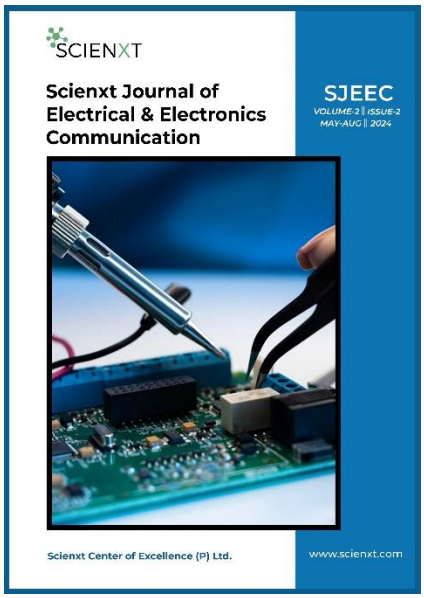

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Chipless rfid sensors: A review of technologies and trends

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Abstract:

Radio-frequency identity (RFID) sensors have emerged as a key generation in the Internet of Things (IoT) environment, providing an unbroken interface for records trade between bodily objects and the cloud. These chipless sensors provide key benefits which include printability, passive operation, low energy consumption, and performance in harsh environments. Multibit chipless tags have shown incredible success, sparking interest in extending their sensing capabilities to include physical, chemical, structural, and environmental. This paper provides a comprehensive review of chipless RFID sensor technology, including various construction methods and material requirements for sensing applications It focuses on state-of-the-art sensor classes and their applications, among other things, and temperature and humidity monitoring, proximity hearing, structural health assessment provides an outline of beauty and provides possible solutions to overcome these limitations. In addition, it explores recent advances in integrating RFID sensors with artificial intelligence to improve sensitivity and selection as well as machine learning techniques Combining insights from chip-based and chipless RFID sensor technologies, this paper describes the transition to chipless solutions and provides a road map for future research efforts in this area Chips through interdisciplinary approaches affecting the development of materials science, wireless communications, and data analytics jointly provide

Keywords:

Chipless RFID Ultrahigh-frequency (UHF) RFIDs, Microstrip antenna, ultrawideband (UWB) frequency.