

ERDİNÇ ŞAHİN

ASST. PROF.

Email : esahin@ktu.edu.tr

Office Phone : [+90 462 377 8453](tel:+904623778453)

Fax Phone : [+90 462 771 7251](tel:+904627717251)

Address : KTÜ Of Teknoloji Fakültesi Enerji Sistemleri
Mühendisliği Bölümü Çamlı Mah. Hacı Mehmet Baheddin
Ulusoy Cad. No:144 61830 Of / TRABZON

International Researcher IDs

ORCID: 0000-0002-9740-599X

Publons / Web Of Science ResearcherID: F-1843-2019

ScopusID: 56352188800

Yoksis Researcher ID: 134704



Learning Knowledge

Doctorate 2011 - 2017	Karadeniz Technical University, Fen Bilimleri Enstitüsü, Elektrik Ana Bilim Dalı, Turkey
Postgraduate 2009 - 2011	Istanbul Technical University, Fen Bilimleri Enstitüsü, Kontrol Müh., Turkey
Undergraduate 2005 - 2010	Anadolu University, Open Education Faculty, İşletme Bölümü, Turkey
Undergraduate 2004 - 2009	Eskisehir Osmangazi University, Mühendislik-Mimarlık Fakültesi, Elektrik-Elektronik Müh., Turkey

Foreign Languages

English, B2 Upper Intermediate

Certificates, Courses and Trainings

Education Management and Planning, Proje Eğitimi Etkinliği Katılım Sertifikası, TÜBİTAK 2237 programı, 2015

Dissertations

Doctorate, Dalga enerji sistemlerinde elektrik gücü üzerindeki düzensiz dalga etkilerinin akıllı kompanzasyon yöntemleriyle giderilmesi, Karadeniz Technical University, Elektrik-Elektronik Müh., Elektrik, 2017

Postgraduate, Geliştirilmiş Tepe Gözlemleyicisi ile PI Kontrolör Tasarımı, Istanbul Technical University, Fen Bilimleri Enstitüsü, Kontrol Müh., 2011

Academic Titles / Tasks

Assistant Professor 2018 - Continues	Karadeniz Technical University, Of Teknoloji Fakültesi, Enerji Sistemleri Mühendisliği
Assistant Professor 2018 - 2018	Karadeniz Technical University, Of Teknoloji Fakültesi, Enerji Sistemleri Mühendisliği
Lecturer PhD 2017 - 2018	Karadeniz Technical University, Abdullah Kanca Meslek Yüksekokulu, Elektronik ve Otomasyon
Lecturer 2011 - 2017	Karadeniz Technical University, Abdullah Kanca Meslek Yüksekokulu, Elektronik ve Otomasyon

Supported Projects

1. ŞAHİN E., TUBITAK Project, AYAK BİLEĞİ İNSTABİLİTELERİNİN REHABİLİTASYONUNA YARDIMCI İNSAN-MAKİNE ETKİLEŞİMLİ ROBOT, 2015 - 2016
2. ALTAŞ İ. H., ŞAHİN E., AYAS M. Ş., Project Supported by Higher Education Institutions, Dalga Enerji Sistemlerinde Elektrik Gücü Üzerindeki Düzensiz Dalga Etkilerinin Akıllı Kompanzasyon Yöntemleriyle Giderilmesi, 2014 - 2016

Published journal articles indexed by SCI, SSCI, and AHCI

1. **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, 2024 (SCI-Expanded)
2. **On the assessment of meta-heuristic algorithms for automatic voltage regulator system controller design: a standardization process**
ÇAVDAR B., ŞAHİN E., SESLİ E.
Electrical Engineering, 2024 (SCI-Expanded)
3. **A novel objective function design and detailed analysis for the AVR-LFC system**
Bora Ç., Kerim D., Şeymanur B., Erdinç Ş., Mehmet N. F.
SADHANA-ACADEMY PROCEEDINGS IN ENGINEERING SCIENCES, vol.48, no.4, 2023 (SCI-Expanded)
4. **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)
5. **A novel optimal $PI\lambda 1I\lambda 2D\mu 1D\mu 2$ 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)
6. **FOPID controller with fractional filter for an automatic voltage**
Ayas M. Ş., Şahin E.
COMPUTERS & ELECTRICAL ENGINEERING, vol.90, 2021 (SCI-Expanded)
7. **High order differential feedback controller design and implementation for a Stewart platform**

AYAS M. Ş., ŞAHİN E., ALTAŞ İ. H.

JOURNAL OF VIBRATION AND CONTROL, vol.26, pp.976-988, 2020 (SCI-Expanded)

8. **Design of an Optimized Fractional High Order Differential Feedback Controller for Load Frequency Control of a Multi-Area Multi-Source Power System With Nonlinearity**
Şahin E.
IEEE ACCESS, vol.8, pp.12327-12342, 2020 (SCI-Expanded)
9. **Fractional High-Order Differential Estimator and Feedback Controller Design for a Single-Input-Single-Output Affine Chaotic System**
Şahin E., Ayas M. Ş.
JOURNAL OF COMPUTATIONAL AND NONLINEAR DYNAMICS, vol.15, no.1, 2020 (SCI-Expanded)
10. **Optimized fractional order control of a cascaded synchronous buck-boost converter for a wave-UC hybrid energy system**
ŞAHİN E., ALTAŞ İ. H.
ELECTRICAL ENGINEERING, vol.100, no.2, pp.653-665, 2018 (SCI-Expanded)
11. **Fractional order based trajectory tracking control of an ankle rehabilitation robot**
AYAS M. Ş., ALTAŞ İ. H., ŞAHİN E.
TRANSACTIONS OF THE INSTITUTE OF MEASUREMENT AND CONTROL, vol.40, no.2, pp.550-564, 2018 (SCI-Expanded)
12. **FPA Tuned Fuzzy Logic Controlled Synchronous Buck Converter for a Wave/SC Energy System**
ŞAHİN E., ALTAŞ İ. H.
ADVANCES IN ELECTRICAL AND COMPUTER ENGINEERING, vol.17, no.1, pp.39-48, 2017 (SCI-Expanded)
13. **Fractional order control of conducting polymer artificial muscles**
Itik M., ŞAHİN E., AYAS M. Ş.
EXPERT SYSTEMS WITH APPLICATIONS, vol.42, no.21, pp.8212-8220, 2015 (SCI-Expanded)

Articles Published in Other Journals

1. **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 DERGISİ, no.1, 2024 (ESCI)
2. **Uçak eğim kontrol sistemi için ölüm oyunu optimizasyonuna dayalı PID-F denetleyicisi tasarımı**
ŞAHİN A. K., AKYAZI Ö., ŞAHİN E., ÇAKIR O.
Gümüşhane Üniversitesi Fen Bilimleri Dergisi, vol.12, no.2, pp.539-549, 2022 (Peer-Reviewed Journal)
3. **Frequency Stability Analysis of Active Power Control Methods in LargeScale Photovoltaic Plants**
Çavdar B., Akyazi Ö., Şahin E., Nuroğlu F. M.
EMO Bilimsel Dergi, vol.11, no.21, pp.17-27, 2021 (Peer-Reviewed Journal)
4. **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)
5. **DC Motorun Hız Kontrolü İçin Meta-Sezgisel Algoritma Tabanlı PID Denetleyici Tasarımı**
ŞAHİN A. K., AKYAZI Ö., ŞAHİN E., ÇAKIR O.
Bitlis Eren Üniversitesi Fen Bilimleri Dergisi, vol.10, pp.533-549, 2021 (Peer-Reviewed Journal)
6. **Genel Amaçlı Kübik Bir Robot Tasarımı ve Uygulaması**
Gök H., AKYAZI Ö., ŞAHİN E.
Karadeniz Fen Bilimleri Dergisi, vol.10, no.1, pp.111-120, 2020 (Peer-Reviewed Journal)
7. **Arduino Based Matlab/Simulink Program Controlled a Battery Charge Unit Design and Application for Solar Energy Systems**
Akyazi Ö., Şahin E., Yurdakul H., Delitay E. C.
Journal of Investigations on Engineering & Technology, vol.3, no.1, pp.17-22, 2020 (Peer-Reviewed Journal)
8. **A Solar Panel Cleaning Robot Design and Application**

- AKYAZI Ö., ŞAHİN E., Özsoy T., Algül M.
Avrupa Bilim ve Teknoloji Dergisi, pp.343-349, 2019 (Peer-Reviewed Journal)
9. **Fotovoltaik Panel ve Şebeke Entegrasyonlu Akıllı Sokak Lambası Tasarımı ve Uygulaması**
AKYAZI Ö., ŞAHİN E., KAHVECİ D. C.
Avrupa Bilim ve Teknoloji Dergisi, pp.356-360, 2019 (Peer-Reviewed Journal)
10. **Parameter effect analysis of particle swarm optimization algorithm in PID controller design**
AYAS M. Ş., ŞAHİN E.
International Journal of Optimization and Control: Theories and Applications, vol.9, no.2, pp.165-175, 2019 (Scopus)
11. **Performance Analysis of Error-Based and User-Defined Objective Functions for a Particle Swarm Optimization Tuned PID Controller with Derivative Filter**
ŞAHİN E., AYAS M. Ş.
Afyon Kocatepe Üniversitesi Fen ve Mühendislik Bilimleri Dergisi, vol.19, pp.682-689, 2019 (Peer-Reviewed Journal)
12. **MODEL PREDICTIVE CONTROL OF A DC-DC BUCK CONVERTER**
DANAYİYEN Y., ALTAŞ İ. H., ŞAHİN E.
Sigma Journal of Engineering and Natural Sciences, no.8, pp.91-97, 2016 (ESCI)
13. **A PSO Tuned Fractional-Order PID Controlled Noninverting Buck-Boost Converter for a Wave/UC Energy System**
ŞAHİN E., ALTAŞ İ. H.
International Journal of Intelligent Systems and Applications in Engineering (IJISAE), vol.4, pp.32-37, 2016 (Peer-Reviewed Journal)
14. **Güncel Sorunlara Pratik Çözümler: Güvenilir Ütü Tasarımı**
ŞAHİN E., SESLİ E., AKTOĞAN A.
3e Electrotech, no.265, pp.98-100, 2016 (Peer-Reviewed Journal)

Books & Book Chapters

1. **FREKANS CEVABI**
Şahin E., Çavdar B.
in: OTOMATİK KONTROL SİSTEMLERİ, MENGİ ONUR ÖZDAL, Editor, NOBEL, Ankara, pp.401-503, 2022

Refereed Congress / Symposium Publications in Proceedings

1. **Design of a PID Controller with Fractional Order Derivative Filter for Automatic Voltage Regulation in Power Systems**
ŞAHİN E.
4th International Symposium on Innovative Approaches in Engineering and Natural Sciences Proceedings, 22 - 24 November 2019
2. **Performance of PSO based classical and fractional PID controllers for an unmanned surface vehicle**
Bir İnsansız Suüstü Aracı Denetiminde PSO Tabanlı Klasik ve Kesir Dereceli PID Denetleyicilerin Performansı
AYAS M. Ş., ŞAHİN E., ALTAŞ İ. H.
26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4
3. **Performances of Multiple-Objective PSO Based PID and Fractional-Order PID Controllers**
AYAS M. Ş., ŞAHİN E., ALTAŞ İ. H.
7th International Conference on Advanced Technologies (ICAT'18), Antalya, Turkey, 28 April - 01 May 2018, pp.160-164

4. **Fractional Order RC^α Circuit Modelling of an Ultra-capacitor**
ŞAHİN E., AYAS M. Ş., ALTAŞ İ. H.
7th International Conference on Advanced Technologies (ICAT'18), Antalya, Turkey, 28 April - 01 May 2018, pp.292-296
5. **Performance of PSO Based Classical and Fractional PID Controllers for an Unmanned Surface Vehicle**
AYAS M. Ş., ŞAHİN E., ALTAŞ İ. H.
26th IEEE Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018
6. **9. Yenilenebilir Enerji Kaynakları Sempozyumu ve Sergisi (YEKSEM)**
ŞAHİN E., ALTAŞ İ. H.
Düzenli ve Düzensiz Dalga Enerji Karakteristiğini Yansıtan Doğrudan-Sürürlü Bir Dalga Enerji Dönüştürücü Emülatörünün Tasarımı ve Modellenmesi, Antalya, Turkey, 3 - 05 November 2017, pp.106-111
7. **Alçaltan DA-DA Dönüştürücünün Model Öngörülmesi Kontrolü**
DANAYİYEN Y., ALTAŞ İ. H., ŞAHİN E.
Akıllı Sistemlerde Yenilikler ve Uygulamaları Sempozyumu (ASYU2016), Düzce, Turkey, 29 September - 01 October 2016, pp.154-157
8. **Dalga/Ultra Kondansatör Enerji Sistemi için Bir DA-DA Artıran Çeviricinin Bulanık Mantık ile Denetimi**
ŞAHİN E., ALTAŞ İ. H., DANAYİYEN Y.
Akıllı Sistemlerde Yenilikler ve Uygulamaları Sempozyumu (ASYU), Düzce, Turkey, 29 September - 01 October 2016, pp.158-163
9. **A PSO Tuned Fractional Order PID Controlled Noninverting Buck Boost Converter for a Wave UC Energy System**
ŞAHİN E., ALTAŞ İ. H.
3rd International Conference on Advanced Technology & Sciences (ICAT16), 1 - 03 September 2016
10. **An optimized fuzzy logic controller for a parallel mechanism rehabilitation robot**
AYAS M. Ş., ALTAŞ İ. H., ŞAHİN E.
IEEE International Conference on Fuzzy Systems, FUZZ-IEEE 2015, İstanbul, Turkey, 2 - 05 August 2015
11. **Dalga Enerjisi Dönüşüm Sistemi için Anahtarlama Güç Filtresi ve Denetleyici Tasarımı**
ŞAHİN E., ALTAŞ İ. H., ÖZKOP E.
Otomatik Kontrol Ulusal Toplantısı, TOK2015, Denizli, Turkey, 10 - 12 September 2015, pp.899-904
12. **Ayak Bileği Rehabilitasyonu için Geliştirilen Bir Paralel Robotun Yörünge Kontrolü**
AYAS M. Ş., ALTAŞ İ. H., ŞAHİN E.
Otomatik Kontrol Türk Milli Komitesi (TOK), Denizli, Turkey, 10 - 12 September 2015, pp.1109-1114
13. **An Optimized Fuzzy Logic Controller For A Parallel Mechanism Rehabilitation Robot**
AYAS M. Ş., ALTAŞ İ. H., ŞAHİN E.
IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), İstanbul, Turkey, 2 - 05 August 2015
14. **A PSO Optimized Fractional-Order PID Controller Design for a PV Array with Non-inverting Buck-Boost Converter**
ŞAHİN E., AYAS M. Ş., ALTAŞ İ. H., Sharaf A. M.
International Conference on Smart Grid Engineering (SEGE'14), Oshawa, Canada, 11 - 13 August 2014, pp.1-5
15. **Optimized control of a parallel mechanism rehabilitation robot**
Ayas M. Ş., ŞAHİN E., Altas I. H.
IASTED International Conference on Robotics Applications, RA 2014, Zürich, Switzerland, 23 - 25 June 2014, pp.367-373
16. **A PSO Optimized Fractional-Order PID Controller for a PV System with DC-DC Boost Converter**
ŞAHİN E., AYAS M. Ş., ALTAŞ İ. H.
16th International Power Electronics and Motion Control Conference and Exposition (PEMC), Antalya, Turkey, 21 - 24 September 2014, pp.477-481
17. **Trajectory Tracking Control Of A Stewart Platform**
AYAS M. Ş., ŞAHİN E., ALTAŞ İ. H.
16th International Power Electronics and Motion Control Conference and Exposition (PEMC), Antalya, Turkey, 21 -

24 September 2014, pp.720-724

18. **Antenna Azimuth Position Control With Fuzzy Logic And Self Tuning Fuzzy Logic Controllers**
Okumuş H. İ., Şahin E., Akyazı Ö.
8th International Conference on Electrical and Electronics Engineering, ELECO 2013, Bursa, Turkey, 1 - 04 December 2013, pp.477-481
19. **Antenna azimuth position control with fuzzy logic and self-tuning fuzzy logic controllers**
OKUMUŞ H. İ., ŞAHİN E., AKYAZI Ö.
8th International Conference on Electrical and Electronics Engineering, ELECO 2013, Bursa, Turkey, 1 - 04 December 2013, pp.477-481
20. **Dalga Enerji Sisteminden Beslenen bir DA Motorunun Hız Kontrolü için Denetleyici Parametrelerinin PSO ile Optimizasyonu**
ŞAHİN E., ÖZKOP E., ALTAŞ İ. H.
Otomatik Kontrol Ulusal Toplantısı, TOK2013, Kütahya, Turkey, 26 - 28 September 2013, pp.483-487
21. **Model Taban Öngörülü Tepe Gözleyicisi Yöntemi ile PI Kontrolör Tasarımı**
ŞAHİN E., GÜZELKAYA M., EKSİN İ.
Otomatik Kontrol Türk Milli Komitesi Ulusal Toplantısı (TOK), Malatya, Turkey, 26 - 28 September 2013, pp.858-861
22. **Dalga Enerji Sisteminden Beslenen Bir DA Motorunun Hız Kontrolü İçin Denetleyici Parametrelerinin PSO İle Optimizasyonu**
ŞAHİN E., ÖZKOP E., ALTAŞ İ. H.
Otomatik Kontrol Türk Milli Komitesi Ulusal Toplantısı (TOK), Malatya, Turkey, 26 - 28 September 2013, pp.483-488
23. **PSO based Determination of SVC Control Parameters for Power System Transient Stability Improvement**
Cevher B., Gümüş T. E., Emiroğlu S., ŞAHİN E.
International Symposium on Innovative Technologies in Engineering and Science, Sakarya, Turkey, 7 - 09 June 2013, pp.665-671
24. **Antenna Azimuth Position Control With Classical PID And Fuzzy Logic Controllers**
Okumuş H. İ., Şahin E., Akyazı Ö.
International Symposium on INnovations in Intelligent SysTEms and Applications (INISTA 2012), Trabzon, Turkey, 2 - 04 July 2012, pp.1-5

Academic and Administrative Experience

2018 - Continues	Deputy Head of Department	Karadeniz Technical University, Of Teknoloji Fakültesi, Enerji Sistemleri Mühendisliği
2017 - 2018	Head of Department	Karadeniz Technical University, Sürmene Abdullah Kanca Myo, Elektronik Ve Otomasyon Bölümü

Courses

Tasarım Projesi, Undergraduate, 2020 - 2021
Elektrik Mühendisliğinin Temelleri, Undergraduate, 2019 - 2020
Kesir dereceli sistem modelleme ve denetleyici tasarımı, Postgraduate, 2020 - 2021
Kontrol Sistemleri - I, Undergraduate, 2019 - 2020
Devre Analizi - I, Undergraduate, 2019 - 2020
Bitirme Çalışması, Undergraduate, 2019 - 2020
Devre Analizi - II, Undergraduate, 2020 - 2021

Güç Sistemleri Analizi, Undergraduate, 2019 - 2020
Elektrik - Elektronik Devre Çizimi, Undergraduate, 2020 - 2021
Güç Sistemlerine Giriş, Undergraduate, 2019 - 2020

Activities in Scientific Journals

Türkiye Otomatik Kontrol (TOK) 2019, Committee Member, 2019 - 2019

Scientific Refereeing

TURKISH JOURNAL OF ENGINEERING, National Scientific Refreed Journal, November 2021
El-Cezerî Journal of Science and Engineering, National Scientific Refreed Journal, July 2021
ADVANCED THEORY AND SIMULATIONS, SCI Journal, June 2021
TUBITAK Project, 1002 - Quick Support Program, TÜBİTAK, Turkey, March 2021
IET POWER ELECTRONICS, SCI Journal, February 2021
CONTROL ENGINEERING PRACTICE, SCI Journal, January 2021
TUBITAK Project, 2209-B - Sanayiye Yönelik Lisans Araştırma Projeleri Destekleme Programı, TÜBİTAK, Turkey, November 2020
INTERNATIONAL JOURNAL OF NUMERICAL MODELLING-ELECTRONIC NETWORKS DEVICES AND FIELDS, Journal Indexed in SCI-E, July 2020
EMO Bilimsel Dergi, National Scientific Refreed Journal, May 2020
Çanakkale Onsekiz Mart Üniversitesi Fen Bilimleri Enstitüsü Dergisi , National Scientific Refreed Journal, March 2020
IEEE Access, SCI Journal, March 2020
Measurement and Control, SCI Journal, December 2019
IEEE Transactions on Sustainable Energy, SCI Journal, December 2019
IEEE IAS Publications, SCI Journal, November 2019
IET Control Theory & Applications, SCI Journal, October 2019
IETE Journal of Research, SCI Journal, October 2019
IEEE Open Journal of Industry Applications, SCI Journal, October 2019
Asian Journal of Control, SCI Journal, September 2019
Electrica, SCI Journal, June 2019
International Journal of Automation and Computing, Other Indexed Journal, May 2019
ASME Journal of Computational and Nonlinear Dynamics, SCI Journal, May 2019
Energy Conversion and management, SCI Journal, March 2018
International Journal of Renewable Energy Research, Other Indexed Journal, February 2018
Karadeniz Fen Bilimleri Dergisi, National Scientific Refreed Journal, July 2017

Metrics

Publication: 54
Citation (WoS): 125
Citation (Scopus): 210
H-Index (WoS): 5
H-Index (Scopus): 7

Research Areas

Information Systems, Communication and Control Engineering, Control and System Engineering, Simulation, Modelling

and Identification, Controllers, Nonlinear Systems, Status Observers and Estimation, Checker, Optimal Control, Electrical and Electronics Engineering, Energy, Renewable energy, Power Electronics, Power Converters, Engineering and Technology