

## **SMART WIRELESS SENSOR NETWORK FOR SMART HOME**

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### **ABSTRACT:**

**System controls and monitoring has become a need in our households due to increase in use of modern applications and devices such as smart home security systems like CCTVs, E-lock systems, also other various appliances like smart lights, fans, air conditioners etc. The current solution for this is the smart wireless sensor network.**

**This network use various monitoring setups like night visions, cameras, and infrared lasers. Also some are even designed to study the behavior pattern of the user and function accordingly. Electricity control of a building can be handled effectively with the help of sensor network. Such networks can be integrated in buildings, offices, homes for energy harvesting also its storage which can be used for the electronic components and circuit. The network can also be beneficial for the betterment of the living conditions of the home inhabitants by having a constant surveillance for elderly and young children. As the system of networks is completely automated it reduces the human error and reduces energy consumption by optimizing it perfectly. Newer self-maintaining sensor networks can even enhance the security infrastructure of a home, office or an institute.**

**This study further elaborate the functioning and uses of wireless sensor networks.**

### **INTRODUCTION:**

Since the inception of Electricity and its applications, people have made innumerable efforts to harness this energy which are still seeing an increasing graph every year. One of the recent development which is grabbing attention throughout the world is the attention seeking method of controlling applications via wireless sensor networks. But even after providing access to such devices via smart phones and other hand held devices, even after this convenience a room for error is always present due to the inclusion of human error factors. Due to which the smart controlled devices also which are actually designed to provide an edge over the traditional orthodox home appliances couldn't deliver cent percent. This issue has been addressed and as a result smart sensor wireless network systems has been developed. This systems are especially developed to get rid of this human error factor.

Wireless sensors have been around with us for a long time now, making our life easier at various places. With the demand and development of technology such wireless sensor systems have reached to our dear homes as well. With the fast development of many wireless devices in recent years, home automation has gained much acceptance, hence, the need for security and energy harvesting systems have increased.

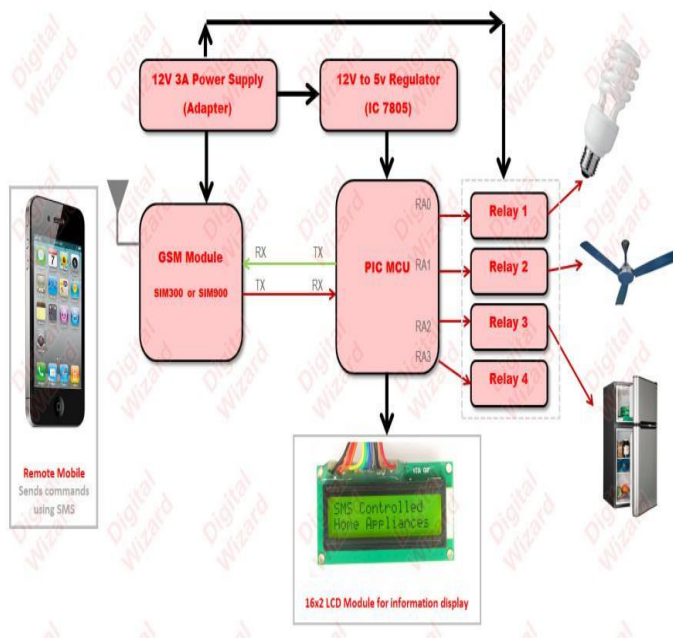
With the advancement in sensor systems, which motivated sensor systems application in military applications, battlefield surveillance applications. Sensor systems are usually connected

via wireless means for such applications and used for several applications ranging from home automation to health care and traffic control applications.

With the advancement of wireless communication protocols such as ZigBee protocols deployed for use in wireless sensor networks, opportunities for building wireless control and monitoring applications have now increased and the cost of installation and design tends to be lower, in addition to low power, large range and high reliability.

Wireless Sensor Networks have wide variety of applications and their nodes are prone to failure due to a hardware failure or malicious attacks. The self-healing mechanism is used for fault detection, diagnosis and healing. However, implementing the self-healing procedures at the cluster head affects the network performance.

#### BLOCK DIAGRAM:



#### CONCLUSION:

This paper presents the use and innovation in smart wireless sensor networks for smart home by integrating of all electrical appliances by

automated system which results in betterment of life by reducing energy consumption like saving electricity, safer living conditions for children and elderly, more secured infrastructure, providing of luxury life while reducing energy wastage by optimizing the system. This network also reduce the error caused due to human nature and are more reliable.

As it is the need of time to modernize ourselves and our life with the advent of technology, majorly smart device which do not require constant human supervision are a must have in this day and age. This can be easily achieved by use of the sensor network in homes as well as in work.

#### REFERNCE:

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