CHAPTER 7
CONCLUSION AND FUTURE WORK

7.1 CONCLUSION

This section summarizes the overall research contribution of this thesis. Implementation of four different routing protocols to enhance the quality of service and to maximize the lifetime of MANET has been the major focus of this work.

To improve the efficiency of routing protocol for the mobile ad hoc networks, new designs of different routing approaches with nano technology have been analyzed. The nodes with nano behavior have been adapted and the routing protocols have been embedded into the mobile node of the MANET. Based on the modified behavior and infrastructure using nano technology, the analysis has been designed with four different routing protocols to improve the quality of service of the mobile ad hoc network.

The first method NAODV proposes a model for the integration of nano technology to the mobile nodes of the mobile ad hoc networks. This extends the behavior of the mobile node with the nano technology and the nodes can perform their own route discovery and route selection. The nano adapted routing protocol enables the nodes to choose their own way of transmission and improves the performance of routing in mobile ad hoc network.

The second approach is to optimize the nano enhanced ad hoc on demand distance vector routing. The increasing number of nano nodes increases the connectivity in the network. Therefore, the message can be delivered to an info station in a lower time using ONAODV. Furthermore, the system throughput increases with increasing number of nano nodes. The method considers different parameters of the routes available and includes different parameters of the MANET nodes to perform route selection.
The third view proposed here is a cluster tree based routing protocol, called ENAODV, which makes use of an improved tree routing address assignment mechanism to enhance scalability, energy efficiency and the lifetime of the network.

The final contribution of the work is a Light Weight Memory Sharing Scheme (LWMSS) which has been tested and evaluated for its performance for various simulation parameters. The proposed scheme discovers the available routes to reach the destination and shares the route memory between other neighbours of the network by two hop method. This overrides and avoids the unnecessary broadcasting of route discovery phase and reduces the frequency of route discovery. The proposed approach reduces the network overhead which arises through route discovery. The performance and lifetime of the overall network have been improved using the proposed approach.

### 7.2 FUTURE WORK

All the above discussed methods have produced efficient results in routing in mobile ad hoc networks and the research can be extended to another level by adapting different properties and measures in performing route discovery and route selection. By considering energy, traffic rate, mobility speed, the performance of the routing algorithm and the quality of service of the network can be improved.

The above discussed methods have been investigated using Constant Bit Rate (CBR) traffic model. A suggestion on the use of Variable Bit Rate (VBR) traffic model for conducting research programmes could be made in future.