

DEPARTMENT OF INSTRUMENTATION

The Electronic testing and calibration Facility in the Department of Instrumentation Engineering at MIT was established under UGC-UPE for the manufacture of Bio-Medical Devices. The objective of the project is to design, fabricate develop and commercialize the various models of Automated Anti-Biogramoscope devices. Integration and calibration of Sensors and Actuator for the Automated Anti-biogramoscope.

The Facility for calibration devices are Mixed signal Oscilloscope with accessories including software (MSO), High Precision LCR meter (LCR meter), Digital storage Oscilloscope (DSO), Regulated power supply (RPS), High Precision Function Generator (FG), High Precision Digital Multimeter (DMM), Multi-measurement Testbench.

The Facility for integration of Sensors and Actuators are Programmable System on Chip (PSoc), Spectrophotometer, Fluorometer, Temperature sensor, Proximity sensor with signal conditioning board, Reconfigurable boards (FPGA), Field Programmable analog arrays and accessories(FPAA), Monochromator.

The facility consists of Simulation Software are LabVIEW, MikroE for ARM, Pic, dsPic, Xilinx Vivado.

In the development of Antibigramoscope device automation in sample filling, Incubation Unit, Sterilizations, sensor integration, User interface Touch Display unit has been Monitoring and control through stand-alone FPGA.

HIGH PRECISION LCR METER



To analyze the characteristics of various actuator signals used in the automated antibiogram unit and to design transformers, power circuits, etc. used in the prototype.

DIGITAL STORAGE OSCILLOSCOPE

To check the faulty components in various circuits. To measure voltage, current, frequency, time period, time interval between signals etc. through visual viewing of the waveforms and the quantities. To save signals for offline processing and analysis



DC REGULATED POWER SUPPLY



RPS is used to provide the apt power supply for actuators, prototyping boards, and sensor modules. It is used to control the current supplied to the actuators for regulated operations.

HIGH PRECISION FUNCTION GENERATOR



External test signals are taken from the Function Generator to analyze the signal conditioning circuits and actuator circuits.

To measure the voltage, resistance, current, frequency, temperature, etc. While designing the electronic circuits for the automation unit, with high level of accuracy. To Check the batteries, power supplies and also to identify faulty components.

HIGH PRECISION DIGITAL MULTIMETER



PROGRAMMABLE SYSTEM ON CHIP (PSOC) AND IT'S ACCESSORIES



Design and implementation of Automated Monitoring and Control using Reconfigurable FPGA platform for the Automated Antibioqram Unit.