

## Prof. IŞIK ÇADIRCI

### Personal Information

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### Education Information

Doctorate, Middle East Technical University, Faculty Of Engineering, Elektrik-Elektronik Mühendisliği, Turkey 1987 - 1994

Postgraduate, Middle East Technical University, Faculty Of Engineering, Elektrik-Elektronik Mühendisliği, Turkey 1987 - 1988

Undergraduate, Middle East Technical University, Faculty Of Engineering, Elektrik-Elektronik Mühendisliği, Turkey 1983 - 1987

### Dissertations

Doctorate, Steady- state and transient performance analyses of a double output induction generator operating at subsynchronous and supersynchronous speeds, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 1994

### Research Areas

Electrical and Electronics Engineering, Power Electronics, Engineering and Technology

### Academic Titles / Tasks

Professor, Hacettepe University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 2003 - Continues

### Advising Theses

ÇADIRCI I., Design of an interleaved PWM rectifier for AC locomotives and implementation of its laboratory prototype, Postgraduate, M.UĞUR(Student), 2015

ÇADIRCI I., Online application of SHEM to grid-connected inverters with DC link voltage by particle swarm optimization, Postgraduate, U.GÜVENGİR(Student), 2014

ÇADIRCI I., Design and implementation of a current source converter based active power filter for medium voltage applications, Doctorate, A.TERCİYANLI(Student), 2010

ÇADIRCI I., Design and implementation of a voltage source converter based hybrid active power filter, Postgraduate, O.UÇAK(Student), 2009

ÇADIRCI I., Data mining methods for clustering power quality data collected via monitoring systems installed on the electricity network, Postgraduate, M.GÜDER(Student), 2009

ÇADIRCI I., Electromagnetic compatibility of electric power quality monitor according to EN 61326 standard, Postgraduate, Ö.YAMAN(Student), 2007

ÇADIRCI I., Fully digital parallel operated switch-mode power supply modules for telecommunications, Doctorate, K.KUTLUAY(Student), 2005

ÇADIRCI I., Simulation of a shunt active power filter using PSCAD/EMTDC, Postgraduate, M.SERKAN(Student), 2000

ÇADIRCI I., Implementation of a voltage controlled soft starter for constant current starting of induction motors with minimized torque pulsations, Postgraduate, G.ZENGİNOBUZ(Student), 2000

ÇADIRCI I., High efficiency ZVZCS pull bridge converter for medium power low input voltage applications, Postgraduate, A.ÇETİN(Student), 2000

ÇADIRCI I., Active clamp/reset forward converter with ZCS/ZVS self-oriven synchronous rectifier for low output voltage applications, Postgraduate, E.BENLİER(Student), 2000

ÇADIRCI I., Self-excitation of induction motors compensated by permanently connected capacitors, Postgraduate, Z.ÇAKIR(Student), 2000

ÇADIRCI I., Post regulation methods in multiple output SMPS and implementation of a two-output forward converter with synchronous switch post regulator, Postgraduate, M.BARAN(Student), 2000

ÇADIRCI I., Digital controller implementation for load current sharing of SMPS, Postgraduate, I.KORKMAZ(Student), 1999

ÇADIRCI I., A40 kHz, unity power factor boost converter with phase shifted parallel IGBTs for medium power operation, Postgraduate, A.YAFAOVI(Student), 1998

ÇADIRCI I., Active clamped ZVS forward converter with a soft switched synchronous rectifier, Postgraduate, Ç.ADNAN(Student), 1998

ÇADIRCI I., EMG filter design for high power high frequency sups, Postgraduate, Y.ERİŞTİREN(Student), 1998

ÇADIRCI I., Design and implementation of a high power, high frequency switch mode battery charger, Postgraduate, A.GÜNGÖR(Student), 1997

ÇADIRCI I., Reliable control of slip energy recovery drives againsts power supply disturbances, Postgraduate, G.AKÇAM(Student), 1997

ÇADIRCI I., Design and implementation of 200 joule/second capacitor charging power supply and flaslitule diving system, Postgraduate, B.ERENTÜRK(Student), 1995

ÇADIRCI I., Harmonic analysis of a double output induction generator, Postgraduate, A.MESRY(Student), 1995

ÇADIRCI I., Double-output induction generator with a modified forced commutated rotor, Postgraduate, Ş.SARIKAYA(Student), 1995

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

- I. **Selective Harmonic Elimination for Variable Frequency Traction Motor Drives Using Harris Hawks Optimization**  
Nalcaci G., Yildirim D., ÇADIRCI I., ERMİŞ M.  
IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.58, no.4, pp.4778-4791, 2022 (SCI-Expanded)
- II. **All-SiC Traction Converter for Light Rail Transportation Systems: Design Methodology and Development of 165 kVA Prototype**  
Yildirim D., Aksit M. H., ÇADIRCI I., ERMİŞ M.  
ELECTRONICS, vol.11, no.9, 2022 (SCI-Expanded)
- III. **Full-Scale Physical Simulator of All SiC Traction Motor Drive With Onboard Supercapacitor ESS for Light-Rail Public Transportation**  
Yildirim D., AKŞİT M. H., Yolacan C., Pul T., Ermis C., Aghdam B. H., ÇADIRCI I., ERMİŞ M.  
IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, vol.67, no.8, pp.6290-6301, 2020 (SCI-Expanded)
- IV. **All SiC PWM rectifier-based off-board ultrafast charger for heavy electric vehicles**  
Yildirim D., ÖZTÜRK S., ÇADIRCI I., ERMİŞ M.  
IET POWER ELECTRONICS, vol.13, no.3, pp.483-494, 2020 (SCI-Expanded)
- V. **Operating principles and practical design aspects of all SiC DC/AC/DC converter for MPPT in grid-connected PV supplies**

ÖZTÜRK S., Popos P., Utalay V., Koc A., ERMİŞ M., ÇADIRCI I.

SOLAR ENERGY, vol.176, pp.380-394, 2018 (SCI-Expanded)

- VI. **On-Line Application of SHEM by Particle Swarm Optimization to Grid-Connected, Three-Phase, Two-Level VSCs with Variable DC Link Voltage**  
Guvengir U., ÇADIRCI I., ERMİŞ M.  
ELECTRONICS, vol.7, no.8, 2018 (SCI-Expanded)
- VII. **All SiC Grid-Connected PV Supply with HF Link MPPT Converter: System Design Methodology and Development of a 20 kHz, 25 kVA Prototype**  
ÖZTÜRK S., Canver M., ÇADIRCI I., ERMİŞ M.  
ELECTRONICS, vol.7, no.6, 2018 (SCI-Expanded)
- VIII. **Correlation Between Multiple Electric Arc Furnace Operations and Unscheduled Power Flows in the Interconnection Lines at the Eastern Cross Border of ENTSO-E**  
Altintas E., Salor O., Buyukdagli U., ÇADIRCI I., ERMİŞ M.  
IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.52, no.4, pp.3508-3517, 2016 (SCI-Expanded)
- IX. **Wind Pattern Recognition and Reference Wind Mast Data Correlations With NWP for Improved Wind- Electric Power Forecasts**  
Buhan S., Ozkazanc Y., ÇADIRCI I.  
IEEE TRANSACTIONS ON INDUSTRIAL INFORMATICS, vol.12, no.3, pp.991-1004, 2016 (SCI-Expanded)
- X. **Multistage Wind-Electric Power Forecast by Using a Combination of Advanced Statistical Methods**  
Buhan S., ÇADIRCI I.  
IEEE TRANSACTIONS ON INDUSTRIAL INFORMATICS, vol.11, no.5, pp.1231-1242, 2015 (SCI-Expanded)
- XI. **Data Mining Framework for Power Quality Event Characterization of Iron and Steel Plants**  
Guder M., Salor O., ÇADIRCI I., Ozkan B., Altintas E.  
IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.51, no.4, pp.3521-3531, 2015 (SCI-Expanded)
- XII. **Identification of Harmonic Current Contributions of Iron and Steel Plants Based on Time-Synchronized Field Measurements-Part II: Inside Plants**  
Unsar O., Salor O., ÇADIRCI I., ERMİŞ M.  
IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.50, no.6, pp.4348-4355, 2014 (SCI-Expanded)
- XIII. **Identification of Harmonic Current Contributions of Iron and Steel Plants Based on Time-Synchronized Field Measurements-Part I: At PCC**  
Unsar O., Salor O., ÇADIRCI I., ERMİŞ M.  
IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.50, no.6, pp.4336-4347, 2014 (SCI-Expanded)
- XIV. **Enhanced Nationwide Wind-Electric Power Monitoring and Forecast System**  
Terciyanlı E., Demirci T., Kucuk D., Sarac M., ÇADIRCI I., ERMİŞ M.  
IEEE TRANSACTIONS ON INDUSTRIAL INFORMATICS, vol.10, no.2, pp.1171-1184, 2014 (SCI-Expanded)
- XV. **Multipurpose Platform for Power System Monitoring and Analysis With Sample Grid Applications**  
Atalik T., ÇADIRCI I., Demirci T., ERMİŞ M., Inan T., Kalaycioglu A. S., Salor O.  
IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT, vol.63, no.3, pp.566-582, 2014 (SCI-Expanded)
- XVI. **Multi-DSP and -FPGA-Based Fully Digital Control System for Cascaded Multilevel Converters Used in FACTS Applications**  
Atalik T., Deniz M., Koc E., Gercek C. O., Gultekin B., ERMİŞ M., ÇADIRCI I.  
IEEE TRANSACTIONS ON INDUSTRIAL INFORMATICS, vol.8, no.3, pp.511-527, 2012 (SCI-Expanded)
- XVII. **Power Quality Solutions for Light Rail Public Transportation Systems Fed by Medium-Voltage Underground Cables**  
Terciyanlı A., Acik A., Cetin A., ERMİŞ M., ÇADIRCI I., Ermis C., Demirci T., Bilgin H. F.  
IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.48, no.3, pp.1017-1029, 2012 (SCI-Expanded)
- XVIII. **A New Flicker Contribution Tracing Method Based on Individual Reactive Current Components of Multiple EAFs at PCC**  
Altintas E., Salor O., ÇADIRCI I., ERMİŞ M.  
IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.46, no.5, pp.1746-1754, 2010 (SCI-Expanded)

- XIX. **A General Purpose Inverter Set-Up for Power Electronics Laboratory Experiments**  
Kayakesen M. E., ÇADIRCI I.  
JOURNAL OF POWER ELECTRONICS, vol.10, no.4, pp.434-443, 2010 (SCI-Expanded)
- XX. **An extensible database architecture for nationwide power quality monitoring**  
Kucuk D., Inan T., Salor O., Demirci T., Akkaya Y., Buhan S., Boyrazoglu B., Unsar O., Altintas E., Haliloglu B., et al.  
INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS, vol.32, no.6, pp.559-570, 2010 (SCI-Expanded)
- XXI. **A New Field-Data-Based EAF Model for Power Quality Studies**  
GÖL M., Salor O., Alboyaci B., Mutluer B., ÇADIRCI I., ERMİŞ M.  
IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.46, no.3, pp.1230-1242, 2010 (SCI-Expanded)
- XXII. **PQONT: A domain ontology for electrical power quality**  
Kucuk D., Salor O., Inan T., Cadirci I., ERMİŞ M.  
ADVANCED ENGINEERING INFORMATICS, vol.24, no.1, pp.84-95, 2010 (SCI-Expanded)
- XXIII. **Electrical Power Quality of Iron and Steel Industry in Turkey**  
Salor O., Gultekin B., Buhan S., Boyrazoglu B., Inan T., Atalik T., Acik A., Terciyani A., Unsar O., Altintas E., et al.  
IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.46, no.1, pp.60-80, 2010 (SCI-Expanded)
- XXIV. **Reactive-power compensation of coal mining excavators by using a new-generation STATCOM**  
Bilgin H. F., Ermis M., Kose K. N., Cadirci I., Acik A., Demirci T., Terciyani A., Kocak C., Yorukoglu M.  
IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.43, no.1, pp.97-110, 2007 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Natural-air-cooled 5 kVA single-phase GaN inverter with paralleled multilayer PCB magnetics**  
Mese H., ÇADIRCI I.  
JOURNAL OF ENGINEERING-JOE, no.2, pp.94-103, 2018 (ESCI)

## Refereed Congress / Symposium Publications in Proceedings

- I. **A Study on Ultracapacitor-based Systems for Compensation of Power Deficiency and Saving Energy: Design, Control and Simulation**  
Aksit M. H., ÖZTÜRK S., ÇADIRCI I.  
3rd IEEE International Future Energy Electronics Conference / Energy Conversion Congress and Exposition (ECCE) Asia, Kao-hsiung, Taiwan, 3 - 07 June 2017, pp.1008-1013
- II. **Forecasting and Scheduling of a Photovoltaic/Battery Energy Storage System for Load Demand**  
ÖZTÜRK S., ÇADIRCI I.  
24th Signal Processing and Communication Application Conference (SIU), Zonguldak, Turkey, 16 - 19 May 2016, pp.2093-2096
- III. **Combined Microcontroller and FPGA Control of Flyback Inverter Using a System-on-Chip Device**  
Caglar B., Caglav E., ÇADIRCI I.  
16th International Power Electronics and Motion Control Conference and Exposition (PEMC), Antalya, Turkey, 21 - 24 September 2014, pp.990-995
- IV. **Power Quality Analysis of Medium Frequency Induction Melting Furnaces Using Sinusoidal Coding**  
Yilmaz I., Salor-Durna O., ÇADIRCI I., ERMİŞ M.  
21st Signal Processing and Communications Applications Conference (SIU), CYPRUS, 24 - 26 April 2013
- V. **A New Flicker Contribution Tracing Method Based on Individual Reactive Current Components of Multiple EAFs at PCC**  
Altintas E., Salor O., ÇADIRCI I., ERMİŞ M.  
44th Annual Meeting of the IEEE-Industry-Applications-Society, Texas, United States Of America, 4 - 08 October 2009, pp.135-136

## Supported Projects

GÖKCEN D., SAKA TANATAR B., BULU G., BAYSAL U., ÇADIRCI I., ALKAR A. Z., KUMBAY YILDIZ Ş., Project Supported by Higher Education Institutions, Elektrik ve Elektronik Mühendisliği Bölümü Laboratuvar Altyapısının Güçlendirilmesi, 2017 - 2021

ÇADIRCI I., KIZICI A., Project Supported by Higher Education Institutions, GaN Güç Tranzistörüne Dayalı Yüksek Güç Yoğunluklu Çift Aktif Köprü DA/DA Çevirgeç Tasarımı ve Gerçekleştirilmesi, 2018 - 2020

ÇADIRCI I., MEŞE H., Project Supported by Higher Education Institutions, Çok Yüksek Güç Yoğunluklu Tek Fazlı GaN Evirgeç Tasarımı ve Geliştirilmesi, 2016 - 2018

ÇADIRCI I., ÖZTÜRK S., Project Supported by Higher Education Institutions, ÇAPRAZ ÇEVİRGECE DAYALI FOTOVOLTAİK ENERJİ DÖNÜŞÜM SİSTEMİNİN İYİLEŞTİRİLMESİ, 2013 - 2016

ÇADIRCI I., ÖZTÜRK S., Project Supported by Higher Education Institutions, Çapraz Çevirgece Dayalı Fotovoltaik Enerji Dönüşüm Sistemi Tasarımı ve Gerçekleştirilmesi, 2012 - 2016

## Metrics

Publication: 30

Citation (WoS): 442

H-Index (WoS): 12