

ÖZGEÇMİŞ

1. Adı Soyadı: Can Barış TOP
2. Unvanı: Doktor
3. Meslek: Elektrik ve Elektronik Mühendisi

DENEYİM

- 1- Lead Researcher - Aselsan
- 2- Postdoctoral Research Fellow - Harvard Medical School
Focused Ultrasound Laboratory, Department of Radiology, Brigham and Women's Hospital Focused Ultrasound Laboratory, Department of Radiology, Brigham and Women's Hospital
- 3- Design Engineer - Aselsan

EĞİTİM

- 1- Middle East Technical University
Middle East Technical University
Doctor of Philosophy (Ph.D.) Electrical and Electronics Engineering
2006 – 2013
Thesis Title: Harmonic Motion Microwave Doppler Imaging Method

A novel imaging method for early stage tumor detection is proposed.
Thesis Title: Harmonic Motion Microwave Doppler Imaging Method

A novel imaging method for early stage tumor detection is proposed.

- 2- Middle East Technical University
Middle East Technical University
Master of Science (MSc) Electrical and Electronics Engineering
2003 – 2006
Thesis Title: Design Of A Slotted Waveguide Array Antenna and Its Feed System
Thesis Title: Design Of A Slotted Waveguide Array Antenna and Its Feed System

- 3- Middle East Technical University
Middle East Technical University
Bachelor of Science (BSc) Electrical and Electronics Engineering
1999 – 2003

YAYINLAR

- 1- Fast System Calibration With Coded Calibration Scenes for Magnetic Particle Imaging
IEEE transactions on medical imaging Eyl 2019
- 2- Trajectory analysis for field free line magnetic particle imaging
Medical physics Oca 2019
- 3- Electronically rotated and translated field-free line generation for open bore magnetic particle imaging

Medical physics Ara 201

- 4- Two-dimensional multi-frequency imaging of a tumor inclusion in a homogeneous breast phantom using the harmonic motion Doppler imaging method

Physics in Medicine & Biology Ara 2017

- 5- Comparison of system-matrix-based and projection-based reconstructions for field free line magnetic particle imaging

International Journal on Magnetic Particle Imaging Mar 2017

- 6- Microwave sensing of acoustically induced local harmonic motion: experimental and simulation studies on breast tumor detection

IEEE Transactions on Microwave Theory and Techniques Kas 2016

- 7- Preclinical evaluation of a low-frequency transcranial MRI-guided focused ultrasound system in a primate model

Physics in Medicine & Biology Eki 2016

Nonthermal ablation of deep brain targets: a simulation study on a large animal model

Medical physics Şub 2016

- 8- Harmonic Motion Microwave Doppler Imaging: A Simulation Study Using a Simple Breast Model

Medical Imaging, IEEE Transactions on Şub 2014

A hybrid method for tissue imaging using dielectric and elastic properties is proposed and investigated with simple bi-layered breast model. In this method, local harmonic motion is generated in the tissue using a focused ultrasound probe. A narrow-band microwave signal is transmitted to the tissue. The Doppler component of the scattered signal, which depends on the dielectric and elastic properties of the vibrating region, is sensed. A plane-wave spectrum technique is used together with reciprocity theorem for calculating the response of a vibrating electrically small spherical tumor in breast tissue. The effects of operating frequency, antenna alignment and distance, and tumor depth on the received signal are presented. The effect of harmonic motion frequency on the vibration amplitude and displacement distribution is investigated with mechanical simulations using the finite element method. The safety of the method is analyzed in terms of microwave and ultrasound exposure of the breast tissue. The results show that the method has a potential in detecting tumors inside fibro-glandular breast tissue.

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- 9- Simulation of the Scattered Field From a Vibrating Tumor Inside the Tissue Using 3D-FDTD Method

Microwave and Wireless Components Letters, IEEE Haz 2013

A simulation method for calculating the scattered field from a small, vibrating breast tumor is given. The Volume Equivalence Principle together with subcell type finite

difference time domain formulation is used for obtaining the scattered field from the tumor. The Doppler component of the scattered field is calculated using the simulation results for the undisplaced and the displaced positions of the tumor. The method is validated by comparing the results obtained on a sample problem with the results of a semi-analytical analysis.

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PATENTLER

- 1- Open bore field free line magnetic particle imaging system
19 Kasım 2019 tarihinde işleme konu Amerika Birleşik Devletleri 10478087B2
- 2- Method of Calibrating Magnetic Particle Imaging System
11 Mayıs 2018 tarihinde dosyalandı Avrupa
- 3- Hybrid mechanical-electromagnetic imaging method and the system thereof
26 Nisan 2017 tarihinde işleme konu Avrupa EP2908716
- 4- Omnidirectional circularly polarized waveguide antenna
22 Haziran 2015 tarihinde işleme konu Türkiye 2012/10987
- 5- Circularly polarized slotted waveguide antenna
23 Ocak 2013 tarihinde dosyalandı Avrupa

ONUR VE ÖDÜLLER

- 1- Post Doctoral Fellowship
TUBITAK
- 2- 2014 Serhat Özyar Young Scientist of the Year Award
- 3- Thesis of the Year Award
Prof. Dr. Mustafa Parlar Foundation
- 4- Finalist in "Patents in application phase" category
2. Ar-Ge ve Teknoloji Günleri, ArEge2, Turkey
Patent application: "Hybrid Mechanical-Electromagnetic Imaging Method and the system Thereof"
Patent application: "Hybrid Mechanical-Electromagnetic Imaging Method and the system Thereof"

DİL

- 1- İngilizce