

Asst. Prof. MUSTAFA ALPARSLAN ZEHİR

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: AAG-3040-2020

ScopusID: 55363508500

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Education Information

Doctorate, Istanbul Technical University, Fen Bilimleri Enstitüsü, Turkey 2013 - 2019

Postgraduate, Istanbul Technical University, Fen Bilimleri Enstitüsü, Turkey 2011 - 2013

Undergraduate, Istanbul Technical University, Elektrik-Elektronik, Elektrik Mühendisliği, Turkey 2005 - 2010

Foreign Languages

English, C2 Mastery

Dissertations

Doctorate, Şebeke etkileşimli tüketiciler ile toplu talep yönetimi, Istanbul Technical University, Fen Bilimleri Enstitüsü, 2019

Postgraduate, Akıllı şebekelerde termostat kontrollü yükler için gelişmiş yerel talep yönetim sistemi tasarımı, Istanbul Technical University, Fen Bilimleri Enstitüsü, 2013

Research Areas

Simulation and Modelling, Human Computer Interaction, Automated Problem Solving, Theorem Proving and Logical Reasoning, Programming Languages, Direct Energy Conversion and Energy Storage, Power System Analysis, Generating Stations and Plants, Electric Power Transmission, Distribution and Protection, Renewable energy, High Voltage Technique

Academic Titles / Tasks

Assistant Professor, Marmara University, Faculty of Engineering, Electrical and Electronics Engineering, 2020 - Continues

Research Assistant, Istanbul Technical University, Elektrik-Elektronik, Elektrik Mühendisliği, 2011 - 2019

Academic and Administrative Experience

Deputy Head of Department, Marmara University, Faculty of Engineering, Electrical and Electronics Engineering, 2022 - Continues

Courses

High Voltage Techniques I, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021

Electrical Circuits II, Undergraduate, 2022 - 2023

Introduction to Electrical Engineering, Undergraduate, 2021 - 2022

Power System Protection, Undergraduate, 2020 - 2021

Electrical Circuits I, Undergraduate, 2021 - 2022, 2020 - 2021

Selected Topics in Electrical Engineering, Postgraduate, 2021 - 2022

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Voltage constraint-oriented management of low carbon technologies in a large-scale distribution network**
Sengor I., Mehigan L., ZEHİR M. A., Cuenca J. J., Geaney C., Hayes B. P.
Journal of Cleaner Production, vol.408, 2023 (SCI-Expanded)
- II. **A Dual Distributed Optimal Energy Management Method for Distribution Grids With Electric Vehicles**
Hoang P. H., Ozkan G., Badr P. R., Papari B., Edrington C. S., ZEHİR M. A., Hayes B., Mehigan L., Kez D. A., Foley A. M.
IEEE Transactions on Intelligent Transportation Systems, vol.23, no.8, pp.13666-13677, 2022 (SCI-Expanded)
- III. **Synergies Between Low Carbon Technologies in a Large-Scale MV/LV Distribution System**
Mehigan L., ZEHİR M. A., Cuenca J. J., Sengor I., Geaney C., Hayes B. P.
IEEE ACCESS, vol.10, pp.88655-88666, 2022 (SCI-Expanded)
- IV. **A critical evaluation of grid stability and codes, energy storage and smart loads in power systems with wind generation**
Al Kez D., Foley A. M., McIlwaine N., Morrow D. J., Hayes B. P., Zehir M. A., Mehigan L., Papari B., Edrington C. S., Baran M.
ENERGY, vol.205, 2020 (SCI-Expanded)
- V. **Development and Field Demonstration of a Gamified Residential Demand Management Platform Compatible with Smart Meters and Building Automation Systems**
Zehir M. A., Ortac K. B., Gul H., Batman A., Aydin Z., Portela J. C., Soares F. J., Bağrıyanık M., Kucuk U., Özdemir A.
ENERGIES, vol.12, no.5, 2019 (SCI-Expanded)
- VI. **Impacts of microgrids with renewables on secondary distribution networks**
Zehir M. A., Batman A., Sonmez M. A., Font A., Tsiamitros D., Stimoniari D., Kollatou T., Bağrıyanık M., Özdemir A., Dialynas E.
APPLIED ENERGY, vol.201, pp.308-319, 2017 (SCI-Expanded)
- VII. **Demand-side management by integrating bus communication technologies into smart grids**
Stimoniari D., Kollatou T., Tsiamitros D., Zehir M. A., Batman A., Bağrıyanık M., Özdemir A., Dialynas E.
ELECTRIC POWER SYSTEMS RESEARCH, vol.136, pp.251-261, 2016 (SCI-Expanded)
- VIII. **Review and comparison of demand response options for more effective use of renewable energy at consumer level**
Zehir M. A., Batman A., Bağrıyanık M.
RENEWABLE & SUSTAINABLE ENERGY REVIEWS, vol.56, pp.631-642, 2016 (SCI-Expanded)
- IX. **Demand Side Management by controlling refrigerators and its effects on consumers**
Zehir M. A., Bağrıyanık M.
ENERGY CONVERSION AND MANAGEMENT, vol.64, pp.238-244, 2012 (SCI-Expanded)

Books & Book Chapters

I. Distribution Network Oriented Demand Response

Zehir M. A., Bağriyanik M.

in: Electric Distribution Network Management and Control, Arefi, Ali, Shahnian, Farhad, Ledwich, Gerard, Editor, Springer, London/Berlin, Singapore, pp.111-129, 2018

Refereed Congress / Symposium Publications in Proceedings

I. Holistic Performance Benchmarking in Power Systems with Distributed Control under Disruptive Cyberattacks

Badr P. R., Papari B., Robison A., Edrington C. S., Abulebdah A., ZEHİR M. A., Hammad E.

IEEE/AIAA Transportation Electrification Conference / Electric Aircraft Technologies Symposium (ITEC+EATS), California, United States Of America, 15 - 17 June 2022, pp.640-646

II. Development of a Vehicle-to-Grid (V2G) Energy Management System to Mitigate Local Operational Challenges in Low Voltage Distribution Networks with Photovoltaics

Gunes F., ZEHİR M. A.

4th IEEE Global Power, Energy and Communication Conference (IEEE GPECOM), Cappadocia, Turkey, 14 - 17 June 2022, pp.389-394

III. Technical Coordination of Aggregated Electric Vehicle Charging and Residential Loads at the Medium Voltage Level

Dumlu F., ZEHİR M. A.

4th IEEE Global Power, Energy and Communication Conference (IEEE GPECOM), Cappadocia, Turkey, 14 - 17 June 2022, pp.546-551

IV. Impact of Cyber-attacks on EV Charging Coordination: The Case of Single Point of Failure

Gumrukcu E., Arsalan A., Muriithi G., Joglekar C., Aboulebdah A., ZEHİR M. A., Papari B., Monti A.

4th IEEE Global Power, Energy and Communication Conference (IEEE GPECOM), Cappadocia, Turkey, 14 - 17 June 2022, pp.506-511

V. Cloud-based Optimal Energy Scheduling of Photovoltaics and Electric Vehicle-integrated Community Microgrids

ZEHİR M. A., Dogan O. T., Merdanoglu H., Yakici E., DURAN S., Akyildirim H. C.

4th IEEE Global Power, Energy and Communication Conference (IEEE GPECOM), Cappadocia, Turkey, 14 - 17 June 2022, pp.535-540

VI. High-Fidelity Electric Vehicle Energy Consumption Modelling and Investigation of Factors in Driving on Energy Consumption

Kocaarslan İ., ZEHİR M. A., Uzun E., Uzun E. C., Korkmaz M. E., Cakiroglu Y.

4th IEEE Global Power, Energy and Communication Conference (IEEE GPECOM), Cappadocia, Turkey, 14 - 17 June 2022, pp.227-231

VII. Investigation of Residential Demand Response Flexibility Including the Effects of the COVID-19 Pandemic on Energy Usage Habits in Turkey

Tanugur M. M., ZEHİR M. A.

4th IEEE Global Power, Energy and Communication Conference (IEEE GPECOM), Cappadocia, Turkey, 14 - 17 June 2022, pp.523-528

VIII. Designing laboratory experiments for electricity grid integration of renewable energy using microgrid, test-rig emulators and real time simulation tools

Murray D., Erdogan N., Zehir M. A., Hayes B.

Engineering Education for Sustainable Development (EESD2021), Cork, Ireland, 14 - 16 June 2021, pp.1-8

IX. Optimal Electric Vehicle Scheduling in Residential Distribution Networks Considering Customer Charging Preferences

Cam M. L., Alparslan Zehir M. A., Hayes B.

2021 IEEE Madrid PowerTech, PowerTech 2021, Madrid, Spain, 28 June - 02 July 2021

- X. **Distribution feeder-level multi-temporal coordination of electric vehicle charging flexibilities considering rebound impact and vehicle owner preferences**
Zehir M. A., Hayes B.
CIRED Workshop 2020 Berlin, 22 September 2020, pp.487-489
- XI. **Modeling for cross-domain electromobility simulations**
Yavuzer A., Gümrükcü E., Zehir M. A., Monti A.
2020 IEEE Power and Energy Student Summit, PESS 2020, Darmstadt, Virtual, Germany, 5 - 07 October 2020, pp.217-222
- XII. **Detailed Evaluation of Long-term Gamified Residential Demand Management System Field Implementation**
Dashti N., Zehir M. A., Gul H., Batman A., Bağrıyanık M., Özdemir A., Kucuk U., Soares F. J.
20th International Conference on Intelligent System Application to Power Systems, ISAP 2019, New Delhi, India, 10 - 14 December 2019
- XIII. **Real-time Grouped Management of Electric Vehicle Battery Chargers (EVBCs) for Voltage Profile Improvement in Radial Distribution Networks**
Zehir M. A., Hayes B., Djokic S. Z.
2019 IEEE PES Innovative Smart Grid Technologies Europe, ISGT-Europe 2019, Bucharest, Romania, 29 September - 02 October 2019
- XIV. **Analysis of consumer expectations, preferences and concerns on deployment of demand response in Turkey**
Zehir M. A., Erpaytoncu S., Yilmaz E., Baici D., Batman A., Bağrıyanık M., Kucuk U., Soares F., Özdemir A.
10th International Conference on Electrical and Electronics Engineering, ELECO 2017, Bursa, Turkey, 29 November - 02 December 2017, pp.1262-1266
- XV. **GReSBAS project: A gamified approach to promote more energy efficient behaviours in buildings**
Barbosa A., Iria J., Cassola F., Coelho A., Portela J., Kucuk U., Madureira A., Zehir M. A., Özdemir A., Soares F.
10th International Conference on Electrical and Electronics Engineering, ELECO 2017, Bursa, Turkey, 29 November - 02 December 2017, pp.1258-1261
- XVI. **Aggregated active and reactive power and energy management of distributed energy resources and performance evaluation**
Zehir M. A., Barbosa A., Sandroni C., Pellegrino L., Lazzari R., Verga M., Bağrıyanık M., Kucuk U., Soares F. J., Özdemir A.
Mediterranean Conference on Power Generation, Transmission, Distribution and Energy Conversion, MEDPOWER 2018, Dubrovnik, Croatia, 12 - 15 November 2018, vol.2018
- XVII. **Demand Response by Real-time Management of Flexible Loads using Dynamic Priorities**
Sönmez M. Ş., Zehir M. A., Bağrıyanık M.
6th International Istanbul Smart Grids and Cities Congress and Fair (ICSG), İstanbul, Turkey, 25 - 26 April 2018, pp.155-159
- XVIII. **Demand Response with Residential and Commercial Loads for Phase Balancing in Secondary Distribution Networks**
Zacharaki V., Zehir M. A., Thavlov A., Heussen K., Batman A., Tsiamitros D., Stimoniaris D., Özdemir A., Dialynas E., Bağrıyanık M.
6th International Istanbul Smart Grids and Cities Congress and Fair (ICSG), İstanbul, Turkey, 25 - 26 April 2018, pp.124-128
- XIX. **Management of Inverter-based Distributed Energy Resources for Providing Voltage Regulation Support in Islanded Operation of Low Voltage Networks**
Zehir M. A., Bargiyanik M., Özdemir A., Barbosa A., Soares F. J., Sandroni C., Pellegrino L., Lazzari R., Verga M., Kucuk U.
53rd International Universities Power Engineering Conference (UPEC), Glasgow, United Kingdom, 4 - 07 September 2018
- XX. **Identification and Comparison of Power and Energy Management Capabilities of Distributed Energy**

Resources

Zehir M. A., Barbosa A., Sandroni C., Pellegrino L., Lazzari R., Verga M., Bağrıyanık M., Kucuk U., Soares F. J., Özdemir A.

6th International Istanbul Smart Grids and Cities Congress and Fair (ICSG), İstanbul, Turkey, 25 - 26 April 2018, pp.119-123

- XXI. **Building automation systems and smart meter integrated residential customer platform**
Aydin Z., Portela J. C., Kucuk U., Zehir M. A., Gul H., Bağrıyanık M., Soares F. J., Özdemir A.
Mediterranean Conference on Power Generation, Transmission, Distribution and Energy Conversion, MEDPOWER 2018, Dubrovnik, Croatia, 12 - 15 November 2018, vol.2018
- XXII. **Mitigation of Negative Impacts of Distributed Generation on LV Distribution Networks through Microgrid Management Systems**
Zehir M. A., Batman A., Sönmez M. Ş., Font A., Tsiamitros D., Stimoniaris D., Zacharaki V., Orth C., Bağrıyanık M., Özdemir A., et al.
IEEE Manchester PowerTech, Manchester, United Kingdom, 18 - 22 June 2017
- XXIII. **A Novel Incentive-based Retail Demand Response Program for Collaborative Participation of Small Customers**
Zehir M. A., Wevers M. H., Batman A., Bağrıyanık M., Hurink J. L., Kucuk U., Soares F. J., Özdemir A.
IEEE Manchester PowerTech, Manchester, United Kingdom, 18 - 22 June 2017
- XXIV. **Analysis of critical operating conditions for LV distribution networks with microgrids**
Zehir M. A., Batman A., Sönmez M. Ş., Font A., Tsiamitros D., Stimoniaris D., Kollatou T., Bağrıyanık M., Özdemir A., Dialynas E.
20th Innovative Manufacturing Engineering and Energy Conference (IManEE), Kallithea, Greece, 23 - 25 September 2016, vol.161
- XXV. **Impact of renewable based microgrid supply/demand profiles on low voltage distribution networks**
Zehir M. A., Batman A., Sönmez M. Ş., Font A., Tsiamitros D., Stimoniaris D., Kollatou T., Bağrıyanık M., Özdemir A., Dialynas E.
Applied Energy Symposium and Submit on Renewable Energy Integration with Mini/Microgrid (REM), Maldives, 19 - 21 April 2016, vol.103, pp.231-236
- XXVI. **Smart energy aggregation network (SEAN): An advanced management system for using distributed energy resources in virtual power plant applications**
Zehir M. A., Bağrıyanık M.
3rd International Istanbul Smart Grid Congress and Fair, ICSG 2015, İstanbul, Turkey, 29 - 30 April 2015
- XXVII. **Development of a Field Data-based Virtual Test Bed for Microgrid Integration of Building Automation Technologies**
Zehir M. A., Batman A., Sönmez M. Ş., Font A., Tsiamitros D., Stimoniaris D., Kollatou T., Bağrıyanık M., Özdemir A., Dialynas E.
9th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 26 - 28 November 2015, pp.51-55
- XXVIII. **Cooperation scheme between KNX and a microgrid control system for enhanced demand-side management**
Stimoniaris D., Kollatou T., Tsiamitros D., Gavros K., Kikis V., Asimonis S., Zehir M. A., Batman A., Bağrıyanık M., Özdemir A., et al.
9th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 26 - 28 November 2015, pp.46-50
- XXIX. **Advanced Energy Storage and Demand-Side Management in Smart Grids using Buildings Energy Efficiency Technologies**
Tsiamitros D., Stimoniaris D., Poulakis N., Zehir M. A., Batman A., Bağrıyanık M., Özdemir A., Dialynas E.
5th IEEE PES Innovative Smart Grid Technologies Conference Europe (ISGT Europe), İstanbul, Turkey, 12 - 15 October 2014
- XXX. **An event-driven energy management system for planned control of thermostatic loads**
Zehir M. A., Batman A., Bağrıyanık M.

2013 IEEE Grenoble Conference PowerTech, POWERTECH 2013, Grenoble, France, 16 - 20 June 2013

XXXI. Demand response planning tool for management method evaluation and tariff design

Zehir M. A., Bağrıyanık M.

2013 4th IEEE/PES Innovative Smart Grid Technologies Europe, ISGT Europe 2013, Lyngby, Denmark, 6 - 09 October 2013

XXXII. Akıllı Şebekelerde Gelişmiş Yerel Talep Yönetimi

Zehir M. A., Bağrıyanık M.

5. Enerji Verimliliği ve Kalitesi Sempozyumu (EVK), Kocaeli, Turkey, 23 - 24 May 2013

XXXIII. Impulsive Noise Survey on Power Line Communication Networks up to 125 kHz for Smart Metering Infrastructure in Systems with Solar Inverters in Turkey

Sönmez M. Ş., Zehir M. A., Bağrıyanık M., Nak O.

International Conference on Renewable Energy Research and Applications (ICRERA), Madrid, Spain, 20 - 23 October 2013, pp.705-710

XXXIV. Demand Side Management potential of refrigerators with different energy classes

Zehir M. A., Bağrıyanık M.

2012 47th International Universities Power Engineering Conference, UPEC 2012, London, United Kingdom, 4 - 07 September 2012

XXXV. Evaluation of management strategies for thermostatic loads in smart grid

Zehir M. A., Bağrıyanık M.

2012 3rd IEEE PES Innovative Smart Grid Technologies Europe, ISGT Europe 2012, Berlin, Germany, 14 - 17 October 2012

Supported Projects

Özdemir A., Bağrıyanık M., EU Supported Other Project, Bina Otomasyon Sistemleri ve Şebeke Etkileşimli Toplum Grid Responsive Society through Building Automation Systems GReSBAS Proje No 115E816, 2016 - 2019

Özdemir A., Bağrıyanık M., TÜBİTAK International Bilateral Joint Cooperation Program Project, Smart Electrical Energy Management and Buildings Energy Efficiency Technologies Elektrik Enerjisinin Akıllı Yönetimi ve Binalarda Enerji Verimliliği Teknolojileri Proje No 113E286, 2014 - 2015

Metrics

Publication: 45

Citation (WoS): 228

Citation (Scopus): 310

H-Index (WoS): 7

H-Index (Scopus): 8

Non Academic Experience

Platin Yapı Mühendislik