Asst. Prof. MAHMUT EMİN ÇELİK

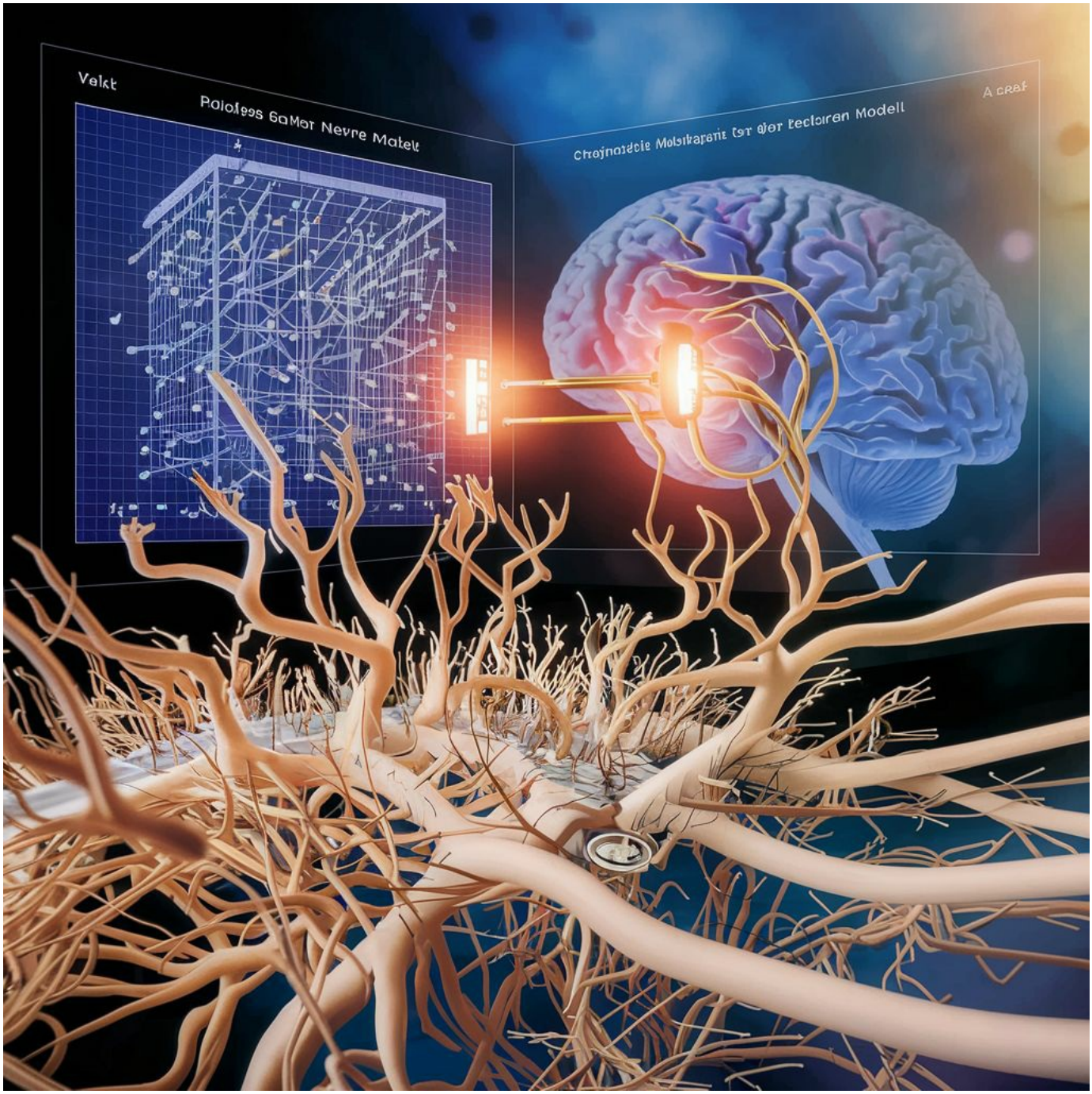
Personal Information

Email: mahmutemincelik@gazi.edu.tr
Web: https://avesis.gazi.edu.tr/mahmutemincelik

International Researcher IDs
ScholarID: U2zAjhwAAAAJ
ORCID: 0000-0002-1766-5514
Publons / Web Of Science ResearcherID: AHE-1540-2022
Yoksis Researcher ID: 52867

Biography

March 2024



In recent years, i have engaged in several other researches -with or without a third party person and/or companies, which are related to:

- Deep Learning solutions for healthcare (based on image and video frames),

- Virtual Reality (VR) and Augmented Reality (AR) towards digitalization

- Computational multi-scale modeling of neural activation due to electrical stimulation and recording

For those areas especially, but not limited to, i have now begun to accept highly motivated undergraduate and graduate students, feel free to contact me if you're interested in any of them.

Education Information

Post Doctorate, University of Michigan, Engineering, Biomedical Engineering, United States Of America 2021 - 2022
Post Doctorate, The Institute de la Vision, Paris, France, France 2018 - 2019

Post Doctorate, Eberhard Karls Universitaet Tübingen, Experimental Retinal Prosthetics Group, Institute for Ophthalmic Research, University of Tübingen, Germany 2018 - 2018
Doctorate, Gazi University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (Dr), Turkey 2010 - 2017
Postgraduate, Gazi University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (Yl) (Tezli), Turkey 2008 - 2010
Undergraduate, Kirikkale University, Faculty Of Engıneerıng, Department Of Electrıcal And Electronıcs Engıneerıng, Turkey 2004 - 2008

Foreign Languages

English, C1 Advanced
French, A2 Elementary

Dissertations

Doctorate, Retina İmplant Protezine Yönelik Gömülü Sistem ve Uyartım Elektrot Matrisinin Tasarımı ve Gerçekleştirilmesi, Gazi University, Fen Bilimleri Enstitüsü, 2017
Postgraduate, Radyasyon onkolojisinde yapay sinir ağı uygulaması, Gazi University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (Yl) (Tezli), 2010

Research Areas

Artificial Intelligence, Computer Learning and Pattern Recognition, Biomedical Image Processing, Biosignal Processing

Academic Titles / Tasks

Assistant Professor, Gazi University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2019 - Continues
Research Assistant, Gazi University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2014 - 2019

Courses

Digital Signal Processing, Undergraduate, 2020 - 2021
Circuit Theory II, Undergraduate, 2019 - 2020
Circuit Theory I, Undergraduate, 2019 - 2020
Devre Analizi Laboratuvarı 1, Undergraduate, 2017 - 2018
Devre Analizi 1, Undergraduate, 2017 - 2018
Elektrik Mühendisliğinin Prensipleri, Undergraduate, 2017 - 2018
Elektrik Elektronik Mühendisliği Tasarımı 1, Undergraduate, 2017 - 2018

Advising Theses

Çelik M. E., Measurement uncertainty calculations of vectoral sizes in microwave measurements, Postgraduate, E.KARAY(Student), 2023
Çelik M. E., The comparison of deep learning algorithms' performances in detection of automated dental filling, Postgraduate, G.BACANLI(Student), 2023
Çelik M. E., Donanım Test Süreçlerinde Verimliliğin Arttırılması: Otomatikleştirilmiş Test Sistemi, Postgraduate, A.SARI(Student), 2023

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Improving Resolution of Panoramic Radiographs: Super Resolution Concept**
Çelik M. E., Mıkaeılı M., Çelik B.
DENTOMAXILLOFACIAL RADIOLOGY, vol.53, no.3, pp.50-60, 2024 (SCI-Expanded)
II. **Evaluation of root canal filling length on periapical radiograph using artificial intelligence**
ÇELİK B., Genç M. Z., ÇELİK M. E.
Oral Radiology, 2024 (SCI-Expanded)
III. **Root Dilaceration Using Deep Learning: A Diagnostic Approach**
ÇELİK B., ÇELİK M. E.

Applied Sciences (Switzerland), vol.13, no.14, 2023 (SCI-Expanded)

IV. **The role of deep learning for periapical lesion detection on panoramic radiographs**
Çelik B., Savastaer E. F., Kaya H. I., Celik M. E.
DENTOMAXILLOFACIAL RADIOLOGY, vol.52, no.8, 2023 (SCI-Expanded)

V. **Automated detection of dental restorations using deep learning on panoramic radiographs**
ÇELİK B., ÇELİK M. E.
Dento maxillo facial radiology, vol.51, no.8, pp.20220244, 2022 (SCI-Expanded)

VI. **Spatial Transcriptomics as a Novel Approach to Redefine Electrical Stimulation Safety**
Whitsitt Q. A., Koo B., ÇELİK M. E., Evans B. M., Weiland J. D., Purcell E. K.
FRONTIERS IN NEUROSCIENCE, vol.16, 2022 (SCI-Expanded)

VII. **Deep Learning Based Detection Tool for Impacted Mandibular Third Molar Teeth**
ÇELİK M. E.
DIAGNOSTICS, vol.12, no.4, 2022 (SCI-Expanded)

VIII. **Comparison of Monophasic and Biphasic Electrical Stimulation by Using Temporal Analysis for Different Inter-electrode Spacings in the Hexagonal Arrays**
ÇELİK M. E., KARAGÖZ İ.
ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING, vol.43, no.6, pp.2889-2898, 2018 (SCI-Expanded)

IX. **The Effect of Return Electrode Position on Induced Electric Fields for Electrical Stimulation of Retinal Ganglion Cells**
Celik M. E.
ACTA PHYSICA POLONICA A, vol.132, no.3, pp.493-495, 2017 (SCI-Expanded)

X. **An Efficient Inductive Coil Link Design for Wireless Power Transfer to Visual Prostheses**
Celik M. E., Aydin E.
ACTA PHYSICA POLONICA A, vol.132, no.3, pp.535-537, 2017 (SCI-Expanded)

XI. **Rabbit Retinal Ganglion Cell Activation Thresholds in Response to Various Electrical Stimulation Waveforms using a Different Spatial Resolution Electrode Array**
Celik M. E., Ozden M., Karagoz I., Sobaci G.
ACTA PHYSICA POLONICA A, vol.131, no.6, pp.1479-1484, 2017 (SCI-Expanded)

XII. **A novel finite element method based retinal stimulation strategy to decrease stimulation threshold and electrode crosstalk**
ÇELİK M. E., KARAGÖZ İ.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.32, no.2, pp.563-573, 2017 (SCI-Expanded)

XIII. **Modelling of Stimulation Environment Using Monophasic Rectangle Pulse for Various Stimulation Parameters**
Celik M. E., Karagoz I.
ACTA PHYSICA POLONICA A, vol.128, 2015 (SCI-Expanded)

XIV. **An in Vitro Study for Analysing the Responses to Monophasic Pulses from Retinal Ganglion Cells**
Eren M., ÇELİK M. E., ÖZDEN M., Sobaci G., KARAGÖZ İ.
OPHTHALMOLOGICA, vol.232, pp.40-41, 2014 (SCI-Expanded)

Articles Published in Other Journals

I. **Image Processing for Tooth Type Classification using Deep Learning**
ÇELİK B., Ulus F. O., SAVAŞTAER E. F., Genç M. Z., ÇELİK M. E.
Current research in dental sciences (Online), 2024 (Peer-Reviewed Journal)

II. **Panoramik Radyograflarda Diş Tiplerinin Sınıflandırılması için Derin Öğrenme Yöntemlerinin Karşılaştırılması**
ÇELİK B., Genç M. Z., ÇELİK M. E.
EMO Bilimsel Dergi, vol.14, no.1, pp.87-95, 2024 (Peer-Reviewed Journal)

III. **A Novel Deep Learning Model for Pain Intensity Evaluation**
ÇELİK M. E.
International Journal of Computational and Experimental Science and Engineering (IJCESEN), vol.9, no.4, pp.325-330, 2023 (Scopus)

IV. **Multi-Compartmental Modeling for Extracellular Stimulation of Neocortex**
ÇELİK M. E.
European Journal of Science and Technology, vol.29, no.13, pp.76-80, 2021 (Peer-Reviewed Journal)

V. **Simulation of Electrical Stimulation of Layered Retina with Bipolar Electrode Configuration and Temperature Change on the Retina**
ÇELİK M. E., KARAGÖZ İ.
International Journal of Computational and Experimental Science and Engineering, vol.1, no.1, pp.5-7, 2015 (Peer-Reviewed Journal)

VI. **The Effect of the Electrical Stimulation on Temperature Rise in the Retinal Tissue for Visual Prostheses**
ÇELİK M. E., KARAGÖZ İ.

International Journal of Computer and Electrical Engineering, vol.6, no.4, pp.369-372, 2014 (Peer-Reviewed Journal)

VII. **Investigation The Role Of Carbon Nanotubes For High Resolution Visual Prostheses**
ÇELİK M. E., KARAGÖZ İ.
International Journal on Technical and Physical Problems of Engineering, vol.6, no.18, pp.192-197, 2014 (Scopus)

Refereed Congress / Symposium Publications in Proceedings

I. **Uncertainty Calculations in Rf Vectorial Measurements**
KARAY E., ÇELİK M. E., Danacı E.
10th INTERNATIONAL MARMARA SCIENCES CONGRESS, Kocaeli, Turkey, 09 June 2023, pp.200-206

II. **Penetre eden elektrotlar ile intrakraniyal elektriksel uyartım: Çok ölçekli bir modelleme çalışması**
ÇELİK M. E.
21. Ulusal Sinirbilim Kongresi, Bolu, Turkey, 08 June 2023

III. **The Improvement of Model Performance for Automated Tooth Identification**
Goc Y. F., ERGÜL Ö., ÇELİK B., ÇELİK M. E.
International Symposium on Fundamentals of Electrical Engineering (ISFEE), Bucharest, Romania, 16 - 18 November 2023, pp.736-740

IV. **Improving Hardware Quality Measurements Using Automated Testing**
Sarı A., ÇELİK M. E.
20th International Conference on Mechatronics – Mechatronika 2022, Pilsen, Czech Republic, 07 December 2022

V. **Kortikal bölgenin elektriksel uyarımı için çok ölçekli hesaplamalı bir model**
ÇELİK M. E.
20. Ulusal Sinirbilim Kongresi, İstanbul, Turkey, 19 October 2022

VI. **Automatic Implant Detection Using Deep Learning**
Kaya H. İ., ÇELİK B., ÇELİK M. E.
3rd International Conference on Applied Engineering and Natural Sciences, Konya, Turkey, 20 July 2022

VII. **Dental filling detection using deep learning in periapical radiography**
Bacanli G., Savaştaer E. F., Çelik M. E.
6th International Symposium on Multidisciplinary Studies and Innovative Technologies, ISMSIT 2022, Ankara, Turkey, 20 - 22 October 2022, pp.721-724

VIII. **Spiking Activity of L5 Pyramidal Neuron: A Computational Modeling**
ÇELİK M. E.
2021 5th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT), Ankara, Turkey, 21 October 2021

IX. **A Computational Model for Cortical Stimulation Comparing Realistic Electrode Geometry vs a Point Source**
ÇELİK M. E., Kish K. E., Weiland J.
The Eye and the Chip -12th World Research Congress, Detroit, United States Of America, 03 October 2021

X. **Investigation of Spatial Selectivity using Blind Source Separation Algorithm for Electrical Retinal Stimulation**
ÇELİK M. E., Nguyen D., SCORSONE E., ROUSSEAU L., PICAUD S.
The International Symposium on Visual Prosthetics - Artificial Vision 2019, Aachen, Germany, 13 - 14 December 2019

XI. **Electrical Response Clustering of Mouse Retinal Ganglion Cells**
RATHBUN D. L., JALLIGAMPALA A., ÇELİK M. E.
11th The Eye and the Chip World Research Congress, Dearborn, United States Of America, 10 - 12 November 2019

XII. **Clustering Electrical Retinal Responses Based on Averaged Peri-stimulus Time Histograms**
ÇELİK M. E., Jalligampala A., Rathbun D. L.
International Symposium on Fundamentals of Electrical Engineering (ISFEE), Bucharest, Romania, 1 - 03 November 2018

XIII. **MATLAB based computational tool for inductive coil link parameters in retinal prosthesis**
ÇELİK M. E., AYDIN E.
The International Symposium on Visual Prosthetics - Artificial Vision 2017, Aachen, Germany, 1 - 02 December 2017

XIV. **Finite Element Method Based Modeling Of A New Electrode Design And Stimulation Strategy For Retinal Stimulation**
ÇELİK M. E., KARAGÖZ İ.
The Young Researcher Vision Camp An International Career Building Symposium, Leibertingen, Germany, 30 June - 02 July 2017, pp.24

XV. **Characterization of Individual Retinal Ganglion Cell Responses Using K-Means Clustering Method**
ÇELİK M. E., Balouji E.
2017 International Artificial Intelligence and Data Processing Symposium (IDAP), Malatya, Turkey, 16 - 17 September 2017

XVI. **Investigation the Effect of Misalignment and Distance between the Coils for Wireless Power Transfer in Retinal Implants**
Aydin E., ÇELİK M. E., Aydemir M. T.
10th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 30 November - 02 December 2017, pp.620-623

XVII. **Determination of Excitation Thresholds for Retina Ganglion Cells Using Biphasic and Monophasic Stimulation Pulses to be Designed for High Resolution Epiretinal Prosthesis**

ÇELİK M. E., KARAGÖZ İ., ÖZDEN M., SOBACI G.
2nd International Symposium on Artificial Vision, Aachen, Germany, 27 - 28 November 2015, pp.4

XVIII. **In Silico Development of 3 dimensionel Retina Model and Monophasic Stimulation Environment**
ÇELİK M. E., KARAGÖZ İ.
3rd International Symposium on Innovative Technologies in Engineering and Science, Valencia, Spain, 3 - 05 June 2015, pp.1756-1762

XIX. **Experimentally determination of optimal electrical stimulation pulse parameters for designing high resolution epiretinal implant system**
KARAGÖZ İ., ÇELİK M. E., ÖZDEN M., SOBACI G.
The Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO), Colorado, United States Of America, 3 - 07 May 2015

XX. **A New Offline Spike Detection Approach For Neural Signals Recorded From Rabbit Retina Ganglion Cell Layer**
ÇELİK M. E., KARAGÖZ İ.
23nd Signal Processing and Communications Applications Conference (SIU), Malatya, Turkey, 16 - 19 May 2015, pp.2203-2205

XXI. **Türkiyede Yeni Bir Epiretinal İmplant Sistemi Geliştirmeye Yönelik Deneysel Çalışmalar**
Eren M., ÇELİK M. E., ÖZDEN M., SOBACI G., KARAGÖZ İ.
Türk Oftalmoloji Derneği 48. Ulusal Kongresi, Antalya, Turkey, 5 - 09 November 2014

XXII. **Development of Computational Retinal Stimulation Model Based on Bipolar Electrode Configuration**
ÇELİK M. E., KARAGÖZ İ.
2nd International Symposium on Innovative Technologies in Engineering and Science, 18 - 20 June 2014, pp.1939-1948

XXIII. **THE EFFECT OF STIMULATION ELECTRODE ARRAY SIZE ON THE TEMPERATURE OF THE RETINAL TISSSUE IN VISUAL PROSTHESES**
ÇELİK M. E., KARAGÖZ İ.
22nd IEEE Signal Processing and Communications Applications Conference (SIU), Trabzon, Turkey, 23 - 25 April 2014, pp.244-247

XXIV. **The Role Of Carbon Nanotubes At ElectrodeTissue Interface For High Resolution Visual Prostheses**
ÇELİK M. E., ÖZDEN M., KARAGÖZ İ.
9th International Conference on Technical and Physical Problems of Electrical Engineering, 9 - 11 September 2013, pp.510-514

XXV. **Visual Prostheses With Hıgh SpatioTemporal Resolution**
ÇELİK M. E., ÖZDEN M., KARAGÖZ İ.
9th International Conference on Technical and Physical Problems of Electrical Engineering, 9 - 11 September 2013, pp.515-519

XXVI. **SIMULATION BASED COMPUTATION MODEL FOR EPIRETINAL PROSTHESIS**
ÇELİK M. E., KARAGÖZ İ.
10th International Conference on Electronics, Computer and Computation (ICECCO), Ankara, Turkey, 7 - 09 November 2013, pp.52-55

XXVII. **VISUAL PROSTHESIS: HOPE for BLINDNESS**
ÇELİK M. E., Ozden M., Karagoz H.
9th International Conference on Electronics Computer and Computation (ICECCO 2012), Ankara, Turkey, 1 - 03 November 2012, pp.41-44

Supported Projects

ÇELİK M. E., ÜNAL M. A., ERKAN M., Project Supported by Higher Education Institutions, MiniAtlas Hassas 3D Modelleme Sistemi, 2024 - Continues

Çelik M. E., Özkutlu Ö., Ateş Sarı Y., Ünlüer N. Ö., R&D Project of Group B, FİZYOTERAPİ VE REHABİLİTASTYON EĞİTİMİNDE TEKNOLOJİ (PC TABANLI HASTA ÖLÇME VE DEĞERLENDİRME SİMULASYONU), 2023 - 2026

Çelik M. E., Çelik B., TUBITAK Project, 3-Boyutlu Dental Tarama Sistemi, 2024 - 2025

Çelik M. E., Çelik B., Emergency R&D Project of Group A, Artırılmış Gerçeklik Tabanlı Diş Hekimliğinde Klinik Muayene Uygulaması, 2024 - 2025

Çelik M. E., Weiland J., Project Supported by Public Organizations in Other Countries, StiMote: An Ultrasmall, Modular Neurophotonic Stimulator, 2021 - 2022

Çelik M. E., Picaud S., Rousseau L., EU Supported Other Project, High Density Full Diamond Cortical Implant for Long Life Time Implantation, 2018 - 2019

KARAGÖZ İ., TUBITAK Project, Epiretinal İmplant Sistemlerinde Yüksek Uzaysal-Zamansal Çözünürlüğün Elde Edilmesi İçin Elektrot Matris Dizini ve Uyartım Stratejisinin Geliştirilmesi, 2013 - 2017

Metrics

Publication: 48
Citation (WoS): 77
Citation (Scopus): 92
H-Index (WoS): 4

H-Index (Scopus): 5

Scholarships

Postdoctoral Research Scholarship, Fulbright Program, 2021 - 2022
Postdoctoral Research Scholarship, TUBITAK, 2018 - 2019
DAAD Research Scholarship, Official Institutions of Foreign Countries, 2018 - 2018
Erasmus+ , European Commission, 2017 - 2017
Ph.D. Research Scholarship Program, TUBITAK, 2012 - 2017
Ph.D. Student Scholarship for a Project under TUBITAK 1001 Program, TUBITAK, 2013 - 2016

Awards

Çelik M. E., Sözlü Üçüncülük Ödülü, 21. Ulusal Sinirbilim Kongresi, June 2023

Non Academic Experience

University of Michigan
The Institut de la Vision
Eberhard-Karls-Universitaet Tubingen
Biomec Mühendislik Çözümleri Lmt. Şti.