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<u>**Topic of Research:**</u>

Security Issues in Wireless Sensor Network

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Wireless Sensor Network (WSN) has gained huge popularity because of its little or no infrastructure based network communication & applicability in variety of applications. In this research, a procedure for identifying malevolent nodes in movable ad-hoc system has been proposed (E- CREDND) and this scheme is critical for the regions where the route separate in the midst of source and goal is two nodes only. This scheme isn't appropriate for those situations where multi-hops are exhibited in the midst of transmitter and recipient. As we know IoT is a subset of WSN. This research unfolds the infancy of the exquisite experience of the 'Internet of Things'. This research discusses the use of Blockchain technology implementation for the security of IoT devices along with the sustainable and energy efficient solution. We have also discussed the future prospect for IoT, Blockchain and other possible architectures.

Consumer electronics or daily use home appliances are the basic necessity of every household. Despite intelligent IoT devices, smart home configuration, and appliances at our disposal, the simple client-server architecture fails to provide facilities like full access control of data and devices, transparency, secured communication, and synchronization between multiple devices, etc. to the users. To overcome these limitations, Blockchain technology has been adopted in recent years, however, it has its own set of limitations in its widespread implementation. We have proposed a methodology using the IOTA platform, a distributed ledger technology (DLT) for secured communication between consumer electronics devices and appliances. The implementation provides access control, interoperability, data storage, and management with an exploratory insight towards a decentralized micro-payment system. This research discloses the fusion of the Internet of Things (IoT) with the so- called "distributed ledger technology" (DLT). Here a communication system based on IOTA and DLT is discussed with a systematic architecture for IoT devices and a future machine-to- machine (M2M) economy. The data communication between IoT devices is analyzed using multiple use cases such as sending DHT-11 sensor data to the IOTA tangle. In this research, we propose an enhancement to the classical "masked authenticated message" (MAM) communication protocol and two architectures called dual signature masked authenticated message (DSMAM) and index-based address value transaction (IBAVT).