World Academy of Science, Engineering and Technology
International Journal of Electrical and Computer Engineering
Vol:18, No:05, 2024

Wireless Information Transfer Management and Case Study of a Fire Alarm System in a Residential Building

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Abstract : The increasing prevalence of wireless networks in our daily lives has made them indispensable. The aim of this research is to investigate the management of information transfer in wireless networks and the integration of renewable solar energy resources in a residential building. The focus is on the transmission of electricity and information through wireless networks, as well as the utilization of sensors and wireless fire alarm systems. The research employs a descriptive approach to examine the transmission of electricity and information on a wireless network with electric and optical telephone lines. It also investigates the transmission of signals from sensors and wireless fire alarm systems via radio waves. The methodology includes a detailed analysis of security, comfort conditions, and costs related to the utilization of wireless networks and renewable solar energy resources. The study reveals that it is feasible to transmit electricity on a network cable using two pairs of network cables without the need for separate power cabling. Additionally, the integration of renewable solar energy systems in residential buildings can reduce dependence on traditional energy carriers. The use of sensors and wireless remote information processing can enhance the safety and efficiency of energy usage in buildings and the surrounding spaces.

Keywords : renewable energy, intelligentization, wireless sensors, fire alarm system
Conference Title : ICCAR 2024 : International Conference on Control, Automation and Robotics
Conference Location : Vancouver, Canada
Conference Dates : May 20-21, 2024