

Asst. Prof. ONUR ELMA

Personal Information

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Biography

Onur Elma received his M.S. and Ph.D. degrees in Electrical engineering from Yıldız Technical University (YTU), Istanbul, Turkey, in 2011 and 2016 respectively. He worked as a project engineer in the industry between 2009 and 2010. He has been employed as a research assistant in the Electrical Engineering Department at YTU from 2011 to 2020. He has been in the Smart Energy Research Center (SMERC) at the University of California, Los Angeles (UCLA) as a visiting researcher from 2014 to 2015. He has worked as a post-doc researcher at the Ontario Tech University (ONTechU) from 2017-2020. He has worked as an Assistant Professor in the Department of Electrical Engineering at YTU between January-September 2021. He is currently working as an Assistant Professor at Canakkale 18 Mart University. He participates in many national and international projects also has more than 40 papers. His research interests include smart grid, electric vehicles, home energy management systems, energy storage, and renewable energy systems.

Education Information

Doctorate, Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Electrical Engineering, Turkey 2011 - 2016

Undergraduate, Anadolu University, Faculty Of Business Administration, Department Of Business, Turkey 2007 - 2012

Postgraduate, Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Elektrik Mühendisliği, Turkey 2009 - 2011

Undergraduate, Yildiz Technical University, Faculty Of Electrical & Electronics, Electrical Engineering Department, Turkey 2004 - 2009

Dissertations

Doctorate, Akıllı şebekeler için yeni bir ev enerji yönetim algoritmasının geliştirilmesi ve uygulanması, Yıldız Technical University, Graduate School Of Natural And Applied Sciences, 2016

Postgraduate, Yenilenebilir enerji kaynaklarından beslenen şebekeden bağımsız bir ev için talep ve kaynak dinamikleri dikkate alınarak sistem analizi, Yıldız Technical University, Graduate School Of Natural And Applied Sciences, 2011

Research Areas

Electrical and Electronics Engineering, Energy, Direct Energy Conversion and Energy Storage, Power System Analysis, Renewable energy, Engineering and Technology

Academic Titles / Tasks

Assistant Professor, Canakkale Onsekiz Mart University, Mühendislik Fakültesi, Elektronik Mühendisliği, 2021 - Continues

Assistant Professor, Yildiz Technical University, Faculty Of Electrical & Electronics, Electrical Engineering Department,
2021 - 2021

Research Assistant, Yildiz Technical University, Faculty Of Electrical & Electronics, Electrical Engineering Department,
2011 - 2021

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

- I. **An expansion planning method for extending distributed energy system lifespan with energy storage systems**
TERCAN S. M. , ELMA O., GÖKALP E., Cali U.
ENERGY EXPLORATION & EXPLOITATION, 2021 (Journal Indexed in SCI)
- II. **Modeling and simulation of the International Space Station (ISS) electrical power system**
Kuzlu M., Abalos K., Elma O., Popescu O., Pipattanasomporn M.
INTERNATIONAL TRANSACTIONS ON ELECTRICAL ENERGY SYSTEMS, vol.31, no.8, 2021 (Journal Indexed in SCI)
- III. **A dynamic charging strategy with hybrid fast charging station for electric vehicles**
Elma O.
ENERGY, vol.202, 2020 (Journal Indexed in SCI)
- IV. **Experimental determination of ZIP coefficients for residential appliances and ZIP model based appliance identification: The case of YTU Smart Home**
Bircan M., DURUSU A., KEKEZOĞLU B., ELMA O., SELAMOĞULLARI U. S.
ELECTRIC POWER SYSTEMS RESEARCH, vol.179, 2020 (Journal Indexed in SCI)
- V. **A smart transformer application for voltage controlled home energy management system**
SELAMOĞULLARI U. S. , ELMA O.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.33, no.4, pp.1543-1556, 2018 (Journal Indexed in SCI)
- VI. **Implementation of a dynamic energy management system using real time pricing and local renewable energy generation forecasts**
ELMA O., Tascikaraoglu A., Ince A. T. , SELAMOĞULLARI U. S.
ENERGY, vol.134, pp.206-220, 2017 (Journal Indexed in SCI)
- VII. **A new home energy management algorithm with voltage control in a smart home environment**
ELMA O., SELAMOĞULLARI U. S.
ENERGY, vol.91, pp.720-731, 2015 (Journal Indexed in SCI)
- VIII. **Real-time performance analysis of an optimally sized hybrid renewable energy conversion unit**
ERDİNÇ O., ELMA O., Uzunoglu M., SELAMOĞULLARI U. S.
ENERGY AND BUILDINGS, vol.75, pp.419-429, 2014 (Journal Indexed in SCI)
- IX. **A comparative sizing analysis of a renewable energy supplied stand-alone house considering both demand side and source side dynamics**
ELMA O., SELAMOĞULLARI U. S.
APPLIED ENERGY, vol.96, pp.400-408, 2012 (Journal Indexed in SCI)
- X. **Experimental performance assessment of an online energy management strategy for varying renewable power production suppression**
ERDİNÇ O., ELMA O., Uzunoglu M., SELAMOĞULLARI U. S. , Vural B., Uğur E., BOYNUEĞRİ A. R. , Dusmez S.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.37, no.6, pp.4737-4748, 2012 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **A Robust Building Energy Management Algorithm Validated in a Smart House Environment**
avijit s., murat k., manisa p., saifur r., ELMA O., SELAMOĞULLARI U. S. , UZUNOĞLU M., YAĞCITEKİN B.
Intelligent Industrial Systems, vol.1, no.2, pp.163-174, 2015 (Refereed Journals of Other Institutions)

Books & Book Chapters

- I. **Smart Home and Building Energy Management Systems**
Elma O., Kuzlu M., Pipattanasomporn M.
in: Smart Energy Management Systems and Renewable Energy Resources, Mohammad Rizwan, Majid Jamil, Editor, AIP (American Institute of Physics) Press, New York, 2021
- II. **Perspectives of Demand-Side Management Under Smart Grid Concept**
Elma O., Gabar H.
in: Energy Conservation in Residential, Commercial, and Industrial Facilities, Hossam A. Gabbar, Editor, John Wiley & Sons, West Sussex, UK, New Jersey, pp.225-247, 2018

Refereed Congress / Symposium Publications in Proceedings

- I. **An Interpretable Solar Photovoltaic Power Generation Forecasting Approach Using An Explainable Artificial Intelligence Tool**
Sarp S., Kuzlu M., Cali U., Elma O., Guler O.
IEEE-Power-and-Energy-Society Innovative Smart Grid Technologies Conference (ISGT), Washington, Kiribati, 16 - 18 February 2021
- II. **Effects of Ultra-Fast Charging System for Battery Size of Public Electric Bus**
ELMA O., Adham M. I., Gaber H.
8th International Conference on Smart Energy Grid Engineering, SEGE 2020, Oshawa, Canada, 12 August 2020
- III. **Flywheel-Based Ultra-Fast On-Route Charging System for Public E-Buses**
ELMA O., Gaber H.
2020 International Conference on Electrical, Communication, and Computer Engineering (ICECCE), İstanbul, Turkey, 12 June 2020
- IV. **Smoothing PV Power Fluctuations with Electric Vehicle and its Grid Interaction**
Verma A. K., ELMA O., Wang Y., Pota H. R., Gadh R., Srivastava M.
2020 IEEE International Conference on Power Electronics, Smart Grid and Renewable Energy, Kochi, India, 02 January 2020
- V. **Design and Analysis of Mobile Hybrid Energy System for Off-Grid Applications**
ELMA O., Gaber H.
2019 International Conference on Power Generation Systems and Renewable Energy Technologies (PGSRET), İstanbul, Turkey, 26 - 27 August 2019
- VI. **Economic Analysis of Demand Response with Voltage Control in Residential Environment**
ELMA O., SELAMOĞULLARI U. S.
ICSG 2019, 20 - 23 April 2019
- VII. **Sizing Analysis of Hybrid DC Fast Charging System for Electric Vehicles**
ELMA O., Gabbar H.
2018 International Conference on Smart Energy Systems and Technologies (SEST), Sevilla, Spain, 10 - 12 September 2018
- VIII. **A survey of a residential load profile for demand side management systems**
ELMA O., SELAMOĞULLARI U. S.
2017 IEEE International Conference on Smart Energy Grid Engineering (SEGE), Oshawa, ON, Canada, 14 - 17 August 2017
- IX. **Determination of ZIP Coefficients for Residential Loads**
bircan m., DURUSU A., KEKEZOĞLU B., ELMA O., SELAMOĞULLARI U. S.
2nd WORLD CONFERENCE ON TECHNOLOGY, INNOVATION AND ENTREPRENEURSHIP, İstanbul, Turkey, 12 - 14 May 2017, vol.5, pp.176-180
- X. **An overview of demand response applications under smart grid concept**
ELMA O., SELAMOĞULLARI U. S.

2017 4th International Conference on Electrical and Electronic Engineering (ICEEE), Ankara, Turkey, 8 - 10 April 2017

- XI. **The Importance of Smart Meter for Transition of Smart Grid in Turkey**
KIRAL G. E., ELMA O.
2nd International Conference & Expo on Green Energy, ATLANTA, United States Of America, 28 - 30 November 2016
- XII. **A home energy management algorithm with smart plug for maximized customer comfort**
ELMA O., SELAMOĞULLARI U. S.
2015 4th International Conference on Electric Power and Energy Conversion Systems (EPECS), Sharjah, United Arab Emirates, 24 - 26 November 2015
- XIII. **Photovoltaic System Design Feasibility and Financial Outcomes for Different Regions in Turkey**
Alper K., ÜLKER F., ELMA O.
Fourth International Conference on Electric Power and Energy Conversion Systems (EPECS 2015), Saraj, Macedonia, 24 - 26 November 2015
- XIV. **New Home Energy Management for Maximize Customer Comfort**
ELMA O., SELAMOĞULLARI U. S.
Fourth International Conference on Electric Power and Energy Conversion Systems (EPECS 2015), Saraj, Macedonia, 24 - 26 November 2015
- XV. **A New Smart Plug for Home Energy Management**
KIRAL G. E., ELMA O., Ahmet Tahir İ., VURAL B., SELAMOĞULLARI U. S., UZUNOĞLU M.
ICPESE 2015: International Conference on Power and Energy Systems Engineering, Paris, France, 27 - 28 August 2015
- XVI. **Analyzing the effect of inverter efficiency improvement in wind turbine systems**
ÖZDEMİR S., SELAMOĞULLARI U. S., ELMA O.
2014 International Conference on Renewable Energy Research and Application (ICRERA), Milwaukee, WI, USA, 19 - 22 October 2014
- XVII. **Data Reliability and Latency Test for ZigBee based Smart Home Energy Management Systems**
Ahmet Tahir İ., ELMA O., SELAMOĞULLARI U. S., PARTAL H. P., VURAL B.
7th International Ege Energy Symposium & Exhibition, Uşak, Turkey, 18 - 20 June 2014
- XVIII. **Financial payback analysis of small wind turbines for a smart home application in Istanbul/Turkey**
Uğur E., ELMA O., SELAMOĞULLARI U. S., TANRIÖVEN M., UZUNOĞLU M.
2013 International Conference on Renewable Energy Research and Applications (ICRERA), Madrid, Spain, 20 - 23 October 2013
- XIX. **Carbon emission savings with a renewable energy supplied smart home operation**
ELMA O., SELAMOĞULLARI U. S., UZUNOĞLU M., Uğur E.
2013 International Conference on Renewable Energy Research and Applications, 20 October - 23 January 2013
- XX. **A home energy management algorithm in a smart house integrated with renewable energy**
Saha A., Murat K., Khamphanchai W., Manisa P., Rahman S., ELMA O., UZUNOĞLU M., YAĞCITEKİN B.
IEEE PES Innovative Smart Grid Technologies, Europe, Istanbul, Turkey, Turkey, 12 - 15 October 2014
- XXI. **Analyzing the Capacity Utilization Rate of Traction Motor Drives in Electric Vehicles with Real World Driving Cycles**
ÖZDEMİR S., ELMA O., Acar F., SELAMOĞULLARI U. S.
Vehicle Power and Propulsion Conference (VPPC), 2014 IEEE, Portugal, 27 - 30 October 2013
- XXII. **Smart grid ready concept of a smart home prototype A demonstration project in YTU**
taşçıkaroğlu a., UZUNOĞLU M., TANRIÖVEN M., BOYNUEĞRİ A. R., ELMA O.
Power Engineering, Energy and Electrical Drives (POWERENG), 2013 Fourth International Conference on, 13 - 17 May 2013

Supported Projects

Elma O., Gabar H., Project Supported by Public Organizations in Other Countries, Analysis and Design of Fast Charging System with Flywheel Energy Storage Platform, 2020 - 2020

Elma O., Gabar H., Project Supported by Public Organizations in Other Countries, Development of Resilient Microgrids in Trailers, 2018 - 2019

Selamoğulları U. S. , TUBITAK Project, Elektrikli Araçlar için Daha Verimli Bir Motor Sürücü Devresi Tasarımı ve Kontrolü, 2013 - 2015

Selamoğulları U. S. , Uzunoğlu M., Vural B., Industrial Thesis Project, Akıllı Şebekelerde Enerji Yönetimi İçin Akıllı Priz Geliştirilmesi, 2013 - 2014

Patent

Elma O., Bina enerji yönetimi için güç tüketimi kontrolü yapan bir priz,, Patent, CHAPTER H Electricity, The Invention Registration Number: 2014 00929 , Initial Registration, 2018

Elma O., Taşcıkaroğlu A., Uzunoğlu M., Boynueğri A. R. , A SMART BUILDING SYSTEM WITH ENERGY MANAGEMENT ABILITY, Patent, CHAPTER H Electricity, The Invention Registration Number: WO 2015/084285 A1 , Registration in Multiple Countries, 2015

Scientific Refereeing

ELECTRIC POWER SYSTEMS RESEARCH, Journal Indexed in SCI-E, October 2021

ENERGY, Journal Indexed in SCI-E, October 2021

Citations

Total Citations (WOS):213

h-index (WOS):7

Scholarships

2214-A, TUBITAK, 2014 - 2015

2211-C, TUBITAK, 2013 - 2014

Turkcell Akademi Bursu, Special Institutions and Organizations, 2012 - 2013

Awards

Elma O., Gabar H., Best paper award, International Conference On Power Generation Systems And Renewable Energy Technologies, August 2019