

Decentralized energy efficient model for data transmission in IoT-based healthcare system

ABSTRACT

The growing world population is facing challenges such as increased chronic diseases and medical expenses. Integrate the latest modern technology into healthcare system can diminish these issues. Internet of medical things (IoMT) is the vision to provide the better healthcare system. The IoMT comprises of different sensor nodes connected together. The IoMT system incorporated with medical devices (sensors) for given the healthcare facilities to the patient and physician can have capability to monitor the patients very efficiently. The main challenge for IoMT is the energy consumption, battery charge consumption and limited battery lifetime in sensor based medical devices. During charging the charges that are stored in battery and these charges are not fully utilized due to nonlinearity of discharging process. The short time period needed to restore these unused charges is referred as recovery effect. An algorithm exploiting recovery effect to extend the battery lifetime that leads to low consumption of energy. This paper provides the proposed adaptive Energy efficient (EEA) algorithm that adopts this effect for enhancing energy efficiency, battery lifetime and throughput. The results have been simulated on MATLAB by considering the Li-ion battery. The proposed adaptive Energy efficient (EEA) algorithm is also compared with other state of the art existing method named, BRLE. The Proposed algorithm increased the lifetime of battery, energy consumption and provides the improved performance as compared to BRLE algorithm. It consumes low energy and supports continuous connectivity of devices without any loss/ interruptions.