

Asst. Prof. ALPER NABI AKPOLAT

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: ABH-8682-2020

ScopusID: 57203142401

Yoksis Researcher ID: 33638

Biography

Alper Nabi Akpolat received the B.Sc. degree in Electrical-Electronics Engineering and the M.Sc. degree in Mechatronics Engineering from Firat University, Elazig, Turkey, in 2012 and 2015, respectively, and then received his Ph.D. degree in Electrical-Electronics Engineering, from the Faculty of Technology, at Marmara University, Istanbul, Turkey, in 2021. He is also serving as an Assistant Professor in the same department.

From March 2019, he has been a Guest Ph.D. student for one year with the Department of Energy Technology, Aalborg University, Denmark as part of the YÖK-YUDAB scholarship. His current research interests include renewable energy systems, PV systems, DC microgrids, control of distributed generation systems, neural networks, and applied artificial intelligence in power electronics and power systems.

Education Information

Doctorate, Marmara University, Institute for Graduate Studies in Pure and Applied Sciences, Department of Electrical and Electronics Engineering, Turkey 2015 - 2021

Postgraduate, Firat University, Institute Of Science, Mechatronics Engineering, Turkey 2012 - 2015

Undergraduate, Firat University, Faculty Of Engineering, Department Of Electrical And Electronics Engineering, Turkey 2008 - 2012

Dissertations

Doctorate, Management and control of distributed energy generation systems via artificial intelligence techniques, Marmara University, Institute for Graduate Studies in Pure and Applied Sciences, Department of Electrical and Electronics Engineering, 2021

Research Areas

Simulation, Modelling and Identification, Controllers, Stability, Neural Networks, Electronic, Circuit Theory, Electronic Circuits, Energy, Direct Energy Conversion and Energy Storage, Generating Stations and Plants, Renewable energy,

Power Electronics, Power Converters, Power Quality

Academic Titles / Tasks

Assistant Professor, Marmara University, Faculty of Technology, Electrical and Electronics Engineering, 2022 - Continues
Research Assistant PhD, Marmara University, Faculty of Technology, Electrical and Electronics Engineering, 2021 - 2022
Research Assistant, Marmara University, Faculty of Technology, Electrical and Electronics Engineering, 2014 - 2021
Researcher, Aalborg Universitet (Aalborg University), The Faculty of Engineering & Science, Department of Energy Technology, 2019 - 2020

Academic and Administrative Experience

Deputy Head of Department, Marmara University, Faculty of Technology, Electrical and Electronics Engineering, 2022 - Continues

Courses

Power Electronics and its Industrial Applications, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022
Elektronik Devrelere Giriş, Undergraduate, 2023 - 2024, 2022 - 2023
Storage Systems Based on Li-Ion Batteries, Doctorate, 2023 - 2024, 2022 - 2023
Digital Design, Undergraduate, 2023 - 2024, 2022 - 2023

Advising Theses

Oyman Serteller N. F., Akpolat A. N., Design of a photovoltaic-based renewable power system for an electrical machine laboratory: Operation and performance analysis, Postgraduate, A.I.(Student), 2023

Jury Memberships

Doctoral Examination, Doctoral Examination, Yıldız Teknik Üniversitesi, May, 2024
Doctoral Examination, Doctoral Examination, Marmara Üniversitesi, April, 2024
Doctoral Examination, Doctoral Examination, İstanbul Medeniyet Üniversitesi, April, 2024
Post Graduate, Post Graduate, Marmara Üniversitesi, January, 2024
Doctoral Examination, Doctoral Examination, İstanbul Teknik Üniversitesi, December, 2023
Post Graduate, Post Graduate, Marmara Üniversitesi, February, 2023
Doctoral Examination, Doctoral Examination, Yıldız Teknik Üniversitesi, December, 2022
Post Graduate, Post Graduate, Marmara Üniversitesi, June, 2022
Post Graduate, Post Graduate, İstanbul Teknik Üniversitesi, June, 2022
Doctoral Examination, Doctoral Examination, İstanbul Medeniyet Üniversitesi, June, 2022

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Modeling and operation of a fuel cell stack for distributed energy resources: A living lab platform**
Akpolat A. N., Dursun E., Kuzucuoğlu A. E.
International Journal of Hydrogen Energy, vol.75, pp.578-591, 2024 (SCI-Expanded)
- II. **Performance Analysis of a PEMFC-Based Grid-Connected Distributed Generation System**

AKPOLAT A. N., DURSUN E., Yang Y.

APPLIED SCIENCES-BASEL, vol.13, no.6, 2023 (SCI-Expanded)

- III. **Dynamic Stabilization of DC Microgrids using ANN-Based Model Predictive Control**
AKPOLAT A. N., Habibi M. R., Baghaee H. R., DURSUN E., KUZUCUOĞLU A. E., Yang Y., Dragicevic T., Blaabjerg F.
IEEE Transactions on Energy Conversion, vol.37, pp.999-1010, 2022 (SCI-Expanded)
- IV. **Inverter-based modeling and energy efficiency analysis of off-grid hybrid power system in distributed generation**
AKPOLAT A. N., DURSUN E., Siano P.
COMPUTERS & ELECTRICAL ENGINEERING, vol.96, 2021 (SCI-Expanded)
- V. **Sensorless Control of DC Microgrid Based on Artificial Intelligence**
Akpolat A. N., Habibi M. R., Dursun E., Kuzucuoğlu A. E., Yang Y., Dragicevic T., Blaabjerg F.
IEEE Transactions on Energy Conversion, vol.36, pp.2319-2329, 2021 (SCI-Expanded)
- VI. **Compensation of distortions in VSC-based DC-AC power systems using a modified vector control method**
Fallah M., Kojabadi H. M., Pashajavid E., AKPOLAT A. N., Guerrero J. M.
CONTROL ENGINEERING PRACTICE, vol.114, 2021 (SCI-Expanded)
- VII. **Sensorless Voltage Estimation for Total Harmonic Distortion Calculation using Artificial Neural Networks in Microgrids**
Adineh B., Habibi M. R., AKPOLAT A. N., Blaabjerg F.
IEEE Transactions on Circuits and Systems II: Express Briefs, vol.68, pp.2583-2587, 2021 (SCI-Expanded)
- VIII. **Deep Learning-Aided Sensorless Control Approach for PV Converters in DC Nanogrids**
AKPOLAT A. N., DURSUN E., KUZUCUOĞLU A. E.
IEEE ACCESS, vol.9, pp.106641-106654, 2021 (SCI-Expanded)
- IX. **Design Implementation and Operation of an Education Laboratory-Scale Microgrid**
AKPOLAT A. N., Yang Y., Blaabjerg F., DURSUN E., KUZUCUOĞLU A. E.
IEEE ACCESS, vol.9, pp.57949-57966, 2021 (SCI-Expanded)
- X. **Performance Analysis of a Grid-Connected Rooftop Solar Photovoltaic System**
AKPOLAT A. N., DURSUN E., KUZUCUOĞLU A. E., Yang Y., Blaabjerg F., BABA A. F.
ELECTRONICS, vol.8, no.8, 2019 (SCI-Expanded)

Articles Published in Other Journals

- I. **LEED certification analysis for an existing building: Credit opportunities and recommendations**
AYTEKİN KONDUL A., YAŞAR N., BAYAR H., AKPOLAT A. N., DURSUN E.
Turkish Journal of Electromechanics & Energy, vol.8, no.3, pp.97-108, 2023 (Peer-Reviewed Journal)
- II. **Design of a renewable based PV power supply system for a machine laboratory: Operation and performance analysis**
NANISH A. I. I., AKPOLAT A. N., OYMAN SERTELLER N. F.
Turkish Journal of Electromechanics & Energy, vol.8, no.3, pp.118-124, 2023 (Peer-Reviewed Journal)
- III. **Energy saving potential and energy audit of a faculty building at Marmara University in Türkiye**
Sönmez T., Varbak Neşe S., Çalış Uslu B., Akpolat A. N., Dursun E.
Turkish Journal of Electromechanics & Energy, vol.7, no.2, pp.67-76, 2022 (Peer-Reviewed Journal)
- IV. **Supervised Learning-Aided Control of a DC-DC Power Converter in Wind Energy Conversion Systems**
AKPOLAT A. N., DURSUN E., KUZUCUOĞLU A. E.
International journal of advances in engineering and pure sciences (Online), vol.33, pp.47-56, 2021 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

- I. **Design and Control of Switched Reluctance Motors with Different Stator and Rotor Pole Numbers by Co-simulation: Comparatively Performance Analysis**
GEÇER B., OYMAN SERTELLER N. F., AKPOLAT A. N.
11. EUROPEAN CONFERENCE ON RENEWABLE ENERGY SYSTEMS ECRES 2023, Riga, Latvia, 18 - 20 May 2023
- II. **Modeling and Operation of a Fuel Cell Stack for Distributed Energy Resources: A Living Lab Platform Consist of PV/Wind/PEMFC Hybrid Power System**
Akpolat A. N., Dursun E., Kuzucuoğlu A. E.
7th International Hydrogen Technologies Congress, Elazığ, Turkey, 10 May 2022 - 12 May 2023, pp.684-687
- III. **Comparison of PID and EPID Controllers in Self Balancing Robot**
Sanapala S., Deepa K., Lekshmi S., AKPOLAT A. N.
7th International Conference on Trends in Electronics and Informatics, ICOEI 2023, Tirunelveli, India, 11 - 13 April 2023, pp.157-161
- IV. **TID based Control Algorithm for Robot Balancing**
Shankar Ganesh M., Deepa K., Lekshmi S., AKPOLAT A. N.
7th International Conference on Trends in Electronics and Informatics, ICOEI 2023, Tirunelveli, India, 11 - 13 April 2023, pp.146-150
- V. **AI-Aided Control of a Power Converter in Wind Energy Conversion System**
AKPOLAT A. N., DURSUN E., KUZUCUOĞLU A. E.
2020 Innovations in Intelligent Systems and Applications Conference (ASYU), İstanbul, Turkey, 15 - 17 October 2020
- VI. **Optimal PV Generation Using Symbiotic Organisms Search Optimization Algorithm-Based MPPT**
AKPOLAT A. N., BAYSAL Y. A., YANG Y., BLAABJERG F.
IECON 2020 The 46th Annual Conference of the IEEE Industrial Electronics Society, Singapore, Singapore, 18 - 21 October 2020
- VII. **Li-ion-based Battery Pack Designing and Sizing for Electric Vehicles under Different Road Conditions**
AKPOLAT A. N., YANG Y., BLAABJERG F., DURSUN E., KUZUCUOĞLU A. E.
2020 International Conference on Smart Energy Systems and Technologies (SEST), İstanbul, Turkey, 7 - 09 September 2020, pp.1-6
- VIII. **Internet of Things for the Distributed Generation**
Yıldırım O., Okay M., AKPOLAT A. N., DURSUN E.
2019 Innovations in Intelligent Systems and Applications Conference (ASYU), Izmir, Turkey, Turkey, 31 October - 02 November 2019
- IX. **Modeling Photovoltaic String in PLECS Under Partial Shading**
AKPOLAT A. N., YANG Y., BLAABJERG F., DURSUN E., KUZUCUOĞLU A. E.
2019 International Conference on Power Generation Systems and Renewable Energy Technologies (PGSRET), İstanbul, Turkey, Turkey, 26 - 27 August 2019
- X. **Towards to Smart Grid: Dynamic Line Rating**
Akpolat A. N., Varbak Neşe S., Dursun E.
7.Uluslararası İstanbul Akıllı Şebekeler ve Şehirler Kongre ve Fuarına, İstanbul, Turkey, 25 - 26 April 2018
- XI. **Advanced Metering Infrastructure (AMI): Smart Meters and New Technologies**
AKPOLAT A. N., DURSUN E.
8th International Advanced Technologies Symposium (IATS'17), 19 - 21 October 2017
- XII. **FROM MICROGRID TO SMART GRID A REVIEW OF CAMPUS PROJECTS**
AKPOLAT A. N., DURSUN E.
the International Engineering, Science and Education Conference (INESEC), 1 - 03 December 2016

Supported Projects

Akpolat A. N., Dursun E., Kuzucuoğlu A. E., Project Supported by Higher Education Institutions, Management and Control of Distributed Energy Generation System via Artificial Intelligence Techniques, 2018 - 2022

Dursun E., Akpolat A. N., Kuzucuoğlu A. E., Project Supported by Other Official Institutions, YUDAB 2019, 2019 - 2020

Scientific Refereeing

CONTROL ENGINEERING PRACTICE, SCI Journal, May 2024
IEEE JOURNAL OF EMERGING AND SELECTED TOPICS IN POWER ELECTRONICS, SCI Journal, May 2024
ELECTRICAL ENGINEERING, SCI Journal, January 2024
Discover Energy, Other Indexed Journal, December 2023
IEEE JOURNAL OF EMERGING AND SELECTED TOPICS IN POWER ELECTRONICS, SCI Journal, December 2023
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, SCI Journal, November 2023
IEEE ACCESS, SCI Journal, November 2023
IEEE ACCESS, SCI Journal, February 2023
IEEE ACCESS, SCI Journal, January 2023
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS. PART I: JOURNAL OF SYSTEMS AND CONTROL ENGINEERING, SCI Journal, October 2022
Balkan Journal of Electrical and Computer Engineering, National Scientific Refreed Journal, July 2022
IEEE SYSTEMS JOURNAL, SCI Journal, July 2022
IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, SCI Journal, April 2022
IEEE JOURNAL OF EMERGING AND SELECTED TOPICS IN POWER ELECTRONICS, SCI Journal, December 2021
Gazi Mühendislik Bilimleri Dergisi, National Scientific Refreed Journal, November 2021
INTERNATIONAL JOURNAL OF ELECTRICAL POWER AND ENERGY SYSTEMS, SCI Journal, September 2021
APPLIED ARTIFICIAL INTELLIGENCE AN INTERNATIONAL JOURNAL, SCI Journal, July 2021
TEPES - Turkish Journal of Electrical Power and Energy Systems, National Scientific Refreed Journal, April 2021
IEEE ACCESS, SCI Journal, January 2021
Turkish Journal of Electromechanics and Energy, National Scientific Refreed Journal, July 2019
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, SCI Journal, May 2016

Scientific Research / Working Group Memberships

Cost (European Cooperation In Science And Technology, Marmara University, Türkiye, COST ACTION CA20109 Modular Energy Islands for Sustainability and Resilience, 2023 - Continues

Mobility Activity

Erasmus Programme, Get Education, Aalborg Universitet (Aalborg University), Denmark, 2023 - 2023

Metrics

Publication: 26
Citation (WoS): 61
Citation (Scopus): 156
H-Index (WoS): 4
H-Index (Scopus): 7

Invited Talks

Dağıtık Üretim Sistemlerinin Yapay Zeka Teknikleri ile Kontrolü, Seminar, İTÜ EMK - Elektrik Mühendisliği Kulübü,

Turkey, November 2021

Scholarships

Management and control of distributed energy generation systems via artificial intelligence techniques, YOK, 2019 - 2020

Awards

Akpolat A. N., Uluslararası Bilimsel Yayınları Teşvik (UBYT), Tübitak-Ulakbim, October 2022

Akpolat A. N., Dursun E., Kuzucuoğlu A. E., Uluslararası Bilimsel Yayınları Teşvik (UBYT), Tübitak-Ulakbim, December 2021

Akpolat A. N., Dursun E., Kuzucuoğlu A. E., Uluslararası Bilimsel Yayınları Teşvik (UBYT), Tübitak-Ulakbim, November 2021

Akpolat A. N., Dursun E., Kuzucuoğlu A. E., Uluslararası Bilimsel Yayınları Teşvik (UBYT), Tübitak-Ulakbim, September 2021

Akpolat A. N., Dursun E., Kuzucuoğlu A. E., Uluslararası Bilimsel Yayınları Teşvik (UBYT), Tübitak Ulakbim, April 2020

Non Academic Experience

Aalborg University

Aras Yapı Denetim LTD. STİ.