CURRICULUM VITAE

NAME: Nevzat Güneri Gençer

DATE: April 18th, 2025

PRESENT POSITION:
Professor of Electrical and Electronics Engineering Department,
Middle East Technical University

Coordinator of **Bioelectromagnetism Research Group (METU-BERG)**
Web Page: **https://blog.metu.edu.tr/ngencer/**

ADDRESS:
Department of Electrical and Electronics Engineering, Middle East Technical University (METU), 06531 Balgat Ankara, TURKEY

TEL: +90-312-210 2314 (office
+90-505-6135614 (cellular)
E-MAIL: ngencer@metu.edu.tr

DATE AND PLACE OF BIRTH: May 28, 1963, **İstanbul, Turkey**

NATIONALITY: Turkish

Google Scholar: https://scholar.google.com.tr/citations?user=SM9kpZoAAAAJ

Scopus: https://www.scopus.com/authid/detail.uri?authorId=7003388562

ORCİD: https://orcid.org/0000-0002-4776-7968

Web of Science: https://publons.com/researcher/L-6976-2016

EDUCATION:

- Ph. D., 1993, Department of Electrical and Electronics Engineering, Ph. D., **Middle East Technical University**, Ankara, Turkey
  Thesis Title: **Electrical Impedance Tomography using Induced Currents**
  Thesis Advisor: **Prof. Dr. Y. Ziya İder**

- M. Sc., 1988, Department of Electrical and Electronics Engineering, M. Sc., **Middle East Technical University**, Ankara, Turkey
  Thesis Title: **Study of Algebraic Reconstruction Algorithms for Practical Applications of EIT**
  Thesis Advisor: **Prof. Dr. Y. Ziya İder**

- B. Sc., 1985, Department of Electrical and Electronics Engineering, B. Sc., **Boğaziçi University**, İstanbul, Turkey.

- High School, 1981, **Ankara Atatürk Anatolian High School**

POSTDOCTORAL RESEARCH

- 1994-1995, Neuromagnetism Laboratory, Physics Department, **New York University**, New York, USA.
  Project Title: **Electro-magnetic source imaging of the human brain using realistic head models**
  Advisor: **Prof. Dr. Samuel J. Williamson**

EXECUTIVE EDUCATION

- **Berkeley – Labsout Accelerator, UC Berkeley Executive Education,** Berkeley Innovation Acceleration Group, June 18-June 20, 2019.

APPOINTMENTS:

- Spring 2003 – **Professor**, Department of Electrical and Electronics Engineering, **Middle East Technical University**, Ankara

- Fall 1997 – 2003, **Associate Professor**, Department of Electrical and Electronics Engineering, **Middle East Technical University**, Ankara

- Fall 1996 – 1997, **Assistant Professor**, Department of Electrical and Electronics Engineering, **Middle East Technical University**, Ankara

- Spring 1996, **Instructor**, Department of Electrical and Electronics Engineering, **Middle East Technical University**, Ankara

- 1995-1996, **Research Assistant Professor**, Physics Department, **New York University**, New York

- 1994-1995 **Postdoctoral Research Assistant**, Physics Department, **New York University**, New York

- Fall 1993, **Instructor**, Department of Electrical and Electronics Engineering, **Middle East Technical University**, Ankara

- 1987-1993, **Research/Teaching Assistant**, Department of Electrical and Electronics, **Middle East Technical University**, Ankara

HONORS AND DISTINCTION

2024 **ISIF'24 Silver medal**, **9th Adana International Inventions Fair** - ISIF'24, October 2-4 , Adana, Turkey

US 10,123,704 B2, EP3016579 B1
Gençer N. G., Carlak H. F., Beşikci C., **Multi-Frequency Current Applied Dual-Band Active Thermal Imaging and the System**

2023 **ISIF'23 Bronze medal**, **8th İstanbul International Inventions Fair** - ISIF'23, April 27th-May 1st , İstanbul, Turkey.

US 10,123,704 B2, EP3016579 B1
Gençer N. G., Carlak H. F., Beşikci C., **Multi-Frequency Current Applied Dual-Band Active Thermal Imaging and the System**.

2010 **James Edward Zimmerman Prize**,
In recognition of his contribution to advances in the field of SQUID technology, International Federation for Medical and Biological Engineering, **BIOMAG 2010**, Dubrovnik, Croatia.

2010 **IV. Health Industry Employers' Association of Turkey (SEIS) National Medical Device Project Award Winner**, **Low-cost, efficient brain computer interface design and prototype development**, Nevzat G. Gençer, H. Balkar Erdoğan, Berna Akıncı, Erman Acar, Ali Bülent Uşaklı.

2008 Co-author of an article listed in the short-list of the **Alfred Nightingale Award 2008, Medical & Biological Engineering & Comput**. (Ataseven Y, Akalin-Acar Z, Acar CE, Gencer NG, **Parallel implementation of the accelerated BEM approach for EMSI of the human brain**, Med. Biol. Eng. Comp. 46:671-679, 2008.

2003 **Research Incentive Award, Turkish Scientific and Technical Research Council (TUBITAK).**

2000 **1999 Academic Achievement Award of the Middle East Technical University (METU).**

1999 **Research Incentive Award, Prof. Dr. Mustafa N. Parlar Education and Research Foundation.**

1998 **Nominated by the Electrical Engineering Department and the Dean of Engineering Faculty** for the **Research Incentive Award of Turkish Scientific and Technical Research Council**.

1997 **Associate Professorship, Institute of Higher Education.**

1996 **Research Assistant Support** provided under the **Research Assistant Support Program of Natural Sciences Institute of METU**.

1994 **Turkish Scientific Research Council Postdoctoral fellowship program support.**

1988 **Erol Gelenbe One of the best M. Sc. Thesis Award** in Electrical and Electronic Engineering Department of METU.

AWARDS RECEIVED BY SUPERVISED GRADUATE STUDENTS

2017 Co-author of the conference paper that receives **Best Student Paper Award**, ISMICT 2017 International Symposium on Medical Information and Communication Technology, Lisbon, Portugal, February 6-8th, 2017.

Ümit İrgin, Can Barış Top, Azadeh Kamali Tafreshi, and Nevzat G. Gençer, **Received Signal in Harmonic Motion Microwave Doppler Imaging as a Function of Tumor Position in a 3D Scheme**

2016 M. Sc. Thesis Supervisor of **Damla Alptekin**,
2016 Graduate Research Workshop Award Winner, METU Department of Electrical and Electronics Engineering.

2014 Ph. D. Thesis Supervisor of **Can Barış Top**,
2012-2013 Academic Year, **Serhat Özyar Young Scientist of the Year Award.**

2013 Ph. D Thesis Supervisor of **Can Barış Top**
2012-2013 Academic Year**, Thesis of the Year Award, Mustafa N. Parlar Education and Research Foundation.**

2010 M. Sc. Thesis Supervisor of **Hasan Balkar Erdoğan**,
2008-2009 Academic Year, **METU Best Thesis Award Winner, METU Graduate School of Natural and Applied Sciences.**

2007 M. Sc. Thesis Supervisor of **Koray Ö. Özkan**, Middle East Technical University, **Thesis of the Year Award, Mustafa N. Parlar Education and Research Foundation.**

2005 Ph. D. Thesis Supervisor of **Zeynep Akalın**, Middle East Technical University, **Serhat Özyar Young Scientist of the Year Award.**

2004 Ph. D. Thesis Supervisor of **Zeynep Akalın**, Middle East Technical University, **Thesis of the Year Award, Mustafa N. Parlar Education and Research Foundation**.

2002 M. Sc. Thesis Supervisor of **Başak Ülker Karbeyaz**, Middle East Technical University,
Thesis of the Year Award, Mustafa N. Parlar Education and Research Foundation.

2001 **3rd place in the 2001 IEEE EMBS Student Paper Competition**
Başak Ülker Karbeyaz, Nevzat G. Gencer, **Implementation of a Data Acquisition System for contactless conductivity imaging**, 23rd Annual International Conference of IEEE/ EMBS, October 2001, Istanbul, Turkey.

EDUCATIONAL SERVICE:

Teaching Experience

- **Undergraduate courses:**

  - **Biomedical Signals, Instrumentation and Measurement**, METU EEE, Spring Semester
    - 30-40 students per semester,
    - Course Developer,
    - Lecturer (every three years),
    - Developed exams and Homeworks, and Term projects
    - Revised the syllabus,
    - Coordinated grading and labs.

  - **Introduction to Medical Imaging**, METU EEE, Fall Semester
    - 30-40 students per semester,
    - Course Developer,
    - Lecturer (every three years),
    - Developed exams, Homeworks, and Term Projects
    - Revised the syllabus,
    - Coordinated grading.

- **Semiconductor Devices and Modeling**, METU EEE, Spring Semester
  - Taught by 4-5 faculty members,
  - 250-300 students per semester,
  - 50-60 students in each group (section),
  - Lecturer (since 1996),
  - Contributed to exams and grading.

- **Analog Electronics**, METU EEE, Fall Semester
  - Taught by 4-5 faculty members,
  - 250-300 students per semester,
  - 50-60 students in each group (section),
  - Lecturer (since 1996),
  - Contributed to exams and grading.

- **Graduate courses:**

  - **Advanced Topics in Medical Imaging**, METU EEE, Spring Semester
    - 5-15 students per semester,
    - Course Developer,
    - Lecturer (every three years),
    - Developed exams and Term Projects
    - Revised the syllabus

  - **Bioelectricity and Biomagnetism**, METU EEE, Fall Semester
    - 5-15 students per semester,
    - Course Developer,
    - Lecturer (every three years),
    - Developed exams and Term Projects,
    - Revised the syllabus

  - **Physiological Control System Analysis**, METU EEE, Spring Semester
    - 5-15 students per semester,
    - Course Developer,
    - Lecturer (every three years),
    - Developed exams and Term Projects
    - Revised the syllabus

  - **Therapeutical and Prosthetic Devices**, METU EEE, Fall Semester
    - 5-15 students per semester,
    - Course Developer,
    - Lecturer (every three years),
    - Developed exams and Term Projects
    - Revised the syllabus

  - **Introduction to Biomedical Engineering**, METU, **Biomedical Engineering**, Spring Semester
    - Bioelectrical Tract Topic: **Biomedical Instrumentation**
    - 5-15 students per semester,
    - Lecturer (3 hours/semester),
    - Contributed to exams and grading.

Graduate Students supervised:

Ph. D Thesis:

Ahmet Önder Tetik, Design and Realization of Data Acquisition System for MAET-MI inside Strong Magnetic Field of an MR Scanner, February 2025.

Mehmet Soner Gözü, Exploring the Effects of Coded Excitations and Pulse Compression on the Performance of Magneto-Acousto-Electrical Tomography with Magnetic Field Measurements in MR Magnet, December 2024.

Damla Alptekin, Multi-modal Quantitative Microwave and Shear Wave Imaging for Breast Tumor Identification, August 2024.

Volkan Tanrıverdi, Induced Current Medical Electro-Thermal Imaging, January 2024.

Ümit İrgin, **Implementation of a Fast Simulation Tool for the Analysis of Contrast Mechanisms in HMMDI and Enhancement of the SNR in the Experimental Set-up,** September 2021.

Azadeh Kamali Tafreshi, **Design and Realization of a Hybrid Medical Imaging System: Harmonic Motion Microwave Doppler Imaging**, February 2016

Can Barış Top, **Harmonic Motion Microwave Doppler Imaging Method**, September 2013.

Koray Özdal Özkan, **3D Multi-Frequency Conductivity Imaging via Contactless Measurements**, January 2013.

Feza Carlak, **Medical Electro-Thermal Imaging, February**, February 2012.

Reyhan Zengin, **Electrical Impedance Tomography using Lorentz Fields**, September 2013.

A. Bülent Uşaklı, **256-channel Electroencephalographic Data Acquisition System for Electrical Source Imaging**, Gazi University, Institute of Science and Technology, December 2006.

Serap Aydın, **Extraction of Auditory Evoked Potentials from Ongoing EEG**, September 2005

Zeynep Akalın Acar, **Electro-magnetic Source Imaging using Realistic Head Models**, June 2005.

Can Erkin Acar, **Parallelization of the Forward and Inverse Problems of Electro-Magnetic Source Imaging of the Human Brain**, April 2003.

M. Sc. Thesis:

Gamze Onuker, **Temperature Estimation using Magnetic Nanoparticles**, December 2019.

Fikret Tatar, **Three Dimensional Finite Difference Time Domain Simulations on Harmonic Motion Microwave Doppler Imaging Method using Realistic Tissue Model**, September 2019.

Ahmet Önder Tetik, **Experimental Studies for LFEIT with Magnetic Field Measurements**, September 2018.

Onur Avan, **Wireless Power Transfer with Bidirectional Telemetry for Active Implantable Medical Devices**, October 2017.

Elyar Ghalichi, **Theoretical Limits and Safety Considerations for Magneto-Acousto Electrical Tomography**, February 2017.

Keivan Kaboutari, **Data Acquisition System for Lorentz Force Electrical Impedance Tomography Using Magnetic Field Measurements**, February 2017.

Utku Baran Kulga, **PHP Applications, K-Wave Simulation and Experimental Studies for Medical Ultrasound**, February 2017.

Yiğit Ürkmeztürk, Design and Implementation of a Communication System for Implantable Medical Devices, February 2016.

Mahsa Keykhali, **A Study on a Low Phase Noise Charge Pump Phase-Locked Loop at 2.8 GHz**, February 2016.

Cansu Akbay, **Application of Image Enhancement Algorithms to Improve the Visibility and Classification of Micro calcifications in Mammograms**, January 2015.

Ulaş Can İnan, **Design and Implementation of Magnetic Field Sensors for Biomedical Applications**, February 2015

Damla Alptekin, **Dual Band Microstrip Implantable Antenna Design for Biomedical Application**, August 2015.

Mürsel Karadaş, **2D Simulations Based on the General Time Dependent Reciprocal Relation and Initial Experiments for LFEIT**, September 2014.

M. Soner Gözü, **2D Simulation Studies and Initial Experimental Results for Hall Effect Imaging**, September 2014.

Galip Özdemir, **Investigating the multi-frequency performance of Electro-thermal imaging: An experimental study**, September 2013.

Erman Acar, **Classification of motor imagery tasks in EEG signal and its application to a brain-computer interface for controlling assistive environmental devices**, February 2011.

Berna Akıncı, **Realization of a cue based motor imagery brain computer interface with its potential application to a wheelchair**, September 2010.

Balkar Erdoğan, **A design and implementation of P300 based brain-computer interface**, September 2009.

Çağdaş Altın, **Java applets for simulation of magnetic resonance imaging**, December 2008.

Mustafa Yurtkölesi, **Imaging electrical conductivity distribution of the human head using evoked fields and potentials**, September 2008

Doğa Gürsoy, **Multi-frequency contactless electrical impedance imaging using realistic head models: Single coil simulations**, January 2007.

S. Taha Ahi, **Solving the forward problem of electrical source imaging by applying the reciprocal approach and the finite difference method**, September 2007.

Koray Özdal Özkan, **Multi-frequency electrical conductivity imaging via contactless measurements**, January 2006.

Cemil Kızılöz, **Real time image processing for medical infrared imaging**, December 2005.

Yoldaş Ataseven, **Parallel implementation of the boundary element method for electromagnetic source imaging of the human brain**, September 2005.

İlyas Evrim Çolak, **An improved data acquisition system for contactless conductivity imaging**, April 2005.

Dilan Görür, **Automated Detection of Sleep Spindles**, January 2003.

Ayhan Serkan Şık, **X-ray physics and computerized tomography simulation using Java and Flash**, December 2003.

Başak Ülker Karbeyaz, Electrical conductivity imaging via contactless measurements: an experimental study, December 2001.

Tafseer Ahmad, **Experimental studies on development of a new imaging system for contactless subsurface conductivity imaging of biological tissues,** August 2001.

Koray Uyar, **Development of a Compression Algorithm Suitable for Exercise ECG data**, April 2001

Burak Yenigün, **Noise Cancellation Techniques Applied to EEG Using Single or More Sweeps,** September 2000.

M. Kemal Özdemir, **Forward problem solution of EMSI of the human brain using a new FEM Formulation with realistic head model**, July 1998.

Nejat Tek, **Electrical conductivity imaging via contactless measurements: Forward and inverse problem simulations** July 1998.

İ. Oğuz Tanzer, **Forward problem solution of electro-magnetic source imaging of the human brain using a new boundary element method formulation with realistic head model**, July 1998.

Current PhD Student:

Balkar Erdoğan, **Development of a multifrequency Lorentz Force Electrical Impedance Tomography System**, METU EEE, **2019 -**

Current MSc. Students:

Ömer Faruk Dalaslan, Exploring Dynamic Inverse Problem Solvers On Realistic Head Models For Brain Source Localization: A Study Of Simulation And Experimental Data, METU EEE**,** 2024 –

Atacan Özsoy, METU EEE, 2025 –

Ali Taha Akpınar, Graduate School of Natural and Applied Sciences, Biomedical Engineering, 2025 -.

Ferihan Beyza Bağdu, Graduate School of Natural and Applied Sciences, Biomedical Engineering, 2025 -.

MAJOR RESARCH INTERESTS:

Mathematical, computational, and instrumentation aspects of **novel medical imaging methods** and **neurostimulation techniques**:

Medical Imaging Techniques:

- **Electrical Impedance Imaging Methods**
  - Applied/Induced Current Electrical Impedance Tomography
  - Electrical Impedance Imaging via contactless measurements, Magnetic Induction Tomography (MIT)
  - Lorentz Force Electrical Impedance Tomography (LFEIT)
- **Electro-Magnetic Source Imaging (EMSI) of the human brain**
- **Harmonic Motion Microwave Doppler Imaging**
- **Medical Electro-thermal Imaging using applied and induced currents**

Neurostimulation Techniques:

- **Novel implantable devices**
- **Magneto-acoustic stimulator systems**

SCIENTIFIC MEETING SERVICE:

- **Invited Speaker**, **Lorentz Alanlı Elektriksel İletkenlik Görüntüleme**, **NÖROM Seminer**, Gazi Üniversitesi, 29 Mart 2021.

- **Invited speaker, Lorentz Field Electrical Impedance Tomography with Magnetic Measurements**, **Graduate Student Seminars**, Bilkent University, Ankara, Turkey, November 18, 2020.

- **Invited Speaker, Innovative Medical Imaging Techniques, METU-SIAM Student Chapter Seminar Series**, Instıtute of Applied Mathematics, February 27 2018.

- **Member of Advisory Board (Elif Uysal Bıyıkoğlu, Nevzat G. Gençer)**, **GRADSTAR 2018, 5th Graduate Student Research Workshop,** Department of Electrical and Electronics Engineering, METU, 2018.

- **National Coordinator, COST Action BM 1309 (EMF-MED)**, European network for innovative uses of EMFs in biomedical applications, 2014-2018.

- **Member of Organizing Committee (Elif Uysal Bıyıkoğlu, Nevzat G. Gençer)**, **GRADSTAR 2017, 4th Graduate Student Research Workshop,** Department of Electrical and Electronics Engineering, METU, 2017.

- **National Coordinator, COST Action TD1301 (MiMed)**, Development of a European-based Collaborative Network to Accelerate Technological, Clinical and Commercialization Progress in the Area of Medical Microwave Imaging, 2013-2017.

- **Invited speaker**, **International Summer School and Workshop on Brain Dynamics,** Electro-Magnetic Source Imaging of the Human Brain, Turunç, Marmaris, Turkey, **J**uly 1-5, 2013.

- **National Coordinator, COST Action BM0601 (NEUROMATH)**, Advanced Methods for the Estimation of Human Brain Activity and Connectivity, 2007-2011.

- **Conference Chair**, **BIYOMUT 2008**, 13th Annual National Conference on Biomedical Engineering, Ankara, Turkey, 2008.

- **Invited speaker**, **Brain-Machine Workshop**, December 2000, Ankara, Turkey.
- **Invited speaker**, **Annual National Conference on EEG**, June 1999, Antalya, Turkey.
- **Invited speaker**, **Annual National Conference on EEG**, June 1998, Kayseri, Turkey.
- **Session Co-chair**, **IEEE-EMBS 19th Annual International Conference**, Chicago, October 1997.
- **Session Chair**, **7th Annual Conference of Electrical-Electronics and Computer Engineering**, September 1997
- **Session Co-chair, IEEE-EMBS 14th Annual International Conference**, Paris, October 1992.

FUNDED PROJECTS:

- **TUBITAK BIGG, Medikal Elektro-Termal Görüntüleme,** November 2024.
- **TUBITAK 119E126**, **Multi-frequency Lorentz Field Electrical Impedance Tomography with Magnetic Measurements in Magnetic Resonance Imaging Scanner**, November 2019, **160,000 USD (919,029 TL)**, 2019-2023 (continues).
- **TUBITAK 117E246, Improving sensitivity, safety and reliability of the Harmonic Motion Microwave Doppler Imaging System,** April 2018, **135,000 USD (550,950 TL)**, 2018-2022.
- **TUBITAK 114E184, Electrical Impedance Imaging using Lorentz Fields and Magnetic Field measurements,** December 2014, **160,000 USD (358,922 TL)**, 2014 -2017.
- **TUBITAK 114036, Harmonic Motion Microwave Doppler Imaging: Prototype System Design**, August 2014, 2014-2017, **170, 000 USD (369,635 TL).**
- **TUBITAK 113S471, Design and Development of Implantable Neurostimulation/ Neuromodulation Devices**, November 2013, **175, 000 USD (353,702 TL)**, 2013 – 2017.
- **TUBITAK 112E031, Harmonic Motion Microwave Doppler Imaging**, September 2012, **60,000 USD (111,950 TL)**, 2012-2013.
- **TUBITAK 106E170, Electrical Impedance Imaging using magnetic induction and magnetic measurements**, February 2007, **80,000 USD (396,334 TL)**, 2007-2010.
- **METU Research Fund Project, BAP-2004-03-01-03, Electro-magnetic source imaging of the human brain,** 2004**.**
- **METU Research Fund Project, BAP-2003-07-02-00-42, Development of a data acquisition system for electrical conductivity imaging via contactless measurements,** 2003**.**
- **METU Research Fund Project, BAP-2003-07-02-00-12, Electro-magnetic source imaging using realistic head models,** 2003**.**
- **METU Research Fund Project, BAP-2003-03-01-01, Development of 256-channel EEG system for Electro-Magnetic Source Imaging of the Human Brain**, May 2003-December 2003.
- **TUBITAK EEEAG-101E013, 2001, Development of a PC controlled data acquisition system for imaging electrical impedance of human body via contactless measurements**, 2001-2002.

- **METU Research Fund Project, No: AFP-98030102, Development of a MATLAB Interface for the signal processing algorithms used to discriminate evoked responses from background EEG,** 2001.

- **METU Research Fund Project, No: AFP-2001-03-01-02, Development of a Parallel Platform for the solution of the Forward Problem of Electro-Magnetic Source Imaging using FEM**, 2001.

- **METU Research Fund Project, No: AFP-98030102, Automatic Segmentation of MRI Brain Images,** 1998**.**

- **METU Research Fund Project, No: AFP-98030103, Development of a Parallel Platform for the Forward Problem of Electro-Magnetic Source Imaging**, 1998.

- **TUBITAK 196E007 (EEEAG-192), Imaging Brain Electrical Activity using Electrical and Magnetic Measurements**, 1996-1999**.**

- **METU Research Fund Project, No: AFP-96030101, Imaging Tissue Conductivity using Magnetic Induction,** 1996.

PARTICIPATED PROJECTS:

- **METU Research Fund Project, No: AFP-86030103,** 1986**.**
- **METU Research Fund Project, No: AFP-87030103,** 1987**.**
- **METU Research Fund Project, No: AFP-88030103,** 1988**.**
- **METU Research Fund Project, No: AFP-91030101,** 1991**.**

FUNDED BUT NOT STARTED PROJECT

tMAS, Design and Realization of a novel transcranial Magneto-Acousto Stimulation system based on Lorentz fields,

tMAS is a part of the **REMOPD** project submitted by an International Consortium to the 2020 EU Joint Programme-Neurodegenerative Disease (JPND) Research Call for Novel Imaging and Brain Stimulation Methods and Technologies, 2020. **tMAS** was proposed by **METU-BERG (METU, Turkey)** as a new brain stimulation method. It was planned to be realized by an Industrial partner (sixth member of the Consortium) Alvimedica from Turkey. **The project was not started due to insufficent financial support from the local support agency.**

Accepted budget of tMAS: € 134.536.

REMOPD, Restoring Motor Functions in Parkinson's Disease with Noninvasive Hybrid Transcranial Neuromodulation, Total Budget: € 1.464.661

Coordinator: Robert Chen, Krembil Research Institute, University Health Network and Division of Neurology, University of Toronto, Canada

Partners:
Saak V. Ovsepian, National Institute of Mental Health (U)
Walter Paulus, Ludwig Maximillians Universität München, Germany
Robert Chen, University of Toronto, Canada
Marc Fournelle, Fraunhofer Gesellschaft, Germany
Nevzat G. Gençer, Middle East Technical University, Turkey
Toygan Sönmez, Alvimedica Medical Technologies, Turkey

PATENTS

- **European patent No: EP3021757A1**, granted on 07.9.2020
  Title: **MULTIFREQUENCY ELECTRICAL IMPEDANCE IMAGING USING LORENTZ FIELDS**
  Proprietors of the Patent: **Nevzat Güneri Gencer, Reyhan Zengin**

- **USA patent (US 10,123,704 B2)**, granted on 13.11.18.
  European Patent No: EP3016579B1, granted on 21.04.2021
  Title: **METHOD AND SYSTEM FOR DUAL-BAND ACTIVE THERMAL IMAGING USING MULTI-FREQUENCY CURRENTS**
  Proprietors of the patent: **Nevzat Guneri Gencer, H. Feza Carlak, Cengiz Beşikci**

- **European Patent No: EP2908716A**, granted on 26.04.17.
  Title: **HYBRID MECHANICAL-ELECTROMAGNETIC IMAGING METHOD AND THE SYSTEM THEREOF**
  Proprietors of the patent: **Nevzat Guneri Gencer, Can Barış Top**

PUBLICATIONS:

Journal Publications:

Reyhan Zengin, Nevzat Güneri Gençer, **Development of breast tissue–mimicking electrical and acoustic phantoms for magneto-acoustic electrical tomography**, Annals of the New York Academy of Sciences, 1-12, 2025.

Mehmet Soner Gözü, Nevzat G. Gençer, **Analyzing Pulse Compression Performance and Image Quality Metrics of Different Excitations in MAET with Magnetic Field Measurements,** International Journal for Numerical Methods in Biomedical Engineering, 40(12), December 2024.

Damla Alptekin Soydan, Can Barış Top, Nevzat G. Gençer, **On the utilization of the adjoint method in microwave tomography,** International Journal for Numerical Methods in Biomedical Engineering 40 (6), June 2024.

Volkan Tanrıverdi, Nevzat G. Gençer, **Induced Current Electro-Thermal Imaging for Breast Tumor Detection: A Numerical and Experimental Study**, Annals of Biomedical Engineering, DOI10.1007/s10439-024-03445-9, February 2024

Umit Irgin, Can Barış Top, Nevzat G. Gençer, **The effect of contrasts in electrical and mechanical properties between breast tissues on Harmonic Motion Microwave Doppler Imaging signal**, IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology, Pages 1-11, 23, April 2021.

Keivan Kaboutari, A. Önder Tetik, Elyar Ghalichi, M. Soner Gözü, Reyhan Zengin, Nevzat G. Gençer, **Data acquisition system for MAET with magnetic field measurements,** Physics in Medicine & Biology 64 (11), 115016, 2019.

M. Soner Gozu, Reyhan Zengin, Nevzat G. Gençer, **Numerical Implementation of Hall Effect Imaging (HEI) Using Linear Phased Array Transducer**, Phys. Med. Biol., Volume 63, Number: 3, 035012, January 2018.

Elyar Ghalichi, Nevzat G. Gençer, **Theoretical limits to sensitivity and resolution in magneto-acousto electrical tomography**, Phys. Med. Biol., Vol 62, Number: 20, 8025-8040, October 2017.

Azadeh Kamali Tafreshi, Can Barış Top, and Nevzat G. Gençer, **Two-dimensional multi-frequency imaging of a tumor inclusion in a homogeneous breast phantom using the harmonic motion Doppler imaging method**, Phys. Med. Biol. , Vol 62, Number:12, 4852–4869 May 2017.

Can Barış Top, Azadeh Kamali Tafreshi, Nevzat G. Gençer, Microwave **Sensing of Acoustically Induced Local Harmonic Motion: Experimental and Simulation Studies on Breast Tumor Detection**, IEEE Trans. Microwave Theory and Techniques, Vol 64., Number:11, 3974-3986, November 2016.

Reyhan Zengin, Nevzat G. Gençer, **Lorentz Force Electrical Impedance Tomography using Magnetic measurements**, Phys. Med. Biol. 61 (2016) 5887-5905. **This article was selected as featured article by the editorial board of the journal**.

H. Feza Carlak, Nevzat G. Gençer, Cengiz Beşikci, **Theoretical assessment of electro-thermal imaging: A new technique for medical diagnosis**, Infrared Physics & Technology, Vol. 76, pages 227-234, May 2016.

Can Barış Top; Nevzat G. Gençer, **Harmonic Motion Microwave Doppler Imaging: A Simulation Study Using a Simple Breast Model**, IEEE Trans. Medical Imaging, Volume: 33 Issue: 2 Pages: 290-300, February 2014.

Can Bariş Top; Nevzat G. Gençer, **Simulation of the Scattered Field From a Vibrating Tumor Inside the Tissue Using 3D-FDTD Method**, IEEE Microwave and Wireless Comp. Letters, Volume: 23 Issue: 6 Pages: 273-275, June 2013.

Katrina Wendel, Outi Väisänen, Jaakko Malmivuo, Nevzat G. Gençer, Bart Vanrumste, Piotr Durka, Ratko Magjarević, Selma Supek, Mihail Lucian Pascu, Hugues Fontenelle, and Rolando Grave de Peralta Menendez, **EEG/MEG Source Imaging: Methods, Challenges, and Open Issues**, Computational Intelligence and Neuroscience, Volume 2009, Article ID 656092, 2009.

Koray Ö. Özkan, Nevzat G. Gençer, **Low-frequency Magnetic Induction Imaging: Reconstructing high-resolution conductivity images of biological tissues**, IEEE Trans. Med. Imaging. Vol. 28, No.4, April 2009.

Yoldaş Ataseven Z. Akalın-Acar, C. E. Acar, Nevzat G. Gençer, **Parallel implementation of the accelerated BEM approach for EMSI of the human brain**, Med. Biol. Eng. Comput., Vol. 46, No:7, 671-679, July 2008.

Bülent Uşaklı, Nevzat G. Gençer, **USB-Based 256-Channel Electroencephalographic Data Acquisition System for Electrical Source Imaging of the Human Brain**, Instrumentation Science and Technology, 35: 255–273, 2007.

Nevzat G. Gençer, Zeynep Akalın-Acar, **Use of the Isolated Problem Approach for multi-compartment BEM models of electro-magnetic source imaging**, Phys. Med. Biol., 50, 3007-3022, 2005.

Zeynep Akalın-Acar, Nevzat G. Gençer, **An advanced boundary element method implementation for the forward problem of electromagnetic source imaging**, Phys. Med. Biol., 49, No: 21, 5011-5028, 2004.

Nevzat G. Gençer, Can E. Acar, **Sensitivity of EEG and MEG measurements to tissue conductivity**, Phys. Med. Biol. 49, 701-717, February 2004.

Başak Ülker Karbeyaz, Nevzat G. Gençer, **Electrical Impedance Imaging via contactless measurements: An Experimental Study**, IEEE Trans. Med. Imaging, Vol. 22, No.5, pp. 627-635, May 2003.

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OTHER

- Professional memberships: **Institute of Electrical and Electronics Engineering (IEEE), Chambers of Electrical and Electronics Engineering (EMO), Turkey.**
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- **Certificate of Competence for Short Range Radio Operators**, Republic of Turkey, Prime Ministry, Undersecretariat for Maritime Affairs Turkish Sailing Federation, General Directorate of Maritime Transport, 2008.
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