

## **Workshop content of Home Automation**

### **Objective:**

Smart Home-BTtooth is a Home Automation workshop about controlling the house hold appliances wirelessly using an Android Mobile based on Bluetooth technology. The workshop aims to introduce students to the field of home automation and how it is implemented in real life. It basically focuses on conceptualization and designing of Bluetooth based home automation system which will help them to clear the fundamental concepts on “How to build a Bluetooth controlled Wireless Home Appliances System??” .

The Workshop includes a detailed study structure, delivered & demonstrated live by our experts in the field of Home Automation. Once the student acquires knowledge about its basic operations, it can be further employed for Robot, Digital Notice Board, Motor Control, Wheel Chair Control, etc.

### **Session 1:**

- Introduction to Embedded System
- Overview of Basic Electronics
- Overview of Digital electronics

### **Session 2:**

- Introduction to wireless communication
- Discussion on Various wireless modules
- Working of wireless communication
- Introduction to USART
- USART of ATmega 8

### **Session 3:**

- Introduction to ATmega 8 Microcontroller
- Features of ATmega 8 Microcontroller
- I/O Ports of ATmega 8 Microcontroller
- LED Interfacing with ATmega 8 Microcontroller

#### **Session 4:**

- Relay
- Different types of Relay
- Relay Interfacing with ATmega 8

#### **Session 5:**

- Assembling of the Robotics Kits.
- Software Installation.
- Different LED Pattern Generation

#### **Session 6:**

- Introduction to Embedded C programming languages
- Writing your first 'Embedded C' program in AVR studio.
- Bluetooth Protocol
- HC-06 Bluetooth Module Interfacing with ATmega 8
- HC-06 Bluetooth Module Interfacing with Android Mobile using ATmega 8
- Android Mobile to HC-06 Bluetooth Module Wireless Data Communication with ATmega 8 and LED Display

#### **Session 7:**

- Appliances System with ATmega 8
- Password Protection
- Password Protected Relay and HC-06 Bluetooth based Android Mobile Controlled Wireless Home Appliances System with ATmega 8

#### **Session 8:**

- Competition and Certification distribution