**IMPLEMENTATION OF MULTIHOP PROTOCOL WITH COST FUNCTION FOR DECREASING ENERGY CONSUMPTION IN NODES**

**[1] T. Shah, N. Javaid, T. N. Qureshi :** This paper presents Wireless Sensor Networks (WSNs), with growing applications in the environment which are not within human reach have been addressed tremendously in the recent past. For optimized working of network many routing algorithms have been proposed, mainly focusing energy efficiency, network life-time, clustering processes. Considering homogeneity of network, we proposed Energy Efficient Sleep Awake Aware (EESAA) intelligent routing protocol for WSNs. In our proposed technique we evaluate and enhance certain issues like network stability, network lifetime and cluster head selection process. Utilizing the concept of characteristical pairing among sensor nodes energy utilization is optimized. Simulation results show that our proposed protocol significantly improved the network parameters and can be a useful approach for WSN

**Summary**: Studied about a homogeneity of network, Energy Efficient Sleep Awake Aware (EESAA) intelligent routing protocol for WSNs.

**[2] Heinzelman, Wendi Rabiner, Anantha Chandrakasan, and Hari Balakrishnan:** Wireless distributed microsensor systems will enable the reliable monitoring of a variety of environments for both civil and military applications. In this paper, we look at communication protocols, which can have significant impact on the overall energy dissipation of these networks. Based on our findings that the conventional protocols of direct transmission, minimum-transmission-energy, multi-hop routing, and static clustering may not be optimal for sensor networks, we propose LEACH (Low-Energy Adaptive Clustering Hierarchy), a clustering-based protocol that utilizes randomized rotation of local cluster based station (cluster-heads) to evenly distribute the energy load among the sensors in the network. LEACH uses localized coordination to enable scalability and robustness for dynamic networks, and incorporates data fusion into the routing protocol to reduce the amount of information that must be transmitted to the base station. Simulations show the LEACH can achieve as much as a factor of 8 reduction in energy dissipation compared with conventional outing protocols. In addition, LEACH is able to distribute energy dissipation evenly throughout the sensors, doubling the useful system lifetime for the networks we simulated.

**Summary:** Studied about LEACH (Low-Energy Adaptive Clustering Hierarchy).

**[3] Y. Ebrahimi and M. Younis:** In wireless sensor networks, nodes probe ambient conditions in their surrounding and report back to the base-station via multi-hop routing. In a hostile environment the network may be subject to adversary attacks. Given the role that the base-station plays, it can be targeted in order to inflict the most damage to the network. Although stealth design and other physical precautionary measures may be pursued to hide the base-station, the fact that the base-station acts as a sink of all data transmission enables an adversary to employ traffic analysis techniques and identify the location of the base-station. This paper presents a novel approach for countering such traffic analysis and boosting the anonymity of the base-station. Sensors in low activity areas will send out deceptive packets among each other in order to distract the attention of the adversary and make the traffic analysis inconclusive. Simulation results show the effectiveness of the approach.

**Summary:** Studied about novel approach for countering such traffic analysis and boosting the anonymity of the base-station

**[4] aring, Alan, et al:** We provide an in-depth study of applying wireless sensor networks to real-world habitat monitoring. A set of system design requirements are developed that cover the hardware design of the nodes, the design of the sensor network, and the capabilities for remote data access and management. A system architecture is proposed to address these requirements for habitat monitoring in general, and an instance of the architecture for monitoring seabird nesting environment and behavior is presented. The currently deployed network consists of 32 nodes on a small island off the coast of Maine streaming useful live data onto the web. The application-driven design exercise serves to identify important areas of further work in data sampling, communications, network retasking, and health monitoring.

**Summary:** Studied about requirements for habitat monitoring.

**[5] N. Javaid, U. Qasim, Z. A. Khan, M. A. Khan, K. Latif and A. Javaid**

In Wireless Multi-hop Networks (WMhNs), routing protocols with energy efficient and delay reduction techniques are needed to fulfill users' demands. In this paper, we present Linear Programming models (LP\_models) to assess and enhance reactive routing protocols. To practically examine constraints of respective LP\_models over reactive protocols, we select AODV, DSR and DYMO. It is deduced from analytical simulations of LP models in MATLAB that quick route repair reduces routing latency and optimizations of retransmission attempts results efficient energy utilization. To provide quick repair, we enhance AODV and DSR. To practically examine the efficiency of enhanced protocols in different scenarios of WMhNs, we conduct simulations using NS-2. From simulation results, enhanced DSR and AODV achieve efficient output by optimizing routing latencies and routing load in terms of retransmission attempts.

**Summary:** Studied about the NS2 tool, Linear Programming models (LP\_models) to assess and enhance reactive routing protocols.