IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.53
Volume 4, Issue 6, March 2024

High Speed Fighter UAV with Electric Coil Gun

Mr. Sumedh Goraksh Rahane, Mr. Ghare Pramod Rajendra, Mrs. Vaishnavi Suresh Walke, Mrs. Khushi Rajesh Pardeshi, Dr. Kishor V. Bhadane
Department of Electrical Engineering
Amrutvahini College of Engineering, Sangamner, Maharashtra, India

Abstract: *The paper focus on "High-Speed Fighter Drone Using Electromagnetic Coil Gun and Dropping Mechanism" project represents a significant milestone in the realm of unmanned aerial vehicles (UAVs). This project aimed to design, develop, and demonstrate a cutting-edge high-speed fighter drone equipped with an electromagnetic coil gun and an advanced payload deployment mechanism. The primary objectives were to enhance drone maneuverability, achieve precision targeting capabilities, and enable efficient payload deployment, thus expanding the potential applications of UAV technology.*

This project involved an intricate blend of engineering, innovation, and technology integration. The drone's design and construction incorporated a lightweight yet durable frame, high-speed motors, and advanced flight control systems, ensuring exceptional agility and stability during flight. The electromagnetic coil gun, a pivotal component, was meticulously designed for precision targeting, delivering impressive accuracy and firing control.

Moreover, the payload deployment mechanism, a vital feature of the system, was developed to ensure the precise and reliable delivery of payloads, expanding the drone's versatility across various domains, including defense, surveillance, and emergency response

Throughout the project's lifecycle, rigorous testing, calibration, and data analysis were conducted to validate the drone's performance, accuracy of the electromagnetic coil gun, and efficiency of the payload deployment mechanism. The project yielded promising results, demonstrating the drone's exceptional flight performance, electromagnetic coil gun's precision targeting, and payload deployment's reliability.

This project report provides a comprehensive overview of the project's objectives, methodologies, results, and significance. It explores the intricate system design, integration processes, testing procedures, and detailed analyses of outcomes. Furthermore, it discusses the challenges faced during development and the potential impact of this high- speed fighter drone in various industries.

In conclusion, the "High-Speed Fighter Drone Using Electromagnetic Coil Gun and Dropping Mechanism" project represents a significant leap forward in UAV technology. Its successful realization opens up new possibilities for drone applications, promising advancements in precision targeting, payload deployment, and the overall versatility of UAVs in both civilian and military contexts

Keywords: Unmanned aerial vehicles (UAVs), Brushless DC motors (BLDC),Electromagnetic Coil Gun, Payloaddeployment, Carbon fiber, Propulsion System, Flight Controllers, Electronic Speed Controller.

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