

## Res. Asst. BORA ÇAVDAR

### Personal Information

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### International Researcher IDs

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Publons / Web Of Science ResearcherID: ADE-9469-2022

ScopusID: 58355250100

Yoksis Researcher ID: 304140

### Education Information

Doctorate, Karadeniz Technical University, Fen Bilimleri Enstitüsü, -, Turkey 2021 - Continues

Postgraduate, Karadeniz Technical University, Fen Bilimleri Enstitüsü, Elektrik Elektronik Anabilimdalı, Turkey 2018 - 2021

Undergraduate, Karadeniz Technical University, Mühendislik Fakültesi, Elektrik Elektronik Mühendisliği Bölümü, Turkey 2014 - 2018

### Foreign Languages

English, B2 Upper Intermediate

### Dissertations

Postgraduate, Fotovoltaik Santraller ve Batarya Enerji Depolama Sistemleri için Güç Sistemi Kararlılık Analizleri, Karadeniz Technical University, Mühendislik Fakültesi, Elektrik-Elektronik, 2021

### Research Areas

Controllers, Simulation and Modelling, Direct Energy Conversion and Energy Storage, Power System Analysis, Generating Stations and Plants, Electric Power Transmission, Distribution and Protection, Renewable energy, High Voltage Technique

### Academic Titles / Tasks

Research Assistant, Karadeniz Technical University, Of Teknoloji Fakültesi, Enerji Sistemleri Mühendisliği, 2019 - Continues

### Published journal articles indexed by SCI, SSCI, and AHCI

- I. **A novel fractional order delay-based PIR controller concept to enhance frequency regulation of a PV-reheat thermal power system under non-linearity and cyber attack**  
Şahin E., ÇAVDAR B.  
Computers and Electrical Engineering, vol.123, 2025 (SCI-Expanded)
- II. **Effect of PV Plant on Frequency Stability in IEEE12 Bus System for Different Penetration Levels and Depth of Frequency Support**  
Çavdar B., Akyazı Ö., Şahin E., Nuroğlu F. M.  
ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING, vol.49, no.12, pp.15899-15916, 2024 (SCI-Expanded)
- III. **On the assessment of meta-heuristic algorithms for automatic voltage regulator system controller design: a standardization process**  
Çavdar B., Şahin E., Sesli E.  
Electrical Engineering, vol.106, no.5, pp.5801-5839, 2024 (SCI-Expanded)
- IV. **Real-time application of a demand-side management strategy using optimization algorithms**  
Tüysüz M., Okumuş H. İ., Aymaz Ş., Çavdar B.  
APPLIED ENERGY, vol.368, 2024 (SCI-Expanded)
- V. **An adaptive fractional controller design for automatic voltage regulator system: sigmoid-based fractional-order PID controller**  
Sahin A. K., ÇAVDAR B., AYAS M. Ş.  
Neural Computing and Applications, vol.36, no.23, pp.14409-14431, 2024 (SCI-Expanded)
- VI. **Cascaded fractional order automatic generation control of a PV-reheat thermal power system under a comprehensive nonlinearity effect and cyber-attack**  
Çavdar B., Şahin E., Sesli E., Akyazı Ö., Nuroğlu F. M.  
Electrical Engineering, vol.105, no.6, pp.4339-4360, 2023 (SCI-Expanded)
- VII. **A novel objective function design and detailed analysis for the AVR-LFC system**  
Bora Ç., Kerim D., Şeymanur B., Erdiñç Ş., Mehmet N. F.  
SADHANA-ACADEMY PROCEEDINGS IN ENGINEERING SCIENCES, vol.48, no.4, 2023 (SCI-Expanded)
- VIII. **A novel optimal  $PI\lambda I\lambda 2D\mu 1D\mu 2$  controller using mayfly optimization algorithm for automatic voltage regulator system**  
Çavdar B., Şahin E., Akyazı Ö., Nuroğlu F. M.  
Neural Computing and Applications, vol.35, no.27, pp.19899-19918, 2023 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Otomatik Gerilim Regülatörü Sistemi Denetleyici Tasarımı için Meta-Sezgisel Algoritmaların Performansı**  
Öztürk Ö., ÇAVDAR B.  
Karadeniz Fen Bilimleri Dergisi, vol.14, 2024 (Peer-Reviewed Journal)
- II. **Analysis of Turkey's Solar Energy Potential with PVSyst**  
Akyazı Ö., Başlık Ş., Khıdırzade K., Çavdar B.  
Karadeniz Fen Bilimleri Dergisi, vol.14, no.3, pp.1486-1502, 2024 (Peer-Reviewed Journal)
- III. **SSA-based Fractional Order PI-PD Cascade Controller Design for DC Motor Speed Control**  
ÇAVDAR B., ŞAHİN E., NUROĞLU F. M.  
JOURNAL OF POLYTECHNIC-POLITEKNİK DERGISI, vol.27, no.1, pp.283-296, 2024 (ESCI)
- IV. **Comparison of grey wolf optimizer (gwo) and incremental conductance (inc) method for maximum power point tracking (mppt) in photovoltaic systems**  
Öztürk Ö., Akyazı Ö., Çavdar B.  
Gümüşhane Üniversitesi Fen Bilimleri Dergisi, vol.13, no.4, pp.962-978, 2023 (Peer-Reviewed Journal)
- V. **Frequency Stability Analysis of Active Power Control Methods in LargeScale Photovoltaic Plants**  
Çavdar B., Akyazı Ö., Şahin E., Nuroğlu F. M.  
EMO Bilimsel Dergi, vol.11, no.21, pp.17-27, 2021 (Peer-Reviewed Journal)

- VI. **Voltage Stability Analysis of Large Scale PV Plant Reactive Power Control Methods**  
ÇAVDAR B., AKYAZI Ö., ŞAHİN E., NUROĞLU F. M.  
SAKARYA UNIVERSITY JOURNAL OF SCIENCE, vol.25, no.4, pp.914-925, 2021 (Peer-Reviewed Journal)
- VII. **The effect of ramp rates of PV power plants on power system stability**  
Çavdar B., Akyazı Ö., Nuroğlu F. M.  
Journal of Investigations on Engineering and Technology, vol.4, no.1, pp.28-35, 2021 (Peer-Reviewed Journal)

## Books

- I. **SİSTEM MODELLEME**  
Akyazı Ö., Çavdar B.  
in: OTOMATİK KONTROL SİSTEMLERİ, MENGİ ONUR ÖZDAL, Editor, NOBEL, Ankara, pp.109-165, 2022
- II. **FREKANS CEVABI**  
Şahin E., Çavdar B.  
in: OTOMATİK KONTROL SİSTEMLERİ, MENGİ ONUR ÖZDAL, Editor, NOBEL, Ankara, pp.401-503, 2022

## Papers Published in Refereed Scientific Meetings

- I. **Hidroelektrik Santral Modeli için PSO, GWO ve MA Optimizasyon Algoritmalarıyla Kesir Dereceli PID Denetleyici Tasarımı**  
Köse İ. H., Danayıye Y., Çavdar B.  
Akıllı Sistemlerde Yenilikler ve Uygulamaları Konferansı (ASYU), Sivas, Turkey, 11 - 13 October 2023
- II. **A Hybrid CNN-LSTM Framework for Unsupervised Anomaly Detection in Water Distribution Plant**  
Şahin A. K., Çavdar B., Doğan R. Ö., Ayas S., Özgenç B., Ayas M. Ş.  
Akıllı Sistemlerde Yenilikler ve Uygulamaları Konferansı (ASYU), Sivas, Turkey, 11 - 13 October 2023
- III. **AVR Sistemi için ARO Tabanlı PID ve FOPID Denetleyici Tasarımı**  
Başlık Ş., Çavdar B., Öztürk Ö., Aslanov T., Akyazı Ö.  
24. Otomatik Kontrol Ulusal Toplantısı, İstanbul, Turkey, 14 September 2023, pp.158-165
- IV. **İki Alanlı Termal Güç Sisteminde AHA Tabanlı PID, FOPID ve FOPI-FOPD Denetleyicilerin Siber Saldırı Analizi**  
Aslanov T., Çavdar B., Öztürk Ö., Başlık Ş., Akyazı Ö.  
24. Otomatik Kontrol Ulusal Toplantısı, İstanbul, Turkey, 14 - 16 September 2023, pp.166-173
- V. **Anomaly Detection in Predicted Water Treatment Data Using Hybrid CNN-LSTM Network Model**  
Özgenç B., Ayas S., Doğan R. Ö., Çavdar B., Şahin A. K., Ayas M. Ş.  
31. IEEE Sinyal İşleme ve İletişim Uygulamaları Kurultayı, İstanbul, Turkey, 5 - 08 July 2023
- VI. **Farklı Penetrasyon Seviyelerine Sahip PV Santralin LVRT'ye Göre Frekansa Etkisi**  
Çavdar B., Dincer K., Şahin A. K., Nuroğlu F. M.  
Uluslararası GAP Yenilenebilir Enerji Ve Enerji Verimliliği Kongresi, Şanlıurfa, Turkey, 5 - 06 November 2020, pp.134

## Supported Projects

Ayas M. Ş., Ayas S., Özgenç B., Doğan R. Ö., Altaş İ. H., TUBITAK Project, Su Arıtma Ve Dağıtma Sistemlerindeki Aykırılık Tespit Modellerine Yönelik Optimum Kara Kutu Çekişmeli Saldırılarının Tasarlanması Ve Savunma Mekanizmasının Geliştirilmesi, 2022 - 2024

## Peer Reviews in Scientific Publications

ISA TRANSACTIONS, Journal Indexed in SCI-E, April 2025

Bulletin of Electrical Engineering and Informatics, Other Indexed Journal, January 2025

ELECTRICAL ENGINEERING, Journal Indexed in SCI-E, January 2025

NEURAL COMPUTING AND APPLICATIONS, Journal Indexed in SCI-E, January 2025

SUSTAINABLE ENERGY, GRIDS AND NETWORKS, Journal Indexed in SCI-E, January 2025

SUSTAINABLE ENERGY, GRIDS AND NETWORKS, Journal Indexed in SCI-E, November 2024

SIGMA JOURNAL OF ENGINEERING AND NATURAL SCIENCES, Journal Indexed in ESCI, September 2024

SIGMA JOURNAL OF ENGINEERING AND NATURAL SCIENCES, Journal Indexed in ESCI, August 2024

Fırat Üniversitesi Mühendislik Bilimleri Dergisi, National Scientific Refreed Journal, August 2024

NEURAL COMPUTING AND APPLICATIONS, Journal Indexed in SCI-E, June 2024

TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, Journal Indexed in SCI-E, April 2024

ISA TRANSACTIONS, Journal Indexed in SCI-E, March 2023

## **Metrics**

Publication: 23

Citation (WoS): 13

Citation (Scopus): 36

H-Index (WoS): 2

H-Index (Scopus): 4

## **Scholarships**

2211-C Yurt İçi Öncelikli Alanlar Doktora Burs Programı, TÜBİTAK, 2024 - Continues