

## Asst. Prof. SALTUK BUĞRA SELÇUKLU

### Personal Information

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**Address:** Erciyes Üniversitesi Mühendislik Fakültesi Enerji Sistemleri Mühendisliği 38039 Kayseri, Türkiye

### International Researcher IDs

ORCID: 0000-0002-9295-3866

Publons / Web Of Science ResearcherID: AAC-5782-2019

ScopusID: 56414984000

Yoksis Researcher ID: 185257

### Education Information

Doctorate, Rutgers, The State University of New Jersey, School Of Engineering, Industrial And Systems Engineering, United States Of America 2010 - 2015

Postgraduate, Colorado State University-Pueblo, School Of Engineering, Industrial And Systems Engineering, United States Of America 2007 - 2008

Undergraduate, Yildiz Technical University, Department Of Industry Engineering, Industry Engineering, Turkey 2002 - 2007

### Foreign Languages

English, C1 Advanced

### Dissertations

Doctorate, MULTI-OBJECTIVE GENERATION EXPANSION PLANNING CONSIDERING UNCERTAINTY AND MODELING WITH THE PARETO UNCERTAINTY INDEX, Rutgers, The State University Of New Jersey, Graduate School – New Brunswick, Industrial And Systems Engineering, 2015

### Research Areas

Industrial Engineering , Optimization Theory and Methods, Multiobjective Optimization, Simulation, Simulation Optimization, Energy, Engineering and Technology

### Academic Titles / Tasks

Assistant Professor, Erciyes University, Mühendislik Fakültesi, Enerji Sistemleri Mühendisliği, 2016 - Continues

Research Assistant, Erciyes University, Mühendislik Fakültesi, Enerji Sistemleri Mühendisliği, 2010 - 2016

## Academic and Administrative Experience

Assistant Manager of Research and Application Center, Erciyes University, Mühendislik Fakültesi, Enerji Sistemleri Mühendisliği, 2019 - Continues  
Erciyes University, 2019 - Continues  
Head of Department, Erciyes University, Mühendislik Fakültesi, Enerji Sistemleri Mühendisliği, 2017 - Continues  
Erciyes University, 2017 - Continues

## Courses

Enerji Sistemlerinin Tasarımı ve Optimizasyonu , Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Enerji Ekonomisi ve Politikaları, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019  
Mühendislikte İleri Sayısal Yöntemler, Postgraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Enerji Ekonomisi ve Politikaları, Doctorate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2017 - 2018  
Bitirme Ödevi , Undergraduate, 2023 - 2024, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Doğrusal Programlama , Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Uzmanlık Alan, Postgraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021  
Enerji Hukuku , Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019  
Uzmanlık Alan, Postgraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021  
Enerji Sistemlerinin Optimizasyonu , Doctorate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019  
Dinamik, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Enerji Kaynakları , Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Enerji Mühendisliğine Giriş , Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019  
Enerji Sistemlerinin Tasarımı ve Optimizasyonu , Undergraduate, 2020 - 2021, 2018 - 2019, 2017 - 2018  
Enerji Ekonomisi ve Politikaları, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019  
Elektrik Piyasalarına Giriş, Postgraduate, 2021 - 2022, 2020 - 2021  
Enerji Sistemleri Tasarım ve Uygulama, Undergraduate, 2021 - 2022, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Enerji Sistemleri Laboratuvarı II, Undergraduate, 2020 - 2021  
Enerji Hukuku, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019  
Lineer Cebir ve Mühendislik Uygulamaları , Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Enerji Kaynakları, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Ekonomik Analiz Yöntemleri , Undergraduate, 2020 - 2021, 2019 - 2020, 2017 - 2018  
Dinamik, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Doğrusal Programlama, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019  
Lineer Cebir ve Mühendislik Uygulamaları, Undergraduate, 2018 - 2019, 2017 - 2018  
Uzmanlık Alan Dersi, Postgraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Bitirme Ödevi , Undergraduate, 2018 - 2019  
Ekonomik Analiz Yöntemleri, Undergraduate, 2019 - 2020, 2017 - 2018  
Uzmanlık Alan Dersi, Postgraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Enerji Mühendisliğine Giriş , Undergraduate, 2019 - 2020, 2018 - 2019  
Mühendislikte İstatistik Metotlar , Undergraduate, 2018 - 2019  
Mühendislikte Sayısal Metotlar , Undergraduate, 2017 - 2018  
Mühendislikte İstatistik Metotlar , Undergraduate, 2018 - 2019  
Seminer, Postgraduate, 2017 - 2018

## Advising Theses

- Selçuklu S. B., Bir Üniversite Kampüsünde Enerji Verimliliği Önlemlerinin Öncelik Sıralamalarının Çok Amaçlı Optimizasyonu, Postgraduate, B.Akyol(Student), Continues
- Selçuklu S. B., Maksimum Rekabet Amaçlı Elektrik Üretim Kapasite Planlaması, Postgraduate, A.Isam(Student), 2020
- Selçuklu S. B., Electricity Markets Simulation Game, Postgraduate, I.Coffie(Student), 2020
- Selçuklu S. B., Türkiye'nin elektrik üretim yatırımları optimizasyonunda yenilenebilir enerjinin ekonomik kalkınma ve istihdama etkisi, Postgraduate, A.MOVLYANOV(Student), 2019
- Selçuklu S. B., Kayseri ili için güneş santrali elektrik enerjisi üretimtahmin planlaması, Postgraduate, O.NKURIYINGOMA(Student), 2018

## Jury Memberships

- PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Erciyes Üniversitesi, September, 2019
- PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Erciyes Üniversitesi, May, 2018
- PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Erciyes Üniversitesi, July, 2017

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

- I. **Machine learning applications on proton exchange membrane water electrolyzers: A component-level overview**  
Albadwi A., SELÇUKLU S. B., KAYA M. F.  
International Journal of Hydrogen Energy, vol.94, pp.806-828, 2024 (SCI-Expanded)
- II. **Effects of tank heating on hydrogen release from metal hydride system in VoltaFCEV Fuel Cell Electric Vehicle**  
Özdoğan E., Hüner B., Süzen Y. O., Eşiyok T., Uzgören İ. N., Kıstı M., Uysal S., Selçuklu S. B., Kayataş Demir N., Kaya M. F.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.48, no.18, pp.6811-6823, 2023 (SCI-Expanded)
- III. **Electricity generation portfolio planning and policy implications of Turkish power system considering cost, emission, and uncertainty**  
SELÇUKLU S. B., Coit D., Felder F.  
Energy Policy, vol.173, 2023 (SCI-Expanded)
- IV. **Economically and environmentally sustainable long-term power system expansion**  
SELÇUKLU S. B., Rodgers M. D., Movlyanov A.  
Computers and Industrial Engineering, vol.164, 2022 (SCI-Expanded)
- V. **Pareto uncertainty index for evaluating and comparing solutions for stochastic multiple objective problems**  
SELÇUKLU S. B., Coit D. W., Felder F. A.  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.284, no.2, pp.644-659, 2020 (SCI-Expanded)
- VI. **Neutronic Analysis of LBE-Uranium Spallation Target Accelerator Driven System Loaded with Uranium Dioxide in TRISO Particles**  
Bakir G., SELÇUKLU S. B., GENÇ G., YAPICI H.  
ACTA PHYSICA POLONICA A, vol.130, no.1, pp.30-32, 2016 (SCI-Expanded)
- VII. **Neutron-Induced Medical Radioisotope Production in a Conceptual Accelerator-Driven System, Fueled with Uranium Carbide**  
ARSLAN A., Bakir G., SELÇUKLU S. B., GENÇ G., YAPICI H.  
ACTA PHYSICA POLONICA A, vol.130, no.1, pp.68-71, 2016 (SCI-Expanded)
- VIII. **Medical Radioisotope Production in a Power-Flattened ADS Fuelled with Uranium and Plutonium**

## **Dioxides**

Bakir G., SELÇUKLU S. B., YAPICI H.

SCIENCE AND TECHNOLOGY OF NUCLEAR INSTALLATIONS, 2016 (SCI-Expanded)

## **Articles Published in Other Journals**

- I. **Generation Expansion Planning Considering Competition and Market Power**  
Selcuklu S. B., Elzein Elmahi A. I.  
European Journal of Sustainable Development Research, vol.6, no.1, 2021 (Scopus)
- II. **Solar power plant generation forecasting using NARX neural network model: A case study**  
NKURIYINGOMA O., SELÇUKLU S. B.  
International Journal of Energy Applications and Technologies, vol.8, no.3, 2021 (Peer-Reviewed Journal)

## **Books & Book Chapters**

- I. **Multi-objective Genetic Algorithms**  
SELÇUKLU S. B.  
in: Handbook of Formal Optimization , Kulkarni, A.J., Gandomi, A.H., Editor, Springer, Singapore, pp.1-37, 2023

## **Refereed Congress / Symposium Publications in Proceedings**

- I. **İklim değişikliği ile mücadele ve emisyon hedefleri kapsamında Türkiye'nin nükleer enerji politikaları analizi**  
Çelik E., SELÇUKLU S. B.  
International World Energy Conference-III, Kayseri, Turkey, 04 December 2023
- II. **MERIT ORDER EFFECT OF RENEWABLE ENERGY SOURCES IN TURKISH ELECTRICITY MARKET**  
Kılıç E., MUĞALOĞLU E., KESKİN H., SELÇUKLU S. B.  
10. YILDIZ ULUSLARARASI SOSYAL BİLİMLER KONGRESİ, İstanbul, Turkey, 21 December 2023
- III. **Electricity Price Forecasting Using Automatic Programming Methods**  
Dikbaş S., ARSLAN S., GÜL M. F., SELÇUKLU S. B.  
International Conference on Artificial Intelligence and Applied Mathematics in Engineering 2023, Antalya, Turkey, 03 November 2023
- IV. **ENERGY PLANNING AND OPTIMIZATION MODELING FOR CAMPUS BUILDINGS AND TRANSPORTATION**  
SELÇUKLU S. B., MOVLYANOV A.  
II. Energy Days Symposium, 26 - 27 September 2023
- V. **Simulation and Assessment of Transition to Alternative Fueled-Buses for a Local Municipality**  
Erbay B. N., DİNÇ M. N., SELÇUKLU S. B.  
7th International Hydrogen Technologies Congress, Elazığ, Turkey, 10 May 2023
- VI. **MAKİNE ÖĞRENİMİ İLE GÜNEŞ ENERJİSİ SANTRALİ ÜRETİM TAHMİNİ**  
HALEF M., SELÇUKLU S. B.  
14th INTERNATIONAL CONFERENCE ON ENGINEERING & NATURAL SCIENCES, Sivas, Turkey, 18 - 19 July 2022, pp.482-483
- VII. **OPTIMIZATION OF ELECTRICITY GENERATION EXPANSION CONSIDERING ECONOMIC DEVELOPMENT AND EMPLOYMENT**  
Movlyanov A., Selcuklu S. B., Rodgers M.  
International World Energy Conference, Kayseri, Turkey, 3 - 04 December 2021, pp.24
- VIII. **A Unique Heat Exchanger Design for Most Efficient Hydrogen Release from Metal Hydride Hydrogen**

### **Storage Tank for VoltaCARH2 Hydrogen Electric Vehicle**

Özdoğan E., Süzen Y. O., Uysal S., Kıstı M., Uzgören İ. N., Hüner B., Selçuklu S. B., Kayataş Demir N., Kaya M. F.

The 5th International Conference on Alternative Fuels , Energy and Environment : Futures and Challenges (ICAFEE 2021), Kayseri, Turkey, 15 - 18 October 2021, pp.1-12

- IX. **Economic, Energy and Environmental Assessments of Transition to Hydrogen-Powered Buses**  
Dinç M. N., Selçuklu S. B., Kıstı M., Kaya M. F.  
The 5th International Conference on Alternative Fuels , Energy and Environment : Futures and Challenges (ICAFEE 2021), Kayseri, Turkey, 15 - 18 October 2021, pp.1-12
- X. **Energy and Environmental Assessment of Transition to Hydrogen Vehicles**  
Dinç M. N., Kıstı M., Selçuklu S. B., Kaya M. F.  
5th International Hydrogen Technologies Congress (IHTEC 2021), Niğde, Turkey, 26 - 28 May 2021, pp.1-12
- XI. **GENERATION EXPANSION PLANNING CONSIDERING COMPETITION AND MARKET POWER**  
Elmahi A. I. E., SELÇUKLU S. B.  
INTERNATIONAL CONFERENCE ON ENERGY, ENVIRONMENT AND STORAGE OF ENERGY ICEESEN 2020, 19 - 21 November 2020, pp.469-473
- XII. **Stochastic Multiple Objective Electric Generation Expansion Planning**  
Coit D. W., Selçuklu S. B., Chatwattanasiri N., Wattanapongsakorn N.  
International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON), Hua Hin, Thailand, 24 - 27 June 2015
- XIII. **Electric power generation expansion planning: Robust optimization considering climate change**  
Li S., Coit D. W., Selçuklu S. B., Felder F. A.  
IIE Annual Conference and Expo 2014, Montreal, Canada, 31 May - 03 June 2014, pp.1049-1058
- XIV. **A New Methodology for Solving Multi-Objective Stochastic Optimization Problems with Independent Objective Functions**  
Selçuklu S. B., Coit D. W., Felder F., Rodgers M., Wattanapongsakorn N.  
IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), Bangkok, Thailand, 10 - 13 December 2013, pp.101-105

### **Supported Projects**

Selçuklu S. B., Öztürk C., Muğaloğlu E., Arslan S., Bilgili F., TUBITAK Project, Agent-Based Simulation Model with Artificial Intelligence-Assisted Learning, Forecasting, and Optimization Algorithms for Electricity Markets and Market Analysis, 2023 - 2025

SELÇUKLU S. B., DİNÇ M. N., Project Supported by Higher Education Institutions, Temiz yakıtlı ve sıfır emisyonlu araçlara geçişin ekonomik enerji ve çevresel etkilerinin değerlendirilmesi, 2022 - 2024

SELÇUKLU S. B., KIRAÇ A., ERGÜN H. C., POLAT Ö., Project Supported by Higher Education Institutions, Elektrik Piyasası Simülasyon Oyunu ile Farklı Piyasa Yapılarının İncelenmesi, 2021 - 2022

Genç M. S., Genç G., Akay B., Selçuklu S. B., Akarsu B., Azgın Ş. T., Yeşilata B., AB IPA Project, Erciyes Üniversitesi Kampüsünde Enerji Verimliliği Önlemlerinin ve Uygulamalarının Öncelik Sıralamalarının Çok Amaçlı Optimizasyonu , 2020 - 2022

Genç M. S., Genç G., Selçuklu S. B., Azgın Ş. T., Akarsu B., Temirkaynak Ş., Yeşilata B., AB IPA Project, Hastane Enerji Verimliliği Fizibilite Çalışması, 2020 - 2022

YAPICI H., ÖZİŞİK G., SELÇUKLU S. B., KAHRAMAN N., DALDABAN F., TÜRKOĞLU O., ÖZLÜ H., KAYATAŞ DEMİR N., ÜSTKOYUNCU N., ERSOY E., et al., Project Supported by Higher Education Institutions, Hidrojen Teknolojisi, Polimer Elektrolit Membranlı Yakıt Hücresi Araştırma Projesi, 2010 - 2014

### **Scientific Refereeing**

TRAKYA ÜNİVERSİTY JOURNAL OF NATURAL SCIENCES, National Scientific Refreed Journal, January 2022

INTERNATIONAL JOURNAL OF THERMODYNAMICS, National Scientific Refreed Journal, January 2022  
International Journal Of Electrical Power & Energy Systems, Journal Indexed in SCI-E, September 2018  
INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS, Journal Indexed in SCI-E, July 2018  
INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS, Journal Indexed in SCI-E, May 2018  
RELIABILITY ENGINEERING & SYSTEM SAFETY, SCI Journal, August 2017  
INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS, Journal Indexed in SCI-E, June 2013  
RELIABILITY ENGINEERING & SYSTEM SAFETY, SCI Journal, May 2012  
ELECTRIC POWER SYSTEMS RESEARCH, Journal Indexed in SCI-E, April 2012

## **Mobility Activity**

Erasmus Programme, Lecturing, Vilnius Gediminas Teknik Üniversitesi, Lithuania, 2018 - 2018

## **Metrics**

Publication: 26  
Citation (WoS): 48  
Citation (Scopus): 87  
H-Index (WoS): 4  
H-Index (Scopus): 5

## **Congress and Symposium Activities**

International Hydrogen Technologies Congress (IHTEC-2021), Attendee, Niğde, Turkey, 2021

## **Scholarships**

Yurtdışı Doktora Eğitim Bursu, YOK, 2010 - 2015