Assoc. Prof. Dr. S. Baris Ozturk

Istanbul Technical University (ITU)
Department of Electrical Engineering
ITU Ayazaga Kampusu, Elektrik-Elektronik Fakultesi, Elektrik Muh. Bol.
Oda No: EEB 7313, 34469 Maslak, Istanbul/TÜRKİYE
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EDUCATION

Texas A&M University — *Jan. 2006 – May 2008*
Ph.D. in Electrical Engineering — College Station, TX

- Dissertation: "Direct Torque Control of Brushless DC Motor with Non-sinusoidal Back-EMF"
- Emphasis: Power Electronics & Motor Drives
- Group: Advanced Electric Machines and Power Electronics (EMPE) Laboratory
- Advisor: Prof. Hamid A. TOLIYAT
- Degree Plan G.P.A.: 3.83 / 4.0

Texas A&M University — *Jan. 2002 – Dec. 2005*
M.Sc. in Electrical Engineering — College Station, TX

- Thesis: "Modeling, Simulation, and Analysis of Low-Cost Direct Torque Control of PMSM Using Hall-Effect Sensors"
- Emphasis: Power Electronics & Motor Drives
- Group: Advanced Electric Machines and Power Electronics (EMPE) Laboratory
- Advisor: Prof. Hamid A. TOLIYAT
- Degree Plan G.P.A.: 4.0 / 4.0

Istanbul Technical University — *Sep. 1995 – Jun. 2000*
B.Sc. in Electrical Engineering — Istanbul, TÜRKİYE

- Graduation Project: "Vector Control of Induction Motor in VISSIM"
- Emphasis: Power Electronics & Motor Drives
- Advisor: Prof. Dr. R. Nejat TUNCAY
- Cumulative G.P.A.: 3.31 / 4.0 (Ranked 2nd in class of 170)

RESEARCH INTERESTS

- Design and Control of Electric Machines & Drives, Self-Commissioning, Auto-Tuning, Sensorless, Sensor-Reduced, Multilevel, Reduced-Switch & Fault Tolerant Control of AC Drives
- Modeling, Simulation, Analysis, DSP-Microcontroller-FPGA Based Design, Control and Implementation of Drives, Energy Conversion, and Power Electronics Systems
- Applications of Modern Control Theory, Artificial Intelligence Control, (Deep) Reinforcement Learning (RL) and Signal Processing to Energy Conversion, Power Electronics and Drive Systems
- Condition Monitoring & Fault Diagnosis of Power Electronics, Machines and Drive Systems
- Electric & Hybrid Electric Vehicle (EV & HEV) Applications Including Traction Inverters, AC Charging, DC Fast Charging and On-Board Charging (OBC)
- Control of On-Grid (Grid-Connected) & Off-Grid Voltage-Source and Current-Source Converters
- Renewable & Clean Energy Systems, Smart and Micro Grids
- MIL, SIL, PIL, HIL, C-HIL and P-HIL Simulations and Rapid Control Prototyping (RCP) for Power Electronics and Drive Systems

PROFESSIONAL EXPERIENCE

Istanbul Technical University (ITU) *Jan. 2020 – Present*
Associate Professor *Istanbul, TÜRKİYE*
Former Deputy Head of the Department of Electrical Engineering
Director of the Photovoltaic Systems Laboratory (PVLAB)

Project Researcher / Consultant

- *TÜBİTAK 1004 – Design and Implementation of High Efficiency, High Power Density Multilevel Inverter Fed Electric Vehicle Drive System with High Bus Voltage: In this project, a high-efficiency and high-power-density electric drive system design, optimization, prototype production, and tests will be carried out, with a holistic view of the electric vehicle propulsion system, from the high DC busbar to the drive motor output.*
  - Researcher
  - Beginning: February 2023 Ending: January 2027
  - Appr. Total Project Funding: 6.700.000 TL
- *ASELSAN Academy – TOHUM (SEED) Project – Development of Advanced Control Techniques for Induction Motor Drivers Operating Under Fluctuating DC Supply Voltage: This project is planned to develop advanced control algorithms with the cooperation of the university-industry, which will minimize the harmonic distortions and torque fluctuations in the induction motor drive, in which AC-DC-AC topology rail systems are fed from the Catenary line.*
  - Consultant
  - Beginning: April 2022 Ending: December 2023
  - Total Project Funding: 44.000 $ (excl. VAT)
- *TÜBİTAK 1005 (121E613) – Development of an Intelligent Electric Power Steering Drive System for Autonomous Vehicles: Within the scope of the project, a compact drive system consisting of a permanent magnet synchronous motor with an idle speed of 5000 r/min, a power of 200 W, a continuous torque of 0.5 N·m and a driver with autonomous vehicle-specific functions performed by Speedgoat HIL system and an interface that allows programming the driver and define the autonomous vehicle steering functions is aimed.*
  - Researcher
  - Beginning: 15/02/2022 End: 15/02/2023
  - Total Project Funding: 224.840,98 TL
- *TÜBİTAK 2209-A – Real-Time Direct Torque Control of Permanent Magnet Synchronous Motor Control Using Q Table Based Reinforcement Learning, 2025.*
  TÜBİTAK 2209-A – Design of a Highly Efficient and Lightweight Permanent Magnet Synchronous Motor for Electric Vehicles: This project aims to design, optimize and manufacture two permanent magnet synchronous hub motors (on the rear wheels) for a 4-seater solar electric car to be used in the World Solar Challenge, which is held in Australia in 2021.
  TÜBİTAK 2209-B – Design of a Highly Efficient and High-Power Density Battery Charging System for Electric Vehicles: This project aims to design and manufacture an LLC-type soft-switching full-bridge resonant converter-based battery charger for a 4-seater solar electric car to be used in the World Solar Challenge, which is held in Australia in 2021.
  - Consultant
- *Courses Taught*: BIL110E: Introduction to Programming Language (C) (Spring 2020-21-22-23), ELK453E: Indst Appl of Power Elc. I (Spring 2020-21-22), ELK453E: Ind. Appl. of Power Electron. (Spring 2023-24-25), Graduation Project & Electrical Eng. Design I, II (Fall & Spring 2020-21-22-23), ELK605E: Vector Control of AC Machines (Spring 2021, Fall 2024-25 - ASELSAN Academy, Fall 2024-25 & ASELSAN Academy), ELK342: Power Electronics Laboratory (Spring 2020-21-22-23-24-25), ELK 455E: Computer Networks for Power Systems (Fall 2020), ELK331E: Power Electronic Circuits (Fall 2020-21-22-23-24-25), ELK596: Scientific Research, Ethics, and Seminar (Fall 2021), ELK334E: Design of Power Electronic Circuits

(Fall 2023-24-25), ELK503E: Power Electronic Systems (Fall 2023 & ASELSAN Academy)-M.Sc. Course, ELK606E: Brushless Servo Drive Applications (Spring 2024-25 & ASELSAN Academy)-Ph.D. Course.

- *Other Lectures & Speeches & Jury Memberships*
  - Teaching Staff Mobility Under the Erasmus+ KA131. Subject: Vector Control of Induction Motors. Hochschule Darmstadt, Department of Electrical Engineering and Information Technology, Darmstadt, Germany. From 17/06/2024 to 21/06/2024
  - Private and Public Ph.D. Defense External Jury Member for Shahid Jaman. Vrije Universiteit Brussel (VUB), MOBI: Electromobility Research Centre, Faculty of Engineering, Belgium, Brussels. Private defense attended online: 17/09/2024 and public defense: 14/10/2024

- *Editorial Board*
  - Engineering Science and Technology, an International Journal (ELSEVIER) **(SCI-E, Q1 at Scopus)** - Since June 2020
  - Journal of Cognitive Systems **(DergiPark)** - Since May 2020

- *Advisory Board*
  - Turkish Journal of Electrical Power and Electrical Systems (TEPES) - Since July 2020
  - ITU Solar Car Team (Academic Advisor) - Since 2021
    https://www.itusct.com/consultans

- *Performs Reviewing / Refereeing for*
  - IEEE Transactions on Power Electronics
  - IEEE Transactions on Industrial Electronics
  - IEEE Transactions on Industry Applications
  - IEEE/ASME Transactions on Mechatronics
  - IEEE Transactions on Energy Conversion
  - IEEE Transactions on Vehicular Technology
  - IEEE Transactions on Industrial Informatics
  - IEEE Journal of Emerging and Selected Topics in Power Electronics
  - IEEE Access
  - IET Electric Power Applications
  - IET Electronics Letters
  - IET The Journal of Engineering
  - ELSEVIER Engineering Science and Technology, an International Journal
  - Taylor & Francis - Electric Power Components and Systems
  - Journal of Circuits, Systems, and Computers
  - MDPI Energies, Machines, and Symmetry Journals
  - Pamukkale University Journal of Engineering Sciences
  - Journal of Cognitive Systems
  - Various IEEE conferences in the past

- *TÜBİTAK (The Scientific and Technological Research Council of Türkiye) - Referee, Inspector, Panelist and Reviewer*
  - Referee and Inspector for TÜBİTAK-TEYDEB (The Technology and Innovation Funding Programs Directorate) and TÜBİTAK
  - ARDEB (Research Funding Programs Directorate) projects
  - Panelist, 2020-1-MULTIDISCIPLINARY ENERGY (ARDEB): MULTIDISCIPLINARY ENERGY PANEL, EEEAG – ELECTRICAL, ELECTRONICS AND INFORMATICS RESEARCH SUPPORT GROUP (27/08/2020)
  - Panelist, 2020-2209_B 1st Term 2020, Electrical and Electronics Engineering (07/03/2021)
  - Panelist, 2021-2-1505 Panel 1 (15/03/2021)
  - Panelist, 2021-1-POWER ELECTRONICS I (04/04/2021)
  - Panelist at 2022 SAVTAG

- *Administrative Tasks:*
  - Deputy Head of the Department of Electrical Engineering (12.06.2020 - 28.09.2024)
  - ITU EEF Investigation, Inquiry, and Research Commission (15.10.2020 - 01.03.2022)
  - ITU Dept. of Electr. Eng. R&D Commission (25.06.2020 - 28.09.2024)
  - ITU Dept. of Electr. Eng. Education Commission (18.01.2021 - 28.09.2024)
  - ITU Dept. of Electr. Eng. Website Prep. and Update Comm. (18.01.2021 - 28.09.2024)
  - ITU Dept. of Electr. Eng. Course Planning and Coor. Comm. (07.08.2020 - 28.09.2024)
  - ITU Dept. of Electr. Eng. Quality and Accreditation Commission (17.09.2020 - 28.09.2024)
  - ITU Dept. of Electr. Eng. Continuous Improvement Commission (04.04.2022 - 28.09.2024)
  - ITU Dept. of Electr. Eng. Education Commission (24.12.2025 - Present)
  - ITU Dept. of Electr. Eng. Erasmus Commission (09.12.2025 - Present)
  - ITU EEF Disciplinary Investigation Commission (24.12.2025 - Present)

Istanbul Okan University (ITU) *Oct. 2009 – Jan. 2020*
Assistant Professor and Head of the Department of Mechatronics Eng. *Istanbul, TÜRKİYE*
Director of Power Electronics and Energy Conversion (PEEC) Laboratory

Principal Investigator (PI)

- *TÜBİTAK 3501 – Implementation of Position Sensorless Direct-Drive Permanent Magnet Generator - Based Small-Scale Wind Power Generating System for Wide Speed Ranges*
  - Beginning: 01/04/2013 End: 01/01/2016
  - Total Project Funding: 108.544 TL (69.049 TL excl. PTİ)
- *TÜBİTAK 1002 – Very Low-Speed Control of Three-Phase AC Motor Using Least Mean Square Method with Low-Resolution Encoder*
  - Beginning: 01/11/2015 End: 01/11/2016
  - Total Project Funding: 29.620 TL

Researcher / Consultant

- *TÜBİTAK 1505 – Design and Implementation of Output Voltage Variable High-Efficient SEPIC LED Driver with Two Different Power - a joint project with ERA Elektronik: Conceptual Design and Modeling. Development of Control Algorithm Software for TMS320F28335 DSP, Design of Power and Control Circuit: Aluminum profile cooling fins with at least IP52 insulation standard without ventilation and cooling fan, capable of delivering 6 A and 10 A output current from 24 VDC voltage regulation from an input voltage range of 18 VDC to 32 VDC with SEPIC topology for bus, minibus and rail systems central LED lighting unit (capable of providing automotive ISO / TE 16750 and Rail Systems EN 50155 requirements); Design of two separate power stages with 150 W and 250 W power levels that can operate at -40 degrees C and +80 degrees C ambient temperature without a full performance at 18 VDC-32 VDC, 16 VDC and 36 VDC at 50 C and 1 hour at full power. Prototype Manufacturing. Laboratory Tests and Standards Compliance.*
  - Researcher
  - Beginning: 01/05/2018 End: 30/10/2020
  - Total Project Funding: 143.066,06 TL
- *TÜBİTAK 1505 – Intelligent Renewable Energy Management System - a joint project with AC-MENA Teknoloji Yönetim ve Yatırım Hizmetleri A.Ş.: Modeling and Simulation: Establishment of hybrid system model with power electronics components and analysis of its performance in MATLAB / Simulink environment, Modeling, testing and performance of wind and solar energy sources in the same DC-link using fuzzy logic, Establishment of battery model in a simulation environment and integration into common DC-link, Developing, testing and analysis of fuzzy logic based maximum efficient energy production algorithm based on MPPT and weather forecast algorithm. Designing and Prototyping an Intelligent Renewable Energy Management System: Embedded software development, Optimization of energy consumption of IoT units, Design of electronic circuits, PCB circuit manufacturing, Software development of optimal energy algorithm, Manufacturing of the prototype main control board, Conducting laboratory experiments,*

Verification of experimental results, correction and improvements.
  - Researcher
  - Beginning: 01/05/2018 End: 01/09/2021
  - Total Project Funding: 159.636,00 TL

- *TÜBİTAK 1505 –Development of an Advanced Autonomous Bus System - a joint project with OTOKAR OTOMOTİV VE SAVUNMA SAN. A.Ş.: Development of Vehicle Mechatronics Systems: Integration of the steering wheel on the bus, Steering motor and MicroAutoBox integration, Autonomous realization of gas and brake systems, Development of the throttle circuitry, MicroAutoBox integration with throttle circuit, Integration of brake system motor with the brake pedal, Control of brake motor as sub-controller with MicroAutoBox, Design of the speed controller and determination of necessary parameters. On-Board Test and Verification: Standard vehicle dynamics test (vehicle maneuvers) and vehicle test on the test track, Escape and maneuver tests, Speed controller tests, Longitudinal control tests and fine-tuning of the speed control algorithm:*
  - *Stop tests (Zero speed down)*
  - *Acceleration tests (output to stationary reference speed)*
  - *Variable reference speed tests*
  - *Deceleration tests*
    - *Deceleration on an ascent-free path*
    - *Deceleration on a positive sloping road*
    - *Deceleration on a negatively sloping road*
  - *Acceleration tests*
    - *Acceleration on an ascent-free path*
    - *Acceleration on a positive sloping road*
    - *Acceleration on a negative sloping path*
  - *Variable reference speed tests*
    - *Follow the reference speed on the incline-free road*
    - *Positively inclined reference speed tracking*
    - *Negative slant reference speed tracking*

  At the end of each of these tests, revise the controller structure and parameters by examining the settling time, overflow, and steady-state errors.
  - Researcher
  - Beginning: 01/05/2018 End: 01/09/2021
  - Total Project Funding: 159.636,00 TL

- *TÜBİTAK 1501 – Development of a High-Efficient and Domestic Power-Train System for Electric Vehicles – joint project with TOFAŞ (FIAT Turkey): Develop electric powertrain control software algorithm for electric vehicles, including regenerative braking, and perform tests on the test bench and actual electric vehicle.*
  * *Electric Power Train Control Software Algorithm Development for Electric Vehicles (Modeling, Simulation and Code Development)* – (EPT-SMS)
    - Researcher
    - Beginning: 01/08/2012 End: 15/07/2013
  * *Electric Power Train Control Software Algorithm Development for Electric Vehicles (Modeling, Simulation and Code Development)* – (EPT-SMS)
    - Researcher
    - Beginning: 15/07/2013 End: 18/04/2014
    - Total Appr. Project Funding: 1,400,000 TL

- *TÜBİTAK 1511 – Development of an Electro-Hydraulic Power Assisted Steering (EHPAS) System – joint project with HEMA Industry A.Ş. supported by TÜBİTAK: Design, simulate, and develop EHPAS motor control algorithm using an automotive-grade digital signal processor*
  - Beginning: 01/06/2013 End: 08/09/2016
  - Total Appr. Project Funding: 500.000 TL (Research/Consulting: 175.000 TL + Tax)

- *TÜBİTAK 1507 – Development of Stand-alone Solar Inverter and Controller for Water Pump Systems: Modeling and simulation of the complete system with MPPT and code development of V/Hz and vector controls for three-phase induction motor*
  - Consulting: 30.000 TL
  - Beginning: 01/10/2015 End: 30/03/2017
  - Total Project Funding: 496.685 TL

- *TÜBİTAK 1003 – Dynamic and Modular Smart Battery Management System: Design and develop an algorithm for the battery model in the HIL system that can consider vehicle data and battery SoC, SoH and RuL and also perform dynamic configurations. This algorithm will then be embedded in the BMS hardware. Using the HIL simulator, perform a system run under certain conditions, such as faulty conditions of the battery, etc., and then validate the obtained SoC, SoH and RuL data*
  - Researcher
  - Beginning: 15/10/2015 End: 15/10/2017
  - Total Project Funding: 309.240 TL

- *Innovative and Sustainable Electric and Hybrid Electric Vehicle Technology Development and Clustering Center (İSTKA) – TR10/14/YEN/0088: Design, develop and control of high power / torque electric vehicle drive-train based on Hardware-In-Loop (HIL) system*
  - Researcher
  - Beginning: 01/09/2014 End: 01/09/2015
  - Total Project Funding: 723.500 TL

- *Innovative Intelligent and Vehicle Communication Technology Development and Clustering Center (İSTKA) – TR10/15/YNK/0022: Responsible for the system selection, purchases, and coordination of the intelligent vehicle and intelligent communication equipment*
  - Researcher
  - Beginning: 01/09/2015 End: 01/09/2016
  - Total Project Funding: 1.435.830,33 TL

- *Intelligent Unmanned Ground Vehicle Project*: Developed power electronics, motor drive, and intelligent steering, brake, throttle, and gearshift control of an unmanned automobile that has an automated manual transmission
  - Researcher

- *Electric Bike Project*: Designed a brushless DC hub motor for an electric bicycle. Designed power electronics and control board that drives the battery-powered brushless DC (BLDC) hub motor with three hall-effect position sensors. Modeled and simulated the BLDC machine in motoring mode. Developed microcontroller and DSP codes to accomplish the two-phase conduction hall-sensored-based BLDC drive
  - Researcher

- *Gearless Elevator Motor Design Project*: Designed different speed and power ranges (Car speeds 0.63 m/s, 1 m/s, and 1.6 m/s with 1 kW to 12 kW power ranges) gearless low-speed high torque permanent magnet synchronous motors (PMSMs) for elevators
  - Researcher

- *Courses Taught*: Computer Programming (Turkish & English) (C Language) (Spring 2010), Introduction to MATLAB/SIMULINK (Fall 2010), Introduction to EE/MCHT Engineering (Fall 2010–11–12–13–14), Electromechanical Energy Conversion (Fall 2010–11–12–13–14–15–16–17–18–19), Microcontrollers (Spring 2011–12–13–14–15–16–17–18–19), Fundamentals of Power Systems (Spring 2011–12–13–14–15–16–17–18–19), Electric Drives (Fall 2011–12–13–14–15–16–17–18–19), Engineering Design (Fall 2015, 2019), Advanced Electric Drives (Graduate Level Course) (Spring 2012, Fall 2013–14–15–16–17–18–19), DSP-Based Electromechanical Motion Control (Graduate Level Course) (Spring 2013–14–15–17–18–19), Principles of Energy Systems Engineering (Fall 2014), Power Electronics and Motion Control Systems (Spring 2016), Mechatronics Engineering O'COOP 1, 2, 3, and 4 (Spring 2018), Graduation Project (Electrical Eng.)

(Spring 2012–13–14–15–16), Graduation Project (Mechatronics Eng.) (Spring 2012–13–14–15–16), Electrical-Electronics Engineering Graduation Project (Spring 2017–18–19), Mechatronics Engineering Graduation Project (Spring 2017–18–19)

- *Other Lectures & Speeches*
  - Teaching Staff Mobility Under the Life Long Learning Program (LLP). Subject: Electric Motor Drives. Erasmushogeschool Brussel, Belgium. From 18/05/2011 to 23/05/2011
  - Teaching Staff Mobility Under the Life Long Learning Program (LLP). Subject: Brushless Motor Drives. Opole Technological University, Opole, Poland. From 13/05/2013 to 17/05/2013
  - Teaching Staff Mobility Under the Erasmus+. Subject: Fundamentals of Electromechanical Energy Conversion and Brushless DC Drives. Université d'Orléans - Polytechnique d'Orléans Orléans, France. From 27/05/2015 to 29/05/2015
  - Training on General Overview for ARDEB Programs: Provide information and experience to academics for TÜBİTAK ARDEB projects, Istanbul Okan University, Hezarfen A. Celebi Meeting Hall. Date: 28/01/2016

- *Trainings Received*
  - ControlDesk Next Generation Basic, September 15, 2015, Paderborn (Germany)
  - dSPACE SCALEXIO System, September 16-17, 2015, Paderborn (Germany)

- *Administrative Tasks*
  - Mechatronics Engineering Department Head
    - Researcher
    - Assessed the performance of the department and its members
    - Managed department resources
    - Dealt with student problems that were not the appropriate concerns of the department
    - Participated in the approval of students' degree programs
    - Implemented administrative policies
    - Participated in the preparation of teaching schedules and assignments
    - Worked with the university's public relations department to recruit good undergraduate and graduate students
  - Department of Electrical and Electronics and Mechatronics Eng. Erasmus Coordinator
    - Researcher
    - Recruitment, coordination and supervision of student mobility
    - Participated in the adaptation of students' learning agreements
    - Processing all department applications for outgoing and incoming Erasmus mobility
    - Dealt with student problems that are not the appropriate concerns of the Erasmus program
  - Director of the Power Electronics and Energy Conversion (PEEC) Lab.
    - Established and administered "Power Electronics and Motion Control Systems" and "Electromechanical Energy Conversion" Laboratories
    - Led and organized research and development
  - Power Electronics and Clean Energy Systems (PECES) M.Sc. Program Coordinator
    - Participated in the establishment of the PECES M.Sc. program
    - Administered PECES M.Sc. program
  - Mechatronics Engineering Ph.D. Program Asst. Coordinator
    - Participated in the establishment of the MCHT Ph.D. program
    - Administered the MCHT Ph.D. program
  - Member of the Board of Directors of TTIS (Transportation Technologies and Intelligent Automotive Systems) Application & Research Center - UTAS
  - Member of the Board of Coordination of ARPROGED (Research and Project Development)
  - Member of the Technical Board of Directors of "Innovative and Sustainable Electric and Hybrid Electric Vehicle Technology Development and Cluster Center" (E-hike)

- *Accreditation*

  - Participated in the MÜDEK (Equivalent to ABET) accreditation process for the "Electrical and Electronics Engineering" Bachelor of Science Program
  - Participated in the ACICS (Accrediting Council for Independent Colleges and Schools) accreditation process of the "Electrical and Electronics Engineering" Bachelor of Science Program
  - Organized and led the ACICS (Accrediting Council for Independent Colleges and Schools) accreditation process of the "Power Electronics and Clean Energy Systems" Master of Science Program

- *Performs Reviewing / Refereeing for*
  - IEEE Transactions on Power Electronics
  - IEEE Transactions on Industrial Electronics
  - IEEE Transactions on Industry Applications
  - IEEE/ASME Transactions on Mechatronics
  - IEEE Transactions on Energy Conversion
  - IEEE Transactions on Vehicular Technology
  - IEEE Transactions on Industrial Informatics
  - IEEE Journal of Emerging and Selected Topics in Power Electronics
  - IEEE Access
  - IET Electric Power Applications
  - IET Electronics Letters
  - IET The Journal of Engineering
  - Taylor & Francis - Electric Power Components and Systems
  - Journal of Circuits, Systems, and Computers
  - MDPI Energies Journal
  - Pamukkale University Journal of Engineering Sciences
  - Various IEEE conferences in the past

- *TÜBİTAK (The Scientific and Technological Research Council of Türkiye) - Referee, Inspector, Panelist and Reviewer*
  - Reviewer for the TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES
  - Panelist at 2014-1-BİDEB 2214A 2219 ENERJİ VE GÜÇ PANELİ (ENERGY AND POWER PANEL)
  - Panelist at 2016-1-KAMAG 1007 DESIGN AND MANUFACTURING MAINLINE ELECTRIC LOCOMOTIVE
  - Panelist at 2017-1-ELEKTRİK MAKİNELERİ (ARDEB) - ELECTRICAL MACHINES PANEL
  - Panelist at 2018-2-GÜÇ ELEKTRONİĞİ (ARDEB) - POWER ELECTRONICS PANEL
  - Referee and Inspector for TÜBİTAK-TEYDEB (The Technology and Innovation Funding Programs Directorate) and TÜBİTAK-ARDEB (Research Funding Programs Directorate) projects

United Technologies Research Center (UTRC) *Jun. 2008 – Sep. 2009*
Senior Research Engineer *East Hartford, CT*

- *SIKORSKY Future Electric Helicopter Study:* Evaluated alternative primary power systems, including the prime mover (fuel cell, battery, combustion engine/generator), distribution and electric drive, for an electrically powered helicopter and identified the resultant vehicle design impacts
- *CARRIER Scalable Digital Control Engine:* Phase I – Develop sensorless Permanent Magnet Synchronous Motor (PMSM) and Induction Motor (IM) variable frequency drives (VFDs). Phase II – Develop a real-time operating system (RTOS) for sensorless PMSM and IM variable frequency drives used in Carrier air conditioning systems ranging from 5 kW to 1 MW
- *World's First PEM Fuel Cell Based Helicopter:* Defined, procured, and integrated telemetry and power conditioning to the specifications

- *Encoderless Induction Motor (IM) and PMSM Control:* Developed MATLAB/Simulink simulation models for encoderless IM control using stator voltage feed-forward control and PMSM control using Luenberger rotor flux observer. Performed a lab implementation of IM encoderless operation using a rapid prototyping unit (AixController) with floating-point C code
- *Dynamic Braking in Tandem Operation of OTIS Elevators:* Designed a dynamic braking system for tandem operation of mechanically decoupled two PM synchronous motors. Performed simulation of dynamic breaking in a two-PM motor-based elevator system (shafts are disconnected) to minimize the jerk when the system starts free-falling due to power loss, etc
- *OTIS Grid Interface:* Review of OTIS and global standards related to the grid interface. Investigated the grid interface issues that occurred in the OTIS elevator systems and helped field engineers resolve the problems

Texas A&M University *Jan. 2002 – May 2008*
Graduate Teaching Assistant and Lecturer *College Station, TX*

- Taught Introduction to Digital Design Laboratory (ELEN 220) - Fall 2002
- Taught DSP Motion Control Device Lab. (undergrad & grad) (ELEN 489/689) - Spring 2003
- Taught Power Electronics Laboratory (ELEN 438) - Fall 2003
- Taught DSP Motion Control Device Lab. (undergrad) (ELEN 489) - Spring 2004
- Taught Power Electronics Laboratory (ELEN 438) - Fall 2004
- Taught Introduction to Electrical Engineering (ENGR 215) - Fall 2005
- Taught DSP Motion Control Device Lab. (undergrad) (ELEN 442) - Spring 2006, 2005
- Taught Power Electronics Laboratory (ECEN 438) - Fall 2007
- Lectured Introduction to Electrical Engineering (ENGR 215) - Summer 2005
- Lectured DSP Motion Control Device (ELEN 442) - Spring 2007, 2006

Manager and Graduate Research Assistant in the Advanced Electric Machines & Power Electronics (EMPE) Lab.

- Organized the daily operations, coordinated relations with equipment vendors, and carried out purchases

Implemented the following projects using Texas Instruments' DSPs:

- Sensorless Direct Torque and Indirect Flux Control of Three-Phase Brushless DC (BLDC) Motor with Non-sinusoidal Back-EMF in a Wide Speed Range
- Direct Torque Control of Three and Five-Phase Permanent Magnet Synchronous Motor (PMSM) Drives
- Boost Power Factor Correction of Direct Torque Controlled BLDC Motor Drive
- Six- and Four-Switch Two-Phase Conduction DTC of BLDC Motor Drives with Non-sinusoidal Back-EMF
- Low-Count Encoder Based Field-Oriented Control (FOC) of Induction Motor Drive for Golf Cars (using 4,6,8,32,64 pulse encoders up to one-digit rpm)
- On-board Fault Diagnosis of Induction Motor (IM) for Hybrid Electric Vehicle (HEV) at Start-Up and Idle Mode
- FOC of Three-Phase PMSM and IM Drives
- Speed Control of BLDC Motor Using Three Hall-Effect Sensors
- Stepper Motor Control Using TMS320LF2407

Simulation-based projects:

- Sensorless Control of Interior and Surface-Mount PM Synchronous Motors in MATLAB / Simulink
- Finite Element Analysis of Axial PM Synchronous Motor Using Ansoft/Maxwell 3D Finite Element Analysis, and Electronic Pole Change of Switch Reluctance Motor for HEV Applications Using Ansoft/Maxwell 2D Finite Element Analysis
- Low-Cost Direct Torque Control of PMSM Using Three Hall-Effect Sensors in MATLAB / Simulink

Whirlpool Co. *Sep., 6, 2002 – Dec., 31, 2004*
Internship at Whirlpool R&D Center *Benton Harbor, MI*

- Modeled brushless PM motor direct drive for a washing machine in Ansoft/SIMPLORER

Pakmaya Production Facility *Jun. – Sep. 1998*
Internship *Duzce, TÜRKİYE*

- Involved in the development of Programmable Logic Control (PLC) for electric motor drives using OMRON

Eregli Iron and Steel Works Co. *Jun. – Sep. 1997*
Internship *Kdz. Eregli, TÜRKİYE*

- Participated in a project on induction motor V/Hz control at the Electric Motor Drives Group

RELEVANT COURSEWORK

- Electrical Machines, Electrical Drives, General Theory of Electromechanical Motion Devices, Computer-aided Design of Electrical Machines, Motor Drive Dynamics
- Power Electronic Circuits, Power Electronics Applications, Rectifiers and Inverter Circuits
- Automatic Control, Digital Control Systems, Microprocessors, Digital Signal Processing Linear System Theory, Linear Control Systems, Fuzzy Logic and Intelligent Systems, DSP-Based Electromechanical Motion Control
- Electric & Hybrid Vehicles, Analysis of Power Electronic Systems, HVDC Transmission

HONORS / AWARDS

- Session chair at IGRS22', 23', 24', and 25' – International Graduate Research Symposium in Istanbul, Türkiye, 02.06.2022 (Online) – Session V/G, 02.05.2023 (Online) – Session I/C, 07.05.2024 (Online) – Session V/C, and 13.05.2025 (Online) – Session V
- Organizing Committee Member, Electr. and Electron. Eng. Congress (EEMKON 2019), 2019
- UTRC Outstanding Achievement Award (highest award at UTRC), 2009
- IEEE-IECON 2008 Best Paper Award – Second Prize
- Accomplished the first World's First Fuel Cell Powered Rotorcraft Flight successfully, 10/2008
- Session chair at IEEE-IECON Conference in Orlando, FL, 2008
- Texas A&M University (TAMU) Office of Graduate Studies EPPEI Travel and Presentation Grants in 2005, 2006, and for the IAS Conference in Fall 2007
- Academic Excellence Scholarship, Texas A&M University (TAMU), College Station, 2004
- Achievement Award (Ranked 2nd in Department of Electrical Eng.) from Istanbul Technical University, 2000
- Upon graduation as the valedictorian of the high school class and receiving high marks on the Turkish National Exam, recruited by the Turkish government to attend Istanbul Technical University in 1995

MEMBERSHIPS

- IEEE Senior Member, Feb. 16, 2019 – Present (one of the 13 people elevated in the Turkey region)
- IEEE Member, 2008 – 2019
- IEEE Student Member, 2002 – 2008
- Chamber of Electrical Engineers of Türkiye (Elektrik Mühendisleri Odası), 2009 – Present

SKILLS

- ***Professional Software***: Assembly / C, C++ for DSP TMS320C28xx, TMS320C28xxx, TMS470 and Fujitsu Microcontrollers, Code Composer Studio, JavaScript (JS), Python, Node.js, VS Code, MATLAB/Simulink, Altair PSIM, PLECS (Plexim), SIMBA, Typhoon HIL, OrCAD PSpice, LTspice, EWB, SIMetrix/SIMPLIS, VISSIM, Max Plus II, Proteus 8 Professional,

KiCAD, Altium Designer, MathCAD, Maple, AutoCAD, Solidworks, ANSYS, Ansys Twin Builder, ANSYS Maxwell 2D/3D and SIMPLORER, PowerWorld Simulator, MPLAB IDE.

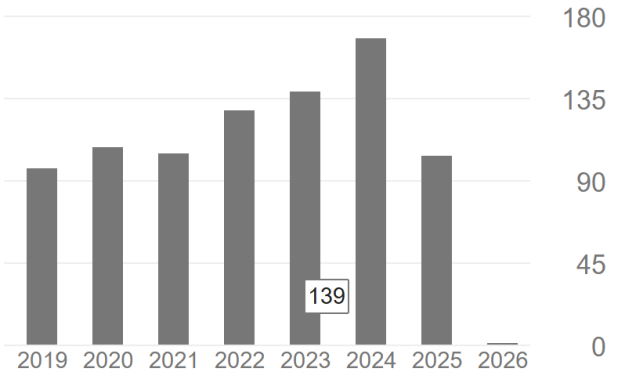
- ***Professional Hardware***: Speedgoat HIL, TI Development Kits incl. HV-Kit and Launchpads.
- ***General Software***: LaTeX, TikZ, CircuiTikz, TeXstudio, JabRef, Overleaf, Inkscape, Adobe Illustrator, Adobe InDesign, Adobe Publisher, Ipe, Visual Basic, Visio, SmartDraw, SketchUp, Adobe Dreamweaver, OBS (Open Broadcasting Software), Blender, Blackmagicdesign Da Vinci Resolve Studio, Kali Linux, MS Office 2003 / 2007 / 2010 / 2013 / 2016 / 2019 & Windows 7/8/10
- ***Languages***: Fluent in English and Turkish

CITATIONS

- **Google Scholar h-index**: 16
- **Scopus h-index**: 12

Google Scholar

	All	Since 2021
Citations	1839	647
h-index	16	10
i10-index	23	11



Scopus

SUPERVISED GRADUATE STUDENTS

M.Sc. Students (Istanbul Technical University, Department of Electrical Engineering)

Graduated:

1. Amin Ghafouri Matanagh, "Broken magnet detection of PMSM using finite element analysis," M.S. thesis, Jan. 2023.
2. Mustafa Avcı (ASELSAN A.Ş.), "Wide speed sensorless control of PMSM drive with smooth transition between HFSI and extended Luenberger observer," M.S. thesis, Jan. 2023.
3. İsmail Ataseven (ASELSAN A.Ş. – UGES–GKSTM), "Design and implementation of a paralleled discrete SiC MOSFET half-bridge circuit," M.S. thesis, Jan. 2023.
4. Lütfü Emre Efe (FEMSAN A.Ş.), "Offline stator resistance estimation for permanent magnet synchronous motor and real-time implementation using embedded coder," M.S. thesis, May 2023.
5. Navid Delfekar Baghbani, "Estimated position error reduction of SMO-based sensorless control of IPMSM using variable notch filter," M.S. thesis, Jun. 2023.
6. Çağrı Batuhan Oğuz, "Farklı gölgelenme örüntüleri ve fotovoltaik bağlantı türleriyle PIL tabanlı maksimum güç noktası takip sisteminin incelenmesi," M.S. thesis, 2023 (Co-Advisor).

7. Berk Taşgın (TA @ITU), "Sensorless speed control of IPMSM drive using high frequency signal injection with a simplified demodulation process," M.S. thesis, Jun. 2023.
8. Muhammet Kılıçtaş (Arçelik A.Ş.), "Design and application of half-bridge LLC resonant converter using reinforcement learning control," M.S. thesis, Jan. 2024.
9. Ömer Nezih Atalay (ASELSAN A.Ş. – UGES–GKSTM), "Torque ripple compensation of inverters under the fluctuating DC voltage in railway vehicles," M.S. thesis, Jan. 2024.
10. Ekrem Rauf Güneş (RUTE), "Highly modular and scalable power module platform for railway traction converter applications," M.S. thesis, June 2024.
11. Fatih Enes Göcen (ASELSAN A.Ş. – UGES–GKSTM), "Design and implementation of full SiC-based center-tapped phase shifted full bridge DC-DC converter with nanocrystalline cored magnetics for railway battery charging applications," M.S. thesis, Jan. 2025.

Current Students:

1. Doruk Yazıcı (ASELSAN A.Ş. - UGES-GKSTM), working on "Design and Control of an Improved Isolated Bidirectional Dual Active Bridge Converter with an Optimized Current Circulation Between Multiple Low Voltage Side Bridges in Battery Charger Units of Railway Systems"
2. Betül Köylü (ASELSAN A.Ş. - UGES-GKSTM), working on "Design and Application of a High-Power Density Totem-Pole PFC Converter for Medical Devices"
3. Ozan Orkun (ASELSAN A.Ş. - UGES-GKSTM), working on "Wireless Power Transfer for Unmanned Vehicles by Using Full-Bridge Series Resonant Converter and Wide-Bandgap Semiconductors"
4. Ali Yasin Çetin (ASELSAN A.Ş. - UGES-GKSTM), working on "Design and Implementation of Solid State Based and MCU Controlled Smart Relay with Data Logging Feature"
5. Yasin Enes Çalışkan (ASELSAN A.Ş. - UGES-GKSTM), working on "Self-Commissioning of Sensorless AC Drives"
6. Hüseyin Kurnaz (ASELSAN A.Ş.), working on "AI-Based Digital Control of DC-DC Converters"
7. Serkan Sancar (ASELSAN A.Ş.), working on "Design and Implementation of LLC Converter with GaN"
8. Bekir Can Karatopak (ASELSAN A.Ş. - UGES-GKSTM), working on "HFSI-Based Sensorless Control of BLDC Drives"
9. Mustafa Ege Arabacı (ASELSAN A.Ş. - UGES-GKSTM), working on "Design and Compensation of Parallel Working Four-Switch Buck-Boost Converters"
10. Berk Balcı (ASELSAN A.Ş. - UGES-GKSTM), working on "Energy Management Systems Using DRL-Based Approach"
11. Ahmet Burak Kaydeci (Ford Otosan A.Ş.), working on "Regenerative Braking Control Strategy for Electric Vehicles Using Machine Learning"
12. Faruk Bal (Arçelik A.Ş.), working on "Sensorless AC Motor Drives"
13. Fatih Emre Yılmaz (Fergani Uzay Teknolojileri), working on "Field-Oriented Control of BLDC Motor Drive for Reaction Wheel Applications Using Hall Sensors"

Ph.D. Students (Istanbul Technical University, Department of Electrical Engineering)

Graduated:

1. Erkan Eren (Owner of BİENSİS), "Control and system optimization of series DC motor drives via variable switching frequency in battery-powered locomotives used in mines," Ph.D. dissertation, Jul. 2024 (Co-Advisor).

Current Students:

1. Gökhan Bahadır, working on "Model Predictive Control of PMSM Drives" (Co-Advisor)
2. İsmet Şen (RUTE), working on "Electric Motor Drives for Railway Systems"
3. Berk Hızarcı (TA & TÜBİTAK 1004 @ITU), working on "Intelligent Electric Motor Drives"
4. Mustafa Mus Ab Avcı (ASELSAN A.Ş. - Power & Control Design Department), working on "HFSI-Based Hybrid PMSM Drives"

M.Sc. Students (Ist. Okan Univ., Department of Electrical and Electronics Engineering)

Graduated:

1. Ali (Mohammad Eid) Sulaiman Bashabsheh, "Model predictive control of permanent magnet synchronous motor in electric power assisted steering system," M.S. thesis, 2020.
2. İbrahim Halil Hayırlı, "Design and analysis of high power SEPIC converter," M.S. thesis, May 2019.
3. Gökhan Bahadır, "Investigation of performances of model predictive controlled induction motors," M.S. thesis, Sep. 2018 (Co-Advisor).
4. Saaed Ur Rahman, "A simple least squares approach for low-speed performance analysis of indirect FOC induction motor drive using low-resolution position sensor," M.S. thesis, Apr. 2017.
5. Muhammad Ameen Majeed, "An encoder fault tolerant FPGA based robot control using bluetooth of a smart phone," M.S. thesis, Apr. 2017.

Ph.D. Students (Ist. Okan Univ., Department of Electrical and Electronics Engineering)

Graduated:

1. Ömer Cihan Kıvanç, "Sensorless permanent magnet synchronous machine control based on stator feedforward voltage estimation," Ph.D. dissertation, Aug. 2016.

PATENTS, PUBLICATIONS & WORKSHOPS

World Intellectual Property Organization (WIPO) Applications

1. P. A. Z. Hasanoglu, R. N. Tuncay, S. B. Ozturk, and O. C. Kivanc, "Internal resistance measurement method for power supplies like batteries or supercapacitors," W.O. Patent 2017111751 A1, Jun. 29, 2017.
2. D. Zhang, T. Gietzold, S. Varigonda, and S. B. Ozturk, "Method for Smooth Motor Startup," W.O. Patent 2013/016505 A2 & A3, Jan. 31, 2013.

US Patents

1. D. Zhang, T. Gietzold, S. Varigonda, and S. B. Ozturk, "Method for Smooth Motor Startup," U.S. Patent 9,263,979 B2, Feb. 16, 2016.
2. D. Zhang, T. Gietzold, S. Varigonda, and S. B. Ozturk, "Method for Smooth Motor Startup," U.S. Patent Application 20140152212 A1, Jun. 5, 2014.

Turkish Patents

1. P. G. Ali Zada, Ö. C. Kıvanç, S. B. Öztürk, and R. N. Tuncay, "ÇOK KANATLI YELKEN TİPİ DAİRESEL BİR RÜZGAR TÜRBİNİ," Turkish Patent Application 2013-G-456408, Jul. 21, 2015.
2. P. H. Ali Zada, Ö. C. Kıvanç, S. B. Öztürk, and R. N. Tuncay, "SÜPER KAPASİTÖRLER İÇİN İÇ DİRENÇ ÖLÇME YÖNTEMİ," Turkish Patent TR 2015 16481 B, Oct. 10, 2018.

Book Chapter

1. S. B. Ozturk, "Development of field-oriented control induction motor using VisSim," in *DSP-Based Electromechanical Motion Control*, H. A. Toliyat, Ed. Boca Raton, FL, USA: CRC Press, 2003.

IEEE Transactions - SCI, SCI-E

1. B. Akin, S. B. Ozturk, H. A. Toliyat, and M. Rayner, "DSP-based sensorless electric motor fault-diagnosis tools for electric and hybrid electric vehicle powertrain applications," *IEEE Trans. Veh. Technol.*, vol. 58, no. 5, pp. 2150–2159, Jun. 2009, doi: 10.1109/TVT.2008.2007587.
2. B. Akin, S. B. Ozturk, H. A. Toliyat, and M. Rayner, "DSP-based sensorless electric motor fault-diagnosis tools for electric and hybrid electric vehicle powertrain applications," *IEEE Trans. Veh. Technol.*, vol. 58, no. 6, pp. 2679–2688, Jul. 2009, doi: 10.1109/TVT.2009.2012430.

3. S. B. Ozturk, W. C. Alexander, and H. A. Toliyat, "Direct torque control of four-switch brushless DC motor with non-sinusoidal back EMF," *IEEE Trans. Power Electron.*, vol. 25, no. 2, pp. 263–271, Feb. 2010, doi: 10.1109/TPEL.2009.2028888.
4. S. B. Ozturk and H. A. Toliyat, "Sensorless direct torque and indirect flux control of brushless DC motor," *IEEE/ASME Trans. Mechatronics*, vol. 16, no. 2, pp. 351–360, Apr. 2011, doi: 10.1109/TMECH.2010.2043742.
5. O. C. Kivanc and S. B. Ozturk, "Sensorless PMSM drive based on stator feedforward voltage estimation improved with MRAS multiparameter estimation," *IEEE/ASME Trans. Mechatronics*, vol. 23, no. 3, pp. 1326–1337, Jun. 2018, doi: 10.1109/TMECH.2018.2817246.

IET (Institution of Engineering and Technology) Journals - SCI, SCI-E

1. A. Deriszadeh, O. Karabasoglu, and S. B. Ozturk, "Excitation procedure for brushless wound-rotor synchronous starter generator with seamless transitions," *IET Power Electron.*, vol. 12, no. 11, pp. 2873–2883, Sep. 18, 2019, doi: 10.1049/iet-pel.2019.0058.
2. O. C. Kivanc and S. B. Ozturk, "Sector determination for SVPWM based four-switch three-phase VSI," *Electron. Lett.*, vol. 53, no. 5, pp. 343–345, Mar. 2, 2017, doi: 10.1049/el.2016.3711.

Other SCI-E Journals

1. E. Eren, H. Kaya, and S. B. Ozturk, "Extend the lifetime of power components in series DC motor drives using ANN-based adaptive switching frequency optimization," *Sensors*, vol. 25, no. 22, Art. no. 6996, Nov. 16, 2025, doi: 10.3390/s25226996.
2. F. E. Gocen, S. B. Ozturk, M. H. Aksit, G. Dugan, B. Cakmak, and C. Demir, "Design and implementation of a full SiC-based phase-shifted full-bridge DC-DC converter with nanocrystalline-cored magnetics for railway battery charging applications," *Energies*, vol. 18, no. 15, Art. no. 3945, Jul. 2025, doi: 10.3390/en18153945.
3. A. G. Matanagh, S. B. Ozturk, T. Goktas, and O. Hegazy, "Classifying the percentage of broken magnets in PMSM using combined STFT and pre-trained convolutional neural network," *Energies*, vol. 17, no. 2, Art. no. 368, Jan. 2024, doi: 10.3390/en17020368.
4. C. B. Oguz, E. Avci, and S. B. Ozturk, "Analysis of PV power plant performance considering combination of different MPPT algorithms, shading patterns and connection types," *Eng. Sci. Technol., Int. J.*, vol. 48, Dec. 2023, doi: 10.1016/j.jestch.2023.101559.
5. I. Ataseven, I. Sahin, and S. B. Ozturk, "Design and implementation of a paralleled discrete SiC MOSFET half-bridge circuit with an improved symmetric layout and unique laminated busbar," *Energies*, vol. 16, no. 6, Art. no. 2903, Mar. 2023, doi: 10.3390/en16062903.
6. O. C. Kivanc, B. T. Akgun, S. Bilgen, S. B. Ozturk, S. Baysan, and R. N. Tuncay, "Residential energy management system based on integration of fuzzy logic and simulated annealing," *Turk. J. Electr. Eng. Comput. Sci.*, Apr. 15, 2022, doi: 10.55730/1300-0632.3864.
7. O. C. Kivanc, S. B. Ozturk, and H. A. Toliyat, "On-line dead time compensator for PMSM drive based on current observer," *Eng. Sci. Technol., Int. J.*, May 2021, doi: 10.1016/j.jestch.2021.04.006.
8. A. Kasasbeh, B. Kelleci, S. B. Ozturk, A. Aksoz, and O. Hegazy, "SEPIC converter with an LC regenerative snubber for EV applications," *Energies*, vol. 13, no. 21, Art. no. 5765, Nov. 2020, doi: 10.3390/en13215765.
9. Y. Wang, A. Aksoz, T. Geury, S. B. Ozturk, O. C. Kivanc, and O. Hegazy, "A review of modular multilevel converters for stationary applications," *Appl. Sci.*, vol. 10, no. 21, Art. no. 7719, Nov. 2020, doi: 10.3390/app10217719.
10. S. B. Ozturk, O. C. Kivanc, A. Aksoz, and O. Hegazy, "Rotor position alignment of FSTPI based PMSM drive using low frequency signal injection," *Appl. Sci.*, vol. 10, no. 21, Art. no. 7397, Oct. 2020, doi: 10.3390/app10217397.
11. O. C. Kivanc and S. B. Ozturk, "Low-cost position sensorless speed control of PMSM drive using four-switch inverter," *Energies*, vol. 12, no. 4, pp. 741–765, Feb. 2019, doi: 10.3390/en12040741.
12. G. Bahadir, S. B. Ozturk, and M. Aktas, "MRAS-based sensorless predictive torque control of three-phase induction motor using SVPWM," submitted for publication, Dec. 2020.

Internationally Indexed Journals

1. M. Ali, İ. Şen, S. B. Öztürk, and E. Avcı, "MIL, SIL and PIL implementation for closed loop control of flyback converter," *Gazi Univ. J. Sci.*, pp. 1–1, Dec. 2023, doi: 10.35378/gujs.1342626.
2. C. B. Oğuz, E. Avcı, and S. B. Öztürk, "Effects of PSO algorithm parameters on the MPPT system under partial shading condition," *Intell. Methods Eng. Sci.*, vol. 2, no. 1, pp. 22–26, Mar. 2023, doi: 10.58190/imiens.2023.8.
3. O. C. Kivanc and S. B. Ozturk, "MATLAB function based approach to FOC of PMSM drive," *Int. J. Simul. Syst. Sci. Technol.*, vol. 17, no. 33, pp. 2.1–2.8, Jan. 2016, doi: 10.5013/IJSSST.a.17.33.02.
4. P. A. Zada, N. Tuncay, S. B. Ozturk, C. Kivanc, H. A. Mamedov, and S. A. Abdullaev, "Parametrical method of low-frequency harmonics suppression in rectifier's output voltage under supply voltage unbalances (mathematical model, study and industrial application)," *Math. Comput. Model. Ser.: Tech. Sci.*, vol. 13, pp. 5–16, Apr. 2016.

National Journals (ULAKBIM - TR DIZIN)

1. O. C. Kivanc and S. B. Ozturk, "Sensorless control of permanent magnet synchronous generator drive using reduced switch inverter," *Pamukkale Univ. J. Eng. Sci.*, vol. 25, no. 2, pp. 132–142, Apr. 2019, doi: 10.5505/pajes.2018.94770.
2. O. C. Kivanc and S. B. Ozturk, "Stator feedforward voltage estimation based sensorless permanent magnet synchronous generator drive using multi-parameter estimation based on MRAS," *Çukurova Univ. J. Fac. Eng. Archit.*, vol. 32, no. 3, pp. 227–241, Sep. 2017, doi: 10.21605/cukurovaummfd.357286.

Conference Papers

1. E. R. Güneş and S. B. Öztürk, "A practical test method for railway traction converter power modules according to ISC 61287-1:2014," in *Proc. Int. Graduate Research Symp. (IGRS24)*, Istanbul, Türkiye, May 08–10, 2024.
2. F. E. Göcen and S. B. Öztürk, "Nanocrystalline cored integrated magnetics design for phase shifted full bridge converter," in *Proc. Int. Graduate Research Symp. (IGRS24)*, Istanbul, Türkiye, May 08–10, 2024.
3. E. Eren, S. B. Öztürk, and H. Kaya, "Effect of variable switching frequency on motor life and power electronic components in battery powered locomotives," in *Proc. 9th Int. Congr. Mining, Machinery and Technologies (IMMAT23)*, İzmir, Türkiye, Sep. 13–15, 2023.
4. L. E. Efe and S. B. Öztürk, "Offline stator resistance estimation for permanent magnet synchronous motor and real-time implementation using embedded coder®," in *Proc. Int. Graduate Research Symp. (IGRS23)*, Istanbul, Türkiye, May 02–05, 2023.
5. N. D. Baghbani and S. B. Öztürk, "Estimated position error reduction of SMO sensorless control fed IPMSM using variable notch filter," in *Proc. Int. Graduate Research Symp. (IGRS23)*, Istanbul, Türkiye, May 02–05, 2023.
6. Ö. N. Atalay and S. B. Öztürk, "Torque ripple compensation of inverters under fluctuating DC voltage in railway vehicles," in *Proc. Int. Graduate Research Symp. (IGRS23)*, Istanbul, Türkiye, May 02–05, 2023.
7. Ç. B. Oğuz, E. Avcı, and S. B. Öztürk, "Effects of PSO algorithm parameters on the MPPT system under partial shading condition," in *Proc. Int. Conf. Engineering Technologies (ICENTE22)*, Konya, Türkiye, Nov. 17–19, 2022.
8. A. Aksoz, Y. Benomar, T. Geury, M. E. Baghdadi, O. Hegazy, S. B. Ozturk, and I. Colak, "Design and technical assessment of local electrical storage systems in double-fed generators for wind turbine power system applications," in *Proc. 16th Int. Conf. Ecological Vehicles and Renewable Energies (EVER)*, Monte Carlo, Monaco, May 5–7, 2021.
9. Ö. C. Kıvanç, B. T. Akgün, S. Bilgen, S. B. Öztürk, S. Baysan, and R. N. Tuncay, "Designing a smart home energy management system to improve cost/comfort factor," in *Proc. 12th Int. Conf. Electrical and Electronics Engineering (ELECO)*, Bursa, Turkey, Nov. 2020, pp. 44–48, doi: 10.1109/ELECO51834.2020.00059.
10. M. Karamuk and S. B. Ozturk, "Design of a controller for torsional vibrations of an electric

vehicle powertrain," in *Proc. Int. Aegean Conf. Electrical Machines and Power Electronics (ACEMP) & Int. Conf. Optimization of Electrical and Electronic Equipment (OPTIM)*, Istanbul, Turkey, Aug. 27–29, 2019, pp. 804–809, doi: 10.1109/ACEMP-OPTIM44294.2019.9007126.
11. I. H. Hayirli, B. Kelleci, O. C. Kivanc, S. B. Ozturk, R. N. Tuncay, and M. O. Citci, "Design and analysis of 240 watt SEPIC converter for LED applications," in *Proc. IEEE 28th Int. Symp. Industrial Electronics (ISIE)*, Vancouver, BC, Canada, Jun. 12–14, 2019, pp. 804–809, doi: 10.1109/ISIE.2019.8781396.
12. A. Majeed, S. B. Ozturk, and D. K. Tureli, "An encoder fault tolerant FPGA based robot control using bluetooth of a smart phone," in *Proc. IEEE ELECO Biannu. Meeting*, Bursa, Turkey, Nov. 30–Dec. 02, 2017, pp. 1336–1341.
13. S. B. Ozturk, O. C. Kivanc, B. Attila, S. U. Rehman, B. Akin, and H. A. Toliyat, "A simple least squares approach for low speed performance analysis of indirect FOC induction motor drive using low-resolution position sensor," in *Proc. IEEE IEMDC Bienn. Meeting*, Miami, FL, USA, May 21–24, 2017, pp. 1–9, doi: 10.1109/IEMDC.2017.8002156.
14. O. C. Kivanc, S. B. Ozturk, R. N. Tuncay, E. Kesici, and C. Yazi, "Electro-hydraulic power steering system modelling for parameter fault detection based on model reference adaptive frame," in *Proc. IEEE IECON Annu. Meeting*, Florence, Italy, Oct. 24–27, 2016, pp. 1808–1814, doi: 10.1109/IECON.2016.7793788.
15. O. C. Kivanc and S. B. Ozturk, "MATLAB function based approach to FOC of PMSM drive," in *Proc. IEEE European Modeling Symp. (EMS)*, Madrid, Spain, Oct. 6–8, 2015, pp. 96–102, doi: 10.1109/EMS.2015.81.
16. P. G. Ali-Zade, R. N. Tuncay, S. B. Ozturk, and O. C. Kivanc, "Quasi-smart construction synchronous machine working with extensive cycling load," in *Proc. Int. Conf. Application of Information and Communication Technology and Statistics in Economy and Education (ICAICTSEE – 2012)*, Sofia, Bulgaria, Oct. 5–6, 2012, pp. 93–101.
17. O. Ustun, S. B. Ozturk, O. C. Kivanc, P. G. Ali Zade, and R. N. Tuncay, "Exciting system selection for brushless synchronous machine," in *Proc. 8th Mediterranean Conf. Power Generation, Transmission, Distribution and Energy Conversion (MedPower 2012)*, Cagliari, Italy, Oct. 1–3, 2012, pp. 72–78, doi: 10.1049/cp.2012.2048.
18. T. Akgün, Z. Koç, Ş. Güner, B. Öztürk, B. Özkan, Ö. Üstün, N. Tuncay, and Ü. Özgüner, "A study on autonomous vehicle development process at Okan University," in *Proc. IEEE ICVES Annu. Meeting*, İstanbul, Turkey, Jul. 24–27, 2012, pp. 369–374, doi: 10.1109/ICVES.2012.6294264.
19. S. Ozturk and H. A. Toliyat, "Sensorless direct torque and indirect flux control of brushless DC motor with non-sinusoidal back-EMF," in *Proc. IEEE IECON Annu. Meeting*, Orlando, FL, USA, Nov. 10–13, 2008, pp. 1373–1378, doi: 10.1109/IECON.2008.4758154.
20. S. B. Ozturk, W. C. Alexander, and H. A. Toliyat, "Direct torque control of four-switch brushless DC motor with non-sinusoidal back-EMF," in *Proc. IEEE PESC Annu. Meeting*, Rhodes, Greece, Jun. 15–19, 2008, pp. 4730–4736, doi: 10.1109/PESC.2008.4592717.
21. S. B. Ozturk, O. Yang, and H. A. Toliyat, "Power factor correction of direct torque controlled brushless DC motor drive," in *Proc. IEEE IAS Annu. Meeting*, New Orleans, LA, USA, Sep. 23–27, 2007, pp. 297–304, doi: 10.1109/07IAS.2007.52.
22. B. Akin, S. B. Ozturk, and H. A. Toliyat, "On-board fault diagnosis of HEV induction motor drive at start-up and during idle mode," in *Proc. IEEE VPPC Annu. Meeting*, Arlington, TX, USA, Sep. 9–12, 2007, pp. 140–147, doi: 10.1109/VPPC.2007.4544114.
23. I. S. Freitas, H. A. Toliyat, C. B. Jacobina, and S. B. Ozturk, "A PWM strategy with reduced bearing currents for five-phase motors," in *Proc. IEEE VPPC Annu. Meeting*, Arlington, TX, USA, Sep. 9–12, 2007, vol. 1–2, pp. 354–358, doi: 10.1109/VPPC.2007.4544151.
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Workshops

- Workshop on Electric and Hybrid Electric Vehicle Technologies Cluster (3rd Workshop), Istanbul Okan University Tuzla Campus, Prof. Dr. Şule KUT Conference Hall, 14.06.2015 - Participated in the development of the report regarding the Project 4.1- High-Efficient, Low-Cost and New Generation Electric Drive Systems of the Group 4: Electrical Machines, Power Electronics, and Drive Systems and moderated the group.
- Workshop on Electric and Hybrid Electric Vehicle Technologies Cluster (2nd Workshop), Istanbul Okan University Tuzla Campus, Faculty of Engineering, 27.03.2015 - Participated in the development of the report for Group 4: Electrical Machines, Power Electronics, and Drive Systems and moderated the group.

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