Abstract

Wireless sensor network (WSNs) comprises of base station and number of nodes. Sometimes remote sensors are used which are generally known as remote sensor actuator systems. WSN is a large network of sensor nodes and these nodes are directly interacting with the environment by sensing the physical and ecological parameters like temperature, weight and so on. The limited energy of the sensor nodes is the major bottle neck of wireless sensor network. By conserving the on board energy, the life span of wireless sensor network can be well extensive. Data communication being the leading energy devastating movement of wireless sensor network, data decrease can provide better in conserving the nodal energy. The basic aim of this paper is to study and evaluate the performance of various techniques that are used for the communication in WSNs. The various algorithms that are used to enhance the energy of sensor nodes in wireless sensor network are portrait

References
1. DEEPAK R DANDEKAR and Dr. P.R. DESHMUKH, “Relay node placement for multi-path connectivity in heterogeneous wireless sensor networks”, 2011 by ELSEVIER B.V.


3. DURGA PAVAN NUDURPati and RAJAT KUMAR SINGH, “Enhancing coverage ratio using mobility in heterogeneous wireless sensor network”, 2013 by ELSEVIER B.V.


5. NAFAA JABEUR, AHMED NAIT SIDI MOH and MOHAMED MAHDI BARKIA, “A bully approaches for competitive redundancy in heterogeneous wireless sensor networks, 2016 by ELSEVIER B.V.


7. FATEH BOUTEKKOUK, FATIMA TAIBI and KHAWLA MEZIANI, “A hybrid approaches to extend the lifetime of heterogeneous wireless sensor networks, 2015 by ELSEVIER B.V.

8. AHMED M. KHEDR, “Location-free minimum coverage determination in a heterogeneous wireless sensor networks, 2015 by ELSEVIER B.V.


10. CHEIN-LIANG FOK, GRUIA-CATALIN ROMAN and CHENYANG LU, “Seville A flexible service provisioning middleware for heterogeneous wireless sensor networks”, 2010 ELSEVIER B.V.

11. SALAH ABDEL-MAGEID and MOHAMED ZAKI, “An adaptive relocation strategy for heterogeneous sensor Networks”, 2011 by ELSEVIER B.V.


13. SALIM EL KHEDIRI, NAJEH NASRI, ANNE WEI and ABDENNACEUR, “An approach for clustering in wireless sensor networks based on LEACH”, 2014 by ELSEVIER B.V.


20. B. Manzoor, N. Javaid, O. Rehman, M. Akbar, Q. Nadeen, A. iqbal, M. ishfaq, “Q-Leach: A
new Routing Protocol for WSNs, 2013 by ELSEVIER B.V.

**Index Terms**

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**Keywords**

Wireless sensor network, Heterogeneous WSNs, Homogeneous WSNs, Firefly Algorithm, Clustering, Simulated annealing, Energy consumption.