

# Prof. ALİ BEKİR YILDIZ

## Personal Information

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## International Researcher IDs

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Publons / Web Of Science ResearcherID: F-5211-2018

ScopusID: 7102365437

Yoksis Researcher ID: 154056

## Education Information

Doctorate, Kocaeli University, Fen Bilimleri Enstitüsü, Elektrik Mühendisliği Anabilim Dalı, Turkey 1993 - 1998

Postgraduate, Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Elektrik Mühendisliği (YI) (Tezli), Turkey 1991 - 1993

Undergraduate, Yildiz Technical University, Faculty Of Electrical & Electronics, Elektrik Mühendisliği Bölümü, Turkey 1987 - 1991

## Foreign Languages

English, B2 Upper Intermediate

## Dissertations

Doctorate, Lineer anahtar modeli kullanılarak güç elektroniği devrelerinin zaman-domeni analizi, Kocaeli University, Fen Bilimleri Enstitüsü, 1998

Postgraduate, Elektrik devrelerinin sayısal yöntemlerle bilgisayar destekli analizi, Yildiz Technical University, Graduate School Of Natural And Applied Sciences, 1993

## Research Areas

Electrical and Electronics Engineering, Circuit Theory, Power Converters, Power Quality

## Academic Titles / Tasks

Professor, Kocaeli University, Mühendislik Fakültesi, Elektrik Mühendisliği, 2020 - Continues

Associate Professor, Kocaeli University, Elektrik Mühendisliği Bölümü, 2014 - 2020

Assistant Professor, Kocaeli University, Mühendislik Fakültesi, Elektrik Mühendisliği Bölümü, 1998 - 2014

Research Assistant, Kocaeli University, Mühendislik Fakültesi, Elektrik Mühendisliği Bölümü, 1992 - 1998

## Courses

Teknik İngilizce , Undergraduate, 2021 - 2022  
Circuit Analysis, Undergraduate, 2019 - 2020  
Electric Circuits I, Undergraduate, 2019 - 2020  
Electric Circuits II, Undergraduate, 2019 - 2020  
Analysis of Electric Circuits Using Numerical Methods, Postgraduate, 2019 - 2020

## Advising Theses

Yıldız A. B., Şebeke Bağlantılı Çok Seviyeli Eviricinin Analizi ve Uygulaması, Postgraduate, B.SABUNCU(Student), 2023  
Yıldız A. B., Kestirimci bakım uygulamaları için dijital kablosuz sensörlerin analizi ve tasarımı, Postgraduate, A.PEKDEMİR(Student), 2023  
Yıldız A. B., Anahtarlamalı Kapasitör Devrelerinin Analizi, Postgraduate, G.Birtek(Student), 2022  
Yıldız A. B., İki-Seviyeli Eviricilerde Kullanılan Yarı-İletken Anahtarların Güç Kayıplarının Analizi, Postgraduate, O.Tahmaz(Student), 2022  
Yıldız A. B., IP66 sınıfı yüksek güçlü bir LED sürücü devresinin güvenilirlik analizi, Doctorate, M.DEMİR(Student), 2019  
Yıldız A. B., Farklı doğrultucu yapılarının çeşitli yük durumları altındaki harmoniklerinin incelenmesi ve lineer modellerin elde edilmesi, Postgraduate, E.ÜNVERDİ(Student), 2014  
Yıldız A. B., Anahtarlamalı devrelerde başlangıç koşullarının belirlenmesi, Postgraduate, M.DEMİR(Student), 2004

## Jury Memberships

Appointment to Academic Staff - Associate Professorship, Appointment to Academic Staff - Associate Professorship, Kocaeli Üniversitesi, December, 2023  
Associate Professor Exam, Associate Professor Exam, Kocaeli Üniversitesi, January, 2023

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

- I. **Direct determination of instantaneous values of periodically switched circuits based on difference equations**  
YILDIZ A. B.  
Engineering Science and Technology, an International Journal, vol.51, 2024 (SCI-Expanded)
- II. **Gyrator-capacitor based modelling and simulation of forward converter**  
Koseni H., YILDIZ A. B.  
COMPEL-THE INTERNATIONAL JOURNAL FOR COMPUTATION AND MATHEMATICS IN ELECTRICAL AND ELECTRONIC ENGINEERING, vol.42, no.2, pp.463-475, 2023 (SCI-Expanded)
- III. **Equivalent Circuit Based Modeling of Multiple Winding Transformers**  
YILDIZ A. B.  
Electric Power Components and Systems, vol.51, no.15, pp.1576-1583, 2023 (SCI-Expanded)
- IV. **Unified and non-ideal switch model for analysis of switching circuits**  
Pekdemir A., YILDIZ A. B.  
COMPEL-THE INTERNATIONAL JOURNAL FOR COMPUTATION AND MATHEMATICS IN ELECTRICAL AND ELECTRONIC ENGINEERING, vol.41, no.5, pp.1332-1344, 2022 (SCI-Expanded)
- V. **Large-signal analysis based on nonlinear algebraic equations for an integrated photovoltaic module-converter system**  
KIRCIOĞLU O., YILDIZ A. B.  
JOURNAL OF COMPUTATIONAL ELECTRONICS, vol.19, no.2, pp.866-874, 2020 (SCI-Expanded)
- VI. **Effect of Potting Material on Reliability and EMC Performance of LED Drivers**  
Demir M., Agir T., YILDIZ A. B.

IEEE TRANSACTIONS ON COMPONENTS PACKAGING AND MANUFACTURING TECHNOLOGY, vol.9, no.8, pp.1542-1548, 2019 (SCI-Expanded)

- VII. **Difference equation-based transient-state and steady-state analysis of flyback converter circuit**  
Yener N., YILDIZ A. B.  
COMPEL-THE INTERNATIONAL JOURNAL FOR COMPUTATION AND MATHEMATICS IN ELECTRICAL AND ELECTRONIC ENGINEERING, vol.38, no.1, pp.81-94, 2019 (SCI-Expanded)
- VIII. **Computer-Based Modelling of Network Functions for Linear Dynamic Circuits Using Modified Nodal Approach**  
YILDIZ A. B.  
CMES-COMPUTER MODELING IN ENGINEERING & SCIENCES, vol.113, no.3, pp.261-274, 2017 (SCI-Expanded)
- IX. **Determination of unified time constants of switching circuits in terms of averaged-nodal equations**  
YILDIZ A. B.  
AUTOMATIKA, vol.58, no.1, pp.11-17, 2017 (SCI-Expanded)
- X. **Simplified harmonic model for fullwave diode rectifier circuits Pojednostavljeni harmoničkimodel za punovalni ispravljač s diodama**  
YILDIZ A. B., ÜNVERDİ E.  
Automatika, vol.55, no.4, pp.399-404, 2014 (SCI-Expanded)
- XI. **Harmonic modeling of full-wave diode rectifier for nonuniform load currents**  
YILDIZ A. B., Aglar E.  
Informacije MIDEM, vol.44, no.4, pp.288-295, 2014 (SCI-Expanded)
- XII. **A MNA-BASED UNIFIED IDEAL SWITCH MODEL FOR ANALYSIS OF SWITCHING CIRCUITS**  
Yildiz A. B.  
JOURNAL OF CIRCUITS SYSTEMS AND COMPUTERS, vol.22, no.6, 2013 (SCI-Expanded)
- XIII. **A Simplified Approach to Analyze of Active Circuits Containing Operational Amplifiers**  
YILDIZ A. B., KELEBEKLER E.  
INFORMACIJE MIDEM-JOURNAL OF MICROELECTRONICS ELECTRONIC COMPONENTS AND MATERIALS, vol.43, no.1, pp.67-73, 2013 (SCI-Expanded)
- XIV. **Electrical equivalent circuit based modeling and analysis of direct current motors**  
Yildiz A. B.  
INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS, vol.43, no.1, pp.1043-1047, 2012 (SCI-Expanded)
- XV. **Characteristic Equation-Based Computation of Thevenin and Norton Equivalent Circuits**  
KELEBEKLER E., YILDIZ A. B.  
IEEE TRANSACTIONS ON ELECTRICAL AND ELECTRONIC ENGINEERING, vol.6, no.6, pp.509-516, 2011 (SCI-Expanded)
- XVI. **Generalized Method Based on Nodal and Mesh Analysis for Computation of Time Constants of Linear Circuits**  
Yildiz A. B.  
CMES-COMPUTER MODELING IN ENGINEERING & SCIENCES, vol.75, no.1, pp.33-42, 2011 (SCI-Expanded)
- XVII. **Characteristic equation-based determination of eigenvalues of linear circuits**  
Yildiz A. B.  
INTERNATIONAL JOURNAL OF ELECTRICAL ENGINEERING EDUCATION, vol.48, no.2, pp.217-223, 2011 (SCI-Expanded)
- XVIII. **Modified Nodal Analysis-Based Determination of Transfer Functions for Multi-Inputs Multi-Outputs Linear Circuits**  
Yildiz A. B.  
AUTOMATIKA, vol.51, no.4, pp.353-360, 2010 (SCI-Expanded)
- XIX. **Large-signal analysis of DC motor drive system using state-space averaging technique**  
Yildiz A. B.  
ENERGY CONVERSION AND MANAGEMENT, vol.49, no.11, pp.3069-3074, 2008 (SCI-Expanded)
- XX. **Speed control of averaged DC motor drive system by using Neuro-PID controller**

Yildiz A. B., Bilgin M. Z.

KNOWLEDGE-BASED INTELLIGENT INFORMATION AND ENGINEERING SYSTEMS, PT 1, PROCEEDINGS, vol.4251, pp.1075-1082, 2006 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Different Approaches to Analysis of Boost Converter Used in Electric Vehicle Circuit**  
yapici a. t., ABUT N., YILDIZ A. B.  
Black Sea Journal of Engineering and Science, vol.7, no.3, pp.601-609, 2024 (Peer-Reviewed Journal)
- II. **Modeling and Analysis of DC-DC CUK Converter with Coupled Inductors**  
TUZTASI F. M., YILDIZ A. B., Kelebek H.  
WSEAS Transactions on Circuits and Systems, vol.21, pp.188-192, 2022 (Scopus)
- III. **Complete Electrical Equivalent Circuit Based Modeling and Analysis of Permanent Magnet Direct Current (DC) Motors**  
Altay A., YILDIZ A. B.  
WSEAS Transactions on Circuits and Systems, vol.21, pp.182-187, 2022 (Scopus)
- IV. **Simulation and Harmonics Reduction of Electronic Ballast Fluorescent Lamp by Using Passive Filter**  
Erdogan B., YILDIZ A. B.  
JOURNAL OF POLYTECHNIC-POLITEKNIK DERGISI, vol.22, no.1, pp.149-155, 2019 (ESCI)
- V. **Analysis of Flyback DC-DC Converter by Modified Nodal Equations**  
Koseni H., YILDIZ A. B.  
JOURNAL OF POLYTECHNIC-POLITEKNIK DERGISI, vol.22, no.1, pp.179-184, 2019 (ESCI)
- VI. **Harmonics in Power Systems and Filter Applications**  
Sabuncu B., YILDIZ A. B.  
Black Sea Journal of Engineering and Science, 2019 (Peer-Reviewed Journal)
- VII. **Pasif Filtre Kullanılarak Elektronik Balastlı Floresan Lambanın Harmoniklerinin Azaltılması ve Simülasyonu**  
ERDOĞAN B., YILDIZ A. B.  
Journal of Polytechnic, 2019 (Peer-Reviewed Journal)
- VIII. **Geri Dönüştürücü DC-DC Dönüştürücünün Genelleştirilmiş Düğüm Denklemleri ile Analizi**  
KÖSENİ H., YILDIZ A. B.  
Journal of Polytechnic, 2019 (Peer-Reviewed Journal)
- IX. **Şebeke Gerilimindeki Azalmaların Tüketici Elektroniği Ürünlerinin Güvenilirliğine Etkisinin Belirlenmesi**  
Demir M., YILDIZ A. B., Kavcı M., NİL M.  
Celal Bayar Üniversitesi Fen Bilimleri Dergisi, 2017 (Peer-Reviewed Journal)
- X. **Fourier Serileri ve Devre Analizi Uygulamaları**  
YILDIZ A. B.  
3e Electrotech, 2017 (Peer-Reviewed Journal)
- XI. **Manyetik Bağlı Devrelerde Max Güç Aktarımının Belirlenmesi**  
YILDIZ A. B.  
3e Electrotech, no.261, pp.138-144, 2016 (Peer-Reviewed Journal)

## Books & Book Chapters

- I. **ELEKTRİK DEVRELERİ - I, Teori ve Çözümlü Örnekler**  
Yıldız A. B.  
Umuttepe Yayınları, Kocaeli, 2019
- II. **ELEKTRİK DEVRELERİ - 1, Teori ve Çözümlü**

YILDIZ A. B.

Umuttepe Yayınları,, 2019

III. **Elektrik Devreleri I Teori ve Çözümlü Örnekler**

YILDIZ A. B.

Volga Yayıncılık, 2016

IV. **Elektrik Devreleri II Teori ve Çözümlü Örnekler**

YILDIZ A. B.

Volga Yayıncılık, 2016

V. **ELEKTRİK DEVRELERİ - II, Teori ve Çözümlü Örnekler**

Yıldız A. B.

Umuttepe Yayınları, Kocaeli, 2015

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

I. **Modified Nodal Analysis Based Modeling of DC-DC SEPIC Converter with Coupled Inductors**

Ozturk A. H. T., YILDIZ A. B.

3rd IEEE International Conference on Electrical Power and Energy Systems, ICEPES 2024, Bhopal, India, 21 - 22 June 2024

II. **Design of FET Based Electronic Power Path Controller for Lithium Battery Applications**

Dincer E., YILDIZ A. B.

3rd IEEE International Conference on Electrical Power and Energy Systems, ICEPES 2024, Bhopal, India, 21 - 22 June 2024

III. **Structure and Simulation of Single Phase Seven Level Inverter**

Emlik A., Yıldız A. B.

6th International Conference on Science and Technology, (Iconst), Budva, Montenegro, 30 August - 01 September 2023, pp.1-6

IV. **Analysis and Comparison of Commonly Used Three Level Inverter Topologies**

Sabuncu B., Yıldız A. B.

6th International Conference on Science and Technology, (Iconst), Budva, Montenegro, 30 August - 01 September 2023, pp.1-12

V. **Exact Electrical Equivalent Circuit Model for Analysis of Permanent Magnet Direct Current (PMDC) Motor**

Altay A., YILDIZ A. B.

2nd IEEE-Industrial-Electronics-Society Annual On-Line Conference (ONCON), South Carolina, United States Of America, 8 - 10 December 2023

VI. **Modeling and Analysis of DC-DC CUK Converter with Coupled Inductors**

Tuztasi F. M., YILDIZ A. B., Kelebek H.

4th IEEE International Conference on Circuits and Systems, ICCS 2022, Chengdu, China, 23 - 26 September 2022, pp.104-108

VII. **Discrete-Model Based Analysis of Flyback Converter Circuit**

CANOL B., YILDIZ A. B.

5h International Symposium on Multidisciplinary Studies and Innovative Technologies, ISMSIT 2021, Ankara, Turkey, 21 - 23 October 2021, pp.346-350

VIII. **An Efficient Approach to Simulation of Sepic Converter with Mutual Inductance**

ŞOLA S., YILDIZ A. B., ERFİDAN T.

INTERNATIONAL CONFERENCE ON ENGINEERING TECHNOLOGIES, Konya, Turkey, 25 - 27 October 2019, pp.214-217

IX. **Tek Fazlı Kontrolsüz Doğrultucu Devresinin Toplam Harmonik Bozunumunun İncelenmesi ve Pasif Filtre Uygulamaları**

Demirel Y. B., YILDIZ A. B.

International Engineering Research Symposium, 5 - 07 September 2019

- X. **Tristör Anahtarlamalı Kondansatör Tabanlı Statik VAR Sisteminin Modellenmesi**  
Yıldız A. B., Sabuncu B.  
International Engineering Research Symposium, Düzce, Turkey, 3 - 05 September 2019, pp.1-4
- XI. **Electrical Equivalent Circuit Based Analysis of Double Pendulum System**  
YAREN T., KİZİR S., YILDIZ A. B.  
IEEE 6th International Conference on Electrical and Electronics Engineering (ICEEE), Istanbul, Turkey, 16 - 17 April 2019
- XII. **Observation of the Effects of Electrostatic Discharge and Lighting Surge on the Reliability of a LED Circuit Driven by Half-Bridge Converter**  
YILDIZ A. B., Demir M., Ağır T.  
24th International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM), 20 - 22 June 2018
- XIII. **Observation of the Effects of Electrostatic Discharge and Lightning Surge on the Reliability of A LED Circuit Driven by Half-Bridge Converter**  
Demir M., YILDIZ A. B., Agir T.  
International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM), Amalfi, Italy, 20 - 22 June 2018, pp.1073-1078
- XIV. **Time-Domain Analysis of Full-Wave Quasi-Resonant Zero-Current Switching Buck Converter by Modified Nodal Analysis**  
Ozdemir I., YILDIZ A. B.  
5th International Conference on Electrical and Electronics Engineering (ICEEE), İstanbul, Turkey, 3 - 05 May 2018, pp.23-26
- XV. **Time-Domain Analysis of Static VAR Compensator by Modified Nodal Analysis**  
Akçay E., YILDIZ A. B.  
5th International Conference on Electrical and Electronics Engineering (ICEEE), İstanbul, Turkey, 3 - 05 May 2018, pp.148-151
- XVI. **Analysis and Modelling of FC-TCR Based on Static VAR Compensator**  
Pekdemir A., YILDIZ A. B.  
5th International Conference on Electrical and Electronics Engineering (ICEEE), İstanbul, Turkey, 3 - 05 May 2018, pp.115-118
- XVII. **Geri Dönüslü DC-DC Dönüştürücünün Genelleştirilmiş Düğüm Denklemleri ile Analizi**  
KÖSENİ H., YILDIZ A. B.  
International Engineering Research Symposium, 11 - 13 September 2017
- XVIII. **Elektrik Tesislerinde Pasif Filtre Kullanılarak Harmoniklerin Azaltılması ve Örnek Bir Uygulama**  
ERDOĞAN B., YILDIZ A. B.  
International Engineering Research Symposium, 11 - 13 September 2017
- XIX. **Determination of the Effect of Short-Term Interruptions in Mains Voltage on the Reliability of Consumer Electronics Products**  
Demir M., İltir M., YILDIZ A. B.  
17th IEEE International Conference on Environment and Electrical Engineering (IEEE EEEIC) / 1st IEEE Industrial and Commercial Power Systems Europe (IEEE I and CPS Europe), Milan, Italy, 6 - 09 June 2017
- XX. **State Space Modelling and Realization of Flyback Converter Circuit**  
Tetik M., KÖSENİ H., YILDIZ A. B.  
3th International Conference on Advanced Technology & Science, (ICAT), 1 - 03 September 2016
- XXI. **Importance of Reliability for Power Electronic Circuits, Case Study: Inrush Current Test and Calculating of Fuse Melting Point**  
Demir M., Kahramanoglu G., YILDIZ A. B.  
17th IEEE International Power Electronics and Motion Control Conference (PEMC), Varna, Bulgaria, 25 - 28 September 2016, pp.830-834
- XXII. **CALCULATING OF FUSE MELTING POINT FOR POWER ELECTRONICS CIRCUITS BY INRUSH ENERGY**

## AND DETERMINATION OF THE ELIGIBILITY

Demir M., Kahramanoglu G., YILDIZ A. B.

18th European Conference on Power Electronics and Applications (EPE), Germany, 5 - 09 September 2016

- XXIII. **Doğrultucularda ve Eviricilerde Kullanılan Pasif Filtre Türlerinin İncelenmesi ve Karşılaştırılması**  
YILDIZ A. B.  
6. Enerji Verimliliği ve Kalitesi Sempozyumu, Turkey, 4 - 06 June 2015
- XXIV. **Fotovoltaik Panelin Tek Diyotlu Eşdeğer Devresine ait Büyük Sinyal Analizi**  
KIRCIOĞLU O., YILDIZ A. B.  
6. ENERJİ VERİMLİLİĞİ, KALİTESİ SEMPOZYUMU VE FUARI, Turkey, 4 - 06 June 2015
- XXV. **Large-Signal and Small-Signal Analysis of Nonlinear Three-Terminal Switching Elements**  
Demir Y., YILDIZ A. B.  
9th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 26 - 28 November 2015, pp.1092-1096
- XXVI. **Determining the controllability of switched linear circuits**  
Demir M., Yildiz A. B.  
IEEE International Symposium on Industrial Electronics, Dubrovnik, Croatia, 20 - 23 June 2005, pp.235-239
- XXVII. **Defining of the initial conditions in the switching circuits**  
Demir M., Yildiz A. B.  
12th IEEE Mediterranean Electrotechnical Conference (MELECON 2004), Dubrovnik, Croatia, 12 - 15 May 2004, pp.59-62
- XXVIII. **DC motor control by using computes based fuzzy technique**  
Cakir B., Yildiz A. B., Abut N., Inanc N.  
14th Annual Applied Power Electronics Conference and Exposition (APEC 99), Texas, United States Of America, 14 - 18 March 1999, pp.391-395
- XXIX. **A fast simulation technique for the power electronic converters**  
Yildiz A. B., Cakir B., Inanc N., Abut N.  
14th Annual Applied Power Electronics Conference and Exposition (APEC 99), Texas, United States Of America, 14 - 18 March 1999, pp.191-196
- XXX. **Analysis method for the simulation of switched-mode converters**  
Yildiz A. B., Cakir B., Ozdemir E., Abut N.  
9th Mediterranean Electrotechnical Conference (Melecon 98), Tel-Aviv-Yafo, Israel, 18 - 20 May 1998, pp.570-574
- XXXI. **An efficient approach to modeling and analysis of power electronic circuits**  
Yildiz A. B., Abut N.  
13th Annual Applied Power Electronics Conference and Exposition (APEC 98), California, United States Of America, 15 - 19 February 1998, pp.344-349
- XXXII. **Switched Reluctance Motor drive by using fuzzy controller**  
Abut N., Cakir B., Inanc N., Yildiz A. B., Bilgin M.  
23rd International Conference of the Industrial-Electronics-Society (IECON 97), Louisiana, United States Of America, 09 November 1997, pp.348-353

## Supported Projects

YILDIZ A. B., Project Supported by Higher Education Institutions, Manyetik Kontrollü Reaktör (MCR) Tabanlı Statik Kompanzasyon Sistemlerinin Tasarımı Ve Analizi, 2019 - 2020

YILDIZ A. B., Project Supported by Higher Education Institutions, GÜÇ ELEKTRİĞİ TABANLI KOMPANZASYON SİSTEMLERİNİN TASARIMI, 2018 - 2019

Yıldız A. B., Demir M., TUBITAK Project, Güç Elektroniği Sistemlerinde Güvenilirlik Analizi ve Led Sürücü Devrelerine Uygulanması, 2016 - 2017

YILDIZ A. B., Project Supported by Higher Education Institutions, Farklı Doğrultucu Yapılarının Çeşitli Yük Durumları Altındaki Harmoniklerinin İncelenmesi ve Lineer Modellerin Elde Edilmesi, 2013 - 2015

## **Metrics**

Publication: 76

Citation (WoS): 49

Citation (Scopus): 66

H-Index (WoS): 3

H-Index (Scopus): 4