



# **A Novel Approach of Cluster Heads Selection by Fuzzy Logic to Enhance the Reliability of WSN**

Ankita Luhan<sup>#1</sup>, Prof. Y. S. Thakur<sup>#2</sup>, Dr. D. K. Sakravdia<sup>#3</sup>

<sup>1</sup>Department of Electronics and Communication Engineering, Ujjain Engineering College, Ujjain

<sup>1</sup>[ankiluhan@gmail.com](mailto:ankiluhan@gmail.com), <sup>2</sup>[ystgecu@yahoo.co.in](mailto:ystgecu@yahoo.co.in), <sup>3</sup>[sakravdia@rediffmail.com](mailto:sakravdia@rediffmail.com)

**Abstract** –Sensor nodes in WSN are powered with a battery. Sensor nodes consume the battery power mainly in the tasks like data transmission, data reception and sensing. Sometimes it is impractical to replace a battery in WSN because humans cannot reach. Therefore once energy or computational resources are consumed, immediate recovery of these resources is a complex task so it is necessary to make use of battery power efficiently to increase the lifetime of the sensor nodes that will also increase the lifetime of the whole network.

To make WSN energy efficient and to increase the lifetime of the network we design a Fuzzy Logic based clustering approach in heterogeneous environment. The execution and demonstration of this work is performed with the help of MATLAB 2014a. The performance comparison metrics are; network lifetime, network throughput and number of alive nodes.

**Keywords** –Fuzzy Inference Systems, Fuzzy Logic, LEACH, WSN.