Suresh Angadi Education Foundation's

ANGADI INSTITUTE OF TECHNOLOGY AND MANAGEMENT

Savagaon Road, Belagavi – 590 009.

Approved by AICTE, New Delhi &Affiliated to Visvesvaraya Technological University, Belagavi)

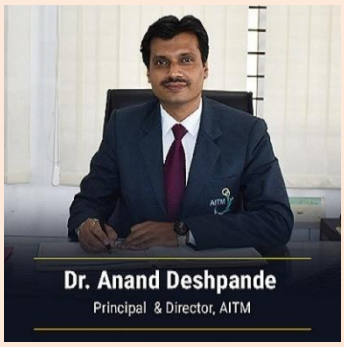
Accredited by NAAC

DRISHTI

E - Newsletter

Department of Electronics and Communication Engineering

Second Quarter E – Newsletter -2021-22

Head of the Institute	Message
	An Institute is assessed on the basis of the Academic ambiance and outcome of the system in terms of performance and achievements of the students and staff in teaching-learning, research, innovation, Placements, and results. AITM has been known for its Academic credentials coupled with holistic growth in all directions. The new generation of competent minds must imbibe knowledge and practically they should comprehend the art of balancing brilliant technical, managerial communication, and interpersonal skills, nest. The Institute has achieved a series of milestones with the help of brilliant students, dedicated staff, and encouraging Management. We promise a wonderful experience of rich Academic and Excellent facilities coupled with professional practices and blended with an affectionate concern for our Students.
Head of the Department	**Message**
 Mr. Raviraj Chougala HOD	Welcome to the department of Electronics and Communication Engineering at Angadi Institute of Technology and Management, Belagavi. The Department was established in the year 2009 with the aim of providing leadership in the field of Electronics & Communication Engineering with an intake of 60 students. The department is located in a sprawling environment with a state of art facilities and highly qualified faculty. The department works with the objective of addressing critical challenges faced by the Industry, Society and the Academia. Perhaps even more important is our unceasing commitment to our students, helping them to learn, grow, develop, and achieve their goals in their pursuit to excel in their professional career.

Institute Vision and Misssion

Vision:

To become a premier institute committed to academic excellence and global competence for the holistic development of students.

Mission:

M1: Develop competent human resources, adopt outcome-based education (OBE) and Implement cognitive assessment of students.

M2: Inculcate the traits of global competencies (such as domain expertise, Accountability, ethics, problem solving ability, communication skills, leadership Qualities and life-long learning) amongst the students.

M3: Nurture and train our students to have domain knowledge, develop the qualities of global professionals and to have social consciousness for holistic development.

Department Vision and Mission

Vision:

To impart quality and responsive education in Electronics and Communication Engineering for the overall development of students to meet the global challenges.

Mission:

M1: Adopt a transformative teaching-learning pedagogy to empower our students with domain knowledge and practical skills in resonance with technological developments.

M2: Impart multi-disciplinary knowledge, and train our students to develop the relevant professional competency skills.

M3: Create a cogent ambiance to comprehend the technical and management principles, and the efficacy of life-long learning.

Parents Meet

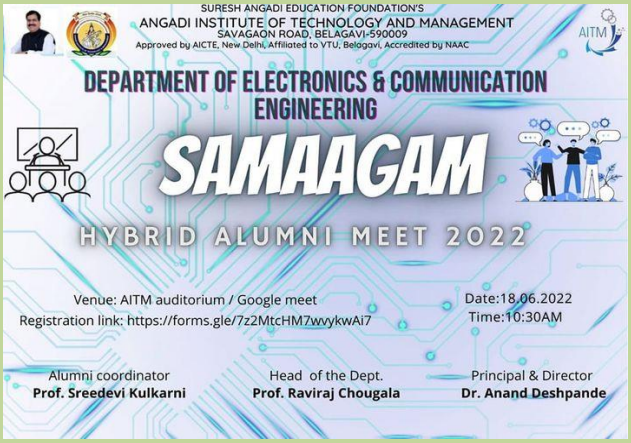
The department of Electronics & Communication conducted Parent Meet on 11/06/2022 at 10.00 am, AITM, Belagavi. All the department staff were present during the event. Parent teacher meeting covers the distance among three stakeholders. PTM opens a communication channel. Everyone is highly busy in his own task, profession and business. Teacher teachers a big number of students in different classes. Teacher is completing several tasks other than classroom teaching for maintaining piousness of an educational institution. Student is busy with reading, writing, completing class work and homework. Parent is busy with his profession for earning bread and butter for family.

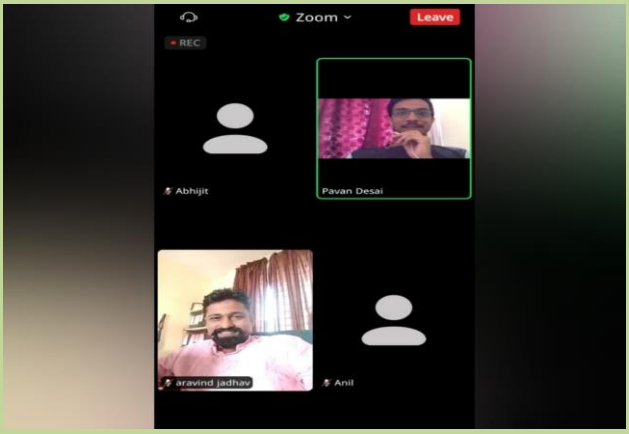
Parent is a partner. Active participation of a parent brings massive change in kid's academic performance. His nature of nurturing brings natural and holistic changes in kid's personality. It is necessary to share responsibility and

accountability with parent for the holistic development of a child. Parent is directly responsible for child progress at home and in the school. In fact, it is necessary to develop a strong bridge between parent and educator. Wise parents never leave space for developing negative outcomes. Each and every moment and movement of child determines her/his future. Parent teacher meeting is an opportunity to exchange observation of a child with each other. Sharing daily experience and observation provide a wider prospect for parent and teacher to plan, prepare and execute planning for better learning outcome of a child. We discuss and share overall personality of a child with the teacher i.e. his/her behavior, manner, habit, attitude, learning styles, relation to self and society etc. PTM is a junction to meet the needs of child.

Department Hybrid Alumni meet

The Department of ECE organized Hybrid Alumni meet 2022 (SAMAAGAM) on 18th june 2022 at Angadi Institute of Technology and Management at 10.30 am, Belagavi. At the meet, around 35 alumni have registered and over 25 have actively interacted with students and faculties. During the meet department HOD, all the faculties of the department and HODs of other departments were present. Alumni have shared their thoughts regarding curriculum, job experience and recent technologies. Alumni refers to a group of students who have graduated from a school, college or a university. At an alumni meet, all the former graduates of a particular institution get together and cherish their past experiences and moments. Creating an engaged, supportive alumni network is crucial to an institution's success. If communication stops once graduates leave an institution, their understanding of the university will become stale. Instead, they should be kept informed so they can remain engaged and keep abreast on the progress of the university. By creating a community for an alumni group, the





students can co-ordinate and reciprocate with each other. Planning will become much easier and ideas, views and opinions can be shared easily.

Vencer 2K22

Vencer was organized on 27th and 28th june 2022. It is cultural fest which is conducted every year in even semester; the fest is mainly focusing on exploring the hidden talent in budding engineers. The "Vencer" is organized every year by inviting Engineering students across Karnataka. The whole process is see-through by the invited Judges from relevant organizations. The winners of all the events are awarded by cash prizes and certificates of merit. The cultural activities enhance the confidence level of the students thereby allowing them to perform better. These activities develop the personality of the students and assist them in shaping a good career. In fact, students can also leverage the advantage of participating in various activities. College fests are usually a highlight in every student's college life. College fests act as a platform for students to showcase their innovative ideas, compete with their peers, and have a feel of the 'real world'. Especially technical fests. These are an amalgamation of fun and learning where spectacular ideas are displayed, and students learn and feel inspired.

Student Articles

Organic Electronics for a Better Tomorrow: Innovation, Accessibility, Sustainability

INTRODUCTION:

We live in an increasingly electronic world, with computers occupying a central
part of our lives. In 2012, there were estimated 30-40 processors per person,

on average, with some individuals surrounded by as many as 1000 processors on a daily basis. While silicon electronics has solved many of the challenges associated with our increased use of electronics, there are limits to what silicon can do. Chemists are synthesizing a wealth of new organic materials for use in electronic devices that create novel properties impossible to replicate with silicon. These materials hold tremendous promise to expand our electronic landscape in ways that will radically change the way society interacts with technology. *Organic Electronics for a Better Tomorrow: Innovation, Accessibility, Sustainability* examines where organic electronics are today, where chemical scientists envision the field is heading, and the scientific and engineering challenges that must be met in order to realize that vision.

"*Organic electronics* is a field of materials science concerning the design, synthesis, characterization, and application of organic small molecules or polymers that show desirable electronic properties such as conductivity."

History:

One class of materials of interest in organic electronics are electrical conductivity, i.e. substances that can transmit electrical charges with low resistivity. Traditionally, conductive materials are inorganic. Classical (and still technologically dominant) conductive materials are metals such as copper and aluminium as well as many alloys. The earliest reported organic conductive material, polyaniline, was described by Henry Letheby in 1862.

Work on other polymeric organic materials began in earnest in the 1960s, A

high conductivity of 1 S/cm (S = Siemens) was reported in 1963 for a derivative of tetraiodopyrrole.

Conductive plastics have undergone development for applications in industry.

In 1987, the first organic diode was produced at Eastman Kodak by Ching W. Tang and Steven Van Slyke.

Organic Materials for Electronics:

Chemical scientists work with several different types of organic materials in their research on electronics. These materials include small molecules and polymers; fullerenes, nanotubes, graphene, and other carbon-based molecular structures; ensembles of molecules and molecular structures; and hybrid materials. They use these materials to build electronic structures and then integrate those structures into electronic devices. Many of these devices are early-stage prototypes, with major scientific and engineering challenges still to be surmounted before the prototypes can become real-world products. But others are already commercial realities, some being used on a widespread basis. For example, both small molecules and polymers are being used in the manufacture of OLED displays (e.g., TV and cell phone displays), solar cells, and transistors.

Carbon-based materials hold tremendous promise for the field of organic electronics because carbon comes in so many different forms, with a wealth of chemistries associated with those different forms Carbon based materials are being researched and developed mostly to create bendable, or rollable, electronic displays, solar cells, and other flexible devices. But they are also

being investigated for their charge storage potential, conducting ink capacity
(e.g., graphene-based inks are being investigated for their use in security
packaging such that tampering breaks the printed circuit, sounding an alarm),
and other applications

ORGANIC ELECTRONICS TODAY:

Organic electronics is not a new field. Electronic devices made with organic
materials already have multiple applications and have been widely
commercialized, mostly in display (e.g., smart phone displays), photovoltaic,
and transistor technologies.

Organic light-emitting diodes (OLEDs) are built from one or more layers of
organic and hybrid material (either small molecules or polymers) sandwiched
between two electrodes (e.g., indium tin oxide), all on a plastic or other
substrate. Unlike other display technologies, which require a backlight in order
for the display to show, OLEDs generate their own light via
electroluminescence and therefore they do not require backlights. They
require less power and are more energy-efficient than backlight-dependent
display technology.

OLEDs are already widely commercialized in many Samsung and other
Smartphone models. The Samsung Galaxy line of OLED-based Smartphone's
occupies a significant portion of the global Smartphone market. Additionally,
Samsung and LG Electronics have both announced forthcoming launches of
large-screen OLED TVs. The new TVs are expected to not only be more
spectacular than today's TV technology, with respect to crisper colours and

sharper contrasts, but also lighter, thinner, and more energy efficient.

ORGANIC ELECTRONICS: THE VISION FOR TOMORROW:

Organic materials give electronic devices unique properties impossible to achieve with silicon-based electronic structures, enabling a broad range of innovative "out-of-the-box" applications. Because of the unique structural and functional variation of organic materials, arguably one of the greatest areas for innovation in the field of organic electronics is in sensing -- that is, the use of electronic devices to sense chemical or biological substances in the environment, in or on the human body, in food and water, or elsewhere.

Not only are organic electronic structures more chemically compatible with biological systems than silicon based devices are, they also enable a flexibility, stretch ability and mechanical "softness" not possible with silicon. Together, these properties create the potential for innovative bio-electronic sensors that can conform to the curvature and moving parts of the human body.

As with organic solar cells, chemical scientists and engineers hope to improve the energy efficiency of organic transistors as well, in the case of OFETs by lowering their operating voltages. Lowering OFET operating voltages is more than an energy efficiency goal. It will also allow chemists to take advantage of the biocompatibility of OFETs; high-voltage FETs generate fatal levels of heat.

CONCLUSION:

Conductive polymers are lighter, more flexible, and less expensive than inorganic conductors. This makes them a desirable alternative in many

applications. It also creates the possibility of new applications that would be
impossible using copper or silicon.
Organic electronics not only includes organic semiconductors, but also
organic dielectrics, conductors and light emitters.
New applications include smart windows and electronic paper. Conductive
polymers are expected to play an important role in the emerging science
of molecular computers.

By Prajwal G.
ECE Department

FASTEST GROWING TECHNOLOGY

Wireless Communication Definition:

Wireless communication is the fastest growing and most vibrant technological areas in Mobile phones, GPS receivers, Remote controls, Bluetooth audio and Wi-Fi etc . The communication field. Wireless communication, or simply sometimes wireless, is the transfer of information or power between two or more points that are not connected by an electric conductor. We live in a world of communication and wireless communication, in particular is a key part of our daily lives. Some of the commonly used wireless communication systems s in our day to day life are:

Types of Wireless Communication:

Wireless communication technology is categorized into different types depending on the distance of communication, the
range of data and type of devices used. The following are the different types of wireless communication technologies.

1. Television and Radio Broadcasting: Radio is considered to be the first wireless service to be broadcast. It is an example of simplex communication system where the information is transmitted only in one direction and all the users receiving the same data.

2. Satellite Communication: Satellite Communication System is an important type of wireless communication. Satellite Communication System offer telecommunication, positioning and navigation.

3. Wireless Local Area Network (Wi-Fi): Wi-Fi is a low cost and low power wireless communication, that is used by various electronic devices like smart phones, laptops etc. in this setup, a router works as a communication hub wirelessly.

4. Global Positioning System (GPS): GPS is solely a subcategory of satellite communication. GPS provides different wireless services like navigation, positioning, location, speed etc. with the help of dedicated GPS receivers and satellite.

5. Mobile Communication System: The advancement of mobile networks is enumerated by generations. Many users communicate across a single frequency band through mobile phones. Similar to GPS devices, some phones make use of signals from satellite to communicate.

Advantages of Wireless Communication:

- Information can be transmitted quickly with a high speed and accuracy.
- The internet can be accessed from anywhere, at any time without any cables or wires.
- Emergency situations can be alerted through wireless communication.
- Wireless, no bunches of wire running out.
- Communication can reach where wiring is not feasible and costly.

Disadvantages of Wireless Communication:

- An unauthorized person can easily misuse the wireless signals which spread through the air.
- It is very important to secure the wireless network to protect information.
- Continuous exposure to any type of radiation can be hazardous and affect the health.

Applications of Wireless Communication:
Wireless Communication has wide applications in the areas of Space, Military, telecommunications, Wireless power transmission, IOT, Radar communication, Artificial intelligence, Fiber optics and intelligent transport systems.

By Neha Singh
ECE Department

Newsletter Editors

Faculty Newsletter Editor

Mr. Sriram Kulkarni
Assistant Professor
ECE Department

Student Newsletter Editors

Miss Sahana Dixit
Mr. Mahalingappa H.