

Assoc. Prof. FATİH GÜL

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: AAE-8130-2019

Yoksis Researcher ID: 134305

Education Information

Doctorate, Ataturk University, Fen Bilimleri Enstitüsü, Elektrik Elektronik Mühendisliği, Turkey 2009 - 2017

Postgraduate, Ataturk University, Fen Bilimleri Enstitüsü, Elektrik Elektronik Mühendisliği, Turkey 2005 - 2008

Undergraduate, Inonu University, Mühendislik Fakültesi, Elektrik Elektronik Mühendisliği, Turkey 1997 - 2004

Foreign Languages

English, B2 Upper Intermediate

Certificates, Courses and Trainings

IT, CyberOps Associate , Cisco Networking Academy, 2021

IT, CCNA: Enterprise Networking, Security, and Automation, Cisco Networking Academy, 2021

IT, CCNA: Switching, Routing, and Wireless Essentials- <https://www.credly.com/users/fatih-gul.ddf2ea5c/badges>, Cisco Networking Academy, 2021

IT, CCNA: Introduction to Networks -<https://www.credly.com/users/fatih-gul.ddf2ea5c/badges>, Cisco Networking Academy, 2021

Project Management, 2237-B, Mühendislik Bilimleri Alanında Araştırma Projesi Hazırlama Eğitimi, TÜBİTAK, 2018

Vocational Training, Hassas Lehimleme ve Genel Ölçüm Belirsizliği, Elektro-Optik Sistemler Bakım Merkezi Müdürlüğü, 2005

IT, Bilgi Teknolojileri, ODTÜ-Bilgisayar Mühendisliği, 2002

Vocational Training, Sinyal Kaynakları, TÜBİTAK- Ulusal Metroloji Enstitüsü, 2001

Quality Management, TSE-EN-ISO 9000, TÜRK STANDARTLARI ENSTİTÜSÜ, 2000

Vocational Training, Kalibratör Kalibrasyonu, TÜBİTAK- Ulusal Metroloji Enstitüsü, 2000

Vocational Training, M60/M48 Tank Thermal Sight/ Fire Control Systems, NAMSA-NATO MAINTENANCE and SUPPLY CENTER, 1994

Dissertations

Doctorate, Metal ZnO ve ZnO_{1-x} metal yapısının memristiv davranışının elektriksel ve optik karakterizasyonu, Ataturk University, Fen Bilimleri Enstitüsü, Elektrik Elektronik Mühendisliği Anabilim Dalı, 2017

Postgraduate, Bilgisayar destekli fotoluminesans ölçüm sisteminde monokromatörün mikrodenetleyici ve adım motor ile kontrolü, Ataturk University, Fen Bilimleri Enstitüsü, Elektrik Elektronik Mühendisliği Anabilim Dalı, 2008

Research Areas

Artificial Intelligence, Computer Learning and Pattern Recognition, Electrical and Electronics Engineering, Electronic, Printed Circuits, Thin Film, Thick Film and Hybrid ICs, Electronic Circuits, Nanotechnology, Optics and Photonics, Optoelectronic Materials and Devices, Semiconducting Materials and Devices, Engineering and Technology

Academic Titles / Tasks

Associate Professor, Recep Tayyip Erdogan University, Mühendislik Fakültesi, Elektrik ve Elektronik Mühendisliği Bölümü, 2020 - Continues

Assistant Professor, Recep Tayyip Erdogan University, Mühendislik Fakültesi, Elektrik ve Elektronik Mühendisliği Bölümü, 2019 - 2020

Assistant Professor, Gumushane University, Mühendislik Ve Doğa Bilimleri Fakültesi-Yazılım Mühendisliği, Yazılım Mühendisliği, 2017 - 2019

Instructor, Gumushane University, Rektörlük-Enformatik, Enformatik, 2009 - 2011

Courses

Labview Ile Biyomedikal Enstrümantasyon Uygulamaları , Postgraduate, 2023 - 2024

Gömülü Sistemlere Giriş , Undergraduate, 2023 - 2024

Elektrik-Elektronik Mühendisliğinde Güncel Konular , Postgraduate, 2023 - 2024

Analog Elektronik, Undergraduate, 2023 - 2024

Labview Programlama , Postgraduate, 2023 - 2024

Elektronik Tasarım Ve Uygulamaları , Undergraduate, 2023 - 2024

MİKRODENETLEYİCİLER, Undergraduate, 2019 - 2020

ELEKTRONİK-II, Undergraduate, 2019 - 2020

TEMEL BİLGİ TEKNOLOJİLERİ, Undergraduate, 2019 - 2020

ELEKTRONİK-I, Undergraduate, 2019 - 2020

PROGRAMLAMAYA GİRİŞ, Undergraduate, 2019 - 2020

TEMEL ELEKTRİK LABORATUVARI-I, Undergraduate, 2017 - 2018

NANOTEKNOLOJİYE GİRİŞ, Postgraduate, 2018 - 2019

NÖROMORFİK SİSTEMLER, Doctorate, 2018 - 2019

ELEKTRİK MÜHENDİSLİĞİNİN TEMELLERİ-I, Undergraduate, 2018 - 2019

ELEKTRİK MÜHENDİSLİĞİNDE MALZEME, Undergraduate, 2018 - 2019

BİYO-ESİNLİ YAPAY ÖĞRENME, Doctorate, 2017 - 2018

ALGORİTMA TASARIMI VE PROGRAMLAMA DİLLERİ, Undergraduate, 2017 - 2018

BİYOBİLİM VE BİYOTEKNOLOJİDE MATLAB, Postgraduate, 2017 - 2018

Jury Memberships

Post Graduate, Post Graduate, Karadeniz Teknik Üniversitesi, August, 2020

Doctoral Examination, Doktora Yeterlik Komitesi Üyesi, Gümüşhane Üniversitesi-Biyoteknoloji Anabilim Dalı, January, 2019

Doctoral Examination, Doktora Yeterlik Sınav Jüri, Karadeniz Teknik Üniversitesi, January, 2018

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Neuro-inspired hardware solutions for high-performance computing: A TiO₂-based nano-synaptic device approach with backpropagation**
YILMAZ Y., GÜL F.
Integration, vol.97, 2024 (SCI-Expanded)
- II. **An overview memristor based hardware accelerators for deep neural network**
Gökgöz B., GÜL F., Aydın T.
Concurrency and Computation: Practice and Experience, vol.36, no.9, 2024 (SCI-Expanded)
- III. **Electronically Controllable Fully Floating Memcapacitor Circuit**
Gur M., AKAR F., ORMAN K., BABACAN Y., Yesil A., GÜL F.
Circuits, Systems, and Signal Processing, vol.42, no.11, pp.6481-6493, 2023 (SCI-Expanded)
- IV. **Harmonic problems in renewable and sustainable energy systems: A comprehensive review**
EROĞLU H., CÜCE E., MERT CÜCE A. P., GÜL F., İSKENDEROĞLU A.
SUSTAINABLE ENERGY TECHNOLOGIES AND ASSESSMENTS, vol.48, 2021 (SCI-Expanded)
- V. **Nano-scale single layer TiO₂-based artificial synaptic device**
Gul F.
APPLIED NANOSCIENCE, vol.10, no.2, pp.611-616, 2020 (SCI-Expanded)
- VI. **Circuit Implementation of Nano-Scale TiO₂ Memristor Using Only Metal-Oxide-Semiconductor Transistors**
Gul F.
IEEE ELECTRON DEVICE LETTERS, vol.40, no.4, pp.643-646, 2019 (SCI-Expanded)
- VII. **Addressing the sneak-path problem in crossbar RRAM devices using memristor-based one Schottky diode-one resistor array**
Gul F.
RESULTS IN PHYSICS, vol.12, pp.1091-1096, 2019 (SCI-Expanded)
- VIII. **A novel OTA-based circuit model corroborated by an experimental semiconductor memristor**
Gul F., BABACAN Y.
MICROELECTRONIC ENGINEERING, vol.194, pp.56-60, 2018 (SCI-Expanded)
- IX. **Carrier transport mechanism and bipolar resistive switching behavior of a nano-scale thin film TiO₂ memristor**
Gul F.
CERAMICS INTERNATIONAL, vol.44, no.10, pp.11417-11423, 2018 (SCI-Expanded)
- X. **The Fabrication and MOSFET-Only Circuit Implementation of Semiconductor Memristor**
BABACAN Y., Yesil A., Gul F.
IEEE TRANSACTIONS ON ELECTRON DEVICES, vol.65, no.4, pp.1625-1632, 2018 (SCI-Expanded)
- XI. **ZnO and ZnO_{1-x} based thin film memristors: The effects of oxygen deficiency and thickness in resistive switching behavior**
Gul F., EFEOĞLU H.
CERAMICS INTERNATIONAL, vol.43, no.14, pp.10770-10775, 2017 (SCI-Expanded)
- XII. **Bipolar resistive switching and conduction mechanism of an Al/ZnO/Al-based memristor**
Gul F., EFEOĞLU H.
SUPERLATTICES AND MICROSTRUCTURES, vol.101, pp.172-179, 2017 (SCI-Expanded)

Articles Published in Other Journals

- I. **A Generic Circuit Model for Memristor Based One Diode-One Resistor Devices**
GÜL F.
Balkan Journal of Electrical and Computer Engineering, vol.7, no.1, pp.15-19, 2019 (Peer-Reviewed Journal)

Books & Book Chapters

I. Emulator circuits and resistive switching parameters of memristor

YEŞİL A., GÜL F., BABACAN Y.

in: Memristor and Memristive Neural Networks, Alex Pappachen James, Editor, INTECH, Zagreb, pp.41-61, 2018

Refereed Congress / Symposium Publications in Proceedings

I. A simplified method to determine carrier transport mechanisms of metal-oxide resistive random access memory (RRAM) devices

GÜL F.

2nd International Congress on Semiconductor Materials and Devices, ICSMD 2018, Ardahan, Turkey, 28 - 30 August 2018, vol.46, pp.6976-6978

II. Metal-Oxide Based Nano-Electronic Synaptic Devices for Brain-Like Computing

GÜL F.

5th International Conference on Materials Science and Nanotechnology For Next Generation (MSNG2018), KAPADOKYA/NEVŞEHİR, Turkey, 4 - 06 October 2018

III. Non-Linear Drift Modeling with Controllable pi-Shaped Window Function for TiO₂ Memristor

OĞUZ Y., GÜL F.

5th International Conference on Materials Science and Nanotechnology For Next Generation (MSNG2018), KAPADOKYA/NEVŞEHİR, Turkey, 4 - 06 October 2018

IV. A simplified method to determine carrier transport mechanisms of metal-oxide resistive random access memory (RRAM) devices

GÜL F.

2nd International Congress on Semiconductor Materials and Devices" (ICSMD-2018), Ardahan, Turkey, 28 - 30 August 2018

V. A Validated Mathematical Model for Semiconductor Memristor Devices

OĞUZ Y., GÜL F.

2nd International Congress on Semiconductor Materials and Devices" (ICSMD-2018), Ardahan, Turkey, 28 - 30 August 2018, pp.253-258

VI. Microcontroller Based Circuit and Software Design to Automate Czerny-Turner Type Monochromator in a Computer Aided Photoluminescence Measurement System

GÜL F., EFEOĞLU H.

8th International Advanced Technologies Symposium (IATS17), 19 - 21 October 2017

VII. The Effect of Post-Annealing on XRD Pattern of DC Sputtered ZnO/SiO₂ Structure

GÜL F., EFEOĞLU H.

8th International Advanced Technologies Symposium (IATS17), 19 - 21 October 2017

VIII. A New Window Function for Memristor Modeling

OĞUZ Y., GÜL F., EROĞLU H.

8th International Advanced Technologies Symposium (IATS17), 19 - 21 October 2017

IX. Increasing the Electrical Vehicle Efficiency with Genetic Algorithm

EROĞLU H., OĞUZ Y., KAPLAN E., GÜL F., ŞİMŞEK C.

8th International Advanced Technologies Symposium (IATS17), 19 - 21 October 2017

X. Reusable Micro-Mixers

KAPLAN E., OĞUZ Y., GÜL F., EROĞLU H.

IMESET 2017, Bitlis, Turkey, 27 - 29 October 2017

XI. Highly Efficient Acoustic Micro-Actuators

KAPLAN E., OĞUZ Y., GÜL F., EROĞLU H.

IMESET 2017, Bitlis, Turkey, 27 - 29 October 2017

XII. A Circuit Model for Single Cell 1 Diode-1 Memristor (1D1M) Semiconductor Device

GÜL F., BABACAN Y.

II. INES International Academic Research Congress, 18 - 21 October 2017

XIII. ZnO and ZnO_{1-x} Based Thin Film Memristor

GÜL F., EFEÖĞLU H.

11th Nanoscience and Nanotechnology Conference (NanoTR-11), Turkey, 22 - 23 July 2015

Supported Projects

Gül F., Eroğlu H., TUBITAK Project, Gıda Güvenliğinde Sevkiyat Ve Soguk Zincir Uygulamaları İçin, Nesnelerin İnterneti (IoT) Tabanlı, Çok Amaçlı Takip Cihazı Gelistirilmesi, 2022 - 2024

Patent

Gül F., Eroğlu H., Yıldız Y., Yılmaz Y., Atesli havaleyi önlemek için vücut sıcaklığı ve oksijen saturasyonu takip cihazı, Utility Model, CHAPTER A Human Needs, The Invention Registration Number: 2022/04/21 , Standard Registration, 2024

Student Project

R & D Project, Nesnenin internet tabanlı Mesh ağı taşkın erken uyarı sistemi-TEKNOFEST, Recep Tayyip Erdogan University, Mühendislik Ve Mimarlık Fakültesi, Elektrik Ve Elektronik Mühendisliği, Turkey, 2023 - 2023

R & D Project, Otonom İlaçlama Yapabilen insansız kara aracı-TÜBİTAK, Recep Tayyip Erdogan University, Mühendislik Ve Mimarlık Fakültesi, Elektrik Ve Elektronik Mühendisliği, Turkey, 2022 - 2023

R & D Project, Güneş Enerjisi İle Çalışan Sabit Kanat İnsansız Hava Aracı (Solarıha)-TÜBİTAK, Recep Tayyip Erdogan University, Mühendislik Ve Mimarlık Fakültesi, Elektrik Ve Elektronik Mühendisliği, Turkey, 2022 - 2023

R & D Project, Afad Erken Uyarı Sistemleri İçin Kablosuz Meteoroloji İstasyonu Tasarımı-TÜBİTAK, Recep Tayyip Erdogan University, Mühendislik Ve Mimarlık Fakültesi, Elektrik Ve Elektronik Mühendisliği, Turkey, 2022 - 2023

R & D Project, Görüntü İşleme Sağlayan Arabalı Drone (Öncü)-TÜBİTAK, Recep Tayyip Erdogan University, Mühendislik Ve Mimarlık Fakültesi, Elektrik Ve Elektronik Mühendisliği, Turkey, 2022 - 2023

R & D Project, Yangının İlk Anını Algılayarak İlgili Birimlere Konumunu İleten Var Olan Sistemlere Entegre Edilebilir Cihaz-TÜBİTAK, Recep Tayyip Erdogan University, Mühendislik Ve Mimarlık Fakültesi, Elektrik Ve Elektronik Mühendisliği, Turkey, 2022 - 2023

Memberships / Tasks in Scientific Organizations

IEEE Member, Member, 2019 - Continues

IEEE Electron Devices Society, Member, 2019 - Continues

IEEE Nanotechnology Council, Member, 2019 - Continues

Scientific Refereeing

International Journal of Electronics, SCI Journal, February 2020

Journal of Physics D: Applied Physics, SCI Journal, January 2020

Journal of Materials Science: Materials in Electronics, SCI Journal, January 2020

Semiconductor Science and Technology, SCI Journal, December 2019

Journal of Physics and Chemistry of Solids, SCI Journal, November 2019

Journal of Materials Science: Materials in Electronics, SCI Journal, August 2019

IOP-Nanotechnology, SCI Journal, June 2019

IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, SCI Journal, January 2019
IEEE Access, SCI Journal, January 2019
Ionics, SCI Journal, January 2019
January 2019
IEEE Transactions on Electron Devices, SCI Journal, January 2018
IEEE Electron Device Letters, SCI Journal, January 2018
January 2018
Journal of Alloys and Compounds-, SCI Journal, January 2017
Materials Science in Semiconductor Processing, SCI Journal, January 2017
Physics Letters A, SCI Journal, January 2017

Mobility Activity

Erasmus Programme, Faculty Exchange, Opolski Üniversitesi, Poland, 2015 - 2020

Metrics

Publication: 27
Citation (WoS): 268
Citation (Scopus): 315
H-Index (WoS): 9
H-Index (Scopus): 9

Awards

Gül F., Dünyanın En Etkili Bilim İnsanları Listesi (2021), Stanford University, Elsevier Bv., November 2022
Gül F., Dünyanın En Etkili Bilim İnsanları Listesi (2020), Stanford University, Elsevier Bv., October 2021
GÜL F., UBYT-Yayın Teşvik, TÜBİTAK, November 2019
GÜL F., Golden List of Reviewers, IEEE, January 2019
GÜL F., UBYT-Yayın Teşvik, TÜBİTAK, December 2018
GÜL F., Outstanding Contribution in Reviewing, ELSEVIER, June 2017