

JOURNAL OF DEFENCE AND SECURITY INDUSTRIES: STRATEGY AND TECHNOLOGY



VOLUME: 1 ISSUE:2 YEAR: 2026

Chairman

Prof. Dr. Haluk GÖRGÜN

Editors-in-Chief

Editor-in-Chief (Strategy & Policy Section)

Prof. Dr. Hakan KARATAŞ

Editor-in-Chief (Technology & Science Section)

Prof. Dr. İhsan KAYA

Section Editors

Prof. Dr. Cenk AKTAŞ

Assoc. Prof. Dr. Sinan KESKİN

Dr. Veda DUMAN KANTARCIOĞLU

Journal of Defence and Security Industries: Strategy and Technology (JDSI)

Journal of Defence and Security Industries: Strategy and Technology (JDSI) is an open-access, peer-reviewed academic journal dedicated to publishing scientific research in the fields of engineering, technology, management, and strategy as they relate to the defence and security sectors. Established by Defence Industries Academy Publications, JDSI aims to foster academic and industrial collaboration by providing a platform where scholars and professionals can exchange knowledge, insights, and innovative approaches to complex challenges in defence and security.

Publication Frequency

The JDSI accepts the articles in English and is being published three times a year.

Correspondence Address

Journal Contact: editorial@jdsi.org

Advisory Board

Prof. Dr. Ahmet Turan Özdemir (Aspilsan Energy Industry and Trade Inc.)
Prof. Dr. Cemal Zehir (Yıldız Technical University)
Prof. Dr. Ebru Tümer (Gebze Technical University)
Prof. Dr. Ebru Menşur (Gebze Technical University)
Prof. Dr. Ercüment Arvas (ASELSAN Inc.)
Prof. Dr. Erhan Afyoncu (National Defence University)
Prof. Dr. F. Duygu Özel Demiralp (Türkiye Biotechnology Institute)
Prof. Dr. Fahrettin Öztürk (TUSAS Engine Industries Inc.)
Prof. Dr. İbrahim Kılıçaslan (İşbir Electric Industry Inc.)
Prof. Dr. Lokman Kuzu (Turkish Aerospace Industries Inc.)
Prof. Dr. Mahmut F. Akşit (TUSAS Engine Industries Inc.)
Prof. Dr. Mehmet Çelik (Konya Karatay University)
Prof. Dr. Mehmet Ali Tekiner (Ordu University)
Prof. Dr. Nurettin Acır (National Defence University)
Prof. Dr. Serdar Salman (National Defence University)
Dr. Ertaç Koca (Presidency of The Republic of Türkiye - Secretariat of Defence Industries)
Dr. Fatih Say (EHSIM Electronic Warfare System Inc.)
Dr. Mehmet Akif Nacar (HAVELSAN Inc.)
Dr. Mehmet Demiroğlu (Turkish Aerospace Industries Inc.)
Dr. Murat Ceran (Presidency of The Republic of Türkiye - Secretariat of Defence Industries)
Dr. Şaduman Aziz (STM Inc.)
Reha Ufuk ER (Presidency of The Republic of Türkiye - Secretariat of Defence Industries)
Taha Yücel (ASELSAN Inc.)

Editorial Board

Assoc. Prof. Dr. Ahmet Fazıl Yağlı (ASELSAN Inc.)
Assoc. Prof. Dr. Arif Furkan Mendi (HAVELSAN Inc.)
Assoc. Prof. Dr. Emrah Sarıca (Baskent University)
Assoc. Prof. Dr. Seval Aksoy Kürü (Marmara University)
Dr. Ali Emre Güleç (ASELSAN Inc.)
Dr. Bahadır Küçükçök (ASELSAN Inc.)
Dr. Begüm Şahin (Medipol University)
Dr. Kaan Arda (Presidency of The Republic of Türkiye - Secretariat of Defence Industries)
Dr. Mevlut Bulut (Presidency of The Republic of Türkiye - Secretariat of Defence Industries)
Dr. Şafak Bilgi Akdemir (ASELSAN Inc.)
Dr. Oğuz Menekşe (ROKETSAN Inc.)
Dr. Sefa Özkaya (National Defence University)
Selin Tamer (ROKETSAN Inc.)
Levent Erikan (HAVELSAN Inc.)
Zeynep Cenk Kuru (Presidency of The Republic of Türkiye - Secretariat of Defence Industries)

Articles

Strategy & Policy Section

Strategic Importance of Industrial Espionage in the Turkish Defence Industry and the Development of Counterintelligence Awareness Against Espionage Methodologies 1-26

Energy Espionage 5.0: Corporate Intelligence, Critical Metals, and Artificial Intelligence 27-58

Technology & Science Section

Volume Over Lethality: A Matrix-Exponential Framework for Defending Drone Swarms..... 59-87

Comparative Analysis of Artificial Intelligence-Based Learning Systems Used in Air Combat Simulation Environments..... 88-109

ML-Based RF Calibration of Military T/R Modules.....110-128

Domain-Specific Summarization to Enhance LLM Effectiveness129-156

Design and Experimental Validation of an EMI Filter for Military DC-DC Converters Achieving MIL-STD-461G CE102 Compliance.....157-176

Mechanically Alloyed Nd-Fe-B Nanoparticles with Graphitic Carbon Shell: Synthesis, Characterization and Magnetic Properties177-200

Editorial

Foundations of Intelligent and Strategic Defence Technologies

We are delighted to present the second issue of the Journal of Defence Science and Industry. This issue represents another significant milestone in our mission to establish a multidisciplinary platform for the dissemination of high-quality research in defence science, engineering, and emerging strategic technologies. As a newly established journal, our ambition extends beyond publication alone; we seek to foster a collaborative ecosystem that unites academia, industry, governmental organisations, and research institutions in addressing the complex technological challenges of modern defence.

The nature of defence is undergoing a profound transformation. Technological superiority is no longer determined by the performance of individual platforms or weapon systems, but by the effective integration of artificial intelligence, advanced electronics, resilient materials, autonomous systems, secure digital infrastructures, and strategic awareness into a cohesive defence ecosystem. This holistic perspective is closely aligned with the strategic vision of the Presidency of the Republic of Türkiye Secretariat of Defence Industries, which continues to promote artificial intelligence, cyber resilience, and quantum technologies as key drivers of future national defence capability.

The papers presented in this issue collectively embody this integrated vision. Although they span a broad range of scientific disciplines, they are united by a common objective: advancing the technological foundations of next-generation defence systems through complementary and interdisciplinary research.

We are particularly encouraged by the strong participation of researchers from leading universities, Turkish defence companies, governmental organisations, and national research institutions. Their contributions exemplify the collaborative research environment required to address rapidly evolving technological and geopolitical challenges and demonstrate the growing synergy between scientific excellence, industrial innovation, and national strategic priorities.

As we publish this second issue of the Journal of Defence Science and Industry, we reaffirm our commitment to serving as an international forum for high-impact research in defense science, engineering, and emerging technologies. We extend our sincere gratitude to our authors, reviewers, editorial board members, and readers for their continued trust and support. We hope that this issue will inspire new collaborations, encourage interdisciplinary research, and contribute to the development of intelligent, resilient, and strategically significant defence technologies for the benefit of both the scientific community and society.

Sincerely,

Prof. Dr. Hakan Karataş & Prof. Dr. İhsan Kaya

Editors-in-Chief