

## Lect. PhD TİMUÇİN EMRE TABARU

### Personal Information

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### International Researcher IDs

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Publons / Web Of Science ResearcherID: O-7642-2018

ScopusID: 57191501837

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### Education Information

Doctorate, Erciyes University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Müh. Abd., Turkey 2014 - 2018

Postgraduate, Erciyes University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Müh. Abd., Turkey 2012 - 2014

Undergraduate, Erciyes University, Fen Fakültesi, Matematik, Turkey 2010 - 2012

Undergraduate, Erciyes University, Mühendislik Fakültesi, Elektrik-Elektronik, Turkey 1998 - 2005

### Dissertations

Doctorate, ALGILAYICI UYGULAMALARI İÇİN FOTOAKUSTİK SİNYAL PARAMETRELERİNİN OPTİMİZASYONU, Erciyes Üniversitesi, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Müh. Abd./ Ema Ve Mikrodalga Anabilim Dalı, 2018

Postgraduate, SULU ÇÖZELTİDE GLİKOZ ALGILANMASI İÇİN OPTİK YÖNTEMLERİN ARAŞTIRILMASI, Erciyes Üniversitesi, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Müh. Abd./ Ema Ve Mikrodalga Anabilim Dalı, 2014

### Research Areas

Bioinstrumentation and Microelectromechanical Systems (MEMS), bioPhotonic, Laser Tissue Interaction, Sensing Devices and Transducers, Electronic Circuits, Optics and Photonics, Electromagnetic, Electric and Magnetic Fields, Lasers and Masers

### Academic Titles / Tasks

Lecturer PhD, Erciyes University, Rektörlük, Rektörlük, 2018 - Continues

Expert, Erciyes University, Rektörlük, Klinik Müh. Araş. Ve Uyg. Mer., 2015 - 2018

Lecturer, Hitit University, Teknik Bilimler Myo Elektronik Ve Otomasyon Bölümü Mekatronik Prog., Elektronik Ve Otomasyon (Mekatronik ), 2011 - 2015

### Courses

Biyomedikal Optik, Undergraduate, 2019 - 2020  
Elektromanyetik Alan Tekniği, Undergraduate, 2020 - 2021  
Elektromanyetik Alan Tekniği, Undergraduate, 2020 - 2021  
Biyomedikal Optik, Undergraduate, 2019 - 2020  
Seçmeli Matematik, Associate Degree, 2020 - 2021  
Matematik I, Associate Degree, 2019 - 2020  
Matematik I, Associate Degree, 2019 - 2020

## Advising Theses

Tabaru T. E., Saraçoğlu Ö. G., BİYOFOTONİK ALGILAMA İÇİN SPR TABANLI FİBER OPTİK ALGILAYICILARIN İNCELENMESİ, Postgraduate, G.Berat(Student), 2021

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

- I. **Highly sensitive ZnO-doped PET diaphragm-based fiber optic microphone**  
Tabaru T. E., Güneş N., Bayırbağ G., Erdal A.  
Sensors and Actuators A: Physical, vol.378, 2024 (SCI-Expanded)
- II. **Triple band diamond-shaped polarization insensitive plasmonic nano emitter for thermal camouflage and radiative cooling**  
ŞANLI A. K., Tabaru T. E., KILIÇ V. T.  
OPTICAL AND QUANTUM ELECTRONICS, vol.56, no.6, 2024 (SCI-Expanded)
- III. **Derivation of Rytov variance for jet engine-induced turbulence**  
Oktay S., Bayraktar M., Tabaru T. E., Chatzinotas S.  
Physica Scripta, vol.99, no.2, 2024 (SCI-Expanded)
- IV. **Low-Temperature Synthesis of Silicon Oxynitride-Doped Si for Tunable Bragg Gratings Homogeneously Deposited on Si, SiO<sub>2</sub>, and Borosilicate Substrates and the tip of SM and PM Optical Fibers**  
Karatutlu A., Tabaru T. E., Ortaç B.  
Advanced Optical Materials, vol.11, no.12, 2023 (SCI-Expanded)
- V. **The Temperature Effect on U and Coil Shaped POF Sensors to Detect Refractive Index Change**  
Tabaru T. E.  
Fiber And Integrated Optics, vol.40, pp.123-131, 2021 (SCI-Expanded)
- VI. **Analyzing the effect of dynamic properties of materials and operating medium on sensor parameters to increase the performance of diaphragm-based static/dynamic pressure sensors**  
TABARU T. E., Hayber Ş. E.  
Journal of Computational Electronics, vol.20, pp.643-657, 2021 (SCI-Expanded)
- VII. **Evanescent Field Absorption-Based Fiber Optic Sensor for Detecting Power Transformer Oil Degradation**  
HAYBER Ş. E., TABARU T. E., GÜÇYETMEZ M.  
FIBER AND INTEGRATED OPTICS, vol.40, no.4-6, pp.229-248, 2021 (SCI-Expanded)
- VIII. **Design and Analysis of Low Profile and Low SAR Full-Textile UWB Wearable Antenna with Metamaterial for WBAN Applications**  
Yalduz H., Tabaru T. E., Kılıç V. T., Türkmen M.  
Aeu-International Journal Of Electronics And Communications, vol.126, no.1, pp.1250-1262, 2020 (SCI-Expanded)
- IX. **The Experimental Validation of Designed Fiber Optic Pressure Sensors With EPDM Diaphragm**  
HAYBER Ş. E., AYDEMİR U., TABARU T. E., SARAÇOĞLU Ö. G., SARAÇOĞLU Ö. G.  
IEEE SENSORS JOURNAL, vol.19, no.14, pp.5680-5685, 2019 (SCI-Expanded)
- X. **Use of 2D In<sub>2</sub>Se<sub>3</sub> Single Crystal as a Diaphragm Material for Fabry-Perot Fiber Optic Acoustic**

## **Sensors**

Hayber Ş. E., TABARU T. E., AYDEMİR U., SARAÇOĞLU Ö. G.

JOURNAL OF NANOELECTRONICS AND OPTOELECTRONICS, vol.14, no.4, pp.464-469, 2019 (SCI-Expanded)

- XI. **Spectral analysis for photoacoustic pressure sensor designs: Theoretical model improvement and experimental validation**  
TABARU T. E., Hayber S. E., Keser S., SARAÇOĞLU Ö. G.  
SENSORS AND ACTUATORS A-PHYSICAL, vol.287, pp.76-83, 2019 (SCI-Expanded)
- XII. **A novel approach based on simulation of tunable MEMS diaphragm for extrinsic Fabry-Perot sensors**  
Hayber S. E., TABARU T. E., SARAÇOĞLU Ö. G.  
OPTICS COMMUNICATIONS, vol.430, pp.14-23, 2019 (SCI-Expanded)
- XIII. **A simple, high sensitive fiber optic microphone based on cellulose triacetate diaphragm**  
Hayber S. E., TABARU T. E., Keser S., SARAÇOĞLU Ö. G.  
Journal of Lightwave Technology, vol.36, no.23, pp.5650-5655, 2018 (SCI-Expanded)
- XIV. **Frequency Domain Analysis of Laser and Acoustic Pressure Parameters in Photoacoustic Wave Equation for Acoustic Pressure Sensor Designs**  
TABARU T. E., Hayber S. E., SARAÇOĞLU Ö. G.  
CURRENT OPTICS AND PHOTONICS, vol.2, no.3, pp.250-260, 2018 (SCI-Expanded)
- XV. **ABC Algorithm based Fuzzy Modeling of Optical Glucose Detection**  
SARAÇOĞLU Ö. G., BAĞIŞ A., KONAR M., TABARU T. E.  
ADVANCES IN ELECTRICAL AND COMPUTER ENGINEERING, vol.16, no.3, pp.37-42, 2016 (SCI-Expanded)

## **Articles Published in Other Journals**

- I. **U-Shaped POF Sensor for Ethanol/Methanol Determination**  
Tabaru T. E., Hayber Ş. E.  
Erciyes Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.37, no.1, pp.149-156, 2021 (Peer-Reviewed Journal)
- II. **Milimetre Altı Ölçümler İçin Fiber Optik Yer Değiştirme Sensörü**  
Hayber Ş. E., Tabaru T. E.  
Avrupa Bilim ve Teknoloji Dergisi, no.24, pp.1-4, 2021 (Peer-Reviewed Journal)
- III. **Experimental analysis of the correlation between ultrasonic velocity and metallographic and cutting performance parameters of boron carbide-doped diamond sockets**  
Ekincioglu G., Tabaru T. E., Hayber Ş. E., Altındağ R.  
Matériaux & Techniques, vol.108, no.4, pp.403-413, 2020 (Peer-Reviewed Journal)
- IV. **Yüksek Güç Transformatörlerindeki Kısmi Deşarj Tespitinde Diyafram Tabanlı Fabry-Perot İnterferometrik Basınç Sensörlerinin Performans İyileştirilmesi için Diyafram Analizi**  
Tabaru T. E., Hayber Ş. E.  
Avrupa Bilim ve Teknoloji Dergisi, no.2020, pp.231-238, 2020 (Peer-Reviewed Journal)
- V. **Fiber Optik Fabry-Perot Akustik Sensörler için Yeni Bir Diyafram Malzemesi Olarak 2D GaSe Benzetimi**  
HAYBER Ş. E., TABARU T. E., AYDEMİR U., SARAÇOĞLU Ö. G.  
Düzce Üniversitesi Bilim ve Teknoloji Dergisi, vol.6, no.2, pp.369-381, 2018 (Peer-Reviewed Journal)

## **Refereed Congress / Symposium Publications in Proceedings**

- I. **DETERMINATION OF TYPE AND ALCOHOL CONCENTRATION IN WATER WITH BENDED POLYMER OPTIC FIBER SENSOR**  
Tabaru T. E., Hayber Ş. E.  
INTERNATIONAL CONFERENCE ON MATHEMATICS – ENGINEERING – NATURAL & MEDICAL SCIENCES , Al Karak,

Jordan, 30 - 31 January 2021, pp.502-503

- II. **INVESTIGATION OF THE RELATIONSHIP BETWEEN THE TRANSFORMER OIL REFRACTIVE INDEX AND BREAKING VOLTAGE**  
Tabaru T. E., Hayber Ş. E.  
5. ULUSLARARASI MARDİN ARTUKLU BİLİMSEL ARAŞTIRMALAR KONGRESİ, Mardin, Turkey, 15 - 16 January 2021, pp.62-63
- III. **ULTRA WIDEBAND SMALL SIZE Y-SHAPED MICRO STRIP PATCH ANTENNA DESIGN**  
Tabaru T. E.  
3rd INTERNATIONAL ISTANBUL SCIENTIFIC RESEARCH CONGRESS, İstanbul, Turkey, 8 - 10 January 2021, pp.55-57
- IV. **ANALYSIS OF DIAMOND SOCKETS WITH ULTRASONIC METHOD**  
Tabaru T. E., Hayber Ş. E.  
3rd INTERNATIONAL ISTANBUL SCIENTIFIC RESEARCH CONGRESS, İstanbul, Turkey, 8 - 10 January 2021, pp.52-54
- V. **Diaphragm Analysis for Performance Improvement of Diaphragm Based Fabry-Perot Interferometric Pressure Sensors in Partial Discharge Detection in High Power Transformers**  
Tabaru T. E., Hayber Ş. E.  
International Conference On Access To Recent Advances In Engineering And Digitalization (ARACONF), Kayseri, Turkey, 5 - 07 March 2020, pp.82-83
- VI. **Akustik Basınç Sensörü Tasarımları için Fotoakustik Dalga Denkleminin Frekans Domeni Analizi**  
Hayber Ş. E., TABARU T. E., SARAÇOĞLU Ö. G.  
II. International Scientific and Vocational Studies Congress – Engineering and Natural Sciences (BILMES ENGINEERING 2018), Nevşehir, Turkey, 5 - 08 July 2018, pp.212
- VII. **Diyafram Tabanlı Fiber Optik Sensörlerde Rezonans Frekansını Ayarlamak İçin Yeni Bir Geometri Tasarımı**  
Hayber Ş. E., TABARU T. E., SARAÇOĞLU Ö. G.  
II. International Scientific and Vocational Studies Congress – Engineering and Natural Sciences (BILMES ENGINEERING 2018), Nevşehir, Turkey, 5 - 08 July 2018, pp.211
- VIII. **A New Geometry Design for Tuning Resonance Frequency in Diaphragm Based Fiber Optic Sensors**  
HAYBER Ş. E., TABARU T. E., SARAÇOĞLU Ö. G.  
II. International Scientific and Vocational Studies Congress, Nevşehir, Turkey, 5 - 08 July 2018
- IX. **Frequency Domain Analysis of Photoacoustic Wave Equation for Acoustic Pressure Sensor Designs**  
HAYBER Ş. E., TABARU T. E., SARAÇOĞLU Ö. G.  
II. International Scientific and Vocational Studies Congress, Nevşehir, Turkey, 5 - 08 July 2018
- X. **Time Domain Analysis of Photoacoustic Wave Equation for Acoustic Pressure Sensor Designs**  
TABARU T. E., Hayber Ş. E., SARAÇOĞLU Ö. G.  
INTERNATIONAL CONFERENCE ON THEORETICAL AND APPLIED COMPUTER SCIENCE AND ENGINEERING 2018, İstanbul, Turkey, 29 - 30 June 2018, pp.250
- XI. **A New Geometry Design to Adjust Sensor Sensitivity for Diaphragm-Based Optical Sensors**  
TABARU T. E., Hayber Ş. E., SARAÇOĞLU Ö. G.  
INTERNATIONAL CONFERENCE ON THEORETICAL AND APPLIED COMPUTER SCIENCE AND ENGINEERING 2018, İstanbul, Turkey, 29 - 30 June 2018, pp.251
- XII. **Fiber Optik İnterferometrik Akustik Basınç Sensörlerinde Diyafram Boyutlarının Belirlenmesi**  
HAYBER Ş. E., TABARU T. E., SARAÇOĞLU Ö. G.  
2nd International Mediterranean Science and Engineering Congress (IMSEC 2017), Adana, Turkey, 25 - 27 October 2017, pp.2268
- XIII. **Using of 2D In2Se3 Single Crystal for Fabry-Perot Fiber Optic Acoustic Sensors as a Diaphragm Material**  
HAYBER Ş. E., TABARU T. E., AYDEMİR U., SARAÇOĞLU Ö. G.  
4th International Conference on Computational and Experimental Science and Engineering (ICCESSEN-2017), Antalya, Turkey, 4 - 08 October 2017, pp.462

- XIV. **Influence of Pressure Caused by the Photoacoustic Effect on Parameters in Sensing Applications**  
TABARU T. E., HAYBER Ş. E., SARAÇOĞLU Ö. G.  
I. Scientific and Vocational Studies Congress, Nevşehir, Turkey, 5 - 08 October 2017, pp.548-549
- XV. **A New Diaphragm Material for Fiber Optic Fabry-Perot Acoustic Sensors with 2D GaSe**  
HAYBER Ş. E., TABARU T. E., AYDEMİR U., SARAÇOĞLU Ö. G.  
IV. International Multidisciplinary Congress of Eurasia (IMCOFE), Roma, Italy, 23 - 25 August 2017, pp.532-533
- XVI. **Selection of Fiber Optic Fabry-Perot Interferometer Parameter for Acoustic Sensing Applications**  
HAYBER Ş. E., TABARU T. E., SARAÇOĞLU Ö. G.  
International Conference on Advances and Innovations in Engineering (ICAIE), Elazığ, Turkey, 10 - 12 May 2017, vol.1, pp.189-195
- XVII. **Darbeleri Lazer Diyot Uyarımlı Fotoakustik Yöntemle Glikoz Algılanması**  
Tabaru T. E., Saraçoğlu Ö. G.  
Eleco 2014 Elektrik – Elektronik – Bilgisayar ve Biyomedikal Mühendisliği Sempozyumu, Bursa, Turkey, 27 - 29 November 2014, pp.628-631
- XVIII. **RGB Tabanlı Basit Bir Spektrofotometre ile Sulu C<sub>12</sub> ozeltide Glikozun Optik Soğurmasının Ölçümü**  
Tabaru T. E., Saraçoğlu Ö. G.  
7. Mühendislik ve Teknoloji Sempozyumu, Ankara, Turkey, 15 - 16 May 2014, pp.219-223

## Expert Reports

- I. **Gıda Kurutma Sistemleri İçin Fresnel Lens Optik Sisteminin Geliştirilmesi**  
Tabaru T. E.  
Gazi Teknopark AŞ., pp.6, Ankara, 2020
- II. **Akıllı Tekstil ile Kalp Ritmi Ölçme**  
Tabaru T. E.  
Gazi Teknopark AŞ., pp.6, Ankara, 2020
- III. **Hızlı ve Güvenli Biyometrik Kimlik Doğrulama İçin Güvenilir Bir Sistemin Geliştirilmesi**  
Tabaru T. E.  
Gazi Teknopark AŞ., pp.6, Ankara, 2020
- IV. **Nörolojik Hastalıklara Sahip Bireylerin Üst Ekstremitelerde Tedavisinde Kullanılacak Akıllı Aktivite Masası Geliştirilmesi**  
Tabaru T. E.  
Gazi Teknopark AŞ., pp.6, Ankara, 2019
- V. **MyPen**  
Tabaru T. E.  
Gazi Teknopark AŞ., pp.6, Ankara, 2019
- VI. **Hareket Algılama Sensörleri İle Entegre Hasta Bakım Sistemi Geliştirilmesi**  
Tabaru T. E.  
Gazi Teknopark AŞ., pp.6, Ankara, 2019
- VII. **Fonksiyonel Yüzey Geliştirilmesi**  
Tabaru T. E.  
Gazi Teknopark AŞ., pp.7, Ankara, 2019

## Supported Projects

Tabaru T. E., Hayber Ş. E., TUBITAK Project, Diyafram Tabanlı Akustik Fiber Optik Sensör Geliştirilmesi, 2017 - 2019  
Tabaru T. E., Saraçoğlu Ö. G., Project Supported by Higher Education Institutions, Algılayıcı Uygulamaları İçin Fotoakustik Sinyal Parametrelerinin Optimizasyonu, 2017 - 2018

## Scientific Refereeing

Mühendislik Bilimleri ve Tasarım Dergisi, National Scientific Refreed Journal, September 2020  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, SCI Journal, June 2020  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, SCI Journal, June 2020  
Technopark, Gazi Teknopark, Turkey, September 2019  
Technopark, Gazi Teknopark, Turkey, June 2019  
TUBITAK Project, April 2019  
Journal of Lightwave Technology, SCI Journal, March 2019  
TUBITAK Project, March 2019

## Metrics

Publication: 45  
Citation (WoS): 39  
Citation (Scopus): 36  
H-Index (WoS): 4  
H-Index (Scopus): 3

## Congress and Symposium Activities

Time Domain Analysis of Photoacoustic Wave Equation for Acoustic Pressure Sensor Designs, Working Group, İstanbul, Turkey, 2018  
A New Geometry Design to Adjust Sensor Sensitivity for Diaphragm-Based Optical Sensors, Working Group, İstanbul, Turkey, 2018  
Frequency Domain Analysis of Photoacoustic Wave Equation for Acoustic Pressure Sensor Designs , Working Group, Nevşehir, Turkey, 2018  
Frequency Domain Analysis of Photoacoustic Wave Equation for Acoustic Pressure Sensor Designs , Working Group, Nevşehir, Turkey, 2018  
Fiber Optik İnterferometrik Akustik Basınç Sensörlerinde Diyafram Boyutlarının Belirlenmesi, Attendee, Adana, Turkey, 2017  
Using of 2D In2Se3 Single Crystal for Fabry-Perot Fiber Optic Acoustic Sensors as a Diaphragm Material, Attendee, Antalya, Turkey, 2017  
Influence of Pressure Caused by the Photoacoustic Effect on Parameters in Sensing Applications, Attendee, Nevşehir, Turkey, 2017  
A New Diaphragm Material for Fiber Optic Fabry-Perot Acoustic Sensors with 2D GaSe, Attendee, Roma, Italy, 2017  
Selection of Fiber Optic Fabry-Perot Interferometer Parameter for Acoustic Sensing Applications, Attendee, Elazığ, Turkey, 2017  
Eleco 2014 Elektrik – Elektronik – Bilgisayar ve Biyomedikal Mühendisliği Sempozyumu, Attendee, Bursa, Turkey, 2014  
7. Mühendislik ve Teknoloji sempozyumu, Attendee, Ankara, Turkey, 2014

## Entrepreneurship Activities

Limited, Optisense Teknoloji Ltd. Şti., 06 April 2016, Founder Owner  
Limited, Fosens Elektrooptik Teknolojiler Ltd. Şti., 08 January 2018, Partner