

# Prof. ERDAL BEKİROĞLU

## Personal Information

**Email:** erdalbekiroglu@gazi.edu.tr

**Web:** <https://avesis.gazi.edu.tr/erdalbekiroglu>

## International Researcher IDs

ScholarID: K2wsI88AAAAJ

## Education Information

Doctorate, Gazi University, Fen Bilimleri Enstitüsü, Elektrik Eğitimi, Turkey 1998 - 2003

Postgraduate, Gazi University, Fen Bilimleri Enstitüsü, Elektrik Eğitimi, Turkey 1995 - 1998

Undergraduate, Gazi University, Teknik Eğitim Fakültesi, Elektrik Eğitimi, Turkey 1990 - 1994

## Foreign Languages

English, C2 Mastery

## Certificates, Courses and Trainings

Foreign Language, Yabancı Dil Hazırlık Eğitimi (İngilizce), Middle East Technical University, 1997

## Dissertations

Doctorate, Yürüyen dalga ultrasonik motorun hız ve konum denetiminin bulanık mantık denetleyici kullanarak gerçekleştirilmesi, Gazi University, Fen Bilimleri Enstitüsü, 2002

Postgraduate, Bilgisayar kontrollü bir diş fırçası hareket mekanizmasının tasarımı, Gazi University, Fen Bilimleri Enstitüsü, 1998

## Research Areas

Industrial automation, Communication Control Systems, Artificial Intelligence, Computer Learning and Pattern Recognition, Renewable energy, Electrical Machine Theory and Design, Electric Motor Drivers, Power Quality

## Academic Titles / Tasks

Professor, Gazi University, Mühendislik Fakültesi, Software Engineering, 2024 - Continues

Professor, Bolu Abant İzzet Baysal University, Mühendislik Fakültesi, Electrical&Electronics Engineering, 2016 - 2024

Associate Professor, Bolu Abant İzzet Baysal University, Faculty of Engineering, Electrical&Electronics Engineering, 2011 - 2016

Assistant Professor, Bolu Abant İzzet Baysal University, Faculty of Engineering, Electrical&Electronics Engineering, 2004 - 2011

Research Assistant, Gazi University, Teknik Eğitim Fakültesi, Elektrik Eğitimi, 1996 - 2003

## Academic and Administrative Experience

Head of Department, Gazi University, Mühendislik Fakültesi, Software Engineering, 2024 - 2024

Head of Department, Bolu Abant İzzet Baysal University, Faculty of Engineering, Electrical&Electronics Engineering, 2013 - 2024

Head of Department, Bolu Abant İzzet Baysal University, Faculty of Engineering, Electrical&Electronics Engineering, 2005 - 2024

Secretary General, Bolu Abant İzzet Baysal University, 2010 - 2016

Head of Department, Bolu Abant İzzet Baysal University, Faculty of Engineering, Electrical&Electronics Engineering, 2005 - 2011

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

- I. **Improving speed control characteristics of PMDC motor drives using nonlinear PI control**  
Çelik E., Bal G., ÖZTÜRK N., BEKİROĞLU E., Houssein E. H., OCAK C., Sharma G.  
Neural Computing and Applications, vol.36, no.16, pp.9113-9124, 2024 (SCI-Expanded)
- II. **Investigating the Effectiveness of Wind Turbine and Salp Swarm Optimization in Alleviating Transmission Congestion of Power System**  
Gautam A., Nasiruddin I., Sharma G., Ahmer M. F., Celik E., Bekiroglu E.  
ELECTRIC POWER COMPONENTS AND SYSTEMS, 2024 (SCI-Expanded)
- III. **Improved Energy Management System for Wind Power-Based Microgrid with EV Charge Station**  
Bekiroglu E., Esmer S.  
ELECTRIC POWER COMPONENTS AND SYSTEMS, vol.52, no.10, pp.1808-1820, 2024 (SCI-Expanded)
- IV. **Near Real-Time Load Forecasting of Power System Using Fuzzy Time Series, Artificial Neural Networks, and Wavelet Transform Models**  
Khatoun S., Ibraheem M., Shahid M., Sharma G., Celik E., Bekiroglu E., Ahmer M. F., Priti P.  
ELECTRIC POWER COMPONENTS AND SYSTEMS, vol.52, no.5, pp.796-810, 2024 (SCI-Expanded)
- V. **Design and Implementation of Drive and Control System for Ultrasonic Motor over Power Line Communication**  
Daldal N., Aytar O., Bekiroglu E., Bal G.  
ELECTRIC POWER COMPONENTS AND SYSTEMS, vol.52, pp.1082-1093, 2024 (SCI-Expanded)
- VI. **Power Loss Minimization through Reconfiguration Using BPSO-Based Technique**  
Kirithikaa S., Narayanan K., Sharma G., Bokoro P. N., Celik E., Bekiroglu E.  
ELECTRIC POWER COMPONENTS AND SYSTEMS, vol.51, no.18, pp.2148-2158, 2023 (SCI-Expanded)
- VII. **Design and Double-Stage Optimization of Synchronous Reluctance Motor for Electric Vehicles**  
Bekiroglu E., Esmer S.  
ELECTRIC POWER COMPONENTS AND SYSTEMS, vol.51, no.20, pp.2557-2572, 2023 (SCI-Expanded)
- VIII. **Reliability Assessment of Demand Response Strategies for Profit Maximization**  
Sivasankari G. S., Narayanan K., Sharma G., Celik E., Bekiroglu E.  
ELECTRIC POWER COMPONENTS AND SYSTEMS, vol.51, no.18, pp.2135-2147, 2023 (SCI-Expanded)
- IX. **Fault-Ride through Improvement of DFIG under Symmetrical/Asymmetrical Voltage Dips**  
Bekiroglu E., Yazar M. D.  
ELECTRIC POWER COMPONENTS AND SYSTEMS, vol.51, pp.510-523, 2023 (SCI-Expanded)
- X. **MPPT Control of Grid Connected DFIG at Variable Wind Speed**  
Bekiroglu E., Yazar M. D.  
ENERGIES, vol.15, no.9, 2022 (SCI-Expanded)
- XI. **Design of highly effective multilayer feedforward neural network by using genetic algorithm**

Ustun O., Bekiroglu E., Onder M.

EXPERT SYSTEMS, vol.37, no.4, 2020 (SCI-Expanded)

- XII. **Role of preparation conditions of Bi-2223 ceramic materials and optimization of Bi-2223 phase in bulk materials with experimental and statistical approaches**  
Pakdil M., Bekiroglu E., Oz M., Saritekin N. K., Yildirim G.  
JOURNAL OF ALLOYS AND COMPOUNDS, vol.673, pp.205-214, 2016 (SCI-Expanded)
- XIII. **Degeneration of mechanical characteristics and performances with Zr nanoparticles inserted in Bi-2223 superconducting matrix and increment in dislocation movement and cracks propagation**  
Akdemir E., Pakdil M., Bilge H., Kahraman M. F., Bekiroglu E., Yildirim G., Zalaoglu Y., Doruk E., Oz M.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.27, no.3, pp.2276-2287, 2016 (SCI-Expanded)
- XIV. **Examination of effective nucleation centers for flux pinning of vortices and optimum diffusion annealing temperature for Au-diffusion-doped Bi-2212 polycrystalline compound**  
Saritekin N. K., Pakdil M., Bekiroglu E., Yildirim G.  
JOURNAL OF ALLOYS AND COMPOUNDS, vol.688, pp.637-646, 2016 (SCI-Expanded)
- XV. **Comparative study on mechanical properties of undoped and Ce-doped Bi-2212 superconductors**  
Zalaoglu Y., Bekiroglu E., Dogruer M., Yildirim G., Ozturk O., Terzioglu C.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.24, no.7, pp.2339-2345, 2013 (SCI-Expanded)
- XVI. **On-Line Educational Tool for the Parallel Operation of the Synchronous Generators**  
Bekiroglu E., Bayrak A.  
COMPUTER APPLICATIONS IN ENGINEERING EDUCATION, vol.19, no.4, pp.669-677, 2011 (SCI-Expanded)
- XVII. **VIRTUAL ELECTRICAL MACHINERY LABORATORY: EXPERIMENTS OF SYNCHRONOUS GENERATOR**  
Bekiroğlu E., Bayrak A.  
Gazi Mühendislik Bilimleri Dergisi, vol.25, no.2, pp.405-413, 2010 (SCI-Expanded)
- XVIII. **The influence of Gd addition on microstructure and transport properties of Bi-2223**  
Terzioglu C., Aydin H., Ozturk O., Bekiroglu E., Belenli I.  
PHYSICA B-CONDENSED MATTER, vol.403, no.19-20, pp.3354-3359, 2008 (SCI-Expanded)
- XIX. **Ultrasonic motors: Their models, drives, controls and applications**  
Bekiroglu E.  
JOURNAL OF ELECTROCERAMICS, vol.20, no.3-4, pp.277-286, 2008 (SCI-Expanded)
- XX. **Microcontroller-based full control of ultrasonic motor with frequency and voltage adjusting**  
Bekiroglu E.  
SENSORS AND ACTUATORS A-PHYSICAL, vol.141, no.1, pp.151-159, 2008 (SCI-Expanded)
- XXI. **A highly effective load adaptive servo drive system for speed control of travelling-wave ultrasonic motor**  
Bal G., Bekiroglu E.  
IEEE TRANSACTIONS ON POWER ELECTRONICS, no.5, pp.1143-1149, 2005 (SCI-Expanded)
- XXII. **Remote control of an ultrasonic motor by using a GSM mobile phone**  
Bekiroglu E., Daldal N.  
SENSORS AND ACTUATORS A-PHYSICAL, vol.120, no.2, pp.536-542, 2005 (SCI-Expanded)
- XXIII. **A PWM technique for DSP controlled ultrasonic motor drive system**  
Bal G., Bekiroglu E.  
ELECTRIC POWER COMPONENTS AND SYSTEMS, no.1, pp.21-38, 2005 (SCI-Expanded)
- XXIV. **Fuzzy logic based DSP controlled servo position control for ultrasonic motor**  
Bal G., Bekiroglu E., DEMİRBAŞ Ş., Colak I.  
ENERGY CONVERSION AND MANAGEMENT, no.20, pp.3139-3153, 2004 (SCI-Expanded)
- XXV. **Servo speed control of travelling-wave ultrasonic motor using digital signal processor**  
Bal G., Bekiroglu E.  
SENSORS AND ACTUATORS A-PHYSICAL, no.3, pp.212-219, 2004 (SCI-Expanded)
- XXVI. **PC controlled toothbrush/dentifrice abrasion machine**

## Articles Published in Other Journals

- I. **Optimization and Performance Improvement of Synchronous Reluctance Motor for Micro-Mobility Vehicles**  
BEKİROĞLU E., ESMER S.  
Turkish Journal of Electrical Power and Energy Systems, vol.3, no.1, pp.12-19, 2023 (Peer-Reviewed Journal)
- II. **Design of PMSynRM for Flywheel Energy Storage System in Smart Grids**  
ESMER S., BEKİROĞLU E.  
International Journal of Smart Grid, vol.6, no.4, pp.84-91, 2022 (Peer-Reviewed Journal)
- III. **Bionic hand: A brief review**  
BAYRAK A., BEKİROĞLU E.  
Journal of Bionic Memory, vol.2, no.2, pp.37-43, 2022 (Peer-Reviewed Journal)
- IV. **Comparison of Trapezoidal and Sinusoidal PWM Techniques for Speed and Position Control of PMSM**  
BEKİROĞLU E., DALKIN A.  
ADVANCES IN ELECTRICAL AND ELECTRONIC ENGINEERING, vol.18, no.4, pp.207-216, 2020 (ESCI)
- V. **Experimental Analysis of Energy Quality at Campus Network-Case Study: Bolu Abant İzzet Baysal University (Engineering Building)**  
BEKİROĞLU E., Yıldız H.  
Düzce Üniversitesi Bilim ve Teknoloji Dergisi, vol.8, no.2, pp.1307-1318, 2020 (Peer-Reviewed Journal)
- VI. **Transformatör Merkezlerinin Güvenlik Amaçlı Uzaktan İzlenmesi ve Otomasyonu**  
BEKİROĞLU E., DALDAL N.  
e-Journal of New World Sciences Academy, vol.4, no.4, pp.459-470, 2009 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Technical Feasibility of Offshore WindPower Plant for Gökçeada Region in Türkiye**  
Akyol B., YAZAR M. D., BEKİROĞLU E.  
12th International Conference on Renewable Energy Research and Application (ICRERA), 29 August - 01 September 2023
- II. **Design and Magnetic Analysis of A Grounding Transformer Compatible With Wind Power System**  
Demiral E., BEKİROĞLU E., YAZAR M. D.  
12th International Conference on Renewable Energy Research and Application (ICRERA), 29 August - 01 September 2023
- III. **Improving Energy Efficiency in Climatic Test Chambers with Deep Learning and Absolute Humidity Methods**  
BEKİROĞLU E., Karaca H.  
11th International Conference on Smart Grid (icSmartGrid), 4 - 07 June 2023
- IV. **Peak Shaving Control of EV Charge Station with a Flywheel Energy Storage System in Micro Grid**  
BEKİROĞLU E., ESMER S.  
11th International Conference on Smart Grid (icSmartGrid), 4 - 07 June 2023
- V. **Mikro-mobilite Araçlar için Senkron Relüktans Motorun Tasarımı ve Optimizasyonu**  
BEKİROĞLU E., ESMER S.  
2022 Güç Sistemleri Konferansı, 18 October 2022
- VI. **Improving Fault Ride Through Capability of DFIG with Fuzzy Logic Controlled Crowbar Protection**  
BEKİROĞLU E., YAZAR M. D.  
2022 11th International Conference on Renewable Energy Research and Application (ICRERA), 18 September

2022, pp.374-378

- VII. **Measurement and Evaluation of Solar Panel Data Via DC Power Line**  
DALDAL N., Uzun B., BEKİROĞLU E.  
2022 10th International Conference on Smart Grid (icSmartGrid), 27 June 2022, pp.280-284
- VIII. **Analysis of Grid Connected Wind Power System**  
BEKİROĞLU E., YAZAR M. D.  
2019 8TH INTERNATIONAL CONFERENCE ON RENEWABLE ENERGY RESEARCH AND APPLICATIONS (ICRERA 2019), 3 - 06 November 2019
- IX. **Microgrid Facility at European Union**  
BAYINDIR R., BEKİROĞLU E., HOSSAIN E., KABALCI E.  
2014 3rd International Conference on Renewable Energy Research and Applications, 19 - 22 October 2014
- X. **Automatic Synchronization Unit for the Parallel Operation of Synchronous Generators**  
BEKİROĞLU E., BAYRAK A.  
IEEE EUROCON 2009, 18 - 23 May 2009
- XI. **İnternet ve GSM Tabanlı Uzaktan Kontrol Uygulaması**  
BAYINDIR R., KUNDAKOĞLU H., YILDIRIM S., BEKİROĞLU E.  
2009 5. Uluslararası İleri Teknolojiler Sempozyumu (IATS'09), 13 May 2009, pp.545-549
- XII. **Alternatörlerin Paralel Bağlanma İşleminin Mikrodenetleyici ile Gerçekleştirilmesi**  
BEKİROĞLU E., BAYRAK A.  
2009 5. Uluslararası İleri Teknolojiler Sempozyumu (IATS'09), 13 May 2009, pp.508-511
- XIII. **Simplified Speed Control Application for an Ultrasonic Motor with PIC Microcontroller**  
BAL G., BEKİROĞLU E., BAYINDIR R., UZEL H.  
Technical and Physical Problems in Power Engineering TPE'2006, 29 May 2006, pp.960-963
- XIV. **Speed Control Implementation of Ultrasonic Motor by Using Fuzzy Logic Approach**  
BEKİROĞLU E., BAL G.  
Technical and Physical Problems in Power Engineering TPE'2004, 06 September 2004, pp.81-85
- XV. **Experimental Examination of Speed Control Methods for a Travelling Wave Ultrasonic Motor**  
BAL G., BEKİROĞLU E.  
2003 3rd International Advanced Technologies Symposium 2003, 18 October 2003, pp.415-423
- XVI. **“Characteristics Estimation of Travelling Wave Ultrasonic Motor Using Equivalent Circuit Model**  
BAL G., BEKİROĞLU E.  
International Conference on Electrical and Electronics Engineering ELECO'2001., 07 November 2001, pp.62-66
- XVII. **Design and Implementation of Digitally Controlled Step Motor Drives for Toothbrush/Dentifrice Mechanism**  
BAL G., BEKİROĞLU E.  
International Conference on Electrical Machines ICEM 98, 02 September 1998, vol.2, pp.803-807

## Metrics

Publication: 50

Citation (WoS): 360

Citation (Scopus): 478

H-Index (WoS): 11

H-Index (Scopus): 14