# Curriculum

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| Nome<br>Name: | Mario |
| Cognome<br>Surname: | Cacciato |

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| ORCID: | 0000-0002-7191-7196 |
| Scopus Author ID: | 6602467336 |
| WOS Author ID: | n.d. |
| Sito WEB<br>WEB site: | n.d. |

## POSIZIONE PROFESSIONALE ATTUALE / CURRENT PROFESSIONAL POSITION:

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| Posizione attuale<br>Current position: | In servizio |
| Qualifica<br>Qualification: | Professore Ordinario (L. 240/10) |
| Ateneo/Ente/Azienda<br>University/Institution/Company: | Università degli Studi di CATANIA |
| Nazione Ateneo/Ente/Azienda<br>University/Institution/Company Country: | ITA |
| Anno inizio<br>Start Year: | 2023 |
| Anno fine<br>End Year: | n.d. |

## PRECEDENTI ESPERIENZE LAVORATIVE (ULTIMI 10 ANNI) / PREVIOUS WORK EXPERIENCE ( LAST 10 YEARS):

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| Qualifica<br>Qualification: | Professore Associato confermato |

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| Ateneo/Ente/Azienda<br>University/Institution/Company | Università degli Studi di CATANIA |
| Posizione Sede Lavorativi (indicare Nazione e Città)<br>Workplace Location (specify Country and City): | Catania, CT, Italia |
| Anno inizio<br>Start Year: | 2011 |
| Anno fine<br>End Year: | 2023 |
| Descrizione<br>Description: | |

## LINGUE / LANGUAGES:

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| Lingua<br>Language: | Inglese |
| Scrittura<br>Writing: | C1 |
| Comunicazione<br>Comunication: | C1 |

## AREA/SETTORE SCIENTIFICO-DISCIPLINARE / AREA/SECTOR SCIENTIFIC-DISCIPLINARY

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| Area scientifico-disciplinare<br>Area scientific-disciplinary: | Ingegneria industriale e dell'informazione |
| Area scientifico-disciplinare codice<br>Area scientific-disciplinary code: | 09 |
| Settore scientifico-disciplinare codice<br>Sector scientific-disciplinary code: | -Convertitori, macchine e azionamenti elettrici |
| Settore scientifico-disciplinare codice<br>Sector scientific-disciplinary code: | -IIND-08/A |

## DESCRIZIONE DEI PRINCIPALI RISULTATI SCIENTIFICI CONSEGUITI NEGLI ULTIMI 10 ANNI (CON ANNESSO ELENCO DI MASSIMO 10 PUBBLICAZIONI) / DESCRIPTION OF THE MAIN SCIENTIFIC RESULTS ACHIEVED IN THE LAST 10 YEARS (WITH ATTACHED LIST OF MAXIMUM 10 PUBLICATIONS):

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| Descrizione<br>Description: | *Responsible and PI of the following projects: • 2023-2025: Italian MIUR Prin PNRR 2022, DIAMOND – DIAgnostic MethOds for electrochemical eNergy Devices; • 2021-2023: Italian MIUR PON “Ricerca e Innovazione” 2014-2020 (PON “R&I” 2014-2020), NAUSICA - "NAvi efficienti tramite l’Utilizzo di Soluzioni tecnologiche Innovative e low CArbon"; • 2017-21: European project H2020-EU.2.1.1.7.- call ECSEL-2016-1-RIA-two-stage, WinSiC4AP (Wide* |

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| | *band gap Innovative SiC for Advanced Power); • 2012-15: European project Eniac JU, E2SG (Energy to Smart Grids). The project received The ENIAC Joint Undertaking INNOVATION AWARD; • 2012-15: Italian MIUR PON R&C 2007-13, PON02 – 'Tecnologie ad alta Efficienza per la Sostenibilità Energetica ed ambientale On-board (TESEO); Laboratory Manager – Electrical Machines and Power Elecronics Research Laboratory, University of Catania, Italy • Built a laboratory for EMI measurement in Power Electronics and Electrical Drives; • Supervising PhD students, postdoctoral fellows and visitors using the laboratory; • Responsible for collaborative interactions with companies and industrial collaborators. founding Serving on Committees: • Director of the 2°level Master in Power Electronics Devices and Technologies of the University of Catania, in collaboration and sponsored by STMicrolectronics, started in the academic year 2022-23, today at the the 3rd edition; • From 2016 to 2024, Coordinator of the Master Degree in Electrical Engineering of the University of Catania, Italy; • From 2016, Coordinator for UniCT of the Double Degree program in Electrical Engineering with the University of Zilina (SK); • From 2024, president of the Joint Chapter IEEE IA/PELS Central&South Italy; • From 2022 to 2024, Chair of the Coordination (Steering) Committee of the IEEE PELS – European Power Electronics and Electrical Drives Association (EPE);* |

## PUBBLICAZIONI / PUBLICATIONS:

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| Anno della pubblicazione<br>Year of publication: | 2024 |
| Citazione<br>Citation: | Mannino, Gaetano, Tina, Giuseppe Marco, Jiménez-Castillo, Gabino, Cacciato, Mario, Bizzarri, Fabrizio, Canino, Andrea (2024). Nonlinear and multivariate regression models of current and voltage at maximum power point of bifacial photovoltaic strings. SOLAR ENERGY, vol. 269, 112357, ISSN: 0038-092X, doi: 10.1016/j.solener.2024.112357 |

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|---|---|
| Anno della pubblicazione<br>Year of publication: | 2024 |
| Citazione<br>Citation: | Sujeeth, Arjun a Arjun Sujeeth A., Angelo Di Cataldo, Luigi Danilo Tornello, Mario Pulvirenti, Luciano Salvo, Angelo Giuseppe Sciacca, Giacomo Scelba, Mario Cacciato. (2024). Power Loss Modelling and Performance Comparison of Three-Level GaN-Based Inverters Used for Electric Traction. ENERGIES, vol. 17, ISSN: 1996-1073, doi: 10.3390/en17030595 |

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|---|---|
| Anno della pubblicazione<br>Year of publication: | 2023 |
| Citazione<br>Citation: | Vasta E., Scimone T., Nobile G., Eberhardt O., Dugo D., De Benedetti M. M., Lanuzza L., Scarcella G., Patane L., Arena P., Cacciato M. |

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| | (2023). Models for Battery Health Assessment: A Comparative Evaluation. ENERGIES, vol. 16, ISSN: 1996-1073, doi: 10.3390/en16020632 |

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|---|---|
| Anno della pubblicazione<br>Year of publication: | 2022 |
| Citazione<br>Citation: | Luciano Salvatore, Mario Pulvirenti, Angelo Giuseppe Sciacca, Giacomo Scelba, Mario Cacciato (2022). Gate-Source Voltage Analysis for Switching Crosstalk Evaluation in SiC MOSFETs Half-Bridge Converters. IEEE POWER ELECTRONICS MAGAZINE, p. 54-60, ISSN: 2329-9207, doi: 10.1109/MPEL.2022.3216764 |

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|---|---|
| Anno della pubblicazione<br>Year of publication: | 2022 |
| Citazione<br>Citation: | Salvatore Foti, Salvatore De Caro, Tommaso Scimone, Antonio Testa, Luigi Danilo Tornello, Giacomo Scelba, Mario Cacciato (2022). Rotor Position Error Compensation in Sensorless Synchronous Reluctance Motor Drives. IEEE TRANSACTIONS ON POWER ELECTRONICS, vol. 37, p. 4442-4452, ISSN: 0885-8993, doi: 10.1109/TPEL.2021.3122532 |

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|---|---|
| Anno della pubblicazione<br>Year of publication: | 2021 |
| Citazione<br>Citation: | Barbagallo, Carmelo, Rizzo, Santi Agatino, Scelba, Giacomo, Scarcella, Giuseppe, Cacciato, Mario (2021). On the Lifetime Estimation of SiC Power MOSFETs for Motor Drive Applications. ELECTRONICS, vol. 10, ISSN: 2079-9292, doi: 10.3390/electronics10030324 |

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|---|---|
| Anno della pubblicazione<br>Year of publication: | 2020 |
| Citazione<br>Citation: | Aiello, Giuseppe, Cacciato, Mario, Gennaro, Francesco, Rizzo, Santi Agatino, Scarcella, Giuseppe, Scelba, Giacomo (2020). A Tool for Evaluating the Performance of SiC-Based Bidirectional Battery Chargers for Automotive Applications. ENERGIES, vol. 13, ISSN: 1996-1073, doi: 10.3390/en13246733 |

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| Anno della pubblicazione<br>Year of publication: | 2019 |
| Citazione<br>Citation: | Tornello L. D., Scelba G., Scarcella G., Cacciato M., Testa A., Foti S., De Caro S., Pulvirenti M. (2019). Combined rotor-position estimation and temperature monitoring in sensorless, synchronous reluctance motor drives. IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol. 55, p. 3851-3862, ISSN: 0093-9994, doi: 10.1109/TIA.2019.2915669 |

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|---|---|
| Anno della pubblicazione<br>Year of publication: | 2019 |
| Citazione | G. Nobile, G. Scelba, M. Cacciato, G. Scarcella (2019). Losses Minimization Control for an |

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| Citation: | Integrated Multi- Drives Topology devoted to Hybrid Electric Vehicles [IEEE Transactions on Industrial Electronics, 2019]. IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, vol. 66, p. 8345-8360, ISSN: 0278-0046, doi: 10.1109/TIE.2018.2875633 |

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|---|---|
| Anno della pubblicazione<br>Year of publication: | 2018 |
| Citazione<br>Citation: | S. Foti, A. Testa, SCELBA, GIACOMO, S. De Caro, CACCIATO, MARIO, SCARCELLA, Giuseppe, T. Scimone (2018). An Open-End Winding Motor Approach to Mitigate the Phase Voltage Distortion on MultiLevel Inverters. IEEE TRANSACTIONS ON POWER ELECTRONICS, vol. 33 n. 3, p. 2404-2416, ISSN: 0885-8993, doi: DOI: 10.1109/TPEL.2017.2695244 |

## DESCRIZIONE DEI PRINCIPALI PROGETTI DI RICERCA E PREMI CONSEGUITI NEGLI ULTIMI 10 ANNI (CON ANNESSO ELENCO DI MASSIMO 10 RISULTATI, INCLUDENDO, A TITOLO DI ESEMPIO, PRINCIPAL INVESTIGATOR O COORDINATORE LOCALE DI PROGETTI DI RICERCA COMPETITIVI NAZIONALI O INTERNAZIONALI, SIGNIFICATIVI PREMI CONSEGUITI PER LA PROPRIA ATTIVITÀ DI RICERCA)/ DESCRIPTION OF THE MAIN RESEARCH PROJECTS AND AWARDS AWARDED IN THE LAST 10 YEARS (WITH ATTACHED LIST OF MAXIMUM 10 ACHIEVEMENTS, INCLUDING, FOR EXAMPLE, PRINCIPAL INVESTIGATOR OR LOCAL COORDINATOR OF NATIONAL OR INTERNATIONAL COMPETITIVE RESEARCH PROJECTS, SIGNIFICANT AWARDS AWARDED FOR YOUR RESEARCH ACTIVITY):

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| Descrizione<br>Description: | *• 2024 Promoted to IEEE, Senior member grade; • Memorial medal Faculty of Electrical Engineering and Information Technology – University of Zilina, 2023; • Best Paper of the Conference ELEKTRO 2024. A. Di Cataldo, G. Aiello, D. Patti, G. Scelba, M. Cacciato, F. Gennaro, "Design of a Modular GaN-based Three-Phase Three-Level ANPC Inverter", ELEKTRO 2024, May 20 - 22, 2024 Zakopane, Poland; • The paper G. Aiello, M. Cacciato, G. Scarcella, G. Scelba, F. Gennaro, N. Aiello, 'Mixed Signals Based Control of a SiC Vienna Rectifier for On-Board Battery Chargers', presented at EPE 2019 ECCE Europe, 2 to 6 September, Genova, Italy, was awarded with the ECCE Europe 2019 - EPE Outstanding Young EPE Member Award; • Best Paper of the Conference ELEKTRO 2018. G. Aiello, M. Cacciato, G. Scarcella, G. Scelba, F. Gennaro, N. Aiello, "Real-Time Emulation of a Three-Phase Vienna Rectifier with Unity Power Factor Operations", ELEKTRO 2023, May 21 - 23, Mikulov, Czech Republic; • "Committee Prize Paper Award" of the Electric Machines Technical Committee at the* |

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| | *IEEE Conference IECON 2017 for the paper entitled "On-Line Stator Winding Resistance and Rotor Permanent Magnet Flux Estimation for Dual–Three Phase PMSM drives"; • Best Paper of the Conference ELEKTRO 2016. Scelba G, Scarcella G, Cacciato M, Aiello G (2016). "Hardware in the loop for failure analysis in AC motor drives", ELEKTRO 2016, Strebkle Pleso, High Tatras - SK;* |

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| Descrizione<br>Description: | PI of the University of Catania unit in the following projects: - 2023-2025: Prin PNRR 2022 DIAMOND – DIAgnostic MethOds for electrochemical eNergy Devices; - 2021-2023: Italian MIUR PON "Ricerca e Innovazione" 2014-2020 (PON "R&I" 2014-2020), NAUSICA - "NAvi efficienti tramite l'Utilizzo di Soluzioni tecnologiche Innovative e low CArbon",; - 2017-21: European project H2020-EU.2.1.1.7. – call ECSEL-2016-1-RIA-two-stage, WinSiC4AP (Wide band gap Innovative SiC for Advanced Power); - 2012-15: European project Eniac JU, E2SG (Energy to Smart Grids); - 2012-15: Italian MIUR PON R&C 2007-13, PON02 – 'Tecnologie ad alta Efficienza per la Sostenibilità Energetica ed ambientale On-board (TESEO); - 2013-14: Sicilian Region POR Linea 4.1.1.2 – 'RIgenerazione ELettrica EVOluta' (RIELEVO); - 2007-08: MIUR 'PRIN 2006' project of the Italian Minister of University and Research entitled "Integration of Photo-Voltaic Systems in Conventional and Hybrid Vehicles"; - 2000: Research project funded by University of Rome- 'La Sapienza' entitled "Storage and Production of Electrical Energy from Renewable Energies with Electrolysis and Fuel Cells". |

## DESCRIZIONE DEI PRINCIPALI RISULTATI CONSEGUITI NEGLI ULTIMI 10 ANNI IN TERMINI DI SVILUPPO DI RETI E RELAZIONI SCIENTIFICHE NAZIONALI E INTERNAZIONALI (CON ANNESSO ELENCO DI MASSIMO 5 RISULTATI, INCLUDENDO, A TITOLO DI ESEMPIO, PARTECIPAZIONE O ORGANIZZAZIONE DI CONVEGNI NAZIONALI E INTERNAZIONALI; CONTRIBUTI A CONSORZI DI RICERCA) / DESCRIPTION OF THE MAIN RESULTS ACHIEVED IN THE LAST 10 YEARS IN TERMS OF DEVELOPMENT OF NATIONAL AND INTERNATIONAL SCIENTIFIC NETWORKS AND RELATIONS (WITH ATTACHED LIST OF MAXIMUM 5 RESULTS, INCLUDING, FOR EXAMPLE, PARTICIPATION OR ORGANIZATION OF NATIONAL AND INTERNATIONAL CONFERENCES; CONTRIBUTIONS TO RESEARCH CONSORTIA):

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| Descrizione<br>Description: | |

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| Descrizione<br>Description: | From 2025 he is a member of the Scientific Committee of EPE ECCE Europe conference, sponsored by IEEE PELS; From 2011 to 2024 he |

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| | was a member of International Scientific Committee of annual EPE - ECCE Europe Conference, co-sponsored by IEEE PELS; From 2012 he is a member of the International Scientific Committee of International Conference ELEKTRO, sponsored by IEEE; In 2017, he was the general co-chair of IEEE 8th International Symposium on Sensorless Control for Electrical Drives (SLED 2017), Catania 18-19 September 2017; In 2012, he was the organizer and General Chair of the International Workshop on Future Decentralized PV Systems, sponsored by EPE and PELS (IEEE). Catania, 19-20 April 2012; In 2013 he was the co-organizer and co-chair of the International Workshop 'Recent Advances on Electrical Machines, Drives and Power Electronics', Catania, 28 January 2013. |

## DESCRIZIONE DEI PRINCIPALI RISULTATI CONSEGUITI NEGLI ULTIMI 10 ANNI IN TERMINI DI SUPPORTO ALLA COMUNITÀ SCIENTIFICA (CON ANNESSO ELENCO DI MASSIMO 5 RISULTATI, INCLUDENDO, A TITOLO DI ESEMPIO, RESPONSABILITÀ DI DIREZIONE DI COMITATI EDITORIALI; INCARICHI DI VALUTAZIONE DELLA RICERCA PRESSO ISTITUZIONI NAZIONALI O INTERNAZIONALI; RESPONSABILITÀ ISTITUZIONALI ALL'INTERNO DELL'ISTITUZIONE DI APPARTENENZA O DI ALTRE ISTITUZIONI) / DESCRIPTION OF THE MAIN RESULTS ACHIEVED IN THE LAST 10 YEARS IN TERMS OF SUPPORT TO THE SCIENTIFIC COMMUNITY (WITH ATTACHED LIST OF MAXIMUM 5 RESULTS, INCLUDING, FOR EXAMPLE, MANAGEMENT RESPONSIBILITIES OF EDITORIAL COMMITTEES; RESEARCH EVALUATION ROLES AT NATIONAL OR INTERNATIONAL INSTITUTIONS; INSTITUTIONAL RESPONSIBILITIES WITHIN THE INSTITUTION OF AFFILIATION OR OTHER INSTITUTIONS):

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| Descrizione<br>Description: | *Senior member of the IEEE of New York. From 2010 to 2024, member of European Power Electronics and Drive Association (EPE); from 2018, voting member of the EPE Executive Council; in 2023-24 he was the Vice-President of EPE. Member of AEIT, the Italian Association of Electrical and Electronic Engineers; Vice-President of the Catania Section of AEIT for the period 2016-2018.* |

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| Descrizione<br>Description: | - From 2020, expert for the Horizon Marie Skłodowska-Curie Actions Individual Fellowships programme (MSCA-IF); - From 2008, projects evaluator for the Italian MIUR or MUR; - From 2021, expert of Ricerca di Sistema elettrico (RdS) Italian MISE; - From 2024, project reviewer for APPV - From 2013 International Peer Review Expert of SRDA (Slovack Research and Development Agency, Bratislava); - In 2023, QNRF- Peer reviewer for research proposals, |

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| | Qatar Research, Development, and Innovation Council. |

## DESCRIZIONE DEI PRINCIPALI RISULTATI CONSEGUITI NEGLI ULTIMI 10 ANNI IN TERMINI VALORIZZAZIONE DELLE CONOSCENZE (CON ANNESSO ELENCO DI MASSIMO 3 RISULTATI, RELATIVI ALLA PARTECIPAZIONE DEL CANDIDATO ALLE ATTIVITÀ DI VALORIZZAZIONE DELLE CONOSCENZE) / DESCRIPTION OF THE MAIN RESULTS ACHIEVED IN THE LAST 10 YEARS IN TERMS OF KNOWLEDGE VALORIZATION (WITH ATTACHED LIST OF MAXIMUM 3 RESULTS, RELATING TO THE CANDIDATE'S PARTICIPATION IN KNOWLEDGE VALORIZATION ACTIVITIES):

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| Descrizione<br>Description: | |

**Informazioni aggiornate alla data di candidatura 19-05-2025**

**Mario Cacciato**

*Il presente curriculum costituisce allegato e parte integrante dell'incarico sottoscritto*