# **Prof. AHMET MASUM HAVA**

# **Personal Information**

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# **Education Information**

Doctorate, University of Wisconsin-Madison, Electrical Engineering/ Electrical And Computer Engineering Department, United States Of America 1991 - 1998 Postgraduate, University of Wisconsin-Madison, Electrical Engineering/ Electrical And Computer Engineering Department, United States Of America 1988 - 1991 Undergraduate, Istanbul Technical University, Elektrik Fakültesi, Enerji Pr., Turkey 1982 - 1987

## **Foreign Languages**

English, C1 Advanced

# Dissertations

Doctorate, Carrier Based PWM-VSI Drives In The Overmodulation Region, University Of Wisconsin-Madison, Electrical Engineering/ Electrical And Computer Engineering Department, 1998 Postgraduate, A New Type of Converter For The Switched Reluctance Machines, University Of Wisconsin-Madison, Electrical Engineering/ Electrical And Computer Engineering Department, 1998

## **Research Areas**

**Engineering and Technology** 

# Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2015 - Continues

Associate Professor, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2011 - 2015

Assistant Professor, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2002 - 2011

# **Advising Theses**

Hava A. M., High performance current control methods for voltage source converters with saturable inductors, Doctorate, Z.ÖZKAN(Student), 2019

Hava A. M., Performance evaluation and comparison of low voltage grid-tied three-phase AC/DC converter configurations with SIi and SiC semiconductor switches, Postgraduate, O.ÖZTOPRAK(Student), 2019

HAVA A. M., Performance evaluation and comparison of low voltage grid-tied three-phase AC/DC converter configurations with SI and SIC semiconductor switches, Postgraduate, O.Öztoprak(Student), 2019

HAVA A. M., Investigation of modular multilevel converter control methods, Postgraduate, F.ERTÜRK(Student), 2015 HAVA A. M., Design and implementation of a 200W microinverter for grid connected energy conversion system, Postgraduate, S.KAVURUCU(Student), 2014

HAVA A. M., F-L-N parameter based power density optimized design and implementation of a digitally controlled 1-kW interleaved DC-DC step down converter, Postgraduate, İ.ŞAHİN(Student), 2014

HAVA A. M., Design and implementation of a 200w microinverter for grid connected photovoltaic energy conversion system, Postgraduate, S.Kavurucu(Student), 2014

HAVA A. M., Design and control of PWM converter with LCL type filter for grid interface of renewable energy systems /, Postgraduate, E.KANTAR(Student), 2014

HAVA A. M., Switch mode converter based damping of PWM converter with LCLtype filter for grid interface of renewable energy systems /, Postgraduate, S.NADİR(Student), 2014

HAVA A. M., Selection of suitable PWM switching and control methods for modular multilevel converter drives /, Postgraduate, B.ÇİFTÇİ(Student), 2014

HAVA A. M., Investigation of DC bus current harmonics in two and three level three-phase inverters, Postgraduate, U.AYHAN(Student), 2012

HAVA A. M., Design, application and comparison of single stage Flyback and SEPIC PFC AC/DC converters for power led lighting application, Postgraduate, H.YILMAZ(Student), 2012

HAVA A. M., Design application and comparison of single stage flyback and SEPIC PFC AC/DC converters for power LED lighting application, Postgraduate, H.Yılmaz(Student), 2012

HAVA A. M., The design, control, and performance analysis of ac motor drives with front end diode rectifier utilizing low capacitance dc bus capacitor and comparison with conventional drives, Postgraduate, V.VOLKAN(Student), 2012

HAVA A. M., Leakage current and energy efficiency analyses of single phase grid connected multi-kva transformerless photovoltaic inverters, Postgraduate, Z.ÖZKAN(Student), 2012

HAVA A. M., The Design, control and performance performance analysis of AC motor drives with front end diode rectifier utilizing low capacitance DC bus capacitor and comparison with conventional drives, Postgraduate, V.Volkan(Student), 2012

HAVA A. M., Design and implementation of advanced pulse width modulation techniques and passive filters for voltage source inverter driven three-phase AC motors, Postgraduate, N.ONUR(Student), 2010

HAVA A. M., Design and implementation of an ultracapacitor test, Postgraduate, H.Hüseyin(Student), 2010

HAVA A. M., Design and implementation of an ultracapacitor test system, Postgraduate, H.HÜSEYİN(Student), 2010

HAVA A. M., Design, implementation, and control of a twostage ac/dc isolated power supply with high input power factor and high efficiency, Postgraduate, M.Can(Student), 2008

HAVA A. M., Shaft transducerless vector control of the interior permanent magnet motor with speed and position estimation using high frequency signal injection and flux observer methods, Postgraduate, Ö.GÖKSU(Student), 2008 HAVA A. M., Design, implementation, and control of a two ? stage AC/DC isolated power supply with high input power factor and high efficiency, Postgraduate, M.CAN(Student), 2008

HAVA A. M., Design of an educational purpose multifunctional DC/DC converter board, Postgraduate, F.ONUR(Student), 2008

HAVA A. M., Parallel active filter design, control, and implementation, Postgraduate, H.ÖZKAYA(Student), 2007

HAVA A. M., Common mode voltage and current reduction in voltage source inverter driven three phase ac motors, Postgraduate, E.ÜN(Student), 2007

HAVA A. M., Series active filter design, control, and implementation with a novel load voltage harmonic extraction method, Postgraduate, O.SELÇUK(Student), 2007

HAVA A. M., Output voltage control of a four-leg inverter based three-phase UPS by means of stationary frame resonant filter banks, Postgraduate, E.DEMİRKUTLU(Student), 2006

HAVA A. M., Repetitive control of a three-phase uninterruptible power supply with isolation transformer, Postgraduate, S.ÇETİNKAYA(Student), 2006

HAVA A. M., Analysis, design, and implementation of a 5 kW zero voltage switching phase-shifted full-bridge DC/DC converter based power supply for arc welding machines, Postgraduate, M.USLU(Student), 2006

HAVA A. M., Analysis, design and implementation a tw-switch single phase electronic line voltage regulator, Postgraduate, B.Şimşir(Student), 2005

HAVA A. M., Lowpass broadband harmonic filter design, Postgraduate, H.ZUBI(Student), 2005

HAVA A. M., Analysis, design, and implementation of a two-switch single phase electronic line voltage regulator, Postgraduate, B.ŞİMŞİR(Student), 2005

HAVA A. M., A novel two-parameter modulation and neutral point potential control method for the three-level neutral point clamped inverter, Postgraduate, B.ÜSTÜNTEPE(Student), 2005

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

- I. Inductor Saturation Compensation With Resistive Decoupling for Single-Phase Controlled VSC Systems
  - ÖZKAN Z., HAVA A. M.

IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.35, no.2, pp.1993-2007, 2020 (SCI-Expanded)

- II. Current control of single-phase VSC systems with inductor saturation using inverse dynamic modelbased compensation
  - Ozkan Z., HAVA A. M.

IEEE Transactions on Industrial Electronics, vol.66, no.12, pp.9268-9277, 2019 (SCI-Expanded)

# III. Optimal Design of Grid-Connected Voltage-Source Converters Considering Cost and Operating Factors

Kantar E., HAVA A. M.

IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, vol.63, no.9, pp.5336-5347, 2016 (SCI-Expanded)

IV. Classification of Grid Connected Transformer less PV Inverters with a Focus on the Leakage Current Characteristics and Extension of Topology Families

Ozkan Z., HAVA A. M. JOURNAL OF POWER ELECTRONICS, vol.15, no.1, pp.256-267, 2015 (SCI-Expanded)

 V. Common-Mode Voltage Reduction Pulsewidth Modulation Techniques for Three-Phase Grid-Connected Converters Hou C., Shih C., Cheng P., HAVA A. M.

IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.28, no.4, pp.1971-1979, 2013 (SCI-Expanded)

- VI. Control, design, and implementation of a low-cost ultracapacitor test system
  Eroglu H. H., HAVA A. M.
  TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.21, no.3, pp.630-648, 2013 (SCI-Expanded)
- VII. A Simple Sag Generator Using SSRs Senturk O. S., HAVA A. M.
   IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.48, no.1, pp.172-180, 2012 (SCI-Expanded)

# VIII. Compatibility Issues Between the Filter and PWM Unit in Three-Phase AC Motor Drives Utilizing the Pure Sine Filter Configuration Cetin N. O., HAVA A. M.

IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.47, no.6, pp.2559-2569, 2011 (SCI-Expanded)

IX. Performance Enhancement of the Single-Phase Series Active Filter by Employing the Load Voltage Waveform Reconstruction and Line Current Sampling Delay Reduction Methods Senturk O. S., HAVA A. M. IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.26, no.8, pp.2210-2220, 2011 (SCI-Expanded)

- X. A High-Performance PWM Algorithm for Common-Mode Voltage Reduction in Three-Phase Voltage Source Inverters
   HAVA A. M., Un E.
   IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.26, no.7, pp.1998-2008, 2011 (SCI-Expanded)
- XI. A Generalized Scalar PWM Approach With Easy Implementation Features for Three-Phase, Three-Wire Voltage-Source Inverters
  HAVA A. M., Cetin N. O.
  IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.26, no.5, pp.1385-1395, 2011 (SCI-Expanded)
- XII. Experimental investigation of shaft transducerless speed and position control of ac induction and interior permanent magnet motors Goksu O., HAVA A. M. TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.18, no.5, pp.865-882, 2010 (SCI-Expanded)
- XIII. High-Performance Harmonic Isolation and Load Voltage Regulation of the Three-Phase Series Active Filter Utilizing the Waveform Reconstruction Method Senturk O. S., HAVA A. M.

IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.45, no.6, pp.2030-2038, 2009 (SCI-Expanded)

XIV. Performance Characteristics of the Reduced Common Mode Voltage Near State PWM Method Un E., HAVA A. M.

EPE JOURNAL, vol.19, no.3, pp.41-49, 2009 (SCI-Expanded)

XV. A Scalar Resonant-Filter-Bank-Based Output-Voltage Control Method and a Scalar Minimum-Switching-Loss Discontinuous PWM Method for the Four-Leg-Inverter-Based Three-Phase Four-Wire Power Supply

Demirkutlu E., HAVA A. M.

IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.45, no.3, pp.982-991, 2009 (SCI-Expanded)

XVI. A Near-State PWM Method With Reduced Switching Losses and Reduced Common-Mode Voltage for Three-Phase Voltage Source Inverters Uen E., HAVA A. M.

IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.45, no.2, pp.782-793, 2009 (SCI-Expanded)

 XVII. Performance Analysis of Reduced Common-Mode Voltage PWM Methods and Comparison With Standard PWM Methods for Three-Phase Voltage-Source Inverters HAVA A. M., Un E.

IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.24, pp.241-252, 2009 (SCI-Expanded)

# XVIII. A novel neutral point potential stabilization technique using the information of output current polarities and voltage vector

Yamanaka K., Hava A., Kirino H., Tanaka Y., Koga N., Kume T.

IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, vol.38, no.6, pp.1572-1580, 2002 (SCI-Expanded) XIX. The matrix converter drive performance under abnormal input voltage conditions Kang J., Hara H., Hava A., Yamamoto E., Watanabe E., Kume T.

IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.17, no.5, pp.721-730, 2002 (SCI-Expanded)

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

 I. Evaluation of Grid-Connected PV Converter Power Module Technologies in Terms of Efficiency, Initial Cost, and Return on Investment Time
 Oztoprak O., HAVA A. M.
 21st European Conference on Power Electronics and Applications (EPE ECCE Europe), Genoa, Italy, 3 - 05

September 2019

II. Comparative Power Loss Analysis of DCM Flyback Transformer Based on FEA, Numeric Simulation,

### **Calculation and Measurements**

Onay H., Suel V., Ozgen T., Hava A. M.

21st European Conference on Power Electronics and Applications (EPE ECCE Europe), Genoa, Italy, 3 - 05 September 2019

III. A Basic Power Electronic Laboratory Experiment Allowing Comprehensive and Structured Learning: Multi-Phase Capacitive Loaded Full-Bridge Rectifier

Oztoprak O., HAVA A. M.

18th IEEE International Power Electronics and Motion Control Conference (IEEE PEMC), Budapest, Hungary, 26 -30 August 2018, pp.881-887

IV. LCL-Filter Design for Low-Voltage High-Power Grid-Tied Voltage-Source Converter Considering Various Damping Methods

Kantar E., HAVA A. M.

17th IEEE Workshop on Control and Modeling for Power Electronics (COMPEL), Trondheim, Norway, 27 - 30 June 2016

V. Performance Evaluation and Selection of PWM Switching and Control Methods for Grid Connected **Modular Multilevel Converters** 

Ciftci B., HAVA A. M.

IEEE Energy Conversion Congress and Exposition, Montreal, Canada, 20 - 24 September 2015, pp.3622-3629

- VI. DC-Bus Ripple Current Characterization of Three-Phase 2/3L-VSIs Considering the Spectral Characteristics
  - Ozkan Z., HAVA A. M.

9th International Conference on Power Electronics / Energy Conversion Congress and Exposition Asia (ICPE-ECCE Asia), Seoul, South Korea, 1 - 05 June 2015, pp.667-674

# VII. Output Ripple Performance Evaluation and Comparison of 2L-VSI and 3L-VSI Considering the **Spectral Characteristics**

Ozkan Z., HAVA A. M.

9th International Conference on Power Electronics and ECCE Asia (ICPE-ECCE Asia), Seoul, South Korea, 1 - 05 June 2015, pp.397-404

VIII. A Detailed Power Loss Analysis of Modular Multilevel Converter

Erturk F., HAVA A. M.

30th Annual IEEE Applied Power Electronics Conference and Exposition (APEC), Charlottetown, Canada, 15 - 19 March 2015, pp.1658-1665

# IX. Performance Analysis, Filter Component Sizing, and Controller Structure Selection of Small **Capacitor Diode Rectifier Front End Inverter Drives** Aban V. V., HAVA A. M.

16th International Power Electronics and Motion Control Conference and Exposition (PEMC), Antalya, Turkey, 21 -24 September 2014, pp.745-750

X. Investigation on Series Active Filter Compensated High Power Grid-Connected Voltage Source **Inverters with LCL Filter** 

Usluer S. N., HAVA A. M.

IEEE Energy Conversion Congress and Exposition (ECCE), Pennsylvania, United States Of America, 14 - 18 September 2014, pp.381-388

# XI. Performance Evaluation and Comparison of Single-Phase and Two-Phase Interleaving Flyback Micro-**Inverters for Grid Connected PV Systems**

Kavurucu S., HAVA A. M.

IEEE 23rd International Symposium on Industrial Electronics (ISIE), İstanbul, Turkey, 1 - 04 June 2014, pp.620-625

XII. Series Active Filter Based Resonance Damping of High Power Three-phase, LCL Filtered, Grid **Connected Voltage Source Inverters** Usluer S. N., HAVA A. M.

IEEE 23rd International Symposium on Industrial Electronics (ISIE), İstanbul, Turkey, 1 - 04 June 2014, pp.643-648

XIII. Design and Implementation of a 800W Step Down Converter with Optimized F-L-N Parameters

ŞAHİN İ., HAVA A. M.

IEEE 23rd International Symposium on Industrial Electronics (ISIE), İstanbul, Turkey, 1 - 04 June 2014, pp.2093-2098

# XIV. Selection of Suitable Carrier-Based PWM Method for Modular Multilevel Converter Ciftci B., Erturk F., HAVA A. M. International Power Electronics Conference (IPEC-ECCE-ASIA), Hiroshima, Japan, 18 - 21 May 2014, pp.3734-3741

# XV. Three-Phase Inverter Topologies for Grid-Connected Photovoltaic Systems Ozkan Z., HAVA A. M.

International Power Electronics Conference (IPEC-ECCE-ASIA), Hiroshima, Japan, 18 - 21 May 2014, pp.498-505

# XVI. Design of Grid Connected PWM Converters Considering Topology and PWM Methods for Low-Voltage Renewable Energy Applications Kantar E., HAVA A. M. International Power Electronics Conference (IPEC-ECCE-ASIA), Hiroshima, Japan, 18 - 21 May 2014, pp.2034-2041

# XVII. Volume and Efficiency Optimization of a Step-down DC/DC Converter Based on F-L-N Parameters ŞAHİN İ., HAVA A. M.

8th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 28 - 30 November 2013, pp.288-292

# XVIII. Control Strategies for Grid Connected PWM-VSI Systems Kantar E., Usluer S. N., HAVA A. M.

8th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 28 - 30 November 2013, pp.220-224

# XIX. Waveform Quality Comparison of Scalar PWM Methods for Modular Multilevel Converters Ciftci B., HAVA A. M.

8th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 28 - 30 November 2013, pp.152-156

# XX. Design and Performance Analysis of a Grid Connected PWM-VSI System Kantar E., Usluer S. N., HAVA A. M.

8th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 28 - 30 November 2013, pp.157-161

# XXI. Energy Conversion Efficiency of Single-Phase Transformerless PV Inverters Ozkan Z., HAVA A. M.

8th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 28 - 30 November 2013, pp.283-287

# XXII. Topology and PWM Method Dependency of High Frequency Leakage Current Characteristics of Voltage Source Inverter Driven AC Motor Drives Cetin N. O., HAVA A. M.

IEEE Energy Conversion Congress and Exposition (ECCE), North-Carolina, United States Of America, 15 - 20 September 2012, pp.3430-3437

# XXIII. A Survey and Extension of High Efficiency Grid Connected Transformerless Solar Inverters with Focus on Leakage Current Characteristics Ozkan Z., HAVA A. M. IEEE Energy Conversion Congress and Exposition (ECCE), North-Carolina, United States Of America, 15 - 20 September 2012, pp.3453-3460

# XXIV. A DC Bus Capacitor Design Method for Various Inverter Applications HAVA A. M., Ayhan U., Aban V. V. IEEE Energy Conversion Congress and Exposition (ECCE), North-Carolina, United States Of America, 15 - 20 September 2012, pp.4592-4599

# XXV. Analysis and Characterization of DC Bus Ripple Current of Two-Level Inverters Using The Equivalent Centered Harmonic Approach Ayhan U., HAVA A. M.

IEEE Energy Conversion Congress and Exposition (ECCE), Arizona, United States Of America, 17 - 22 September

2011, pp.3830-3837 XXVI. Leakage Current Analysis of Grid Connected Transformerless Solar Inverters with Zero Vector Isolation Ozkan Z., HAVA A. M. IEEE Energy Conversion Congress and Exposition (ECCE), Arizona, United States Of America, 17 - 22 September 2011, pp.2460-2466 XXVII. Environment-friendly Uninterruptible Power Supply (UPS) Systems Gunes I., Ustuntepe B., Islek M., Ece N., HAVA A. M. International Exhibition and Conference for Power Electronics, Intelligent Motion and Power Quality (PCIM Europe 2010), Nuremberg, Germany, 4 - 06 May 2010, pp.806-811 High Performance Harmonic Isolation By Means of The Single-phase Series Active Filter Employing XXVIII. The Waveform Reconstruction Method Senturk O. S., HAVA A. M. IEEE Energy Conversion Congress and Exposition, San-Jose, Costa Rica, 20 - 24 September 2009, pp.1383-1384 XXIX. On the Contribution of PWM Methods to the Common Mode (Leakage) Current in Conventional Three-phase Two-level Inverters as Applied to AC Motor Drives HAVA A. M., Cetin N. O., Uen E. IEEE Industry-Applications-Society Annual Meeting, Alberta, Canada, 5 - 09 October 2008, pp.146-153 XXX. High Performance Harmonic Isolation and Load Voltage Regulation of the Three-Phase Series Active Filter Utilizing the Waveform Reconstruction Method Sentuerk O. S., HAVA A. M. IEEE Industry-Applications-Society Annual Meeting, Alberta, Canada, 5 - 09 October 2008, pp.194-201 XXXI. A High Performance PWM Algorithm for Common Mode Voltage Reduction in Three-phase Voltage Source Inverters Uen E., HAVA A. M. 39th IEEE Power Electronic Specialists Conference (PESC 08), Rhodes, Greece, 15 - 19 June 2008, pp.1528-1534 Output voltage control of a four-leg inverter based three-phase UPS utilizing stationary frame XXXII. resonant filter banks HAVA A. M., Demirkutlu E. 2007 European Conference on Power Electronics and Applications, Aalborg, Denmark, 2 - 05 September 2007, pp.4925-4934 XXXIII. Performance characteristics of the reduced common mode voltage Near State PWM method Un E., HAVA A. M. 12th European Conference on Power Electronics and Applications, Aalborg, Denmark, 2 - 05 September 2007, pp.1061-1070 XXXIV. Performance enhancement and comparison of discrete time current regulators for parallel active filters Ozkaya H., Senturk O. S., HAVA A. M. 12th European Conference on Power Electronics and Applications, Aalborg, Denmark, 2 - 05 September 2007, pp.3689-3698 XXXV. Output voltage control of a four-leg inverter based three-phase UPS by means of stationary frame resonant filter banks Demirkutlu E., Cetinkaya S., HAVA A. M. IEEE International Electric Machines and Drives Conference (IEMDC 2007), Antalya, Turkey, 3 - 05 May 2007, pp.880-881 XXXVI. A Near State PWM Method With Reduced Switching Frequency And Reduced Common Mode Voltage For Three-Phase Voltage Source Inverters Uen E., HAVA A. M. IEEE International Electric Machines and Drives Conference (IEMDC 2007), Antalya, Turkey, 3 - 05 May 2007, pp.235-236 XXXVII. Performance enhancement of discrete time hysteresis current regulators and comparison with

 linear current regulators for parallel active filters
 Oezkaya H., Sentuerk O. S., HAVA A. M.
 IEEE International Electric Machines and Drives Conference (IEMDC 2007), Antalya, Turkey, 3 - 05 May 2007, pp.1282-1283
 XXXVIII.
 A novel two-parameter modulation and neutral point potential control method for the three-level neutral point clamped inverter
 Uestuentepe B., HAVA A. M.
 IEEE International Electric Machines and Drives Conference (IEMDC 2007), Antalya, Turkey, 3 - 05 May 2007, pp.742-743
 XXXIX.
 Performance analysis and comparison of reduced common mode voltage PWM and standard PWM techniques for three-phase voltage source inverters

Un E., Hava A.

21st Annual IEEE Applied Power Electronics Conference (APEC 2006), Texas, United States Of America, 19 - 23 March 2006, pp.303-309

# **Supported Projects**

HAVA A. M., ÖZKAN Z., Project Supported by Higher Education Institutions, MULTİ-KVA TRAFOSUZ FOTOVOLTAİK EVİRİCİLERİN TASARIMI, DENETİMİ VE GERÇEKLENMESİ, 2017 - 2017

HAVA A. M., Project Supported by Other Private Institutions, Radar Sistemleri Mekatronik Yönlendirme Çözümleri Araştırma-Geliştirme Projesi, 2016 - 2017

HAVA A. M., Project Supported by Other Private Institutions, Servo motor ve sürücü sistemlerinin geliştirilmesi ve tasarımında teknik destek, 2015 - 2016

# **Contractual Researches**

Hava A. M., Elektra Elektronik Sanayi ve Ticaret Anonim Şirketi, Dağıtım Şebekelerinde Kullanılmak Üzere 230V 150A Modüler Monofaze Şönt Aktif Harmonik Filtre Tasarımı ve Gerçeklenmesi, 2019 - 2020 Hava A. M., ELSİS Elektronik Sistemler Sanayi A.Ş., Yenilenebilir Enerji Sistemlerinde Kullanılmak Üzere Akıllı, Yüksek Verimli, Şebekeye Senkronize, Modüler İnvertör Sisteminin Geliştirilmesi, 2018 - 2019 HAVA A. M., aselsan, 2018 - 2018 HAVA A. M., VESTEL A.Ş. AR-GE PROJE, 2016 - 2018 HAVA A. M., ASELSAN ELEKTRONİK AR-GE PROJESİ, 2016 - 2017

## **Scientific Refereeing**

IEEE TRANSACTIONS ON ENERGY CONVERSION, SCI Journal, July 2020 IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, SCI Journal, January 2020

# Metrics

Publication: 59 Citation (WoS): 1556 Citation (Scopus): 1433 H-Index (WoS): 16 H-Index (Scopus): 17