

## **Asst. Prof. Mustafa BAYSAL**

### **Personal Information**

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### **Education Information**

Doctorate, Yıldız Teknik Üniversitesi, Graduate School of Natural and Applied Sciences, Elektrik Mühendisliği, Turkey  
2002 - 2008

Postgraduate, Yıldız Teknik Üniversitesi, Graduate School of Natural and Applied Sciences, Elektrik Mühendisliği, Turkey  
1998 - 2001

Undergraduate, Yıldız Teknik Üniversitesi, Faculty of Electrical & Electronics, Elektrik Mühendisliği, Turkey 1994 - 1998

### **Foreign Languages**

English, C1 Advanced

### **Dissertations**

Doctorate, HARMONİK İCEREN GÜÇ SİSTEMLERİNİN GERİLİM KARARLILIGININ YÜK MODELLEMELERİ VE FACTS  
ELEMENLARI BAKIMINDAN İNCELENMESİ, Yıldız Teknik Üniversitesi, Graduate School of Natural and Applied Sciences,  
Elektrik Mühendisliği, 2008

Postgraduate, PWM DC-DC DÖNÜŞTÜRÜCÜLERDE PASİF BASTIRMA DEVRELERİ , Yıldız Teknik Üniversitesi, Graduate  
School of Natural and Applied Sciences, Elektrik Mühendisliği, 2001

### **Research Areas**

Electrical and Electronics Engineering, Energy, Power System Analysis, Engineering and Technology

### **Academic Titles / Tasks**

Assistant Professor, Yıldız Technical University, Faculty Of Electrical & Electronics, Electrical Engineering Department,  
2009 - Continues

Research Assistant, Yıldız Technical University, Faculty Of Electrical & Electronics, Electrical Engineering Department,  
2000 - 2009

### **Advising Theses**

Baysal M., Comparison of Flywheel and Li-ION Battery Energy Storage Systems and Performance Analysis of Hybrid  
Energy Storage System On Different Load Profiles, Postgraduate, İ.Cem(Student), 2019

Baysal M., Smart Distribution Protection without Voltage Transformer, Postgraduate, F.ALPAŞLAN(Student), 2019

Baysal M., SHORT-TERM LOAD FORECASTING FOR MICROGRIDS BASED ON FUZZY LOGIC, Postgraduate, J.Tapiwa(Student), 2018

Baysal M., Power management strategy of stand-alone microgrid with hydrogen fuel cell and renewable sources, Postgraduate, J.MA(Student), 2018

Baysal M., DEVELOPING MULTI AGENT CONTROL METHODS FOR IMPROVED OPERATIONAL CONDITIONS IN SMART DISTRIBUTION NETWORKS, Doctorate, G.ŞEN(Student), 2018

Baysal M., DESIGN AND IMPLEMENTATION OF A DIGITAL SIGNAL PROCESSOR CONTROLLED STATIC (SMART) SWITCH FOR MICROGRID SYSTEMS, Postgraduate, T.ÖZER(Student), 2018

BAYSAL M., Analysis and Assesment the Reliability of Distribution Power Systems, Doctorate, M.WADİ(Student), 2017

Baysal M., A New Protection Philosophy For Medium Voltage Smart Distribution Network, Doctorate, A.SHOBOLE(Student), 2017

BAYSAL M., Akıllı şebekeler altyapısına uygun bir orta gerilim trafo merkezinin tasarımı ve ekonomik analizi, Postgraduate, Y.Berkay(Student), 2016

BAYSAL M., Mikroşebeke gerilim yapısına uygun 3 fazlı inverterin labview ile kontrol edilmesi ve geliştirilmesi, Postgraduate, C.AKTAŞ(Student), 2016

BAYSAL M., Harmonic analysis of dimmable power leds for street lighting, Postgraduate, H.Fayek(Student), 2015

BAYSAL M., Mikroşebeke yapısına uygun üç fazlı inverterin simülasyon modelinin geliştirilmesi ve analizi, Postgraduate, F.ÜLKER(Student), 2015

BAYSAL M., Active and reactive power sharing of parallel inverters in microgrid by using droop control, Postgraduate, A.ISMAIL(Student), 2014

BAYSAL M., Pv, rüzgar türbini ve batarya içeren hibrid enerji sistemlerinde iyileştirilmiş optimal ölçeklendirme, Postgraduate, G.GÜRİSOY(Student), 2014

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

- I. **Thermal and electrical performance analysis of induction heating based-thermochemical reactor for heat storage integration into power systems**  
Bio Gassi K., Guene Lougou B., BAYSAL M., Ahouannou C.  
INTERNATIONAL JOURNAL OF ENERGY RESEARCH, 2021 (Journal Indexed in SCI)
- II. **Deep learning methods and applications for electrical power systems: A comprehensive review**  
Ozcanli A. K. , Yaprakdal F., BAYSAL M.  
INTERNATIONAL JOURNAL OF ENERGY RESEARCH, vol.44, no.9, pp.7136-7157, 2020 (Journal Indexed in SCI)
- III. **A Deep Neural Network-Assisted Approach to Enhance Short-Term Optimal Operational Scheduling of a Microgrid**  
Yaprakdal F., Yilmaz M. B. , BAYSAL M., Anvari-Moghaddam A.  
SUSTAINABILITY, vol.12, no.4, 2020 (Journal Indexed in SCI)
- IV. **An Adaptive Protection Technique for Smart Distribution Network**  
Shobole A., BAYSAL M., Wadi M., Tur M. R.  
ELEKTRONIKA IR ELEKTROTEHNIKA, vol.26, no.4, pp.46-56, 2020 (Journal Indexed in SCI)
- V. **Optimal operational scheduling of reconfigurable microgrids in presence of renewable energy sources**  
YAPRAKDAL F., BAYSAL M., Anvari-Moghaddam A.  
Energies, vol.12, no.10, 2019 (Journal Indexed in SCI)
- VI. **Design and Implementation of an Interactive Interface for Demand Response and Home Energy Management Applications**  
YENER B., Tascikaraoglu A., ERDİNÇ O., BAYSAL M., Catalao J. P. S.  
APPLIED SCIENCES-BASEL, vol.7, no.6, 2017 (Journal Indexed in SCI)
- VII. **Islanding Detection in Microgrids Using Harmonic Signatures**  
Merino J., Mendoza-Araya P., Venkataramanan G., BAYSAL M.

IEEE TRANSACTIONS ON POWER DELIVERY, vol.30, no.5, pp.2102-2109, 2015 (Journal Indexed in SCI)

- VIII. **Survey of power quality in Turkish national transmission network**  
Kocatepe C., Kekezoğlu B., Bozkurt A., Yumurtacı R., İnan A., Arıkan O., Baysal M., Akkaya Y.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.21, pp.1880-1892, 2013  
(Journal Indexed in SCI)
- IX. **Assessment of power quality terms on energy distribution systems: a case study of Istanbul**  
KEKEZOĞLU B., BOZKURT A., ARIKAN O., KOCATEPE C., YUMURTACI R., BAYSAL M.  
PRZEGLAD ELEKTROTECHNICZNY, vol.88, 2012 (Journal Indexed in SCI)
- X. **Power quality assessment of grid-connected wind farms considering regulations in turkey**  
Kocatepe C., Inan A., ARIKAN O., YUMURTACI R., KEKEZOĞLU B., BAYSAL M., BOZKURT A., Akkaya Y.  
RENEWABLE & SUSTAINABLE ENERGY REVIEWS, vol.13, no.9, pp.2553-2561, 2009 (Journal Indexed in SCI)
- XI. **A detailed analytical analysis of a passive resonant snubber cell perfectly constructed for a pulse width modulated d.c.-d.c. buck converter**  
Bodur H., Bakan A., Baysal M.  
ELECTRICAL ENGINEERING, vol.85, no.1, pp.45-52, 2003 (Journal Indexed in SCI)

## Articles Published in Other Journals

- I. **HISTORICAL AND MONTE CARLO SIMULATION-BASED RELIABILITY ASSESSMENT OF POWER DISTRIBUTION SYSTEMS**  
Wadi M., BAYSAL M., Shobole A., Tur M. R.  
SIGMA JOURNAL OF ENGINEERING AND NATURAL SCIENCES-SIGMA MUHENDISLIK VE FEN BILIMLERI DERGISI, vol.38, no.3, pp.1527-1540, 2020 (Journal Indexed in ESCI)
- II. **Online Energy Management Strategy Based on Adaptive Model Predictive Control for Microgrid with Hydrogen Storage**  
MA J., BAYSAL M.  
INTERNATIONAL JOURNAL OF RENEWABLE ENERGY RESEARCH, vol.8, pp.861-870, 2018 (Refereed Journals of Other Institutions)
- III. **Effects of Distributed Generations' Integration to the Distribution Networks Case Study of Solar Power Plant**  
Shobole A., BAYSAL M., Wadi M., TÜR M. R.  
INTERNATIONAL JOURNAL OF RENEWABLE ENERGY RESEARCH, vol.7, 2018 (Refereed Journals of Other Institutions)
- IV. **RELIABILITY ASSESSMENT OF RADIAL NETWORKS VIA MODIFIED RBD ANALYTICAL TECHNIQUE**  
WADI M. J., BAYSAL M.  
SIGMA JOURNAL OF ENGINEERING AND NATURAL SCIENCES-SIGMA MUHENDISLIK VE FEN BILIMLERI DERGISI, vol.35, pp.717-726, 2017 (Journal Indexed in ESCI)
- V. **Protection Coordination in Electrical Substation Part-2 Unit Protections (Differential and Distance Protection) -Case Study of Siddik Kardesler Substation (SKS), Istanbul, Turkey**  
Shobole A., BAYSAL M., Wadi M., Tur M. R.  
GAZI UNIVERSITY JOURNAL OF SCIENCE, vol.30, no.4, pp.163-178, 2017 (Journal Indexed in ESCI)
- VI. **Protection Coordination Practice in Electrical Substation Part-1 Overcurrent and Earth Fault Protection - Case Study of Siddik Kardesler Substation (SKS), Istanbul, Turkey**  
Shobole A., BAYSAL M., Wadi M., Tur M. R.  
GAZI UNIVERSITY JOURNAL OF SCIENCE, vol.30, no.4, pp.180-198, 2017 (Journal Indexed in ESCI)
- VII. **Elektrikli Ofis Cihazlarında Güç Faktörü ve cos $\phi$ 'nin İncelenmesi**  
KEKEZOĞLU B., ARIKAN O., KOCATEPE C., YUMURTACI R., BAYSAL M., BOZKURT A.  
3e Electrotech, no.174, 2008 (National Non-Refereed Journal)
- VIII. **Elektrikli Ofis Donanımlarının Harmonik Etkilerinin İncelenmesi**  
KEKEZOĞLU B., ARIKAN O., KOCATEPE C., YUMURTACI R., BAYSAL M., BOZKURT A.

## Books & Book Chapters

- I. **Harmonic Effects of Power System Loads: An Experimental Study**  
KOCATEPE C., YUMURTACI R., ARIKAN O., BAYSAL M., KEKEZOĞLU B., BOZKURT A., KUMRU C. F.  
in: Power Quality Issues, Zobaa A., Editor, Intech, Rijeka, pp.175-200, 2013

## Refereed Congress / Symposium Publications in Proceedings

- I. **Single Dual Setting Directional Over-current Relay Based Line Protection Logic for Distributed Generation Integrated Power Systems**  
EVKAY İ., ASHRAF S., BAYSAL M., SELAMOĞULLARI U. S., HASAN O.  
2nd Global Power, Energy and Communication Conference (GPECOM), İzmir, Turkey, 20 October 2020, pp.245-250
- II. **Microgrid aggregated load short-term forecasting using a Long Short Term Memory Recurrent Neural Network**  
BAYSAL M., BIO GASSI K., DAGAL I.  
5TH INTERNATIONAL CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING, 17 - 19 December 2019
- III. **Phase change material based heat storage analysis for its integration into renewable microgrid**  
BAYSAL M., BIO GASSI K., IDRIS D.  
5TH INTERNATIONAL CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING, 17 - 19 December 2019
- IV. **THE EFFECT OF ISLANDING ON HARMONIC DISTORTION IN THE INVERTER-BASED MICROGRID**  
KAYMAZÖZCANLI A., BAYSAL M.  
World Energy Strategies Congress and Exhibition, 26 - 28 August 2019
- V. **COMPARISON OF FLYWHEEL AND LI-ION BATTERY ENERGY STORAGE SYSTEMS AND PERFORMANCE ANALYSIS OF HYBRID ENERGY STORAGE SYSTEM ON DIFFERENT LOAD PROFILES**  
AÇIKGÖZ İ. C., BAYSAL M.  
4th International Conference on Computational Mathematics and Engineering Sciences, Antalya, Turkey, 20 April 2019, pp.252
- VI. **Smart Distribution Protection with no Voltage Transformer**  
ALPASLAN F., BAYSAL M.  
First International Symposium on Graduate Research in Science Focus on Entrepreneurship and Innovation (ISGRS 2018), 4 - 06 October 2018
- VII. **Multi agent-based decentralized control for improving the efficiency and voltage regulation in smart microgrid**  
Sen G., BAYSAL M.  
2018 International Conference on Smart Energy Systems and Technologies, SEST 2018, Sevilla, Spain, 10 - 12 September 2018
- VIII. **Multi agent-based control techniques to reduce losses for smart grid connected microgrids**  
Sen G., BAYSAL M.  
6th International Istanbul Smart Grids and Cities Congress and Fair, ICSG 2018, İstanbul, Turkey, 25 - 26 April 2018, pp.173-177
- IX. **Smart hybrid wind-solar street lighting system fuzzy based approach: Case study Istanbul-Turkey**  
Wadi M., Shobole A., TUR M. R., BAYSAL M.  
6th International Istanbul Smart Grids and Cities Congress and Fair, ICSG 2018, İstanbul, Turkey, 25 - 26 April 2018, pp.71-75
- X. **Reliability Evaluation in Smart Grids via Modified Monte Carlo Simulation Method**  
Wadi M., BAYSAL M., Shobole A., Tur M. R.  
7th International Conference on Renewable Energy Research and Applications (ICRERA), Paris, France, 14 - 17

October 2018, pp.841-845

- XI. **Protection Coordination Practices for Industrial Ring Distribution Network Case Study of Organized Industrial Zone (GEBZE, Turkey)**  
Shobole A., BAYSAL M., Wadi M., Tur M. R.  
7th International Conference on Renewable Energy Research and Applications (ICRERA), Paris, France, 14 - 17 October 2018, pp.1027-1031
- XII. **Short Term Load Forecasting for Microgrids Based On Fuzzy Logic**  
MUTSENA J. T., BAYSAL M.  
International Conference on Engineering Technologies, 7 - 09 December 2107, pp.434-439
- XIII. **Design and Simulation of A Three-Phase Static Smart Switch for Microgrid**  
ÖZER T., BAYSAL M.  
8th International Advanced Technologies Symposium, 19 October 2107 - 22 October 2017, pp.3557-3564
- XIV. **On-Line energy management strategy for hybrid electric vehicles based on AMPC**  
Jun M., Shah A., Baysal M., İlhan H.  
The 10th International Conference on Electrical and Electronics Engineering (IEEE ELECO2017), Bursa, Turkey, 30 November - 02 December 2017, pp.1-5
- XV. **Real time active power control in smart grid**  
SHOBOLE A., WADI M., TÜR M. R. , BAYSAL M.  
2017 IEEE 6th International Conference on Renewable Energy Research and Applications, 5 - 08 November 2017, pp.585-590
- XVI. **Modeling And Simulation Of Split Shaft Micro Turbine Generation Systems Based On Fuel Consumption**  
ÇELİK Ş., KEKEZOĞLU B., BAYSAL M.  
The 8th International Advanced Technologies Symposium (IATS 2017), Elazığ, Turkey, 19 - 21 October 2017
- XVII. **Comparison between Open-Ring and Closed-Ring Grids Reliability**  
WADI M., BAYSAL M., SHOBOLE A.  
2017 4TH INTERNATIONAL CONFERENCE ON ELECTRICAL AND ELECTRONIC ENGINEERING (ICEEE 2017), Ankara, Turkey, 8 - 10 April 2017, pp.290-294
- XVIII. **Performance Comparison of Droop Control Methods for Parallel Inverters in Microgrid**  
ahmed i., BAYSAL M.  
ICEC 2015 : 17th International Conference on Entertainment Computing, 27 - 28 August 2015
- XIX. **Improving the Fault Ride through Capability and Stability of Wind Farms with DFIG Wind Turbine by using Statcom**  
Abdulfetah S., Karakaş A., Selamoğulları U. S. , Baysal M.  
17th International Conference on Electrical and Computer Systems Engineering, Paris, France, 27 - 28 August 2015
- XX. **Improved Optimal Sizing of Hybrid PV/Wind/Battery Energy Systems**  
Gursoy G., BAYSAL M.  
3rd THE INTERNATIONAL CONFERENCE on RENEWABLE ENERGY RESEARCH and APPLICATIONS (ICRERA), Wisconsin, United States Of America, 19 - 22 October 2014, pp.713-716
- XXI. **Energy management algorithm for smart home with renewable energy sources**  
BOYNUEĞRİ A. R. , YAĞCITEKİN B., BAYSAL M., KARAKAŞ A., UZUNOĞLU M.  
4th International Conference on Power Engineering, Energy and Electrical Drives, 13 - 17 May 2013
- XXII. **Investigation of Harmonic Effect in Turkey's Iron Steel Industry**  
KEKEZOĞLU B., KOCATEPE C., YUMURTACI R., ARIKAN O., BAYSAL M., BOZKURT A., AKKAYA Y., Özdemirci E.  
The 6th International Conference, 2008 Power Quality and Supply Reliability (PQ2008), Parnu, Estonia, 27 August 2008, pp.435-439
- XXIII. **Güç Sİstem Gerilim Kararlılığında Yük Modellemelerinin Önemi**  
BAYSAL M., UZUNOĞLU M., KOCATEPE C.  
12. ELEKTRİK-ELEKTRONİK-BİLGİSAYAR MÜHENDİSLİĞİ ULUSAL KONGRESİ, 01 November 2007, pp.321-325
- XXIV. **Dağıtım Sisteminde Kısa Devre Gücünün Harmonik Bozulmaya Etkisi**  
KOCATEPE C., YUMURTACI R., BAYSAL M., ARIKAN O., BOZKURT A., KEKEZOĞLU B.

- Enerji Verimliliği ve Kalitesi Sempozyumu (EVK 2007), Kocaeli, Turkey, 17 May 2007, pp.267-271
- XXV. **Harmoniklerin Kompanzasyon Tesisleri Üzerindeki Etkilerinin Rezonans Olayları Bakımından İncelenmesi**  
YUMURTACI R., ARIKAN O., BOZKURT A., KOCATEPE C., BAYSAL M., KEKEZOĞLU B.  
Enerji Verimliliği ve Kalitesi Sempozyumu (EVK 2007), Kocaeli, Turkey, 17 May 2007, pp.272-277
- XXVI. **Transient Analysis of Medium-Length Transmission Lines**  
K C., BAYSAL M.  
3RD INTERNATIONAL SYMPOSIUM ON ELECTRICAL, ELECTRONIC AND COMPUTER ENGINEERING, 01 November 2006, pp.209-213
- XXVII. **State-space Transient Analysis of Transmission Lines Using Eigenanalysis**  
BAYSAL M., KOCATEPE C., KARAKAS A.  
4th International Conference on Electrical and Power Engineering, 01 October 2006, pp.1325-1330
- XXVIII. **Tristör Kontrollü Seri Kompanzasyon Metotlarının Karşılaştırılması**  
BAYSAL M., KOCATEPE C., UZUNOĞLU M.  
ELEKTRİK-ELEKTRONİK-BİLGİSAYAR MÜHENDİSLİĞİ 11. ULUSAL KONGRESİ, 01 September 2005, vol.2, pp.425-428
- XXIX. **Güç Sistemlerinde Araharmyonikler Ve Etkileri**  
KEKEZOĞLU B., KOCATEPE C., YUMURTACI R., BAYSAL M., ARIKAN O., BOZKURT A.  
Enerji Verimliliği ve Kalitesi Sempozyumu (EVK 2007), Kocaeli, Turkey, 17 May 2005, pp.263-266
- XXX. **Harmonikli Sistemlerde Filtre Uygulamasının Karşılaştırılması**  
KOCATEPE C., BAYSAL M., ÇAKIR H.  
1. ENERJİ VERİMLİLİĞİ VE KALİTESİ SEMPOZYUMU, 01 May 2005, pp.258-262
- XXXI. **The State of Corona Discharge in High Voltage Transmission Line under Non Linear Conditions using ANN**  
TANRIÖVEN M., ACARKAN B., BAYSAL M., KARAKAŞ A.  
International Conference on Fuzzy Systems and Soft Computational Intelligence in Management and Industrial Engineering, FSSCIMIE 2002, İstanbul, Turkey, 29 - 31 May 2002, pp.31-36
- XXXII. **Long Transmission Line Calculation Having Nonlinear Load by Artificial Neural Network (ANN)**  
KARAKAS A., KUCUKSARI S., BAYSAL M.  
INTERNATIONAL CONFERENCE ON FUZZY SYSTEMS AND SOFT COMPUTATIONAL INTELLIGENCE IN MANAGEMENT AND INDUSTRIAL ENGINEERING, 01 May 2002
- XXXIII. **The Determination Of Calibration Values Of Spherical Electrode For High Voltage Measuring By Fuzzy Algorithms**  
TANRIÖVEN M., Baysal M., Küçüksari S., Karakas A.  
FSSCIMIE (Int.Con. on Fuzzy S. and Soft Comp. Intell. in Man. and Ind. Eng.), 01 May 2002

## Supported Projects

- Selamoğulları U. S. , Baysal M., TÜBİTAK International Bilateral Joint Cooperation Program Project, Formal Analysis of Protection Systems in Smart Grids using Probabilistic Model Checking, 2019 - 2021
- BAYSAL M., TUBITAK Project, Guvenlik Kontrollu Akıllı Priz Tasarımı, 2017 - 2018
- Baysal M., TUBITAK Project, Mikroşebeke Yapısına Uygun Gerilim Beslemeli İverterter Geliştirilmesi, 2014 - 2017
- BAYSAL M., Project Supported by Other Official Institutions, BEDAS, Orta Gerilim Şebekesinin Kapalı Ring I-s, letimi I-c, in Koruma/Kontrol Sisteminin Tasarımı, OG Şebekesinin Kapalı Ring I-s, letimi I-c, in Yeniden Yapılandırılması ve Pilot Bölge Uygulaması, 2013 - 2016
- Elma O., Baysal M., Uğur E., Selamoğulları U. S. , Boynueğri A. R. , Uzunoğlu M., Project Supported by Other Official Institutions, Enerji Verimliliğini Arttırmak ve Karbon Emisyonunu Azaltmak Amacıyla Akıllı Şebeke Altyapısına Uygun Bir Akıllı Evin Geliştirilmesi, 2012 - 2012
- BAYSAL M., Other Supported Projects, Microgrid Application for Air Force Base Medical Treatment Facility, 2010 - 2012
- KEKEZOĞLU B., BAYSAL M., TUBITAK Project, Türkiye Elektrik Sisteminde Güç Kalitesine Etki Eden Değişkenleri ve Güç

## Citations

Total Citations (WOS):82

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