

## Assoc. Prof. TOLGA ESAT ÖZKURT

### Personal Information

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### International Researcher IDs

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### Education Information

Doctorate, University of Pittsburgh, Elektrik Ve Bilgisayar Mühendisliği, United States Of America 2005 - Continues  
Postgraduate, Istanbul Technical University, Bilişim Enstitüsü, Bilgisayar Bilimleri Anabilim Dalı, Turkey 2002 - 2004  
Undergraduate, Istanbul Technical University, Elektrik-Elektronik Fakültesi, Elektronik Ve Haberleşme Mühendisliği Bölümü, Turkey 1998 - 2002

### Dissertations

Postgraduate, İkizge Dilimi Kullanarak Metinden Bağımsız Konuşmacı Belirleme, İstanbul Teknik Üniversitesi, Bilgisayar Bilimleri Anabilim Dalı, 2016

Doctorate, Spatial filtering of Magnetoencephalographic Data in Spherical Harmonics Domain, University Of Pittsburgh, Elektrik Ve Bilgisayar Mühendisliği, 2009

### Research Areas

Health Sciences, Social Sciences and Humanities, Natural Sciences, Engineering and Technology

### Academic Titles / Tasks

Associate Professor, Middle East Technical University, Graduate School of Informatics, 2017 - Continues

### Academic and Administrative Experience

Middle East Technical University, Graduate School of Informatics, 2016 - Continues

### Advising Theses

ÖZKURT T. E., Neuromodulatory effect of bilateral rhythmic tactile stimulation on recognition memory, Postgraduate,

A.BERK(Student), 2022

ÖZKURT T. E., Fast EEG based biometrics via mean curve length, Postgraduate, R.YAHYAEI(Student), 2022

ÖZKURT T. E., BRAIN OSCILLATORY ANALYSIS OF VISUAL WORKING MEMORY ERRORS, Doctorate, I.MAPELLI(Student), 2019

ÖZKURT T. E., Resting state brain connectivity via bicoherence and coherence, Postgraduate, A.LEVENT(Student), 2018

ÖZKURT T. E., Cognitive aspects of brain-computer communication: An implementation and extension of the P300 speller paradigm, Postgraduate, U.ACAR(Student), 2018

ÖZKURT T. E., Effect of bilateral somatosensory stimulus on oscillatory brain activity and long term memory, Postgraduate, G.GÖKTEPE(Student), 2017

ÖZKURT T. E., Classification of emotions in vocal responses, Postgraduate, E.ÇAĞLAYAN(Student), 2017

ÖZKURT T. E., Suppression of semantic interference during an auditory working memory task: An EEG study, Postgraduate, N.MELNIK(Student), 2015

ÖZKURT T. E., Suppression of semantic interference during an auditory working memory task: an EEG study, Postgraduate, N.Melnik(Student), 2015

ÖZKURT T. E., NEUROPSYCHOLOGICAL PROCESSING OF TURKISH MORPHOLOGY: INVESTIGATION OF INFLECTION, DERIVATION AND COMPOUNDING, Doctorate, S.ÖZER(Student), 2013

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

- I. **Abnormally low sensorimotor  $\alpha$  band nonlinearity serves as an effective EEG biomarker of Parkinson's disease**  
Özkurt T. E.  
JOURNAL OF NEUROPHYSIOLOGY, vol.131, no.2, pp.435-445, 2024 (SCI-Expanded)
- II. **Spatiotemporal signal space separation for regions of interest: Application for extracting neuromagnetic responses evoked by deep brain stimulation**  
Oswal A., Abdi-Sargezeh B., Sharma A., ÖZKURT T. E., Taulu S., Sarangmat N., Green A. L., Litvak V.  
HUMAN BRAIN MAPPING, vol.45, no.2, 2024 (SCI-Expanded)
- III. **Revisiting the earliest hyperscanning study: power and functional connectivity in the alpha band may link brains far apart**  
ÖZKURT T. E.  
Frontiers in Human Neuroscience, vol.18, 2024 (SCI-Expanded)
- IV. **A Basic Nietzschean Model in Lieu of the Causal Maxim**  
ÖZKURT T. E.  
PHILOSOPHIA, vol.50, no.3, pp.1343-1363, 2022 (AHCI)
- V. **Mean curve length: An efficient feature for brainwave biometrics**  
Yahyaei R., Özkurt T. E.  
Biomedical Signal Processing and Control, vol.76, 2022 (SCI-Expanded)
- VI. **Identification of nonlinear features in cortical and subcortical signals of Parkinson's Disease patients via a novel efficient measure**  
Ozkurt T. E., Akram H., Zrinzo L., Limousin P., Foltynie T., Oswal A., Litvak V.  
NEUROIMAGE, vol.223, 2020 (SCI-Expanded)
- VII. **Brain Oscillatory Correlates of Visual Short-Term Memory Errors**  
Mapelli I., ÖZKURT T. E.  
FRONTIERS IN HUMAN NEUROSCIENCE, vol.13, 2019 (SCI-Expanded)
- VIII. **N1-P2: Neural markers of temporal expectation and response discrimination in interval timing**  
Duzcu H., ÖZKURT T. E., Mapelli I., Hohenberger A.  
ACTA NEUROBIOLOGIAE EXPERIMENTALIS, vol.79, no.2, pp.193-204, 2019 (SCI-Expanded)
- IX. **Unilateral deep brain stimulation suppresses alpha and beta oscillations in sensorimotor cortices**  
Abbasi O., Hirschmann J., Storzer L., ÖZKURT T. E., Elben S., Vesper J., Wojtecki L., Schmitz G., Schnitzler A., Butz M.  
NEUROIMAGE, vol.174, pp.201-207, 2018 (SCI-Expanded)

- X. **Modulation of alpha oscillations is required for the suppression of semantic interference**  
Melnik N., Mapelli I., ÖZKURT T. E.  
NEUROBIOLOGY OF LEARNING AND MEMORY, vol.144, pp.11-18, 2017 (SCI-Expanded)
- XI. **Parkinsonian Rest Tremor Is Associated With Modulations of Subthalamic High-Frequency Oscillations**  
Hirschmann J., Butz M., Hartmann C. J., Hoogenboom N., ÖZKURT T. E., Vesper J., Wojtecki L., Schnitzler A.  
MOVEMENT DISORDERS, vol.31, no.10, pp.1551-1559, 2016 (SCI-Expanded)
- XII. **Estimation of nonlinear neural source interactions via sliced bicoherence**  
ÖZKURT T. E.  
BIOMEDICAL SIGNAL PROCESSING AND CONTROL, vol.30, pp.43-52, 2016 (SCI-Expanded)
- XIII. **A direct relationship between oscillatory subthalamic nucleus-cortex coupling and rest tremor in Parkinson's disease**  
Hirschmann J., Hartmann C. J., Butz M., Hoogenboom N., ÖZKURT T. E., Elben S., Vesper J., Wojtecki L., Schnitzler A.  
BRAIN, vol.136, pp.3659-3670, 2013 (SCI-Expanded)
- XIV. **Differential modulation of STN-cortical and cortico-muscular coherence by movement and levodopa in Parkinson's disease**  
Hirschmann J., ÖZKURT T. E., Butz M., Homburger M., Elben S., Hartmann C. J., Vesper J., Wojtecki L., Schnitzler A.  
NEUROIMAGE, vol.68, pp.203-213, 2013 (SCI-Expanded)
- XV. **Statistically Reliable and Fast Direct Estimation of Phase-Amplitude Cross-Frequency Coupling**  
Ozkurt T. E.  
IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, vol.59, no.7, pp.1943-1950, 2012 (SCI-Expanded)
- XVI. **A critical note on the definition of phase-amplitude cross-frequency coupling**  
ÖZKURT T. E., Schnitzler A.  
JOURNAL OF NEUROSCIENCE METHODS, vol.201, no.2, pp.438-443, 2011 (SCI-Expanded)
- XVII. **High frequency oscillations in the subthalamic nucleus: A neurophysiological marker of the motor state in Parkinson's disease**  
Ozkurt T. E., Butz M., Homburger M., Elben S., Vesper J., Wojtecki L., Schnitzler A.  
EXPERIMENTAL NEUROLOGY, vol.229, no.2, pp.324-331, 2011 (SCI-Expanded)
- XVIII. **Distinct oscillatory STN-cortical loops revealed by simultaneous MEG and local field potential recordings in patients with Parkinson's disease**  
Hirschmann J., Ozkurt T. E., Butz M., Homburger M., Elben S., Hartmann C. J., Vesper J., Wojtecki L., Schnitzler A.  
NEUROIMAGE, vol.55, no.3, pp.1159-1168, 2011 (SCI-Expanded)
- XIX. **Spatial Filtering of MEG Signals for User-Specified Spherical Regions**  
Ozkurt T. E., Sun M., Jia W., Scabassi R. J.  
IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, vol.56, no.10, pp.2429-2438, 2009 (SCI-Expanded)
- XX. **Decomposition of magnetoencephalographic data into components corresponding to deep and superficial sources**  
ÖZKURT T. E., Sun M., Scabassi R. J.  
IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, vol.55, no.6, pp.1716-1727, 2008 (SCI-Expanded)

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

- I. **Efficient and Accurate Neural Fingerprints Obtained via Mean Curve Length of High Dimensional Model Representation of EEG Signals**  
Korkmaz Özay E., Özkurt T. E.  
European Signal Processing Conference (EUSIPCO), Helsinki, Finland, 4 - 08 September 2023, pp.1175-1179
- II. **Ampirik ve/ya hazır EEG kayıtlarının kullanımına dair bir tartışma**  
Özkurt T. E.  
1. Ulusal Nörogörüntüleme Konferansı, Ankara, Turkey, 7 - 09 September 2023, pp.7
- III. **Neural oscillations, circular causality and the implications for nature**

ÖZKURT T. E.

Causality in the Neuro- and Psychological Sciences (CINAPS 2018), ANVERS, Belgium, 19 - 21 September 2018, pp.12-14

- IV. **On the Most Informative Slice of Bicoherence That Characterizes Resting State Brain Connectivity**  
Kandemir A. L., ÖZKURT T. E.  
European Signal Processing Conference (EUSIPCO), Rome, Italy, 3 - 07 August 2018, pp.1382-1386
- V. **Would somatosensory stimuli increase LTM performance? A preliminary EEG study**  
GÖKTEPE G., MAPELLI I., ÖZKURT T. E.  
International Conference for Cognitive Neuroscience, 5 - 08 August 2017
- VI. **Modeling deep brain stimulation effects on amplitude and coupling behavior of beta and high-frequency oscillations**  
ÖZKAN V. A., ÖZKURT T. E.  
Coupling and Causality in Complex Systems, 25 - 27 September 2017
- VII. **Sliced cross-channel bicoherence between local field potentials for patients with Parkinson's disease**  
ÖZKURT T. E., HIRSCHMANN J., BUTZ M., SCHNITZLER A.  
Coupling and Causality in Complex Systems, 25 - 27 September 2017
- VIII. **Alpha synchronization between occipital and frontal regions distinguishes errors in a visual working memory task**  
MAPELLI I., ÖZKURT T. E.  
BIOMAG 2016 - 20th International Conference on Biomagnetism, 1 - 08 October 2016
- IX. **ADAPTIVE IDENTIFICATION OF OSCILLATORY BANDS FROM SUBCORTICAL NEURAL DATA**  
ÖZKURT T. E., Butz M., Hirschmann J., Schnitzler A.  
23rd European Signal Processing Conference (EUSIPCO), Nice, France, 31 August - 04 September 2015, pp.2586-2590
- X. **Alpha activity reflects semantic interference resolution in an auditory working memory task**  
MELNIK N., MAPELLI I., ÖZKURT T. E.  
Human Brain Mapping Annual Meeting, Honolulu, United States Of America, 14 - 18 June 2015
- XI. **Alpha Activity in the Posterior Regions Distinguishes Visual False Memories and Other Memory Errors**  
MAPELLI I., NATALIA M., ÖZKURT T. E.  
Human Brain Mapping Annual Meeting, Honolulu, United States Of America, 14 - 18 June 2015
- XII. **Spectral Features of Heart Rate Variability Obtained from a Video Camera**  
ÇAĞLAYAN E., ÖZKURT T. E.  
23rd Signal Processing and Communications Applications Conference (SIU), Malatya, Turkey, 16 - 19 May 2015, pp.955-957

## Supported Projects

ÖZKURT T. E., GÖKTEPE G., Project Supported by Higher Education Institutions, Bellek performansını artırıcı dokunsal ve işitsel ritmik uyaran parametrelerinin belirlenimi, 2017 - 2017

YILDIRIM İ. S., ÖZKURT T. E., Project Supported by Higher Education Institutions, Elektronik Öğrenme Tasarım İlkelerinin EEG Verileri ile Doğrulanması: Deneysel Çalışma, 2016 - 2016

ÖZKURT T. E., MAPELLI I., Project Supported by Higher Education Institutions, Sözel Bellek Performansının Nicelenmesi Ve Frontal İzdüşümü, 2012 - 2014

## Metrics

Publication: 32

Citation (WoS): 730

Citation (Scopus): 790

H-Index (WoS): 9

H-Index (Scopus): 10