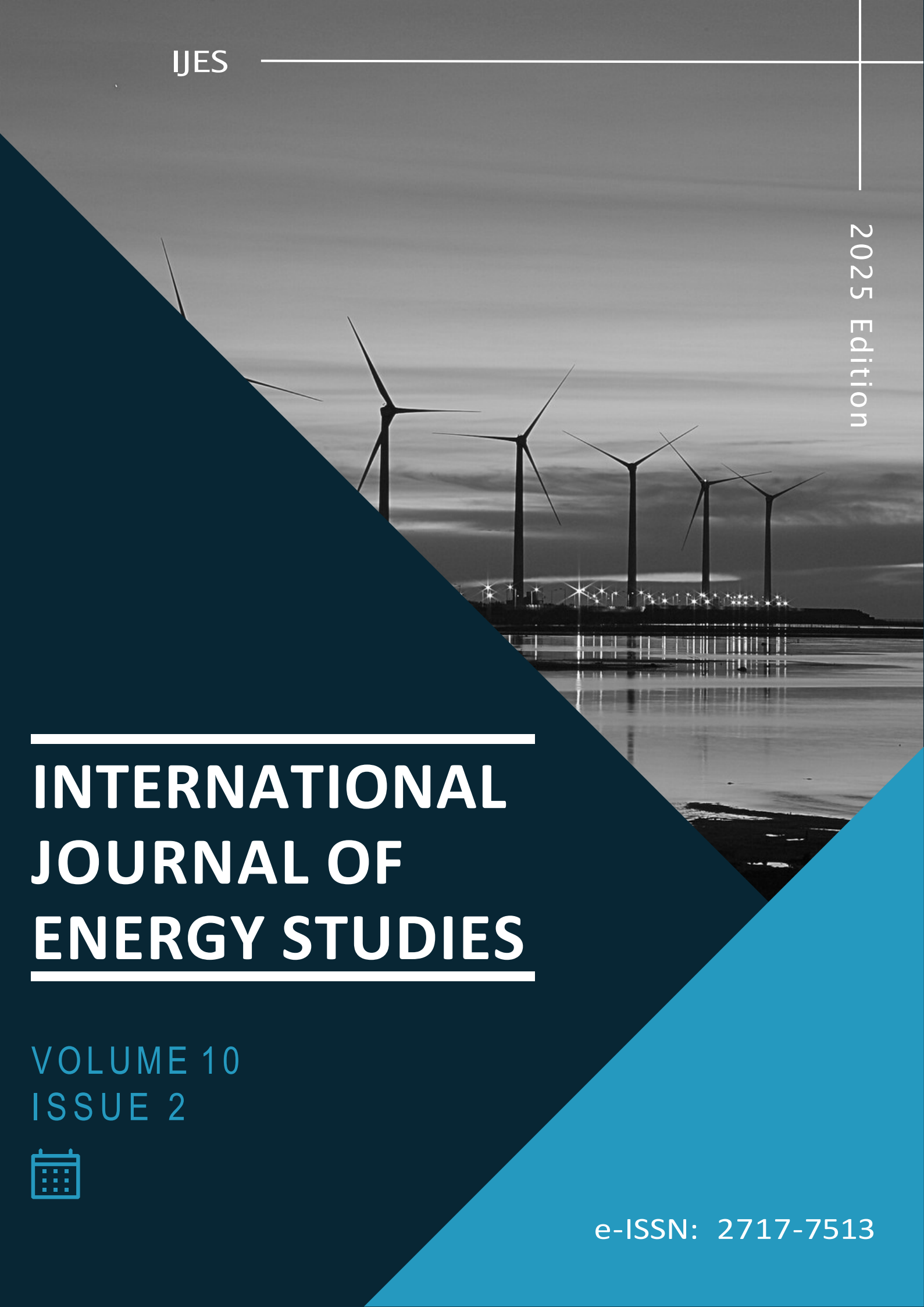


IJES

2025 Edition



INTERNATIONAL JOURNAL OF ENERGY STUDIES

VOLUME 10
ISSUE 2



e-ISSN: 2717-7513

International Journal of Energy Studies (*IJES*)

IJES is published four times a year

e-ISSN:2717-7513

Homepage: <https://dergipark.org.tr/en/pub/ijes>

Publisher: Türkiye Enerji Stratejileri ve Politikaları Araştırma Merkezi (TESPAM)

2025, Volume 10, Issue 2

Contents

Thermodynamic insights and comparative evaluation of R22, R410A, R32, R290, and R1234ze(E) in air source heat pump systems: A theoretical study / Pages:332-366 / Kutbay Sezen (Research Article)

Optimization of combustion and emission characteristics of coke oven gas doped ammonia/air mixture by colorless distributed combustion (CDC) technology/ Pages:367-391 / Ozan Kekül (Research Article)

A high-efficiency hybrid energy system composed of fuel cell and thermoelectric generator for light electric vehicles / Pages:393-407 / Mehmet Zahid Erel (Research Article)

Hybrid renewable energy systems optimization: a case study of an industrial application using HOMER / Pages:409-435 / Tuba Tezer (Research Article)

Performance analysis and characterization of latent heat storage in integrated thermal management systems under transition season conditions / Pages:437-459 / Gülenay Alevay Kılıç (Research Article)

Enhancing summer thermal comfort and energy performance in university office spaces using DesignBuilder's parametric optimization: The role of window openings, solar shading, and HVAC systems / Pages:461-510 / Gonca Özer Yaman (Research Article)

Investigation and modeling of wastewater treatment, electricity generation and coulombic efficiency by new design nested cylindrical dual chamber microbial fuel cell / Pages:511-522 / Gizem Hazan Akçay, İrfan Ar (Research Article)

Life Cycle Assessment of Biodiesel Produced from Cottonseed Oil in Türkiye / Pages:523-548 / Aliaa Saleh, Hidayet Oğuz, Atıf Emre Demet (Research Article)

Optimal sizing of small hydroelectric power plant: a case study of Challawa Gorge dam, Kano state / Pages:549-567 / Nuraini Sunusi Ma'aji, Masud Musa, Kadawa Ibrahim Ali, Umar

Muhammad Ahmad, Jamilu Ya'u Muhammad, Audu Taofeek Olaniyi, Iliya Abdullahi Aliyu
(Research Article)

Türkiye's net zero plan: mathematical analysis of emission and mitigation approaches /
Pages:569-594 / Mujeeb Babatunde Adetayo (Research Article)

**Calibration of building energy simulation models for energy-efficient retrofitting: a
residential case study in Samsun-Havza /** Pages:595-617 / Sinem Tozlu, Ayşenur Coşkun,
Semra Arslan Selçuk, Fatma Zehra Çakici (Research Article)

Technological advancements in PV-based energy storage methods / Pages:619-646 / Merve
Yılmaz, Onur Akar, Nazmi Ekren (Opinion Article)

Editorial Team

Editor-in-Chief

Prof. Dr. Mustafa İlbaş - Gazi University – Türkiye

Co-Editor

Prof. Dr. Serhat Karyeyen - Gazi University – Türkiye

Dr. Berre Kümük – Iskenderun Technical University - Türkiye

Dr. Büşra Arslan - Gazi University - Türkiye

Associate Editors

Prof. Dr. Bora Timurkutluk - Niğde Ömer Halisdemir University - Türkiye

Prof. Dr. Nesrin Kayataş Demir - Erciyes University - Türkiye

Prof. Dr. Bilge Albayrak Çeper - Erciyes University - Türkiye

Prof. Dr. Selahattin Çelik - Ankara Yıldırım Beyazıt University - Türkiye

Assoc. Prof. Dr. Harun Yılmaz - Erzincan Binali Yıldırım University – Türkiye

Language Editor

Fatma Ülkü Kavruk - Gazi University – Türkiye

Editorial Advisory Board

Prof. Dr. Volkan Ş. Ediger - Kadir Has University - Türkiye

Prof. Dr. Ashwani K. Gupta - University of Maryland, College Park - Maryland, USA

Prof. Dr. Oktay Çetinkaya - Middle East Technical University - Türkiye

Prof. Dr. Shouyin (Ian) Yang - National Formosa University - Taiwan

Prof. Dr. İlker Yılmaz - Gazi University - Türkiye

Prof. Dr. Hakan Serhad Soyhan - Sakarya University - Türkiye

Prof. Dr. Yüksel Kaplan - Niğde Ömer Halisdemir University - Türkiye

Prof. Dr. İskender Gökalp - CNRS - France

Prof. Dr. Ahmet Yozgatlıgil - Middle East Technical University - Türkiye

Prof. Dr. Veli elik - Ankara Yıldırım Beyazıt University – Türkiye
Prof. Dr. Nafiz Kahraman - Erciyes University - Türkiye
Prof. Dr. Yueh-Heng Li - National Cheng Kung University – Taiwan
Assoc. Prof. Dr. Murat Sahin - National Defence University - Türkiye
Assoc. Prof. Dr. Abdulkadir Bektaş – Directorate of Climate Change - Türkiye
Dr. Paramvir Singh - Indian Institute of Technology Mumbai – India

Technical Editors

Dr. Berre Kümük – Iskenderun Technical University - Türkiye
Dr. Büşra Arslan - Gazi University - Türkiye
Res. Assist. Fethi Mustafa Çimen - Gazi University – Türkiye
Res. Assist. Can Alican - Gazi University - Türkiye