; A. Cucuccio. dal 11-06-2008 al 13-06-2008.
- Il Workshop on Sensorless Controls 2008 Varsavia (Polonia). Titolo dell'intervento: "Sensorless Control of Salient Synchronous Motors", autori: Giacomo Scelba. dal 29-08-2008 al 29-08-2008.
- partecipazione come relatore a IAS 2008 Edmonton (Canada). Titolo dell'articolo: "Steady-State and Transient Analysis of Maximum Torque per Ampere Control for IPMSMs", autori: A. Consoli; G. Scarcella; G. Scelba; S. Sindoni; A. Testa. dal 05-10-2008 al 09-10-2008.
- III Workshop on Sensorless Controls 2009 Barcellona (Spagna). Titolo dell'articolo: "Implementation Issues for Industrial Applications of Sensorless Controlled Synchronous Motor Drives", autori: A. Consoli, G. Scelba. dal 11-09-2009 al 11-09-2009.
- partecipazione come relatore a ECCE 2009 San Jose, California (USA). Titolo dell'articolo: "Optimization of transient operations in sensorless control techniques based on carrier signal injection", autori: A. Consoli; A. Gaeta; G. Scarcella; G. Scelba; A. Testa. dal 20-09-2009 al 24-09-2009.
- EPE PEMC 2010 Ohrid (Macedonia). Titolo dell'articolo: "Range extended efficiency optimization technique for scalar IPMSM drives", autori: Alfio Consoli; Giuseppe Scarcella; Giacomo Scelba; Mario Cacciato dal 06-09-2010 al 08-09-2010.
- IEMDC 2011 Niagara Falls (Canada). Titolo dell'articolo: "New scalar control for full speed operating range IM drives", autori: A. Consoli; G. Scelba; G. Scarcella; M. Cacciato. dal 15-05-2011 al 18-05-2011.
- ECCE 2011 Phoenix (Arizona, USA). Titolo dell'articolo: "Modeling and control of three-phase PMSMs under open-phase fault", autori: Alberto Gaeta; Giacomo Scelba; Alfio Consoli. dal 17-09-2011 al 22-09-2011.
- partecipazione come relatore a ECCE 2012 Raleigh (North Carolina, USA). Titolo dell'articolo: "Efficient energy extraction of Wind Power Networks in urban environment", autori: Alfio Consoli; Giuseppe Scarcella; Giacomo Scelba. dal 15-09-2012 al 20-09-2012.
- ECCE 2013 Denver (Colorado, USA). Titolo dell'articolo: "Fault tolerant AC multi-drive system", autori: M. Pulvirenti; G. Scarcella; G. Scelba; M. Cacciato; A. Testa. dal 15-09-2013 al 19-09-2013.
- ECCE 2014 Pittsburgh (Pennsylvania, USA). Titolo dell'articolo: "Fault-decoupled instantaneous frequency and phase angle estimation for three-phase grid-connected inverters", G. De Donato; G. Scelba; F. Giulii Capponi; G. Scarcella. dal 14-09-2014 al 18-09-2014.
- WEMDCD 2015 Torino, Italia. Titolo dell'articolo: "High performance sensorless controls based on HF excitation: A viable solution for future AC motor drives?", autori: G. Scarcella; G. Scelba; A. Testa. dal 26-03-2015 al 27-03-2015.
- ECCE 2015 Montreal (Canada). Titolo dell'articolo: "Integrated multi-drive configuration for starter-alternator applications", autori: G. Scarcella; G. Scelba; M. Cacciato; A. Spampinato; M. M. Harbaugh. dal 20-09-2015 al 24-09-2015.
- ECCE 2016 Milwaukee, WI-USA, 18-22 Settembre 2016. Titolo dell'articolo: "THD and efficiency improvement in multi-level inverters through an open end winding configuration", autori: S. De Caro; S. Foti; T. Scimone; A. Testa; M. Cacciato; G. Scarcella; G. Scelba. dal 18-09-2016 al 22-09-2016.
- EEMODS 2017, Rome, Italy. Titolo dell'articolo: "On the Reliability of Electrical Drives for Safety-Critical Applications", autori: Scelba, G.; De Donato, G.; Scarcella, G.; Giulii Capponi, F.; Cacciato, M.; Caricchi, F. dal 06-09-2017 al 08-09-2017.

- SLED 2017, Catania, Italy. Titolo dell'articolo: "Compensation of rotor position estimation errors in sensorless dual-Three phase PMSM drives through back-EMF sensing", autori: Scelba, G.; Scarcella, G.; Cacciato, M.; Pulvirenti, M.; Testa, A. dal 18-09-2017 al 19-09-2017.
- ECCE 2017, Cincinnati, OH, USA. Titolo degli articoli: -"On-line stator resistance and permanent magnet flux linkage identification on open-end winding PMSM drives", autori: Pulvirenti, M.; Scarcella, G.; Scelba, G.; Testa, A.; Harbaugh, M. M. -" Over-voltage mitigation on SiC based motor drives through an open end winding configuration", autori: De Caro, S.; Foti, S.; Scimone, T.; Testa, A.; Scelba, G.; Pulvirenti, M.; Russo, S. -"Asymmetrical hybrid unidirectional T-type rectifier for high-speed gen-set applications", autori: Foti, S.; Testa, A.; Scelba, G.; Sabatini, V.; Lidozzi, A.; Solero, L. dal 01-10-2017 al 05-10-2017.
- ECCE 2018, Portland, Oregon, USA. Titolo degli articoli: -"On the Effects of Position Sensor Resolution in Variable Speed Drives", autori: Giacomo Scelba, Giulio De Donato, Giuseppe Scarcella and Fabio Giulii Capponi. dal 23-09-2018 al 27-09-2018.
- EPE 2019, Genova, ITA. Titolo degli articoli: -"Switching modeling of Power Devices Turn-Off in a SiC mosfets-based Inverter leg", autori: SALVO Luciano, CACCIATO Mario, MONTORO Gionatan, NANIA Massimo, PULVIRENTI Mario, SCARCELLA Giuseppe, SCELBA Giacomo. dal 02-09-2019 al 06-09-2019.
- ECCE 2018, Baltimore, Maryland, USA. Titolo degli articoli: -"A novel Hybrid N Level T Type Inverter Topology", autori: Salvatore Foti, Antonio Testa, Luigi Danilo Tornello, Giacomo Scelba, Tommaso Scimone, Giuseppe Scarcella and Salvatore De Caro; - "A novel Three Phase Multilevel Inverter Topology with Reduced Device Count for Open End Winding Motor Drives", autori: Salvatore Foti, Antonio Testa, Giacomo Scelba, Tommaso Scimone, Salvatore De Caro, Luigi Danilo Tornello and Giuseppe Scarcella. dal 29-09-2019 al 03-10-2019.
- ECCE 2020, Detroit, MI, USA. Titolo dell'articolo: "On the Effects of Ultra-High Switching Frequency on PWM-Inverter-Fed Induction Motors," autori: G. Scelba, D. Camuglia, G. De Donato, S. Vaschetto, A. Cavagnino and E. Agamloh. dal 11-10-2020 al 15-10-2020.
- 6th IEEE Workshop on Electrical Machines Design, Control and Diagnosis – WEMDCD 2023 13th – 14th april 2023, Newcastle upon Tyne, UK. Titolo dell'articolo: "Resolution of Rotor Position Measurement: Modelling and Impact on Speed Estimator", autori: Giacomo Scelba.

Publications (summary)

SCOPUS: Author ID 22434206800, number of articles:199, number of citations:2430, h-index:24.

ANNEXES

Annex 1 – National and International Projects

Annex 2 – Publications

MAIN NATIONAL AND INTERNATIONAL PROJECTS

Principal Investigator

2021 – 2025

Local Coordinator of a research unit working to the Horizon 2020 Framework Programme Project (ECSEL-IA - ECSEL Innovation Action): 101007310 — GaN4AP, development of new technologies and innovative power circuits, employing the GaN-based devices.

2023 – 2025

Flagship project ELECTRO (Electrically Propelled Vehicles: Charge and Technologies), - SPOKE 1 - INDUSTRY 4.0 FOR SUSTAINABLE MOBILITY AND AEROSPACE of project NODES, which has received funding from the MUR on PNRR funding programme - Missione 4, Componente 2, Investimento 1.5 – Creazione e rafforzamento di “Ecosistemi dell’innovazione”, costruzione di “leader territoriali di R&S” with grant agreement no. ECS00000036.

2023

“Simulazioni, Modellizzazioni e Caratterizzazioni Applicative di Moduli di Potenza con MOSFET al Carburo di Silicio – Moduli di Potenza con Carburo di Silicio per Inverter”, within a Scientific Collaboration Agreement with the STMicroelectronics – Catania (IT).

2018 – 2020

“Key Technologies and Methodologies for Sustainable Electric Mobility” within the Call for proposal of the University research project.

2015 – 2021

European Union-funded investment programme - Programma Operativo Nazionale (PON), Title “Wide-bandgap-semiconductor-based, three-phase voltage source inverter for high-frequency electromechanical energy conversion in next generation hybrid vehicles”, P.I. of the following project activities:

"Design of innovative IGBTs and MOSFETs for low and medium voltage applications";

"Design and optimization of layouts for advanced IGBT, and GaN-based MOSFETs packaging”.

Research team member

2022 - 2024

"Navi efficienti tramite l'utilizzo di soluzioni tecnologiche innovative e low carbon (NAUSICA)" - Area MOBILITÀ SOSTENIBILE - PNR 2015-2020.

2022 - 2025

“Electromagnetic optimization of SiC power modules”, within the project of title: "Sicilian Micronano Tech Research And Innovation Center - SAMOTHRACE", di cui all'Avviso del Ministero dell'Università e della Ricerca n. 3277 del 30 dicembre 2021 per la presentazione di proposte di intervento per la creazione e il rafforzamento di "ecosistemi dell'innovazione", costruzione di "leader territoriali di R&S" - Ecosistemi dell'Innovazione - nell'ambito del Piano Nazionale di Ripresa e Resilienza, Missione 4 Istruzione e ricerca - Componente 2 Dalla ricerca all'impresa - Investimento 1.5, finanziato dall'Unione europea- NextGenerationEU".

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ENIAC JU/CALL 2010/270722-2 ERG - Design and characterization of EMI filters evaluating technologies to increase the energy efficiency by exploiting the Planar Magnetic Technology. EMI Filter circuit prototypes have been developed and tested.

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ENIAC JU/CALL 2011-1/296131 E2SG "Energy to smart grid" – Development of innovative Phase Locked Loop (PLL) algorithm for the control algorithm devoted to the grid connection of the PV inverters even in grids with high distortion.

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Italian MIUR PON R&C 2007-2013 PON01_00700 - AMBITION POWER Development of technologies and devices based on silicon, SiC, to be integrated in power modules and to be used in automotive, aeronautics and photovoltaics application fields.

2015 - 2021

WInSiC4AP H2020-ECSEL-2016-1-RIA Development of innovative end-user products (application systems and subsystems) based on SiC technology. Advanced technology bricks and applicative platforms across different industrial domains.

2017

"Modeling and Simulations of Induction and Switched Reluctance Motors for Automotive Applications", supported by Magneti Marelli S.p.a. Powertrain Business Line.

2017

"Modeling and Simulations of IGBT based power converters", supported by Magneti Marelli S.p.a. Powertrain Business Line.

PUBLICATIONS

Most Recent Articles

- [1]. S. Foti, T. Scimone, A. Oteri, G. Scelba and A. Testa, "A reduced switch count, self-balanced, 13-level inverter based on a Dual T-Type configuration," in IEEE Transactions on Power Electronics, doi: 10.1109/TPEL.2023.3281679.
- [2]. L. Salvo, M. Pulvirenti, A. G. Sciacca, G. Scelba and M. Cacciato, "Gate-Source Voltage Analysis for Switching Crosstalk Evaluation in SiC MOSFETs Half-Bridge Converters," in IEEE Power Electronics Magazine, vol. 9, no. 4, pp. 54-60, Dec. 2022, doi: 10.1109/MPEL.2022.3216764.
- [3]. Foti, S.; Testa, A.; Scelba, G.; De Caro, S.; Scarcella, G. Self-Sensing Control of Open-End Winding PMSMs Fed by an Asymmetrical Hybrid Multilevel Inverter. *Energies* 2022, 15, 3166. <https://doi.org/10.3390/en15093166>.
- [4]. G. Scelba, G. De Donato, A. A. M. Elsmann, L. D. Tomello, G. Scarcella and F. G. Capponi, "Resolution of Rotor Position Measurement: Modeling and Impact on Speed Estimation," in IEEE Journal of Emerging and Selected Topics in Power Electronics, vol. 10, no. 2, pp. 1992-2004, April 2022, doi: 10.1109/JESTPE.2021.3088271.
- [5]. S. Foti et al., "Rotor Position Error Compensation in Sensorless Synchronous Reluctance Motor Drives," in IEEE Transactions on Power Electronics, vol. 37, no. 4, pp. 4442-4452, April 2022, doi: 10.1109/TPEL.2021.3122532.
- [6]. Foti, S., Testa, A., De Caro, S. et al. A general approach to sensorless estimation rotor and stator windings temperature in induction motor drives. *Electr Eng* 104, 203–215 (2022). <https://doi.org/10.1007/s00202-021-01373-8>.
- [7]. G. Scelba, D. Cremente, G. De Donato, S. Vaschetto, E. B. Agamloh and A. Cavagnino, "Experimental Assessment of Induction Motors Fed by Sub-MHz-PWM Wide Band Gap Inverters," in IEEE Transactions on Industry Applications, vol. 58, no. 4, pp. 4461-4473, July-Aug. 2022, doi: 10.1109/TIA.2022.3163355.
- [8]. Rizzo, S.A., Scelba, G., "A hybrid global MPPT searching method for fast variable shading conditions", 2021, *Journal of Cleaner Production*, Vol. 298, doi: 10.1016/j.jclepro.2021.126775;
- [9]. Tomello, L.D., Foti, S., Cacciato, M., Testa, A., Scelba, G., De Caro, S., Scarcella, G., Rizzo, S.A., "Performance improvement of grid-connected induction motors through an auxiliary winding set", 2021, *Energies*, Vol. 14, n°8, doi=10.3390%2fen14082178;
- [10]. Foti, S., Testa, A., De Caro, S., Tomello, L.D., Scelba, G., Cacciato, M., "Multi-level multi-input converter for hybrid renewable energy generators", 2021, *Energies*, Vol. 14, n° 6, doi=10.3390%2fen14061764;
- [11]. Barbagallo, C., Rizzo, S.A., Scelba, G., Scarcella, G., Cacciato, M., "On the lifetime estimation of SiC power mosfets for motor drive applications", 2021, *Electronics (Switzerland)*, Vol. 10, n° 3, doi. 10.3390/electronics10030324;
- [12]. Foti, S., Tomello, L., Testa, A., Scelba, G., De Caro, S., Cacciato, M., Scimone, T., "Rotor Position Error Compensation in Sensorless Synchronous Reluctance Motor Drives", 2021, *IEEE Transactions on Power Electronics*, doi. 10.1109/TPEL.2021.3122532;
- [13]. Aiello, G., Cacciato, M., Gennaro, F., Rizzo, S.A., Scarcella, G., Scelba, G., "A tool for evaluating the performance of sic-based bidirectional battery chargers for automotive applications", 2020, *Energies*, Vol. 13, n° 24, doi. 10.3390/en13246733;
- [14]. Nobile, G., Vasta, E., Cacciato, M., Scarcella, G., Scelba, G., Di Stefano, A.G.F., Leotta, G., Pugliatti, P.M., Bizzari, F., "Performance assessment of large photovoltaic (PV) plants using an integrated state-space average modeling approach", 2020, *Energies*, Vol. 13, n° 18, doi. 10.3390/en13184777;
- [15]. Foti, S., Testa, A., Scelba, G., Sabatini, V., Lidozzi, A., Solero, L., "A Low THD Three-Level Rectifier for Gen-Set Applications", 2019, *IEEE Transactions on Industry Applications*, vol. 55, n° 6, doi 10.1109/TIA.2019.2937054;
- [16]. De Caro, S., Foti, S., Scimone, T., Testa, A., Scelba, G., Pulvirenti, M., Russo, S., "Motor overvoltage mitigation on SiC MOSFET drives exploiting an open-end winding configuration", 2019, *IEEE Transactions on Power Electronics*, Vol. 34, n°11, doi. 10.1109/TPEL.2019.2902254;
- [17]. Nobile, G., Scelba, G., Cacciato, M., Scarcella, G., "Losses Minimization Control for an Integrated Multidrive Topology Devoted to Hybrid Electric Vehicles", 2019, *IEEE Transactions on Industrial Electronics*, Vol. 66, n°11, doi. 10.1109/TIE.2018.2875633;
- [18]. Tomello, L.D., Scelba, G., Scarcella, G., Cacciato, M., Testa, A., Foti, S., De Caro, S., Pulvirenti, M., "Combined rotor-position estimation and temperature monitoring in sensorless, synchronous reluctance motor drives", 2019, *IEEE Transactions on Industry Applications*, Vol. 55, n° 4, doi. 10.1109/TIA.2019.2915669;
- [19]. Foti, S., Testa, A., De Caro, S., Scimone, T., Scelba, G., Scarcella, G., "Multi-level open end windings multi-motor drives", 2019, *Energies*, Vol. 12, n° 5, doi. 10.3390/en12050861;
- [20]. Foti, S., Scelba, G., Testa, A., Sciacca, A., "An averaged-value model of an asymmetrical hybrid multi-level rectifier", 2019, *Energies*, Vol. 12, n° 4, doi. 10.3390/en12040589;
- [21]. Pulvirenti, M., Scarcella, G., Scelba, G., Testa, A., Harbaugh, M.M., "On-line stator resistance and permanent magnet flux linkage identification on open-end winding PMSM Drives", 2019, *IEEE Transactions on Industry Applications*, Vol. 55, n° 1, doi. 10.1109/TIA.2018.2869877;
- [22]. De Donato, G., Scelba, G., Pulvirenti, M., Scarcella, G., Giulii Capponi, F., "Low-Cost, High-Resolution, Fault-Robust Position and Speed Estimation for PMSM Drives Operating in Safety-Critical Systems", 2019, *IEEE Transactions on Power Electronics*, Vol. 34, n°1, doi. 10.1109/TPEL.2018.2820042.