

## Assoc. Prof. ABDURRAHMAN GÜNDAY

### Personal Information

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### International Researcher IDs

ScholarID: j12gYqsAAAAJ

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Publons / Web Of Science ResearcherID: AAH-5448-2021

ScopusID: 55747963900

Yoksis Researcher ID: 207232

### Education Information

Doctorate, Bursa Uludağ University, FEN BİLİMLERİ ENSTİTÜSÜ, FEN BİLİMLERİ ENSTİTÜSÜ, Turkey 2010 - 2016

Postgraduate, Bursa Uludağ University, FEN BİLİMLERİ ENSTİTÜSÜ, FEN BİLİMLERİ ENSTİTÜSÜ, Turkey 2004 - 2007

Undergraduate, Bursa Uludağ University, MÜHENDİSLİK FAKÜLTESİ, ELEKTRİK-ELEKTRONİK MÜHENDİSLİĞİ, Turkey 1992 - 1998

### Foreign Languages

Italian, B1 Intermediate

German, B1 Intermediate

English, C1 Advanced

### Certificates, Courses and Trainings

Education Management and Planning, EĞİTİMDE İNOVASYON VE ETKİLEŞİM, BURSA ULUDAĞ UNIVERSITY, 2020

### Dissertations

Doctorate, ANALYSIS AND MODELLING OF THE THERMAL EFFECTS IN OPTICAL FIBER DISTRIBUTED SENSING SYSTEMS , Bursa Uludağ University, FEN BİLİMLERİ ENSTİTÜSÜ, Elektronik Mühendisliği (Dr), 2016

Postgraduate, Sensing simulations of the temperatures and strains occurred on power cable by the optical fiber sensors, Bursa Uludağ University, FEN BİLİMLERİ ENSTİTÜSÜ, Elektronik Mühendisliği (YI) (Tezli), 2007

### Research Areas

Optical Communication, Telecommunication Applications, Software, Electrical and Electronics Engineering, Sensing Devices and Transducers, Electronic Circuits, Optics and Photonics, Renewable energy, Optical Materials and Devices, Optoelectronic Materials and Devices, Engineering and Technology

## Academic Titles / Tasks

Assistant Professor, Bursa Uludağ University, MÜHENDİSLİK FAKÜLTESİ, ELEKTRİK-ELEKTRONİK MÜHENDİSLİĞİ, 2020  
- Continues

## Courses

### Postgraduate

Lidar and Radar Systems in Hybrid Electric Vehicles, Postgraduate, 2021 - 2022  
Photonic and Optical Switching Methods, Postgraduate, 2021 - 2022  
Optical Fiber Sensor Applications in Hybrid Electric Vehicles, Postgraduate, 2021 - 2022  
Optoelectronic Circuits, Postgraduate, 2021 - 2022

### Undergraduate

OCCUPATIONAL HEALTH AND SAFETY, Undergraduate, 2020 - 2021  
OPTOELECTRONICS, Undergraduate, 2021 - 2022  
PHOTONICS CIRCUIT COMPONENTS, Undergraduate, 2020 - 2021  
COMMUNICATION ELECTRONICS, Undergraduate, 2020 - 2021  
ELECTRICAL MATERIALS, Undergraduate, 2020 - 2021  
Operational Amplifier and their Applications, Undergraduate, 2020 - 2021  
Integrated Communication Networks, Undergraduate, 2020 - 2021

## Supervised Theses

Günday A., Modeling and Performance Analysis of Lithium-Ion Battery System Used in Electric Vehicles, Postgraduate, C.Karayel(Student), Continues  
Günday A., Modelling and strain analysis of FBG sensing system in lithium ion batteries, Postgraduate, E.Güleç(Student), Continues  
Günday A., Modeling of 2D Lidar and Analysis of the Effects of Measurement Parameters on Detection Performance, Postgraduate, S.Çindemir(Student), Continues  
Günday A., Thermal Analysis and Modeling of FR4 and Aluminum PCBs in LED Driver Circuit Boards in Stop Lamps of Passenger Vehicles, Postgraduate, S.Osmanoğlu(Student), Continues  
Günday A., Investigation of Aerosol Effect in Lidar-Based Object Detection for Autonomous Vehicles, Postgraduate, E.Sönmez(Student), Continues  
Yılmaz G., Günday A., IR Led'lerde Sıcaklığa Bağlı Tepe Dalgaboyu Değişiminin İncelenmesi ve Modellenmesi, Postgraduate, İ.TAŞCI(Student), 2024  
Günday A., ELEKTRİKLİ TAŞITLARDA ROTAYA BAĞLI ENERJİ TÜKETİM TAHMİNİ VE MODELLENMESİ, Postgraduate, E.KÜÇÜKBOSTANCI(Student), 2024  
Günday A., Elektrikli Taşıtlarda FBG Algılayıcılar Kullanılarak Li-Ion Batarya Sıcaklığının Modellenmesi ve Simülasyonu, Postgraduate, A.AVCI(Student), 2024  
Günday A., OPTİK FİBERLİ DAĞINIK AKUSTİK ALGILAMA İLE HEDEF TESPİTİ VE SİSTEM OPTİMİZASYONU, Postgraduate, M.BİLGİN(Student), 2023  
Günday A., Binek araçların sinyal lambalarında sürücü devre kartlarının ısıl analizi ve optimizasyonu, Postgraduate, Ö.ACAR(Student), 2021

## Jury Memberships

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Bursa Uludağ University, January, 2024

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

- I. **Investigation of the effects of grating length, Bragg wavelength and wavelength shift on temperature sensitivity in fiber Bragg grating-based sensing systems**  
GÜNDAY A.  
Optical and Quantum Electronics, vol.56, no.3, 2024 (SCI-Expanded)
- II. **Influence of temperature on detectable minimum rotation rate in i-FOGs using Er-doped SFSS**  
Sag E., GÜNDAY A., YILMAZ G.  
JOURNAL OF ELECTRICAL ENGINEERING-ELEKTROTECHNICKY CASOPIS, vol.73, no.2, pp.146-151, 2022 (SCI-Expanded)
- III. **A method for distributed sensing of temperature, strain and weight formations employing the acoustic velocity and Bulk modulus of fused silica**  
GÜNDAY A.  
Optik, vol.252, 2022 (SCI-Expanded)
- IV. **Computational analysis of the core refractive index dependencies of Brillouin frequency shift and Brillouin power change in Brillouin coherent detection based distributed sensing systems**  
GÜNDAY A.  
OPTOELECTRONICS AND ADVANCED MATERIALS-RAPID COMMUNICATIONS, vol.12, pp.502-511, 2018 (SCI-Expanded)
- V. **Analysis of effects of Young modulus variations on Brillouin power and Brillouin frequency shift changes in optical fibers**  
GÜNDAY A., KARLIK S. E., YILMAZ G.  
JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS, vol.18, pp.1000-1006, 2016 (SCI-Expanded)
- VI. **THE IMPACT OF TEMPERATURE AND STRAIN FORMATIONS ON YOUNG AND SHEAR MODULI IN USAGE OF OPTICAL FIBER DISTRIBUTED SENSING FOR POWER CABLES**  
GÜNDAY A., KARLIK S. E., YILMAZ G.  
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.29, no.3, pp.517-525, 2014 (SCI-Expanded)

## **Articles Published in Other Journals**

- I. **Effects of vibration frequency and velocity parameters on Doppler frequency shift in laser Doppler vibrometer systems**  
Günday A., Balabey A., Utar C., Demir M., Yılmaz M. M., Sipahi T.  
Gümüşhane Üniversitesi Fen Bilimleri Dergisi, vol.15, no.2, pp.100-112, 2025 (Peer-Reviewed Journal)
- II. **Effects of Atmospheric Attenuation on LiDAR Wavelength**  
Günday A., Balabey A., Utar C., Yılmaz M. M., Demir M., Sipahi T.  
Karadeniz Fen Bilimleri Dergisi, vol.15, no.1, pp.191-202, 2025 (Peer-Reviewed Journal)
- III. **Optik Fiberlerde Kullanılan Yüksek Katkılı Silika Camın Dielektrik Sabitinin Polarizasyon Etkisi Altında Frekans ve Sıcaklıkla Değişimi**  
Günday A.  
Karadeniz Fen Bilimleri Dergisi, vol.14, no.1, pp.315-325, 2024 (Peer-Reviewed Journal)
- IV. **PRESSURE DEPENDENCIES OF RELATIVE CHANGE IN ELECTRICAL RESISTANCE, GAGE FACTOR AND POISSON'S RATIO IN BARE OPTICAL FIBERS**  
Günday A.  
Konya mühendislik bilimleri dergisi (Online), vol.10, no.3, pp.613-622, 2022 (Peer-Reviewed Journal)
- V. **Analysis of variation of Brillouin and Rayleigh scattering coefficients with thermal strain in Landau-Placzek ratio based optical fiber distributed sensing for XLPE insulated power cables**  
GÜNDAY A., KARLIK S. E., YILMAZ G.  
International Review of Electrical Engineering, vol.8, no.2, pp.920-929, 2013 (Scopus)
- VI. **Optik Fiberli Dağılık Algılama Yöntemiyle Enerji Kablosunda Sıcaklık ve Gerginliğin Algılanması**  
**Temperature and Strain Sensing by the Method of Optical Fiber Distributed Sensing in Power Cable**

GÜNDAY A., YILMAZ G., KARLIK S. E.

Uludağ Üniversitesi Mühendislik-Mimarlık Fakültesi Dergisi (Uludağ University Journal of The Faculty of Engineering and Architecture), vol.12, no.2, pp.43-52, 2007 (Peer-Reviewed Journal)

## Books

- I. **MATLAB Grafik Kullanıcı Arayüzü (GUI) Tabanlı Optik Fiber Dağınık Algılamalı Sistem Simülatörü**  
GÜNDAY A.  
in: Mühendislik Alanında Teori ve Araştırmalar II, Doç. Dr. Mihriban KALKANCI, Editor, Gece Publishing/ Gece Yayınevi, Ankara, pp.445-456, 2020
- II. **Silika Optik Fiberin Bağlı Direnç Değişiminin Brillouin Frekans Kayması ve Güç Değişimi Üzerindeki Etkileri**  
GÜNDAY A.  
in: Mühendislik Alanında Araştırma ve Değerlendirmeler – 2019 / Haziran, Mahmut Turhan, Editor, Gece Publishing /Gece Akademi, Ankara, pp.171-181, 2019
- III. **Electronics Workbench ve Devre Uygulamaları**  
GÜNDAY A.  
Ekin Yayınevi, Bursa, 2015

## Papers Published in Refereed Scientific Meetings

- I. **Comparative Investigation of Resolution, Sampling Rate and Noise Performances of Atmega328P Internal Analog-Digital Converter and ADS1115 Analog-Digital Converter**  
Günday A., Utar C., Balabey A., Yılmaz M. M., Demir M.  
8. Uluslararası Ankara Multidisipliner Bilimsel Çalışmalar Kongresi, Ankara, Turkey, 16 - 18 March 2025, pp.12-20
- II. **INVESTIGATION OF DISCHARGE VOLTAGE AND DISCHARGE CAPACITY OF LI-ION BATTERY CELLS AT DIFFERENT TEMPERATURES**  
Günday A., Karayel C., Güleç E.  
1. Europe International Scientific Research and Innovation Congress, Milan, Italy, 22 - 26 February 2025, pp.165-176
- III. **COMPARISON OF RADAR, LIDAR AND CAMERA TECHNOLOGIES USED IN ADVANCED DRIVER ASSISTANCE SYSTEMS**  
Günday A., Aslane E.  
1. Uluslararası Ankara Bilimsel Araştırmalar ve İnovasyon Kongresi, Ankara, Turkey, 21 - 22 December 2024, pp.482-491
- IV. **INVESTIGATION OF THE CHANGES IN ELECTRICAL PERFORMANCE OF COPPER AND ALUMINUM WITH TEMPERATURE**  
Günday A.  
5. ULUSLARARASI HAZAR BİLİMSEL ARAŞTIRMALAR VE İNOVASYON KONGRESİ, Simkent, Kazakhstan, 26 - 28 December 2024, pp.761-766
- V. **INVESTIGATION OF FACTORS AFFECTING THE MEASUREMENT ACCURACY OF A 2D LiDAR DEVICE UNDER EXPERIMENTAL CONDITIONS**  
Çindemir S., Günday A.  
8. ULUSLARARASI HALIÇ MULTİDİSİPLİNER BİLİMSEL ARAŞTIRMALAR KONGRESİ, İstanbul, Turkey, 3 - 05 December 2024, pp.832-839
- VI. **Hava Lidarlarda Menzil ve Yansıtma Katsayısı Parametrelerinin LiDAR Kesit Alanı Üzerindeki Etkilerinin İncelenmesi**  
Günday A., Balabey A., Utar C., Yılmaz M. M., Demir M., Sipahi T.  
10. ULUSAL HAVACILIK ve UZAY KONFERANSI, Ankara, Turkey, 18 - 20 September 2024, pp.100-110

- VII. **Distributed Sensing and Monitoring of Transformer Winding Temperature**  
Serinci Y., Tüter M., Günday A.  
UMTEB-XV International Scientific Research Congress, Jakarta, Indonesia, 24 - 25 March 2024, pp.210-217
- VIII. **Analysis of Temperature Formations Occurred in Li-Ion Batteries Using Fiber Bragg Grating Sensors**  
Avcı A., Günday A.  
HAGIA SOPHIA 7th INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY SCIENTIFIC STUDIES, İstanbul, Turkey, 3 - 05 February 2024, pp.758-763
- IX. **Investigation of the Relationship Between Euro 7 Brake Dust Emissions and Regenerative Breaking**  
Günday A., Küçükboşancı E.  
5. INTERNATIONAL MEDITERRANEAN CONGRESS, Mersin, Turkey, 13 - 14 January 2024, pp.1625-1631
- X. **Theoretical Investigation of the Effects Aluminium Composition Parameter on the Emission Performance of IR LEDs**  
Taşçı İ., Günday A., Yılmaz G.  
9th ASIA PACIFIC INTERNATIONAL MODERN SCIENCES CONGRESS, Baku, Azerbaijan, 16 - 18 January 2024, pp.259-266
- XI. **Analysis of the Change in Peak Emission Wavelength with Dopant Ratio and Temperature Variation in Ga<sub>1-x</sub>Al<sub>x</sub>As LEDs**  
Günday A., Taşçı İ.  
ANKARA INTERNATIONAL CONGRESS ON SCIENTIFIC RESEARCH-IX (9. ULUSLARARASI ANKARA BİLİMSEL ARAŞTIRMALAR KONGRESİ), Ankara, Turkey, 26 - 28 December 2023, pp.1383-1384
- XII. **On The Strain And Temperature Dependencies Of The Electric Susceptibility OF Silica Fiber Core**  
Günday A.  
8. INTERNATIONAL SCIENCES AND INNOVATION CONGRESS, Ankara, Turkey, 14 - 15 October 2023, pp.205-206
- XIII. **Variation of Relative Change in Peak Emission Wavelength, Spectral Linewidth and Energy Band Gap Parameters of AlGaAs LED with Junction Temperature**  
Günday A.  
EURASIA II. INTERNATIONAL SCIENTIFIC RESEARCH AND INNOVATION CONGRESS, Ankara, Turkey, 6 - 08 September 2023, pp.134-142
- XIV. **Analysis of Effects of Random Wheel Slip Variations on Wheel and Engine Velocities in Mecanum Wheeled Unmanned Terrestrial Vehicles**  
Günday A., Odabaş S.  
CUKUROVA 9th INTERNATIONAL SCIENTIFIC RESEARCHES CONFERENCE, Adana, Turkey, 9 - 11 October 2022, pp.307-319
- XV. **Phase BOTDR based Distributed Acoustic Sensing**  
Bilgen M., Günday A.  
ELECO - 13th INTERNATIONAL CONFERENCE on ELECTRICAL and ELECTRONICS ENGINEERING, Bursa, Turkey, 25 November 2021
- XVI. **Effects of Photon-Shot and Excess Noises on Detectable Minimum Rotation Rate in I-FOG Design for Autonomous Vehicles**  
KILINÇARSLAN K., Sağ E., GÜNDAY A.  
The International Conference on Advanced Engineering, Technology and Applications (ICAETA-2021), İstanbul, Turkey, 09 July 2021
- XVII. **Basınç Oluşumlarının Optik Fiberin Bulk Modülü ve Akustik Hız Değişimi Üzerindeki Etkisi**  
Günday A.  
Erasmus International Academic Research Symposium, İzmir, Turkey, 5 - 06 April 2019, pp.86-87
- XVIII. **Optical Fiber Distributed Sensing of Temperature, Thermal Strain and Thermo-Mechanical Force Formations on OPGW Cables under Wind Effects**  
Günday A., Karlık S. E.  
8th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 28 - 30 November 2013, pp.462-467
- XIX. **Landau Placzek Oranını Temel Alan Optik Fiberli Dağınık Algılamada Brillouin ve Rayleigh Saçılma**

### **Katsayılarının Gerginlikle Değişiminin Analizi**

Günday A., Karlık S. E., Yılmaz G.

ELECO 2012 Elektrik-Elektronik ve Bilgisayar Mühendisliği Sempozyumu, Bursa, Turkey, 29 November - 01 December 2012, pp.678-684

XX. **Landau Placzek Oranını Temel Alan Optik Fiberli Dağınık Algılamada Brillouin ve Rayleigh Saçılma Katsayılarının Sıcaklıkla Değişiminin Analizi**

Günday A., Karlık S. E., Yılmaz G.

ELECO 2012 Elektrik-Elektronik ve Bilgisayar Mühendisliği Sempozyumu, Bursa, Turkey, 29 November - 01 December 2012, pp.372-378

XXI. **Spontaneous Raman Power and Brillouin Frequency Shift Method Based Distributed Temperature and Strain Detection in Power Cables**

Günday A., Yılmaz G., Karlık S. E.

ELECO 2007 Fifth International Conference on Electrical and Electronics Engineering, Bursa, Turkey, 5 - 09 December 2007, pp.326-330

## **Supported Projects**

Günday A., TUBITAK Project, Rayleigh Saçılması Esaslı Optik Fiberli Dağınık Akustik Algılama Sistemi Modellenmesi, 2025 - 2026

Günday A., TUBITAK Project, Topografik Lidar Ölçüm Verilerinin İzlenmesi Ve Takibi İçin Raspberry Pi Aracılığıyla Mobil Uygulama Geliştirme, 2025 - 2026

Günday A., TUBITAK Project, Raman Esaslı Dağınık Sıcaklık Sensörü (DTS) ile Transformator Bobin Sıcaklıklarının Algılanması, MATLAB/Simulink ortamında modellenerek matematiksel analizlerinin yapılması, 2024 - 2025

Günday A., TUBITAK Project, Giyilebilir Tekstile Entegre Raspberry Pi ile EKG Sinyalinin Algılanması, Geliştirilmiş Mobil Uygulamada Takibi ve Analizi, 2024 - 2025

Günday A., TUBITAK Project, Lityum-İyon (Li-Ion) Batarya Sistemlerinde (Fiber Bragg Iızgara) FBG Sensör ile Termal Analiz, 2023 - 2024

Günday A., Project Supported by Defense Industry, Havacılık ve Uzayda LİDAR Uygulamaları (TUSAŞ - LIFT UP PROJESİ), 2023 - 2024

## **Activities in Scientific Journals**

International Journal of Sensors and Sensor Networks, Publication Committee Member, 2022 - Continues

## **Memberships / Tasks in Scientific Organizations**

Chamber of Electrical Engineering, Bursa Branch, Member, 2000 - Continues, Turkey

## **Peer Reviews in Scientific Publications**

Uludağ Üniversitesi Mühendislik Fakültesi Dergisi, National Scientific Refreed Journal, January 2022

Journal Of Optoelectronics And Advanced Materials, SCI Journal, June 2017

## **Scientific Consultations**

TEKNOFEST 2024, Project Consultancy, Bursa Uludağ University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, Turkey, 2024 - Continues

Electrical-Electronics and Biomedical Engineering Conference, Scientific Consultancy, Bursa Uludağ University,  
MÜHENDİSLİK FAKÜLTESİ, ELEKTRİK-ELEKTRONİK MÜHENDİSLİĞİ, Turkey, 2022 - Continues

## Metrics

Publication: 37

Citation (WoS): 14

Citation (Scopus): 37

H-Index (WoS): 3

H-Index (Scopus): 4

## Non Academic Experience

Business Establishment Private, VENES Electric and Cable Systems Ltd. Co., Plant Manager, Plant Manager

Business Establishment Private, FICOSA Automotive Inc. Co. , Advanced Logistic, Project Manager

FICOSA International Otomotiv San. ve Tic. A.Ş., Lojistik Gelişmiş Projeler (Advanced Logistics - Orta Düzey Yönetici)

Business Establishment Private, ISIŞAH Industrial Resistance and Heat Equipment Inc. Co., Planning and Logistic,  
Planning and Logistic Director

ISIŞAH Endüstriyel Rezistans ve Isı Ekipmanları San. Tic. A.Ş., Planlama ve Lojistik Müdürü

Business Establishment Private, Yazaki Automotive Inc. Co., Engineering, Project, Planning and Production Responsible

YAZAKI Systems Technologies Turkey Otomotiv A.Ş., Proje, Planlama ve Üretim Sorumlusu (Orta Düzey Yönetici)

Business Establishment Private, Türk Pirelli Cabo and Systems Inc. Co. , Technical Purchasing, Non raw material  
expertise

TURK PIRELLI Kablo ve Sistemleri A.Ş., Teknik Satınalma Şefi - Sorumlusu (Mühendis)