

## Energy-Efficient Clustering Protocol in Wireless Sensor Networks for Healthcare Monitoring

**Authors :** Ebrahim Farahmand, Ali Mahani

**Abstract :** Wireless sensor networks (WSNs) can facilitate continuous monitoring of patients and increase early detection of emergency conditions and diseases. High density WSNs helps us to accurately monitor a remote environment by intelligently combining the data from the individual nodes. Due to energy capacity limitation of sensors, enhancing the lifetime and the reliability of WSNs are important factors in designing of these networks. The clustering strategies are verified as effective and practical algorithms for reducing energy consumption in WSNs and can tackle WSNs limitations. In this paper, an Energy-efficient weight-based Clustering Protocol (EWCP) is presented. Artificial retina is selected as a case study of WSNs applied in body sensors. Cluster heads (CHs) selection is equipped with energy efficient parameters. Moreover, cluster members are selected based on their distance to the selected CHs. Comparing with the other benchmark protocols, the lifetime of EWCP is improved significantly.

**Keywords :** WSN, healthcare monitoring, weighted based clustering, lifetime

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