mainly attributes to sensor module, processor module and wireless communication module [8-9]. Among them, the wireless communication module is the leading consumer.

Let k be the energy consumed by a sensor node to send 1bit data to the distance of d. If each of the eight values occupies 1bit of space, then the total energy consumed to send the eight values amounts to 8k. The data fusion algorithm based on Haar wavelet transform fused the eight temperature values to get data with granularity of 1. The energy consumed to send the fused data to d distance is 1/8 of d distance. Therefore, this algorithm can effectively reduce the transmission load without sacrificing data reliability, thus saving the energy of sensor nodes.

5. CONCLUSIONS

This paper applies the WSN technology in data acquisition and monitoring of weapon production equipment. The WSN was adopted to replace the traditional wired sensor system, and used to collect and monitor the operating condition of the equipment. The structure of cluster tree network and the implementation of its routing algorithm were described according to the framework of the monitoring system. Based on Zigbee technology, the self-organizing network was set up to achieve the purpose of collecting network data. Next, the author depicted the implementation of batch estimation fusion algorithm based on weighted mean and data fusion algorithm based on Haar wavelet transform. The validity and rationality of the two algorithms were verified through simulation experiment.

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