



[Home](#) | [About us](#) | [Search](#) | [Current Issue](#) | [Past Issues](#) | [Guidelines](#) | [Subscribe](#) | [Co](#)

Impact Factor® for 2011 is **0.2** [Click here](#) to download free Android Application for this and other j

[Previous Article](#) [T](#)

ARTICLE

Year : 2013 | **Volume :** 59 | **Issue :** 6 | **Page :** 774-782

Energy-efficient and multi-stage clustering algorithm in wireless sensor networks using cellular lear

[Mohammad Ahmadinia](#)¹, [Mohammad Reza Meybodi](#)², [Mahdi Esnaashari](#)², [Hamid Alinejad-Rokny](#)³

¹ Department of Computer, Kerman Branch, Islamic Azad University, Kerman, Iran

² Department of Computer Engineering and Information Technology, Soft Computing Laboratory, A of Technology, Tehran, Iran

³ School of Computer Science and Engineering, Faculty of Medicine, The University of New South NSW, Australia

Date of Web Publication 13-Feb-2014



Correspondence Address:

Mohammad Ahmadinia

Department of Computer, Kerman Branch, Islamic Azad University, Kerman
Iran

 Login to access the email ID

DOI: 10.4103/0377-2063.126958



Abstract

One of the main challenges in wireless sensor networks is the energy constraints of sensor nodes which are considered precisely when designing algorithms for such networks. Clustering is known as one of the methods that can be used for addressing this challenge. In this paper, an efficient method for clustering wireless sensor networks based on the means of cellular learning automata has been presented (LaClustering). Proposed method selects clusters through several stages; each considers one parameter affecting the overall performance of the cluster. The parameters considered in different stages of the proposed algorithm are energy levels of the sensor nodes, number of nodes in each node, network connectivity, and formation of balanced clusters. To evaluate the performance of the proposed method, several experiments have been conducted using the J-sim simulator and the proposed method is compared with some of the best clustering algorithms reported in literature. The simulation results have shown

This document was created with Win2PDF available at <http://www.daneprairie.com>.
The unregistered version of Win2PDF is for evaluation or non-commercial use only.