

## عنوان مقاله:

Better Neighbors, Longer Life: an Energy Efficient Cluster Head Selection Algorithm in Wireless Sensor Networks based on Particle Swarm Optimization

## محل انتشار:

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## خلاصه مقاله:

Clustering is one of the most effective techniques for reducing energy consumption in wireless sensor networks. But selecting optimum cluster heads (CH) as relay nodes has remained as a very challenging task in clustering. All current state of the art methods in this era only focus on the individual characteristics of nodes like energy level and distance to the Base Station (BS). But when a CH dies it is necessary to find another CH for cluster and usually its neighbor will be selected. Despite existing methods, in this paper we proposed a method that considers node neighborhood fitness as a selection factor in addition to other typical factors. A Particle Swarm Optimization algorithm has been designed to find best CHs based on intra-cluster distance, distance of CHs to the BS, residual energy and neighborhood fitness. The proposed method compared with LEACH and PSO-ECHS algorithms and experimental results have shown that our proposed method succeeded to postpone death of first node by ۵.۷۹%, death of ۳۰% of nodes by ۲۵.۵۰% and death of ۷۰% of nodes by ۵۸.۶۷% compared to PSO-ECHS algorithm

## کلمات کلیدی:

Optimization, neighborhood fitness, Energy Consumption

## لینک ثابت مقاله در پایگاه سیویلیکا:

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