

ERDEM AKBOY

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Davutpaşa Campus/Yildiz Technical University, Esenler-
İSTANBUL

International Researcher IDs

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Publons / Web Of Science ResearcherID: U-8776-2019

ScopusID: 55924797500

Yoksis Researcher ID: 189771



Education

Post Doctorate 2023 - 2024	Aalborg Universitet (Aalborg University), Aalborg Energy, Applied Power Electronics, Denmark
Doctorate 2012 - 2018	Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Elektrik Mühendisliği/ Elektrik Makinaları Ve Güç Elektroniği, Turkey
Postgraduate 2009 - 2011	Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Elektrik Mühendisliği, Turkey
Undergraduate 2005 - 2009	Sakarya University, Faculty Of Engineering, Elektrik-Elektronik Mühendisliği, Turkey

Foreign Languages

English, B2 Upper Intermediate

Dissertations

Doctorate, Development and Implementation of a New Modular Active Snubber Cell for Inverters, Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Elektrik Mühendisliği/ Elektrik Makinaları Ve Güç Elektroniği, 2018

Postgraduate, Improvement of A New Single Stage PFC Circuit with Resonant Circuits and Soft Switching, Yildiz Technical University, Elektrik Mühendisliği/ Elektrik Makinaları Ve Güç Elektroniği, 2012

Academic Titles / Tasks

Assistant Professor 2021 - Continues	Yildiz Technical University, Faculty Of Electrical & Electronics, Electrical Engineering Department
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Researcher
2023 - 2024

Aalborg Universitet (Aalborg University), Aalborg Energy, Applied Power
Electronics

Research Assistant PhD
2018 - 2021

Yildiz Technical University, Faculty Of Electrical & Electronics, Electrical
Engineering Department

Research Assistant
2010 - 2018

Yildiz Technical University, Faculty Of Electrical & Electronics, Electrical
Engineering Department

Supported Projects

1. AKBOY E., Karakuş B., Project Supported by Higher Education Institutions, Yumuşak Anahtarlamalı Faz Kaydırmalı Tam Köprü Güç Dönüştürücüsünün Tasarımı ve Uygulaması, 2024 - Continues
2. Akboy E., Blaabjerg F., TUBITAK Project, BATTERY MANAGEMENT SYSTEM IN TERMS OF RELIABILITY, STATE OF CHARGE ESTIMATION AND DEVELOPMENT OF CONTROL METHODS , 2023 - 2024
3. AKBOY E., ATALAY H., EŞEN O., Project Supported by Higher Education Institutions, Elektrikli Araçlar İçin Tek Fazlı Güç Faktörü Düzeltmeli Yükseltici Dönüştürücü Devresi Analizi Tasarımı ve Uygulaması, 2021 - 2024
4. Akboy E., Atalay H., Eşen O., Project Supported by Higher Education Institutions, Elektrikli Araçlar İçin Tek Fazlı Güç Faktörü Düzeltmeli Yükseltici Dönüştürücü Devresi Analizi Tasarımı ve Uygulaması, 2021 - 2024
5. BODUR H., DUDAK A. T., GÜNDOĞAN A., AKBOY E., Yeşilyurt H., Project Supported by Higher Education Institutions, Tek Fazlı Düşürücü Yükseltici ve Geri Dönüştürücü Tabanlı Tek Aşamalı Yeni Güç Faktörü Düzeltme PFC Devrelerinin Geliştirilmesi ve Uygulanması, 2019 - 2021
6. Akboy E., İlhan S., TUBITAK Project, OTOMOTİV SEKTÖRÜNE YÖNELİK ARAÇ KONTROL SİSTEMİ TASARIMI, 2019 - 2020
7. BODUR H., AKBOY E., Project Supported by Higher Education Institutions, İnvverteler İçin Yeni ve Modüler Bir Aktif Bastırma Hücresinin Geliştirilmesi ve Uygulanması, 2015 - 2018
8. BODUR H., AKBOY E., Project Supported by Higher Education Institutions, Rezonans Devreli ve Yumuşak Anahtarlamalı Yeni Bir Tek Aşamalı PFC Devresinin Geliştirilmesi, 2012 - 2016

Awards

1. Akboy E., Top 10 Research Assistants with Publications, Yıldız Teknik Üniversitesi, March 2021

Published journal articles indexed by SCI, SSCI, and AHCI

1. **A comparason of the effects of different commutation techniques on acoustic noise in AFPM UAV motors**
Kurtulus F., Akboy E.
Electrical Engineering, vol.106, no.5, pp.6423-6429, 2024 (SCI-Expanded)
2. **A New Single-Stage Single-Switch AC-DC PFC Topology**
Bodur H., Yesilyurt H., Akboy E., Gundogan A., Dudak A. T.
Iranian Journal of Science and Technology - Transactions of Electrical Engineering, vol.47, no.2, pp.627-637, 2023 (SCI-Expanded)
3. **MPPT mechanism based on novel hybrid particle swarm optimization and salp swarm optimization algorithm for battery charging through simulink**
Dagal I., Akin B., Akboy E.
Scientific Reports, vol.12, no.1, 2022 (SCI-Expanded)

4. **A new single-stage single-switch isolated AC-DC PFC topology with high duty cycle and low current stress and high efficiency**
Bodur H., Akboy E., Yesilyurt H., Gündoğan A., Dudak A. T.
ELECTRICAL ENGINEERING, vol.104, no.5, pp.3049-3059, 2022 (SCI-Expanded)
5. **A novel hybrid series salp particle Swarm optimization (SSPSO) for standalone battery charging applications**
Dagal I., Akin B., Akboy E.
Ain Shams Engineering Journal, vol.13, no.5, 2022 (SCI-Expanded)
6. **Improved salp swarm algorithm based on particle swarm optimization for maximum power point tracking of optimal photovoltaic systems**
Dagal I., Akin B., Akboy E.
International Journal of Energy Research, vol.46, no.7, pp.8742-8759, 2022 (SCI-Expanded)
7. **A novel active snubber cell for soft-switched isolated PWM half-bridge converter**
Bodur H., Yesilyurt H., Akboy E., Ting N. S.
Electrical Engineering, vol.102, pp.1821-1830, 2020 (SCI-Expanded)
8. **A New and Modular Active Snubber Cell for Inverters**
Bodur H., Akboy E., Yesilyurt H.
IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, vol.67, pp.288-296, 2020 (SCI-Expanded)
9. **A new single stage single phase power factor corrected and isolated AC-DC converter based on resonance and soft switching**
BODUR H., AKBOY E., AKSOY İ.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.24, no.3, pp.1487-1501, 2016 (SCI-Expanded)

Articles Published in Other Journals

1. **Axial Flux Permanent Magnet Motor Design for Lightweight Unmanned Aerial Vehicles**
Kurtuluş F., Akboy E.
Turkish Journal of Electrical Power and Energy Systems, vol.5, no.1, pp.2-9, 2025 (Peer-Reviewed Journal)
2. **Design and Implementation of a Power Supply for KNX Protocol**
AKAR H. S., AKBOY E., EYİDOĞAN Y.
Turkish journal of electrical power and energy systems (Online), vol.3, no.2, pp.90-96, 2023 (Peer-Reviewed Journal)
3. **Analysis and Design of a Flyback Converter for Universal Input and Wide Load Ranges**
Gokcegoz F., AKBOY E., OBDAN A. H.
ELECTRICA, vol.21, no.2, pp.235-241, 2021 (ESCI)
4. **A new resonance based single-switch PFC converter**
BODUR H., AKBOY E.
Electrica, vol.21, no.1, pp.160-167, 2021 (ESCI)
5. **DESIGN AND ANALYSIS OF A FLYBACK CONVERTER WITH IMPROVED SNUBBER CELLS**
Tanrikulu U., AKBOY E., AKIN B.
SIGMA JOURNAL OF ENGINEERING AND NATURAL SCIENCES-SIGMA MUHENDISLIK VE FEN BILIMLERI DERGISI, vol.38, no.4, pp.2205-2216, 2020 (ESCI)
6. **Passive Lossless Snubber for PFC AC-DC Converters**
Bodur H., Yesilyurt H., Akboy E.
ELECTRICA, vol.20, no.1, pp.97-106, 2020 (ESCI)
7. **Yüksek Güç Faktörlü Şebeke Bağlı Bir PV Sistemin Modellenmesi ve Farklı Işınımlar Altında Kontrolü**
AKBOY E.
European Journal of Science and Technology, pp.794-802, 2019 (Peer-Reviewed Journal)

Papers Published in Refereed Scientific Meetings

1. **Charging Strategies Influence on DC-DC Converter and Li-Ion Battery Performance**
Tahir M. U., Chakraborty S., Akboy E., Sangwangwonich A., Stroe D. I., Hegazy O., Blaabjerg F.
2024 IEEE Energy Conversion Congress and Exposition (ECCE), Arizona, United States Of America, 20 - 24 October 2024, pp.2248-2253
2. **Thermal Stress Analysis of Dual Active Bridge DC-DC Converter Under Battery Pulsed Current Charging Strategy**
Akboy E., Tahir M. U., Sangwangwonich A., Stroe D. I., Blaabjerg F.
2024 IEEE Energy Conversion Congress and Exposition (ECCE), Arizona, United States Of America, 20 - 24 October 2024, pp.4516-4520
3. **Extending the ZVS Range of Quasi Resonant Inverter Topology used Induction Hobs**
Şahin A., Akboy E.
15th National Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 28 - 30 November 2024, pp.1-5
4. **Thermal Performance and Efficiency Analysis of Conventional and Active Clamp Forward Converters**
Akkuş M., Bakırdemir E. H., Zeren T., Kaymakçı Ö. S., Akboy E.
15th National Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 28 - 30 November 2024, pp.1-5
5. **Design and Simulation of Critical Conduction Mode Boost PFC Circuit**
Yaşar R. Ö., Doğru U. E., Haznedaroğlu S. S., Akboy E.
11th International Conference on Electrical and Electronics Engineering (ICEEE), Muğla, Turkey, 22 - 24 April 2024, pp.1-6
6. **Elektrikli Araçlar Uygulamaları için Yüksek Güçlü İnverterlerde Kontrol Yöntemlerinin İncelenmesi**
Karasoy Ö., Akboy E.
11. International Congress on Engineering and Technology Management, İstanbul, Turkey, 16 - 17 March 2024, pp.246-254
7. **MPPT TEKNİĞİ KULLANARAK FOTOVOLTAİK SİSTEMLER İÇİN GENETİK ALGORİTMA TABANLI YÜKSELTİCİ DÖNÜŞTÜRÜCÜ**
Tülücü M. E., Dagal I., Akboy E.
11. Uluslararası Mühendislik ve Teknoloji Yönetimi Kongresi , İstanbul, Turkey, 16 - 17 March 2024, pp.211-218
8. **Multiple Output Application of Quasi-Resonant Flybacks on TV Applications**
Haznedaroğlu S. S., Doğru U. E., Yaşar R. Ö., Akboy E.
2023 14th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 30 November - 02 December 2023, pp.1-6
9. **Comparison of Increasing Efficiency in DAB Converters using EPS, DPS and TPS with Evolutionary Algorithms**
Esturk A., Akboy E.
25th European Conference on Power Electronics and Applications, EPE 2023 ECCE Europe, Aalborg, Denmark, 4 - 08 September 2023
10. **Snubber Cell Design in Triac Based AC Choppers in Vacuum Cleaner Applications**
Aktekin S., Çarkacı B., Akboy E.
ELECO 2022 Elektrik-Elektronik ve Biyomedikal Mühendisliği Konferansı, Bursa, Turkey, 24 - 26 November 2022, pp.1-5
11. **Review of Forward Converters**
Akkuş M., Bodur H., Akboy E.
ELECO 2022 Elektrik-Elektronik ve Biyomedikal Mühendisliği Konferansı, Bursa, Turkey, 24 - 26 November 2022, pp.1-5
12. **Basic ZVT Boost Converter Simulation for Low Power Electric Vehicle Systems**
Ergin M. Ş., Akboy E.
ELECO 2022 Elektrik-Elektronik ve Biyomedikal Mühendisliği Konferansı, Bursa, Turkey, 24 - 26 November 2022,

pp.1-5

13. **Design and Implementation of a Power Supply for KNX Protocol**
Solmaz Akar H., Akboy E., Eyidođan Y.
ELECO 2022 Elektrik-Elektronik ve Biyomedikal Mühendisliđi Konferansı, Bursa, Turkey, 24 - 26 November 2022,
pp.1-5
14. **The Optimization of Reactive Power at Dual Active Bridge Converters with Genetic Algorithm Çift Yönlü Tam Köprü Turu Dönusturuculerde Reaktif Gucun Genetik Algoritma ile Optimizasyonu**
Esturk A., AKBOY E.
2022 Innovations in Intelligent Systems and Applications Conference, ASYU 2022, Antalya, Turkey, 7 - 09 September 2022
15. **A Basic Phase Shift Full Bridge DC-DC Converter Design And Simulation**
Kucuk S., Akboy E.
57th International Universities Power Engineering Conference: Big Data and Smart Grids, UPEC 2022, İstanbul, Turkey, 30 August - 02 September 2022
16. **Minimizing Reactive Power of DAB Converters in EPS Control with Evolutionary Computation**
AKBOY E., ACAR VURAL R.
10th IEEE International Conference on Renewable Energy Research and Applications (ICRERA), İstanbul, Turkey, 26 - 29 September 2021, pp.351-356
17. **GENİŞ GİRİŞ GERİLİMİ ARALIKLI REZONANSLI LLC DÖNÜŞTÜRÜCÜLERİNANALİZİ**
Sađlam H., Bodur H., Akboy E.
6. ULUSLARARASI MUHENDİSLİK MİMARLIK VE TASARIM KONGRESİ, İstanbul, Turkey, 17 - 18 December 2020, pp.591-599
18. **COMPARATIVE ANALYSIS OF SINGLE-SWITCH FORWARD CONVERTERS WITH PASSIVE SNUBBER**
BODUR H., PINARBAŞI M., AKBOY E.
International Energy and Engineering Congress and Exhibition, Gaziantep, Turkey, 18 October 2018, pp.749-759
19. **An improved duty cycle ZVT two swicth forward converter**
BODUR H., Zungor F., AKBOY E.
5th International Conference on Electrical and Electronics Engineering, ICEEE 2018, İstanbul, Turkey, 3 - 05 May 2018, pp.36-40
20. **Interview of Soft Switching Tecniques for Inverters**
BODUR H., AKBOY E.
2nd International Energy and Enginnering Conference, Gaziantep, Turkey, 12 October 2017, pp.197-203
21. **Yumuşak Anahtarlama Üç Seviyeli İnverterlerin İncelenmesi**
BODUR H., OKUMUŞ H., AKBOY E.
Elektrik, Elektronik, Bilgisayar ve Biyomedikal Mühendisliđi Sempozyumu (ELECO), Bursa, Turkey, 01 December 2016, pp.1-5
22. **A new soft switching three level T type inverter**
ŞAHİN Y., TINÇ N. S., AKBOY E., AKSOY İ.
2016 10th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG), Bydgoszcz, Poland, Poland, 29 June - 01 July 2016
23. **Analysis of Soft Switching Three Level Inverters**
BODUR H., Okumus H., AKBOY E.
National Conference on Electrical, Electronics and Biomedical Engineering (ELECO), Bursa, Turkey, 1 - 03 December 2016, pp.368-372
24. **A new forward-flyback based single switch single stage PFC converter**
Bodur H., Yılmaz Kaya K., Akboy E., Aksoy I.
6th IEEE International Symposium on Power Electronics for Distributed Generation Systems, PEDG 2015, Aachen, Germany, 22 - 25 June 2015
25. **A new single stage power factor correction circuit with resonant circuit and soft switching**
BODUR H., AKBOY E., Aksoy I.
2013 4th International Conference on Power Engineering, Energy and Electrical Drives, POWERENG 2013,

İstanbul, Turkey, 13 - 17 May 2013, pp.834-839

26. **Tek Aşamalı Güç Faktörü Düzeltme Devrelerinin İncelenmesi**

BODUR H., AKBOY E., AKSOY İ.

Elektrik- Elektronik ve Bilgisayar Sempozyumu, 01 October 2011, pp.168-172

27. **Üç Fazlı Güç Faktörü Düzeltme Devrelerinin İncelenmesi**

BODUR H., AKBOY E., AKSOY İ.

Elektrik- Elektronik ve Bilgisayar Sempozyumu, ELECO'2012, Bursa, Turkey, 02 December 2010, pp.168-172

Other Publications

1. **Development and Implementation of a New Modular Active Snubber Cell for Inverters**

Akboy E.

Other, pp.1-113, 2018

2. **Improvement of A New Single Stage PFC Circuit with Resonant Circuits and Soft Switching**

Akboy E.

Other, pp.1-100, 2011

Academic and Administrative Experience

2021 - 2022	Deputy Head of Department	Yildiz Technical University, Faculty Of Electrical & Electronics, Electrical Engineering Department
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Courses

Doctorate

Rezonanslı Güç Dönüştürücüleri, Doctorate, 2022 - 2023

Postgraduate

Elektriksel Enerji Depolama Sistemleri, Postgraduate, 2021 - 2022

Undergraduate

Power Electronics, Undergraduate, 2020 - 2021

Circuit Analysis and Synthesis, Undergraduate, 2019 - 2020

Control of Electrical Machines, Undergraduate, 2020 - 2021

Elektronics, Undergraduate, 2018 - 2019

The Control of Electrical Machines, Undergraduate, 2018 - 2019

Digital Systems, Undergraduate, 2018 - 2019

Power Electronics, Undergraduate, 2018 - 2019

Supervised Theses

Akın B., Akboy E., HIBRIT SOLAR ŞARJ KONTROL CİHAZININ TASARIMI VE UYGULAMASI, Doctorate, A.Durmuş(Student), Continues

Akboy E., Elektrikli araç uygulamaları için yüksek güçlü inverterlerde kontrol yöntemlerinin incelenmesi, Postgraduate, Ö.KARASOY(Student), 2024

Akboy E., Kısmi rezonanslı geri dönüşlü çevirici tasarımı ve uygulaması, Postgraduate, S.SELİN(Student), 2024

Akboy E., İnsansız hava aracı uygulamaları için eksenel akıllı sürekli mıknatıslı motor tasarımı ve akustik performansının farklı kontrol yöntemleriyle incelenmesi, Postgraduate, S.FARUK(Student), 2024

Akboy E., Fotovoltaik sistemlerde yükseltici türü dönüştürücü tabanlı MPPT sisteminin evrimsel algoritma kontrolü,

Postgraduate, M.EMİN(Student), 2024

Akboy E., Yüksek güç faktörlü yükseltici tür dönüştürücü beslemeli LLC rezonans devresi tasarımı ve uygulaması, Postgraduate, R.ÖNDER(Student), 2024

Akboy E., Yumuşak Anahtarlama Güç Dönüştürücü Tasarımı ve Uygulaması, Postgraduate, Ş.Ergin(Student), 2023

Akboy E., Batarya şarj sistemleri için güç dönüştürücüsü analizi, tasarımı ve simülasyonu, Postgraduate, Ş.KÜÇÜK(Student), 2023

Memberships / Tasks in Scientific Organizations

IEEE, Member, 2023 - Continues, United States Of America

Peer Reviews in Scientific Publications

JOURNAL OF CIRCUITS SYSTEMS AND COMPUTERS, Journal Indexed in SCI-E, November 2020

INTERNATIONAL TRANSACTIONS ON ELECTRICAL ENERGY SYSTEMS, Journal Indexed in SCI-E, August 2020

TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, Journal Indexed in SCI-E, June 2020

IEEE Transaction on Power Electronics, SCI Journal, May 2018

IEEE Transaction on Industrial Electronics, SCI Journal, March 2018

Tasks In Event Organizations

Erdinç O., Catalao J., Erenoğlu A. K., Akboy E., Şengör İ., 3rd International Conference on Smart Energy Systems and Technologies (SEST), Scientific Congress, İstanbul, Turkey, Eylül 2020

Metrics

Publication: 46

Citation (WoS): 87

Citation (Scopus): 154

H-Index (WoS): 6

H-Index (Scopus): 6

Congress and Symposium Activities

World Energy Strategies Congress and Exhibition, Working Group, İstanbul, Turkey, 2019

Research Areas

Electrical and Electronics Engineering, Energy, Renewable energy, Power Electronics, Power Converters, Engineering and Technology