

Assoc. Prof. BANU BULUT ACAR

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: M-4898-2018

Yoksis Researcher ID: 274561

Education Information

Post Doctorate, The University of Leeds, Faculty of Engineering and Physical Sciences, School of Chemical and Process Engineering, England 2022 - 2023

Doctorate, Hacettepe University, Fen Bilimleri Enstitüsü, Turkey 2005 - 2013

Postgraduate, Hacettepe University, Fen Bilimleri Enstitüsü, Turkey 2002 - 2005

Undergraduate, Hacettepe University, Mühendislik Fakültesi, Nükleer Enerji Mühendisliği Bölümü, Turkey 1995 - 2002

Foreign Languages

English, C1 Advanced

Certificates, Courses and Trainings

Project Management, Fen ve Mühendislik Bilimlerinde Uygulamalı Proje Geliştirme-Yürütme-Sonuçlandırma Eğitimi, Hacettepe Üniversitesi, 2019

Education Management and Planning, Eğitimcilerin Eğitimi Programı, Hacettepe Üniversitesi, 2016

Security, Nükleer Güvenlik Denetçisi Temel Eğitimi, Türkiye Atom Enerjisi Kurumu, 2014

Dissertations

Doctorate, Back-end nuclear fuel cycle options: Effects on high level waste management and disposal, Hacettepe University, Fen Bilimleri Enstitüsü, 2013

Postgraduate, Economic analysis methodology of open and closed nuclear fuel cycles, Hacettepe University, Fen Bilimleri Enstitüsü, 2005

Research Areas

Nuclear Engineering and Nuclear Energy Studies

Academic Titles / Tasks

Associate Professor, Hacettepe University, Mühendislik Fakültesi, Nükleer Enerji Mühendisliği Bölümü, 2024 - Continues
Assistant Professor, Hacettepe University, Mühendislik Fakültesi, Nükleer Enerji Mühendisliği Bölümü, 2017 - 2024
Assistant Professor, University of Leeds, 2022 - 2023
Research Assistant, Hacettepe University, Mühendislik Fakültesi, Nükleer Enerji Mühendisliği Bölümü, 2002 - 2006

Academic and Administrative Experience

Deputy Head of Department, Hacettepe University, Mühendislik Fakültesi, Nükleer Enerji Mühendisliği Bölümü, 2024 - Continues
Deputy Head of Department, Hacettepe University, 2018 - 2022

Courses

Nuclear Fuel and Materials, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018
Nükleer Emniyet, Undergraduate, 2023 - 2024
Nuclear Waste Management, Doctorate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018
Graduation Project, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017
Material Sciences, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018
Spent Fuel Reprocessing, Postgraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018
Nuclear Fuel Cycle, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018

Advising Theses

Bulut Acar B., Nükleer Güç Santrallerinde Bulunan Yapı, Sistem ve Bileşenlerin Güvenlik Sınıflandırması Analizi, Postgraduate, Y.YAMAN(Student), 2024
Bulut Acar B., Kazaya toleranslı ve yüksek yanma oranlı kullanılmış yakıt için kuru depolama kabı analizi, Postgraduate, H.MERVE(Student), 2021
Bulut Acar B., Kullanılmış yakıttan uranyum ve plütonyumun tam birlikte geri kazanıldığı yakıt çevriminin nükleer silahsızlanma açısından değerlendirilmesi, Postgraduate, Y.CAN(Student), 2021
Bulut Acar B., Kullanılmış nükleer yakıtın yatay jeolojik bertarafının ısıl analizleri, Postgraduate, G.ÖZEŞME(Student), 2019

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Dose rate distribution calculations with the Monte Carlo method for high burnup spent fuel loaded dry storage cask**
Pediz G., Bulut Acar B.
NUCLEAR ENGINEERING AND DESIGN, vol.426, no.113392, pp.1-9, 2024 (SCI-Expanded)
- II. **Hydrodynamic simulation-informed compartment modelling of an annular centrifugal contactor**
Bulut Acar B., Al-Sayaghi M., Fells A., Hanson B.
CHEMICAL PRODUCT AND PROCESS MODELING, vol.1, pp.1-15, 2024 (SCI-Expanded)
- III. **Performance evaluation of a currently in-use dry storage cask design for spent accident tolerant fuel loading case under normal operation condition**
Durdu H. M., BULUT ACAR B.
Kerntechnik, vol.88, no.4, pp.424-436, 2023 (SCI-Expanded)
- IV. **Nuclear proliferation resistance assessment of fuel cycles closed with complete co-processing of spent fuel**

Can Y., Acar B.

PROGRESS IN NUCLEAR ENERGY, vol.150, 2022 (SCI-Expanded)

- V. **Implications of different actinide recycling options for EPR reactors on resource utilization and resultant high level waste disposal**
Acar B.
ANNALS OF NUCLEAR ENERGY, vol.171, 2022 (SCI-Expanded)
- VI. **Development of canisters for spent fuels of VVER-1200 and ATMEA1 new generation reactors and determination of geological disposal densities**
Özeşme G., Acar B.
ANNALS OF NUCLEAR ENERGY, vol.150, 2021 (SCI-Expanded)
- VII. **Impact assessment of alternative back-end fuel cycles on geological disposal of resultant spent fuels and high level wastes**
Acar B., Zabunoglu O. H.
ANNALS OF NUCLEAR ENERGY, vol.130, pp.452-472, 2019 (SCI-Expanded)
- VIII. **Comparison of the once-through and closed nuclear fuel cycles with regard to waste disposal area required in a geological repository**
Acar B., ZABUNOĞLU H. O.
ANNALS OF NUCLEAR ENERGY, vol.60, pp.172-180, 2013 (SCI-Expanded)
- IX. **Determination of fissile fraction in MOX (mixed U plus Pu oxides) fuels for different burnup values**
Ozdemir L., Acar B., Zabunoglu O. H.
ANNALS OF NUCLEAR ENERGY, vol.38, pp.540-546, 2011 (SCI-Expanded)

Articles Published in Other Journals

- I. **Determination of Disposal Density of VVER-1200 Spent Fuel Loaded Canisters in Horizontal Geological Disposal**
ÖZEŞME G., BULUT ACAR B.
BgNS TRANSACTIONS, vol.25, pp.45-48, 2021 (Peer-Reviewed Journal)
- II. **VVER-1200 Tipi Nükleer Reaktörün Kullanılmış Yakıtları İçin Depolama Tesisi Modeli Geliştirilmesi ve Maliyet Analizi**
BULUT ACAR B.
Afyon Kocatepe Üniversitesi Fen ve Mühendislik Bilimleri Dergisi, vol.20, no.2, pp.362-373, 2020 (Peer-Reviewed Journal)

Books & Book Chapters

- I. **Environmental Impact Assessment for New Nuclear Power Plants in Mediterranean Countries**
BULUT ACAR B.
in: Management and Conservation of Mediterranean Environments, Rui Alexandre Castanho, José Martín Gallardo, Editor, IGI Global Publishing, Hershey, PA, pp.94-114, 2021

Refereed Congress / Symposium Publications in Proceedings

- I. **Evaluation of Radioactive Waste Streams and Management Options for Molten Salt Small Modular Reactor**
Bulut Acar B.
International Conference on Small Modular Reactors and their Applications, Vienna, Austria, 21 - 25 October 2024, pp.1-5

- II. **Effect of the host rock thermal properties on the disposal area requirements for spent fuel and vitrified high level waste in a geological repository**
Bulut Acar B.
International Conference on the Management of Spent Fuel from Nuclear Power Reactors - Meeting the Moment , 2024, Vienna, Austria, 10 - 14 June 2024, pp.1-5
- III. **Possible Extraction and Energy Potential of Uranium Reserves at the Temrezli Deposit in Turkey**
BULUT ACAR B.
International Symposium on Uranium Raw Material for the Nuclear Fuel Cycle: Innovation for Sustaining Future Resources and Production (URAM-2023), Viyana, 08 May 2023
- IV. **Determination of enrichment of FeCrAl/U3Si2 fuel to reach the same burnup with the standard UO2/Zr fuel**
BULUT ACAR B.
Istanbul Rumeli University 1st International Scientific Research Conference on Sustainable Engineering and Technology, İstanbul, Turkey, 13 - 15 May 2022, pp.83-84
- V. **Actinide Transmutation Performance Evaluation of Accelerator Driven Subcritical Reactor with Thorium Bearing Fuel**
BULUT ACAR B.
2nd International Congress of Engineering and Natural Sciences Studies, Ankara, Turkey, 7 - 09 May 2022, pp.58-70
- VI. **Complete Co-processing of Spent Fuel as a Back-End Fuel Cycle Strategy**
BULUT ACAR B., ZABUNOĞLU H. O.
International Conference on the Management of Spent Fuel from Nuclear Power Reactors: Learning from the Past, Enabling the Future, VİYANA, Austria, 24 - 28 June 2019
- VII. **Role of Nuclear Education Programs in the Enhancement of Nuclear Regulatory System in Turkey**
BULUT ACAR B.
International Conference on Effective Nuclear and Radiation Regulatory Systems: Working Together to Enhance Cooperation, LAHEY, Netherlands, 4 - 07 November 2019
- VIII. **Determination of Disposal Density of VVER-1200 Spent Fuel Loaded Canisters in Horizontal Geological Disposal**
ÖZEŞME G., BULUT ACAR B.
BgNS International Conference Nuclear Energy for the People, RUSÇUK, Bulgaria, 4 - 07 November 2019, pp.37
- IX. **Estimation of Uranium Requirements for Planned Nuclear Power Plants and Supply Capacity of Uranium Resources in Turkey**
BULUT ACAR B., ZABUNOĞLU H. O.
International Symposium on Uranium Raw Material for the Nuclear Fuel Cycle: Exploration, Mining, Production, Supply and Demand, Economics and Environmental Issues (URAM-2018), ViİYANA, Austria, 25 - 29 June 2018, pp.81-84
- X. **Impact of Storage Period on Safe Geological Disposal of Spent Fuel**
BULUT ACAR B., ZABUNOĞLU H. O.
International Conference on the Safety of Radioactive Waste Management (CN-242), VİYANA, Austria, 21 - 25 November 2016
- XI. **Açık ve Kapalı Nükleer Yakıt Çevrimlerinin Yüksek Aktiviteli Atık Bertarafı Açısından Karşılaştırılması**
BULUT ACAR B., ZABUNOĞLU H. O.
XI. Ulusal Nükleer Bilimler ve Teknolojileri Kongresi, Aydın, Turkey, 12 - 14 October 2016, pp.18

Supported Projects

BULUT ACAR B., BİLEN O., Project Supported by Higher Education Institutions, Kullanılmış Yakıttan Uranyum ve Plütonyumun Geri Kazanımında Santrifüj Kontaktör Kullanımı, 2023 - Continues

Bulut Acar B., IAEA International Atomic Energy Agency Supported Project, INT2022-Supporting Capacity Building in

Member States for Uranium Production and Safety of Naturally Occurring Radioactive Material Residue Management, IAEA, 2020 - 2024

Bulut Acar B., H2020 Project, PATRICIA (Partitioning and Transmuter Research Initiative in a Collaborative Innovation Action) -Development of a process flowsheet to identify critical points in the proposed AMSEL flowsheet, 2022 - 2023

Metrics

Publication: 23

Citation (WoS): 11

Citation (Scopus): 18

H-Index (WoS): 2

H-Index (Scopus): 2

Scholarships

2219 Yurtdışı Doktora Sonrası Araştırma Bursu, TÜBİTAK, 2022 - 2023

Non Academic Experience

TÜRKİYE ATOM ENERJİSİ KURUMU