

## ENERGY EFFICIENT FAST DATA COLLECTION IN TREE-BASED WIRELESS SENSOR NETWORKS

**Monica Seles.G.E**

*II – M.E Computer Science and Engineering,  
Paavai Engineering College, Namakkal [Dt],  
Tamilnadu, India.*

[monicaeng90@gmail.com](mailto:monicaeng90@gmail.com)

**S.Lavanya**

*Asst. Prof & HOD Dept. of IT,  
Paavai Engineering College, Namakkal [Dt],  
Tamilnadu, India.*

[pecithod@paavai.edu.in](mailto:pecithod@paavai.edu.in)

### Abstract

In this paper, Using different techniques under practical simulation model for the many-to-one communication example known as convergecast. We first consider time scheduling on a single frequency channel with the aim of minimizing the number of time slots required to complete a convergecast. Then, we combine scheduling with transmission power control to improve the effects of intrusion, and show that power control is reducing the schedule length under a single frequency, scheduling transmission using multiple frequencies is more competent. The energy efficient data collection schedule length used for a propose algorithms that achieve these bounds on the network. We also evaluate the performance of various channel assignment methods and find most incredible that for moderate size networks nodes, the use of multi-frequency scheduling can suffice to eliminate most of the interference. Then, the energy efficient data collection rate no longer remains limited by interference but by the topology of the routing tree. The network models to be spanning trees and capacitated minimal spanning trees, and show important development in scheduling performance over different deployment densities. Lastly, we evaluate the impact of different interference and channel models on the schedule length.

Key Words: Convergecast, TDMA scheduling, multiple channels, power-control, routing trees TMCP.