

# A.V.C. COLLEGE OF ENGINEERING

|Affiliated to Anna University, Chennai| Approved by AICTE, New Delhi|

|Re-Accredited by NAAC with 'B++' grade (2nd Cycle) || An ISO 9001:2015 Certified Institution|

Mannampandal, Mayiladuthurai, Nagapattinam District, Tamilnadu- 609 305.

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## Department of Electronics and Communication Engineering Accredited by NBA

### *Software Design Platform in Design and Teaching of RF Radio Communication Systems*

#### **Principal Investigator**

**Dr. CHITRAVALAVAN, M.Tech., Ph.D.,**

**Prof and Head/ECE**

**A.V.C. College of Engineering**

## ABOUT THE COLLEGE

A.V.C. College of Engineering was started in the year 1996 committed to social welfare. The founding father Sri S. Ramalingam Pillai sowed the seeds of A.V. Charities in 1806 in memory of his beloved son Thiru Velayutham pillai. A.V. Charities began its educational services by starting the A.V.C. (Autonomous) college in 1955, extended their horizon to A.V.C Polytechnic in 1983 and in 1996 by opening the Engineering college. A.V. Charities serve as Beacon light in the field of education to the innumerable youth, with rural background. We are very glad to say that we are second to none in enhancing the young minds to compete the ever changing global changes. A.V.C College of Engineering is a pioneer institution and first self financing college in Nagapattinam District. We have been approved by All India Council for Technical Education (AICTE) and also in possession of ISO 9001:2015 certificate. We are moving ahead with National Board of Accreditation (NBA) for the Engineering courses. Our Mission is to make the institution a Centre of Academic Excellence. The R&D facilities have been opened up to make the students as reservoir of knowledge, aptitude to advance and to face the global challenges.

## ABOUT THE DEPARTMENT

- ❖ Imparting quality education is the main objective of the department of Electronics and Communication Engineering. The ECE department plays a vital role in enriching knowledge and career opportunities for the students with the help of highly qualified and dedicated faculty members. Well equipped laboratory facilities include modern tools and latest software.
- ❖ Bachelor of Engineering in Electronics and Communication Engineering started in the year of 1996.
- ❖ Master of Engineering in Applied Electronics started in the year of 2013.
- ❖ The ECE Programme has been accredited by the National Board of Accreditation-AICTE, during the period 15-03-2012 to 15-03-2015 and accredited for the academic year 2022-23, 2023-24, 2024-25.,i.e.,upto 30-06-2025.
- ❖ The ECE Programme has been acquired Anna University permanent affiliation from the year 2014 onwards.
- ❖ The department is certified with ISO 9001-2015 standard.
- ❖ The department possessed numerous Anna University rank holders.

## About MODROBS Lab:

Department of *Electronics and Communication Engineering* received grant from AICTE-Modernization and Removal of Obsolescence (MODROBS) scheme of worth rupees 10Lakhs under F.NO.9-238/RIFD/MOD/Policy-1/2018-19. The grant was utilized to modernize the Communication Systems Lab under project title “*Software Design Platform in Design and Teaching of RF Radio Communication Systems*”.

This laboratory aids in developing latest techniques and exploring frontier areas of research in the field of wireless communication.

Software defined Platform is useful in observing the signal waveforms and to know the effect of noise and design components in 5G digital communication systems.

All the equipments procured in this project would continue to aid and support our technical skills and substantiate our research methodologies



## Equipments Available:

- ❖ Wicomm-t Wireless Digital Communication Trainer
- ❖ Commlab-t Communication Lab Trainer
- ❖ MATLAB Software Up-Gradation
- ❖ Personal Computers
- ❖ Digital Storage Oscilloscope



# Objectives of the Project

- ❖ To propose a new dimension for teaching and research in communication techniques and algorithms.
- ❖ To replace as many analog components and hardwired devices of the transmitter and receiver as possible with programmable devices.
- ❖ To enable reconfigurable system architecture for wireless networks and user terminals.
- ❖ To develop over the air lab and field testing with live RF signals.
- ❖ To test the designs in the presence of interference and other real world conditions.
- ❖ To provide an efficient solution to the problem of building multimode, multifunctional, and multiband wireless devices that can be updated by using software updates.
- ❖ To bridge the gap between fundamental theory and industrial practices.



**AVC COLLEGE OF ENGINEERING, MANNAMPANDAL,  
MAYILADUTHURAI**

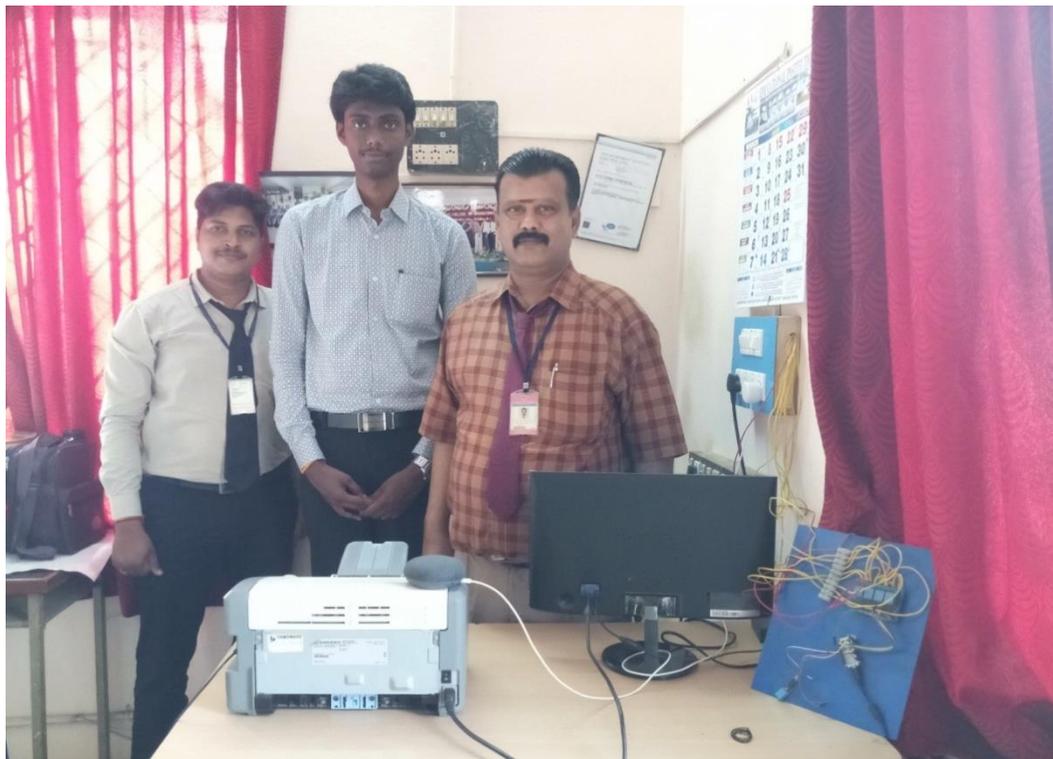
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**PRODUCT DEVELOPMENT**

<b>S.No</b>	<b>Title of the Project</b>	<b>Major Equipment &amp; Domain</b>	<b>Year</b>	<b>Developed By</b>
1.	Smart Automation for Controlling Appliances in Office using IoT	ATMEGA PROCESSOR & IOT	2019	Mr.A.P.Prabakaran., Asst.Prof, ECE
2.	Automated Irrigation Control System for Garden using Multiple Sensor Networks	ATMEGA PROCESSOR & Embedded Systems	2020	Mr.A.P.Prabakaran., Asst.Prof, ECE
3.	Automatic Hand Sanitizer Machine	IR Integrated Microcontroller	2020	Mr.A.P.Prabakaran., Asst.Prof, ECE

## **Smart Automation for Controlling Appliances in Office using IoT.**

The Wireless Home Automation System (WHAS) uses computers or mobile devices to control basic home functions and its features automatically through Internet of Things (IOT) from anywhere around the world. This system monitors room temperature and control the domestic appliances / medical applications from anywhere using Internet of Things in efficient way by allowing real time monitoring systems and buzzer for the emergency purposes. The person can access data and control the systems by using mobile applications via either voice or text. It also can be operated manually



## **Automated Irrigation Control System for Garden using Multiple Sensor Networks**

Watering for Garden is concerned with growing plants. With the advancement of technology, the world is being automated. Automated Systems are favoured over the manual systems. Automated Systems reduces manual works and is said to be an energy efficient method. In this system of approach, an automated system for irrigation process involves an arrangement of sensors in the cultivation field. The objective of this system is quantity of water delivered to plant based on the soil moisture level. The proposed system ensures that the plants should have enough water for their growth. The system includes sensors and microcontroller to send the signal by triggering the relay to open or close the electrical valve to control the water flow. In the long run, this will helps to reduce water wastage and timed irrigation processes. This system also works manually without interrupting automation control.



## **Automatic Hand Sanitizer Machine**

The COVID-19 pandemic has radically affected life for almost everyone around the globe, and makers are no exception. With everyone being more careful of their interactions with humans and objects, personal hygiene has taken serious precedence over all other factors in public space. A lot of public places have hand sanitizers for visitors, but they need to be manually pressed. To avoid manual contact, some no-touch hand sanitizer dispensers are commercially available, but they are expensive and mostly off-the-shelf commercial sanitizers cannot be automated. The project of contactless hand sanitizer dispenser is an alternate one for press-to-release hand sanitizer available in the market. An infrared (IR) sensor which detects the presence of hands and consequently activates the motor pump to dispense alcohol-based sanitizer. The circuit is economical, reliable, and can be easily constructed.

