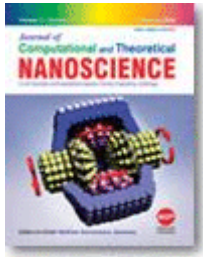


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# Heterogeneous Multi-Hop Energy Routing Protocol with Ant Bee Fuzzy Clustering Process in Wireless Network

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**Authors:** Raj, A. Sundar <sup>1</sup>; Titus, S <sup>2</sup>;**Source:** Journal of Computational and Theoretical Nanoscience, Volume 14, Number 9, September 2017, pp. 4320-4325(6)**Publisher:** American Scientific Publishers**DOI:** <https://doi.org/10.1166/jctn.2017.6739>**Abstract**

References



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Wireless sensor and actuator networks (WSAN) are one of the important communication technologies which monitor the environmental conditions while transmitting the information in the wireless networks. During the information transmission, wireless network faces the several problems, energy consumption, quality of the services; network coverage which leads reduces the efficiency of the communication process. So, in this paper proposes a novel energy efficient and quality based sensing model for overcoming the existing issues. Initially the network covered region is estimated by applying the Boolean Elfes sensing model. After identifying the particular network region, the clusters have been formed by applying the Ant Bee Fuzzy (ABF) clustering approach which analyzes the node according to the node sensitivity. Then the node information is transmitted with the help of the heterogeneous multi-hop energy routing protocol that reduces the high energy consumption also it transmit the information high quality when compared to the existing system. At last the efficiency of the system is evaluated with the help of the simulation results in terms of the coverage fraction, accuracy of the cluster, energy consumption.

**Keywords:** Accuracy of the Cluster; Ant Bee Fuzzy Clustering Approach; Boolean Elfes Sensing Model; Coverage Fraction; Energy Consumption; Heterogeneous Multi-Hop Energy Routing Protocol; Sensing Model; Wireless Sensor and Actuator Networks

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**Affiliations:** **1:** Department of Electronics and Communication Engineering, E. G. S. Pillay Engineering College, Nagapattinam 611002, India **2:** Department of Electrical and Electronics Engineering, M. A. M College of Engineering, Trichy 621105, India

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