

# Prof. NEVZAT GÜNERİ GENÇER

## Personal Information

**Office Phone:** [+90 312 210 2314](tel:+903122102314)

**Fax Phone:** [+90 312 210 2304](tel:+903122102304)

**Email:** [ngencer@metu.edu.tr](mailto:ngencer@metu.edu.tr)

**Web:** <https://blog.metu.edu.tr/ngencer/>

**Address:** Elektrik-Elektronik Mühendisliği Bölümü, Orta Doğu Teknik Üniversitesi, 06800, Çankaya, Ankara

## International Researcher IDs

ScholarID: SM9kpZoAAAAJ

ORCID: 0000-0002-4776-7968

Publons / Web Of Science ResearcherID: L-6976-2016

ScopusID: 7003388562

Yoksis Researcher ID: 6080

## Biography

Nevzat G. Gencer received a B.Sc. degree in Electrical and Electronics Engineering in 1985 from Boğaziçi University, Istanbul, Turkey, and the M.Sc. and Ph.D. degrees from Middle East Technical University (METU), Ankara, Turkey, in 1988 and 1993, respectively, all in electrical and electronics engineering. He was a Teaching Assistant and Instructor in the Electrical and Electronics Engineering Department, METU, from 1987 to 1994. He held a postdoctoral position in the Neuromagnetism Laboratory of the Physics Department at New York University, New York, during 1994-1995. Then he worked as a Research Assistant Professor in the same department. In 1996, he joined the Electrical and Electronics Engineering Department of METU as an Assistant Professor. His research interests are new medical imaging modalities, the mathematical and computational aspects of medical imaging, and the application of numerical electromagnetics to biomedical problems.

## Education Information

Doctorate, Middle East Technical University, Faculty of Engineering, Department of Electrical and Electronics Engineering, Turkey 1988 - 1993

Postgraduate, Middle East Technical University, Faculty of Engineering, Department of Electrical and Electronics Engineering, Turkey 1986 - 1988

Undergraduate, Bogazici University, Faculty Of Engineering, Department Of Electrical And Electronics Engineering, Turkey 1981 - 1985

## Foreign Languages

English, C1 Advanced

## Certificates, Courses and Trainings

Entrepreneurship, Berkeley-Labsout Accelerator, UC Berkeley Executive Education, 2019

## Dissertations

Doctorate, ELECTRICAL IMPEDANCE TOMOGRAPHY USING INDUCED CURRENTS, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 1993

Postgraduate, STUDY OF ALGEBRAIC RECONSTRUCTION ALGORITHMS FOR PRACTICAL APPLICATIONS OF EIT, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 1988

## Research Areas

Biomedical Engineering, Electrical and Electronics Engineering, Engineering and Technology

## Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Department of Electrical and Electronics Engineering, 2003 - Continues

Associate Professor, Middle East Technical University, Faculty of Engineering, Department of Electrical and Electronics Engineering, 1997 - 2003

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Electrical and Electronics Engineering, 1996 - 1997

Lecturer PhD, Middle East Technical University, Faculty of Engineering, Department of Electrical and Electronics Engineering, 1993 - 1996

Research Assistant, Middle East Technical University, Faculty of Engineering, Department of Electrical and Electronics Engineering, 1987 - 1993

## Academic and Administrative Experience

Research Assistant Professor, New York University, Fizik Bölümü, Physics Department/Neuromagnetism Laboratory, 1995 - 1996

Postdoctoral Researcher, New York University, Physics Department, Physics Department/Neuromagnetism Laboratory, 1994 - 1995

## Courses

Introduction to Medical Imaging, Undergraduate, 2020 - 2021

Bioelectricity and Biomagnetism, Doctorate, 2019 - 2020

Biomedical Signals, Instrumentation, and Measurements, Undergraduate, 2018 - 2019

## Advising Theses

GENÇER N. G., Implementation of a fast simulation tool for the analysis of contrast mechanisms in HMMDI and enhancement of the SNR in the experimental set-up, Doctorate, Ü.İRGİN(Student), 2021

Gençer N. G., Top C. B., Three dimensional finite difference time domain simulations on harmonic motion microwave Doppler imaging method using realistic tissue models, Postgraduate, F.TATAR(Student), 2019

Gençer N., Temperature estimation using magnetic nanoparticles: a simulation study., Postgraduate, G.Onuker(Student), 2019

GENÇER N. G., Experimental studies for lfeit with magnetic field measurements, Postgraduate, A.ÖNDER(Student), 2018

GENÇER N. G., Data acquisition system for Lorentz force electrical impedance tomography using magnetic field

measurements, Postgraduate, K.KABOUTARI(Student), 2017

GENÇER N. G., Wireless power transfer with bidirectional telemetry for active implantable medical devices, Postgraduate, O.AVAN(Student), 2017

GENÇER N. G., PHP applications, K-wave simulations and experimental studies for medical ultrasound, Postgraduate, U.BARAN(Student), 2017

GENÇER N. G., Theoretical limits and safety considerations for magneto-acousto electrical tomography, Postgraduate, E.GHALICHI(Student), 2017

GENÇER N. G., A study on a low phase noise charge pump phase-locked loop at 2.8 GHz, Postgraduate, M.KEYKHALI(Student), 2016

GENÇER N. G., A Study on a low phase noise charge pump phase-locked loop at 2.8 GHz, Postgraduate, M.Keykhali(Student), 2016

GENÇER N. G., Design and realization of a hybrid medical imaging system: Harmonic motion microwave doppler imaging, Doctorate, A.KAMALI(Student), 2016

GENÇER N. G., Design And Implementation Of A Communication System For Implantable Medical Devices, Postgraduate, Y.ÜRKMEZTÜRK(Student), 2016

GENÇER N. G., Design and implementation of magnetic field sensors for biomedical applications /, Postgraduate, U.Can(Student), 2015

GENÇER N. G., ALATAN L., Dual band microstrip implantable antenna design for biomedical applications, Postgraduate, D.ALPTEKİN(Student), 2015

GENÇER N. G., Application of image enhancement algorithms to improve the visibility and classification of microcalcifications in mammograms, Postgraduate, C.AKBAY(Student), 2015

GENÇER N. G., 2D simulation studies and initial experimental results for hall effect imaging /, Postgraduate, M.Soner(Student), 2014

GENÇER N. G., AKAR G., A mass detection algorithm for mammogram images /, Postgraduate, M.YEŞİLKAYA(Student), 2014

GENÇER N. G., 2D simulation studies and initial experimental results for Hall effect imaging, Postgraduate, M.SONER(Student), 2014

GENÇER N. G., 2D simulations based on the general time dependent reciprocal relation and initial experiments for LFEIT /, Postgraduate, M.KARADAŞ(Student), 2014

GENÇER N. G., Investigating the multi-frequency performance of electro-thermal imaging: An experimental study, Postgraduate, G.ÖZDEMİR(Student), 2013

GENÇER N. G., Harmonic motion microwave doppler imaging method, Doctorate, C.BARIŞ(Student), 2013

GENÇER N. G., 3D MULTI-FREQUENCY CONDUCTIVITY IMAGING VIA CONTACTLESS MEASUREMENTS, Doctorate, K.ÖZDAL(Student), 2013

GENÇER N. G., Electrical impedance tomography using Lorentz fields, Doctorate, R.ZENGİN(Student), 2012

GENÇER N. G., Medical electro-thermal imaging, Doctorate, H.Feza(Student), 2012

GENÇER N. G., Electrical impedance tomography using lorentz fields, Doctorate, R.ZENGİN(Student), 2012

GENÇER N. G., Classification of motor imagery tasks in EEG signal and its application to a brain-computer interface for controlling assistive environmental devices, Postgraduate, E.ACAR(Student), 2011

GENÇER N. G., Realization of a cue based motor imagery brain computer interface with its potential application to a wheelchair, Postgraduate, B.Akıncı(Student), 2010

GENÇER N. G., A design and implementation of P300 based brain-computer interface, Postgraduate, H.BALKAR(Student), 2009

GENÇER N. G., Imaging electrical conductivity distribution of the human head using evoked fields and potentials, Postgraduate, M.Yurtkölesi(Student), 2008

GENÇER N. G., Java applets for simulation of magnetic resonance imaging, Postgraduate, Ç.Altın(Student), 2008

GENÇER N. G., Solving the forward problem of electrical source imaging by applying the reciprocal approach and the finite difference method, Postgraduate, S.TAHA(Student), 2007

GENÇER N. G., Multi-frequency contactless electrical impedance imaging using realistic head models: Single coil simulations, Postgraduate, D.GÜRSOY(Student), 2007

GENÇER N. G., Multi-frequency electrical conductivity imaging, Postgraduate, K.ÖZDAL(Student), 2006

GENÇER N. G., Multi-frequency electrical conductivity imaging via contactless measurements, Postgraduate, K.Özdal(Student), 2006

GENÇER N. G., Real time image processing for medical infrared imaging, Postgraduate, C.KIZILÖZ(Student), 2005

GENÇER N. G., BAYKAL B., Extraction of auditory evoked potentials from ongoing EEG, Doctorate, S.AYDIN(Student), 2005

GENÇER N. G., An improved data acquisition system for contactless conductivity imaging, Postgraduate, İ.EVRİM(Student), 2005

GENÇER N. G., Parallel implementation of the boundary element method for electromagnetic source imaging of the human brain, Postgraduate, Y.Ataseven(Student), 2005

GENÇER N. G., Electro-magnetic source imaging using realistic head models, Doctorate, Z.Akalm(Student), 2005

GENÇER N. G., Real time image processing for medical infrared inaging, Postgraduate, C.Kızılöz(Student), 2005

GENÇER N. G., X-ray physics and computerized tomography simulation using Java and Flash, Postgraduate, A.SERKAN(Student), 2003

GENÇER N. G., Parallelization of the forward and inverse problems of electro-magnetic source imaging of the human brain, Doctorate, C.ERKİN(Student), 2003

Gençer N., Experimental studies on development of a new imaging system for contactless subsurface conductivity imaging of biological tissues, Postgraduate, T.Ahmad(Student), 2001

GENÇER N. G., Development of a compression algorithm suitable for exercise ECG data, Postgraduate, K.UYAR(Student), 2001

GENÇER N. G., Electrical conductivity imaging via contactless measurements: An experimental study, Postgraduate, B.ÜLKER(Student), 2001

GENÇER N. G., Noise cancellation techniques applied to EEG using single or more sweeps, Postgraduate, B.Yenigün(Student), 2000

GENÇER N. G., Noise cancellation techniques applied to EEG using single or mare sweeps, Postgraduate, B.YENİGÜN(Student), 2000

GENÇER N. G., Eelectical conductivity imaging via contactless measurement : Forward and inverse problem simülations, Postgraduate, M.NEJAT(Student), 1998

GENÇER N. G., Forward problem solution of electro-magnetic source imaging of the human brain using a new boundary element method formulation with realistic head model., Postgraduate, İ.OĞUZ(Student), 1998

GENÇER N. G., Electrical conductivity imaging via contactless measurements: Forward and inverse problem simulations., Postgraduate, M.Nejat(Student), 1998

GENÇER N. G., Forward problem solution of EMSI of the human brain using a new FEM formulation with realistic head model, Postgraduate, M.KEMAL(Student), 1998

## **Jury Memberships**

Award, Serhat Özyar Young Scientist of the Year, Orta Doğu Teknik Üniversitesi, April, 2021

Award, 18. Serhat Özyar Yılın Genç Bilim İnsanı Ödülü, Orta Doğu Teknik Üniversitesi, April, 2020

Award, Serhat Özyar Young Scientist of the Year Award, ODTÜ Öğretim Elemanları Derneği, April, 2019

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

- I. **Analyzing Pulse Compression Performance and Image Quality Metrics of Different Excitations in MAET With Magnetic Field Measurements**  
Gözü M. S., GENÇER N. G.  
International Journal for Numerical Methods in Biomedical Engineering, vol.40, no.12, 2024 (SCI-Expanded)
- II. **On the utilization of the adjoint method in microwave tomography**  
Soydan D. A., Top C. B., GENÇER N. G.  
International Journal for Numerical Methods in Biomedical Engineering, vol.40, no.6, 2024 (SCI-Expanded)

- III. **Induced Current Electro-Thermal Imaging for Breast Tumor Detection: A Numerical and Experimental Study**  
Tanrıverdi V., GENÇER N. G.  
Annals of Biomedical Engineering, vol.52, no.4, pp.1078-1090, 2024 (SCI-Expanded)
- IV. **Data acquisition system for MAET with magnetic field measurements**  
Kabotari K., Tetik A. O., Ghalichi E., Gozu M. S., Zengin R., GENÇER N. G.  
PHYSICS IN MEDICINE AND BIOLOGY, vol.64, no.11, 2019 (SCI-Expanded)
- V. **Numerical implementation of magneto-acousto-electrical tomography (MAET) using a linear phased array transducer**  
GÖZÜ M. S., ZENGİN R., GENÇER N. G.  
PHYSICS IN MEDICINE AND BIOLOGY, vol.63, no.3, 2018 (SCI-Expanded)
- VI. **Theoretical limits to sensitivity and resolution in magneto-acousto-electrical tomography**  
GHALICHI E., GENÇER N. G.  
PHYSICS IN MEDICINE AND BIOLOGY, vol.62, no.20, pp.8025-8040, 2017 (SCI-Expanded)
- VII. **Two-dimensional multi-frequency imaging of a tumor inclusion in a homogeneous breast phantom using the harmonic motion Doppler imaging method**  
TAFRESHI A. K., TOP C. B., GENÇER N. G.  
PHYSICS IN MEDICINE AND BIOLOGY, vol.62, no.12, pp.4852-4869, 2017 (SCI-Expanded)
- VIII. **Microwave Sensing of Acoustically Induced Local Harmonic Motion: Experimental and Simulation Studies on Breast Tumor Detection**  
top C. B., TAFRESHI A. K., GENÇER N. G.  
IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES, vol.64, no.11, pp.3974-3986, 2016 (SCI-Expanded)
- IX. **Lorentz force electrical impedance tomography using magnetic field measurements**  
ZENGİN R., GENÇER N. G.  
PHYSICS IN MEDICINE AND BIOLOGY, vol.61, no.16, pp.5887-5905, 2016 (SCI-Expanded)
- X. **Theoretical assessment of electro-thermal imaging: A new technique for medical diagnosis**  
Carlak H. F., GENÇER N. G., BEŞİKÇİ C.  
INFRARED PHYSICS & TECHNOLOGY, vol.76, pp.227-234, 2016 (SCI-Expanded)
- XI. **Harmonic Motion Microwave Doppler Imaging: A Simulation Study Using a Simple Breast Model**  
Top C. B., GENÇER N. G.  
IEEE TRANSACTIONS ON MEDICAL IMAGING, vol.33, no.2, pp.290-300, 2014 (SCI-Expanded)
- XII. **Simulation of the Scattered Field From a Vibrating Tumor Inside the Tissue Using 3D-FDTD Method**  
Top C. B., GENÇER N. G.  
IEEE MICROWAVE AND WIRELESS COMPONENTS LETTERS, vol.23, no.6, pp.273-275, 2013 (SCI-Expanded)
- XIII. **EEG/MEG source imaging: Methods, challenges, and open issues**  
WENDEL K., VÄISÄNEN O., MALMIVUO J., GENÇER N. G., VANRUMSTE B., DURKA P., MAGJAREVIĆ R., SUPEK S., PASCU M. L., FONTENELLE H., et al.  
Computational Intelligence and Neuroscience, vol.2009, 2009 (SCI-Expanded)
- XIV. **Low-Frequency Magnetic Subsurface Imaging: Reconstructing Conductivity Images of Biological Tissues via Magnetic Measurements**  
Oezkan K. O., GENÇER N. G.  
IEEE TRANSACTIONS ON MEDICAL IMAGING, vol.28, no.4, pp.564-570, 2009 (SCI-Expanded)
- XV. **Parallel implementation of the accelerated BEM approach for EMSI of the human brain**  
ATASEVEN Y., Akalin-Acar Z., Acar C. E., GENÇER N. G.  
MEDICAL & BIOLOGICAL ENGINEERING & COMPUTING, vol.46, no.7, pp.671-679, 2008 (SCI-Expanded)
- XVI. **USB-based 256-channel electroencephalographic data acquisition system for electrical source imaging of the human brain**  
Usakli A. B., Gencer N. G.  
INSTRUMENTATION SCIENCE & TECHNOLOGY, vol.35, no.3, pp.255-273, 2007 (SCI-Expanded)
- XVII. **Use of the isolated problem approach for multi-compartment BEM models of electro-magnetic**

## **source imaging**

Gencer N. G., Akalin-Acar Z.

PHYSICS IN MEDICINE AND BIOLOGY, vol.50, no.13, pp.3007-3022, 2005 (SCI-Expanded)

- XVIII. An advanced boundary element method (BEM) implementation for the forward problem of electromagnetic source imaging**  
Akahn-Acar Z., Gencer N. G.  
PHYSICS IN MEDICINE AND BIOLOGY, vol.49, no.21, pp.5011-5028, 2004 (SCI-Expanded)
- XIX. Sensitivity of EEG and MEG measurements to tissue conductivity**  
Gencer N. G., Acar C.  
PHYSICS IN MEDICINE AND BIOLOGY, vol.49, no.5, pp.701-717, 2004 (SCI-Expanded)
- XX. Electrical conductivity Imaging via contactless measurements: An experimental study**  
KARBETAYZ B. Ü., Gencer N. G.  
IEEE TRANSACTIONS ON MEDICAL IMAGING, vol.22, no.5, pp.627-635, 2003 (SCI-Expanded)
- XXI. Implementation of a data acquisition system for contactless conductivity imaging**  
Ulker B., Gencer N.  
IEEE ENGINEERING IN MEDICINE AND BIOLOGY MAGAZINE, vol.21, no.5, pp.152-155, 2002 (SCI-Expanded)
- XXII. Forward problem solution of electromagnetic source imaging using a new BEM formulation with high-order elements**  
Gencer N. G., TANZER I. O.  
PHYSICS IN MEDICINE AND BIOLOGY, vol.44, no.9, pp.2275-2287, 1999 (SCI-Expanded)
- XXIII. Electrical conductivity imaging via contactless measurements**  
Gencer N. G., TEK M.  
IEEE TRANSACTIONS ON MEDICAL IMAGING, vol.18, no.7, pp.617-627, 1999 (SCI-Expanded)
- XXIV. Forward problem solution for electrical conductivity imaging via contactless measurements**  
Gencer N. G., TEK M. N.  
PHYSICS IN MEDICINE AND BIOLOGY, vol.44, no.4, pp.927-940, 1999 (SCI-Expanded)
- XXV. Differential characterization of neural sources with the bimodal truncated SVD pseudo-inverse for EEG and MEG measurements**  
Gencer N. G., WILLIAMSON S. J.  
IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, vol.45, no.7, pp.827-838, 1998 (SCI-Expanded)
- XXVI. Magnetic source images of human brain functions**  
GENÇER N. G., Williamson S.  
BEHAVIOR RESEARCH METHODS INSTRUMENTS & COMPUTERS, vol.29, no.1, pp.78-83, 1997 (SSCI)
- XXVII. Electrical impedance tomography: Induced-current imaging achieved with a multiple coil system**  
Gencer N. G., İDER Y. Z., Williamson S.  
IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, vol.43, no.2, pp.139-149, 1996 (SCI-Expanded)
- XXVIII. ELECTRICAL-IMPEDANCE TOMOGRAPHY USING INDUCED CURRENTS**  
GENÇER N. G., KUZUOĞLU M., İDER Y.  
IEEE TRANSACTIONS ON MEDICAL IMAGING, vol.13, no.2, pp.338-350, 1994 (SCI-Expanded)
- XXIX. A COMPARATIVE-STUDY OF SEVERAL EXCITING MAGNETIC-FIELDS FOR INDUCED CURRENT EIT**  
GENÇER N., İDER Y.  
PHYSIOLOGICAL MEASUREMENT, vol.15, 1994 (SCI-Expanded)
- XXX. ELECTRICAL-IMPEDANCE TOMOGRAPHY USING INDUCED AND INJECTED CURRENTS**  
GENÇER N., İDER Y., KUZUOĞLU M.  
CLINICAL PHYSICS AND PHYSIOLOGICAL MEASUREMENT, vol.13, pp.95-99, 1992 (SCI-Expanded)
- XXXI. DETERMINATION OF THE BOUNDARY OF AN OBJECT INSERTED INTO A WATER-FILLED CYLINDER**  
İDER Y., NAKİBOĞLU B., KUZUOĞLU M., GENÇER N.  
CLINICAL PHYSICS AND PHYSIOLOGICAL MEASUREMENT, vol.13, pp.151-154, 1992 (SCI-Expanded)
- XXXII. ELECTRICAL-IMPEDANCE TOMOGRAPHY OF TRANSLATIONALLY UNIFORM CYLINDRICAL OBJECTS WITH GENERAL CROSS-SECTIONAL BOUNDARIES**  
İDER Y., GENÇER N., ATALAR E., TOSUN H.

## Articles Published in Other Journals

- I. **The Effect of Contrasts in Electrical and Mechanical Properties between Breast Tissues on Harmonic Motion Microwave Doppler Imaging Signal**  
Irgin U., Top C. B., GENÇER N. G.  
IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology, vol.5, pp.362-370, 2021 (ESCI)
- II. **Optimal reference electrode selection for electric source imaging**  
Gençer N. G., Williamson S., GUEZIEC A., HUMMEL R.  
Electroencephalography and Clinical Neurophysiology, vol.99, no.2, pp.163-173, 1996 (Scopus)

## Books & Book Chapters

- I. **Forward Problem Solution of Magnetic Source Imaging**  
GENÇER N. G., ACAR C. E., TANZER İ. O.  
in: Magnetic Source Imaging of the Human Brain, Zhong-Lin Lu, Lloyd Kaufman, Editor, Psychology Press, 2003

## Refereed Congress / Symposium Publications in Proceedings

- I. **Induced Current Electro-Thermal Imaging in A Realistic Breast Model: A Numerical Study Gerçekçi Bir Meme Modelinde Akım İndüklemeli Elektro-Termal Görüntüleme: Sayısal Bir Çalışma**  
Tanrıverdi V., GENÇER N. G.  
32nd IEEE Conference on Signal Processing and Communications Applications, SIU 2024, Mersin, Turkey, 15 - 18 May 2024
- II. **MAET with Magnetic Field Measurements Using Circular and Figure-of-Eight Coils**  
Tetik A. Ö., Gençer N. G.  
IEEE Biomedical Circuits and Systems (BIOCAS) 2023 Conference, Toronto, Canada, 19 - 21 October 2023
- III. **Numerical Studies for Magneto-Acousto-Electrical Tomography with Magnetic Field Measurement Using Barker-Coded Excitation**  
Gözü M. S., Gençer N. G.  
IEEE Biomedical Circuits and Systems (BIOCAS) 2023 Conference, Toronto, Canada, 19 - 21 October 2023
- IV. **Doğrusal Frekans Modülasyonlu Uyarma Kullanılarak Manyetik Alan Ölçümlü Manyeto-Akusto-Elektriksel Tomografi için Sayısal Çalışmalar**  
GÖZÜ M. S., TETİK A. Ö., GENÇER N. G.  
2022 Medical Technologies Congress (TIPTEKNO), Antalya, Turkey, 31 October 2022, vol.1, pp.181-184
- V. **Yüksek Q Faktörlü Bobinin Transfer Fonksiyonunun Manyetik Alan Ölçümlü Manyeto-Akusto-Elektriksel Tomografi Sinyalleri Üzerindeki Etkisini Giderme**  
TETİK A. Ö., GÖZÜ M. S., GENÇER N. G.  
2022 Medical Technologies Congress (TIPTEKNO), Antalya, Turkey, 31 October 2022, vol.1, pp.185-188
- VI. **Phantom and Solenoid Coil Development for Induced Current Electro-Thermal Imaging Akım İndüklemeli Electro-Termal Görüntüleme İçin Fantom ve Solenoid Bobin Yapımı**  
Tanrıverdi V., GENÇER N. G.  
2021 Medical Technologies Congress, TIPTEKNO 2021, Antalya, Turkey, 4 - 06 November 2021
- VII. **Induced Current Thermal Imaging in Breast Cancer Detection**  
Tanrıverdi V., GENÇER N. G.  
29th IEEE Conference on Signal Processing and Communications Applications (SIU), ELECTR NETWORK, 9 - 11 June 2021

- VIII. **An Improved Receiver for Harmonic Motion Microwave Doppler Imaging**  
Soydan D. A., Irgin U., Top C. B., Gençer N. G.  
14th European Conference on Antennas and Propagation, EuCAP 2020, Copenhagen, Denmark, 15 - 20 March 2020
- IX. **Enhancing the sensitivity of harmonic motion microwave doppler imaging using main signal cancellation circuit**  
Irgin Ü., Top C. B., Soydan D. A., GENÇER N. G.  
12th European Conference on Antennas and Propagation, EuCAP 2018, London, United Kingdom, 9 - 13 April 2018, vol.2018
- X. **Heat Analysis in Magneto-Acousto Electrical Impedance Tomography**  
Ghalichi E., ZENGİN R., GENÇER N. G.  
18TH INTERNATIONAL CONFERENCE ON BIOMEDICAL APPLICATIONS OF ELECTRICAL IMPEDANCE TOMOGRAPHY, 21 - 24 June 2017
- XI. **An Experimental Study for Magneto-Acousto Electrical Impedance Tomography using Magnetic Field Measurement**  
KABOUTORI K., TETİK A. Ö., Ghalichi E., GÖZÜ M. S., ZENGİN R., GENÇER N. G.  
18TH INTERNATIONAL CONFERENCE ON BIOMEDICAL APPLICATIONS OF ELECTRICAL IMPEDANCE TOMOGRAPHY, 21 - 24 June 2017
- XII. **An Analytical Solution for Forward Problem of Magneto Acousto Electrical Tomography**  
GHALICHI E., GENÇER N. G.  
BIOEM2016, Ghent, Belgium, 07 June 2016 - 10 June 2017
- XIII. **A Numerical Analysis of Magneto-Acousto Electrical Tomography with a Simplified Breast Model**  
ZENGİN R., GENÇER N. G.  
The 13th IASTED International Conference on Biomedical Engineering, 20 - 21 February 2017
- XIV. **Received Signal in Harmonic Motion Microwave Doppler Imaging as a Function of Tumor Position in a 3D Scheme**  
IRGIN U., TOP C. B., TAFRESHI A. K., GENÇER N. G.  
11th International Symposium on Medical Information and Communication Technology (ISMICT), Lisbon, Portugal, 6 - 08 February 2017, pp.86-90
- XV. **A numerical study on the resolution limit of Magneto Acousto Electrical Tomography using Magnetic Field Measurements**  
ZENGİN R., GENÇER N. G.  
BIOEM2016, Ghent, Belgium, 7 - 10 June 2016
- XVI. **Realization of Harmonic Motion Microwave Doppler Imaging Method**  
KHAMALI TAFRESHI A., GENÇER N. G.  
BIOEM2016, Ghent, Belgium, 7 - 10 June 2016
- XVII. **Dual Band PIFA Design For Biomedical Applications**  
ALPTEKİN D., ALATAN L., GENÇER N. G.  
EUCAP 2016, DAVOS, Switzerland, 10 - 15 April 2016, pp.3987-3990
- XVIII. **Application of High Resolution Magnetic Resonance Imaging Methods for Spinal Cord Tissue Segmentation**  
Durlu C., Erdogan H. B., Kucukdeveci O. F., GENÇER N. G.  
20th National Biomedical Engineering Meeting (BIYOMUT), İzmir, Turkey, 3 - 05 November 2016
- XIX. **Design and Assembly of a Static Magnetic Field Generator for Lorentz Field Electrical Impedance Tomography**  
Tetik A. O., Ghalichi E., Kaboutari K., GENÇER N. G.  
20th National Biomedical Engineering Meeting (BIYOMUT), İzmir, Turkey, 3 - 05 November 2016
- XX. **Numerical analysis of spinal cord stimulation with triple leads with guarded cathode**  
DURLU C., ZENGİN R., GENÇER N. G., Kucukdeveci F.  
2015 19th National Biomedical Engineering Meeting (BIYOMUT), Istanbul, Turkey, Turkey, 5 - 06 November 2015
- XXI. **Low phase noise phase locked loop frequency synthesizer design for breast cancer detection**



- KEYKHALI M., GENÇER N. G.  
2015 19th National Biomedical Engineering Meeting (BIYOMUT), Istanbul, Turkey, Turkey, 5 - 06 November 2015
- XXII. **2D Simulations Based on General Time-Dependent Reciprocal Relation for LFEIT**  
KARADAŞ M., GENÇER N. G.  
37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Milan, Italy, 25 - 29 August 2015, pp.1556-1559
- XXIII. **CAD for detection of microcalcification and classification in mammograms**  
AKBAY C., GENÇER N. G., GENÇER G.  
2014 18th National Biomedical Engineering Meeting, Istanbul, Turkey, Turkey, 16 - 17 October 2014
- XXIV. **Numerical studies for Hall Effect Imaging using linear phased array transducer**  
Gözü M. S., ZENGİN R., GENÇER N. G.  
2014 18th National Biomedical Engineering Meeting, Istanbul, Turkey, Turkey, 16 - 17 October 2014
- XXV. **A dual band antenna design for implantable medical devices**  
ALPTEKİN D., GENÇER N. G., KUCUKDEVECİ F.  
2014 18th National Biomedical Engineering Meeting, Istanbul, Turkey, Turkey, 16 - 17 October 2014
- XXVI. **Data Acquisition System for Harmonic Motion Microwave Doppler Imaging**  
Tafreshi A. K., Karadas M., Top C. B., GENÇER N. G.  
36th Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society (EMBC), Illinois, United States Of America, 26 - 30 August 2014, pp.2873-2876
- XXVII. **Harmonic Motion Microwave Doppler Imaging method for breast tumor detection**  
Top C. B., Tafreshi A. K., GENÇER N. G.  
2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Chicago, IL, 26 - 30 August 2014
- XXVIII. **Medical Thermal Imaging of Electrically Stimulated Woman Breast: a simulation study**  
Carlak H. F., Gençer N. G., Beşikci C.  
33rd Annual International Conference of the IEEE Engineering-in-Medicine-and-Biology-Society (EMBS), Massachusetts, United States Of America, 30 August - 03 September 2011, pp.4905-4908
- XXIX. **Thermal images of electrically stimulated breast: A simulation study**  
Carlak H. F., GENÇER N. G., BEŞİKÇİ C.  
12th Mediterranean Conference on Medical and Biological Engineering and Computing, MEDICON 2010, Chalkidiki, Greece, 27 - 30 May 2010, vol.29, pp.244-247
- XXX. **A realization of a P300 based brain-computer interface system P300 tabanlı bir beyin-bilgisayar arayüzü sisteminin oluşturulması**  
Erdoğan B., GENÇER N. G.  
2010 15th National Biomedical Engineering Meeting, BIYOMUT2010, Antalya, Turkey, 21 - 24 April 2010
- XXXI. **Online cue-based discrimination of left / right hand movement imagination Çevrimiçi ipucu-bazlı sol / sağ el hareket düşüncesinin ayrıştırılması**  
Akinci B., GENÇER N. G.  
2010 15th National Biomedical Engineering Meeting, BIYOMUT2010, Antalya, Turkey, 21 - 24 April 2010
- XXXII. **Simulations of electrically stimulated thermal imaging using a 3D breast model Akim uygulamalı termal görüntüleme yöntemi için üç boyutlu meme modeli ile benzetimler**  
Carlak H. F., GENÇER N. G., BEŞİKÇİ C.  
2010 15th National Biomedical Engineering Meeting, BIYOMUT2010, Antalya, Turkey, 21 - 24 April 2010
- XXXIII. **Analytical solution for contactless electrical impedance measurement Dokunmasız yolla elektriksel iletkenlik ölçümleri için analitik formülasyon**  
Top C. B., GENÇER N. G.  
2010 15th National Biomedical Engineering Meeting, BIYOMUT2010, Antalya, Turkey, 21 - 24 April 2010
- XXXIV. **Sensitivity matrix analysis for contactless electrical conductivity imaging Dokunmasız yolla elektriksel iletkenlik görüntülemesi için duyarlılık matrisi analizi**  
Zengin R., GENÇER N. G.  
2010 15th National Biomedical Engineering Meeting, BIYOMUT2010, Antalya, Turkey, 21 - 24 April 2010

- XXXV. **Contactless Electrical Conductivity Imaging Simulations Using FDFD Method**  
GENÇER N. G., Gencer N. G.  
14th National Biomedical Engineering Meeting, İzmir, Turkey, 20 - 22 May 2009, pp.435-438
- XXXVI. **Application of Wiener Deconvolution Model in P300 Spelling Paradigm**  
Erdogan B., GENÇER N. G.  
14th National Biomedical Engineering Meeting, İzmir, Turkey, 20 - 22 May 2009, pp.41-44
- XXXVII. **Electrically Stimulated Breast Model's Thermal Imaging Simulations**  
CARLAK H. F., GENÇER N. G.  
14th National Biomedical Engineering Meeting, İzmir, Turkey, 20 - 22 May 2009, pp.179-182
- XXXVIII. **Electrical Conductivity Imaging via Contactless Measurements: Data Acquisition Systems Developed in METU Brain Research Laboratories**  
Ozkan K. O., GENÇER N. G.  
14th National Biomedical Engineering Meeting, İzmir, Turkey, 20 - 22 May 2009, pp.175-178
- XXXIX. **Classification of 4-class Motor Imagery EEG Data with Common Sparse Spectral Spatial Pattern Method**  
Akinci B., GENÇER N. G.  
14th National Biomedical Engineering Meeting, İzmir, Turkey, 20 - 22 May 2009, pp.49-52
- XL. **Prototype Hardware Design for Brain Computer Interface Applications**  
Erdogan B., Akinci B., Acar E., Usakli A. B., GENÇER N. G.  
14th National Biomedical Engineering Meeting, İzmir, Turkey, 20 - 22 May 2009, pp.481-483
- XL1. **Forward Problem Solution for Contactless Electrical Conductivity Imaging with Realistic Head Model**  
Zengin R., GENÇER N. G.  
14th National Biomedical Engineering Meeting, İzmir, Turkey, 20 - 22 May 2009, pp.183-184
- XLII. **Development of realistic head models and forward problem solution in electro-magnetic source imaging**  
GENÇER N. G.  
14th World Congress of Psychophysiology the Olympics of the Brain, St Petersburg, Russia, 8 - 13 September 2008, vol.69, pp.160
- XLIII. **Performance tests of a novel electroencephalographic data-acquisition system**  
Usakli A. B., GENÇER N. G.  
5th IASTED International Conference on Biomedical Engineering, Innsbruck, Austria, 14 - 16 February 2007, pp.253-257
- XLIV. **Comparison of methods for extracting of evoked potentials**  
Kilic S., Gencer N., Baykal B.  
25th Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society, Cancun, Mexico, 17 - 21 September 2003, vol.25, pp.2495-2498
- XLV. **Use of the reciprocal problems in electro-magnetic source imaging of the human brain**  
Gencer N., Acar C.  
25th Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society, Cancun, Mexico, 17 - 21 September 2003, vol.25, pp.2667-2670
- XLVI. **An accelerated BEM formulation for the forward problem solution of ESI using realistic head models**  
Akalm Z., Gencer N.  
25th Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society, Cancun, Mexico, 17 - 21 September 2003, vol.25, pp.2671-2674
- XLVII. **Sensitivity of EEG and MEG to conductivity perturbations**  
Acar C., Gencer N.  
25th Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society, Cancun, Mexico, 17 - 21 September 2003, vol.25, pp.2834-2837
- XLVIII. **Development of a data acquisition system for electrical conductivity images of biological tissues via contactless measurements**  
Ahmad T., Gencer N.

23rd Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society, İstanbul, Turkey, 25 - 28 October 2001, vol.23, pp.3380-3383

**XLIX. Implementation of a data acquisition system for contactless conductivity imaging**

ULKER B., Gencer N. G.

23rd Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society, İstanbul, Turkey, 25 - 28 October 2001, vol.23, pp.3376-3379

**L. Generalized inverse solution for bimodal electro-magnetic source images**

Gencer N., Williamson S.

10th International Conference on Biomagnetism, Santa Fe, Argentina, 01 January 1999, pp.217-220

**LI. A new 3D FEM formulation for the solution of potential fields in magnetic induction problems**

Tek M., Gencer N. G.

International Conference of the IEEE Engineering-in-Medicine-and-Biology-Society, Illinois, United States Of America, 30 October - 02 November 1997, vol.19, pp.2470-2473

**LII. A new finite element formulation for the forward problem of electro-magnetic source imaging**

Ozdemir M., Gencer N.

International Conference of the IEEE Engineering-in-Medicine-and-Biology-Society, Illinois, United States Of America, 30 October - 02 November 1997, vol.19, pp.2104-2107

**LIII. A new boundary element method formulation for the forward problem solution of electro-magnetic source imaging**

Tanzer I., Gencer N.

International Conference of the IEEE Engineering-in-Medicine-and-Biology-Society, Illinois, United States Of America, 30 October - 02 November 1997, vol.19, pp.2100-2103

**LIV. ELECTRICAL-IMPEDANCE TOMOGRAPHY USING INDUCED CURRENTS - AN EXPERIMENTAL-STUDY**

GENÇER N., IDER Y.

Nuclear Science Symposium and Medical Imaging Conference (NSS-MIC 93), San-Francisco, Costa Rica, 30 October - 06 November 1993, pp.1794-1798

**LV. A NEW DESCENT ALGORITHM FOR ELECTRICAL-IMPEDANCE TOMOGRAPHY**

KUZUOĞLU M., LEBLEBICIOĞLU K., GENÇER N. G., IDER Y.

14TH ANNUAL INTERNATIONAL CONF OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY, Paris, France, 29 October - 01 November 1992, vol.14, pp.1684-1685

**LVI. SENSITIVITY MATRIX ANALYSIS OF THE BACK-PROJECTION ALGORITHM IN ELECTRICAL-IMPEDANCE TOMOGRAPHY**

GENÇER N. G., KUZUOĞLU M., IDER Y.

14TH ANNUAL INTERNATIONAL CONF OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY, Paris, France, 29 October - 01 November 1992, vol.14, pp.1682-1683

**LVII. SENSITIVITY ANALYSIS AND INVERSE PROBLEM SOLUTION OF ELECTRICAL-IMPEDANCE TOMOGRAPHY USING INDUCED CURRENTS**

GENÇER N. G., IDER Y., KUZUOĞLU M.

1991 ANNUAL INTERNATIONAL CONF OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOC, Florida, United States Of America, 31 October - 03 November 1991, pp.7-8

**LVIII. AN ALGORITHM FOR COMPENSATING FOR 3D EFFECTS IN ELECTRICAL-IMPEDANCE TOMOGRAPHY**

IDER Y., GENÇER N.

1989 ANNUAL INTERNATIONAL CONF OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOC : IMAGES OF THE TWENTY-FIRST CENTURY, Washington, United States Of America, 9 - 12 November 1989, vol.11, pp.465-466

**LIX. A DUAL MODALITY IMAGING-SYSTEM FOR IMPEDANCE TOMOGRAPHY WITH ULTRASONICALLY DETERMINED BOUNDARIES**

IDER Y., DORKEN E., GENÇER N., KOYMEN H.

1989 ANNUAL INTERNATIONAL CONF OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOC : IMAGES OF THE TWENTY-FIRST CENTURY, Washington, United States Of America, 9 - 12 November 1989, pp.283-284

## Episodes in the Encyclopedia

### I. Wiley Encyclopedia of Biomedical Engineering

GENÇER N. G.

Wiley, pp., 2006

## Supported Projects

Ulusoy I., Halıcı U., Bayram B., Ankaralı M. M., Temizel A., Gençer N. G., Akar G., Ertekin Bolelli Ş., Turgut A. E., Son Ç. D., et al., CB Strateji ve Bütçe Başkanlığı (Kalkınma Bakanlığı) Projesi, NÖROM Nörobilim ve Nöroteknoloji Mükemmeliyet Merkezi, 2020 - 2023

GENÇER N. G., TUBITAK Project, MR Ortamında Çoklu Frekanslı Lorentz Alanları ve Manyetik Alan Ölçümleri ile Elektriksel Empedans Görüntülenmesi, 2019 - 2023

GENÇER N. G., TUBITAK Project, Harmonik Hareket Mikrodalga Doppler Görüntüleme Yöntemi İçin Sistem Duyarlılığı, Güvenliği ve Güvenilirliğini Artırma Çalışmaları, 2018 - 2022

GENÇER N. G., TÜBİTAK International Bilateral Joint Cooperation Program Project, Lorentz Alanları Ve Manyetik Alan Ölçümleri İle Elektriksel Empedans Görüntülemesi , 2014 - 2017

Gençer N. G., TÜBİTAK - AB COST Project, Harmonik Hareket Mikrodalga Doppler Görüntüleme Yöntemi için Prototip Sistem Geliştirilmesi, 2014 - 2017

Gençer N. G., TUBITAK Project, Harmonik Hareket Mikrodalga Doppler Görüntüleme Prototip Sistem Geliştirmesi, 2014 - 2017

GENÇER N. G., TUBITAK Project, Vücut İçine Yerleştirilen Implantable Nörostimülasyon Nöromodülasyon Cihazları Tasarımı Ve Geliştirmesi, 2013 - 2017

GENÇER N. G., KABOUTARI K., GÖZÜ M. S., TETİK A. Ö., Project Supported by Higher Education Institutions, Lorentz Alanları Ve Manyetik Alan Ölçümleri İle Elektriksel Empedans Görüntülemesi, 2016 - 2016

Gençer N. G., TUBITAK Project, Vücut İçine Yerleştirilen (Implantable) Nörostimülasyon/Nöromodülasyon Cihazları Tasarımı ve Geliştirmesi, 2013 - 2016

GENÇER N. G., Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2015

GENÇER N. G., Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2014

GENÇER N. G., TUBITAK Project, Harmonik Hareket Mikrodalga Doppler Görüntüleme Yöntemi, 2012 - 2013

GENÇER N. G., TUBITAK Project, Akım İndükleme ve Manyetik Alan Ölçümleri ile Elektriksel Empedans Görüntülemesi, 2007 - 2010

## Patent

Gençer N. G., Zengin R., MULTIFREQUENCY ELECTRICAL IMPEDANCE IMAGING USING LORENTZ FIELDS, Patent, CHAPTER A Human Needs, The Invention Registration Number: EP3021757B1 , 2020

Gençer N. G., Carlak H. F., Besikci C., Method and System for Dual-band Active Thermal Imaging using Multi-frequency Currents, Patent, CHAPTER A Human Needs, The Invention Registration Number: US 10,123,704 B2 , Standard Registration, 2018

Gençer N. G., HYBRID MECHANICAL-ELECTROMAGNETIC IMAGING METHOD AND THE SYSTEM THEREOF, Patent, CHAPTER A Human Needs, The Invention Registration Number: EP 2 908 716 , Standard Registration, 2017

## Scientific Refereeing

MATHEMATICAL BIOSCIENCES AND ENGINEERING, Journal Indexed in SCI-E, October 2019

IEEE ACCESS, SCI Journal, August 2019

## **Tasks In Event Organizations**

Gençer N. G., Uysal Bıyıkođlu E., GRAD STAR ver2.0, Workshop Organization, Ankara, Turkey, Ekim 2018

## **Scientific Research / Working Group Memberships**

Odtü Biyoelektromagnetizma Araştırma Grubu (Metu Berg), Middle East Technical University, Turkey,  
<https://blog.metu.edu.tr/ngencer/>, 1997 - Continues

## **Metrics**

Publication: 95

Citation (WoS): 667

Citation (Scopus): 914

H-Index (WoS): 13

H-Index (Scopus): 14

## **Invited Talks**

Lorentz Field Electrical Impedance Tomography with Magnetic Field Measurements, Seminar, İhsan Doğramacı Bilkent Üniversitesi, Turkey, November 2020

Meme kanseri tanısında alternatif tıbbi görüntüleme teknikleri , Conference, Uluslararası katılımlı Radyoloji Kongresi TURKRAD 2019, Turkey, November 2019

NUMERICAL ANALYSIS AND COMPUTATIONAL FLUID DYNAMICS WORKSHOP IN HONOR OF MÜNEVVER TEZER-SEZGİN'S 67TH BIRTHDAY, Workshop, Orta Dođu Teknik Üniversitesi, Turkey, April 2019

## **Non Academic Experience**

New York University Physics De

New York University Physics De