



**SURVEY ARTICLE**

# Various Hierarchical Routing Protocols in Wireless Sensor Network: A Survey

Vandna Sharma<sup>1</sup>, Payal Jain<sup>2</sup>

<sup>1</sup>Computer Science & Engineering, M.M Engineering College Mullana, India

<sup>2</sup>Computer Science & Engineering, M.M Engineering College Mullana, India

<sup>1</sup> [sharma.vandna709@gmail.com](mailto:sharma.vandna709@gmail.com); <sup>2</sup> [payaljain.gt99@gmail.com](mailto:payaljain.gt99@gmail.com)

---

**Abstract—** *In a hierarchical architecture, higher energy nodes can be used to process and send the information while low energy nodes can be used to perform the sensing in the proximity of the target. This means that creation of clusters and assigning special tasks to cluster heads can greatly contribute to overall system scalability, lifetime, and energy efficiency. Hierarchical routing is an efficient way to lower energy consumption within a cluster and by performing data aggregation and fusion in order to decrease the number of transmitted messages to the BS. Hierarchical routing is mainly two-layer routing where one layer is used to select cluster heads and the other layer is used for routing. Numbers of routing, power management, and data dissemination protocols have been specifically designed for WSNs where energy awareness is an essential design issue. The focus has been given to the hierarchical routing protocols which might differ depending on the application and network architecture. In this paper we discuss some of the hierarchical routing protocols that give an overview of different hierarchical routing strategies which is used in WSN and their performance is compared based on metrics such as localization, data aggregation, power usage.*

**Key Terms:** - *hierarchical routing protocol; routing protocol; clustering; lifetime; wireless sensor network*

---

Full Text: <http://www.ijcsmc.com/docs/papers/May2013/V2I5201328.pdf>