

Prof. ERKAN AFACAN

Personal Information

Office Phone: [+90 582 334 4](tel:+905823344)

Email: e.afacan@gazi.edu.tr

Web: <http://w3.gazi.edu.tr/~e.afacan/>

Address: Gazi Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 06570 Maltepe/Ankara

Biography

He was born in Yesilova/Burdur, Turkey in 1966. He has received B.Sc., M. Sc. and Ph.D. degrees in Electronics Engineering in 1987, 1990 and 1996 from Hacettepe University, Electrical and Electronics Engineering Department. From November 1987 to March 1997 he has worked as a Research Assistant at Hacettepe University, Electrical and Electronics Engineering Department. In March 1997, he has joined the Faculty of Engineering and Architecture, Gazi University and currently he is working as a Professor in the Department of Electrical and Electronics Engineering. He is married and he has two children. He knows English and Russian.

Education Information

Doctorate, Hacettepe University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (Dr), Turkey 1990 - 1996

Post Graduate, Hacettepe University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (YI) (Tezli), Turkey 1987 - 1990

Under Graduate, Hacettepe University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, Turkey 1983 - 1987

Foreign Languages

English, C2 Mastery

Russian, B2 Upper Intermediate

Dissertations

Doctorate, Alçak irtifa radar sistemleri için yayılma yolu üzerindeki engellerin modellenmesi, Hacettepe University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (Dr), 1996

Post Graduate, Kama biçimli engellerden saçılmanın modellenmesi, Hacettepe University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (YI) (Tezli), 1990

Research Areas

Communication System Theory, Cryptography, Electromagnetic Waves, Antennas and Propagation, Field Theory and Polynomials

Professional Experience

Head of Department, Gazi University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2020 - Continues
Deputy Head of Department, Gazi University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 2013 - 2014
Deputy Head of Department, Gazi University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 2001 - 2002
Deputy Head of Department, Gazi University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 1997 - 1997

Advising Theses

AFACAN E., Design Of Effective Antenna Array For Speed Detection Radar Applications, Post Graduate, E.DABAK(Student), 2019
AFACAN E., Simulation of a homomorphic encryption system, Post Graduate, H.ÇAĞIL(Student), 2019
AFACAN E., Wavelet Method Based Image Fusion Techniques, Post Graduate, Ş.PEHLİVANLI(Student), 2019
AFACAN E., The Investigation Of Electric Field Shielding Effectiveness Of Metallic Enclosures With Various Apertures At Electromagnetic Compatbility, Post Graduate, H.ÇOPUR(Student), 2019
AFACAN E., Shielding In Electromagnetic Interference Protection And Investigation Of The Shielding Effectiveness Of Materials, Post Graduate, Y.ÖZKAN(Student), 2018
AFACAN E., Wideband Antenna Optimization, Post Graduate, M.ÖNER(Student), 2017
AFACAN E., The Analysis Of The Performances Of Square Array Antennas, Post Graduate, R.BAYRAMOV(Student), 2016
AFACAN E., The Optimization Of Circular Antenna Arrays Using Particle Swarm Optimization, Post Graduate, Ç.KORKUÇ(Student), 2016
AFACAN E., Design Of Circular Array Antennas Using Genetic Algorithm, Post Graduate, B.ÖZEN(Student), 2015
AFACAN E., High frequency gaussian beam interaction with plasma medium, Post Graduate, S.ALPARSLAN(Student), 2014
AFACAN E., electromagnetic interference filter design, Post Graduate, H.ÇAĞLAR(Student), 2014
AFACAN E., Usage Of Costas Arrays In Low Probability Of Intercept Radars, Post Graduate, F.GÜLEÇ(Student), 2014
AFACAN E., Transmission line E/H field generator, Post Graduate, A.KARAALÍ(Student), 2014
AFACAN E., Plasma- antenna design by using finite difference time domain method, Post Graduate, E.ÖZEN(Student), 2013
AFACAN E., Array thinning, sideband analysis and pulse optimization for time modulated antenna arrays, Doctorate, E.AKSOY(Student), 2012
AFACAN E., Direction of arrival estimation methods for smart antenna systems, Post Graduate, T.ORUL(Student), 2012
AFACAN E., Kısa dalga linklerinde MUSIC (MUltiple Signal Classification) algoritması kullanılarak sinyallerin geliş yönlerinin belirlenmesi, Post Graduate, F.KUTAY(Student), 2011
AFACAN E., Increasing the efficiency of wireless energy transfer, Post Graduate, A.ERDEM(Student), 2011
AFACAN E., OSI katman modelinde 3. katman güvenlik duvarı uygulaması, Post Graduate, O.BAŞKAYA(Student), 2010
AFACAN E., MODELLING OF RADIO WAVE PROPAGATION IN TUNNEL ENVIRONMENTS, Post Graduate, N.KAPLAN(Student), 2010
AFACAN E., Video Kameralı Radar Sistemi İçin Mobil Plaka Tanıma Sistemi Uygulaması, Post Graduate, O.DEMİR(Student), 2010
AFACAN E., Güvenli özet algoritması, Post Graduate, B.BUDAK(Student), 2010
AFACAN E., Faz dizili dairesel mikroserit antenlerin genetik algoritma ile optimizasyonu, Post Graduate, M.SELİM(Student), 2010
AFACAN E., FAZ DİZİLİ DAİRESEL MİKROSERİT ANTENLERİN GENETİK ALGORİTMA İLE OPTİMİZASYONU, M.Selim(Student), 2010
AFACAN E., SIMULATION OF TURBO CODES IN DIGITAL COMMUNICATION, Post Graduate, Y.TEKİN(Student), 2008
AFACAN E., THE MODELLING OF AES ENCRYPTION ALGORITHM, Post Graduate, M.DİRAYET(Student), 2007
AFACAN E., Diferensiyel evrim algoritması ile anten dizilerinde örüntü şekillendirme, Post Graduate, E.AKSOY(Student), 2007

AFACAN E., PATTERN SHAPING IN ANTENNA ARRAYS USING DIFFERENTIAL EVOLUTION ALGORITHM, E.AKSOY(Student), 2007

AFACAN E., Dalga kılavuzunda yayılan elektromanyetik dalganın dalgacık dönüşümü ile modellenmesi, Post Graduate, S.FİDAN(Student), 2006

AFACAN E., Elektronik harp ve sinyal karıştırması, Post Graduate, M.ÖZÇELİK(Student), 2006

AFACAN E., Genetik algoritma ile iletişim ağlarında yönlendirme optimizasyonu, Post Graduate, A.ÖZBİLEN(Student), 2006

AFACAN E., Eliptik eğriler ile sayısal imza, Post Graduate, F.DEĞİRMENCİ(Student), 2006

AFACAN E., Eliptik eğri kriptografisi, Post Graduate, Ö.ÇETİN(Student), 2006

AFACAN E., GSM sisteminde hücre planlamasının bulanık mantık ile denetimi, Post Graduate, A.HAKAN(Student), 2005

AFACAN E., Kaotik bir haberleşme sisteminin simülasyonu, Post Graduate, F.ERGÜN(Student), 2005

AFACAN E., GSM sisteminde kapasite artışı durumunda tabu arama algoritması ile hücre planlaması, Post Graduate, B.KAAN(Student), 2004

AFACAN E., Fiber optikte dalga yayılımı, Post Graduate, M.AKİF(Student), 2002

AFACAN E., Mikrodalga ile tomografik görüntüleme, Post Graduate, G.TİKİT(Student), 2002

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Location Optimization for Square Array Antennas Using Differential Evolution Algorithm**
AFACAN E.
INTERNATIONAL JOURNAL OF ANTENNAS AND PROPAGATION, vol.2016, 2016 (Journal Indexed in SCI)
- II. **GAUSSIAN BEAM INTERACTION AT HIGH FREQUENCIES WITH PLASMA MEDIUM**
AVCI S. A. , AFACAN E.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.30, no.2, pp.273-279, 2015 (Journal Indexed in SCI)
- III. **An Inequality for the Calculation of Relative Maximum Sideband Level in Time-Modulated Linear and Planar Arrays**
AKSOY E., AFACAN E.
IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION, vol.62, no.6, pp.3392-3397, 2014 (Journal Indexed in SCI)
- IV. **A Comparative Study on Sideband Optimization in Time-Modulated Arrays**
AKSOY E., AFACAN E.
INTERNATIONAL JOURNAL OF ANTENNAS AND PROPAGATION, vol.2014, 2014 (Journal Indexed in SCI)
- V. **Calculation of Sideband Power Radiation in Time-Modulated Arrays With Asymmetrically Positioned Pulses**
AKSOY E., AFACAN E.
IEEE ANTENNAS AND WIRELESS PROPAGATION LETTERS, vol.11, pp.133-136, 2012 (Journal Indexed in SCI)
- VI. **SIMULATION OF A COMMUNICATION SYSTEM USING LORENZ- BASED DIFFERENTIAL CHAOS SHIFT KEYING (DCSK) MODEL**
ERGÜN YARDIM F., AFACAN E.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.25, no.1, pp.101-110, 2010 (Journal Indexed in SCI)
- VII. **Thinned Nonuniform Amplitude Time-Modulated Linear Arrays**
AKSOY E., AFACAN E.
IEEE ANTENNAS AND WIRELESS PROPAGATION LETTERS, vol.9, pp.514-517, 2010 (Journal Indexed in SCI)
- VIII. **Planar antenna pattern nulling using differential evolution algorithm**
AKSOY E., AFACAN E.
AEU-INTERNATIONAL JOURNAL OF ELECTRONICS AND COMMUNICATIONS, vol.63, no.2, pp.116-122, 2009 (Journal Indexed in SCI)
- IX. **The improvement in the terrain model for a target close to an obstacle**

- AFACAN E., Yazgan E.
ELECTROMAGNETICS, vol.21, no.4, pp.295-306, 2001 (Journal Indexed in SCI)
- X. **A new method for the calculation of Fock scattering functions**
AFACAN E., Yazgan E.
MICROWAVE AND OPTICAL TECHNOLOGY LETTERS, vol.21, no.3, pp.223-226, 1999 (Journal Indexed in SCI)
- XI. **Elliptic cylinder modeling of obstacles for low altitude radar systems**
AFACAN E., Yazgan E.
JOURNAL OF ELECTROMAGNETIC WAVES AND APPLICATIONS, vol.13, no.2, pp.237-258, 1999 (Journal Indexed in SCI)
- XII. **Beam steering antenna design for low altitude radar systems**
Saka B., AFACAN E., Yazgan E.
JOURNAL OF ELECTROMAGNETIC WAVES AND APPLICATIONS, vol.11, no.2, pp.215-224, 1997 (Journal Indexed in SCI)
- XIII. **The effect of loading Gregorian antennas on side-lobe levels**
AFACAN E., Yazgan E.
CANADIAN JOURNAL OF PHYSICS, vol.74, pp.685-691, 1996 (Journal Indexed in SCI)

Books & Book Chapters

- I. **Kuyudaki Taş: Kuantum**
Afacan E.
Epos Yayınları, Ankara, 2018
- II. **Kriptografiye Giriş**
Afacan E.
Epos Yayınları, Ankara, 2016
- III. **A Novel Approach for Supplying Wireless Energy to Multiple Devices Using Sweeping Effect**
AŞKIN ERDEM G., AFACAN E.
in: Multidisciplinary Perspectives on Telecommunications Wireless Systems and Mobile Computing, Hu Wen-Chen, Editor, IGI Global, pp.43-58, 2014

Refereed Congress / Symposium Publications in Proceedings

- I. **Matrix Pencil Method for Antenna Arrays**
AYTAŞ N., AFACAN E., İNANÇ N.
8th International Conference on Advanced Technologies (ICAT'xx19), Saray-Bosna, Bosnia And Herzegovina, 26 - 30 August 2019
- II. **Investigation of Planar Frequency Diverse Array Antenna in Concentric Circular Geometry**
Akkoc A., AFACAN E., Yazgan E.
11th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 28 - 30 November 2019, pp.651-654
- III. **Çeşitli Açıklıklara Sahip Kapalı Metalik Kutuların Elektrik Alan Ekranlama Etkinliğinin Tahmini**
ÇOPUR H., AFACAN E.
BILMES 2018, Nevşehir, Turkey, 01 October 2018
- IV. **Signal and Noise Subspace Decomposition for a Linear Antenna Array Using SVD**
Aytas N., AFACAN E., İNANÇ N.
26th IEEE Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018
- V. **Investigation of Wave Propagation in a Plasma Antenna using 3D FDTD**
Avcı S. A. , AFACAN E.
13th International Symposium on Electronics and Telecommunications (ISETC), Timisoara, Romania, 8 - 09

November 2018, pp.161-163

- VI. **Analysis of Noisy Signals with Subspace Methods**
AYTAŞ N., TUNA E., AFACAN E.
I. Uluslararası Bilimsel ve Mesleki Çalışmalar Sempozyumu (BILMES 2017), 5 - 08 October 2017
- VII. **Analysis of the Incoming Signal on the Antenna Array Using Singular Value Decomposition**
AYTAŞ N., AFACAN E., TUNA E.
ISER INTERNATIONAL CONFERENCE, ROMA, Italy, 20 - 21 May 2017
- VIII. **Reconfiguration of Plasma Antenna Using 3D FDTD Method**
AVCI S. A., AFACAN E.
Progress in Electromagnetics Research Symposium - Spring (PIERS), St Petersburg, Russia, 22 - 25 May 2017, pp.2644-2647
- IX. **A New Search Method for Costas Arrays by Using Difference Triangle Analysis**
AFACAN E.
Progress in Electromagnetics Research Symposium - Spring (PIERS), St Petersburg, Russia, 22 - 25 May 2017, pp.456-461
- X. **Achievements of Reflectivity Rainfall Rate Conversion Coefficients for 8 Radars of TSMS**
HAZER A., AFACAN E.
ERAD 2016 9th European Conference on Radar in Meteorology and Hydrology, 10 - 14 October 2016
- XI. **Müstevi Antena Qefeslerinin Sentezi Metodu**
BAYRAMOV R., AFACAN E.
IV International Scientific Conference of Young Researchers, 29 - 30 April 2016
- XII. **Optimization of Circular Antenna Arrays Using Particle Swarm Optimization**
Korkuc C., AFACAN E.
24th Signal Processing and Communication Application Conference (SIU), Zonguldak, Turkey, 16 - 19 May 2016, pp.449-452
- XIII. **Usage of Costas Arrays in Low Probability of Intercept Radars**
Gulec F., AFACAN E.
23rd Signal Processing and Communications Applications Conference (SIU), Malatya, Turkey, 16 - 19 May 2015, pp.347-350
- XIV. **High Frequency Gaussian Beam Interaction with Plasma Medium**
AVCI S. A., AFACAN E.
9th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 26 - 28 November 2015, pp.958-960
- XV. **Evaluation of MUSIC Algorithm with regard to Signal Estimation for Short Wave Links**
Kutay F., AFACAN E.
22nd IEEE Signal Processing and Communications Applications Conference (SIU), Trabzon, Turkey, 23 - 25 April 2014, pp.313-316
- XVI. **Estimation of Direction of Arrival Algorithms**
Orul T., AFACAN E.
Progress In Electromagnetics Research Symposium, Stockholm, Sweden, 12 - 15 August 2013, pp.1346-1351
- XVII. **Sidelobe Level and Sideband Optimization for Thinned Planar Antenna Arrays Using Time Modulation**
AFACAN E.
7th European Conference on Antennas and Propagation (EuCAP), Gothenburg, Sweden, 8 - 12 April 2013, pp.336-338
- XVIII. **The effect of frequency, multi resonator and relay resonator conditions on wireless power transmission**
Gundogdu A. E., AFACAN E.
11th Annual Wireless Telecommunications Symposium, WTS 2012, London, England, 18 - 20 April 2012
- XIX. **Some experiments related to wireless power transmission**
Gündoğdu A. E., AFACAN E.

2011 Cross Strait Quad-Regional Radio Science and Wireless Technology Conference, CSQRWC 2011, Harbin, China, 27 - 30 July 2011, vol.1, pp.507-509

- XX. **Zaman Modülasyonlu Doğrusal Dizilerde Yanbant Düzeyi ve Örüntü Sıfırı Kontrolü**
AKSOY E., AFACAN E.
IEEE 19. Sinyal İşleme ve İletişim Uygulamaları Kurultayı (SIU'xx2011), Antalya, Turkey, 20 - 22 April 2011, pp.351-354
- XXI. **Sideband Level Suppression Improvement via Splitting Pulses in Time Modulated Arrays under Static Fundamental Radiation**
Aksoy E., AFACAN E.
Progress In Electromagnetics Research Symposium, Suzhou, China, 12 - 16 September 2011, pp.364-367
- XXII. **Generalized Representation of Sideband Radiation Power Calculation in Arbitrarily Distributed Time-modulated Planar and Linear Arrays**
Aksoy E., AFACAN E.
Progress In Electromagnetics Research Symposium, Suzhou, China, 12 - 16 September 2011, pp.368-371
- XXIII. **Control of Cell Planning with Fuzzy Logic in GSM System**
Isik A. H. , AFACAN E.
8th WSEAS International Conference on Telecommunications and Informatics, İstanbul, Turkey, 30 May - 01 June 2009, pp.101-102
- XXIV. **Anten Uygulamalarına Yönelik Diferansiyel Evrim Algoritması için Performans Artırımı**
AKSOY E., AFACAN E.
5. Elektrik-Elektronik-Bilgisayar Mühendisliği Sempozyumu (ELECO'xx2008), Bursa, Turkey, 26 - 30 November 2008, pp.96-99
- XXV. **Pattern Nulling in Linear Arrays with Fewer Elements by Using Differential Evolution Algorithm**
AKSOY E., AFACAN E.
5th International Conference on Electrical and Electronics Engineering (ELECO'xx2007), Bursa, Turkey, 5 - 09 December 2007, pp.260-264
- XXVI. **Düzlemsel Anten Dizilerinde Diferansiyel Evrim Algoritması ile Örüntü Sıfırlama**
AKSOY E., AFACAN E.
4. Elektrik-Elektronik-Bilgisayar Mühendisliği Sempozyumu (ELECO'xx2006), Bursa, Turkey, 6 - 10 December 2006, pp.77-79
- XXVII. **Modeling obstacles as cascaded ellipses**
AFACAN E., Yazgan E.
Proceedings of the IEEE Antennas and Propagation International Symposium. Part 3 (of 3), Seattle, WA, USA, 19 - 24 June 1994, vol.3, pp.1878-1880
- XXVIII. **Irregular terrain modeling for the low altitude radar applications**
AFACAN E., SAKA TANATAR B., Yazgan E.
Proceedings of the 7th Mediterranean Electrotechnical Conference - MELECON. Part 1 (of 3), Antalya, Turkey, 12 - 14 April 1994, vol.2

Supported Projects

Afacan E., TUBITAK Project, Yüksek Dereceden Costas Dizileri için Veritabanı Oluşturulması ve Analizi, 2016 - 2017

Activities in Scientific Journals

Journal Of The Faculty Of Engineering And Architecture Of Gazi University, Assistant Editor, 2019 - Continues

Memberships / Tasks in Scientific Organizations

IEEE, Member, 1991 - Continues, United States Of America
Elektrik Mühendisleri Odası, Member, 1987 - Continues, Turkey

Citations

Total Citations (WOS):216
h-index (WOS):7

Invited Talks

Kriptografiye Giriş-Şifreleme Teorisi, Conference, Elektrik Mühendisleri Odası, Turkey, February 2018

Awards

Afacan E., Gürbüz A. S. , Erdem S. C. , Koçer O., 2242 Üniversite Öğrencileri Araştırma Proje Yarışmaları, Savunma, Uzay ve Havacılık Kategorisi, Ankara Bölge Sergisi, Birincilik Ödülü, Tübitak, June 2019