

## 基于ZigBee的无线传感网络Cluster-Tree算法研究

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摘要:

ZigBee技术的无线传感器网络是基于分布式地址分配的一种支持拓扑变化、节点移动的新型无线传感网络, 拥有强大的自组网能力。针对ZigBee网络的Cluster-Tree算法对簇首能量要求高及节点间非最佳路由的问题, 结合节点能量分析提出新的簇首产生办法, 并结合AODVjr算法的思路来寻求节点间的最佳路由。仿真结果表明, 改进的算法能够有效地提高数据发送成功率, 降低网络中的死亡节点数, 减小端到端的报文传输时延, 提高网络的使用价值。

关键词: ZigBee网络; Cluster-Tree; 路由算法; 节点; NS2

## A Study on Wireless Sensor Networks Cluster-Tree Route Based on ZigBee

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**Abstract:**

ZigBee, a new kind of wireless sensor network based on the address allocation mechanism has a strong networking capability, which supports topology changing and node moving. Owing to problems of cluster head node energy demand is high and non-optimal routing between nodes in ZigBee Cluster-Tree algorithm, an advanced method for forming the cluster head nodes resulting from node energy and finding the best route resulting from AODVjr algorithm is proposed. At the same time, The simulation results indicate that the new Cluster-Tree algorithm can improve the packet transmission success rate effectively, cut down the death of nodes, reduce the end-to end packet transmission delay, and extends the network value.

**Keywords:** ZigBee network; Cluster-Tree; Routing algorithm; Node; NS2

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