

## Engineers Day 15<sup>th</sup> September 2018

On 15<sup>th</sup> September 2018 students of B.Tech Electronics & Communication program celebrated Engineers day by following events:

- 1) Robot race
- 2) Line following robot
- 3) Poster presentation competition
- 4) Non technical quiz competition

### 1) Robot Race

For robot race students designed robot track from scrap and waste material. The track was with hurdles. Students participated in this robot race.





2) Line following robot



### 3) Poster presentation competition

## RECENT TRENDS OF ELECTRONIC INFOODTECH

**GENETICALLY MODIFIED FOOD (GMO)**  
Genetic modification involves inserting or deleting genes from an organism's genome to create desirable traits.

**INTERNET OF THINGS (IOT)**  
In the context of agriculture, IOT involves connecting various devices like sensors, actuators, and gateways to collect and exchange data.

**CALORIE TRACKER**  
- Trackable - Healthier habits  
- 3000+ apps, 5000+ food items  
- Find out calories present in food items

**DRONE**  
- Range also from 100m to 1000m  
- Monitor the productivity of the crops  
- To find out diseased or damaged plants  
- Also data is recorded because fertilizers and pesticides

**3D PRINTING**  
- 3D printing allows for the production of personalized food items.  
- Example: personalized nutrition based on individual health needs.

**PRECISION AGRICULTURE**  
- Data-driven farming  
- To optimize crop yield and reduce resource usage.

**DELIVERY APP**  
- Connect food delivery apps  
- Connect food items to the consumer  
- Delivery to doorstep  
- Online ordering - delivery, pickup, order, food items

**FOOD WASTING TRACKING**  
- Minimize food wastage  
- eg. Tala app  
- Different household size  
- online, paper-based or offline

**FOOD WASTING TRACKING**  
- PRIVATE SINGLE PRIVATE GASPREPARE FOOD TECH T & TAIL

## IRNSS : NAVIC SATELLITE

**IRNSS : NAVIC SATELLITE**

The IRNSS constellation consists of seven satellites in orbit, providing navigation services over the Indian subcontinent and the Indian Ocean region.

**Benefits:**

- Terrestrial, aerial and marine navigation
- Disaster management
- Vehicle tracking and fleet management
- Precision farming
- Urban and rural navigation for drivers
- Transport and maritime data capture
- Terrestrial navigation for the blind and travellers.

Signal	Carrier frequency	Bandwidth
SPS - L5	1176.45 MHz	24 MHz (104 - 130 MHz)
SPS - S	2492.028 MHz	16.5 MHz (2492 - 2508 MHz)

**IRNSS will provide basically two types of services:**

- Standard positioning service
- Restricted service

ISRO has built a total of nine satellites in the IRNSS series of which eight are currently in orbit. Three of these satellites are in geostationary orbit.

The remaining in geosynchronous orbit that maintain an inclination of 29° to the equatorial plane.

The IRNSS constellation was named as "Navic" by the honourable prime minister.

**Speed of light = (300,000 km or 186,000 miles/sec.)**

**Distance = Speed x time.**

# MEMRISTOR

Memristor define as the fourth passive circuit element. It provides a relationship between magnetic flux and electric charge.

$$d\phi = Mdq$$

HP labs used  $TiO_2$  to build memristor. It is constructed of a  $TiO_2$  thin film sandwiched between platinum electrodes.

**MEMRISTOR**

Memory + Resistor

$\times 10^{-4}$

$V$  to  $I$  Characteristic

**Voltage**  $V$

**Resistor**  $V=RI$

**Current**  $I$

$V = \frac{d\phi}{dt}$

$i = \frac{dq}{dt}$

**Inductors**  $\phi = Li$

**Charge**  $q$

**Memristor**  $\phi = Mq$

**FLUX**  $\phi$

**Equivalent Circuit**

Undoped  $\Rightarrow R_{OFF}$

Doped  $\Rightarrow R_{ON}$

Virtual Cathode

Anion Migration in Titanium Dioxide with an Applied Electric Field.

SUNHA SAMYAL  
PRERANA TARAL

# LATEST TRENDS IN ICT

## IOT

1. What is IOT ?

- It is a network of objects that are embedded with sensors, software, and network capabilities, which enable them to collect and exchange data.
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## LI-FI

1. What is li-fi ?

- It is a wireless technology that uses light to transmit data.
- It is a wireless technology that uses light to transmit data.

LI-FI VS WIFI

## INTERNET

1. What is Internet ?

- It is a global network of computers that are connected to each other.
- It is a global network of computers that are connected to each other.

**4**

# INTERNET OF THINGS

IOT is a network comprised of physical objects capable of gathering and sharing electronic information.

IOT - The future of technology to make smart worlds.

## How it works?

- 1. Sensors / Devices**  
Collection of data from environment.
- 2. Connectivity**  
Sensors/devices connected to cloud through satellite, Wi-Fi, Bluetooth, IP, LAN, etc. in form of mobile.
- 3. Data Processing**  
Once data gets to the cloud, software performs processing on it.
- 4. User Interface**  
The info is made visible to the end user via an alert, e.g. email, text, notification etc.

## IOT applications and usecases:

**1 Smart Home**

- Door bell, clocks, lights, AC, etc.

Smart homes are promised to save time, money and energy.

**2 Retailers**

Retailers can enhance the in-store experience of the customers using IOT.

**3 Connected Health**

People can wear the IOT devices which will collect and analyze data about user's health, also follow doctor-made techniques to combat illness.

**4 Smart Farming**

A system is built for monitoring the crop field with the help of sensors (light, temp, humidity, soil moisture etc.) & automating the irrigation system.

**5 Smart City**

- Traffic management.
- Cuts pollution.
- Makes better use of infrastructure.
- Keeps all citizens safe.

**6 Hazardous zone**

Detection of gas levels and leakages in industrial environments, surroundings of chemical factories and inside mines.

### Advantages:

- Communication
- Automation & control
- Information
- Monitor & save time.
- Saves money
- Better quality of life.

### Disadvantages:

- Compatibility
- Complexity
- Privacy / Security
- Safety
- Unemployment
- Super reliance on technology.

Made By: 1) Pranali Khotakate.  
2) Shilpa Bombale.

# ELECTRONICS TRENDS

## Artificial Intelligence

Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. These processes include learning (the acquisition of information from an experience), reasoning (the manipulation of information to solve a problem), and problem solving (the selection of solutions from a set of possible solutions).

Artificial intelligence is based on an assumption that an intelligent system of gathering information by interpretation of patterns is more appropriate than human intelligence.

**Used In →**

- Robotics
- Self-driving cars
- Recommendation systems
- Virtual assistants
- Fraud detection
- Spam filtering
- Image recognition
- Natural language processing
- Expert systems
- Game playing
- Medical diagnosis
- Financial analysis
- Customer service chatbots
- Sentiment analysis
- Predictive analytics
- Cybersecurity
- Supply chain optimization
- Personalized marketing
- Sentiment analysis
- Recommendation systems
- Fraud detection
- Spam filtering
- Image recognition
- Natural language processing
- Expert systems
- Game playing
- Medical diagnosis
- Financial analysis
- Customer service chatbots
- Sentiment analysis
- Predictive analytics
- Cybersecurity
- Supply chain optimization
- Personalized marketing

## THE INTERNET OF THINGS (IoT)

is the network of physical devices, vehicles, home appliances, and other items embedded with electronics, software, sensors, actuators, and connectivity which enables these things to connect and exchange data, creating opportunities for new level of automation, machine-to-machine (M2M) communication, and data exchange between devices, resulting in efficiency improvements, economic benefits, and reduced human solutions.

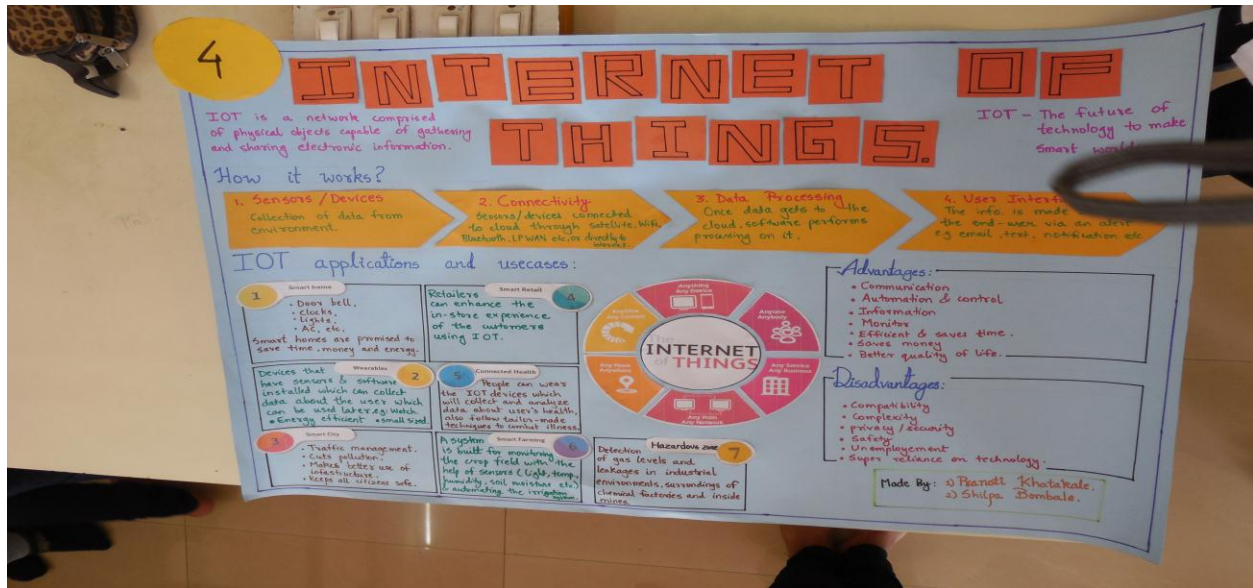
### APPLICATIONS

- Smart Home
- Smart Retail
- Smart Farming
- Smart City
- Connected Health
- Hazardous zone

### USES

- Smart Home
- Smart Retail
- Smart Farming
- Smart City
- Connected Health
- Hazardous zone

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4) Non technical quiz competition



