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(57) Abstract :
 The present invention relates to a system and method for efficient data packet transmission policy of leader drone in clustered flying ad-hoc network. The rise of FANET (unmanned aerial vehicle-based ad-hoc network) has revolutionized sectors like smart transportation and digital healthcare. However, with its growth, FANET has become a prime target for cyberattacks, including denial-of-service (DOS) and selective plaintext and ciphertext assaults. Traditional public key cryptography methods fall short due to their computational and transmission costs. The solution lies in lattice-based public key cryptosystems, specifically the truncated polynomial ring of the nth degree (NTRU). NTRU is an open-source public key cryptography that utilizes lattice-based encryption for securing data. Intrinsically resistant to quantum attacks, the lattice-based foundation of NTRU provides a robust defense mechanism. The research assumes a clustered FANET setting with an efficient cluster-based routing algorithm, detailing clusters and their heads. The proposed strategy encrypts data using NTRU between cluster heads, ensuring secure end-to-end communication during data transmission. Accompanied Drawings [Figure 1]

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