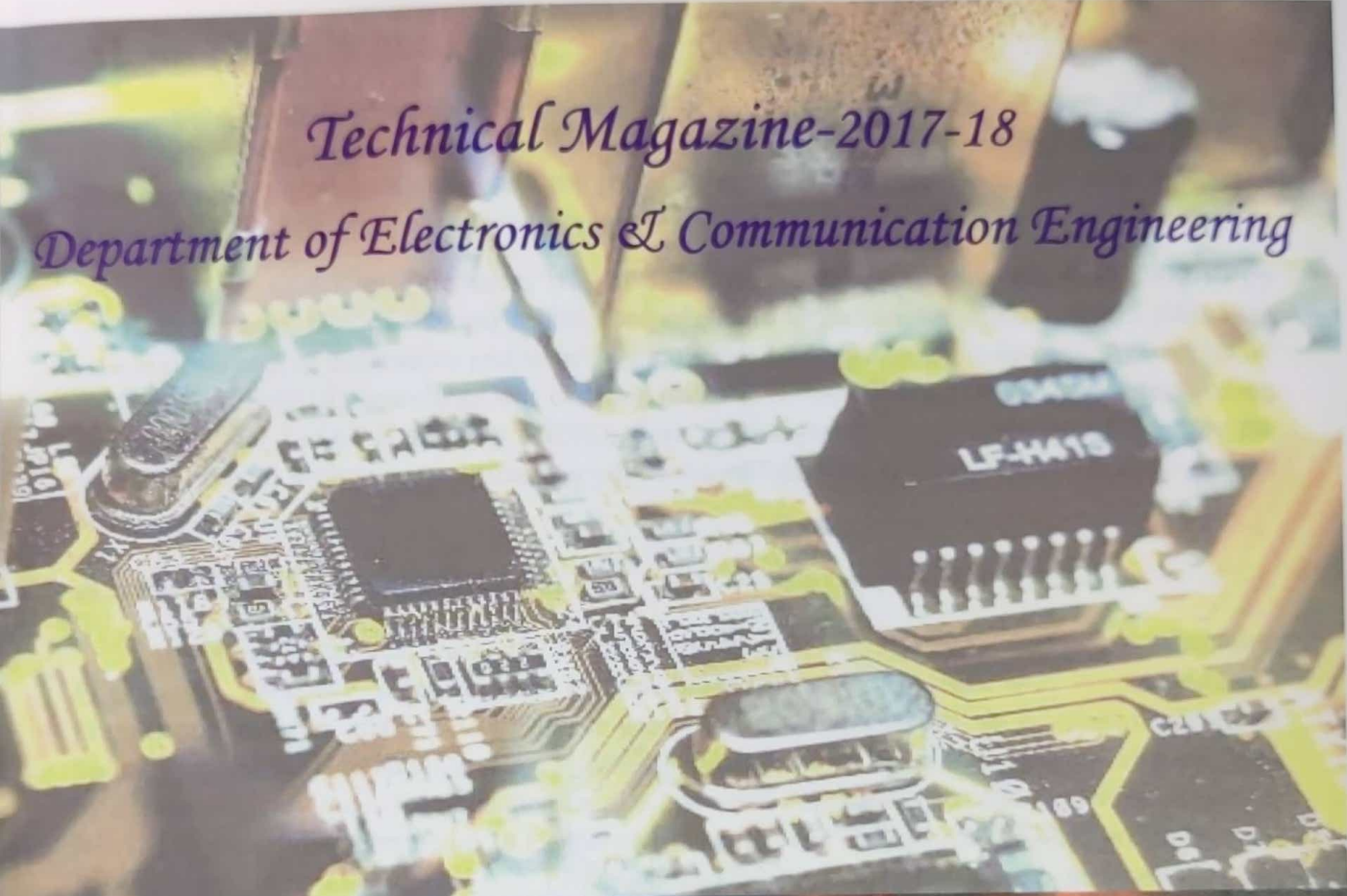




TECHNICAL MAGAZINE-2017-18
DEPARTMENT OF
ELECTRONICS & COMMUNICATION ENGINEERING

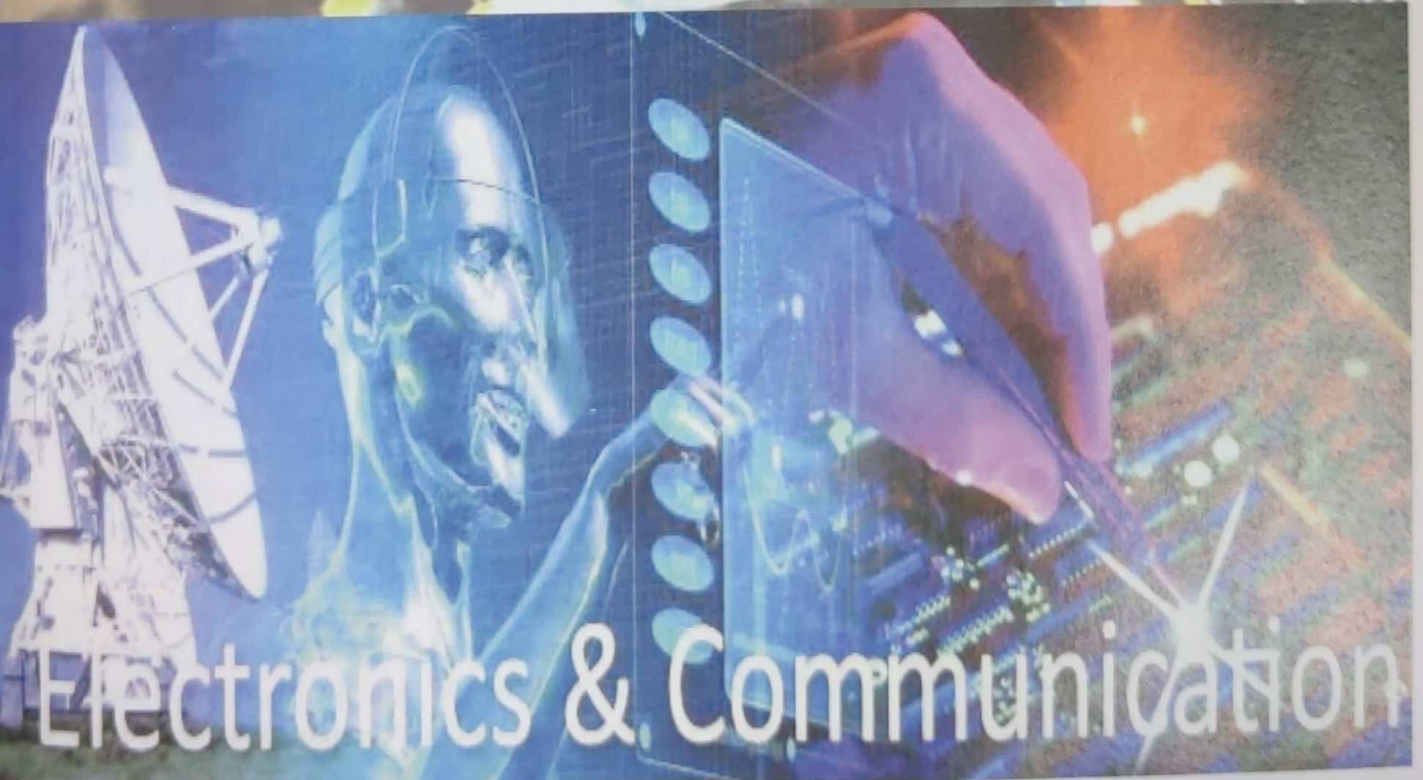


Electronics & Communication



Technical Magazine-2017-18

Department of Electronics & Communication Engineering



Electronics & Communication

About the college:

Velagapudi Ramakrishna Siddhartha Engineering College, established on 23rd October 1977, is the first private undergraduate level technical institute in the state of Andhra Pradesh. The campus situated at Kanuru suburbs of Vijayawada city, extends over 24 acres of serene surroundings with the vast expanse of greenery.

TIFAC CORE in Telematics was awarded to the college during the year 2009-10 by DST, New Delhi, first of its kind in the state of Andhra Pradesh, to produce world class manpower in the area of Telematics and to be an innovative backyard to the industries. Accredited by TCS in the year 2010, the college was certified under ISO 9001:2008. The college was one of the few selected for TEQIP II grant by MHRD, Govt. of India under Sub Component 1.2 during the year 2011-12 for scaling up postgraduate education and demand driven research & development and innovation.

About ECE Department:

Established in the year 1977, the departments of Electronics & Communication Engineering presently offer 4 year B.Tech program in Electronics and Communication Engineering with an intake of 240 and 2 year M.Tech programmers' in Communication and Signal Processing, Telematics and VLSI & Embedded Systems with an intake of 18 each. Run by a team of highly qualified dedicated faculty and staff, the department was accredited thrice by NBA. The department established a Center of Relevance and Excellence (CORE) under Mission REACH programmers of TIFAC (Technology Information Forecasting and Assessment Council), New Delhi in the area of Telematics. Several research and sponsored projects from ANURAG (DRDO), NRSC (ISRO), UCG, AICTE, DST are executed by the faculty of the department.

A Word By Coordinator:

(Dr.M.PADMAJA, PROFESSOR, ECE
VRSEC)

Keeping in view the recent developments in technology and bringing automation and robotics in day to day life applications, one can say that the future of electronics and its allied fields is bright. It is required in bringing awareness but these upcoming technologies by conducting seminars, symposia and conferences to create awareness. I am happy that our department had conducted events on account of AFOSEC.



Incubation Centre

- Incubation center was established on June 15, 2017. **The core activities of the Incubation Centre involves** Nucleation of new business by creating the environment and opportunities for know-how providers, entrepreneurs .Promoting and running an active program for identification, creation, acceleration and translation (into practice) of technology idea suitable for new venture creation. Run an active program in building (and sharing generously) resources, networks, competencies and special expertise in select areas at the interfaces of technology and innovation, business and entrepreneurship, and government and policy. In addition to these primary services ,there are advantages of getting to work in an academic environment. For example, academic mentors can closely engage with start-ups and share knowledge. This allows the start-up team to focus on the product/service it is working on and get it to the market quickly. The availability of business networks helps refine business models of companies.



• Number of start-ups incubated

S. No	Dept	Name of the start up	Nature of start up	Year of commencement	Contact information of the promoters
1	ECE	Name of the Product: SUBHEVE	App development based product	AY 2017-18 (In-Progress)	M.V.S.Ramaditya, T.V.Koushik, O. Narendra Babu, ECE IV/IV B.Tech.
2	ECE	Name of the Product: BLANK SPACE	Advertise agency	AY 2017-18 (In-Progress)	Sahas P SarmistaThalapaneni

• VRSEC Incubation Centre Industry partners:

- Agilent (Keysight) Technologies India Pvt. Ltd., Bangalore,
- National Instruments Systems India Pvt. Ltd., Bangalore,
- Efftronics Systems Pvt. Ltd., Vijayawada,
- LinkwellTelesystems Pvt. Ltd., Hyderabad,
- FutureTech Instruments Pvt. Ltd, Secunderabad ,
- Electronic Industries Association of AP, Hyderabad,
- India Electronics & Semiconductor Association, Bangalore,
- Bharath Sanchar Nigam Limited, Vijayawada,
- Entuple Technologies, Bangalore,
- Core EL Technologies, Hyderabad,
- Digi Logic Systems Pvt. Ltd, Hyderabad,
- Vi Micro Systems Pvt., Ltd, Chennai,

✚ Organization of different events

➤ Work Shops.

- Five days workshop on “Autonomous Robotics” using Micro-controller Programming, from 3rd-7th July 2017.



Resource person Dr. Balakrishna Gokaraju, Associate Professor, University of West Alabama,
USA



The goal of this workshop is to interact with the faculty and students in order to encourage strong undergraduate research culture in the field of robotics, strongly encourage your

students pursuing major projects in the fields of robotics and control. The coordinators of this program are Dr. T. Anish Chand and Mr.G. Hema Kumar .

- Four day Workshop and Project Competition on “Smart City Hackathon Vijayawada”, from 12th-15th September 2017.

IOT MAKERS

SMART CITY HACKATHON IS ON VIJAYAWADA

ABOUT EVENT

The idea of this "Smart City Hackathon" was to bring the best of hacking community across India at one event to encourage smart and innovative tech solutions to support the smart city initiative.

If you are interested in urban innovation? Smart Cities? Open data? Technology? If you have any idea, innovation to make your city better? If you are looking for visibility, mentorship and investment for your solution?

Join Us for 2-day BootCamp on IOT followed by a 24 Hrs. Smart city Hackathon at Vijayawada.

Venue : VR SIDDHARTHA ENGINEERING COLLEGE
BootCamp : 12TH-13TH SEP 2017
Hackathon : 14TH-15TH SEP 2017

GET IN TOUCH
Rahul Singh : 93469 30044
Jyoti Mayekar : 97007 39627

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Resource person Shri.Amarender director of the SmartBridge Solutions & IOT Makers,,Hyd



As the part of making Vijayawada a smart city , ECE department of VR Siddhartha Engineering College in Collaboration with SmartBridge Solutions & IOT Makers,.,Hyd, held a two days boot camp followed by a 24 hour coding contest Hackathon program building prototyping for all the engineering students , which is called "SMART CITY VIJAYAWADA HACKATHON". During this contest students of many colleges ,in and around Vijayawada have actively taken part and the prototypes like Smart Vehicle Parking ,Smart Home Power Management ,Smart Water and Smart Traffic Management Systems which will help making Vijayawada , a Smart city have been developed.The chief guests of the day, Mr.Yukthesh from IBM have seen the models and appreciated the students .Prizes were awarded to the students based on their models.

- One day workshop on “Maven Silicon WEBINAR VLSI workshop ” on 11th November 2017.



Resource person Industry Veteran Mr. Sivakumar PR- Founder and CEO of Maven Silicon

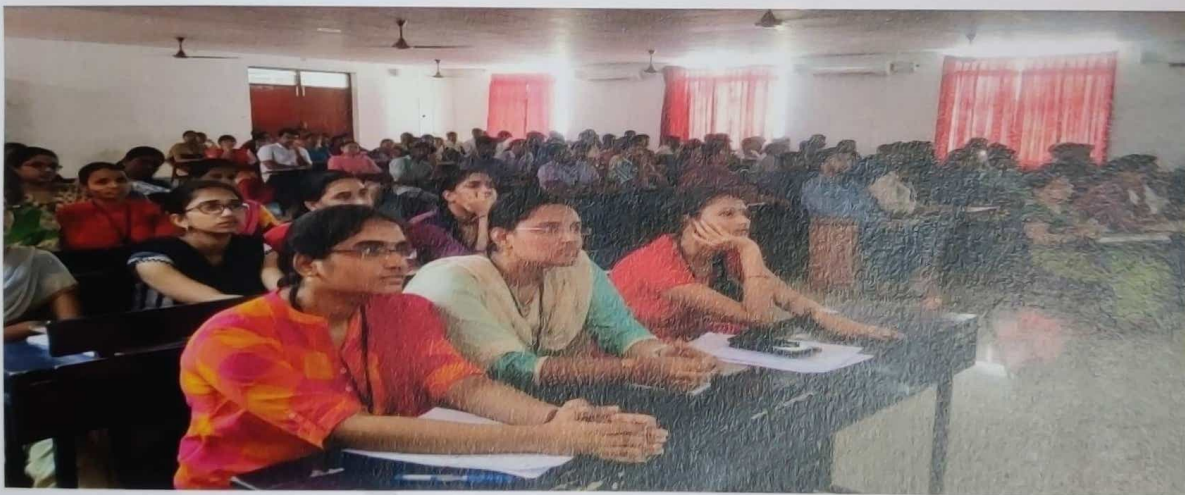


The main goal of this webinar is to gain insight about the current needs in the VLSI industry, for highly enthusiastic VLSI Aspirants craving for more on Industrial VLSI Training. This webinar gave an overview of RTL Design and Functional Verification concepts.

- One day IEEE Workshop On "Advances In MMIC Technology" on 24th February 2018.



Resource Person: Mr. Vaibhav Agarwal, COO, Astra Microwave Products Ltd., India



In this workshop Introduction to MMIC technology and the latest developments were discussed followed by a Hands-on workshop on MMIC applications.

➤ Guest lectures.

- Guest Lecture on “High power semiconductor devices” on 26th December 2017.



Resource person Dr Mulpuri Venkata Rao Professor , George Mason University, Virginia



The lecture focused on new type of emerging power semiconductor devices is the silicon carbide (SiC), which is a compound semiconductor, composed of silicon and carbon. The SiC power devices are able to operate at higher switching speed and higher temperature with lower switching and conduction losses in comparison to the silicon devices such as IGBTs.

- Guest Lecture on “VLSI Techniques for Signal Processing Algorithms: Research trends in Signal Processing” on 26th December 2017.



Resource person Dr Sk Rafi Ahamed, Associate Professor, ECE Department, Indian Institute of Technology, Guwahati



The lecture Emphasizes on signal processing applications and technologies related to digital and software radio frequency (RF) processing, single-chip solution, nanoscale technology, cognitive and reconfigurable radar, smart Internet of things. The main focus is on Recent trends and possible research areas.

- Guest Lecture on “Electro Magnetics Impulse High Power Energy Applications” on 30th December 2017.



Resource person Dr D V Giri , Professor ,University New Mexico, USA



The lecture emphasizes on the electro magnetic pulse technology which provides non contact process for joining , forming and cutting of metals. The main focus is on industrial applications and research areas.

- Guest Lecture on “Human Vs Machine Intelligence” on 10th February 2018.



Resource Persons .Dr B Yegnanarayana Professor ,IIT Hyd and C Krishna Mohan, Assoc Prof, IIT Hyd



The lecture focused on emergence of Artificial Intelligence, its “contextual awareness,” namely its ability to sense and respond to current context followed by areas of research work.

➤ Faculty Development Program.

- 1 Week Faculty development program on “CMOS analog IC Design” from 13th -18th November 2017.



Resource persons Dr.Renuka ravavarapu , Engineering director, Cadence Design Systems USA
And Dr P srihari , Member E&ICTA ,NIT Warangal



FDP mainly focuses on impact of low power VLSI and IOT in the near future are discussed by Dr.Renuka ravavarapu. Other resource person Dr P srihari , Member E&ICTA , NIT Warangal covered the recent trends and research fields in low power VLSI area.

➤ Patents Filed.

S.No	Title	Application Number	Name Of The Applicant	Status
1.	Method, System and Apparatus Mecanum Wheeled Robot	4646/CHE/2015	Dr.K.S.R.K, E.Soumya, E.Ramya, Y.Vivek	Application Published & To be examined
2.	Intelligent Highway Traffic System And Surveillance	5350/CHE/2015	Dr.K.S.R.K, K.Vineesh, M.Dheeraj, M.Irfan	Application Published & To be examined
3.	Multi Octave Band Planar Ring Radiator	201641027230	Dr.N.N.Sastry, K.Sriramakrishna, K.Sneha	Application Published & To be examined
4.	Multioctave Band Microwave Printed Radiator	201641005228	M.Baghyalakshmi, Dr.N.N.Sastry,K.Sriramakrishna	Application Published & To be examined
5.	Compact Tunable Dual Band Antenna	201641036615	Dr.V.Pravenn Naidu	Application Published & To be examined

➤ Ongoing Research Projects.

S. No	Title of the Project	Funding Agency	Amount Rs in Lakhs	Name (s) of the Coordinators	Status & Period
1.	Development and Evaluation of Algorithms for Automated Tree Delineation and Tree Parameters (Height And Crown Diameter) Estimation for Forestry Applications	NRSC ISRO Hyderabad	16.90	Dr. M. Suneetha Dr. N. N. Sastry Dr. K. Sri Rama Krishna Mr. V. Radhesyam Mr. B.L.N Phaneendra Kumar Mr. A Ravi Raja	On going 2016 – 2018
2.	Development of Web Based Tools for online/offline Inclusion of Value added Services and Analysis on BHUVAN for High Resolution Satellite Imagery	NRSC ISRO Hyderabad	14.50	Dr. Suvarna Vani Koneru, Dr. N. N Sastry Dr. M. Padmaja Mr. Praveen Kumar Kollu, Mr. Jitendra Alaparathi Mr. A Ravi Raja	On going 2016 – 2018
3.	Design and Analysis of Multi octave band EW Phased array using a printed Radiator covering 6-18G Hz	DLRL, DRDO, Delhi	65.05	Dr. K Sri Rama Krishna Dr. N N Sastry Dr. V Praveen Naidu Dr. S K Fayaz Mr. R V H Prasad Mr. K Prem Chand	On going 2017-2020
4.	Modernization and removal of obsolescence scheme (MODROBS)	AICTE	8.3	Dr. K Sri Rama Krishna	On going 2017-2018

➤ Engineers Day Celebrations

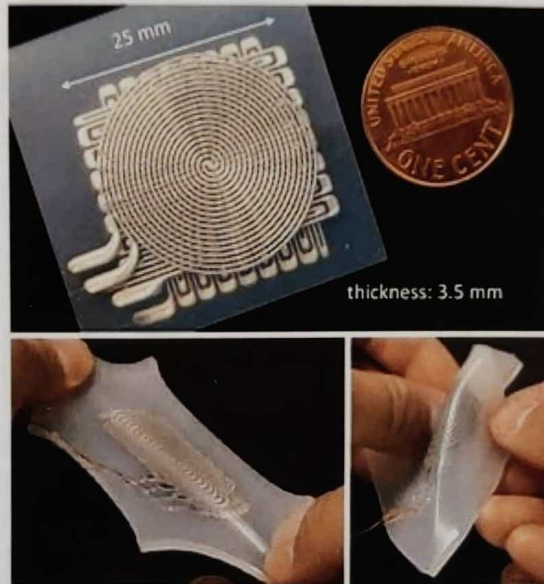
The Engineering Community across India celebrates Engineers Day on 15 September every year as a tribute to the greatest Indian Engineer Bharat Ratna Mokshagundam Visvesvaraya. "Role of Engineers in a devolving India" is the theme of Engineers Day 2017. Many of our students have exhibited the projects on this day.



➤ Paper presentation: AFOSEC 2018

ARTIFICIAL SKIN

An electronic tattoo or an e-tattoo is a flexible, stretchable, ultrathin device consisting of a small flexible circuit that clings to the body and reads the person's heart rate, brain wave and muscular activity. This paper focuses on the construction, working and applications of an electronic tattoo

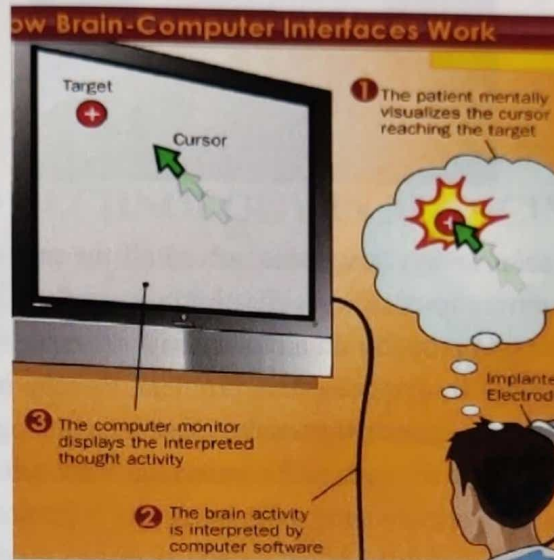


Researchers are carrying out experiments to make use of electronic tattoos in several other ways. The device would soon be able to heal internal wounds, cuts and burns by speeding up the healing process. The EES technology is being used by a company named MC10 in Massachusetts which will directly mount a laminated electronic tattoo in the damaged spinal cord to bridge gaps. Electrozyme is yet another company which aims to work on athletes and closely observe their performances. The tattoo would measure hydration level, fatigue level, pH values of the skin etc. and clearly display these observations to the coach so that their performance can be enhanced. Along with these devices, an electronic tattoo can be incorporated into thin thermometers which would continuously track the temperature of the user and set an alarm when the statistics are out of normal range. These tattoos can also be embedded in clothes like uniforms of workers in plants, players, mining areas etc. where in there would be a vast transition in the temperature of their surroundings. So, if the tattoos can monitor the temperature of the user's surrounding, they can modify the temperature of the clothes worn by the users in such a way that the users feel comfortable.

K.Sai Prasanna
K. Teja Sri

BRAIN GATE

Brain Gate is a brain implant system developed by the bio-tech company, Cyber kinetics in conjunction with the Department of Neuroscience at Brown University. The development of the brain gate system brain-computer interface is to enable those with severe paralysis and other neurological conditions to live more productively and independently.



The computer chip, which is implanted into the brain, monitors brain activity in the patient and converts the intention of the user into computer commands. Currently the chip uses about 100 hair-thin electrodes that sense the electro-magnetic signature of neurons firing in specific areas of the brain. The activity is translated into electrically charged signals and is then sent and decoded using a program, which can move a robotic arm, a computer cursor, or even a wheelchair. Scientists are developing the brain gate systems underlying core technology in the neuroport system to enable improved diagnosis and treatment for a number of neurological conditions, such as epilepsy and brain trauma. Brain gate will be the first human device that has been designed to record, filter, and amplify multiple channels of simultaneously recorded neural activity at a very high spatial and temporal resolution

Sumadhura kopuri

INFRARED PLASTIC SOLAR CELL

Nanotechnology is the nexus of sciences. Nanotechnology is the engineering of tiny machines - the projected ability to build things from the bottom up using techniques and tools being developed today to make complete, highly advanced products. It includes anything smaller than 100 nanometers with novel properties. As the pool of available resources is being

exhausted, the demand for resources that are everlasting and eco-friendly is increasing day by day. One such form is the solar energy.

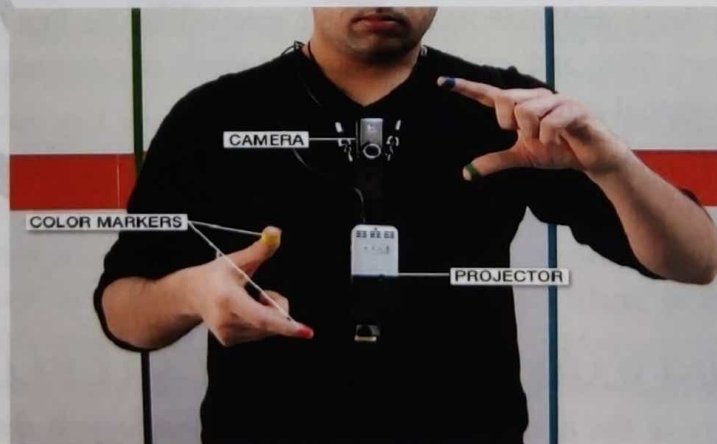


The advent of solar energy just about solved all the problems. As such solar energy is very useful. But the conventional solar cells that are used to harness solar energy are less efficient and cannot function properly on a cloudy day. The use of nanotechnology in the solar cells created an opportunity to overcome this problem, thereby increasing the efficiency. This paper deals with an offshoot in the advancement of nanotechnology, its implementation in solar cells and its advantage over the conventional commercial solar cell.

D.Sivani
M.Devi

SIXTH SENSE TECHNOLOGY

Sixth sense is a wearable interface that augments the physical world around us with the digital information and lets us use natural hand gestures to interact with that information. Without use of keyboard, mouse we can see videos, access, change, modify data simply by using this technology.



The Sixth Sense prototype comprises a pocket projector, a mirror and a camera contained in a pendant like, wearable device. Both the projector and the camera are connected to a mobile

computing device in the user's pocket. The projector projects visual information enabling surfaces, walls and physical objects around us to be used as interfaces; while the camera recognizes and tracks user's hand gestures and physical objects using computer vision based techniques. The software program processes the video stream data captured by the camera and tracks the locations of the colored markers (visual tracking fiducially) at the tip of the user's fingers. The movements and arrangements of these fiducially are interpreted into gestures that act as interaction instructions for the projected application.

M.Soumya.
M.V.N Bhavana.

NANO TECHNOLOGY IN MEDICINE

One of the important areas of nanotechnology is "nanomedicine," refers to highly specific medical intervention at the molecular scale for diagnosis, prevention and treatment of diseases. Nanoparticles hold tremendous potential as an effective drug delivery system. In this review we discussed recent developments in nanotechnology for drug delivery. To overcome the problems of gene and drug delivery, nanotechnology has gained interest in recent years. Nanoparticles hold tremendous potential as an effective drug delivery system. Nanosystems with different compositions and biological properties have been extensively investigated for drug and gene delivery applications. Brain cancer is one of the most difficult malignancies to detect and treat mainly because of the difficulty in getting imaging and therapeutic agents past the blood-brain barrier and into the brain.

K.B.M.Priyanka.
M.Dedeepya.

VOICE RECOGNITION

Voice recognition identifies the sound of human voice. It converts the acoustic signal to stream of words .Accept messages as input for controlling the system. A speech recognition system is designed to assist the speaker in accomplishing what that person wants to do The speech recognition engine uses all sorts of data, statistical models, and algorithms to convert spoken input into text.-During the 1940's and 1950's the United States Department of Defense and MIT became the largest contributors to the speech recognition field -In the 1960's and 1970's, the technology can be attributed to the educational institutions-Today, voice recognition systems are important. One piece of information that the speech recognition engine uses to process a word is its pronunciation, which represents what the speech engine thinks a word should sound like.

K.Prathyusha.
A.Rose Monica.

is helpful in the case of alerting the people during the time of Natural calamities. Waves around 7-8 Hz easily penetrate through Earth's atmosphere without any appreciable losses. So in the present system we will be using the phenomenon of resonance to establish PRECISE COMMUNICATION (self-developed concept).

E.Eswar.
Ch.Jaswanth.

WAVELET BASED IMAGE COMPRESSION

Image compression is the translation of image data in a format to a more compact form. The Objective of image compression is to reduce redundancy of the image data. A compressed image consumes less storage space and bandwidth when compared to uncompressed images which is more useful for internet packets sending and receiving fastly. The main principal behind image compression is that the neighbouring pixels are correlated and, therefore, the information is redundant among the neighbouring pixels. Discrete Cosine Transform (DCT) is the basic technique for the image compression which ends up with few disadvantages. In most of the image compression applications Haar and Daubechies Discrete Wavelet Transform (DWT) was used to overcome the disadvantages of DCT.

In this paper, we go for wavelet packet transform, as it is the best for the compression. A wavelet series is a representation of a square-integrable real- or complex function by certain orthonormal series generated by a wavelet. Basic function of the transformer is variable in their time extension not in their shape. Wavelet compression can be either lossless or loosy.

Using a wavelet transform, the wavelet compression methods are adequate for representing transients, such as percussion sounds in audio, or high-frequency components in two-dimensional images. Notable implementations are JPEG2000, DjVu and ECW for still images, REDCODE, CineForm, the BBC's Dirac, and OggTarkin for video.

M. Usha Rani.
S.Pranathi.

STRATELLITE

Wireless communication is simply data communication without the use of landlines. This may involve cellular telephone, two-way radio, fixed wireless (broadband wireless), laser (free space optics) or satellite communications. Mobile wireless technologies are going to act as glue towards bringing together the wired and wireless to share and distribute information seamlessly across each other's areas of reference. The paper firstly introduces the wireless communications and then switches to fourth generation in wireless communications. The paper then discusses about High Altitude Airships, the "STRATELLITES" which are actually unmanned Kelvar balloons filled with helium which are used instead of towers for wireless communication, each of which replace hundreds of towers and reduce the cost of wireless communications. They also overcome the disadvantage of simple towers which could not provide proper coverage in the hilly areas.

NEAR FIELD TECHNOLOGY

Near field communication is a short range high frequency wireless communication technology that enables the exchange of data between electronic devices over about a 10 cm distance. NFC allows you to share small payloads of data between an NFC tag and an android powered device, or between two android powered devices by establishing RADIO communication is also possible between an NFC device and an unpowered NFC chip called a Tag. Tags can range in complexity. Simple tags suggests just read and write semantics, sometimes with one time programmable areas to make card read-only. More complex tags offer math operations, and have cryptographic hardware to authenticate access to a sector. RFID is the predecessor of NFC . NFC and RFID both transfer data via inductive coupling. Induction occurs when a wire or other conductor of electricity passes through a magnetic field, generating an electric current in the wire. NFC's "read-write" capabilities allow the payment station to request a personal identification number to check identity and then verify the PIN before proceeding with the transaction. And that offers an extra safety feature beyond what contactless RFID solutions can provide .NFC allows you a many real time applications today of E-BOOKING(ticketing),CASHLESS PAYMENTS, IDENTIFICATION, PHYSICAL ACCESS,SECURE PC- LOGON, TRANSIT with specifications such as frequency for data across NFC is 13.56 MHZ. like all RADIO signals, these travel in waves, with peaks and troughs. The distance from the peak of one wave to the next is 13.56 MHZ, the signal moves 13.56 million wavelengths in the span of a second . Currently, an NFC can send data at the rate of 106,212 or 424 kilobits per second.

A.N.M.Jaya Lakshmi.
A.Saroopya.

WIRELESS CHARGING OF MOBILES

It is a hectic task to carry everywhere the charger of mobile phones or any electronic gadgets while travelling or it is very cruel when your mobile phone getting off when we need it urgently. It is the major problem in today's electronics gadgets though the leading with the developments in technology, but this technology is still incomplete because of certain limitations. Today's world requires the technology for this purpose. The main objective of this current proposal is to make the recharging of mobile phones independent of their manufacture and battery make. In this paper a new proposal has been made so as to make the recharging of the mobile phones is done automatically as you talk in your mobile phone. This is done by using microwaves. The microwave signal is transmitted from the transmitter along with the message signal using special kind of antennas called slotted wave guide antenna at a frequency of 2.45GHz. There are minimal additions of a sensor, a rectenna , and a filter. With the above setup, the need for separate chargers for mobile phones is eliminated and makes charging universal. Thus the more you talk, the more is your mobile phone gets charged. Today's world requires the complete technology and for this purpose we are proposing wireless charging of mobile phones.

Gorantla Venkata Sundeep Kumar,
Lokanadham Praveen Kumar.

MOTION PICTURE CAPTURE TECHNOLOGY

It is the process of recording the movement of people or objects. This technology is presently ruling the entire film circuit. The first machine patented in the United States that showed animated pictures is "WHEEL OF LIFE" or "ZOOPRAXISCOPE". The next considerable contribution to the field of motion pictures is "CINEMATOGRAPHE" which actually has three units a camera, a film processing unit and a projector. This technology finds its place in military field, entertainment, sports, medical applications, film making, videogame development.

Yarra.mounika,
P.Ujwala.

SPACE JUNK

Space debris can be broadly classified into two categories: (i) large debris with dimension larger than 10 cm. The smaller debris are more numerous and are difficult to detect and impossible to individually track. This makes them more dangerous than the fewer larger debris which can be tracked and hence avoided. In addition, there are solutions for larger debris, for example, NRL's FRIEND device that can remove large objects from useful orbits and place them in graveyard orbits¹). To the best of our knowledge there are no credible solutions for the small debris. Damage from even millimeter size debris can be dangerous. The source of small debris is thought to be collision between large objects²), such as spent satellites, which can lead to a collision cascade³). Perhaps a more ominous source of smaller debris is collision between large and small objects as we describe in the following. Since such collisions will be more frequent our focus is to develop a concept for eliminating the small orbital debris which cannot be individually tracked to evade collision.

D.Mounika.
B. Asha.

PRECISE COMMUNICATION

This paper explains in detail about precise communication. Precise communication refers to the exactness in communication. This is completely a new and Innovative idea of communication ensuring high levels of privacy. This uses Alpha Waves which resonate at Schumann Frequency. This system enables Brain-Brain communication which in turn helps even Deaf and mute to communicate in real-time. This overcomes the problem of lack of proper privacy in the present communication system, by providing a highly secure Communication. The broadcasting of signal at a time to an entire State even to an entire Nation is possible, which

is helpful in the case of alerting the people during the time of Natural calamities. Waves around 7-8 Hz easily penetrate through Earth's atmosphere without any appreciable losses. So in the present system we will be using the phenomenon of resonance to establish PRECISE COMMUNICATION (self-developed concept).

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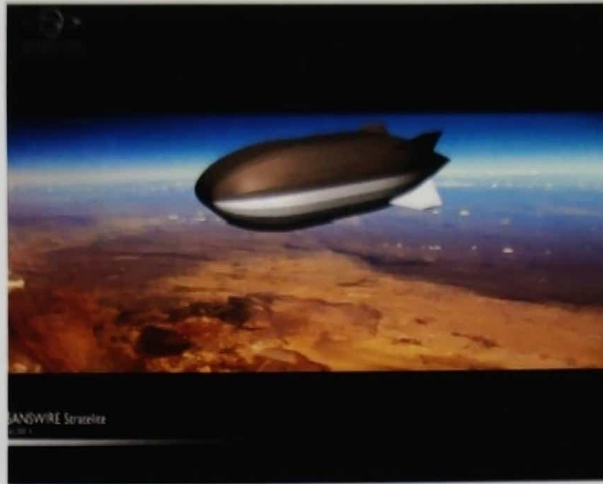
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M. Usha Rani.
S.Pranathi.

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Stratellites provide the required facilities of wireless communication more efficiently than the ordinary towers. The Stratellite will allow subscribers to easily communicate in 'both directions' using readily available wireless technology." They minimise the cost of communication. Stratellites present a mobile, low-cost, high-capacity alternative to satellite relays and cell towers. Once the defects of Stratellites have been overcome and become more reliable, they play a vital role in the future generation wireless communication.

N.Yamini.
V.Susmitha.

WIRELESS POWER RECEPTION THROUGH RECTENNA

This is a proposal for solar power generation in which the solar power is converted into microwaves through satellites called Solar Power Satellites (SPS) and it is received using a special type of antennae called rectenna, mounted on earth surface.

The concept of free space power propagation is not a new concept and it is the topic of discussion for nearly four decades. In this paper we explain the same for the generation and reception of electrical power using the rectennas. Rectennas are special type of antennae that could convert the incoming microwave radiation into electricity and this electricity can be sent to grids for storage and future usage.

The paper first discusses about the history of free space power transmission and gives a brief introduction to the rectenna concept. The important component of the rectenna, the schottky barrier diode is explained. Then the functional model for the Solar Power Satellite is explained. The importance of the solar energy is explained both in terms of the cost and its echo friendly nature. The paper is concluded explaining our model of a simple rectenna, which could be readily built using the components from the laboratory.

P.Dilip kumar.
N.Narendra Babu.

WIMAX TECHNOLOGY

WIMAX technology marks a new era in the wireless internet access. Broadband internet today is as important as waterways, railroads and interstate highways of earlier era. Affordable internet to all citizens is very important for a knowledge based economy and society. Until now broadband connections either had to be offered by companies that own physical links to buildings, which meant telecos or cable operators or they had to come from expensive satellite links or from wireless broadband system that did not have economies of scale in their competency. To solve the above problem, the technology called WIMAX based on IEEE802.16 standard is on way and is expected to outpace the growth of broad wire line options as cellular phones have supplanted many land line users. This paper will provide a very strong introduction about WIMAX technology, deployment.

T.V.S.Revanth.
N.GovindaRao.

WIRELESS CHARGING OF MOBILES

It is a hectic task to carry everywhere the charger of mobile phones or any electronic gadgets while travelling or it is very cruel when your mobile phone getting off when we need it urgently. It is the major problem in today's electronics gadgets though the leading with the developments in technology, but this technology is still incomplete because of certain limitations. Today's world require the technology for this purpose. The main objective of this current proposal is to make the recharging of mobile phones independent of their manufacture and battery make. In this paper a new proposal has been made so as to make the recharging of the mobile phones is done automatically as you talk in your mobile phone. This is done by using microwaves. The microwave signal is transmitted from the transmitter along with the message signal using special kind of antennas called slotted wave guide antenna at a frequency of 2.45GHz. There are minimal additions of a sensor, a rectenna, and a filter. With the above setup, the need for separate chargers for mobile phones is eliminated and makes charging universal. Thus the more you talk, the more is your mobile phone gets charged. Today's world requires the complete technology and for this purpose we are proposing wireless charging of mobile phones.

Gorantla Venkata Sundeep Kumar.
Lokanadham Praveen Kumar.

BAYER COLOR FILTER IMAGES COMPRESSION USING WAVELETS

In Image demosaicing Bayer pattern is popular among various CFA patterns. Demosaicing with this Bayer pattern produces high resolution color images. This paper presents

a new demosaicing approach for spatially sampled image data perceived through a color filter array, and thereby exploiting the correlation of color components for subsampled image reconstruction. The above method is compatible with wavelet-domain denoising before demosaicing. It is also a general framework to apply existing image denoising algorithms to color filter array data. Compression is through Huffman coding and application of biorthogonal wavelets with the results proving that the proposed method .

A minimum of three colour samples at each pixel location is mandatory for production of a colour image. Three full-channel colour images can be obtained through the use of a colour filter in front of each sensor. Though it requires three charge-coupled device (CCD) sensors it is costly with the sensors having to be aligned correctly. A better cost-effective solution will be to place a colour filter array (CFA) before the sensor to capture one colour component in each pixel, interpolating the missing two colour components.

K.Nandini Priyanka.

G.Sai Chandana Reddy.

APPLICATIONS OF NANO TECHNOLOGY

In this paper we present applications of nanotechnology in electronics. Though there are vast applications of nanotechnology in electronics we are here present only few applications. In this firstly we explain Moore's law. Later we will present applications in memory and storage and in displays.

K.Amulya.

K.Bhavya..

EVOLUTION OF MOBILE WIRELESS COMMUNICATION NETWORKS-1G TO 5GAS WELL AS FUTURE PROSPECTIVE OF NEXT GENERATION COMMUNICATIONNETWORK

Mobile communication systems revolutionized the way people communicate. Evolution of wireless access technologies is about to reach its fourth generation (4G) and the 5G mobile networks will focus on the development of the user terminals where the terminals will have access to different wireless technologies at the same time and will combine different flows from different technologies. Looking past, wireless access technologies have followed different evolutionary paths aimed at unified target related to performance and efficiency in high mobile environment.

S. S. Jagan Kumar.

S.V. PrahaladGuptha.

TRANSISTORS WITHOUT SEMICONDUCTORS

The invention of transistor, a semiconductor device, revolutionized the field of electronics and with the idea of integrated circuiting, it paved the way for smaller and cheaper electronic devices. Now, it has become quite common to place billions of transistors on a single silicon chip. But the size of these devices cannot be reduced and further. Moreover, the power loss in the form of heat is the disadvantage in using semiconducting materials. So, the alternative is to make devices without semiconductors. This paper deals with the idea of using nanoscale conducting and insulating materials to make a transistor. The applications and advantages of these nanotransistor devices are discussed. Finally, the challenges in developing this technology are also presented.

Mounika Kalamraju.
Navya Deevi.

A MULTI-AGENT-BASED RFID FRAMEWORK FOR SMART-OBJECT APPLICATIONS

RFID can transform everyday objects into smart objects. Currently, in most applications, agent definitions are not encoded directly on the tags due to tag memory limitations, and RFID technology is used purely for identification. A technology that employs a microchip with an antenna that broadcasts its unique identifier and location to receivers. Employs a microchip called a smart tag, broadcasts unique 96-bit identifier to receiver. Receiver relays the data to a computer.

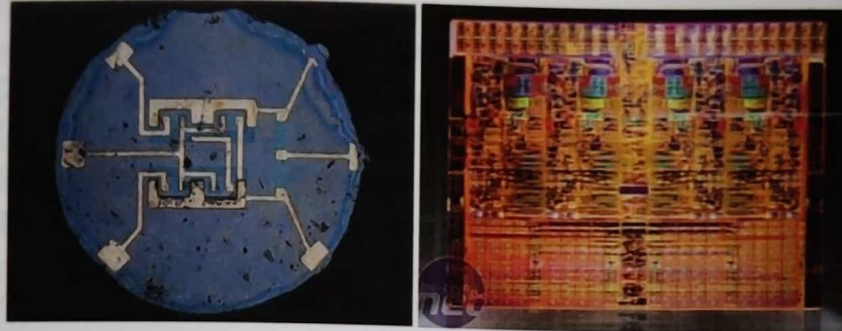
P.Sai ram.
L.Sridhar.

WIRELESS COMMUNICATION

Wireless communication is the transfer of information between two or more points that are not connected by an electrical conductor. The most common wireless technologies use radio. Wireless computer mice, keyboards and headsets, headphones, radio receivers, satellite television, broadcast television and cordless telephones. Even though we have achieved advancement in communication, but today we are notable to provide communication to rural areas. So we have developed a new technology to provide communication to the rural areas.

N.Mihira Teja.
T.Naraasimha Rao.

VERY LARGE SCALE INTEGRATION



A comparison: First Planar IC (1961) and Intel Nehalem Quad Core Die

VLSI means **VERY LARGE SCALE INTERGRATION**. VLSI is the process of creating integrated circuits by combining thousands of transistors into a single chip. The Microprocessor is a vlsi device. The size and cost of circuits is reduced by vlsi by making 1000 of circuits with diodes and resistance to a single chip. The performance of very large scale integration (VLSI) circuits is depends on the interconnected routing in the circuits. In VLSI routing, wire sizing, buffer sizing, and buffer insertion are techniques to improve power dissipation, area usage, noise, crosstalk, and time delay. Without considering buffer insertion, the shortest path in routing is assumed having the minimum delay and better performance. However, the interconnect delay can be further improved if buffers are inserted at proper locations along the routing path. Hence, this paper proposes a heuristic to simultaneously find the optimal routing path and buffer location. Global routing is a design action that precedes local routing and follows placement. Global routing decides about the distribution of the interconnections across the available routing channels. This paper deals with application to solve the problem of global routing.

Sathvik.

UNDER WATER WIRELESS COMMUNICATION

While wireless communication technology today has become part of our daily life, the idea of wireless undersea communications may still seem far-fetched. However, research has been active for over a decade on designing the methods for wireless information transmission underwater. Human knowledge and understanding of the world's oceans, which constitute the major part of our planet, rests on our ability to collect information from remote undersea locations. In this paper we enhance our knowledge on the capacity of a point-to-point communication link in an underwater acoustic channel. The aim of the paper is to design a Digital Acoustic Underwater Communication System with the specific requirements as the system should be robust as regards the underwater channel and should be able to effectively

counter the effects of strong multi-path ,Transmission loss, Ambient loss and Doppler spread. We also discuss about the scheme of transmission of digital bits under water through different means of transmitters.

T.Sandhya rani.

K.Nagamani.

ARTIFICIAL VISION- A BIONIC EYE

For those millions of us whose vision isn't perfect, there are glasses. But for those hundreds of thousands who are blind, devices that merely assist the eyes just aren't enough. What they need are alternative routes by which the sights of the world can enter the brain and be interpreted.

Technology has created many path ways for the mankind. Now technology has improved to that extent where in the entire human body can be controlled using a single electronic chip. We have seen prosthetics that helped to overcome handicaps. Bio medical engineers play a vital role in shaping the course of these prosthetics. Now it is the turn of artificial vision through bionic eyes. Chips designed specially to imitate the characteristics of the damaged retina and the cones and rods of the organ of sight are implanted with a microsurgery.

K.Tarun Kumar.

K.Sai Srimannarayana

TRAFFIC CONJECTURE (WITH SMART CAR SYSTEMS USING INDUCTIVE LOOPS AND TOUCH LESS MOBILE CONTROL)

The traffic jams in cities are most common and remained as a uncontrollable problem. This idea we developed is the result of our observation in one of the major traffic intersection at Vijayawada (Benz circle). In this paper we are going to present you the best solution to eradicate heavy traffic jams without using any constructions like bridges or additional lanes on the roads. We observed that the commuters are getting stuck in the traffic jams mainly due to no proper estimation on the traffic on their way. So, we thought that we can eliminate this problem by intimating or instructing the driver/commuter about the level of traffic at any junction all over the city. Such that the commuter can escape from the traffic jam and he/she can reach the destination in time. So to intimate the density of traffic at any junction, we are going to use "Induction loops" to calculate the density of traffic at the junctions and to display them to the commuter. In addition to this we are also using Google maps to forecast the traffic through GPS to the driver at any place regarding the traffic at the junctions. And also we are using these induction loops to reduce the noise pollution at the traffic intersections. We also quoted about one of the smart car experience to the commuter ie., a touch less mobile controlling system that

enables the driver to operate his/her mobile without even touching it. This touch less mobile system is more useful to eliminate accidents that occur due to usage of mobile phones while driving.

M.Divya sree.

STEGANOGRAPHY ALGORITHM USING EDGE AND RANDOM LSB TECHNIQUES

Steganography is the art of hiding information in a cover medium such that the existence of information is concealed. An image is a suitable cover medium for steganography because of its great amount of redundant spaces. One method of image steganography is random edge embedding. Random edge embedding is a combination of random lab technique and edge lsb technique. In this technique the pixels are selected randomly using pseudo-random number generator and the lsb's of each pixel is embedded with the message bits. The number of pixels selected is equal to the length of the message stream. The selected pixels lsb is made zero by performing AND operation with 254(1111110) . Embedded lsb's with binary data using logic OR operations between image pixels with final data. Convert the single column image in to original size of the image. Generate a key to decode the image. This method represents a high embedding capacity. Security is high for this method.

Y.Sahiti.

K.Susmitha.

SYNAPTIC TRANSISTOR

Synaptic transistor is a type of transistor that can learn in ways similar to a neural synapse. This device self-optimizes its properties for the functions it has carried out in the past. It has a structure quite similar to that of a field effect transistor, where a bit of ionic liquid takes the place of the gate insulating layer between the gate electrode and the conducting channel, and that channel is composed of Samarium Nickelate (SNO) rather than the field effect transistor's doped silicon.

It mimics the behaviour of the property of neurons called Spike-timing-dependent plasticity (STDP). One of the ways through which sets of behaviours are reinforced or learned, is called spike-timing dependent plasticity. Plasticity is the name for the brain's ability to change its own structure through thought and activity. The learning response is that the conductivity of the SNO layer varies in response to the STDP history of the synaptic transistor, essentially by shuttling oxygen ions between the SNO and the ionic liquid.

The synaptic transistor could mark the beginning of a new kind of artificial intelligence:

one embedded not in smart algorithms but in the very architecture of a computer. In principle, a system integrating millions of tiny synaptic transistors and neuron terminals could take parallel computing into a new era of ultra-efficient high performance.

N. Lakshmi Sowmya.

T. Sravya Sruthi.

TOUCHLESS TOUCHSCREEN

Initially touch screen has created a great furore. The days of using touch screens & scratching them has gone. Touch screen displays or present everywhere in the world. frequent touching a touch screen displays with a pointing device such as a finger can result in the gradual sensitization of the touch screen & can ultimately lead to failure of the touch screen. To avoid this, a simple user inter phase for touch less control of electrically operating equipment is being developed Elliptic Labs innovative technology lets you control you gadgets like PC's, MP3 players or mobiles without touching them. This touch less touch screen user inter face so are different from other systems which depend on distance to the sensor or sensor selection this system depends on hand and or finger motions, a hand wave in a certain direction, or a flick of the hand in one area, or holding the hand in one areaor pointing with one finger for example. The device is based on optical pattern recognition using a solid state optical matrix sensor with a lens to detect hanthe technology behind it is it obviously requires a sensor but the sense neither hand mounted nor present on the screen. The sensor can be placed either on the table or near the screen. And the hardware setup is so compact that it can be fitted into a tiny device like a MP3 player or a mobile. It recognizes the position of an object from as 5 feet. The Touch less touch screen user interface can be used effectively in computers, mobiles, webcams and lapis May be few years motions.

V.Kalpana.

V.Sreenithya.

THE MEASUREMENT OF DEFORMATION OF A SILICON ELASTOMER TUBE USING DIGITAL IMAGE PROCESSING

According to the latest research the nonlinear elastic model with hysteresis is the most realistic to model the blood vessel. Relationship between the transmural pressure and external diameter of the blood vessel, modelled by a silicon elastomer tube is studied under stress. This paper focuses on the measurement method using digital image processing. Edge detection algorithms are developed using Matlab software environment to determine the diameter of the tube under specific inner pressure. Results reproduce the static and dynamic behaviour of the silicon elastomer material.

M. Sai Ratna Kashyap .

N. Santhosh Kumar.

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