

Prof. BÜNYAMİN TAMYÜREK

Personal Information

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Biography

BÜNYAMİN TAMYÜREK was born in Artvin, Türkiye, in 1970. He received the B.S. degree in electrical engineering from Yıldız Technical University, Istanbul, Türkiye, in 1991, and the M.S. and Ph.D. degrees in electric power engineering from Rensselaer Polytechnic Institute, Troy, NY, in 1996 and 2001, respectively.

From 2001 to 2003, he was with the American Electric Power, Corporate Technology Development Department, Groveport, OH, where he was involved in the evaluation and testing of the sodium sulfur (NAS) battery systems. While at the AEP Dolan Technology Center, he was a System Expert for the battery and associated interface during the installation of the first U.S. NAS battery energy storage system demonstration project. In 2004, he joined as a Faculty in the department of electrical and electronics engineering, Eskisehir Osmangazi University, Eskisehir, Türkiye. In 2019, he moved to Ankara and continued his faculty position in the electrical and electronics engineering department of the Gazi University. His current research interests include high-power-quality ac-dc converters, high frequency and high-power density dc-dc converters, energy storage systems, uninterruptible power supplies, frequency converters, microgrids, and photovoltaic inverters.

Dr. Tamyürek was an Associate Editor for Letters of the IEEE TRANSACTIONS ON POWER ELECTRONICS between 2006 and 2010.

Education Information

Doctorate, Rensselaer Polytechnic Institute, School of Engineering, Electric Power Engineering, United States Of America
1996 - 2001

Postgraduate, Rensselaer Polytechnic Institute, School of Engineering, Electric Power Engineering, United States Of America
1995 - 1996

Undergraduate, Yıldız Technical University, Faculty Of Electrical & Electronics, Electrical Engineering Department, Turkey
1987 - 1991

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, A High Power-Quality, Three-Phase Utility Interface, Rensselaer Polytechnic Institute, School of Engineering, Electric Power Engineering, 2001

Research Areas

Engineering and Technology

Academic Titles / Tasks

Professor, Gazi University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2022 - Continues

Associate Professor, Gazi University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2019 - 2022

Associate Professor, Eskisehir Osmangazi University, Mühendislik-Mimarlık Fakültesi, Elektrik Elektronik Mühendisliği Bölümü, 2015 - 2019

Assistant Professor, Eskisehir Osmangazi University, Mühendislik-Mimarlık Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 2004 - 2015

Research Assistant, Yildiz Technical University, Faculty Of Electrical & Electronics, Elektrik Mühendisliği Bölümü, 1992 - 1994

Courses

Power Electronics I, Undergraduate, 2022 - 2023

Advising Theses

Tamyürek B., Dijital kontrollü yumuşak mod geçişli dört anahtarlı bir alçaltıcı-yükseltici çevirici tasarımı, Postgraduate, B.ÇAYKENARI(Student), 2021

TAMYÜREK B., Otonom mikro şebekelerin meta sezgisel algoritmalar ile boyutlandırma optimizasyonu, Doctorate, İ.ÇETİNBAS(Student), 2020

TAMYÜREK B., Uçak sistemleri için 115 V 400 Hz evirici tasarımı ve uygulaması, Postgraduate, B.ŞAFAK(Student), 2019
TAMYÜREK B., Eskişehir-Ankara yüksek hızlı tren hattı elektrifikasyon tesislerinin modellenmesi ve analizi, Postgraduate, E.ÖZDEMİR(Student), 2018

TAMYÜREK B., Pozisyon İzleme Gözlemcisi ile Fırçasız Doğru Akım Motorlarının Sensörsüz Alan Yönlendirmeli Kontrolü, Postgraduate, A.CANPOLAT(Student), 2018

TAMYÜREK B., Fotovoltaik uygulamalar için sarmaşık yapıli flyback dönüştürücü tabanlı bir evirici tasarımı ve uygulaması, Postgraduate, B.KIRIMER(Student), 2016

TAMYÜREK B., Doğrusal olmayan yük altında çalışan kesintisiz güç kaynaklarında yüksek çıkış performansı elde etmek için bir dijital kontrol sistemi tasarımı, Postgraduate, K.SEPETÇİ(Student), 2015

TAMYÜREK B., Dijital kontrollü çok fazlı senkronize DC-DC alçaltıcı çevirici tasarımı, Postgraduate, E.ERDOĞAN(Student), 2010

TAMYÜREK B., Yakıt pilleri uygulamaları için dijital kontrollü D.A.-D.A. dönüştürücü devre tasarımı, Postgraduate, G.ÖZKAN(Student), 2007

TAMYÜREK B., Yakıt pilleri uygulamaları için düşük maliyetli ve yüksek verimli dc-dc dönüştürücü tasarımı, Postgraduate, Y.ÇELİK(Student), 2007

TAMYÜREK B., Bir IGBT kesim karakteristiğinin Hefner modeli ile incelenmesi, Postgraduate, A.KIYAK(Student), 2007

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Parameter extraction of photovoltaic cells and modules by hybrid white shark optimizer and artificial rabbits optimization**
ÇETİNBAS İ., TAMYÜREK B., DEMİRTAŞ M.
Energy Conversion and Management, vol.296, 2023 (SCI-Expanded)
- II. **Design and implementation of a 10 kV/10 kW high-frequency center-tapped transformer**
Rahman S., Candan M. Y., TAMYÜREK B., Aydın E., Mese H., Aydemir M. T.
ELECTRICAL ENGINEERING, vol.104, no.4, pp.2603-2619, 2022 (SCI-Expanded)
- III. **The Hybrid Harris Hawks Optimizer-Arithmetic Optimization Algorithm: A New Hybrid Algorithm for Sizing Optimization and Design of Microgrids**
ÇETİNBAS İ., TAMYÜREK B., DEMİRTAŞ M.
IEEE Access, vol.10, pp.19254-19283, 2022 (SCI-Expanded)
- IV. **Sizing optimization and design of an autonomous AC microgrid for commercial loads using Harris Hawks Optimization algorithm**
Cetinbas I., TAMYÜREK B., DEMİRTAŞ M.
ENERGY CONVERSION AND MANAGEMENT, vol.245, 2021 (SCI-Expanded)
- V. **Analysis and simulation of efficiency optimized IPM drives in constant torque region with reduced computational burden**
KOÇ M., EMİROĞLU S., TAMYÜREK B.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.29, no.3, pp.1643-1658, 2021 (SCI-Expanded)
- VI. **Effects of Aging and Environmental Factors on Performance of CdTe and CIS Thin-Film Photovoltaic Modules**
DEMİRTAŞ M., Tamyurek B., KURT E., ÇETİNBAS İ., Ozturk M. K.
JOURNAL OF ELECTRONIC MATERIALS, vol.48, no.11, 2019 (SCI-Expanded)
- VII. **High-efficiency design of a grid-connected PV inverter based on interleaved flyback converter topology**
Tamyurek B., Kirimer B.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.27, no.3, pp.1855-1870, 2019 (SCI-Expanded)
- VIII. **An Interleaved High-Power Flyback Inverter for Photovoltaic Applications**
Tamyurek B., Kirimer B.
IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.30, no.6, pp.3228-3241, 2015 (SCI-Expanded)
- IX. **A High-Performance SPWM Controller for Three-Phase UPS Systems Operating Under Highly Nonlinear Loads**
Tamyurek B.
IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.28, no.8, pp.3689-3701, 2013 (SCI-Expanded)
- X. **A Three-Phase Unity Power Factor Single-Stage AC-DC Converter Based on an Interleaved Flyback Topology**
Tamyurek B., Torrey D. A.
IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.26, no.1, pp.308-318, 2011 (SCI-Expanded)

Articles Published in Other Journals

- I. **Design of Impedance Source Step-up Converter for High DC Voltage Applications**
Dag B., Özdemir M. A., Tamyürek B., Aydın E., Aydemir M. T.
EMO Bilimsel Dergi, vol.13, no.1, pp.23-30, 2023 (Peer-Reviewed Journal)
- II. **Dijital Kontrollü Yumuşak Mod Geçişli Dört Anahtarlı Bir Alçaltıcı-Yükseltici Çevirici Tasarımı**
ÇAYKENARI B., TAMYÜREK B.
EMO Bilimsel Dergi, vol.11, no.21, pp.43-57, 2021 (Peer-Reviewed Journal)
- III. **Yeni Nesil Yüksek Gerilim Kazançlı ve İzoleli Z-Kaynak DA-DA Dönüştürücü için K-Faktör Tasarım**

Yöntemi ile Analog Denetleyici Tasarımı ve Uygulaması

TURAN E., DAĞ B., TAMYÜREK B., AYDEMİR M. T.

Gazi Üniversitesi Fen Bilimleri Dergisi Part C: Tasarım ve Teknoloji, vol.9, no.2, 2021 (Peer-Reviewed Journal)

IV. Design, Analysis and Optimization of a Hybrid Microgrid System Using HOMER Software: Eskisehir Osmangazi University Example

ÇETİNBAS İ., Tamyurek B., DEMİRTAŞ M.

INTERNATIONAL JOURNAL OF RENEWABLE ENERGY DEVELOPMENT-IJRED, vol.8, no.1, pp.65-79, 2019 (ESCI)

V. Eskişehir Osmangazi Üniversitesi Kampüsünde Elektrik Tüketim Maliyetinin Azaltılmasına Yönelik FV Üretim ve Enerji Depolama Biriminden Oluşan bir Mikro Şebekenin Optimal Tasarımı

ÇETİNBAS İ., TAMYÜREK B., DEMİRTAŞ M.

EMO Bilimsel Dergi, vol.8, no.1, pp.33-38, 2018 (Peer-Reviewed Journal)

VI. Application of Modified Subgradient Algorithm Based on Feasible Values to Security Constrained Non-Convex Economic Dispatch Problems with Prohibited Zones and Ramp Rates

FADIL S., URAZEL B., TAMYÜREK B.

International Journal of Electronics and Electrical Engineering, vol.4, no.1, pp.1-8, 2016 (Peer-Reviewed Journal)

VII. Performance Analysis of Sodium Sulfur Battery Energy Storage and Power Quality Applications

TAMYÜREK B., NICHOLS D.

Eskişehir Osmangazi Üniversitesi Mühendislik Mimarlık Fakültesi Dergisi, vol.17, no.1, pp.99-115, 2004 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

I. Series DC Arc Fault in More Electric Aircraft

Calikoglu A., TAMYÜREK B.

38th Annual IEEE Applied Power Electronics Conference and Exposition, APEC 2023, Florida, United States Of America, 19 - 23 March 2023, vol.2023-March, pp.3125-3132

II. Parallel-Input Series-Output Z-Source Converters for High Voltage DC Power Supplies

ÖZDEMİR M. A., Aydın E., DAĞ B., TAMYÜREK B., Aydemir M. T.

2023 IEEE Energy Conversion Congress and Exposition, ECCE 2023, Tennessee, United States Of America, 29 October - 02 November 2023, pp.2103-2108

III. Analysis and Design of a Piezoelectric Fan System for Advanced Cooling Applications

Aksu S. Y., TAMYÜREK B.

10th International Conference on Electrical and Electronics Engineering, ICEEE 2023, İstanbul, Turkey, 8 - 10 May 2023, pp.343-348

IV. A Comparison of GaN-Based Cascode and E-mode HEMTs Using Bridgeless Totem Pole PFC

Saglam B., Aksit M. H., Tamyürek B.

2022 IEEE Energy Conversion Congress and Exposition, ECCE 2022, Michigan, United States Of America, 9 - 13 October 2022

V. Type 4 Wind Turbine Design and Development of Grid Code Algorithms

Gulcu H., TAMYÜREK B.

IEEE Electrical Power and Energy Conference (EPEC), ELECTR NETWORK, 5 - 07 December 2022, pp.438-445

VI. An Improvement on Modified Voltage Lift Switching Inductor Structures Used in X-Y Converters to Eliminate Impulsive Turn-on Currents

Kavlak C., TAMYÜREK B.

4th IEEE Global Power, Energy and Communication Conference (IEEE GPECOM), Cappadocia, Turkey, 14 - 17 June 2022, pp.130-134

VII. Coreloss Estimation via Long Short-Term Memory Model (LSTM) of Dry-Type Transformer based on FEA

KÜL S., YILDIZ B., TAMYÜREK B., İSKENDER İ.

2021 10th International Conference on Renewable Energy Research and Application (ICRERA), İstanbul, Turkey,

26 - 29 September 2021

- VIII. **Design of a 10 kW, 100kV High Voltage DC Power Supply**
Rahman S., TAMYÜREK B., Candan M. Y., Meşe H., AYDEMİR M. T.
9th International Conference on Advanced Technologies (ICAT'20), İstanbul, Turkey, 10 August 2020
- IX. **Energy Management of a PV Energy System and a Plugged-in Electric Vehicle Based Micro-Grid Designed for Residential Applications**
ÇETİNBAS İ., TAMYÜREK B., DEMİRTAŞ M.
8TH INTERNATIONAL CONFERENCE ON RENEWABLE ENERGY RESEARCH AND APPLICATIONS, Brasov, Romania, 3 - 06 November 2019
- X. **A Review of Turkey's Current Situation in Resource Utilization of Renewables and Energy Policies**
ÇETİNBAS İ., TAMYÜREK B.
ICSEEC: SUSTAINABLE ENERGY AND ENERGY CALCULATIONS, Muğla, Turkey, 12 - 14 April 2019
- XI. **Development of a Controller Based on Compensation of Fourier Series Coefficients of Voltage Error for Stand-Alone Inverters**
TAMYÜREK B., YAĞIZ C.
2019 IEEE Applied Power Electronics Conference and Exposition (APEC), Anaheim, CA, USA, United States Of America, 17 - 21 March 2019, pp.921-926
- XII. **Design and Analysis of A Hybrid Microgrid System Using Homer Software: Eskişehir Osmangazi University Example**
ÇETİNBAS İ., TAMYÜREK B., DEMİRTAŞ M.
6. European Conference on Renewable Energy Systems, 25 - 27 June 2018
- XIII. **Effect of aging and environmental factors on performance of thin film photovoltaic modules: A comparative analysis**
DEMİRTAŞ M., TAMYÜREK B., KURT E., ÇETİNBAS İ.
6. European Conference on Renewable Energy Systems, 25 - 27 June 2018
- XIV. **Design of controller for inverters with ultra-low THD: A repetitive and predictive-PID controller approach**
TAMYÜREK B., KELEŞ F.
2017 19th European Conference on Power Electronics and Applications (EPE'xx17 ECCE Europe), Warszawa, Poland, 11 - 14 September 2017, pp.1-9
- XV. **Yenilenebilir Enerji Kaynaklı Akıllı Bir Ev İçin Enerji Yönetimi Uygulaması**
ÇETİNBAS İ., TAMYÜREK B., DEMİRTAŞ M.
Yenilenebilir Enerji Kaynakları Sempozyumu (YEKSEM 2017), Antalya, Turkey, 3 - 05 November 2017, pp.159-165
- XVI. **Mikro Şebeke Topolojileri Ve Türkiye'nin Yenilenebilir Enerji Potansiyelinin Mikro Şebekeler Açısından Değerlendirilmesi**
ÇETİNBAS İ., TAMYÜREK B., DEMİRTAŞ M.
Yenilenebilir Enerji Kaynakları Sempozyumu (YEKSEM 2017), Antalya, Turkey, 3 - 05 November 2017, pp.152-158
- XVII. **Eskişehir Osmangazi Üniversitesi Kampüsü için Tasarlanmış bir AA Mikro Şebekede Enerjinin Optimal Yönetimi**
ÇETİNBAS İ., TAMYÜREK B., DEMİRTAŞ M.
1. Ulusal Elektrik Enerjisi Dönüşümü Kongresi (EL-EN), Elazığ, Turkey, 21 - 22 September 2017, pp.251-256
- XVIII. **Efficiency analysis of a Bi-directional DC/DC converter for wireless energy transfer applications**
ERDEM A., ÇOLAK K., DARIUSZ C., TAMYÜREK B.
2015 IEEE Energy Conversion Congress and Exposition (ECCE), Montreal, QC, Canada, Canada, 20 - 24 September 2015, pp.594-598
- XIX. **A multimode photovoltaic inverter with energy storage capability**
TAMYÜREK B., KIRIMER B.
2015 IEEE Energy Conversion Congress and Exposition (ECCE), Montreal, QC, Canada, 20 - 24 September 2015, pp.3740-3747
- XX. **Design and simulation of a high power quality regenerative PWM rectifier system for 1 MW electric locomotives**

SEPETÇİ K., TAMYÜREK B.

2013 3rd International Conference on Electric Power and Energy Conversion Systems, Istanbul, Turkey, Turkey, 2 - 04 October 2013, pp.1-6

XXI. An interleaved flyback inverter for residential photovoltaic applications

TAMYÜREK B., KIRIMER B.

2013 15th European Conference on Power Electronics and Applications (EPE), Lille, France, France, 2 - 06 September 2013, pp.1-10

XXII. Design and implementation of an improved controller for parallel-connected 400 Hz frequency converters

TAMYÜREK B., CEYHAN A., BİRDANE E.

2010 Twenty-Fifth Annual IEEE Applied Power Electronics Conference and Exposition (APEC), Palm Springs, CA, USA, United States Of America, 21 - 25 February 2010, pp.1197-1203

XXIII. Design of a Three Phase Unity Power Factor Single Stage Telecom Rectifier

TAMYÜREK B.

International Conference on Electrical and Electronics Engineering (ELECO 2009), Bursa, Turkey, 5 - 08 November 2009, pp.311-315

XXIV. A simple DSP based control system design for a three phase high power factor boost rectifier

TAMYÜREK B., CEYHAN A., BİRDANE E., KELEŞ F.

2008 Twenty-Third Annual IEEE Applied Power Electronics Conference and Exposition, Austin, TX, USA, United States Of America, 24 - 28 February 2008, pp.1416-1422

XXV. Improvement of Total Harmonic Distortion in Single Phase Inverters Using Repetitive Control Method

ELÇİK E., EDİZKAN R., TAMYÜREK B.

12. Electrical, Electronics, Computer, and Biomedical Engineering National Conference and Exposition, Eskişehir, Turkey, 14 - 18 November 2007, pp.45-49

XXVI. Elektrikli Demiryolu Çeken Araç Modernizasyonunda Tülomsaş Kemsan İşbirliği

BİRDANE E., TAMYÜREK B., CEYHAN A.

Türkiye’de Demiryolu Çeken Araçları Üretim Teknolojileri Sempozyumu, Eskişehir, Turkey, 23 - 24 June 2006, pp.78-91

XXVII. The NAS battery: a multifunction energy storage system

TAMYÜREK B., NICHOLS D., DEMİRCİ O.

2003 IEEE Power Engineering Society General Meeting (IEEE Cat. No.03CH37491), Toronto, Ontario, Canada, Canada, 13 - 17 July 2003, vol.4, pp.1991-1996

XXVIII. Sodium sulfur battery applications

TAMYÜREK B., NICHOLS D., VOLKKOMMER H.

2003 IEEE Power Engineering Society General Meeting (IEEE Cat. No.03CH37491), Toronto, Ontario, Canada, Canada, 13 - 17 July 2003, vol.4, pp.2323-2324

XXIX. A high power quality three phase utility interface

TAMYÜREK B., TORREY D.

APEC. Seventeenth Annual IEEE Applied Power Electronics Conference and Exposition (Cat. No.02CH37335), Dallas, TX, USA, United States Of America, 10 - 14 March 2002, vol.2, pp.709-715

Supported Projects

Dağ B., Aydemir T., TAMYÜREK B., TUBITAK Project, EMPEDANS KAYNAKLI DA-DA DÖNÜŞTÜRÜCÜLÜ YÜKSEK GERİLİM DA GÜÇ KAYNAĞI TASARIMI, 2021 - 2024

Tamyürek B., Yağız C., TUBITAK Project, Askeri Standartlarda, Paralellenebilir, 600-3600 W Arası, Yüksek Güç Kaliteli AC/DC ve İzole DC/DC Çevirici Modülleri Ürün Ailesi Tasarımı, Geliştirilmesi ve Kalifikasyonlarının Gerçekleştirilmesi, 2019 - 2021

TAMYÜREK B., TUBITAK Project, Evsel Fotovoltaik Uygulamalar için Düşük Maliyetli Flyback Dönüştürücü Tabanlı Bir

Evirici Sistemi Geliştirilmesi, 2014 - 2017

TAMYÜREK B., TUBITAK Project, E1000 Tipi Elektrikli Lokomotif Geliştirilmesi, 2013 - 2016

TAMYÜREK B., TUBITAK Project, ELEKTRİKLİ ARAÇ AC DC ŞARJ İSTASYONLARININ TASARIMI VE MODÜLER YAPILI UYGULAMALARIN GELİŞTİRİLMESİ, 2013 - 2016

Memberships / Tasks in Scientific Organizations

IEEE Power Electronics Society Membership, Member, 2005 - Continues, United States Of America

IEEE (Institute of Electrical and Electronics Engineers), Member, 2004 - Continues, United States Of America

Scientific Refereeing

IEEE TRANSACTIONS ON POWER ELECTRONICS, SCI Journal, January 2021

Metrics

Publication: 46

Citation (WoS): 326

Citation (Scopus): 397

H-Index (WoS): 8

H-Index (Scopus): 9

Non Academic Experience

American Electric Power, Columbus, Ohio, A.B.D.

InterScience, Inc., Troy, New York, A.B.D.