Department of Electronics & Communication Engineering

Accredited by NBA, New Delhi

October Issue 2021

IMPULSE

Integrating

the news of Electronics!!!

SECAB INSTITUTE OF ENGINEERING & TECHNOLOGY BIJAPUR

IN THE EDITION

NEWSLETTER

INSTITUTE

VISION

To develop professionally competent Engineer serve the society

MISSION

- *Imparting effective outcome-based education*
- *Preparing students through skill oriented courses to excel in their profession*
- *Promoting research for the benefit of society*
- *Strengthening relationship with all stakeholders*

DEPARTMENT

VISION

To develop professionally competent and socially responsible Electronics and Communication Engineers

MISSION

- *Strengthening core competencies among the learners through outcome-based education*
- *Imparting technical skills by conducting hands-on training programs/workshops on Emerging technologies*
- *Producing graduates with societal responsibilities*
- *Involving stakeholders in development of the department*

MESSAGE FROM HOD

The process of learning is extremely important in life. What you learn, how you learn and where you learn play a crucial role in developing ones Intellectual capability. I am pleased to welcome you to the Department of Electronics and Communication Engineering. It is the most flourishing discipline of Engineering.

It offers professional technical training that keeps the students to be in pace with the latest developments in the field of Electronics and Communication Engineering. The department trains its Technocrats to face the challenges in life by providing many value added courses to enhance their career prospects. Continuous Interaction with students, parents and staff, along with the Training and Placement Cell ensures a bright future to the students. Special attention is provided on practical orientation to the teaching learning process.

The department regularly takes various initiatives like organizing Colloquium by inviting experts from Industry and Academic background. We conduct workshops and Technical seminars for students. We do send students for Internship programs to get exposure in the working environment.

Our goal is to impart value based quality education along with development of positive attitude, skills and abilities to apply their knowledge in order to face the challenges of future. I wish success to all students in your endeavour to join us on the journey of quality education & to have a great learning experience with my excellent, loving & caring team.

Dr. Noorullah Shariff

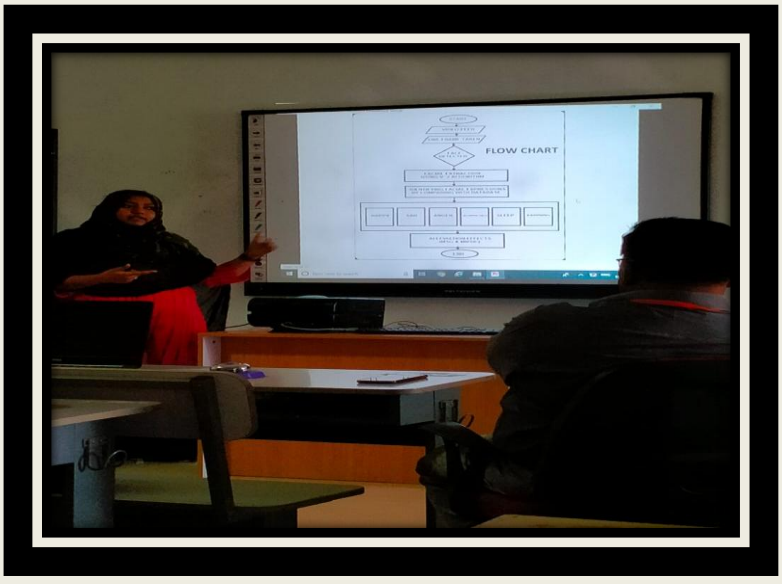
(B.Tech (ECE), M.E (Guided Missiles), Ph.D (CSE))

STUDENT ACHIEVEMENTS

Ms. Tayyaba ara Mohammad Sultan Baragudi,5th Semester, Dept of ECE has completed an online course on " Python Data Structures " authorized by University of MICHIGAN and Offered through Coursera on 7th September, 2020.

Ms. Farha Anjum Mulla of 3rd Semester, ECE dept. has completed an online course on " C for Everyone : Programming Fundamentals" authorized by University of California, Santa Cruz and Offered through Coursera on 13th September, 2020.

Ms. Nusrath Kembhavi, Ms. Akshata Patil, Ms. Archana Patil, Department Electronics and Communication Engineering, have presented a Research Paper entitled "Design and Implementation of Magic Mirror for Home Security Using IoT and Facial Emotion Detection with Alleviation Effects" in three days International Conference on Artificial Intelligence and Soft Computing (ICAISC-2021) from 11th - 13th Feb. 2021 organized by Karnataka State Akkamahadevi Women's University, Vijayapura, Karnataka.



SCIENCE CORNER

Galileo Galilei was the first to use a refracting telescope to make important astronomical discoveries

Genius is one percent inspiration and ninety-nine percent perspiration – Thomas Edison

ACADEMIC PERFORMANCE

4TH SEMESTER

Nida arif Inamdar

86%

Summaya Dalawai

85.22%

Madeeha Shaikh

83.2%

EVEN SEMESTER RESULTS 2020-2021

6TH SEMESTER

Tayyabara B.

89%

Shilpa Tangadagi

84.87%

Sayeda Faiqa

84.62%

8TH SEMESTER

Jannatul Firdous

90%

Sukanya Kore

89%

Nusrat Kembhavi

88%

HEARTY CONGRATULATIONS TO ALL TOPPERS

This year's Nobel Prize for Physiology or Medicine — awarded to the researchers, David Julius and Ardem Patapoutian from the University of California, San Francisco and Scripps Research in La Jolla, California, respectively — recognizes their seminal work in identifying the gene and understanding the mechanism through which our body perceives temperature and pressure.

INTERNSHIP

The final year students of Electronics & Communication Engineering have undergone training and internship on Application development using python and AI in N.S InfoTech Limited Sponsored by Standard Chartered Bank and Implemented by FUEL PVT.LTD. Navanagar, Hubli

First batch consisting of 6 students completed the internship from 22nd August to 20th September 2021.Second batch consisting of 21 students completed the internship from 22nd September to 20th October 2021.

Students also learnt Soft Skills, Online Aptitude, leadership via Stories of leadership and Basics of JAVA during the training period.

BRIDGING THE BARRIER

Internships provide exposure to the real world

Students learn how to apply the knowledge acquired during an internship to future workplaces. In addition to this, it is an excellent learning curve for young graduates and students while meeting new people and making connections in the professional world.

A PROFESSIONAL LEARNING EXPERIENCE

STUDENT ACTIVITY PROGRAM

The department of Electronics & Communication Engineering visited Secab Girls School on 16th January, 2021. 5th semester students Miss. Soumya Salunkhe, Miss. Akshata Chavan, Miss. Aishwarya Hajare, Miss. Humera Mujawar and Miss. Ibtesham Mahadiya carried the activity for students of 10th std. Prof. M. R. Chikkond, Mr. S. D. Biradar & Mrs. Uzma I.S. accompanied students. The interaction started with introduction session followed by a presentation on "Importance of Technical education among the youth and skill development". Students were made to perform some Team building activities so as to learn Time Management and working in Teams.

The department of Electronics & Communication Engineering visited Secab Girls School on 10th February, 2021. 3rd semester students Miss. Sumaiya Dalawai, Miss. Nida Inamdar, Miss. Madeeha Shaikh, Mr. Ahetesham B. and Mr. Aftab Shaikh carried the activity for students of 9th and 10th std. Prof. Md. Ziaullah , Prof. Veeresh K. H. & Mr. S. D. Biradar accompanied students.

*The three individuals credited with the invention of the **transistor** were William Shockley, John Bardeen and Walter Brattain*

ROLE OF ELECTRONICS IN COVID-19 BATTLE

The outbreak of Covid-19 pandemic has affected the whole world in innumerable ways. We all know how badly COVID-19 has impacted our lives, both personal and professional. During this time of sheer uncertainty and constant fear, our willingness to adopt technology and electronic devices have been our lifeline.

With the outbreak of Covid-19 pandemic, a wide range of electronic devices have been developed that are being used independently or in association with other technical equipment to combat corona virus. Electronic devices such as thermal scanners, biosensors, etc., are playing a crucial role in preventing the spread of the virus.

The present crisis due to Covid-19 has forced scientists and engineers to come up with ideas or technologies to deal with this situation. Biologists and medical professionals, along with scientists and engineers, are contributing towards designing cost-effective, fast, and portable technological equipment to control, test, and treat the disease, which has affected the whole world.

Role of electronics: The development and implementation of different technological solutions aimed for combat Corona virus are rapidly taking shape around the world. Engineers are taking advantage of modular electronic design, 3D printing, and various other skills to create prototypes of devices that could be critical in the fight against Covid-19. For example, 3D printing can be used to help produce vital hospital supplies. 3D-printing design engineers and specialists are already assisting in the production of respirators, valves, masks, etc. Here are some of the initiatives well supported by electronics towards tackling Covid-19.

Latest technologies, such as IoT, AI, drones, robots, UVs, GPS, and Bluetooth, can play a

primary role in such circumstances to mitigate the impact of COVID-19 outbreak. *Therefore, our study highlights numerous technological solutions, which are of great help in controlling disease spread and facing challenges caused by it.*

Digital initiatives: Digital platforms can help in containing the crisis and save lives. A coordinated global response using digital technologies is needed to fight Covid-19, with greater impetus on strengthening IT and cyber security. For instance, there is a need to enable non-personal data exchange in a secure manner and promote the use of digital solutions in healthcare.

Information provider: Electronic communication media has played a great role in creating awareness on subjects related toCovid-19, as well as in countering the misinformation related to Covid-19, which otherwise might have created panic in masses. Different electronic media like television, radio and smart phones show scientific reports, involve informed people in discussions to counter the spread of misinformation, and highlight the importance of precautions to be taken in the wake of corona virus outbreak. The electronic media through video conferences and online learning has played an important role during the pandemic time.

Electronic assisted medical equipment: Teams of engineers, physicians, computer scientists, and others all over the world are working to develop and implement safe and inexpensive alternative medical equipment that could be built quickly around the world. When it comes to the development of low-cost critical medical equipment like ventilators, personnel protection equipment (PPE), virus-free masks, etc., electronics plays a great role.

Technology-Based Temperature Monitoring: There are a number of monitoring devices being used to detect Covid-19 by recording the temperature of the general public. Infrared and wireless thermometers have now become the most commonly used medical equipment at toll gates, entry and exit gates of offices, airports, shopping malls, hotels, railway stations, shops, hospitals, and other public places. These temperature monitoring technologies have assisted in measuring the body temperature of individuals from a distance; these temperature measuring devices have also been useful in identifying the individuals who might need further investigation.

Advanced monitoring techniques: Other emerging technologies such as artificial intelligence (AI), the Internet of Things (IoT), and deep learning methods help analyze the data more accurately. AI is being used to predict and monitor the spread of the disease across countries, track the news regarding the number of confirmed cases of corona virus, and predict the survival chance of patients with severe corona virus symptoms.

Machine learning is specifically being used on CT scan data to detect corona virus in patients. There are also a number of biosensors being used in molecular diagnostic platforms within hospitals to help determine if a patient has corona virus. So, while temperature sensors are one of the main tools being used to fight Covid-19, there are a number of electronic gadgets and software programs that are being used at different stages of the fight.

Robotics and drones: Robotics- COVID-19 has made us realize how meaningful human interactions are for making things work. The pandemic has severely impacted labour - intensive sectors such as food, retail, logistics, and manufacturing businesses. COVID-19 has resulted in a strong push to implement the usage of robots and also to speed up the robotics research. Robots are now being used to clean infected areas and for delivering food to quarantined individuals. Robots are also helping in delivering medicines and food supplies to corona virus patients.

The count of COVID-19 cases is increasing rapidly, and the number of patients who need medical attention is putting extraordinary pressure on healthcare professionals across the world. In a few countries, remote-controlled robots are being used for helping medical professionals to conduct critical tasks such as mouth swab collection for conducting the virus detection test, for conducting ultrasound scans, etc.

Drones: Drones are being used for food deliveries, tracking population, transporting test kits, spraying disinfectant, and for delivering medicines to quarantine areas, etc. These are also being used to spray disinfecting chemicals in public spaces. Drones equipped with thermal imaging technology are being used to detect people with fever/flu symptoms.

Conclusion: COVID-19 has proved that technology innovations have been helping in managing the epidemic in a timely, systematic, and calm manner. A lesson learnt from the COVID-19 pandemic has been to stay prepared well in advance against any crisis at both an individual and collective level. All we need to fight an epidemic like COVID-19 is preparedness. Advancement in technology is steadily progressing; it will undoubtedly continue to grow exponentially. It's we humans who have to adapt to changes in technology faster and continue to invest in building the technology systems for better preparedness.

The COVID-19 virus is a new virus linked to the same family of viruses as Severe Acute Respiratory Syndrome (SARS) and some types of common cold. The outbreak of Novel corona virus disease (COVID-19) was initially noticed in a seafood market in Wuhan city in Hubei Province of China in mid- December, 2019.The official names COVID-19 and SARS-CoV-2 were issued by the WHO on 11 February 2020.

Shilpa Tangadagi,

7th Semester, ECE

MORE ATTENTION TO THE CYBER SECURITY OF INDUSTRIAL INTERNET OF THINGS

Many sensors and IoT have been integrated into the industrial control systems (ICS) and Industrial automation and control systems (IACS) in the rapid developing smart factory or industry. Yet most of IoT devices and existing ICS are vulnerable to physical security risks.We have to build adequate information security protection capability in Industrial Internet of Things (IoT) to ensure those systems to function continuously and thus achieve their purpose and expected benefits.

Enhancing the cyber security of industry IoT system: It is universally reckoned that cyber security shall be thoroughly considered in the new system where initially planning, design, processing and implementation to final operation shall be catered for. Furthermore, in service IIoT and ICS systems must be able to assess security risk and manage information security. Purdue Enterprise Reference Architecture (PERA) provides a basic operating structure of an industrial control system. Industrial Automation and control system security committee proposes an ISA-99 standard with a framework to provide cyber security assessment tools in the IoT field.

Conclusion: The importance of evolving cyber security for IIoT and IACS is crucial. Topics about latest standard for IACS and related IIoT research examinations are of our major attention.

The industrial internet of things (IIoT) refers to interconnected sensors, instruments, and other devices networked together with computers' industrial applications, including manufacturing and energy management.

The IIoT is enabled by technologies such as cyber security, cloud computing, edge computing, mobile technologies, machine-to-machine, 3D printing, advanced robotics, big data, internet of things, RFID technology, and cognitive computing.

Humera Mujawar ,
7th Semester, ECE

In the context of modern digitized world, Artificial Intelligence is the property of machines, computer programs and systems to perform the intellectual and creative functions of a person, independently find ways to solve problems, be able to draw conclusions and make decisions.

The term Intelligence refers to the ability to acquire and apply different skills and knowledge to solve a given problem. Intelligence is integrated with various cognitive functions such as language, attention, planning, memory and perception. It involves both human and artificial Intelligence.AI will revolutionalize the way in which different companies across compete and grow by representing a new production factor that can drive business profitability.

Open challenges: The challenges of AI include the following: Within near future, the artificial intelligence goals were to affect the society from law and economics in several technical terms including security, verification, validity and control. The major short term threats of artificial Intelligence include the devastating race of arms in fatal autonomous weapons and full dependence of our life on technology will eventually lead to unemployment problem, social discrimination and power inequality in societies.AI will become better in solving tasks compared to human beings hence loss of jobs. For example, drivers will be ruled over by robotic cars. As a result of AI out competing humans will create a big challenge on human thinking.

Solution & suggestions: To reduce the destructive effects of AI, it is essential to develop the symbolic approach, which should allow us to operate with weakly formalized representations and their meanings. The success and effectiveness of solving new problems depend on the ability to allocate only essential information which requires flexibility in the methods of abstraction.

Conclusion: AI can achieve great discoveries and advances for humanity due to its multiple possibilities. Most AI systems have the ability to learn, which allows people to improve their performance over time. The adoption of AI outside the technology sector is at an early or experimental stage.

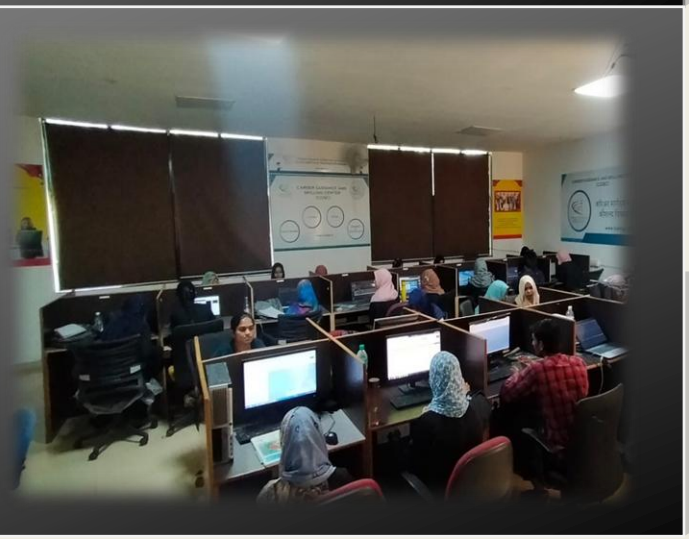
An AI is a computer system that is able to perform tasks that ordinarily require human intelligence. These artificial intelligence systems are powered by machine learning.

In 1955, John McCarthy coined the term Artificial Intelligence, which he proposed in the famous Dartmouth conference in 1956. This conference attended by 10-computer scientists, saw McCarthy explore ways in which machines can learn and reason like humans.

Soumya Salunkhe,

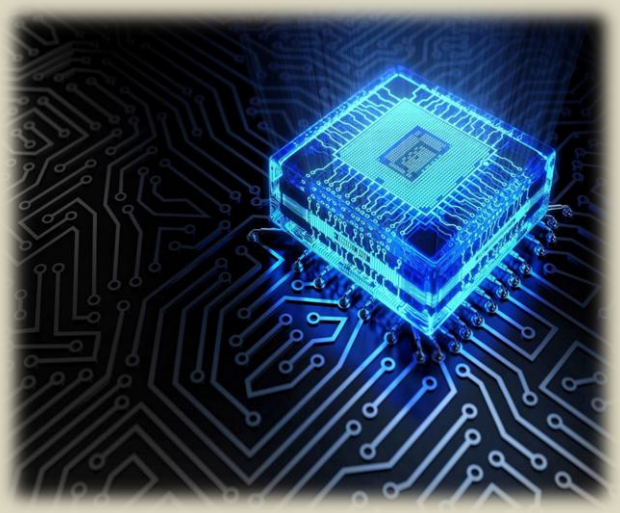
7th Semester, ECE

PHOTO GALLERY



Science fact: Human brain generates enough electricity to power a light bulb!!!

Reference: www.dentinstitute.com



INTRODUCTION: A system-on-chip product is a highly integrated microelectronic device that unites formerly separate devices into a single unified structure.

TWO PRIMARY CHALLENGES OF SOC: 1. Technical obstacles of device integration: 2.Development of a new design methodology:

The Challenge of Integration: The cost-driven marketplace demands that embedded systems continue to move from discrete solutions to integrated system-on-chip. The four basic elements needed to construct a system-on-a- chip product include:

*— A Central Processing Unit Core: leading 32-bit cores for example include ColdFire, M*core, SH-3, PowerPC, PicoJava, and ST20 — Memory: memory options include ROM (Read-Only Memory), RAM (Random Access Memory), Flash, EEPROM (Electrically Erasable Programmable Read-Only Memory) and OTP (One-Time Programmable) — Peripherals: peripheral options include, analog to digital converters, watchdog timers, universal asynchronous receiver transmitter, memory management unit. — Application Specific Circuit Modules: application specific modules would include such options as peripheral component interface, universal serial bus, Ethernet or client-defined intellectual property.*

The technical feat of integrating these separate elements is enormous. It requires development of compatible process technologies, interface bus architectures, and interoperable hardware/software verification tools. Integration is also a challenge because of the demands placed on technology and design at the deep sub-mircon level. Challenges of deep sub-micron design include: interconnect delays and the escalation of power density. All of these technical obstacles have not been overcome, though efforts are well advanced to

remove them. The Challenge of SOC Design Methodology: Prior to seeking device integration, designing an SOC means adopting a design for re-use methodology.

This means developing or adopting intellectual property (IP) that can be easily integrated into different chip designs. The ultimate benefit of this design method will be future time and money savings of at least 25 percent over designing IP from scratch each time.

There are no companies that presently possess the wide array of IP blocks necessary to compete in the highly competitive SOC market. Companies must therefore outsource their IP needs, in conjunction with building their own IP library. This way they will have an opportunity to achieve time to market goals. Outsourcing IP is also a means to differentiate one SOC product from another, by adding compelling applications and functionality while achieving affordable consumer price points.

With an IP library built, SOC vendors will then be well leveraged to integrate the IP into a variety of chip designs. The key to the success of SOC implementation is well designed IP that can be readily re-used.

CONCLUSION: The design of embedded Systems-on-Chip (SOC) is influenced by several evolutionary trends, such as the increase in design complexity made possible through shrinking features sizes coupled with larger die sizes for chips. On the other hand, the increasing complexity of building blocks leads to a revolutionary challenge in the emerging system design process that combines complex Intellectual-Property (IP) library blocks to create specialized embedded SOC under tight time-to-market deadlines. Such IP libraries frequently consist of pre-designed mega-cells such as processor cores and memories; several new architectural and optimization issues arise in the process of incorporation of these complex components in application-specific embedded systems. In this book, we described techniques for incorporating memory architectures in such embedded systems that contain both custom-synthesized hardware, as well as programmable processor cores

A system on a chip (SoC) is essentially an integrated circuit or an IC that takes a single platform and integrates an entire electronic or computer system onto it.

System on Chip (SoC) Manufacturers:

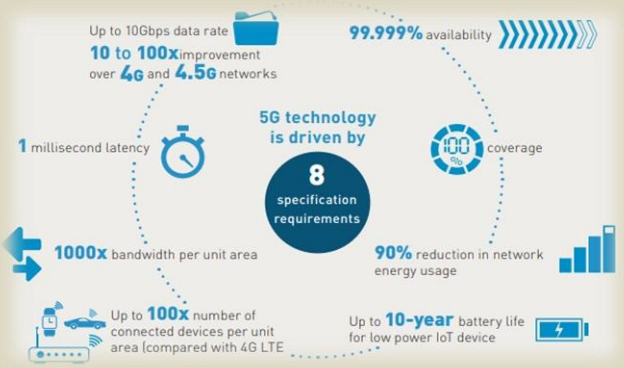
STMicroelectronics, NXP Semiconductors, Texas Instruments, Dialog Semiconductor, Microchip Technology, GHI Electronics, Cypress Semiconductor to mention a few.

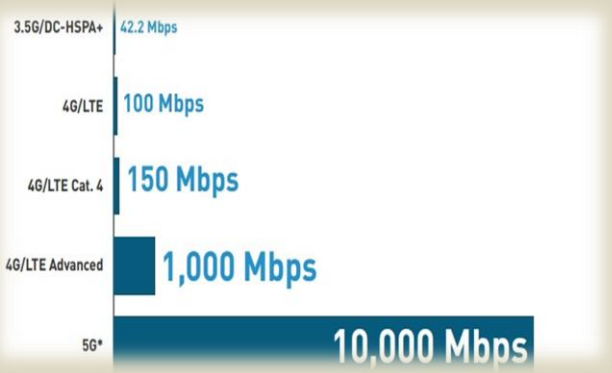
Anjum Sartur,

7th Semester, ECE

5G technology is a breakthrough. The next generation of telecom networks has started hitting the market and will continue to expand worldwide.

Beyond speed improvement, the technology is expected to unleash a massive 5G IoT(Internet of Things) ecosystem where networks can serve communication needs for billions of connected devices with the right trade-offs between speed, latency and cost.





5G technology is driven by eight specification requirements:

- *Up to 10Gbps data rate - > 10 to 100x speed improvement over 4G and 4.5G networks*
- *1-millisecond latency*
- *1000x bandwidth per unit area*
- *Up to 100x number of connected devices per unit area (compared with 4G LTE)*
- *99.999% availability*
- *100% coverage*
- *90% reduction in network energy usage*
- *Up to 10-year battery life for low power IoT device*

How fast is 5G:

•5G speed tops out at 10 gigabits per second (Gbps).

•5G is 10 to x100 faster than what you can get with 4G.

5G and the previous mobile generations at a glance: In the last four decades, mobile phones, more than any other technology, have quietly changed our lives forever.

•1G, the first generation of telecom networks (1979), let us talk to each other and be mobile

•2G digital networks (1991) let us send messages and travel (with roaming services)

•3G (1998) brought a better mobile internet experience (with limited success)

•3.5G brought a truly mobile internet experience, unleashing the mobile apps ecosystem

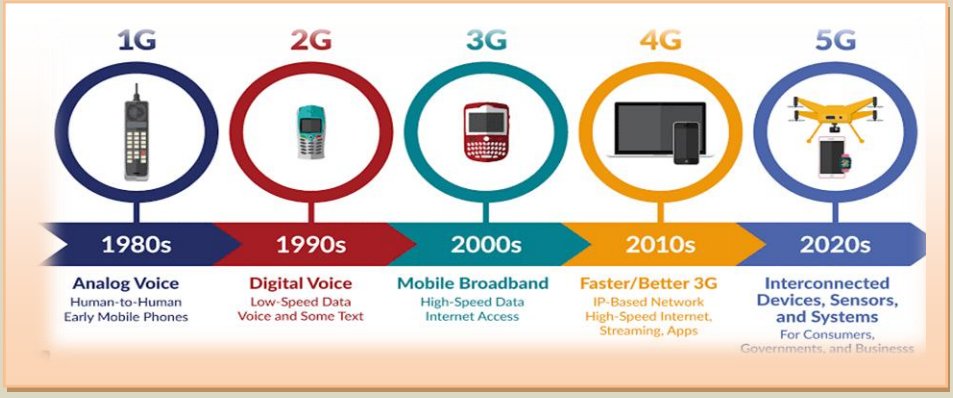
•4G (2008) networks brought all-IP services (Voice and Data), a fast broadband internet experience, with unified networks architectures and protocols

•4G LTE (for Long Term Evolution), starting in 2009, doubled data speeds

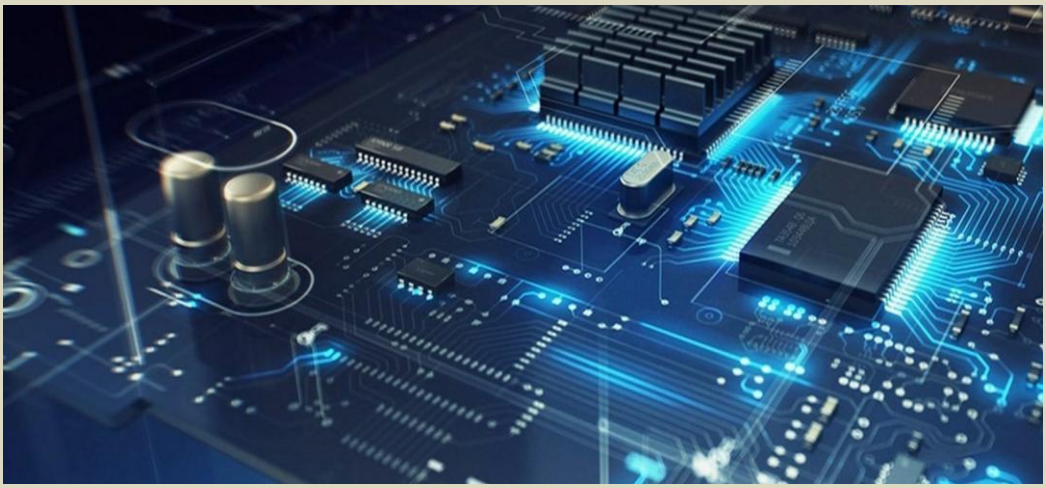
•5G networks expand broadband wireless services beyond mobile internet to IoT and critical communications segments

When is 5G coming: As of March 2021, 157 mobile operators have launched commercial 5G services in 62 countries, according to GSMA Intelligence. The study forecasts 551m subscriptions by the end of 2021, and 1.8 billion by the end of 2025.

Conclusion: 5G connectivity promises to break traditional paradigms of data delivery by providing network connectivity almost everywhere. Security, performance, interoperability, and auditable compliance are just a few of the 5G challenges that require immediate attention. The "perception" of speed, instantaneous response time, and IoT performance will become a reality thanks to 5G.



Akshata Chavan, 7th Semester, ECE



The Indian semiconductor industry offers high growth potential areas as the industries which source semiconductors as inputs are themselves witnessing high demand. The end-use industries such as mobile devices, telecommunication equipment, information technology, office automation (IT & OA), industrial machinery, automobiles and several other industries have applications for computing in some form or other and thereby necessarily have growing demand for semiconductors. Now with the concept of Internet of Things (IoT) picking up momentum, the next generation of interconnected devices would further increase the demand for intelligent computing, thereby creating sustainable demand for semiconductors.

India has a very fast growing electronics system design manufacturing (ESDM) industry. India also has a strong design base with more than 120 units. According to the Department of Electronics and Information Technology (DeitY), nearly 2,000 chips are being designed every year in India and more than 20,000 engineers are working on various aspects of chip design and verification. The government has a strong focus in developing the ESDM ecosystem in India. Several subsidies and other incentives are on offer for setting up electronics manufacturing units in India.

Market size: According to a study by The Associated Chambers of Commerce of India (ASSOCHAM) and EY, the Indian electronics and hardware industry is expected to reach US$ 112-130 billion by 2018 as electronics and hardware manufacturers are looking to increase their manufacturing base in India to cater to the domestic market as well as the Middle East, Africa and SAARC countries.

According to the India Electronics & Semiconductor Association, the Indian Electronic System Design and Manufacturing (ESDM) market will grow from US$ 76 billion in 2013 to US$ 400 billion by 2020. Consumption of semiconductors, in the meantime, has also steadily climbed.

According to a report by NOVONOUS, the semiconductor industry is estimated to grow from US$ 10.02 billion in 2013 to US$ 52.58 billion in 2020 at a Compound Annual Growth Rate (CAGR) of 26.72 per cent.

The research report expects that mobile devices are expected to grow at a high CAGR of 33.4 per cent between 2013 and 2020. Consequently the share of mobile devices in semiconductor revenue is expected to grow from 35.4 per cent in 2013 to 50.7 per cent in 2020. Further, the telecommunication segment is also expected to grow at a high CAGR of 26.8 per cent between 2013 and 2020. The IT&OA segment is estimated to grow at a CAGR of 18.2 per cent over the next seven years. Although consumer electronics segment is expected to grow at a CAGR of 18.8 per cent, its contribution to the total semiconductor revenue is expected to lower to 3.5 per cent in 2020 from 5.6 per cent in 2013. Automotive electronics segment is expected to grow at a fast clip of 30.5 per cent CAGR from 2013 to 2020. Consequently, its revenue contribution is set to rise to 3.9 per cent in 2020 from 3.2 per cent in 2013.

Investments: Mr. Ravi Shankar Prasad, Union Minister of Information Technology, announced that the Foreign Direct Investment (FDI) in electronic manufacturing has reached an all-time high of Rs 123,000 crores (US$ 18.34 billion) in 2016 from around Rs 11,000 crores (US$ 1.64 billion) in 2014, primarily due to government reforms and its Make in India initiative.

The Government of India has allowed 100 per cent Foreign Direct Investment (FDI) under the automatic route in Electronics Systems Design & Manufacturing sector. According to the data released by the Department of Industrial Policy and Promotion (DIPP), the electronics sector attracted foreign direct investment (FDI) worth US$ 1.70 billion between April 2000 and December 2016.

Some of the notable developments in this sector are as follows:

• Panasonic Corporation, the Japan-based electronics company, plans to set up a new plant at Jhajjar in Haryana, which will manufacture refrigerators for the Indian market, along with setting up a research and development (R&D) center for appliances consisting of two technical divisions to strengthen the product development in the country.

• Samsung India Electronics Ltd has signed a deal to lease 100,000 square feet (sqft) of space at Oberoi Realty Ltd's commercial property Commerz II in Goregaon suburb of Mumbai, for setting up its new corporate office.

• Next Orbit Ventures, a growth-stage investor, plans to invest US$ 100 million in Gujarat-based semiconductor fabrication project, through its fund focused on Electronic System Design and Manufacturing (ESDM) sector.

India's first Centre of Excellence for Internet of Things (CoE-IoT) has been launched in Bengaluru with five start-ups, which will provide demonstration and concept labs for building IoT solutions for applications like agriculture, automobile, telecommunications, healthcare and consumer goods.

• Dow Corning, one of the leading global players in silicones, silicon-based technology and innovation, opened its Sahayog Building Solutions Centre in New Delhi, which will provide project support, technical training and skill-building workshop to construction industry professionals.

• The Department of Electronics and Information Technology (DeitY) has approved proposals worth Rs 6,155 crore (US$ 917.8 million) under the Modified Special Incentive Package Scheme (M-SIPS), which aims to provide financial incentives to private companies for setting up electronics manufacturing units.

• Department of Electronics & Information Technology and M/s Canbank Venture Capital Fund Ltd plan to launch an Electronics Development Fund (EDF), which will be a 'Fund of Funds' to invest in 'Daughter Funds' which would provide risk capital to companies developing new technologies in the area of electronics, nano-electronics and Information Technology (IT).

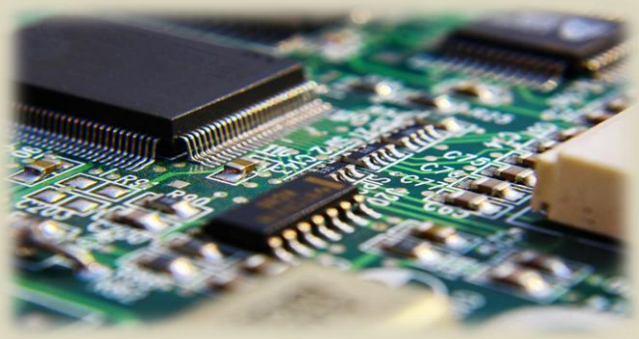
• Infineon Technologies, a German semiconductor firm has partnered with National Skill Development Corporation (NSDC) to impart training to youth on semiconductor or chip technology, aimed at boosting the electronic manufacturing ecosystem in India.

• US-based semiconductor company Freescale which has R&D facility in India, said that it is enabling its partners to bring smart products to facilitate the government's Rs 1.13 trillion (US$ 16.85 billion) Digital India initiative.

• Aricent, a US-based product engineering firm has acquired Bengaluru-based chip design services company SmartPlay for Rs 1,100 crore (US$ 163.06 million), making it one of the biggest acquisitions in the semiconductor space in India

• Invecas Technologies Pvt. Ltd, a startup working on outsourced chip design plans to invest US$15-20 million over the next couple of years in setting up design centers in Hyderabad and Bengaluru.

• IESA has signed a MoU with Singapore Semiconductor Industry Association (SSIA) to establish and develop trade and technical cooperation between the electronics and semiconductor industries of both the countries.



Gujarat is expected to have its first semiconductor wafer fabrication manufacturing facility by late 2017 in Prantij of Sabarkantha district. The facility, which will be set up by Hindustan Semiconductor Manufacturing Corporation (HSMC), will employ over 25,000 people including 4,000 direct employees. HSMC along with ST Microelectronics (France/Italy) and Silterra (Malaysia) will set up two manufacturing units each with capacity of producing 20,000 wafers per month.

Government Initiatives:

• In the Union Budget 2017-18, the Government of India increased the allocation for incentive schemes like the Modified Special Incentive Package Scheme (M-SIPS) and the Electronic Development Fund (EDF) to Rs 745 crore (US$ 111 million) for providing a boost to the semiconductor as well as the electronics manufacturing industry.

• The Union Cabinet has approved incentives up to Rs 10,000 crore (US$ 1.47 billion) for investors by amending the M-SIPS scheme, in order to further incentivise investments in electronics sector, create employment opportunities and reduce dependence on imports by 2020.

• The Ministry of Electronics and Information Technology plans to revise its policy framework, which would involve the government taking a more active role in developing the sector by providing initial capital, with the aim to attract more private players and make India a global semiconductor hub.

• Mr Ravi Shankar Prasad, Union Minister of Electronics and Information Technology, inaugurated an Electropreneur Park at University of Delhi's South Campus, which would incubate 50 early stage start-ups and create at least five global companies over a period of five years.

• The ESDM industry will benefit from the government's "Make in India" campaign and is projected to see investment proposals worth Rs 10,000 crore (US$ 1.5 billion) over the next two years, according to the India Electronics and Semiconductor Association (IESA), an industry body.

• *The Government of Telangana plans to launch T-Works in Hyderabad, which will act as a prototyping centre for electronics, semiconductors and hardware start-ups on the lines of California State's Innovation Hub or iHub.*

• *The Government of India has taken several steps to boost domestic production of electronic items and reduce dependence on imports. Some of these steps include imposition of basic customs duty on certain items falling outside the purview of IT Agreement, exemption from SAD on inputs/components for PC manufacturing, imposition of education cess on imported electronic products for parity, etc.*

• *Gujarat government is planning to set up an electronics products manufacturing hub in the state, through its newly announced Electronics Policy 2016, which will generate about 500,000 jobs in the electronics sector in the next five years.*

• *The government also plans to invest US$10 billion in two computer chip manufacturing facilities with a view to create an ecosystem that lays the focus on high-end innovation.*

• *The Union Cabinet has reconstituted an empowered committee on setting up semiconductor wafer fabrication manufacturing facilities in the country.*

Road Ahead: The government, in consultation with semiconductor industry, has increased focus on the ESDM sector in last few years. Some of the initiatives outlined in the National Electronics

policy and the National Telecom policy are already in the process of implementation, such as Preferential Market Access (PMS), Electronics Manufacturing Clusters (EMC) and Modified Special Incentive Package Scheme (M-SIPS). With the implementation of fabrication capabilities in India, the country could achieve a degree of self-sufficiency in electronics.

A semiconductor sits between a conductor and an insulator and is commonly used in the development of electronic chips, computing components, and devices. It's generally created using silicon, germanium, or other pure elements

The global semiconductor industry is dominated by companies from the United States, Taiwan, South Korea, Japan and Netherlands.

China leads the production of semiconductor chips in the world, according to data from the United Nations.

Tayyabara B.

7th Semester, ECE

FACULTY ACHIEVEMENTS

The Department of Electronics & Communication Engineering has conducted a program on " Ethics, Time Management, Career Guidance & Personality Development" at Sri Rabindranath Tagore PU College Vijayapura on 18th March,2021.

The Department of Electronics & Communication Engineering has conducted a program on "Ethics, Time Management, Career Guidance & Personality Development" at Sangmeshwar science PU College (Drona academy) Vijayapura on 18th March, 2021.

The Department of Electronics & Communication Engineering has conducted a program on "Ethics, Time Management, Career Guidance & Personality Development" at Morarji Desai girls Science PU College, Arakeri Tanda, Tikota, Vijayapur on 20th March, 2021.

The Department of Electronics & Communication Engineering has conducted a program on "Ethics, Time Management, Career Guidance & Personality Development" at Loyola PU College, Vijayapur on 26th March, 2021.

The Department of Electronics & Communication Engineering has conducted a program on "Ethics, Time Management, Career Guidance & Personality Development" at Roopa Devi Science PU College & International School, Vijayapur on 29th March, 2021.

The department of Electronics & Communication Engineering visited IQRA PU Science college on 10th August, 2021.Dr.S.A.Quadri, Prof. Aarif Makandar, Mrs. Uzma I.Satteekar & Ms. Fathima S. were involved in program conduction. The interaction started with introduction session followed by a presentation on "Importance of Technical education among the youth and skill development".

KSCST PROJECT DEMONSTRATION

PROJECT TITLE

IOT BASED AUTOMATED TICKET COLLECTING AND SCREENING GATE TO PREVENT INCIDENTS ON RAILWAY PLATFORM DURING COVID-19

Student members:

- **Mr. Mahammadnaveed Shirol**
  USN: 2SA15EC015
- **Mr. Ahsan Mehadi Momin**
  USN: 2SA17EC003
- **Mr. Vishal Joshi**
  USN: 2SA17EC032
- **Mr. Zuberkhan Pathan**
  USN: 2SA17EC033

Project Guide:

Prof. Mallangoud Chikkond

Assistant Professor

Dept. of ECE, SECAB.I.E.T

Project co-guide:

Prof.Mohammad Ziaullah C.

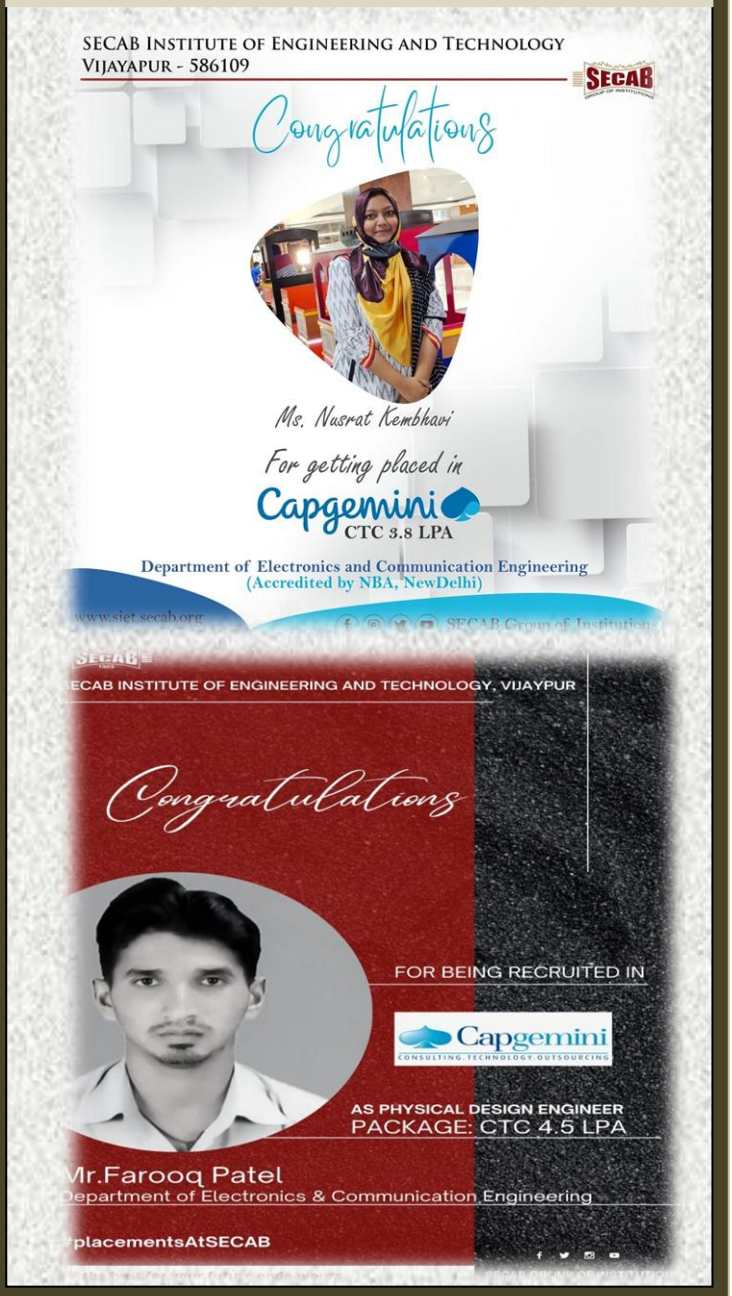
Assistant Professor

Dept. of ECE, SECAB.I.E.T

Placements

YOUR PERSEVERENCE HAS REWAREDED YOU... GOOD LUCK

FROM: Dept. of ECE



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Department of Electronics & Communication Engineering

Programme Educational Objectives (PEOs):

PEO 1: Apply the knowledge of Electronics and Communication Engineering to analyze and solve Engineering problems.

PEO 2: Acquire core competency for successful adaptation to emerging technological developments.

PEO 3: Inculcate professionalism to solve societal and environmental issues.

PEO 4: Develop lifelong learning attitude by involving stakeholders.

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Contact us: 9611789200

We are changing the world with Technology – Bill Gates