Dr. Timuçin Emre TABARU

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EDUCATIONS

Degree	Department/Program	University	Yıl
Post Doc.	National Nanotechnology Research Center and Institute (UNAM)	Bilkent University	currently
PhD.	Electrical and Electronics Eng.	Erciyes University	2018
MSc .	Electrical and Electronics Eng.	Erciyes University	2014
Bs.	Mathematic	Erciyes University	2012
Bs.	Electrical and Electronics Eng.	Erciyes University	2005

THESES

MSc., "Investigation of Optical Methods for Detection of Glucose in Aqueous Solution", Erciyes University, Institute of Science and Technology, Electrical and Electronics Eng. Electromagnetic Fields and Microwave. Jully 2014

PhD., "Optimization of Photoacoustic Signal Parameters for Sensor Applications", Erciyes University, Institute of Science and Technology, Electrical and Electronics Eng., Electromagnetic Fields and Microwave. September 2018.

EXPERIENCE

Title	Position	Date
Assistant Professor	Dept. of Electrical Electronics Eng., Sivas University of Science and Technology	2021- ...
Lecturer Dr	Erciyes University, Clinical Eng. Res. and App. Cer.	2018-2021
Specialist	Erciyes University, Clinical Eng. Res. and App. Cer.	2015-2018
Lecturer	Hitit University	2011-2015

RESEARCH AREAS

- Fiber Optic Sensors,
- Biomedical optics,
- Lasers and it’s applications,
- Optics and Photonics,

- Nanophotonic devices,
- Photoacoustic Sensing and Spectroscopy,
- Bioinstrumentation and MEMS,
- Opto-Acoustic,
- Wearable Antennas

PROJECTS

1. Fiber Optic Sensor Design and Applications for Photoacoustic Imaging, **TÜBİTAK Project**, under assessment, 2021.
2. Diaphragm Based Acoustic Fiber Optic Sensor Development, **TÜBİTAK Project**, Project No: 2170560, 2018-2019**.**
3. Motorization of Non-Motorized Mobile X-Ray Device**, TÜBİTAK Project**, Project No: 2150327, 2016-2017.
4. Investigation of Optical Methods for Detection of Glucose in Aqueous Solution, Erciyes University, Scientific Research Projects Coordination Unit, **Master Thesis Project**, FYL-2014-4910, 2012 – 2014.
5. Optimization of Photoacoustic Signal Parameters for Sensor Applications, Erciyes University Scientific Research Projects Coordination Unit, **PhD Thesis Project**, FDK-2016-6815, 2016-2018.

PUBLICATIONS

A. Articles published in international peer-reviewed journals and covered by SCI / SCI-Expanded:

A1. 2021, **Tabaru, T. E.** ''The Temperature Effect on U and Coil Shaped POF Sensors to Detect Refractive Index Change''. *Fiber and Integrated Optics*, 40(01), 1-12.

A2. 2021, **Tabaru, T. E.,** Hayber Ş.E., "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", *Journal of Computational Electronics-Springer, vol.20, pp.643–657.*

A3. 2020, Yalduz, H., **Tabaru, T. E.**, Kilic, V. T., Turkmen, M. "Design and Analysis of Low Profile and Low SAR Full-Textile Ultra-Wideband Wearable Antenna with Metamaterial for WBAN Applications*", AEU-International Journal of Electronics and Communications*, vol.126, 153465.

A4. 2019, Hayber Ş.E., Aydemir U., **Tabaru T.E.**, Saraçoğlu Ö.G., ''The Experimental Validation of Designed Fiber Optic Pressure Sensors with EPDM Diaphragm'', *IEEE Sensors Journal*, vol.19, pp.2604-2609.

A5. 2019, **Tabaru T.E.**, Hayber Ş.E., Keser S., Saraçoğlu Ö.G., ''Spectral Analysis for Photoacoustic Pressure Sensor Designs: Theoretical Model Improvement and Experimental Validation'', *Sensors and Actuators A-Physical*, vol.287, pp.76-83.

A6. 2019, Hayber Ş.E., **Tabaru T.E.**, Saraçoğlu Ö.G., ''A novel approach based on simulation of tunable MEMS diaphragm for extrinsic Fabry–Perot sensors'', *Optics Communications-Elsevier*, vol.403, pp.14-23.

A7. 2019, Hayber S. E., **Tabaru T. E.**, Aydemir U. and Saracoglu O. G., ''Use of 2D In2Se3 Single Crystal as a Diaphragm Material for Fabry-Perot Fiber Optic Acoustic Sensors'', *Journal of Nanoelectronics and Optoelectronics*.

A8. 2018, Hayber S. E., **Tabaru T. E.**, Keser S., Saracoglu O. G., ''A Simple, High Sensitive Fiber Optic Microphone Based on Cellulose Triacetate Diaphragm'', *IEEE/OSA Journal of Lightwave Technology*, Vol. 36, Issue 23, 5650-5655.

A9. 2018, **Tabaru T.E.**, Hayber Ş.E., Saraçoğlu Ö.G., ''Frequency Domain Analysis of Laser and Acoustic Pressure Parameters in Photoacoustic Wave Equation for Acoustic Pressure Sensor Design'', *Optic Society of America-Current Optics and Photonics*, vol.2, pp.250-260.

A10. 2016, Saraçoğlu Ö.G., Bagis A., Konar M., **Tabaru T.E.**, ''ABC Algorithm based Fuzzy Modeling of Optical Glucose Detection'', *Advances in Electrical and Computer Engineering*, vol.16, pp.37 -42.

B. <u>Articles presented at international scientific meetings and published in the proceedings book:</u>

B1. 2021, Özçiftçi B, Tabaru T.E., Saraçoğlu Ö.G. '' Analysis of 2D Material Usage in Multilayer Surface Plasmon Resonance Based Fiber Optic Biosensor Design '' 29th IEEE Signal Processing and Communication Applications Congress (SIU 2021), 9-11 June, Istanbul, Turkey.

B2. 2021, Hayber Ş.E., **Tabaru T.E.**, "Fiber Optic Displacement Sensor for Submillimeter Measurements", International Conference on Access to Recent Advances in Engineering and Digitalization (ARACONF), 10-12 March 2021, Kayseri, Turkey.

B3. 2021, Hayber Ş.E., **Tabaru T.E.**, "The Effects of Dynamic Properties of Diaphragm Materials and Medium on Pressure Sensors and Determine the Diaphragm Material'', Çukurova 6th International Scientific Researches Conference, 5 - 6 March 2021 Adana, Turkey.

B4. 2021, Hayber Ş.E., **Tabaru T.E.**, "Determination of Type and Alcohol Concentration in Water with Bended Polymer Optic Fiber Sensor'', EJONS XI – International Conference on Mathematics – Engineering – Natural & Medical Sciences, 2021 Karak, JORDAN.

B5. 2021, **Tabaru T. E.,** "Ultra-Wideband Small Size Y-Shaped Micro Strip Patch Antenna Design'', 3rd International Istanbul Scientific Research Congress (ICONSOS& RDSI 2021), İstanbul, Türkiye.

B6. 2021, **Tabaru T. E.**, Hayber Ş. E., ''Analysis of Diamond Sockets with Ultrasonic Method'', 3rd International Istanbul Scientific Research Congress, (ICONSOS& RDSI 2021), İstanbul, Türkiye.

B7. 2021, **Tabaru T. E.**, Hayber Ş. E., ''Detection of Transformer Oil Degradation by Ultraviolet-Visible Spectrometric Method', International Symposium of Scientific Research and Innovative Studies (ISSRIS 2021), Bandırma, Turkey.

B8. 2021, **Tabaru T. E.**, Hayber Ş. E., ''Investigation of the Relationship Between the Refractive Index of Transformer Oil and the Breaking Stress', 5th International Mardin Artuklu Scientific Researches Conference, Mardin, Turkey.

B9. 2020, **Tabaru T. E.**, Hayber Ş. E., ''Diaphragm Analysis for Performance Improvement of Diaphragm Based Fabry-Perot Interferometric Pressure Sensors in Partial Discharge Detection in High Power Transformers'', International Conference on Access to Recent Advances in Engineering and Digitalization (ARACONF 2020), Kayseri, Turkey.

B10. 2019, **Tabaru T.E.**, Hayber Ş.E., Saraçoğlu Ö.G., ''Time Domain Analysis of Photoacoustic Wave Equation for Acoustic Pressure Sensor Designs'', International Conference on Theoretical and Applied Computer Science and Engineering (ICTACSE 2018), İstanbul, Turkey.

B11. 2018, Hayber Ş.E., **Tabaru T.E.**, Saraçoğlu Ö.G., '' A New Geometry Design for Tuning Resonance Frequency in Diaphragm-Based Fiber Optic Sensors'', II. International Scientific and Vocational Studies Congress – Engineering and Natural Sciences (BILMES ENGINEERING 2018), Nevşehir, Turkey.

B12. 2018, Hayber Ş.E., **Tabaru T.E.**, Saraçoğlu Ö.G., '' Frequency Domain Analysis of Photoacoustic Wave Equation for Acoustic Pressure Sensor Designs'', II. International Scientific and Vocational

Studies Congress – Engineering and Natural Sciences (BILMES ENGINEERING 2018), Nevşehir, Turkey.

B13. 2018, **Tabaru T.E.**, Hayber Ş.E., Saraçoğlu Ö.G., ''A New Geometry Design to Adjust Sensor Sensitivity for Diaphragm-Based Optical Sensors'', International Conference on Theoretical and Applied Computer Science and Engineering (ICTACSE 2018), İstanbul, Turkey.

B14. 2017, Hayber Ş.E., **Tabaru T.E.**, Aydemir U., Saraçoğlu Ö.G., ''A New Diaphragm Material for Fiber Optic Fabry-Perot Acoustic Sensors with 2D GaSe'', IV. International Multidisciplinary Congress of Eurasia (IMCOFE2017), Roma, Italy.

B15. 2017, **Tabaru T.E.**, Hayber Ş.E., Saraçoğlu Ö.G., ''Influence of Pressure Caused by the Photoacoustic Effect on Parameters in Sensing Applications'', I. Scientific and Vocational Studies Congress (BILMES ENGINEERING 2018), Nevşehir, Turkey.

B16. 2017, Hayber Ş.E., **Tabaru T.E.**, Saraçoğlu Ö.G., '' Determination of Diaphragm Dimensions in Fiber Optic Interferometric Acoustic Pressure Sensors'', 2nd International Mediterranean Science and Engineering Congress (IMSEC 2017), Adana, Turkey.

B17. 2017, Hayber Ş.E., **Tabaru T.E.**, Aydemir U., Saraçoğlu Ö.G., ''Using of 2D In2Se3 Single Crystal for Fabry-Perot Fiber Optic Acoustic Sensors as a Diaphragm Material'', 4th International Conference on Computational and Experimental Science and Engineering (ICCESEN-2017), Antalya, Turkey.

B18. 2017, Hayber Ş.E., **Tabaru T.E.**, Saraçoğlu Ö.G., ''Selection of Fiber Optic Fabry-Perot Interferometer Parameter for Acoustic Sensing Applications'', International Conference on Advances and Innovations in Engineering (ICAIE), Elazığ, Turkey.

C. National-international books or chapters in books:

D. Publications published in other international and national peer-reviewed journals:

D1. 2021, **Tabaru, T,** Hayber, Ş. "U-Shaped POF Sensor for Ethanol/Methanol Determination". Erciyes University Institute of Science Journal of Science, 37(1), 149-156.

D2. 2021, Hayber Ş.E., **Tabaru T.E.**, '' Fiber Optic Displacement Sensor for Submillimeter Measurements", European Journal of Science and Technology, SI**,** ss.1-4**.**

D3. 2020, Ekincioglu G., **Tabaru T. E.**, Hayber S. E., Altindag R. ''Experimental analysis of the correlation between ultrasonic velocity and metallographic and cutting performance parameters of boron carbide-doped diamond sockets. '' *Matériaux & Techniques*, 108.4, 403.

D4. 2020, **Tabaru T. E.**, Hayber Ş. E. '' Diaphragm Analysis for Performance Improvement of Diaphragm Based Fabry-Perot Interferometric Pressure Sensors in Partial Discharge Detection in High Power Transformers'', European Journal of Science and Technology, ss.231-238**.**

D5. 2018, Hayber Ş.E., **Tabaru T.E.**, Aydemir U., Saraçoğlu Ö.G., '' 2D GaSe Simulation as a New Diaphragm Material for Fiber Optic Fabry-Perot Acoustic Sensors'', *Duzce University Journal of Science and Technology*, cilt.6, ss.369-381.

E. Articles presented at national scientific meetings and published in proceedings books:

E1. 2014, **Tabaru T.E.**, Saraçoğlu Ö.G., Aslan E., ''Measurement of Optical Absorption of Glucose in Aqueous Solution with a Simple RGB Based Spectrophotometer', 7th Engineering and Technology Symposium (MTS 2014), Ankara, Turkey.

E2. 2014, **Tabaru T.E.**, Saraçoğlu Ö.G.,'' Detection of Glucose by Pulsed Laser Diode Excited Photoacoustic Method'', Electrical Electronics Computer and Biomedical Engineering Symposium (Eleco 2014), Bursa, Turkey.