

# An Energy Efficient Fuzzy Logic based Hybrid Routing Protocol in Wireless Sensor Networks

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**Abstract** –Wireless sensor networks are the collection of several small, battery operated electronic devices known as sensors in order to monitor physical phenomena such as temperature, pressure or humidity. Furthermore, these sensor nodes are usually operated by the battery which is normally not easy to replace. Till now many routing protocols have been proposed for energy efficiency of both homogeneous and heterogeneous environments. We propose here a Fuzzy-based hybrid protocol for some nodes to transmit data directly to the base station. The proposed approach is based on fuzzy level information which minimizes the time for the selection of cluster head.

**Keywords** – Fuzzy, LEACH, Routing, WSN.