

## عنوان مقاله:

A Modified Zonal Stable Election Protocol for Energy Efficiency in Heterogeneous Wireless Sensor Networks

## محل انتشار:

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## خلاصه مقاله:

A wireless sensor network (WSN) comprises a large collection of spatially distributed and self-regulating tiny sensors that provide monitoring and reporting services in many commercial and home applications. A bane to the continuous function of this system is primarily due to its reliance on short-lived battery-powered sensor nodes. To minimise energy dissipation of sensors, many routing protocols have appeared. The Zonal Stable Election Protocol (Z-SEP) is one of the popular protocols designed to improve the energy efficiency of heterogeneous wireless sensor networks. However, the protocol has a poor stability period and low throughput resulting in fewer packets delivered to the base station. This paper proposes a modification to the Z-SEP protocol, by further dividing the sensing region into four parts and allowing cluster heads to be selected from amongst the normal nodes to transmit data to the base station unlike in Z-SEP in which normal nodes send packets directly to the base station. The cluster head election criterion has been modified also to include both residual energy and node density. Based on simulation results from MATLAB, the performance of the proposed protocol is better than, LEACH, SEP, and Z-SEP in the area of stability, throughput and network lifetime.

## کلمات کلیدی:

Stability, Network Lifetime, Throughput, SEP, Z-SEP

## لینک ثابت مقاله در پایگاه سیویلیکا:

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