

Prof. Belgin Trkay

Personal Information

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International Researcher IDs

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Education Information

Doctorate, Istanbul Technical University, Elektrik-Elektronik Fakltesi, Elektrik Mhendislięi Blm, Turkey 1986 - 1993

Foreign Languages

English, B2 Upper Intermediate

Dissertations

Postgraduate, DC iletimde maliyet, İstanbul Teknik Üniversitesi, Elektrik Mhendislięi, Elektrik Mhendislięi Anabilimdalı, 1985

Research Areas

Technical Sciences, Electrical and Electronics Engineering, Energy, Generating Stations and Plants, Electric Power Transmission, Distribution and Protection, Renewable energy

Academic Titles / Tasks

Professor, Istanbul Technical University, Elektrik-Elektronik Fakltesi, Elektrik Mhendislięi Blm, 2011 - Continues

Professor, Istanbul Technical University, Elektrik-Elektronik Fakltesi, Elektrik Mhendislięi Blm, 2011 - Continues

Professor, Istanbul Technical University, Elektrik-Elektronik Fakltesi, Elektrik Mhendislięi Blm, 2011 - Continues

Associate Professor, Istanbul Technical University, Elektrik-Elektronik Fakltesi, Elektrik Mhendislięi Blm, 1997 - Continues

Academic and Administrative Experience

İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakltesi, Elektrik Mhendislięi Blm, 2014 - Continues

İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Elektrik Mühendisliği Bölümü, 2014 - 2017

İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, 2001 - 2004

İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, 2001 - 2004

İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Elektrik Mühendisliği Bölümü, 2000 - 2001

İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Elektrik Mühendisliği Bölümü, 1998 - 2000

İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Elektrik Mühendisliği Bölümü, 1997 - 1998

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **A robust crow search algorithm based power system state estimation**
Andiç C., Ozturk A., Turkey B.
Energy Reports, vol.9, pp.490-501, 2023 (SCI-Expanded)
- II. **Power system state estimation using a robust crow search algorithm based on PMUs with limited number of channels**
Andiç C., Ozturk A., Turkey B.
Electric Power Systems Research, vol.217, 2023 (SCI-Expanded)
- III. **Optimizing Security Systems with an Optimum Design of a Hybrid Renewable Energy System**
Kiyak M. H., Pürlü M., Emre Turkey B., Akıncı T. Ç.
Electric Power Components and Systems, 2023 (SCI-Expanded)
- IV. **Techno-Economic Comparative Analysis of Grid-connected and Islanded Hybrid Renewable Energy Systems in 7 Climate Regions, Turkey**
Ayan O., Turkey B.
IEEE Access, vol.11, pp.48797-48825, 2023 (SCI-Expanded)
- V. **Tap Staggering Analysis and Effects on the Adaptive Protection System in Networks With Renewable Energy Sources**
Kasap H., Pürlü M., Turkey B., Ganjavi R.
IEEE Access, vol.11, pp.138623-138637, 2023 (SCI-Expanded)
- VI. **A comparative study on harmonic analysis and thermal performance of different types of lamps for residential building**
Ayan O., Turkey B.
ENERGY REPORTS, vol.8, pp.932-945, 2022 (SCI-Expanded)
- VII. **Distribution network reconfiguration using time-varying acceleration coefficient assisted binary particle swarm optimization**
Hizarci H., Demirel O., Turkey B.
ENGINEERING SCIENCE AND TECHNOLOGY-AN INTERNATIONAL JOURNAL-JESTECH, vol.35, 2022 (SCI-Expanded)
- VIII. **Optimal Allocation of Renewable Distributed Generations Using Heuristic Methods to Minimize Annual Energy Losses and Voltage Deviation Index**
Pürlü M., Turkey B.
IEEE Access, vol.10, pp.21455-21474, 2022 (SCI-Expanded)
- IX. **Estimating the Distributed Generation Unit Sizing and Its Effects on the Distribution System by Using Machine Learning Methods**
Pürlü M., Turkey B.
ELEKTRONIKA IR ELEKTROTECHNIKA, vol.27, no.4, pp.24-32, 2021 (SCI-Expanded)
- X. **Wavelet Entropy and its Application for Flicker Contribution Evaluation**
SİLSÜPÜR M., Turkey B.
IEEE TRANSACTIONS ON ELECTRICAL AND ELECTRONIC ENGINEERING, vol.14, no.1, pp.67-74, 2019 (SCI-Expanded)
- XI. **Determination of Flicker Contribution Level by Using Proposed Index**
SİLSÜPÜR M., Turkey B. E.
ELEKTRONIKA IR ELEKTROTECHNIKA, vol.24, no.2, pp.18-26, 2018 (SCI-Expanded)

- XII. **A New Approach for Flicker Analysis Using Information-Theory-Based Wavelet Energy Entropy**
Silsupur M., Turkey B.
IEEE TRANSACTIONS ON ELECTRICAL AND ELECTRONIC ENGINEERING, vol.12, no.6, pp.961-962, 2017 (SCI-Expanded)
- XIII. **The prediction and penetration of wind energy with storage system analysis**
AKYÜREK B., Turkey B.
ENERGY SOURCES PART B-ECONOMICS PLANNING AND POLICY, vol.12, no.3, pp.211-215, 2017 (SCI-Expanded)
- XIV. **Economic analysis of standalone and grid connected hybrid energy systems**
Turkey B., TELLI A. Y.
RENEWABLE ENERGY, vol.36, no.7, pp.1931-1943, 2011 (SCI-Expanded)
- XV. **A novel differential evolution application to short-term electrical power generation scheduling**
Uyar A. Ş., Turkey B., KELES A.
INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS, vol.33, no.6, pp.1236-1242, 2011 (SCI-Expanded)
- XVI. **Electrical Load Forecasting Using Support Vector Machines a Case Study**
Dilara D., Turkey B.
International Review of Electrical Engineering-IREE, vol.6, no.5, pp.2411-2418, 2011 (SCI-Expanded)
- XVII. **An Economic Analysis of Grid-connected Hybrid Energy Systems**
Turkey B., TELLI A. Y.
ENERGY SOURCES PART B-ECONOMICS PLANNING AND POLICY, vol.6, no.3, pp.228-241, 2011 (SCI-Expanded)
- XVIII. **Application of a Fast Evolutionary Algorithm to Short-term Hydro-thermal Generation Scheduling**
Turkey B., MECITOGLU F., Baran Ş.
ENERGY SOURCES PART B-ECONOMICS PLANNING AND POLICY, vol.6, no.4, pp.395-405, 2011 (SCI-Expanded)
- XIX. **Evolutionary Algorithms for the Unit Commitment Problem**
Turkey B., UYAR A. Ş.
Turkish Journal of Electrical Engineering and Computer Sciences, vol.16, no.3, pp.239-255, 2008 (SCI-Expanded)
- XX. **Optimal Distribution Network Design Using Genetic Algorithms**
Turkey B., Taylan A.
Electric Power and Component Systems, vol.33, no.5, pp.513-524, 2005 (SCI-Expanded)

Articles Published in Other Journals

- I. **Power quality comparison of single-phase and three-phase inverter topologies for renewable energy systems**
TÜRKAY B., Saçlı M., AYAN O., Silsüpür M.
International Journal of Smart Grid and Clean Energy, vol.1, no.1, pp.174-183, 2019 (Peer-Reviewed Journal)
- II. **Flicker Source Detection Methods Based on IEC 61000 4 15 and Signal Processing Techniques A Review**
TÜRKAY B., SİLSÜPÜR M.
Balkan Journal of Electrical and Computer Engineering, vol.3, pp.93-97, 2015 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

- I. **False Data Injection Attacks on CSA-Based State Estimation in Smart Grid**
ANDIÇ C., ÖZTÜRK A., TÜRKAY B.
IEEE Global Energy Conference (GEC2022), Turkey, 26 October 2022, vol.1, pp.253-257
- II. **The Application of HBA Technique to Economic Dispatch: A Case Study From Turkey**
ANDIÇ C., AYDIN E., ÖZTÜRK A., TÜRKAY B.
IEEE Global Energy Conference (GEC2022), Turkey, 26 October 2022, vol.1, pp.258-261

- III. **Short Term Load Forecasting Using Machine Learning Algorithms: A Case Study in Turkey**
PÜRLÜ M., ANDIÇ C., TÜRKAY B., Nobari A.
IEEE Global Energy Conference (GEC2022), Turkey, 26 October 2022, vol.1, pp.13-18
- IV. **"False Data Injection Attacks on CSA-Based State Estimation in Smart Grid**
ANDIÇ C., ÖZTÜRK A., TÜRKAY B.
IEEE Global Energy Conference (GEC2022), Batman, Turkey, 26 - 29 October 2022, vol.1, pp.253-257
- V. **"Short-Term Load Forecasting Using Machine Learning Algorithms: A Case Study in Turkey**
Nobari A., PÜRLÜ M., ANDIÇ C., TÜRKAY B., Nobari A.
IEEE Global Energy Conference (GEC2022), Batman, Turkey, 26 - 29 October 2022, vol.1, pp.13-18
- VI. **The Application of HBA Technique to Economic Dispatch: A Case Study From Turkey**
ANDIÇ C., Aydın E., ÖZTÜRK A., TÜRKAY B.
IEEE Global Energy Conference (GEC2022, Batman, Turkey, 26 - 29 October 2022, vol.1, pp.258-259
- VII. **Optimum Energy Management in Electric Vehicle Parking Lots Using Heuristic Methods**
CANOL B., ANDIÇ C., PÜRLÜ M., TÜRKAY B.
2022 IEEE 4th Global Power, Energy and Communication Conference (GPECOM), Turkey, 14 - 17 June 2022, pp.473-477
- VIII. **Market-Clearing Price Forecasting Using Keras in Turkish Day-Ahead Electricity Market**
PÜRLÜ M., TÜRKAY B., ANDIÇ C., AYDIN E., CANOL B., KÜÇÜKASLAN B.
2022 IEEE 4th Global Power, Energy and Communication Conference (GPECOM), Turkey, 14 - 17 June 2022, pp.517-522
- IX. **Rotor Angle Stability Analysis by Using Lyapunov's Direct Method of a SMIB Power System**
ANDIÇ C., ÖZTÜRK A., TÜRKAY B.
2022 IEEE 4th Global Power, Energy and Communication Conference (GPECOM), Turkey, 14 - 17 June 2022, pp.296-300
- X. **Honey Badger Algorithm Based Tuning of PID Controller for Load Frequency Control in Two-Area Power System Including Electric Vehicle Battery**
ANDIÇ C., Özümcan S., ÖZTÜRK A., TÜRKAY B.
2022 IEEE 4th Global Power, Energy and Communication Conference (GPECOM), Turkey, 14 - 17 June 2022, pp.307-310
- XI. **Economic Dispatch of Multi-Microgrid Systems by Using Particle Swarm Optimization**
Aydın E., Pürlü M., Türkay B.
13th International Conference on Electrical and Electronics Engineering, ELECO 2021, Virtual, Bursa, Turkey, 25 - 27 November 2021, pp.268-272
- XII. **Optimal Design of Hybrid Grid-connected Microgrid with Renewable Energy and Storage in a Rural Area in Turkey by Using HOMER**
Pürlü M., Beyarslan S., Türkay B.
13th International Conference on Electrical and Electronics Engineering, ELECO 2021, Virtual, Bursa, Turkey, 25 - 27 November 2021, pp.263-267
- XIII. **Effects of Electric Vehicles on Distribution Network, Cost Analysis and Optimization with Genetic Algorithm**
ÇİFTÇİ H., TÜRKAY B.
ELECO, Bursa, Turkey, 28 - 30 November 2019
- XIV. **Short Circuit Analysis in Grid Connected with High Penetration of PV Systems**
Mustafaoglu S., ÇİFTÇİ H., TÜRKAY B.
ELECO, Bursa, Turkey, 28 - 30 November 2019
- XV. **Energy Quality Analysis Of Grid-Connected Solar Inverter Topologies**
Özli Ş., ÇİFTÇİ H., AYAN O., TÜRKAY B.
ELECO, Turkey, 28 - 30 November 2019
- XVI. **Elektrikli Araçların Dağıtım Şebekesine Etkisinin Maliyet Analizi ve Genetik Algoritma ile Optimizasyonu**
Çiftçi H., Yıldız B., Türkay B., Ayan O.

CIGRE Türkiye Güç Sistemleri Konferansı, Ankara, Turkey, 14 - 15 November 2018, pp.1-6

- XVII. **Dynamic Economic Dispatch with Valve Point Effect by Using GA**
TÜRKAY B., PÜRLÜ M.
CEIT 2018(6th International Conference on Control Engineering Inform, İstanbul, Turkey, 25 - 27 October 2018
- XVIII. **Improvement Of Home Energy Awareness Through The Designed Graphical User Interface**
TÜRKAY B., AYAN O.
CEIT 2018 (6th International Conference on Control Engineering Infor, İstanbul, Turkey, 25 - 27 October 2018
- XIX. **Accommodating Photovoltaics Integration Impacts on Distribution Network Protection System using Distance Relay**
ABED HEDAYA A. S., Turkey B.
2nd International Symposium on Multidisciplinary Studies and Innovative Technologies, ISMSIT 2018, Kizilcahamam, Ankara, Turkey, 19 - 21 October 2018
- XX. **Harmonic effects of Electric Vehicles on Low Voltage Distribution Ttransformers and Power Grid**
TÜRKAY B., AYAN O., CAN B., SİLSÜPÜR M.
2nd International Symposium on Multidisciplinary Innovative, Ankara, Turkey, 19 - 01 October 2018
- XXI. **An examination of the effects of distributed generation on distribution systems by load flow analysis**
TÜRKAY B., AYAN O., JAFARZADEH N.
20th International Symposium on Electrical Apparatus and Technologies, SIELA 2018, Burgas, Bulgaria, 3 - 06 July 2018
- XXII. **Energy management algorithm for peak demand reduction**
TÜRKAY B., AYAN O.
2018 20th International Symposium on Electrical Apparatus and Technologies, SIELA 2018, Burgas, Bulgaria, 3 - 06 July 2018
- XXIII. **Domestic electrical load management in smart grids and classification of residential loads**
TÜRKAY B., AYAN O.
5th International Conference on Electrical and Electronics Engineering, ICEEE 2018, İstanbul, Turkey, 3 - 05 May 2018
- XXIV. **Optimal capacitor placement in radial distribution system using genetic algorithm method**
Delkhooni M., Ayan O., Pürlü M., Turkey B.
10th International Conference on Electrical and Electronics Engineering, ELECO 2017, Bursa, Turkey, 29 November - 02 December 2017, vol.2018-January, pp.1491-1495
- XXV. **Harmonic Effects of Electric Vehicles on Low Voltage Distribution Transformers and Power Grid**
Can B., Ayan O., Silsupur M., Turkey B.
2nd International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT), Kizilcahamam, Turkey, 19 - 21 October 2018, pp.232-237
- XXVI. **Smart Thermostats for Home Automation Systems and Energy Savings from Smart Thermostats**
Ayan O., Turkey B.
6th International Conference on Control Engineering and Information Technology (CEIT), İstanbul, Turkey, 25 - 27 October 2018
- XXVII. **Dynamic Economic Dispatch with Valve Point Effect by Using GA and PSO Algorithm**
Pürlü M., Turkey B.
6th International Conference on Control Engineering and Information Technology (CEIT), İstanbul, Turkey, 25 - 27 October 2018
- XXVIII. **Optimal Capacitor Placement in Radial Distribution System Using Genetic Algorithm Method**
DELKHOONİ M., AYAN O., Purlu M., TÜRKAY B.
EMO, Bursa, Turkey, 30 November - 02 December 2017, vol.1, pp.1491-1495
- XXIX. **Investigation of Power Quality Analysis of Three-Phase Inverter Topologies for Renewable Energy Systems**
SAÇLI M., AYAN O., SİLSÜPÜR M., TÜRKAY B.
Bursa akademik Odalar birliği, Bursa, Turkey, 30 November - 02 December 2017, vol.1, pp.1145-1449

- XXX. **Smart Home Energy Management Technologies Based on Demand Side Management and A Review of Smart Plugs with Smart Thermostats**
 AYAN O., TÜRKAY B.
 EMO, Bursa, Turkey, 30 November - 02 December 2017, vol.1, pp.1247-1252
- XXXI. **Remote Controlled Load Shifting and Effects of ToU on end-Users**
 AYAN O., TÜRKAY B.
 4th international conference on computational and experimental science and engineering (iccesen), Antalya, Turkey, 4 - 08 October 2017, vol.1, pp.219
- XXXII. **Residential Load Management through Smart Plugs in Smart Grids**
 AYAN O., SAÇLI M., TÜRKAY B.
 International Conference on Condition Monitoring, Diagnosis and Maintenance, Bucharest, Romania, 25 - 27 September 2017, vol.1, pp.78-87
- XXXIII. **Investigation of Power Quality Analysis of Single-Phase Inverter Topologies for Solar Energy Systems**
 SAÇLI M., AYAN O., SİLSÜPÜR M., TÜRKAY B.
 Investigation of Power Quality Analysis of Single-Phase Inverter Topologies for Solar Energy Systems, Bucharest, Romania, 25 - 27 September 2017, vol.1, pp.88-96
- XXXIV. **Impact of Distributed Generation on Radial Distribution Network with Various Load Models**
 Hizarci H., Turkey B.
 52nd International Universities Power Engineering Conference (UPEC), Heraklion, Greece, 28 - 31 August 2017
- XXXV. **Economic and environmental load dispatch using genetic algorithm**
 AYAN O., SEVİL M., TÜRKAY B.
 Sustainable and Renewable energy engineering (ICSREE) konferans, Tokyo, Japan, 13 - 15 May 2017, vol.1, pp.760-763
- XXXVI. **Comparison of Lighting Technologies in Residential area for Energy conservation**
 AYAN O., TÜRKAY B.
 sustainable and Renewable energy engineering (ICSREE) konferans?, Tokyo, Japan, 13 - 15 May 2017, vol.1, pp.760-763
- XXXVII. **Economic and Environmental Load Dispatch Using Genetic Algorithm**
 Sevil M., Ayan O., Turkey B.
 2nd International Conference on Sustainable and Renewable Energy Engineering (ICSREE), Hiroshima, Japan, 10 - 12 May 2017, pp.53-57
- XXXVIII. **Transient Stability Analysis of the Transmission System Considering the Initial Steady State Results**
 TAVUKÇU E., TÜRKAY B.
 f the Transmission System Considering the Initial Steady State Results", 03/2017, s. 760-763, THE 10th INTERNATIONAL SYMPOSIUM ON ADVANCED TOPICS IN ELECTRICAL ENGI, Bükreş, Romania, 23 - 25 March 2017, vol.1, pp.750-753
- XXXIX. **Optimal Placement of Phasor Measurement Units for State Estimation in Smart Grid**
 Var H., Turkey B.
 National Conference on Electrical, Electronics and Biomedical Engineering (ELECO), Bursa, Turkey, 1 - 03 December 2016, pp.6-10
- XL. **Akıllı Şebekelerde Durum Kestrimi için Fazör ölçüm Birimlerinin Optimum Yerleştirilmesi**
 TÜRKAY B., VAR H.
 ELECO2016, Bursa, Turkey, 1 - 03 December 2016
- XLI. **İşaret İşleme ve Bilgi Kuramı Temelli Fliker Analizi**
 TÜRKAY B., SİLSÜPÜR M.
 GÜÇ SİSTEMLERİ KONFERANSI 2016, İstanbul, Turkey, 15 - 16 November 2016
- XLII. **Application of Information Theory in Smart Grid Measurements**
 Silsupur M., Turkey B.
 4th International Istanbul Smart Grid Congress and Fair (ICSG), İstanbul, Turkey, 20 - 21 April 2016, pp.122-125
- XLIII. **Application of Information Theory in Smart Grid Measurement**

SİLSÜPÜR M., TÜRKAY B.

ISCG Istanbul 2016, İstanbul, Turkey, 20 - 21 April 2016, pp.122-125

XLIV. Optimal Power Flow Solution Using Particle Swarm Optimization Algorithm

Türkay B., Cabadag R. I.

IEEE EUROCON Conference, Zagreb, Croatia, 1 - 04 July 2013, pp.1412-1418

Supported Projects

Türkay B., Çiftçi H., Project Supported by Higher Education Institutions, Dağıtım Şebekelerinde Gerilim Regülasyonu İçin Dağıtılmış Enerji Depolama Sistemlerinin Koordineli Kontrolü, 2018 - 2019

Türkay B., Project Supported by Higher Education Institutions, Rüzgar Enerjisinin Şebekeye Penetrasyonunda Depolama Sistemlerinin Yerleşimi, 2014 - 2018

Türkay B., Project Supported by Higher Education Institutions, Ünite Yüklenme Probleminin Parçacık Sürü Optimizasyonu Yönetimi ile Çözümü, 2012 - 2018

Türkay B., Project Supported by Higher Education Institutions, PARALEL REZONANSIN ENDÜSTRİDE TESPİTİ, 2010 - 2018

Türkay B., Project Supported by Higher Education Institutions, Meskenlerde Talep Tarafı Yönetimi ve Talep Cevabı Uygulamaları, 2016 - 2017

Türkay B., Project Supported by Higher Education Institutions, Genetik Algoritma İle Dağıtım Şebekelerinin Optimum Tasarımı, 2004 - 2005

Metrics

Publication: 69

Citation (WoS): 166

Citation (Scopus): 202

H-Index (WoS): 6

H-Index (Scopus): 11

Non Academic Experience

Matrikss Bilgi Dağıtım Hizmetleri