

## **Secure Wireless Monitoring and Control Systems for Smart Grid and Smart Home using IOT**

The purpose of this project is to monitor and control Power grid and home devices (Analog and Digital) remotely using smart phone. The devices are controlled and monitored by android mobile through Wi-Fi module.

“Secure Wireless Monitoring and Control Systems for Smart Grid and Smart Home” is a modern era automation system where we can control the status of the appliances from anywhere in the world.

This system also continuously monitors the status of devices connected to it. If the status of any critical device changes from ON to OFF or vice versa, then microcontroller-based system automatically sends the message alerts back to user. After completion of the command implementation this system sends the confirmation messages back to the calling user.

The whole controller of the project is PIC microcontroller. Here, light, fan and DC motor are interfaced to microcontroller. In this project the devices to be controlled are interfaced with a Wi-Fi module through Arduino, which is capable of receiving instructions from Android mobile and performs the necessary tasks. The devices (i.e. light, fan and motor) ON/OFF is can be controlled by Android mobile. So, relays are connected with devices to ON/OFF is to be done when instructions are received from android mobile. Even the parameters data can also monitored in Android mobile.

### **The major features of this project are:**

1. Automatic parameter monitoring.
2. Wireless data reception and display system on Android phone.
3. Low power consumption.

### **The major learning's of this project are:**

1. Implementation of ADC module.
2. Wireless data transmission and reception.
3. Embedded C programming.
4. PCB designing.

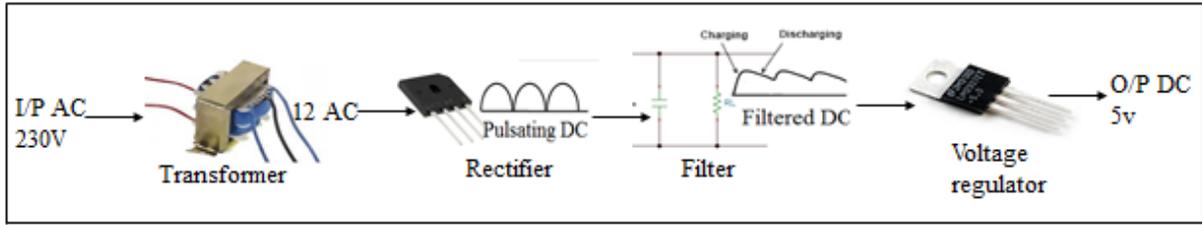
**The major building blocks of this project are:**

1. Regulated power supply.
2. Microcontrollers.
3. Wi-Fi module.
4. DC fan
5. Light
6. DC motor
7. Reset.
8. Android phone.
9. Crystal oscillators.
10. LED indicators.

**Software's used:**

1. PIC-C compiler for Embedded C programming.
2. PIC kit 2 programmer for dumping code into Micro controller.
3. Express SCH for Circuit design.
4. Proteus for hardware simulation.

**Regulated Power Supply:**



**Block diagram:**

