

### **Quadcopter: RC Drone Workshop**

This workshop teaches about designing of quadcopter as well as assembly of RC drone. This workshop includes controlling of Drone using flight control board which includes Assembly and calibration of Flight Control board.

#### **Content:**

##### **Session 1:**

- Introduction to Flying Drones
- Discussion about Tri copter, Quadcopter, Hexa copter
- Working Principle of Quadcopter.
- Constituents required for Drones
- Flight control board
- Electronic Speed Controller
- Q450 Frame
- BLDC Motors
- RF Remote
- Propeller
- Kit Distribution & Introduction to kit contents

##### **Session 2:**

- Introduction to Arduino Microcontroller
- Installation of Arduino IDE
- Programming for Motor control
- Programming for Motor Speed Control
- Working of Motor driver with Microcontroller

##### **Session 3:**

- Constructional Concepts Quadcopter Frame.
- Assembly and Construction of quadcopter
- Connection consideration of various configurations
- Operation of Gyroscopes Micro Controller KK2.1.5

##### **Session 4:**

- Calibration of KK Flight control board
- Motor Testing with Remote
- Android App/ RF Remote Testing with Quadcopter
- Group wise Flying session

**Kit Content:**

Day 1 Kit (group of 5)

- Arduino Board 328
- Motor Driver L293D Module
- Potentiometer
- BO DC Motor
- BO Wheel
- Jumper wires
- Battery Snapper
- 9V DC battery
- Screw Set
- Screw driver

Day 2 Kit (group of 10)

- KK Flight Control Board
- Q450 quadcopter Frame
- 1400KV BLDC Motors
- 10\*4.5 Propeller set
- 2.4 GHz RF Remote controller
- Electronic speed controller (ESC)
- LIPO Battery
- LIPO Charger
- Many more components

Students will be provided kits on a returnable basis.

**The Faculty:**

The faculties are people from top academic institutions, industries and research institutions. They have experience in the industries at the same time had the best education in this field. In fact some of them are pursuing master and Doctorate at Top notch universities to build their knowledge base.

**Note: Techfest, IIT Bombay Certificates to all participants (only if participant attends all the sessions).**