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)

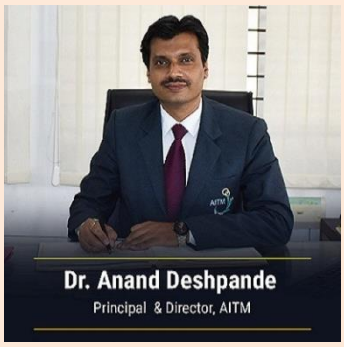
Accredited by NAAC

DRISHTI

E- Newsletter

Department of Electronics and Communication Engineering

First 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.

Department Graduation Day

The Department of ECE organized 9th Graduation Day on 13th august 2021 at Angadi Institute of Technology and Management, Belagavi. Mr. Sandeep Athanimath, Senior Layout Design Engineer, Microchip Technologies, USA was the chief guest for the event and discussed the need for Electronics Engineer and various job opportunities in VLSI and Embedded Systems domain. During the graduation day Principal, department HOD, all the faculties of the department and 40 students were present. Dr. Anand Deshpande, Principal, AITM addressed the gathering, encouraged the students for Higher education and also discussed various job openings in IT sectors. Graduation Ceremony is an opportunity to mark student achievements and it acts as a bridge between the end of studies and the beginning of the next stage of life, whether that is further study or a working career. When a person graduates, it signifies the move from a previous form of existence to a more

mature being. As this mature is progressing, many people come to the revelation that a graduation can be life changing. The simple marker or two phases helps to tie different parts of a life together with a common remembrance. Graduation is not just an end, it is a new beginning; the start of a new chapter in one's life whether it be another school year, or the entry into the workforce. Graduation help people remember the things accomplished in the past, as well as to look forward to the future. When people think of graduation they remember friends and family made or seen (respectively) throughout that time period; they think of the honors they achieved, and the many ways that those honors will help them to pursue future opportunity. On the Graduation Day, the energy of our graduates was unmatched as they ushered in the most awaited event of their academic life amongst their friends and teachers in our college. The student photo session was held during the event and students captured their memories on camera, along with their HODs, sharing the stage one last time.

Department Association Inauguration

The department of Electronics & Communication organized "Inauguration of Association" by Dr. Anilkumar Garag, Motivational speaker, Belagavi on 10/12/2021 at 10.00 am, AITM, Belagavi. The HOD, staff, technical staff and all the students were present during the event. The main functions of Association are to

1. Develop and explore the student's strengths and talents outside of academics.
2. Giving opportunity to the students to build friendships and participate in group activities outside of the tight circle of the regular classroom.
3. Advance the Educational and psychological values among the students.
4. Providing a way to keep students supervised outside of academic hours.
5. Building skills that are not necessarily taught in the classroom but are still important for the future.

6. Develop the overall Personality to the students.
7. Helping students develop stronger time-management and organizational skills.

AICTE ISTE Sponsored 6 days Induction/refresher program on "Recent Trends of Artificial Intelligence for 5G Communication Industrial visit to GTTC

The department of Electronics & Communication inaugurated AICTE ISTE Sponsored 6 days Induction/refresher program on "Recent Trends of Artificial Intelligence for 5G Communication" from 4th to 10th January 2022. The event was chaired by Chief guest Col. B. Venkat, Director FDP AICTE, Guest of Honor, Dr. Suresh D. S, Chairman, ISTE and Prof. Vijay D. Vaidya, Executive Secretary, ISTE. The program was inauguarated by the E&C department under the guidance and support by Dr.Spoorthi Patil, Director SAEF, Shri. Raju Joshi sir, administrator, Principal & Director Dr. Anand Deshpande sir and Event coordinator Dr. Sanjay Pujari . Electronics and Communication Department head Prof Raviraj Chougula and Dean Academics Prof Gajanan Tudvekar present over the function. Mr Abhinandan Sutar anchored the function. All the department heads and faculties were present to inaugurate the program. Participants from different states and reputed organizations from Goa, Maharasthra, Rajasthan, Gujarat, Karnataka, Telangana, Tamil Nadu, Punjab and many other states.

Student Articles

Science Technology in Ancient India

Science and technology in ancient and medieval India covered all the major branches of human knowledge and activities, including mathematics, astronomy, physics, chemistry, medical science and surgery, fine arts, mechanical and production technology, civil engineering and architecture, shipbuilding and navigation, sports and games

Ancient India was a land of sages, saints and seers as well as a land of scholars and scientists. Ancient India's contribution to science and technology include:

- *Mathematics - Vedic literature is replete with concepts of zero, the techniques of algebra and algorithm, square root and cube root. Arguably, the origins of Calculus lie in India 300 years before Leibnitz and Newton.*
- *Astronomy - Rig Veda (2000 BC) refers to astronomy.*
- *Physics - Concepts of atom and theory of relativity were explicitly stated by an Indian Philosopher around 600 BC.*
- *Chemistry - Principles of chemistry did not remain abstract but also found expression in distillation of perfumes, aromatic liquids, manufacturing of dyes and pigments, and extraction of sugar.*
- *Medical science & surgery - Around 800 BC, first compendium on medicine and surgery was complied in ancient India.*
- *Fine Arts - Vedas were recited and recitation has to be correct, which gave rise to a finer study of sound and phonetics. The natural corollary were emergence of music and other forms of performing arts.*
- *Mechanical & production technology - Greek historians have testified to smelting of certain metals in India in the 4th century BC.*
- *Civil engineering & architecture - The discovery of urban settlements of*

Mohenjodaro and Harappa indicate existence of civil engineering & architecture, which blossomed to a highly precise science of civil engineering and architecture and found expression in innumerable monuments of ancient India.

- *Shipbuilding & navigation - Sanskrit and Pali texts have several references to maritime activity by ancient Indians.Sports& games - Ancient India is the birth place of chess, ludo, snakes and ladders and playing cards.*

Mathematics

India is the birth place of several mathematical concepts, including zero, the decimal system, algebra and algorithm, square root and cube root. Geometrical theories were known to ancient Indians and find display in motifs on temple walls, which are in many cases replete with mix of floral and geometric patterns. The method of graduated calculation was documented in a book named "Five Principles" (Panch-Siddhantika) which dates to 5th Century AD.A. L. Basham, an Australian Indologist, writes in his book, The Wonder That was India that "... the world owes most to India in the realm of mathematics, which was developed in the Gupta period to a stage more advanced than that reached by any other nation of antiquity.

Algebraic theories, as also other mathematical concepts, which were in circulation in ancient India, were collected and further developed by Aryabhatta, an Indian mathematician, who lived in the 5th century, in the city of Patna, then called Pataliputra. He has referred to Algebra (as Bijaganitam) in his treatise on mathematics named Aryabhattiya.

Another mathematician of the 12th century, Bhaskaracharya also authored several treatises on the subject - one of them, named Siddantha Shiromani has a chapter on algebra. He is known to have given a basic idea of the Rolle's

theorumssssss and was the first to conceive of differential calculus.

The success of Indian mathematics was mainly due to the fact that Indians had a clear conception of the abstract number as distinct from the numerical quantity of objects or spatial extension.

Astronomy

Ancient India's contributions in the field of astronomy are well known and well documented. The earliest references to astronomy are found in the Rig Veda, which are dated 2000 BC. During next 2500 years, by 500 AD, ancient Indian astronomy has emerged as an important part of Indian studies and its affect is also seen in several treatises of that period. In some instances, astronomical principles were borrowed to explain matters, pertaining to astrology, like casting of a horoscope. Apart from this linkage of astronomy with astrology in ancient India, science of astronomy continued to develop independently, and culminated into original findings, like:

- *The calculation of occurrences of eclipses*
- *Determination of Earth's circumference*
- *Theorizing about the theory of gravitation*
- *Determining that sun was a star and determination of number of planets under our solar system*

Physics

The root to the concept of atom in ancient India is derived from the classification of material world in five basic elements by ancient Indian philosophers. These five 'elements' and such a classification existed since the Vedic times, around 3000 BC before. These five elements were the earth (prithvi), fire (agni), air (vayu), water (jaal) and ether or space (aksha). These elements were also associated with human sensory perceptions. Indian philosophers believed that except ether or space, all other elements were physically palpable and hence comprised of small and minuscule particles of matter. They believed that the smallest

particle which could not be subdivided further was paramanu , a Sanskrit word. Paramanu is made of two Sanskrit words, param meaning ultimate or beyond and anu meaning atom. Thus, the term "paramanu" literally means 'beyond atom' and this was a concept at an abstract level which indicated the possibility of splitting atom, which is now the source of atomic energy.

Chemistry

Ancient India's development in chemistry was not confined at an abstract level like physics, but found development in a variety of practical activities. In any early civilization, metallurgy has remained an activity central to all civilizations from the Bronze Age and the Iron Age, to all other civilizations that followed. It is believed that the basic idea of smelting reached ancient India from Mesopotamia and the Near East. Coinage dating from the 8th Century B.C. to the 17th Century A.D. Numismatic evidence of the advances made by smelting technology in ancient India.

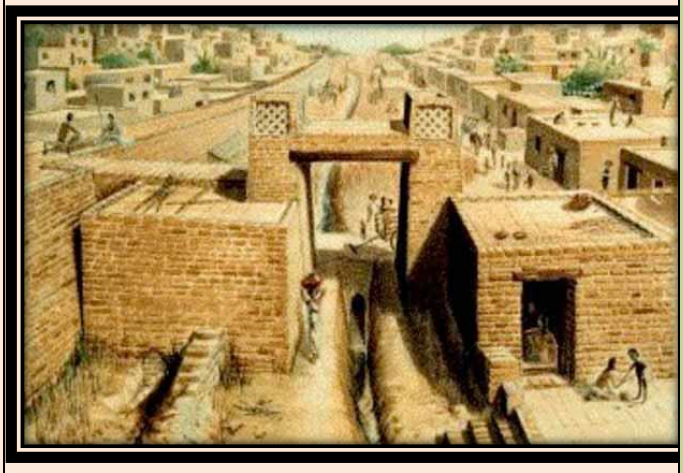
In India itself, certain objects testify to the higher level of metallurgy achieved by the ancient Indians. By the side of Qutub Minar, a World heritage site, in Delhi, stands an Iron Pillar. The pillar is believed to be cast in the Gupta period around circa 500 AD. The pillar is 7.32 meters tall, tapering from a diameter of 40 cm at the base to 30 cm at the top and is estimated to weigh 6 tonnes. It has been standing in the open for last 1500 years, withstanding the wind, heat and weather, but still has not rusted, except very minor natural erosion. This kind of rust proof iron was not possible till iron and steel was discovered few decades before.

The advance nature of ancient India's chemical science also finds expression in other fields, like distillation of perfumes and fragment ointments, manufacturing of dyes and chemicals, polishing of mirrors, preparation of pigments and colours. Paintings found on walls of Ajanta and Ellora (both World heritage sites) which look fresh even

after 1000 years, also testify to the high level of chemical science achieved in ancient India.

Civil Engineering & Architecture

India's urban civilization is traceable to Mohenjo-Daro and Harappa, now in Pakistan, where planned urban townships existed 5000 years before. From then onwards, the ancient Indian architecture and civil engineering continued to develop and grow. It found manifestation in construction of temples, palaces and forts across the Indian peninsula and the neighboring regions. In ancient India, architecture and civil engineering was known as sthapatya-kala, literal translation of which means the art of constructing (something). During the periods of Kushan Empire and Maurya empires, the Indian architecture and civil engineering reached to regions like Baluchistan and Afghanistan. Statues of Buddha were cut out, covering entire mountain faces and cliffs, like Buddhas of Bamiyan, Afghanistan.



Gateway At Harappa: Indus Valley Civilization

Over a period of time, ancient Indian art of construction blended with Greek styles and spread to Central Asia.In mainland India of today, there are several marvels of ancient India's architectural heritage, including World heritage sites like Ajanta, Ellora, Khajuraho, Mahabodhi Temple, Sanchi, Brihadisvara Temple and Mahabalipuram.

Production Technology

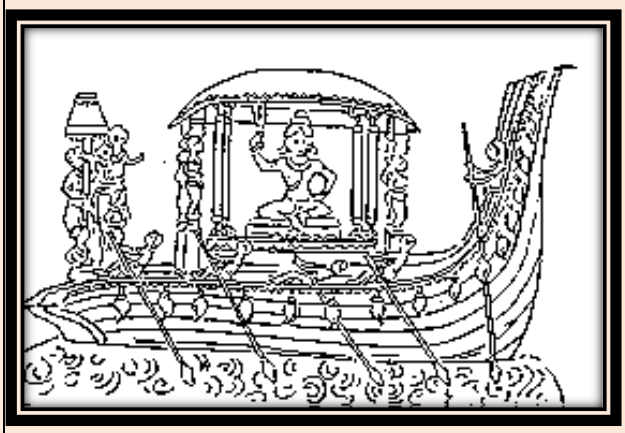
Mechanical and production technology of ancient India ensured processing of natural produce and their conversion into merchandise of trade, commerce and export. A number of travelers and historians have indicated a variety of items, which were produced, consumed and exported around that society's "known world" by the ancient Indians.

Almost 3,000 years ago, Indians came across a plant called sugarcane that probably originated in New Guinea. They noticed that this plant tasted sweet. To use it as a sweetener in their cooking, they ground sugarcane stalks to extract the juice. Once that was done, they then boiled down the sugary liquid to yield sugary solids. The sugary solids looked like gravel but tasted sweet. This was what we later called brown sugar. For a while, brown sugar was the best kept secret in India. But that changed after the invasion of the Persian emperor, Darius. When Darius attacked India in 510 B.C., his army stumbled upon this wonderful invention. As Darius and his men had been accustomed to sweetening their food with honey, they were surprised to find that there was another alternative out there. They were quoted as describing the sugarcane as "a reed that gives honey without bees." Though the Persians learned about sugarcane and brown sugar, they did not spread the knowledge to other parts of the world. They and the Indians exported brown sugar as a luxury product and a medicine. They made a lot of money! Their monopoly on sugar production finally came to a halt after the Arabs invaded Persia in 642A.D. The Arabs learned the secret and made it free to the public!

Besides sugar, ancient Indians were also credited for being the first people in the world to grow cotton. As far back as 4,500 years ago, they began cultivating cotton in the Indus Valley. They dug ditches and canals to irrigate their farms. After they harvested their crop, they used a simple wooden spinning wheel to weave it into beautiful cloth. For centuries, India's cotton and China's silk were among the most popular goods on the trading routes between Asia and Europe. Eventually, India

learned the silk-making technique from China and, thus, became a textile powerhouse.

Shipbuilding & Navigation



A panel found in Mohenjo-Daro depicts a sailing craft, and thousands of years later Ajanta murals also depict a sea-faring ship. The science of shipbuilding and navigation was well known to ancient Indians. Sanskrit and Pali texts are replete with maritime references, and ancient Indians, particularly from the coastal regions, were having commercial relations with several countries of across the Bay of Bengal like Cambodia, Java, Sumatra, Borneo, and even up to China. Similar maritime and trade relations existed with countries across the Arabian Sea like Arabia, Egypt and Persia.

Even around circa 500 AD, sextants and mariner's compass were not unknown to ancient Indian shipbuilders and navigators. J.L. Reid, a member of the Institute of Naval Architects and Shipbuilders, England, at around the beginning of the 20th century has got published in the Bombay Gazetteer that "The early Hindu astrologers are said to have used the magnet, in fixing the North and East, in laying foundations, and other religious ceremonies. The Hindu compass was an iron fish that floated in a vessel of oil and pointed to the North. The fact of this older Hindu compass seems placed beyond doubt by the Sanskrit word 'Maccha-Yantra', or 'fish-machine', which Molesworth gives as a name for the mariner's compass".

By Pratibha Badiger
ECE Department

Newsletter Editors

Faculty Newsletter Editor

Mr. Sriram Kulkarni
Assistant Professor
ECE Department

Student Newsletter Editors

Miss Sahana Dixit
Mr. Mahalingappa H.