

## Prof. TUĞBA SELCEN NAVRUZ

### Personal Information

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### International Researcher IDs

ScholarID: 4mAqslcAAAAJ

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Publons / Web Of Science ResearcherID: AIC-3722-2022

ScopusID: 23036276600

Yoksis Researcher ID: 54109

### Education Information

Doctorate, Gazi University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (Dr), Turkey 2002 - 2008

Postgraduate, Gazi University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (YI) (Tezli), Turkey 1997 - 2002

Undergraduate, Gazi University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, Turkey 1993 - 1997

### Foreign Languages

English, C1 Advanced

### Dissertations

Doctorate, Arabant yapılı güneş pillerinde verim optimizasyonu, Gazi University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (Dr), 2008

Postgraduate, Beş eksenli bir robot kolunun ters kinematik hesaplamalarının ve yörünge planlamasının yapılması, Gazi University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (YI) (Tezli), 2002

### Research Areas

Electrical and Electronics Engineering, Electronic, Electronic Circuits, Optics and Photonics, Engineering and Technology

### Academic Titles / Tasks

Professor, Gazi University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2023 - Continues

Associate Professor, Gazi University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2017 - 2023

Assistant Professor, Gazi University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2009 - 2016

Assistant Professor, University of California, Los Angeles, EE Faculty, Electrical Engineering, 2011 - 2012

Research Assistant, Gazi University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2003 - 2009

Lecturer, Cankiri Karatekin University, Vocational School, Department Of Electronics And Automation, 1998 - 2003

## Academic and Administrative Experience

Rectorate Commissioner, Gazi University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2020 - Continues  
Deputy Head of Department, Gazi University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2017 - 2020  
Gazi University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 2009 - 2013

## Courses

Fotovoltaik Devreler ve Elemanlar, Postgraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021  
Analog Electronics Lab II, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020  
Devre Teorisi II, Undergraduate, 2021 - 2022  
Analog Electronics Lab I, Undergraduate, 2021 - 2022, 2020 - 2021  
Analog Electronics I, Undergraduate, 2021 - 2022, 2020 - 2021  
Mühendislik Uygulamaları için Modern Optik, Postgraduate, 2021 - 2022  
Mühendislik Uygulamaları İçin Modern Optik, Postgraduate, 2021 - 2022, 2020 - 2021  
Analog Electronics II, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021  
Devre Teorisi I, Undergraduate, 2022 - 2023, 2021 - 2022

## Advising Theses

Navruz T. S., SÜPER ÇÖZÜNÜRLÜK ALGORİTMALARINDA DERİN ÖĞRENMENİN ETKİSİ, Postgraduate, M.Can(Student), 2024  
Navruz T. S., İskender İ., Design and implementation of double stage starter/generator for hybrid propulsion systems, Doctorate, S.ARSLAN(Student), 2023  
Navruz T. S., BVP ve EDA Sensörleri Kullanılarak Yapay Zekâ Destekli Stres Tespiti, Postgraduate, E.EREN(Student), 2023  
Navruz T. S., İnsansız hava araçları için otonom uçuş algoritması geliştirme ve simülasyonu, Postgraduate, K.ÇANTAŞ(Student), 2022  
Navruz T. S., DEEP LEARNING BASED VOICE COMMAND SYSTEM, Postgraduate, A.Nur(Student), 2021  
Navruz T. S., EŞ ZAMANLI KONUM BELİRLEME VE HARİTALAMA METOTLARININ KARŞILAŞTIRILMASI, Postgraduate, K.YALÇIN(Student), 2021  
Navruz T. S., Eş zamanlı konum belirleme ve haritalama probleminde iyileştirilmiş çözüm için GKF, AGKF ve FastSLAM uygulamaları, Postgraduate, S.KARAÇAM(Student), 2021  
NAVRUZ T. S., Efficiency Analysis In Solar Cells Made Of Different Semiconductor Materials, Postgraduate, M.Korun(Student), 2016  
NAVRUZ T. S., Longitudinal And Lateral Control For Unmanned Ground Vehicles, Postgraduate, A.NURİ(Student), 2015  
NAVRUZ T. S., Büyük veri uygulamaları için bir lamda mimari geliştirilmesi, Doctorate, M.UMUT(Student), 2015  
NAVRUZ T. S., Modelling intermediate band solar cell using finite difference method, Postgraduate, M.BÜYÜKBAŞ(Student), 2011  
NAVRUZ T. S., Efficiency optimization using detailed balance method in multi-junction solar cells, Postgraduate, G.ŞENAY(Student), 2011  
NAVRUZ T. S., DESIGN AND CONSTRUCTION OF AN PC CONTROL SOLAR TRACKING SYSTEM., Postgraduate, F.A. (Student), 2011  
NAVRUZ T. S., Termal görüntüleme sistemlerinde görüntü simülasyonu, Postgraduate, A.CANPOLAT(Student), 2011

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

1. A comprehensive experimental study for analyzing the effects of data augmentation techniques on voice classification

Bakir H., cayir A. N., NAVRUZ T. S.

MULTIMEDIA TOOLS AND APPLICATIONS, vol.83, no.6, pp.17601-17628, 2024 (SCI-Expanded)

- II. **Performance Analysis of Lambda Architecture-Based Big-Data Systems on Air/Ground Surveillance Application with ADS-B Data**  
Demirezen M. U., NAVRUZ T. S.  
SENSORS, vol.23, no.17, 2023 (SCI-Expanded)
- III. **An improved adaptive FastSLAM algorithm with time-varying noise estimator**  
Karaçam S., Navruz T. S.  
ASIAN JOURNAL OF CONTROL, vol.26, no.4, pp.2617-2627, 2023 (SCI-Expanded)
- IV. **Modeling Lattice Matched Dilute Nitride Triple and Quadruple Junction Solar Cells on Virtual SiGe Substrate**  
NAVRUZ T. S.  
PHOTONICS, vol.10, no.6, 2023 (SCI-Expanded)
- V. **FEM-based optimal design and testing of synchronous magnetic coupling for aerospace Starter/Generator applications**  
Arslan S., Iskender I., NAVRUZ T. S.  
ENGINEERING SCIENCE AND TECHNOLOGY-AN INTERNATIONAL JOURNAL-JESTECH, vol.41, 2023 (SCI-Expanded)
- VI. **Finite Element Method-Based Optimisation of Magnetic Coupler Design for Safe Operation of Hybrid UAVs**  
Arslan S., Iskender I., NAVRUZ T. S.  
AEROSPACE, vol.10, no.2, 2023 (SCI-Expanded)
- VII. **Comparison of three IBSCs in terms of photo-filling, capture cross section of carriers, the concentration of IB states and overlapping of absorption coefficients in the wide range of band gaps including GaAs**  
Kızıloğlu V., Navruz T. S., Saritas M.  
Optik, vol.225, 2021 (SCI-Expanded)
- VIII. **Modeling lattice-matched InP-based multijunction solar cells**  
NAVRUZ T. S.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.25, no.2, pp.1010-1020, 2017 (SCI-Expanded)
- IX. **Determination of the optimum material parameters for intermediate band solar cells using diffusion model**  
NAVRUZ T. S., Saritas M.  
PROGRESS IN PHOTOVOLTAICS, vol.22, no.5, pp.593-602, 2014 (SCI-Expanded)
- X. **THE VARIATION OF THE CURRENT IN AUGER EFFECT INTERMEDIATE BAND SOLAR CELLS DUE TO THE INTERMEDIATE BAND LEVEL**  
Navruz T. S.  
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.28, no.3, pp.455-463, 2013 (SCI-Expanded)
- XI. **GaSb/InGaAs quantum dot-well hybrid structure active regions in solar cells**  
Laghumavarapu R. B., Liang B. L., Bittner Z. S., Navruz T. S., Hubbard S. M., Norman A., Huffaker D. L.  
SOLAR ENERGY MATERIALS AND SOLAR CELLS, vol.114, pp.165-171, 2013 (SCI-Expanded)
- XII. **The detailed analysis of auger effect on the efficiency of intermediate band solar cells**  
Navruz T. S., Saritas M.  
SOLAR ENERGY MATERIALS AND SOLAR CELLS, vol.93, no.11, pp.1913-1922, 2009 (SCI-Expanded)
- XIII. **Efficiency variation of the intermediate band solar cell due to the overlap between absorption coefficients**  
Navruz T. S., Saritas M.  
SOLAR ENERGY MATERIALS AND SOLAR CELLS, vol.92, no.3, pp.273-282, 2008 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Lambda Architecture-Based Big Data System for Large-Scale Targeted Social Engineering Email Detection**  
Demirezen, Ph.D. M. U., Navruz T. S.  
INTERNATIONAL JOURNAL OF INFORMATION SECURITY SCIENCE, vol.12, no.3, pp.29-59, 2023 (Peer-Reviewed Journal)
- II. **Microwave Whispering-Gallery-Mode Photoconductivity Measurement of Recombination Lifetime in Silicon**  
Yurchenko V., Navruz T. S., Ciydem M., Altıntaş A.  
ADVANCED ELECTROMAGNETICS, vol.8, no.2, pp.101-107, 2019 (ESCI)
- III. **Light-Controlled Polarization of MM-Waves with Photo-Excited Gratings in a Resonant Semiconductor Slab**  
Yurchenko V., Navruz T. S., Ciydem M., Altıntaş A.  
ADVANCED ELECTROMAGNETICS, vol.8, no.2, 2019 (ESCI)
- IV. **Inverse Kinematics Calculations and Trajectory Planning of Edubot robot arm with five axes**  
Tonbul T. S., Sarıtaş M.  
Gazi Üniversitesi Mühendislik Mimarlık Fakültesi Dergisi, vol.18, no.1, pp.145-167, 2003 (Peer-Reviewed Journal)

## Books & Book Chapters

- I. **An Adaptive EKF Algorithm with Adaptation of Noise Statistic Based on MLE, EM and ICE**  
Karaçam S., Yalçın K., Navruz T. S.  
in: Smart Applications with Advanced Machine Learning and Human-Centred Problem Design, Fatos Xhafa, Editor, Springer Nature, Zürich, pp.185-198, 2023
- II. **Improved Performance of Adaptive UKF SLAM with Scaling Parameter**  
Yalçın K., Karaçam S., Navruz T. S.  
in: Smart Applications with Advanced Machine Learning and Human-Centred Problem Design , Fatos Xhafa, Editor, Springer Nature, Zürich, pp.175-183, 2023
- III. **Intermediate Band Solar Cells and the Variation of Efficiency Due to the Overlap between Absorption Coefficients**  
NAVRUZ T. S., SARITAŞ M.  
in: Physics of nanostructured solar cell Chapter 6, Viorel Badescu, Marius Paulescu, Editor, Nova Publishers, New York, pp.143-164, 2010

## Refereed Congress / Symposium Publications in Proceedings

- I. **Termal Kameralarda Derin Öğrenme ile Süper Çözünürlük**  
Öz M. C., Navruz T. S.  
32. IEEE Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Mersin, Turkey, 15 May - 18 June 2024, pp.1-4
- II. **Super Resolution with Deep Learning in Thermal Images Termal Görüntülerde Derin Öğrenme ile Süper Çözünürlük**  
Öz M. C., NAVRUZ T. S.  
32nd IEEE Conference on Signal Processing and Communications Applications, SIU 2024, Mersin, Turkey, 15 - 18 May 2024
- III. **Optimal Design of an In-Runner Direct-Drive Synchronous Permanent Magnet Starter/Generator for UAVs**  
Arslan S., İskender İ., Navruz T. S.  
ISMSIT 2022, Ankara, Turkey, 20 - 22 October 2022, pp.1-6

- IV. **Effect of Resampling Methods to Performance of FastSLAM Under Different Noise Conditions**  
Karaçam S., Navruz T. S.  
IEEE Signal Processing and Communications Applications (SIU), Karabük, Turkey, 15 May - 18 September 2022, pp.1-4
- V. **Stress Detection with Deep Learning Using BVP and EDA Signals**  
Eren E., Navruz T. S.  
HORA, Ankara, Turkey, 9 - 11 June 2022, pp.1-7
- VI. **İNSANSIZ HAVA ARAÇLARI İÇİN OTONOM UÇUŞ SİSTEMİ GELİŞTİRME**  
Çantaş K., Navruz T. S.  
INTERNATIONAL CONFERENCE OF AERONAUTICS AND ASTRONAUTICS, Konya, Turkey, 10 - 12 November 2021, pp.18
- VII. **An Adaptive EKF Algorithm with Adaptation of Noise Statistic Based on MLE, EM and ICE**  
Karaçam S., Yalçın K., Navruz T. S.  
International Conference on Artificial Intelligence and Applied Mathematics in Engineering 2021, Antalya, Turkey, 1 - 04 October 2021, pp.45
- VIII. **Improved Performance of Adaptive UKF SLAM with Scaling Parameter**  
Yalçın K., Karaçam S., Navruz T. S.  
3rd International Conference on Artificial Intelligence and Applied Mathematics in Engineering, Antalya, Turkey, 01 October 2021, pp.44
- IX. **Effect of Dataset Size on Deep Learning in Voice Recognition**  
Çayır A. N., Navruz T. S.  
2021 3rd International Congress on Human-Computer Interaction, Optimization and Robotic Applications (HORA), Ankara, Turkey, 11 - 13 June 2021, pp.1-5
- X. **Lambda Architecture Based Big Data System for Air and Ground Surveillance**  
Demirezen M. U., Navruz T. S.  
4th International Conference on Computer Applications and Information Security, Tunis, Tunisia, 18 - 20 March 2021
- XI. **Size Dependent Intermediate Band Energy Levels and Absorption of Bound States in Box Shaped Quantum Dots**  
KIZILOĞLU V., NAVRUZ T. S., SARITAŞ M.  
International Conference on Photovoltaic Technologies (PVCon), Ankara, Turkey, 4 - 06 July 2018
- XII. **Comparison of Ge, InGaAs p-n junction solar cell**  
Korun M., Navruz T. S.  
International Physics Conference at the Anatolian Peak (IPCAP), Erzurum, Turkey, 25 - 27 February 2016, vol.707
- XIII. **The Efficiency Variation in IBSCs Due to the Occupation Factor of IB Level**  
KIZILOĞLU V., NAVRUZ T. S., SARITAŞ M.  
SOLARTR 2014 CONFERENCE EXHIBITION, 19 - 21 November 2014
- XIV. **Longitudinal and Lateral Control for Unmanned Ground Vehicles**  
SOMUNCUOĞLU A. N., NAVRUZ T. S.  
ISITES 2014, Karabük, Turkey, 18 - 20 June 2014, pp.520-529
- XV. **GaSb/InGaAs Quantum Dot-Well Solar Cells**  
Laghumavarapu R. B., Liang B. L., Bittner Z., NAVRUZ T. S., Hubbard S. M., Norman A., Huffaker D. L.  
39th IEEE Photovoltaic Specialists Conference (PVSC), Tama, Japan, 16 - 21 June 2013, pp.292-295
- XVI. **Image simulation in thermal imaging systems**  
Canpolat A., NAVRUZ T. S.  
EEMG, Ankara, September, 2011., Ankara, Turkey, 29 September - 01 October 2011, pp.86-89
- XVII. **TARİH VE ZAMAN TABANLI GÜNEŞ TAKİP SİSTEMİ**  
Fathi H., NAVRUZ T. S.  
EEMG, Ankara, September, 2011, Ankara, Turkey, 29 September - 01 October 2011, pp.34-38
- XVIII. **P N Eklem Güneş Pillerinde Auger Etkisinin Detaylı Denge Modeli ile İncelenmesi**  
NAVRUZ T. S.

4. Mühendislik ve Teknoloji Sempozyumu, Ankara, Turkey, 28 - 29 April 2011, pp.244-249

**XIX. The Effect of Overlap between Absorption Coefficients on the Variation of Current Densities in Intermediate Band Solar Cells**

NAVRUZ T. S.

ELECO'2009 International Conference on Electrical Electronics Engineering, Bursa, Turkey, 5 - 08 November 2009, vol.1, pp.19-23

**XX. The effect of Auger mechanism on the efficiency of the intermediate band solar cell**

NAVRUZ T. S., SARITAŞ M.

22nd European Photovoltaic Solar Energy Conference 2007, Milan, Italy, 3 - 07 September 2007, pp.641-647

**XXI. Intermediate Band Solar Cells**

NAVRUZ T. S., SARITAŞ M.

ELECO'2005 International Conference on Electrical Electronics Engineering, Bursa, Turkey, 7 - 11 December 2005, vol.2, pp.51-54

**XXII. Beş eksenli bir robot kolunda ters kinematik hesaplamalar ve yörünge planlaması**

Tonbul T. S., Saritaş M.

ELECO 2002, Bursa, Turkey, 18 - 22 December 2002, pp.173-177

## Supported Projects

Çiydem M., Navruz T. S., TUBITAK Project, Simulation, fabrication, and testing of MM- and CM-wave grid-on-a-slab metamaterial structures for studying their transmission, polarization, and shielding properties, 2018 - 2018

Navruz T. S., Project Supported by Higher Education Institutions, Devre Analizi Laboratuvar Setlerinin Bilgisayar Destekli Olarak Yenilenmesi, 2015 - 2016

Navruz T. S., Saritaş M., Project Supported by Higher Education Institutions, Analog Sayısal Elektronik ve Elektronik Giriş Laboratuvarlarının Deney Setlerinin Bilgisayar Destekli Olarak Yenilenmesi, 2014 - 2015

Özçelik S., Navruz T. S., TUBITAK Project, III Modeling of V Group Bijoint and Quantum Well Solar Cells, Epitaxial Growth and Development of Solar Cells, 2010 - 2013

## Scientific Refereeing

SIU 2022, Conference Paper (Full Text), April 2022

## Metrics

Publication: 42

Citation (WoS): 103

Citation (Scopus): 134

H-Index (WoS): 5

H-Index (Scopus): 7