

## **ABSTRACT**

*Security is a major concern in the Mobile Wireless Sensor Network (MWSN) and it's very difficult to implement the security system. Many challenges occur because sensors limit the amount of processing power, storage, nodes that are mobile, bandwidth and energy. These challenges must be overcome because they are caused by the importance of security in mobile sensor node and the domain that handles sensitive information. This research will discuss the secure and performance of MWSN authentication.*

*In this research, a combination of the Elliptic Curve Cryptography (ECC) algorithm and HASH SHA-256 function will be applied which will enable easy and fast authentication between moving sensor nodes and secure communication in the network from attacks that might occur with certain low energy consumption.*

*After testing the MWSN without using and using the merger method, the results of applying the ECC and SHA-256 merge method have improved quality and obtained an average QoS with a delay parameter about 1310,28 ms, packet loss about 92,14%, throughput about 0.0192 Mbit/s and total energy consumption about 16.0125200175166 J. From these results, the merge of algorithm and SHA-256 methods can improve the quality of QoS and can be applied into MWSN.*

*Keywords: Mobile Wireless Sensor Network, Elliptic Curve Cryptography, SHA-256, security, authentication*