

DEC 2018, Issue 1

HORIZON

DEPARTMENT OF ECE





Dr. T. K. Rama Krishna Rao
PRINCIPAL

Principal's Message

The significant problems we face cannot be solved at the same level of thinking we were at when we created them." - Albert Einstein. It is only through knowledge that man attains immortality. Knowledge has to expand or grow to remain knowledge. The road to excellence is toughest, roughest and steepest in the Universe. The world requires and honors only excellence. Available information has to be directed by wisdom and intelligence to create new knowledge. Promotion of creativity is the new role of education. It is only through creative thinking that the present and future problems can be addressed to find dynamic solutions. Technology should be used to help remove poverty from the world. In fact 40% of the world's poor are in India. Confidence leads to capacity. It is faith in oneself that produces miracles. Education at ACET helps build Character, Strengthen the mind, expand the intellect and establish a culture of looking at problems in a new perspective. The student is put through rigorous training so that he can stand on his own feet after leaving the portals of the Institute.

Vision

-->To emerge as a centre of excellence in education and Research

Mission

-->To establish skill and learning centric infrastructure in thrust areas

-->To develop Robotics and IOT based infrastructure Laboratories

-->To organize events through industry institute collaborations and promote innovation

-->To disseminate knowledge through quality teaching learning process.



Dr. R V V KRISHNA
HOD ECE

ECE department was established in the year 2004 with an intake of 60 students and now it has been expanded with an intake of 240 students. ECE plays a vital role in Technology Revolution. Our main aim is to generate new knowledge by engaging in cutting-in research to promote academic growth and to develop human potential to its fullest extent so that intellectually capable & imaginatively gifted leaders can emerge in a range of professions. We have Modern state of the art and well furnished labs like Microwave and Optical Communication Lab, Electronic Devices and Circuits lab, Modern Communication Lab, Research lab etc with excellent laboratory facilities and dedicated faculty.

National Science Day

National Science Day is celebrated every year on February 28. National Science Day is celebrated to commemorate discovery of the 'Raman Effect', which led to Indian scientist Sir Chandrasekhara Venkata Raman or CV Raman winning the Noble Prize in Physics in 1930. Raman Effect is a phenomenon in spectroscopy discovered by the eminent physicist while working in the laboratory of the Indian Association for the Cultivation of Science, Kolkata.

National Science Day On February 28; "Women In Science" This Year's Theme

The basic objective of celebration of National Science Day is to propagate the message of importance of science and its application among the people. The first National Science Day was celebrated on February 28, 1987.

National Science Day

28th February

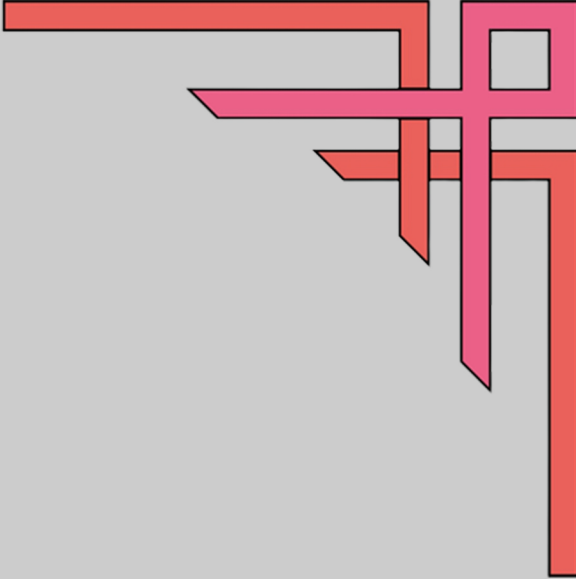


National Science Day is celebrated to mark the discovery of the Raman Effect by Indian physicist Sir C.V. Raman

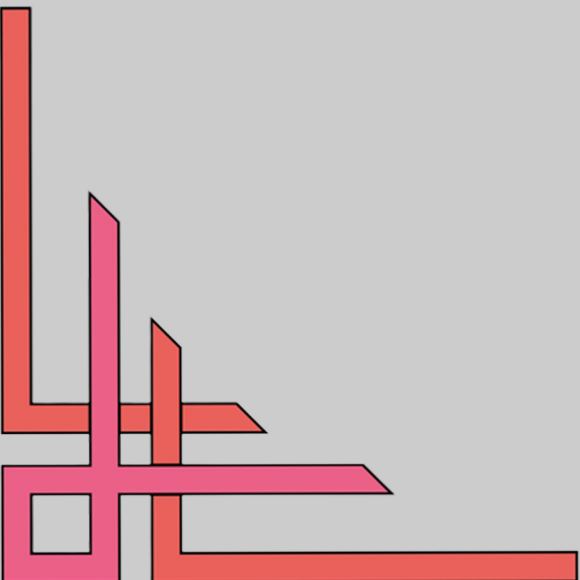
Raman Effect is a change of wavelength exhibited by some of the radiation scattered in a medium. The effect is specific to the molecules which cause it, and so can be used in spectroscopic analysis.

The basic objective of observation of National Science Day is to spread the message of importance of science and its application among the people.

The Theme for 2018 is "Science and Technology for Sustainable Future"



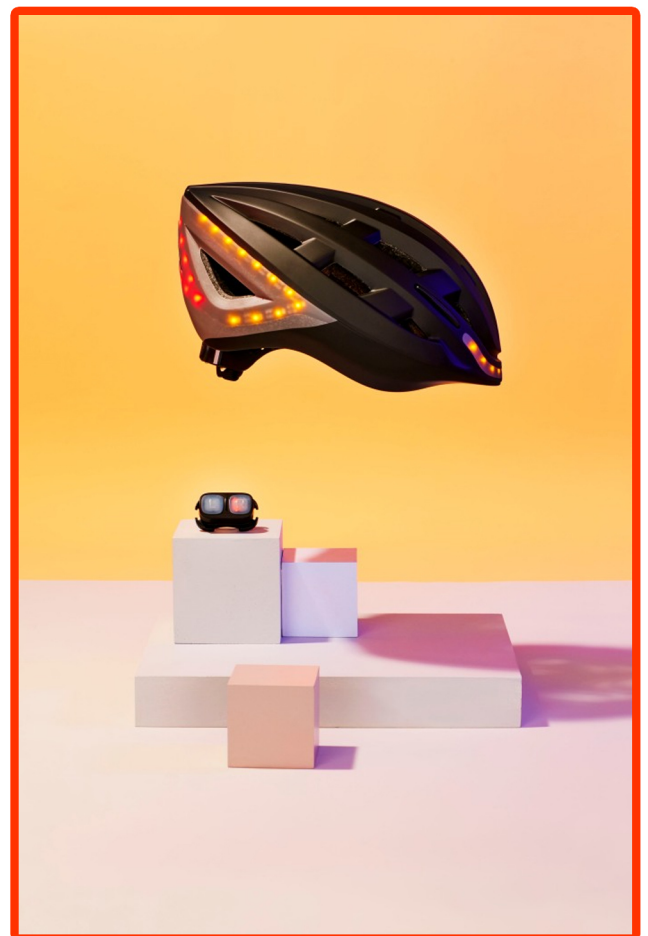
MAJOR NEWS & INNOVATIONS

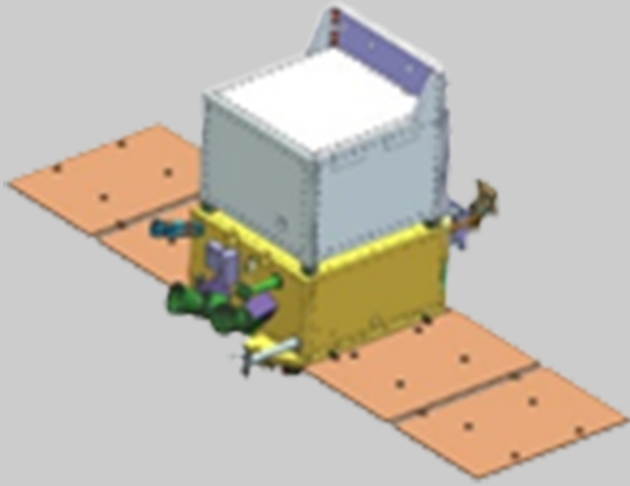




For people who are blind, everyday tasks such as walking to school or doing laundry can be a challenge. But what if they could “borrow” the eyes of someone who can see? That’s the thinking behind AIRA. With this service, users send live video of their surroundings to an Aira agent through special glasses or a smartphone app. The agents, who are available at all times, can then answer questions, describe objects, or guide users through a location.

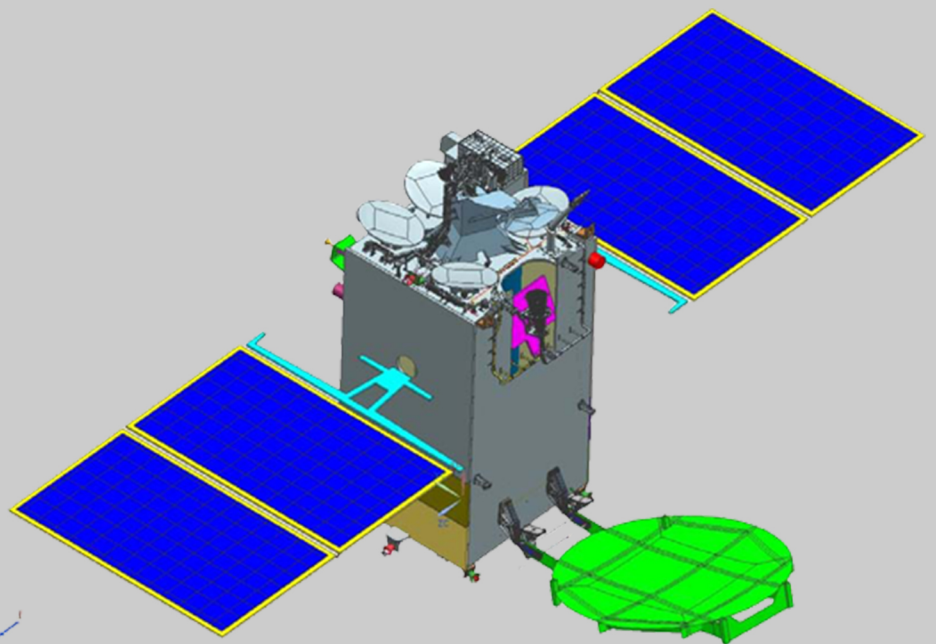
Biking in the dark can be dangerous. Eu-wen Ding almost found this out the hard way. When he forgot his lights, cars almost hit him. So he started thinking about a better way to ride. Eventually, he created the LUMOS KICKSTART HELMET. Its bright LED lights make a cyclist more visible. They also blink to indicate a turn. Riders can activate the signal by clicking a wireless remote on their handlebars



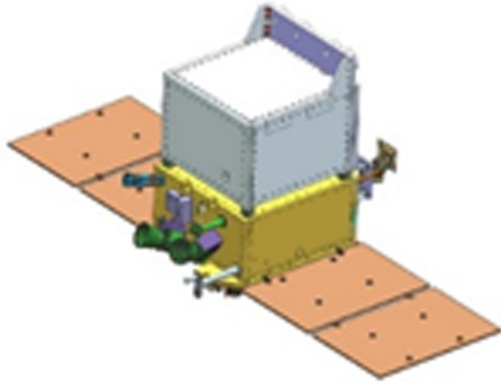


LAUNCHES

2018-19



EMISAT



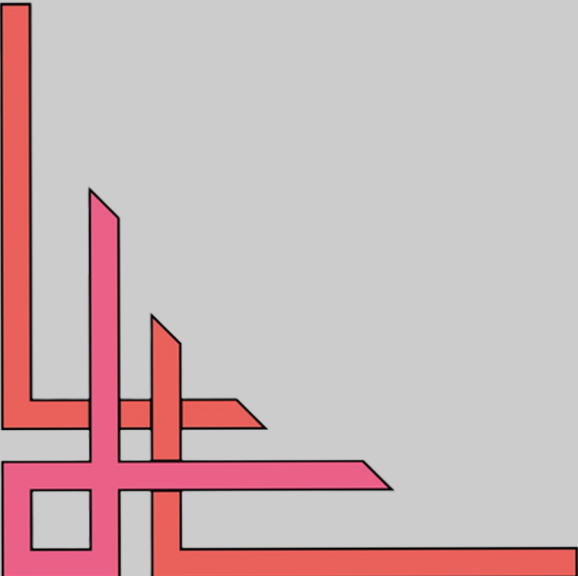
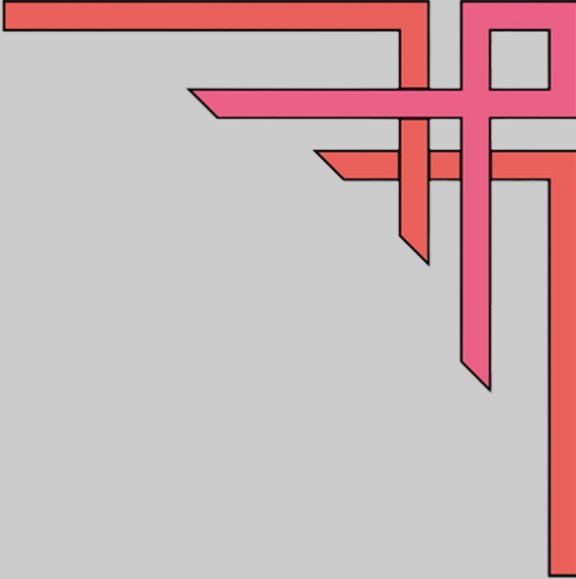
EMISAT is a satellite built around ISRO's Mini Satellite-2 bus weighing about 436 kg. The satellite was successfully placed in its intended sun-synchronous polar orbit of 748 km height by PSLV-C45 on April 01, 2019. The satellite is intended for electromagnetic spectrum measurement.

GSAT-31

India's telecommunication satellite, GSAT-31 was successfully launched on February 06, 2019 from Kourou launch base, French Guiana by Ariane-5 VA-247.

GSAT-31 is configured on ISRO's enhanced I-2K Bus, utilising the maximum bus capabilities of this type. This satellite will augment the Ku-band transponder capacity in Geostationary Orbit.

Weighing about 2536 kg, GSAT-31 will provide continuity to operational services on some of the in-orbit satellites. The satellite derives its heritage from ISRO's earlier INSAT/GSAT satellite series. The satellite provides Indian mainland and island coverage.



Faculty Publications & Achievements

Challenges-of-7nm-Technology

What is 7nm?

7nm refers to a technology node that is one of the most advanced FinFET process nodes used in chip design & fabrication. 7nm is one of the latest process nodes in production today that provides shrink down transistors, offering improvement in silicon area utilization and power efficiency, which is going on into production mode for the last couple of months. The tradeoff is increase in chip design & manufacturing process complexity, along with higher manufacturing/fabrication cost.

Benefits of 7nm Technology

The main benefits are PPA i.e. power, performance and area, which is the main ask of the Mobile, handheld device and processor industry. It is evident from the fact that Apple recently announced their A13 Bionic chip used in the iPhone 11 built using TSMC's 2nd gen 7nm process, while Qualcomm is already shipping their snapdragon parts in 7nm.

Reduced power consumption - This is a key parameter for the mobile/handheld industry, for which the power consumption & battery life is a primary concern to address. Per published data, 7nm TSMC process gives 40% power saving over 10nm **.

Improvement in switching performance - This is equally important in server applications and smartphones, which use faster processors and want to add more threads to their multi-tasking capabilities. Faster switching means faster application run time. Per the data published by TSMC, this shows 20% speed improvement**.

1.6x higher density - This is a key advantage to produce the lightest and thinnest possible smartphones (that is having a small form factor). Per published data, TSMC 7nm has resulted in area saving because of 1.6X logic density vis-a-vis 10nm.



SNEHA M JOSEPH

5G COMMUNICATION

5G is the 5th generation mobile network. It is a new global wireless standard after 1G, 2G, 3G, and 4G networks. 5G enables a new kind of network that is designed to connect virtually everyone and everything together including machines, objects, and devices. 5G wireless technology is meant to deliver higher multi-Gbps peak data speeds, ultra low latency, more reliability, massive network capacity, increased availability, and a more uniform user experience to more users. Higher performance and improved efficiency empower new user experiences and connects new industries.

Broadly speaking, 5G is used across three main types of connected services, including enhanced mobile broadband, mission-critical communications, and the massive IoT. A defining capability of 5G is that it is designed for forward compatibility—the ability to flexibly support future services that are unknown today.

Enhanced mobile broadband

In addition to making our smartphones better, 5G mobile technology can usher in new immersive experiences such as VR and AR with faster, more uniform data rates, lower latency, and lower cost-per-bit.

Mission-critical communications

5G can enable new services that can transform industries with ultra-reliable, available, low-latency links like remote control of critical infrastructure, vehicles, and medical procedures.

Massive IoT

5G is meant to seamlessly connect a massive number of embedded sensors in virtually everything through the ability to scale down in data rates, power, and mobility—providing extremely lean and low-cost connectivity solutions.



S V KIRAN

PUBLICATIONS

- 1) K. Parvateesam , Design and Implementation of an IOT based Efficient and Intelligent Smart Bins by using Raspberry Pi, International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering, 2278-8875, Vol 7, June 2018
- 2) K. Jaya Ram Kumar, Design of high-speed Wallace tree multiplier using 8-2 and 4-2 adder compressors, International Journal of Engineering & Technology, 1793-8236, Vol 7, 2018
- 3) K. Parvateesam, Design and Implementation of IOT Based Smart Surveillance and Intelligent Monitoring System Using Raspberry Pi, International Journal of Engineering and Techniques, 2395-1303, Vol 4, 2018
- 4) R. Sai Lakshmi, Raspberry PI passenger car for road safety, International Journal of Engineering and Technniques, 2395-1303, Vol 4, June 2018
- 5) V Vijayasri Bolisetty, Intelligibility measure of a time-frequency weighted compressed noisy speech, International Journal for Innovative Engineering and Management Research, 2456-5083, Vol 7, June 2018
- 6) V Vijayasri Bolisetty, Transformation based Speech Compression for improving speech perception under low SNR conditions, International Journal of Research, 2236-6124, Vol 7, July 2018
- 7) Rama Vasantha Adiraju, Design and implementation of high speed modified Russian peasant multiplier using 8-2 adder compressors, International Journal of Research in Electronics & Communication Engineering, ISSN 0976 – 6472, vol-6 / Sep 2018
- 8) P.Ramesh Kumar, A Matlab Implementation of Standard Deviation Pooling based Gradient Magnitude Similarity Deviation (GMSD) FR-IQA Model, IJETAE, ISSN 2250-2459, Vol 8, Issue 11, NOV 2018

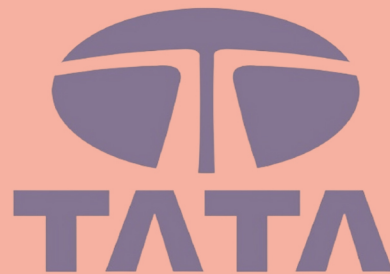
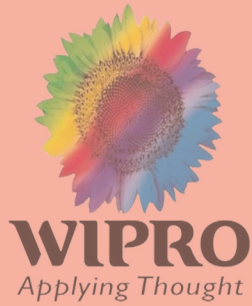
9) B. V. Vijaysri, A Novel Speech Comparison Technique using Optimized Wavelet Transform to Improve the Quality of Auditory Perception under Low SNR Conditions, International Journal of Simulation Systems, Science & Technology 1473-8031, Vol 19, Dec 2018

10) E Jagadeeswara Rao, Design and Implementation of High Speed Modified Russian Peasant Multiplier using 8-2 Adder Compressors, International Journal of Research and Computer Engineering(IJRECE), 2229-5518, / Sep 2018

11) R. Anil Kumar, Modified OFDM Receiver Design with Improved Channel Capacity, International journal of Engineering & Technology,1793-8236, Vol 7, 2018

12) R. Anil Kumar, Out-of-Band Radiation, PAPR and SER Analysis for Future Wireless (5G) Communications, Journal of Advanced Research in Dynamical & Control Systems, 1943023X, Vol 10, 2018





PLACEMENTS 2018-19



CONGRATULATIONS



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15P31A04I2



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15P31A04J9



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16P35A0425



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15P31A04I8
Mr. CH SRISAI



15P31A04C4
Miss. B KAMESWARI



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16P35A0425



15P31A04E6
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15P31A04K0
Miss K PRAVALLIKA



16P35A0420
Mr. P ANIL REDDY



15P31A04C5
Miss. P SIRISHA



15P31A04C9
Mr. D RAMESH



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15P31A04J4
Miss. G ALEKHYA



15P31A04H0
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15P31A04M5
Miss. P NAVEENA



15P31A04G7
Miss. S ALEKHYA



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ZENQ



15P31A04I4
Miss B LATHA

Infosys
POWERED BY INTELLECT
DRIVEN BY VALUES



15P31A04N0
Mr. N RAJESH

ggk tech
Delivering Commitments

INVITED TALKS

IEEE



RESOURCE PERSONS

- 1) PROF. N. DEEPIKA RANI
- 2) DR. P. SATHEESH
- 3) DR. LAKSHMI NARAYANA SADASIYUNI

TOPICS

- 1) RF RADIATION HAZARDS AND ITS IMPACT ON HUMAN LIFE
- 2) RECENT TRENDS & CHALLENGES IN SOFTWARE DEVELOPMENT
- 3) STEM PROJECTS - A CAREER PASSPORT



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A Synonym For Placements

