

Assoc. Prof. Senem Şentürk Lüle

Personal Information

Office Phone: [+90 212 285 3941](tel:+902122853941)

Email: senturklule@itu.edu.tr

Web: <https://avesis.itu.edu.tr/senturklule>

Address: İTÜ Ayazağa Yerleşkesi Enerji Enstitüsü Maslak/Sarıyer 34469 İstanbul/ Türkiye

International Researcher IDs

ScholarID: Nx6VWU4AAAAJ

ORCID: 0000-0002-6632-5831

Publons / Web Of Science ResearcherID: K-6818-2018

ScopusID: 56530858000

Yoksis Researcher ID: 243411

Education Information

Doctorate, Hacettepe University, Fen Bilimleri Enstitüsü, Nükleer Enerji Mühendisliği Abd, Turkey 2002 - 2012

Postgraduate, The University of Birmingham, School Of Physics And Astronomy, Physics And Technology Of Nuclear Reactors, United Kingdom 2003 - 2004

Postgraduate, Hacettepe University, Fen Bilimleri Enstitüsü, Nükleer Enerji Mühendisliği Abd, Turkey 1999 - 2002

Undergraduate, Hacettepe University, Mühendislik Fakültesi, Nükleer Enerji Mühendisliği, Turkey 1994 - 1999

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Computational fluid dynamics studies for a spouted bed nuclear fuel coater, Hacettepe Üniversitesi, Fen Bilimleri Enstitüsü, Nükleer Enerji Mühendisliği Abd, 2012

Postgraduate, Testing of MCFANG Code for Medical Applications, The University Of Birmingham, School Of Physics And Astronomy, Physics And Technology Of Nuclear Reactors, 2004

Postgraduate, Design of a Gamma Irradiation Facility and radiation Dose Calculations with Monte Carlo Simulations, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Nükleer Enerji Mühendisliği Abd, 2002

Research Areas

Fluid Mechanics, Nuclear Energy, Energy storage technologies, Nuclear Engineering and Nuclear Energy Studies

Academic Titles / Tasks

Assistant Professor, Istanbul Technical University, Enerji Enstitüsü, Nükleer Araştırmalar, 2016 - Continues

Research Assistant, Hacettepe University, Mühendislik Fakültesi, Nükleer Enerji Mühendisliği, 1999 - 2005

Academic and Administrative Experience

Assistant Director of the Institute, Istanbul Technical University, Enerji Enstitüsü, Nükleer Araştırmalar, 2021 - Continues

Courses

Nuclear Reactor Theory, Doctorate, 2020 - 2021
Nükleer Mühendisliğin Esasları, Postgraduate, 2021 - 2022
Radyasyondan Korunma ve Sağlık Fiziği, Postgraduate, 2019 - 2020
Nuclear Reactor Engineering, Postgraduate, 2019 - 2020
Advanced FLuid Dynamics, Postgraduate, 2018 - 2019
Enerji Sistemlerinde Hesaplamalı Yöntemler, Postgraduate, 2018 - 2019
Radyasyon Zırhlama, Postgraduate, 2017 - 2018
Nuclear Engineering Materials, Postgraduate, 2017 - 2018

Advising Theses

Şentürk Lüle S., KUVARS TÜPLÜ KATI PARÇACIKLI GÜNEŞ ALICISI İÇİN HESAPLAMALI AKIŞ DİNAMİĞİ ANALİZİ, Postgraduate, M.Bölük(Student), 2021
Şentürk Lüle S., NÜKLEER EMNİYETTE FİZİKSEL KORUMA SİSTEMİ TASARIMI VE ANALİZİ İÇİN YAZILIM GELİŞTİRİLMESİ, Postgraduate, M.Akdemir(Student), 2021
Şentürk Lüle S., ATMOSPHERIC DISPERSION AND CORRESPONDING DOSE AND RISK CALCULATIONS FOR A HYPOTHETICAL ACCIDENT IN ITU TRIGA MARK II RESEARCH REACTOR, Postgraduate, S.Bektaş(Student), 2020
Şentürk Lüle S., THERMAL HYDRAULICS ANALYSIS OF ITU TRIGA MARK II RESEARCH REACTOR WITH 3D COMPUTATIONAL FLUID DYNAMICS SIMULATION, Postgraduate, F.Kutbay(Student), 2020
Şentürk Lüle S., AKIŞKAN YATAK KURUTMA SİSTEMİNDE HESAPLAMALI AKIŞ DİNAMİĞİ ANALİZLERİ, Postgraduate, A.Doğan(Student), 2020
Şentürk Lüle S., COMPUTATIONAL FLUID DYNAMICS ANALYSIS OF A THERMOCLINE THERMAL STORAGE UNIT FOR SOLAR THERMAL APPLICATIONS, Postgraduate, A.Asaditaheri(Student), 2018

Jury Memberships

Post Graduate, Yüksek Lisans tez savunma jüriliği, İstanbul Teknik Üniversitesi, March, 2016

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Assessment of the detection efficiency calibration of high-resolution gamma-ray spectrometers by EGSnrc and MCNP6.2 Monte Carlo codes**
Sayın S., Seferinoğlu M., Yeltepe E., Çetin B., Şentürk Lüle S.
Radiation Physics and Chemistry, vol.203, 2023 (SCI-Expanded)
- II. **Computational Fluid Dynamics Analysis of a Thermocline Thermal Storage Unit for Solar Thermal Applications**
Şentürk Lüle S., Asaditaheri A.
ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING, vol.47, no.7, pp.9005-9018, 2022 (SCI-Expanded)
- III. **An integrated method for atmospheric dispersion and corresponding risks: Application to ITU TRIGA Mark II research reactor**
Bektaş S., Şentürk Lüle S.
Progress in Nuclear Energy, vol.143, 2022 (SCI-Expanded)

- IV. **The computational fluid dynamics evaluation of the diffuser on N-16 radioisotope rise time in TRIGA mark II research reactor tanks**
Bektaş S., Lüle S., Çolak Ü.
Progress in Nuclear Energy, vol.134, 2021 (SCI-Expanded)
- V. **The development of TM2-RIA code for TRIGA type research reactors**
Allaf M. A. , Şentürk Lüle S., Çolak Ü.
ANNALS OF NUCLEAR ENERGY, vol.145, 2020 (SCI-Expanded)
- VI. **Application of CNUREAS and MCNP5 codes to VVER-1000 MOX Core Computational Benchmark**
Lule S., OZDEMIR L., ERDOGAN A.
PROGRESS IN NUCLEAR ENERGY, vol.85, pp.454-461, 2015 (SCI-Expanded)
- VII. **CFD simulations of hydrodynamics of conical spouted bed nuclear fuel coatere**
Lule S., Çolak Ü., KÖKSAL M., KÜLAH G.
Chemical Vapor Deposition, vol.21, no.4-6, pp.122-132, 2015 (SCI-Expanded)

Articles Published in Other Journals

- I. **Nükleer Emniyette Fiziksel Koruma Sistemi Tasarımı ve Analizi İçin Yerli Yazılım Geliştirilmesi**
AKDEMİR M., ŞENTÜRK LÜLE S.
Savunma Bilimleri Dergisi, no.42, pp.1-20, 2022 (Peer-Reviewed Journal)
- II. **Performance improvement methods for quartz tube solid particle fluidized bed solar receiver**
Şentürk Lüle S., Bölük M.
Journal of Thermal Engineering, vol.8, no.4, pp.477-489, 2022 (ESCI)
- III. **The Investigation of the Sensitivity of Monte Carlo Simulation Results to Modelling Approaches for Nuclear Reactor Cores**
ŞENTÜRK LÜLE S., Allaf M., ÇOLAK Ü.
Avrupa Bilim ve Teknoloji Dergisi, no.38, pp.110-115, 2022 (Peer-Reviewed Journal)
- IV. **Dose calculations of anthropomorphic voxel-based phantom for Americium-241/Beryllium neutron source**
SARIOĞLU B., ŞENTÜRK LÜLE S., ÇOLAK Ü.
BgNS TRANSACTIONS, 2021 (Peer-Reviewed Journal)
- V. **The Method to Predict First Critical Core Loading for Nuclear Reactors**
Şentürk Lüle S.
Sakarya University Journal of Science, vol.24, no.6, pp.1248-1251, 2020 (Peer-Reviewed Journal)
- VI. **Neutronic Comparison of Proposed Claddings for Accident Tolerant Fuel with Zirconium Based Cladding in PWRs**
ŞENTÜRK LÜLE S., ÇOLAK Ü.
BgNS TRANSACTIONS, vol.20, no.2, pp.121-123, 2015 (Peer-Reviewed Journal)

Books & Book Chapters

- I. **The Application of Artificial Intelligence to Nuclear Power Plant Safety**
Yavuz C., ŞENTÜRK LÜLE S.
in: Artificial Intelligence for Knowledge Management, Energy, and Sustainability, Eunika Mercier-Laurent, Gülgün Kayakutlu, Editor, Springer, pp.117-127, 2022
- II. **Reaktivite Geri Besleme**
Çelik A., Tiftikçi A., Tanbay T., Çelikten O. Ş. , Çelik N., Ayhan H., Türkmen M., Şentürk Lüle S., Atak H., Akbulut Özen S. (Editor)
in: Nükleer Reaktör Fiziğinin Temelleri, Songül Karabulut Özen, Editor, Akademisyen, Ankara, pp.221-242, 2021

Refereed Congress / Symposium Publications in Proceedings

- I. **Monte Carlo Estimation of Spent Fuel Gamma Spectrum and Dose from Measurement System**
ŞENTÜRK LÜLE S., SARIOĞLU B., ÇOLAK Ü.
International Graduate Research Symposium, Turkey, 1 - 03 June 2022
- II. **Computational Fluid Dynamics Analysis of ITU TRIGA Mark II Research Reactor Spent Fuel Pit**
Sayın S., ŞENTÜRK LÜLE S., ÇOLAK Ü.
European Research Reactor Conference, Helsinki, Finland, 26 September 2021
- III. **Shielding Performance of a Proposed Spent Fuel Pit for the ITU TRIGA Mark II Research Reactor**
BEKTAŞ S., ŞENTÜRK LÜLE S., ÇOLAK Ü.
European Research Reactor Conference, Helsinki, Finland, 26 September 2021
- IV. **Neutronic Analysis of Ventilated Dry Storage Cask with Monte Carlo Method**
SARIOĞLU B., ŞENTÜRK LÜLE S., ÇOLAK Ü.
International Conference on Nuclear Energy for New Europe, Bled, Slovenia, 6 - 09 September 2021
- V. **The Effect of Burnup on ITU TRIGA Mark II Research Reactor Control Parameters**
ÖZKAN F. Ö. , ŞENTÜRK LÜLE S., ÇOLAK Ü.
International Conference on Nuclear Energy for New Europe, Bled, Slovenia, 6 - 09 September 2021
- VI. **The application of Artificial Intelligence to Nuclear Power Plant Safety**
Yavuz C., ŞENTÜRK LÜLE S.
30th International Joint Conference on Artificial Intelligence, Montreal, Canada, 19 - 27 August 2021
- VII. **Freeze Plug Design in Molten Salt Reactor with Consideration of Solidification**
KAHRAMAN M. C. , ŞENTÜRK LÜLE S., ÇOLAK Ü.
IV International (XVII Regional) Scientific Conference "Technogenic Systems and Environmental Risk", Obninsk, Russia, 19 - 20 April 2021, pp.13-15
- VIII. **CRITICALITY ANALYSIS OF PROPOSED TRIGA SPENT FUEL PIT DESIGN FOR VARIOUS HYPOTHETICAL EVENTS**
Bektaş S., Şentürk Lüle S., Çolak Ü.
29th International Conference Nuclear Energy for New Europe, Piran, Slovenia, 7 - 10 September 2020
- IX. **The Role of Women in the Development of Effective Nuclear Risk Communication A Case Study by WiN Turkey**
Göktepe G., Güngör N., Şentürk Lüle S., Songur E.
International Symposium on Communicating Nuclear and Radiological Emergencies to the Public, Vienna, Austria, 1 - 05 October 2018
- X. **Monte Carlo Analysis of Control Rod Worth for ITU TRIGA Mark II Research Reactor**
Özkan F. Ö. , Allaf M., Şentürk Lüle S., Çolak Ü.
27th International Conference Nuclear Energy for New Europe, Piran, Slovenia, 10 - 13 September 2018, pp.1
- XI. **Doppler Broadening Effect on Reactivity Feedback in ITU TRIGA MARK II Research Reactor**
Allaf M., Kutbay F., Şentürk Lüle S., Çolak Ü.
27th International Conference Nuclear Energy for New Europe, Piran, Slovenia, 10 - 13 September 2018
- XII. **The Future of Nuclear Energy and Changing Roles**
ÇOLAK Ü., ŞENTÜRK LÜLE S.
İNERMA, Turkey, 27 - 30 September 2017
- XIII. **The Future of Nuclear Energy and Changing Roles**
Şentürk Lüle S., Çolak Ü.
International Energy Raw Materials and Energy Summit, İstanbul, Turkey, 27 - 30 September 2017, pp.1
- XIV. **Thorium as Nuclear Fuel**
ÇOLAK Ü., ŞENTÜRK LÜLE S.
İNERMA, 1 - 03 October 2015
- XV. **Accident Tolerant Fuel**
ŞENTÜRK LÜLE S., ÇOLAK Ü.
İNERMA, 1 - 03 October 2015

- XVI. **Application of Monte Carlo Techniques to Dose Rate Calculations of Gamma Irradiation Facility**
ŞENTÜRK LÜLE S., ÇOLAK Ü.
23rd WiN Global Annual Conference, Austria, 24 - 27 August 2015
- XVII. **Nuclear Power projects in Turkey and Human Resource Development Activities**
ÇOLAK Ü., ŞENTÜRK LÜLE S.
International Conference on Nuclear Human Resources Development in Asia and the Pacific, Malaysia, 28 - 30 October 2014
- XVIII. **Assessment and Prognosis of Local Radioactive Incident Using Atmospheric Dispersion Modeling**
Şimşek V., ŞENTÜRK LÜLE S.
International Conference on Global Emergency Preparedness and Response, Viyana, Austria, 19 - 23 October 2015
- XIX. **Burnup Calculations of TR-2 Research Reactor with MONTEBURNS Monte Carlo Code**
Özdemir L., erdoğan a., ŞENTÜRK LÜLE S.
International Conference Nuclear Science and Its Applications, Samarqand, Uzbekistan, 25 September 2012

Supported Projects

Erentürk S., Tan Ü., Şentürk Lüle S., Okyar A., YUŞAN S., Project Supported by Higher Education Institutions, Doğal Hammaddeler Kullanılarak Cam-Seramik Radyasyon Zırhlama Malzemelerinin Hazırlanması ve Zırhlama Performanslarının Belirlenmesi, 2022 - Continues

Şentürk Lüle S., Çolak Ü., TUBITAK Project, Toryum Yakıtlı Mikro Nükleer Reaktör Tasarımı, 2022 - 2025

Şentürk Lüle S., Project Supported by Public Organizations in Other Countries, RER1022- Enhancing Utilization and Safety of Research Reactors, 2022 - 2024

Şentürk Lüle S., Kutbay F., Bektaş S., Özkan F. Ö. , Çolak Ü., Project Supported by Higher Education Institutions, Nükleer Reaktörlerin Tasarım ve Güvenlik Analizlerinde Kullanılan Kodların Kuplajı ve Ara Yüzünün Geliştirilmesi, 2019 - 2022

Şentürk Lüle S., IAEA International Atomic Energy Agency Supported Project, Enhancing Capacity Building Activities in the European Nuclear and Radiation Safety Organizations for the Safe Operation of Facilities, 2018 - 2022

Oyguç R. A. , Oyguç E. E. , Şentürk Lüle S., Erken A., Project Supported by Higher Education Institutions, VVER1200 tipi Nükleer Santralin Dış Koruma Kabının Yapı Zemin Etkileşimleri Gözetilerek Sismik Performansının Belirlenmesi ve Kırılma Eğrilerinin Elde Edilmesi, 2017 - 2021

Şentürk Lüle S., Çolak Ü., Ecer S., Kayakutlu G., Uzsayılır A., Project Supported by Other Official Institutions, TÜRKİYE İÇİN NÜKLEER SANTRALLERİN TEKNOLOJİK, EKONOMİK, ENDÜSTRİYEL, SOSYAL VE ÇEVRESEL AÇIDAN GENEL BİR DEĞERLENDİRMESİ, 2018 - 2018

Scientific Refereeing

Turkish Journal of Nuclear Sciences, National Scientific Refreed Journal, April 2018

Metrics

Publication: 35
Citation (WoS): 18
Citation (Scopus): 19
H-Index (WoS): 1
H-Index (Scopus): 2

Congress and Symposium Activities

International Symposium on Communicating Nuclear and Radiological Emergency to the Public, Attendee, Vienna,

Austria, 2018

27th International Conference Nuclera Energy for New Europe, Attendee, Slovenia, 2018

Non Academic Experience

Other, Uluslararası Atom Enerjisi Ajansı

Other Public Institution, Türkiye Atom Enerjisi Kurumu

Business Organization (private), Serco Assurance