SARANATHAN COLLEGE OF ENGINEERING

PANJAPUR, TRICHY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION

PROUDLY PRESENTS

WIZARDZZ-2K16

FROM THE HOD'S DESK...

I am very enchanted that our ECE department is releasing our department e-magazine version. 8.0 named "WIZARDZZ V.8" for the even semester of 2015-2016. Department of ECE has been releasing e-magazine once per semester since November, 2012. This e-magazine is surely a channel to prove the hidden talents of both our faculty members and our students not only in technical but also in literature. Our ECE Department aims at keeping students abreast of the current technological trends and due consideration is also paid to enhance their skills in communication, fine arts, etc. I hope this e-magazine provides an opportunity to the students and staff members to lend free expression to their pioneering and imaginative thoughts.

This e-magazine plays an active role in gaining latest developments in the field of Engineering and also presents the achievements of the department. This e-magazine would surely help in building our promising Engineers to become expertise in the field of Electronics and Communication Engineering. This EMagazine is the window to our departmental activities.This emagazine includes a wide range of facts, riddles, quotes, paintings and some informative and inspirational articles apart from technical articles.

A flower makes no garland. This magazine is not the outcome of the effort put in by an individual. I extend my sincere thanks to the persons who have contributed to this issue and enhance its perfection and beautification through their articles.I congratulate the entire editorial team for their hard work and dedication that has resulted in the publication of this issue of our department e-magazine WIZARDZZ v8.0.I wish them All the Best for all their future accomplishments.

DR. M.Santhi
HOD/ECE

VISION

To become a leading Institution of Higher Learning and a Center of Excellence in Research in Electronics and Communication Engineering.

MISSION

- To facilitate budding engineers to obtain technical exposure in the area of Electronics and Communication Engineering.
- To nurture career improvement.
- To endorse research activities in the department.
- To develop professional and ethical attitude for the students

Programme Educational Objectives

- To provide the students with a **strong foundation** in the required **sciences** in order to pursue studies in Electronics and Communication Engineering.
- To give a **broad exposure** to the students in various topics related to Electronics and Communication Engineering fields in order to enable them to excel in their professional career /higher studies.
- To develop **innovative skills** in the students in order to solve the problems those are likely to arise in their professional life.
- To inculcate in the students a professional and ethical attitude and an ability to visualize the engineering issues in a broader **social context**.

Programme outcomes

- An ability to apply knowledge of mathematics, science, and engineering
- An ability to design and conduct experiments, as well as to analyze and interpret data
- An ability to design a system, component, or process to meet desired need within realistic constraints such as economic, environmental, social, political, ethical, health, safety, manufacturability, and sustainability
- An ability to function on multidisciplinary teams
- An ability to identify, formulate, and solve engineering problems
- An understanding of professional and ethical responsibility
- An ability to communicate effectively
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- A recognition of the need for, and an ability to engage in life-long learning
- A knowledge of contemporary issues
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
- An ability to analyze electronics and communication engineering concepts comprehensively to inculcate research interest in developing products based on futuristic communication electronics

CONTENTS

FACULTY ACHIEVEMENTS

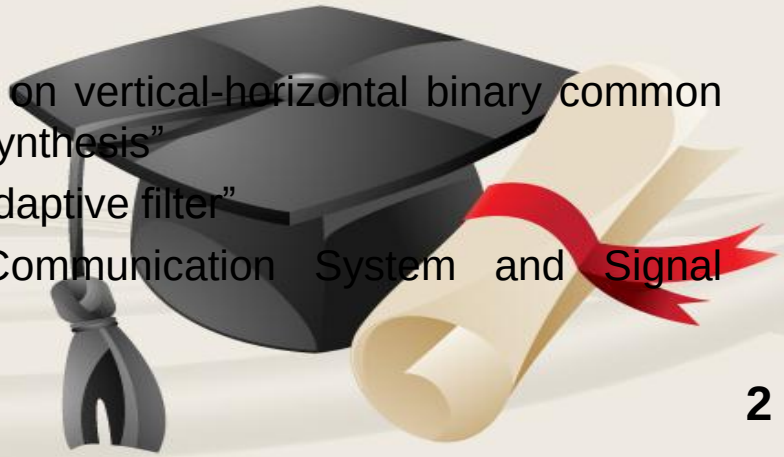
A teacher presents the past, reveals the present,
and creates the future
if you can READ this
thank a teacher...

DR. M. SANTHI M.E., PH.D
Professor & Head

International Journals

- S.Hariprasath & Dr.M.Santhi “Adaptive Implementation of Bimodal Biometric system in FPGA”, Australian Journal of Basic and Applied Sciences in January 2016 ISSN-1991-8198 page 467-476 Vol.10(1),2015.
- B.Divya & Dr.M.Santhi “Internet of Things for Embedded Systems”, Australian Journal of Basic and Applied Sciences in January 2016 ISSN-1991-8198 page 404-410 Vol.10(1), 2015.
- Chief guest and chair person for national conference on multimedia design and signal processing at Trichy engineering college on 18th march 2016.
- Presented papers titled
  - “Efficient VLSI design of constant multiplier architecture based on vertical-horizontal binary common sub-expression elimination algorithm for reconfigurable fir filter synthesis”
  - “Low power low complexity implementation of direct form LMS adaptive filter”

  in National conference on “Recent Trends in Advanced Communication System and Signal Processing”.(30th and 31st march 2016)



DR.C.VENNILA M.E., PH.D
Professor

- S.Subathardevi,.C.Vennila (17th & 18th December2015) “Novelty in architecture of ROBDD for the minimization of interconnect delay’’, International Conference ICCI CCT on Proceedings of ICCICCT 2015, Noorul Islam University, Kanniyakumari.
- S.Subathardevi, C.Vennila (17th&18th December2015) “Survey over on-chip buses for VLSI Architecture with optimized delay for Multiprocessor System design’’, International Conference I C C I C C T on Proceedings of ICCICCT 2015, Noorul Islam University, Kanniyakumari.
- S.Subathardevi, C.Vennila, R.Vishnupriya, B.Angalaeswari, M.Neethija (17th&18th March 2016) “Novel Design for BCD adder with minimized delay’’, International Conference ICIIECS-2016 published in Proceedings of ICIIECS-2016, Karpagam College of Engineering, Coimbatore.
- S.Subathardevi, C.Vennila, M.Lakshmiprabha, B.Logeshwari, S.Malathy (17th&18th March 2016) “Modified architecture of FFT with reduced interconnect delay for OFDM’’, International Conference ICIIECS-2016 published in Proceedings of ICIIECS-2016, Karpagam College of Engineering, Coimbatore.
- Herald A, Vennila C,(FEB 2016)”Comparison of Modulation Techniques for Underwater Optical Wireless communication at Mallipattinam , Tamil Nadu”, in the proceedings of ICETETS’16 pp 520-524

- Ganesan.R, Seetharaman.G, TughruArslan, Vennila.C, Prabhakar.T.N,(Nov 2015) “Design and testing of low power reliable NOCs for wireless applications”, 9th International Conference on Advanced Computing and Communication Technology,Panipat.
- S.Subathardevi, C.Vennila “Optimization of interconnect delay in system design architecture using AXI4 bus than PLB bus”International Association of Advances in Engineering and Technology(IAAET), selected for conference.
- L. Sriraman , T.N. Prabakar, C. Vennila, “Design And Implementation Of Nikhilam Multiplier Using Vedic Mathematics”, selected for icetets 2016 .

International Journals:

- S.Subathardevi, C.Vennila “Modified Reconfigurable Architecture for Binary Array Multiplier with reduced delay”, **Indian Journal of Science and Technology’’**., Vol.8, Issue 23, Sep.2015. ISSN (Print) : 0974-6846, ISSN (Online) : 0974-5645.(DOI: 10.17485/ijst/2015/v8i23/85354)(Indian Journal of Science and Technology, Vol 8(23), DOI: 10.17485/ijst/2015/v8i23/IPL0887, September 2015) **(Sl. No. 8167)**
- S.Subathardevi, C.Vennila“Modified Architecture for Distributed Arithmetic with optimized delay using parallel processing”, **Indian Journal of Science, Engineering and Technology**. Vol.8, Issue 24, Sep.2015.(**DOI**: 10.17485/ijst/2015/v8i24/82801**)** ISSN (Print) : 0974-6846, ISSN (Online) : 0974-5645. (Indian Journal of Science and Technology, Vol 8(24), IPL0619, September 2015) **(Sl. No. 8167)**
- S.Subathardevi, C.Vennila “Novelty in architecture of ROBDD for the minimization of interconnect delay’’, International Journal of IEEE digital library.**(yet to be published)**

- Presented papers titled
  - “An energy efficient distributed algorithm for maximizing lifetime of wireless sensor networks”,“An energy-efficient attack-resistant trust model for underwater wireless sensor networks”
  - “An efficient broadcast protocol for collision avoidance in cognitive radio adhoc network using bracer protocol”

  in National conference on “Recent Trends in Advanced Communication System and Signal Processing”.(30th and 31st march 2016)

DR. S.RAJESWARI, M.TECH., PH.D
Associate Professor

- Presented papers titled
  - “Energy based path selection in wireless mesh network using cluster based routing protocol”,
  - ”Automatic detection and notification of potholes and humps on roads to aid drivers”

  in National conference on “Recent Trends in Advanced Communication System and Signal Processing”.(30th & 31st march 2016)
- Presented paper titled “Energy deprived routing protocol with an effective queue for WMNS” in International conference at Vivekanandha college of engineering (march 2016)

DR. S.A. ARUNMOZHI

M.B.A, M.TECH., PH.D

Associate Professor

- Presented papers titled
  - “A co-operative bait detection scheme for the detection of collaborative blackhole attacks in manet”
  - “Design of slot-loaded loop antenna”

  in National conference on “Recent Trends in Advanced Communication System and Signal Processing”.(30th and 31st march 2016)

DR.V.MOHAN M.E.,PH.D
Associate Professor

- FDP on Random Process –guest lecture on Applications of Random Process
- Ramanujan Day (MASE)- guest lecture on Fuzzy Inference System
- Presented paper titled “Changed Detection using Temporal Features and Feedback Loops” in International conference on Computer and Communication Systems at Sri Venkateswara College of Technology on 4th & 5th March, 2016
- Presented paper titled “Intra Frame Coding with Markovian Prediction and LWT” in International conference on Computer and Communication Systems at Sri Venkateswara College of Technology on 4th & 5th March,2016
- Attended workshop on writing Research papers for SCI indexed journals and preparing proposals for funding agencies on February 8, 2016

DR.M.PADMAA M.E.,PH.D

Associate Professor

- completed Ph.D titled “Random Image Steganography” in the area of INFORMATION SECURITY.
- Presented papers titled
  - “Image compaction and encipherment using fractal dictionary and julia set ”
  - “Multiple-query image retrieval based on pareto front method with EM-ranking”
  - “An enhanced implementation of image fusion for multifocus images using NIHS transform and DCT”

  in National conference on “Recent Trends in Advanced Communication System and Signal Processing” (30th and 31st march 2016)
- Presented paper titled “Implementation of image fusion using NIHS transform and DCT for multifocus images” in international conference at Alagappa university(march 2016)

DR.P.SHANMUGAPRIYA

M.TECH.,PH.D

Associate Professor

- Presented paper titled “Identification of Skin Lesion Description using HL Intuitive features” in International Conference on Computer & Communication System at Sri Venkateswara College of Technology on 4th &5th March,2016
- Presented paper titled “Segmentation of overlapping cervical cells by multiple level set functions optimization” in National conference on “Recent Trends in Advanced Communication System and Signal Processing”.(30th and 31st march 2016)

DR. M.BARITHA BEGUM

M.E.,PH.D

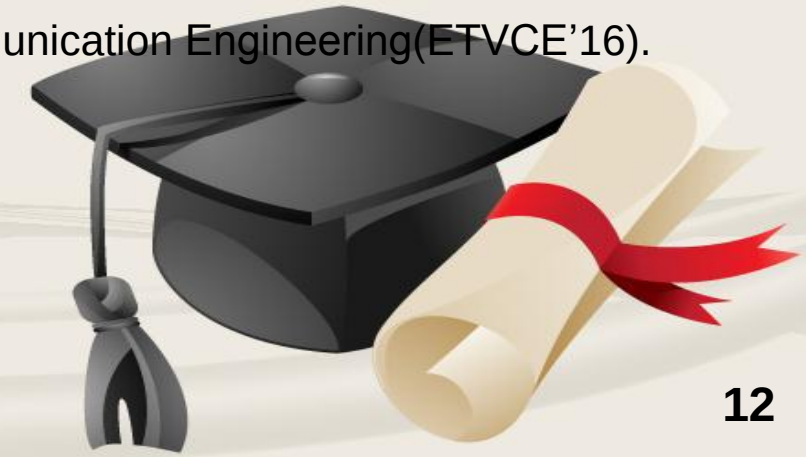
Assistant Professor

- Presented papers titled
  - “Securing cognitive radio network against primary user emulation attack”
  - “Codeword substitution technique for hiding data in encrypted h.264/AVC video”
  - “Biometric cryptosystem based on Delaunay quadrangle structure for fingerprint template protection and person identification”

  in National conference on “Recent Trends in Advanced Communication System and Signal Processing”.(30th and 31st march 2016)

Mr.S.HARI PRASATH M.E.
Assistant Professor

- Attended a one day workshop on “Research Methodologies”.
  Venue: Anna university, CEG campus.
  Date: 8th October 2015.
- Attended two days workshop on probability and random process
  Venue: Saranathan college of engineering
  Date: 28th and 29th december 2015
- Attended National conference on Emerging Trends in VLSI, communication Engineering(ETVCE’16).



- Presented papers titled
  - “Image compression using optimized dot diffusion”
  - ”Segmentation of tumor and edema of brain using Neural networks”
  - “Multistage denoising based on DWT thresholding”

  in National conference on “Recent Trends in Advanced Communication System and Signal Processing”(30th and 31st march2016)

International journals:

- S.Hariprasath & Dr.M.Santhi **“**Adaptive Implementation of Bimodal Biometric system in FPGA”, Australian Journal of Basic and Applied Sciences in January 2016 ISSN-1991-8198 page 467-476 Vol.10(1),2015.

MS. A SHAMIM BANU, M.E.
Assistant Professor

- Presented paper titled “Survey on speech recognition” at National conference on “Recent Trends in Advanced Communication System and Signal Processing”.(30th and 31st march 2016)

Mr. K. MALAISAMY M.E.
Assistant Professor

- Presented a paper titled “Design of microstrip patch array antenna for KV-band application” at International conference on computer and communication system on 4th and 5th march 2016 at Sri Venkateswara college of technology.
- Attended a one day workshop on “Research Methodology”.

  Venue: Anna university, CEG campus.

  Date: 8th October 2015.

Mr. G.SIVAKANNU M.E.
Assistant Professor

- Attended two days workshop on “SIGNAL AND IMAGE PROCESSING”.
  Venue: Sona college of technology, Salem.
  Date: 4th and 5th december, 2015.
- Attended two days workshop on probablity and random process
  venue: saranathan college of engineering
  date: 28th and 29th dec 2015
- Attended one day workshop on writing Research papers for SCI indexed journals and preparing proposals for funding agencies on February 8, 2016

Ms. V.RAMYA M.E.
Assistant Professor

- Attended two days workshop on “SIGNAL AND IMAGE PROCESSING”.
  Venue: Sona college of technology, Salem.
  Date: 4th and 5th december,
  2015.
- “Football transmit video”- International conference IJRTS Volume-3 issue December 2015/ISSN (online): 2348-1439.

Mr. M.MAHENDRAN M.E.
Assistant Professor

- Attended a one day workshop on ”INTERNET OF THINGS AND ITS APPLICATION IN WSN”.
  Venue: Anna university.
  Date: 21 November 2015.

MS. P SIVAGAMASUNDHARI

M.E.,

Assistant Professor

❖ Presented paper titled “Joint source and channel coding for image transmission using improved turbo codes in AWGN channel” at National conference on “Recent Trends in Advanced Communication System and Signal Processing”.(30th and 31st march 2016)

Ms. V.AARTHI M.E.
Assistant Professor

Journal

- "Combined Source and Channel Coding for Image Transmission Using Enhanced Turbo Codes in AWGN and Rayleigh Channel", World Academy of Science, Engineering and Technology, vol.9, no.6, pp.456-461. **(with impact factor SJR:0.13) H-index-14**

Conference

- V.Aarthi, "Combined Source and Channel Coding for Image Transmission using Enhanced Turbo Codes in AWGN and Rayleigh Fading Channel " IEEE International Conference on Advanced Computing and Communication Systems, Sri Eshwar College of Engineering, Coimbatore, Jan 5-7, 2015.pp. 1-5. [Won Best Paper Award]. Published in IEEE xplore. DOI: 10.1109/ICACCS.2015.7324106
- V.Aarthi, "Performance comparison of UEP and EEP Turbocodes using Log-MAP Turbo decoding algorithm" National Conference On Advancements in Computing, Communication and Security, April 2, 2015 at Indra Ganesan College of Engineering, Trichy.

Ms. M.LAKSHMI PRABHA

M.TECH.

Assistant Professor

- Attended two days workshop on “SIGNAL AND IMAGE PROCESSING”.
  Venue: Sona college of technology,Salem.
  Date: 4th and 5th december,2015.

NATIONAL CONFERENCE ON RECENT TRENDS IN ADVANCED COMMUNICATION SYSTEMS AND SIGNAL PROCESSING

- conducted on March 30 and 31, 2016.

convened by

Dr.M.Santhi, Professor & Head

&

Dr.M.Baritha Begum, Assistant Professor

A total of 88 papers have been received, out of which 70 papers have been selected. Apart from our college students, 33 students from other colleges also presented their ideas.

Publications of students

- **M.KARTHIKA, M.VASANTHI, B.VINOTHA** :presented paper titled "Video encryption and decryption using RSA algorithm" in national conference on recent trends in advanced communication systems and signal processing at SCE(march 2016).
- **B.RAMA PRABHA** :presented paper titled "An energy efficient distributed algorithm for maximizing lifetime of wireless sensor networks" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016).
- **M.MADHURA** :presented paper titled "An energy-efficient attack-resistant trust model for underwater wireless sensor networks" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016).
- **V.S.P.PADMINI** :presented papers titled
    - "Multistage denoising based on DWT thresholding" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
    - "multistage denoising based on linear and nonlinear methods" in international conference at Indra ganeshan college (march 2016).
- **F.MELISHA SHARON** :presented paper titled "Codeword substitution technique for hiding data in encrypted h.264/AVC video" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016).
- **C.ABIRAMI** :presented paper titled "Biometric cryptosystem based on delaunay quadrangle structure for fingerprint template protection and person identification" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016).
- **T.NOORUL BINOONA** :presented papers titled
    - "Multiple-query image retrieval based on pareto front method with EM-ranking" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
    - "pareto depth with EM ranking for multiple query image reterival" in international conference at alagappa university (march 2016)

- **R.VAISHNAVI** :presented paper titled "Efficient vlsi design of constant multiplier architecture based on vertical-horizontal binary common sub-expression elimination algorithm for recongigurable fir filter synthesis" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **I.SHERLI AXCEELIA** :presented papers titled
  - "An enhanced implementation of image fusion for multifocus images using NIHS transform and DCT" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
  - "Implementation of image fusion using NIHS transform and DCT for multifocus images" in international conference at Alagappa university(march 2016)
- **N.PRISCILLA VILMA MANORATHI** :presented papers titled
  - "Segmentation of overlapping cervical cells by multiple level set functions optimization" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
  - "Optimization of multiple level set functions for overlapping cervical cells segmentation" in international conference at Alagappa university(march 2016)
- **R.HEMALATHA** :presented paper titled "A co-operative bait detection scheme for the detection of collaborative blackhole attacks in manet" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **N.S PRADEP, S.PRASANNA AJAY** :presented paper titled "Joint source and channel coding for image transmission using improved turbo codes in AWGN channel" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **S.GEETHA, M.NISHANTHINI, G.SHANTHI, K.SIVABHARATHI, M.SUGANYA** :presented paper titled "Data leakage detection and security using cloud computing" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)

- **A.VIKRAM, R.SINDUJA, S.VINOTHINI, A.SHIVAPRIYA, S.NALINI** :presented paper titled "Analyze the performance of searching using GD clustering algorithm" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **B.MALATHI, K.RAMYA, S.SANGAVI** :presented paper titled "Adaptive preprocessing and prediction using SVM classifier" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **S.P.MUKESH, B.PRAGADISHWARAN, R.K.SAKTHIVEL,V.K.SOMESHWAR** :presented paper titled "Live security using online motion detection system" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **D.INDHUMATHI, A.NEERAJA LAKSHMI, R.S.NEEVETHA, A.AARTHI** :presented paper titled "Automatic circuit breaker based load management system" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **S.ANISFATHIMA,K.HAMSAVARTHINI,D.DIVYA,R.ARIVUKARASI** :presented paper titled "An efficient broadcast protocol for collison avoidance in cognitive radio adhoc network using bracer protocol" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **M.KARTHIKA, M.VASANTHI, B.VINOTHA** :presented paper titled "Video encryption and decryption using RSA algorithm" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **B.K.BALAJI** :presented papers titled
  - "design of microstrip patch array antenna using slit type for KU band applications" in national conference on recent trends in advanced communication systems and signal processing at SCE(march 2016)
  - "design of compact multiband antenna for WWAN/LTE mobile phone app" in international conference at MAMCE (march 2016)
  - "design of microstrip patch array antenna for KU-band application" in international conference at SVCT (march 2016)

- **BANU GANGA.G, HAMSHAPRIYA.M.E, HEMASURABI.P, MONISHA DEVI.N** :presented paper titled " Qos aware geographic opportunistic routing in wireless sensor networks " in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **BANUMATHI K JANANI A JAYAMATHANGI S** :presented paper titled " design and implementation of a verilog-based digital receiver for 2.4 Ghz zigbee applications on FPGA " in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **PRIYANGA S, PRIYANKA A, SUMAIYA M, SURUTH**i :presented paper titled " designing an inertial pen for hand gesture recognition using wireless system " in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **K.SOWMITHRI, S.VIDHYA, R.SUBHASHINI, M.RAMKUMAR** :presented paper titled " an efficient block based image compression scheme with orthogonal polynomials, lifting scheme and entropy coding" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **SS PREETHI ,V.PREETHI ,R.RAFIA PARGIN, M.SHOBANA** :presented paper titled " automatic detection and notification of potholes and humps on roads to aid drivers" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **RAM NARESH S, SUBHA CATHRINE C, VENKATESH V, DHARINI T** :presented paper titled " classification of medicinal plants using embedded system" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **C.CHINNA KANNAN** :presented papers titled
  - "compact multiband antenna for WWAN/LTE mobile phone app" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
  - "design of compact multiband antenna for WWAN/LTE mobile phone app" in international conference at MAMCE (march 2016)
  - "design of microstrip patch antenna for KU-band application" in international conference at SVCT (march 2016)

- **C.T.NALLAMMAI :** presented papers titled " Low power low complexity implementation of direct form LMS adaptive filter" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **M.DHIVYA** :presented papers titled
    - "Energy based path selection in wireless mesh network using cluster based routing protocol" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
    - "Energy deprived routing protocol with an effective queue for WMNS" in international conference at vivekanandha college of engineering (march 2016)
- **I.INFANT AROCKIA MARY :** presented paper titled "Intra prediction and transform based on 2D Markov process for video compression" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
- **V.SWAPNA** :presented paper titled
    - "classification of skin lesions description using SVM" on International conference at SCE (march 2016)
    - "identification of skin lesion using HLIF" in international conference at SVCT (march 2016)
- **K.POORNIMA** :presented papers titled
    - "detection of changes in the video sequence using spatiotemporal features and feedback loop" in national conference on recent trends in advanced communication systems and signal processing at SCE (march 2016)
    - "change detection using STLBP and feedback loops" in international conference at SVCT (march 2016)

STUDENT'S ACHIEVEMENTS

s.no	Name	Year	Achievements
1.	**U. Steve Arul**	Third	1. ICCCS 2k16 at SVCT. 2. 2nd prize in Boxes at Care group of institution. 3. 2nd prize in Paper presentation at SCE(ELCOMFEST 2K15) 4. 1st prize in matlab coding at Care group of institution.
2.	**M. Prakadheesh**	Third	1. 1st prize in cuimast(tech quiz) at M.Kumaraswamy college of Engineering. 2. 1st prize in paper presentation at Anna University (Trichy). 3. 1st prize in paper presentation at Care group of institution. 4. 1st prize in paper presentation at MEC. 5. 2nd prize in Boxes at Care group of institution. 6. 1st prize in paper presentation at SCE (ELCOMFEST 2K15). 7. 2nd prize in technical quiz at SCE (ELCOMFEST 2K15). 8. 2nd prize in paper presentation at VCET(Madurai). 9. 1st prize in RC Race at MEC.
3.	**R. Raj mohan**	Third	1st prize in matlab coding at Care group of institution.
4.	**G.Ruthra**	Third	1. 1st prize in cuimast(tech quiz) at M.Kumaraswamy college of Engineering. 2. 1st prize in paper presentation at Anna University (Trichy). 3. 1st prize in paper presentation at Care group of institution. 4. 2nd prize in paper presentation at VCET(Madurai).
5.	**C.D. Vijaya dharshan**	Third	1. 1st prize in “make out of waste” at Care group of instituition 2. Paper presentation at Care group of institution. 3. Ethical hacking and PCB design workshop.
6.	**S. Raja ganesh**	Third	1. 1st prize in “make out of waste” at Care group of instituition 2. Paper presentation at Care group of institution. 3. Ethical hacking and PCB design workshop.
7.	**M Samuel**	Third	1. 1st prize in “Debug your mind” in Care group of institution. 2. 1st prize in “Make out of waste” in Care group of institution. 3. Paper presentation at Care group of institution. 4. Ethical hacking and PCB design workshop.
8.	**R.R. Pranbhu ganesh**	Third	1. 1st prize in “Debug your mind” in Care group of institution. 2. Paper presentation at Care group of institution. 3. Ethical hacking and PCB design workshop.

s.no	Name	Year	Achievements
9.	**Salai chandra rajan**	Third	1. ICCCS 2k16 at SVCT. 2. 1st prize in "Make out of waste" in Care group of institution. 3. 3rd place in District level basket ball (Rotary Club).
10.	**K. Praveena**	Third	1. India Engineering Olympiad- 599th ranking all over India 2. Paper presentation at Care group of institution. 3. 2nd prize in "Treasure hunt" in Care group of institution.
11.	**P.R. sivakami**	Third	1. 1. Paper presentation at Care group of institution. 2. 2nd prize in "Treasure hunt" in Care group of institution. 3. Ethical hacking and PCB design workshop.
12.	**K. Vinitha**	Third	1. Paper presentation at Care group of institution. 2. 2nd prize in "Treasure hunt" in Care group of institution 3. One day workshop in International Science Research & Development Center.
13.	**V. Vennila**	Third	1. Paper presentation at Care group of institution. 2. 2nd prize in "Treasure hunt" in Care group of institution
14.	**M. Sriabinaya**	Third	1. Paper presentation at Care group of institution. 2. 2nd prize in "Treasure hunt" in Care group of institution 3. Ethical hacking and PCB design workshop.
15.	**P. Sri saranya**	Third	1. Paper presentation at Care group of institution. 2. 2nd prize in "Treasure hunt" in Care group of institution 3. Ethical hacking and PCB design workshop. 4. 1st prize in "Crazy craii" in PSNA college. 5. Paper presentation in PSNA college
16.	**S. Soundarya**	Third	1. Paper presentation at Care group of institution. 2. 2nd prize in "Treasure hunt" in Care group of institution 3. Ethical hacking and PCB design workshop.

s.no	Name	Year	Achievements
17.	**Sivakami Subramanian**	Third	1. 1st prize in paper presentation at Chendhuran college of Engineering. 2. 2nd prize in non-technical event in Chendhuran college of Engineering. 3. Paper presentation in Bharathi women's college of Engineering. 4. Ethical hacking and PCB design workshop.
18.	**M. Saraswathy**	Third	1. 1st place in 100 m and 200 m relay. 2. 2nd place in javune and 400m 3. 1st in Ball badminton and Kho-Kho in Intercollege competition.
19.	**Rashmi R Rao**	Third	1. 1st prize in Paper presentation at K.S. Rangasamy college of technology. 2. 1st prize in non-technical event in Chendhuran college of Engineering. 3. 3rd prize in paper presentation at Chendhuran college of Engineering. 4. 2nd prize in Paper presentation at Bharathi women's college of Engineering. 5. 1st prize in non-technical event at Bharathi women's college of Engineering. 6. 1st Prize in English elocution (SCE).
20.	**B.R. Sai vaishnavi**	Third	1. 1st prize in Paper presentation at Chendhuran college of Engineering. 2. 2nd prize in technical quiz at Chendhuran college of Engineering. 3. Paper presentation in Bharathi women's college of Engineering.
21.	**B. Sreenidhi**	Third	1. 1st prize in Paper presentation at K.S. Rangasamy college of technology. 2. 3rd prize in paper presentation at Chendhuran college of Engineering. 3. 2nd prize in Paper presentation at Bharathi women's college of Engineering. 4. 1st prize in non-technical event at Bharathi women's college of Engineering. 5. 1st prize in circuit debugging at Bharathi women's college of Engineering.
22.	**R.M. Visalakshi**	Third	1. Paper presentation in Care group of institution 2. 2nd prize in circuit debugging at in Care group of institution 3. 1st prize in non-technical event at in Care group of institution 4. 3rd prize in Essay writing (SCE)
23.	**P. Shanmuga priya**	Third	1. Paper presentation in Care group of institution 2. 2nd prize in circuit debugging at in Care group of institution 3. 1st prize in non-technical event at in Care group of institution.
24.	**M. Dhivya**	Third	1. 1st prize in JAM at Indhira ganesan college of Engineering 2. Paper presentation in Shivani polytechnic college. 3. One day workshop in International Science Research & Development Center.

s.no	Name	Year	Achievements
25.	**K. Priyadharshini**	Third	Inplant training in BSNL.
26.	**S. Dhanush Priya**	Third	Workshop on Mobile & Wireless communication.
27.	**R. S. Neevetha**	Third	1.Inplant training in BSNL. 2. Workshop on fibre optics.
28.	**A. Neeraja Lakshmi**	Third	1.Inplant training in BSNL. 2. Workshop on fibre optics. 3.Paper presentation in Alagappa chettiyar university. 4.Paper presentation in M.Kumaraswamy college. 5.MTA workshop.
29.	**D. Indhumathi**	Third	1.Inplant training in BSNL. 2. Workshop on fibre optics. 3.Paper presentation in Alagappa chettiyar university. 4.Paper presentation in M.Kumaraswamy college. 5.MTA workshop.
30.	**Edith Rominta**	Third	Workshop on Computational neuroscience and 3D animator.
31.	**A. Abinaya**	Third	1.MTA Workshop 2.Ethical hacking workshop 3.Poster presentation in Velammal college 4.Paper presentation in ICTACT 5.Paper presentation in M.Kumaraswamy college.

s.no	Name	Year	Achievements
32.	**M. Jayasree**	Third	1.MTA Workshop 2.Ethical hacking workshop 3.Poster presentation in Velammal college 4.Paper presentation in ICTACT 5.Paper presentation in M.Kumaraswamy college.
33.	**Y. Keerthiga**	Third	1.Ethical hacking workshop 2.Paper presentation in Care group of institution.
34.	**M. Keerthana**	Third	Ethical hacking workshop
35.	**S. Parameswari**	Third	Ethical hacking workshop
36.	**M. Nasreen Banu**	Third	Ethical hacking workshop
37.	**V. Hemavathi**	Third	Ethical hacking workshop
38.	**D. Kanimozhi**	Third	Ethical hacking workshop
39.	**R. Jayalakshmi**	Third	Ethical hacking workshop
40.	**I. Bavitha**	Third	Won 3rd place in volley ball (Anna university)
41.	**R. Akalya**	Third	Ethical hacking workshop
42.	**P. Kiruthiga**	Third	1. Ethical hacking workshop. 2.Paper presentation in Care group of institution. 3.Antenna design and analysis (HFSS) workshop.
43.	**T.K.R Durgha dhevi**	Third	1. Ethical hacking workshop. 2.Paper presentation in Care group of institution. 3.Antenna design and analysis (HFSS) workshop.

s.no	Name	Year	Achievements
44.	**S. Divya**	Third	1.Ethical hacking workshop 2.Paper presentation in Care group of institution.
45.	**B. Lavanya**	Third	1.Ethical hacking workshop 2.Paper presentation in Care group of institution.
46.	**T.J. Karthick**	Third	1.MTA workshop. 2.OFC workshop
47.	**M. Jotheeswaran**	Third	1. 3D animation workshop 2. Optimization coding workshop 3. Mobile and Wireless communication workshop 4. Sensor guided robotics workshop 5. E-yantra ideas competition 6. Inplant training in UNIQ technologies 7. India Engineering Olympiad- 309th ranking all over India 8. Antenna design and analysis (HFSS) workshop.
48.	**D.P. Kishore kumar**	Third	1. 3D animation workshop 2. Optimization coding workshop 3. Mobile and Wireless communication workshop 4. Sensor guided robotics workshop 5. E-yantra ideas competition 6. India Engineering Olympiad- 396th ranking all over India 7. Antenna design and analysis (HFSS) workshop.
49.	**K. Naresh**	Third	1. Mobile and Wireless communication workshop 2. Sensor guided robotics workshop 3. E-yantra ideas competition 4. India Engineering Olympiad- 309th ranking all over India 5.Antenna design and analysis (HFSS) workshop.
50.	**N. Lathika**	Third	1.Antenna design and analysis (HFSS) workshop. 2. Brainwave robotics workshop 3.Quadbot workshop

s.no	Name	Year	Achievements
51.	**K. Iswarya Lakshmi**	Third	1.Antenna design and analysis (HFSS) workshop. 2. Brainwave robotics workshop
52.	**Dhana Priya**	Third	1.Antenna design and analysis (HFSS) workshop. 2. 1st place in wealth out of waste (SCE)
53.	**V. Deepika**	Third	1.Antenna design and analysis (HFSS) workshop. 2. 1st place in wealth out of waste (SCE)
54.	**Harinie**	Third	Antenna design and analysis (HFSS) workshop.
55.	**Charan**	Third	1. Antenna design and analysis (HFSS) workshop. 2. Brainwave robotics workshop.
56.	**Prem kumar**	Third	1. Antenna design and analysis (HFSS) workshop. 2. Brainwave robotics workshop.
57.	**Sridharan**	Third	Antenna design and analysis (HFSS) workshop.
58.	**P. Mohan raj**	Third	Brainwave robotics workshop.
59.	**B.R. Krishnan raj**	Third	Brainwave robotics workshop.

s.no	Name	Year	Achievements
60.	**S.Prakash**	Third	Paper presentation in Anna University(Trichy). 2nd prize in technical quiz at SCE (ELCOMFEST 2K15).
61.	**P. Vijayan**	Third	Paper presentation in Anna University(Trichy).
62.	**G. Preetha**	Third	Paper presentation at Care group of institution.
63.	**G. Priya**	Third	1. Ethical hacking, PCB design dotnet, satellite communication workshop.
64.	**P. Santhiya**	Third	Paper presentation in Barathidhasan institute of technology.
65.	**K. Vinothini**	Third	One day workshop in International Science Research & Development Center.
66.	**R. Sumathi**	Third	One day workshop in International Science Research & Development Center.
67.	**R. Rajadharshini**	Third	1. 16 gesture based robotics- 3 days workshop 2. 1st prize in technical quiz at SCE (ELCOMFEST 2K15). 3. 1st prize in paper presentation at SCE (ELCOMFEST 2K15). 4. 1st prize in circuit debugging at SCE (ELCOMFEST 2K15).
68.	**R. Princy sheeba**	Third	1. 16 gesture based robotics- 3 days workshop 2. 2nd prize in paper presentation at SCE (ELCOMFEST 2K15)
69.	**I. Sangeetha**	Third	1.16 gesture based robotics- 3 days workshop 2. 1st prize in non technical event at PSNA college.
70.	**K.S. Rosy rithika**	Third	16 gesture based robotics- 3 days workshop

s.no	Name	Year	Achievements
71.	S. Sagarika	Third	16 gesture based robotics- 3 days workshop
72.	P. Sowndarriya	Third	16 gesture based robotics- 3 days workshop
73.	S. Priyadharshini	Second	1.Paper presentation in NIT, Trichy. 2. Inplant training in BSNL.
74.	C. Sinduja	Second	Workshop in NIT , Trichy.
75.	B. Rizwana	Second	Workshop in NIT , Trichy.
76.	R. Reshma	Second	1.Workshop in NIT , Trichy. 2. Inplant training in BSNL.
77.	M. Shereen sanofer	Second	Workshop in NIT , Trichy.
78.	M. Sushmitha	Second	1.Workshop in NIT , Trichy. 2. Inplant training in BSNL.
79.	S. Vasim hasina	Second	1.Workshop in NIT , Trichy. 2.Inplant training in BSNL
80.	N. Nivetha	Second	1.Workshop in NIT , Trichy. 2.Inplant training in BSNL

s.no	Name	Year	Achievements
81.	Salai Gayathri	Second	1.Workshop in NIT , Trichy. 2.Inplant training in BSNL
82.	K. Shanmuga Priya	Second	Inplant training in BSNL
83.	S. Yesaswini	Second	1.Workshop in NIT , Trichy. 2.Inplant training in BSNL
84.	Sathya Priya	Second	Inplant training in BSNL
85.	Ponmozhi	Second	Paper presentation in M.Kumaraswamy college, Karur

T-KEYBOARD

ABSTRACT:

‘KEYBOARD’ is a input device which is used to give a input to the computer. We all know that because we are seeing it since our childhood, which is a a board with multiple ‘KEYS’. This paper is about the keyboard without keys . You might think how is this possible. But this paper is all about that. Nowadays, touch screen makes user to control the device much easier than using ‘KEYS’. In fields such as IT ,CSE ,etc.., the use of keyboard is high. Some may even work more than 6 hours a day. Most of the companies are making use of the same old technology for long a time. The keys of the keyboard became so hard to press which makes the employee or user to put in more pressure than a normal one. It causes some severe disorders for the users , especially in their hands. Hence, we are introducing ‘T-Keyboard’ (TOUCH SCREEN KEYBOARD) which has touch screen in the place of keys along with LCD display.

I. Working of normal Keyboard:

What's under the keys?

Pull a key off the keyboard and you can see roughly how it works. There's a little hole in the plastic base and the keyboard has a long round bar the same shape.

When you press the key, the bar pushes down through the hole to touch the contact layers below. Inside the hole, there's a little tiny piece of rubber (you can't see it in this photo) that stops the key moving down and pushes it back up when you release it. This is what gives the spring to the keys.

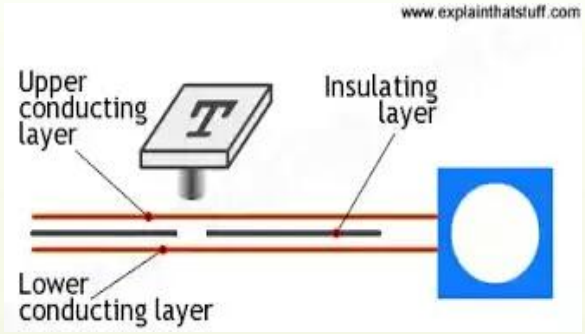
What's under the keyboard?

Take off the keyboard's bottom panel and you can see how it all works from beneath. You can see the transparent plastic contact layers that detect key presses and (through those layers) you can see the round bars poking the keys down from above. The green rectangle at the top contains three small LEDs that activate the indicator lights for "Num lock", "Caps lock", and "Scroll lock". Notice also the cable running along the inside of the case at the top of the keyboard, which carries electrical signals from the keyboard to your computer's USB port (or PS/2 port on older machines).

How do the keys press down?

This is the magic part of a keyboard. There are three separate layers of plastic that work together to detect your key presses. Two of them are covered in electrically conducting metal tracks and there's an insulating layer between them with holes in it. The dots you can see are places where the keys press the two conducting layers together. The lines are electrical connections that allow tiny electric currents to flow when the layers are pressed tight to one another by a key moving down from above. In the photo below, you can see a close-up of the underside of one key—and, if you look closely, just about see how it works. There's one set of electrical connections on the lower sheet of plastic, printed in light gray. The other set is on the upper sheet of plastic and printed in dark gray. The two sheets are kept apart by a clear plastic layer except at the holes, which is where the keys push down to make the two sheets touch.

How does it all work together?



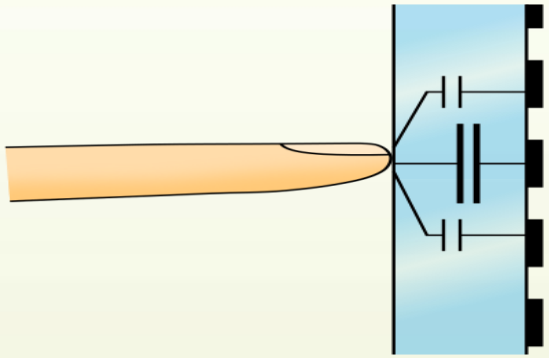
When you press a key, the top and bottom contact layers come together and the keyboard sends a signal to your computer.

How do keypads work?

TV remote controls, cellphones, push-button telephones, and all kinds of other little gadgets use a different kind of key-switch mechanism that's simpler, more compact, and cheaper to make: it's called a rubber-membrane keypad. Instead of plastic keys and contact layers, there are just two parts. On top, there's the keypad part with all the keys molded from a single piece of flexible (rubbery) plastic. The underside of each key is coated with a small patch of electrically conducting material. The second part of the keypad is a layer of electrical contacts formed directly onto a circuit board. When you press down on a key, the conducting material bridges the contacts, completes a switch, and triggers the specific circuit for that key. The problem with keypads like this is that you get oily films or dirt building up between the two layers, which can stop one or more keys from working. They also feel very "squidgy" to the touch, which makes them unsuitable for ordinary computer keyboards.

WORKING OF CAPACITIVE TOUCH SCREEN

Capacitive sensors detect anything that is conductive or has a dielectric different from that of air.

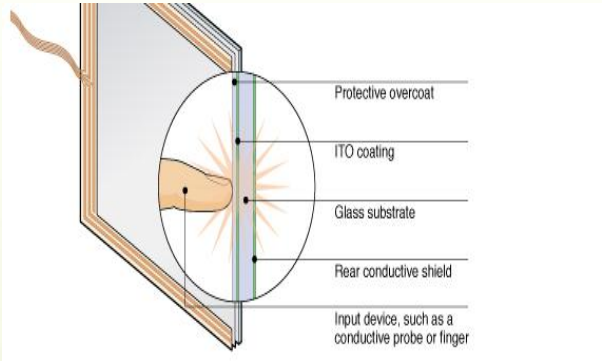


Many types of sensors use capacitive sensing, including sensors to detect and measure proximity, position or displacement, humidity, fluid level, and acceleration. Human interface devices based on capacitive sensing, such as track pads, can replace the computer mouse. Digital audio players, mobile phones, and tablet computers use capacitive sensing touchscreens as input devices. Capacitive sensors can also replace mechanical buttons. There is also a musical instrument, the Theremin, that uses capacitive sensing to allow a human player to control volume and pitch without physically touching the instrument.

Design:

Capacitive sensors are constructed from many different media, such as copper, Indium tin oxide (ITO) and printed ink. Copper capacitive sensors can be implemented on standard FR4 PCBs as well as on flexible material. ITO allows the capacitive sensor to be up to 90% transparent (for one layer solutions, such as touch phone screens). Size and spacing of the capacitive sensor are both very important to the sensor's performance. In addition to the size of the sensor, and its spacing relative to the ground plane, the type of ground plane used is very important. Since the parasitic capacitance of the sensor is related to the electric field's (e-field) path to ground, it is important to choose a ground plane that limits the concentration of e-field lines with no conductive object present.

Designing a capacitance sensing system requires first picking the type of sensing material (FR4, Flex, ITO, etc.). One also needs to understand the environment the device will operate in, such as the full operating temperature range, what radio frequencies are present and how the user will interact with the interface.



There are two types of capacitive sensing system: mutual capacitance,[3] where the object (finger, conductive stylus) alters the mutual coupling between row and column electrodes, which are scanned sequentially;[4] and self- or absolute capacitance where the object (such as a finger) loads the sensor or increases the parasitic capacitance to ground. In both cases, the difference of a preceding absolute position from the present absolute position yields the relative motion of the object or finger during that time.

Circuit design:

Capacitance is typically measured indirectly, by using it to control the frequency of an oscillator, or to vary the level of coupling (or attenuation) of an AC signal.

The design of a simple capacitance meter is often based on a relaxation oscillator. The capacitance to be sensed forms a portion of the oscillator's RC circuit or LC circuit. Basically the technique works by charging the unknown capacitance with a known current. (The equation of state for a capacitor is i = C dv / d t . This means that the capacitance equals the current divided by the rate of change of voltage across the capacitor.) The capacitance can be calculated by measuring the charging time required to reach the threshold voltage (of the relaxation oscillator), or equivalently, by measuring the oscillator's frequency. Both of these are proportional to the RC (or LC) time constant of the oscillator circuit . The primary source of error in capacitance measurements is stray capacitance, which if not guarded against, may fluctuate between roughly 10 pF and 10 n F. The stray capacitance can be held relatively constant by shielding the (high impedance) capacitance signal and then connecting the shield to (a low impedance) ground reference. Also, to minimize the unwanted effects of stray capacitance, it is good practice to locate the sensing electronics as near the sensor electrodes as possible.

ADVANTAGES OF CAPACITIVE TOUCH SCREEN

- Visibility good even in sunlight
- Not affected by dirt, grease, moisture
- Multi touch support available
- **User doesn’t need to apply any force**
- More responsive than resistive touch screen
- capacitive touchscreen has glass layer instead of plastic, it looks brighter and sharper
- Highly touch sensitive and doesn’t need a stylus

WORKING OF T-KEYBOARD

Its look like normal glass slab which is in black in color. It contains LCD display where the keys of the keyboard were displayed. Using capacitive touch screen technology we planned to provide touch sensing area in the palace of keys only. So that the misspelling can be reduced. Comparing to the normal keyboard, the force given by the user to give a input is reduced. So that the disorders which is caused by the normal keyboard to users can be overcome using our T-KEYBOARD.

Special features

- **‘Themes’ :** T-Keyboard is made of LCD display with capacitive touch screen technology.
- We can change the background of the keyboard using software installed in the computer. We can decorate the keyboard with themes according to your computer themes.
- T-Keyboard makes the laptops way too smaller because it doesn’t have any keys and circuit boards which is in the normal keyboard
- While switching ON the computer, the border of the keys blinks to provide a user friendly atmosphere
- T-Keyboard weighs less than the normal qwerty keyboard
- In future, gesture typing in the android keyboard can also be used in our T-Keyboard

M.Mohamed Yasir,
A.Mohamed Ibrahim
II year , ECE A

WIRELESS CHARGING OF MOBILE PHONES

Wireless Charging

With mobile phones becoming a basic part of life, the recharging of mobile phone batteries has always been a problem . The mobile phones vary in their talk time and battery stand by according to their manufacturer and batteries. All these phones irrespective of their manufacturer and batteries have to be put to recharge after the battery has drained out . The main objective of their manufacturer 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 use of 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 is 2.45GHz. There are minimal additions, which have to be made in the mobile handsets, which are the addition 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 mobile phones is eliminated and makes charging universal. Thus the more you talk, the more is your mobile phone charged! With this proposal the manufacturers would be able to remove the talk time and battery stand by from their phone specifications!

AKSHARAA.S, AKCHAYAAH.C
II YEAR, ECE A

The technology

- Qi is an established, evolving wireless charging standard that supports inductive and resonant charging, while ensuring full backward compatibility with all Qi devices.
- Qi is capable of scaling from less than 1 watt to over 1,000 watts of power, enabling countless products and applications.
- Qi fully supports the capability to charge multiple devices at once with full spatial freedom.

REDTACTON- A INNOVATIVE ASPECT IN NETWORKING

The new Idea of Redtacton which makes use of Human body as a communication network by the name HAN(Human Area Network). RedTacton is a break-through technology that, uses the surface of the human body as a safe, high speed network transmission path at speeds up to 10 Mbps. RedTacton involves initiating communication with a touch that could result in a wide range of actions in response. It does not rely on electromagnetic or a light wave to transmit data.

Technically, it is completely distinct from wireless and infrared technology. Using a new super-sensitive photonic electric field sensor, it can achieve duplex communication over human body. Redtacton has its unique new functional features and enormous potential, Redtacton has different applications and further it can be developed. Technology is making many things easier; I can say that this concept is standing example for that. So far we have seen Local Area Network(LAN), Mass Area Network(MAN), Wide Area Network (MAN), INTERNET & many more but here is new concept of “REDTACTON ”which makes the human body as a communication network(HAN).

PRAKADHEESH

III YEAR, ECE B

ANY SONG

A poor woman and a rich woman are talking about music.

The poor woman says she has studied music and can name a song with any name in it.

The rich woman says "OK, if you can find a song with my son's name in it, I will give you a thousand dollars. His name is Demarcus-Jabari."

The poor woman gives her answer and is instantly $1,000 richer.

What was her answer?

Solution:
"Happy Birthday."

CONTINUOUS GLUCOSE MONITERING

Continuous Glucose Monitoring (CGM) is an FDA-approved device that provides real-time glucose readings, throughout the day and night, allowing people with diabetes to see their glucose levels and track how quickly they're increasing or decreasing. It is the one type of the wearable body network system. CGM has been an established technology since 2006 and performance and advances throughout the years have made today's system increasingly accurate. CGM systems use a tiny sensor inserted under the skin to check glucose levels in tissue fluid. The sensor stays in place for several days to a week and then must be replaced.

The FDA-approved Medtronic Guardian® REAL-Time Continuous Glucose Monitoring System alerts diabetes patients to high and low glucose levels, allowing them to better manage their diabetes.

A transmitter sends information about glucose levels via radio waves from the sensor to a pager like wireless monitor. The user must check blood samples with a glucose meter to program the devices. Because currently approved CGM devices are not as accurate and reliable as standard blood glucose meters, users should confirm glucose levels with a meter before making a change in treatment. A typical CGM provides up to as many as 288 glucose readings per day (once every 5 minutes). CGM does not completely eliminate the need for blood glucose meter readings but provides additional information for more informed treatment decisions and improved glucose control. CGM can be used by people with type-1 or type-2 who are concerned with their diabetes management. To successfully managed diabetes, a monitoring a system is needed to consistently check the glucose levels.

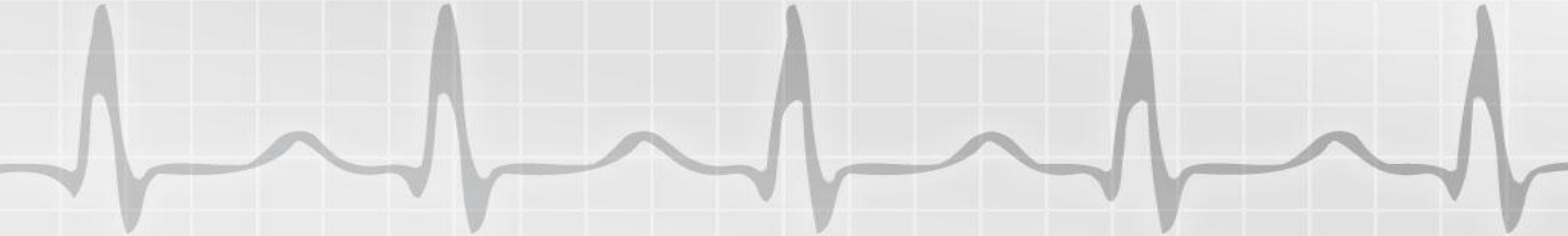
S. GOKULAVANI , J.L.LINCIY VANDHAN
II YEAR, ECE A

Total deaths from diabetes are projected to rise by more than 50% in the next 10 years. Most notably, they are projected to increase by over 80% in upper-middle income countries.

COMPUTER MOUSE IMPLEMENTATION USING OBJECT DETECTION AND IMAGE PROCESSING

There are so many devices developed to help the physical world interact with the digital world but only few are there for gesture recognition made by body movements. Gesture recognition technology is already developed. In this paper three technologies are mainly used: object detection, image processing and colour recognition for reducing the bridge between the physical world and the digital world by using Sixth sense technology. Sixth sense technology is a set of wearable devices that acts as a gestural interface between the physical world and the digital world. The system recognizes a user's free hand gestures as well as icons/symbols drawn in the air with the fingers. The aim of this paper is to move the mouse cursor on the screen without using hardware such as a mouse and only by moving the cursor through finger movements i.e. the process of gesture recognition. The implementation of the computer mouse is through the fingers by image grabbing using Sixth Sense Technology which is finally processed in MATLAB without using gesture recognition.

S.PRAKASH P.VIJAYAN
III YEAR ECE B



MEMS TECHNOLOGY

I. Introduction

Micro-electro -mechanical systems (mems) is the technology that in its most general form can be defined as miniaturized mechanical and electro-mechanical elements i.e., devices and structures , that are made using the techniques of micro fabrication.

II. Structure of mems

The critical physical dimensions of mems devices can Vary from well below 1 micron (i.e, 10^-6metre) on the lower end several millimetres to micrometres . The types of mems devices can vary from relatively simple structures having no moving elements ,to extremely complex electro mechanical systems with multiple moving elements under the control of integrated micro electronics .

III. Development of mems

Over the past several decades mems researchers and developers have demonstrated and extremely large number of micro sensors for almost every possible sensing modality including temperature, pressure , inertial forces, chemical, magnetic fields, radiation,etc. Remarkably, many of these micro machined sensors have demonstrated performances exceeding those of their macro scale counterparts.

Not only is the performance of mems devices exceptional, but their method of production leverages the same batch fabrication techniques used in the integrated circuit industry-which can translate into cost effective device production as well as many other benefits not surprisingly, silicon based discrete micro sensors were quickly commercially exploited and the Markets for these devices continue to grow at the rapid rate.

IV. Biomedical applications using mems technology

Capsule endoscope is a technology that uses a tiny wireless camera, located in a pill-size capsule,to take pictures of the digestive track. The capsule is swallowed by the patient and takes photographs of the inside of the esophagus,stomach and small intestine as it travels through the GI

V. Micro reed sensor

Major component in pill camera is micro reed sensor. Why mems micro-reed sensor: The pill's battery life is only a few hours. The designers have developed a solution to this by using the micro-miniature reed switch in conjunction with a magnet. The reed sensor is a excellent choice because it can operate reliably from -50˚C to 150˚C

VI. Applications

- Crone's diseases.
- Mal –absorption disorder.
- Tumours of intestine and vascular disorders.
- Gastrointestinal reflex.
- Small bowel injury.

VII. Advantages

- Small size.
- High quality images.
- No side affects and complications.
- Efficient than endoscopy.

VIII. Disadvantages

- It is very expensive and not reusable.
- It cannot be controlled once it get ingested.

S.MEENAKSHI, G.JESEEKA
II YEAR, ECE A

DIGITAL JEWELRY

The latest computer craze has been to be able to wear wireless computers. The Computer Fashion Wave, “Digital Jewelry” looks to be the next sizzling fashion trend of the technological wave.

The combination of shrinking computer devices and increasing computer power has allowed several companies to being producing fashion jewelry with embedded intelligence. Today’s, manufacturers place millions of transistors on a microchip, which can be used to make small devices that store tons of digital data… The whole concept behind this is to be able to communicate to others by means of wireless appliances. The other key factor of this concept market is to stay fashionable at the same time. Digital Jewelry is the fashion jewelry with embedded intelligence. “Digital Jewelry” can help you solve problems like forgotten passwords and security badges. “Digital Jewelry” is a nascent catchphrase for wearable ID devices that contain personal information like passwords, identification, and account information. They have the potential to be all-in-one replacement for your device’s license, key chain, business cards, credit cards, health insurance card, corporate security badge, and loose cash. They can also solve a common dilemma of today’s wired world - the forgotten password. By the end of the decade, we could be wearing our computer instead of sitting in-front of them.

S.GOKULAVANI, T. HARSHINYA
II YEAR, ECE A

THE PRESENT STATUS

Tax structure of India

- **What are doing?**

  Business

  Tax: PAY PROFESSIONAL TAX

- **What are you doing in business?**

  Selling the goods

  Tax: PAY SALES TAX

- **From where are you getting goods?**

  From other area/ state/abroad

  Tax: PAY CENTRAL TAX CUSTOM DUTY &OCTROI &NOW LBT & LPT !

- **What are you getting in selling goods?**

  Profit

  Tax : PAY INCOME TAX !

- **How do you distribute profit ?**

  By the way of dividend

  Tax : PAY DIVIDEND DISTRIBUTION TAX

- **Where are you manufacturing the goods ?**

  Factory

  Tax : PAY EXCISE DUTY !

- **Do you have office / warehouse/factory ?**

  Yes.

  Tax : PAY MUNICIPAL & FIRE TAX !

- **Do you have staff ?**

  Yes

  Tax : PAY STAFF PROFFESIONAL TAX !

- **Doing business in millions?**

  Yes

  Tax : PAY TURNOVER TAX !

  No

  Tax : Then pay MINIMUM ALTERNATE TAX (MAT)

- **Are you taking out over 25,000 cash from bank ?**

  Yes for Salary

  Tax : PAY CASH HANDLING TAX !

- **Where are you lodging your client ?**

  Hotel

  Tax : PAY LUXURY TAX !

- **Are you going out of station for business ?**

  Yes

  Tax : PAY FRINGE BENEFIT TAX !

- **Have you taken / given any services ?**

  Yes

  Tax : PAY SERVICE TAX !

- **How come you got such a big a amount ?**

  Gift on birthday

  Tax : PAY GIFT TAX !

- **Do you have any wealth ?**

  Yes

  Tax : PAY WEALTH TAX !

- **To reduce tension, for entertainment , where are you going ?**

  Cinema / Resort

  Tax : PAY ENTERTAINMENT TAX !

- **Have you purchased house ?**

  Yes

  Tax : PAY STAMP DUTY & REGISTRATIOIN FEE !

- **How you travel?**

  Bus

  Tax : PAY SURCHARGE !

- **INDIAN : Can I die now ?**

  Wait. We are about to launch the FUNERAL TAX !!!

VASIM HASINA.S
II YEAR,ECE B

HEAD TRANSPLANTATION

Do you believe me if I say you could live in this world even after your death?..... of course it has become true by the Italian surgeon Dr.sergio Canavero, who has conducted head transplantation in monkey and going to implement the same in HUMAN BEING by the year 2017.

"Life is not worth living until you have someone to die for and life is not worth dying until you have someone to die for"

Valery Spirdinov,a 30 years old Russian who has a degenerative muscle condition wants to become the first person to undergo head transplantation. It would be performed by the Italian neurosurgeon who believes to have 90 percent chances of success. Since the greatest hurdle is to restore the connection to spinal cord because without this the brain have no connection to the new body he hopes his "Gemini" protocol-combining polyethylene glycol to fuse nerves with electrical stimulation of spinal cord will allow the patient to perform tasks. Hope it will result in a great revolution ."I can think of nothing better than being able to give a healthy organ to improve the life of another person."

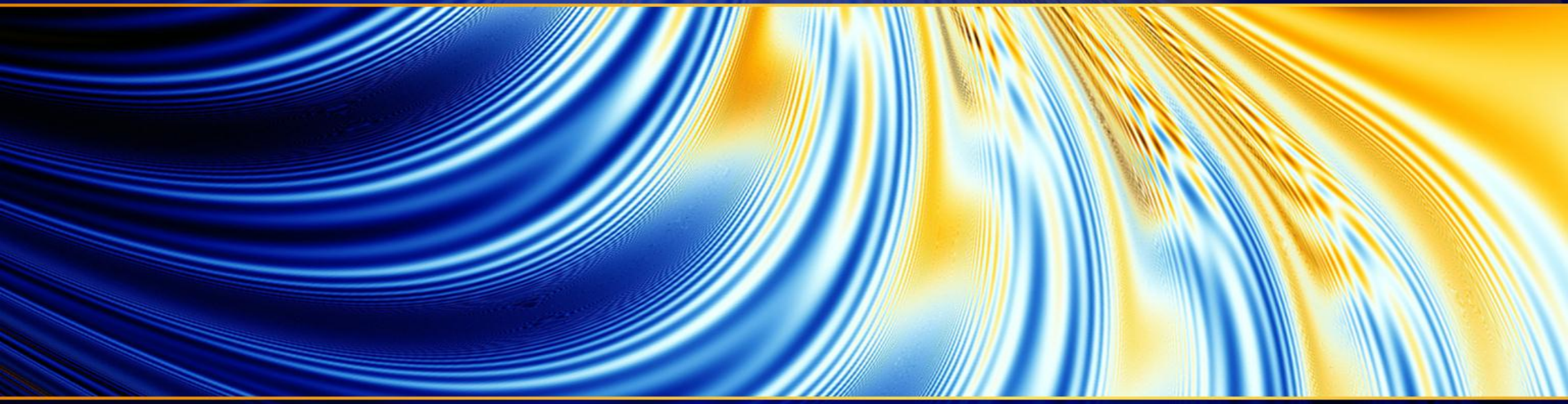
S.VASIM HASINA

II YEAR ECE B

Find a 10-digit number where the first digit is how many zeros in the number, the second digit is how many 1s in the number etc. until the tenth digit which is how many 9s in the number.

Solution:

6210001000



Spectrum Management Techniques using Cognitive Radios

Spectrum has been a very valuable resource in wireless communication systems. The available electromagnetic radio spectrum is getting crowded day by day due to manipulation in wireless devices and applications. Underutilization of Spectrum has become a major source of concern for each network user. The growing demand of wireless applications has put a lot of constraints in the usage of available radio spectrum .which is limited and precious resource. Also, it has been found that the allocated spectrum is underutilized due to spectrum static allocation. Moreover the conventional approach to manage spectrum is very inflexible. Present wireless networks are characterized by such a policy, where governmental agencies assign this spectrum on a long term basics to license holders. With most of these sort of allocations it is hard to find vacant bands to either deploy new services or to enhance existing ones. In order to overcome this situation, a new means for improved utilization of the spectrum creating opportunities for dynamic spectrum access is preferred. This issue can be solved using Cognitive Radio (CR) technology. “Spectrum Management Techniques using Cognitive Radios” has the efficiency and effectiveness of the system when compared to conventional mode of operations. Cognitive Radio Technology Spectrum Management Techniques namely Spectrum Sensing, Spectrum Decision-Making, Spectrum Sharing and Spectrum Mobility makes Cognitive Radio Technology an asset to the network domain and easily solves issues like interference, noise and underutilization.

STEVE ARUL.V
III YEAR, ECE B

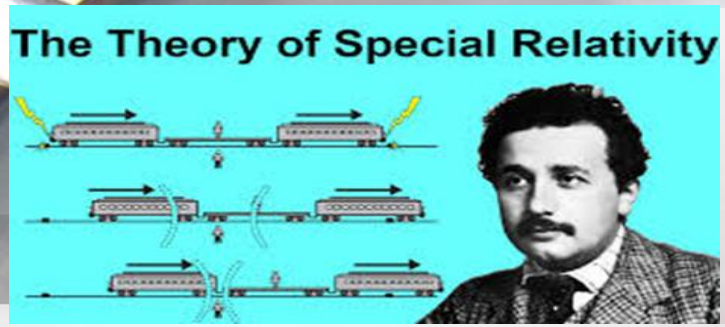
TIME TRAVEL

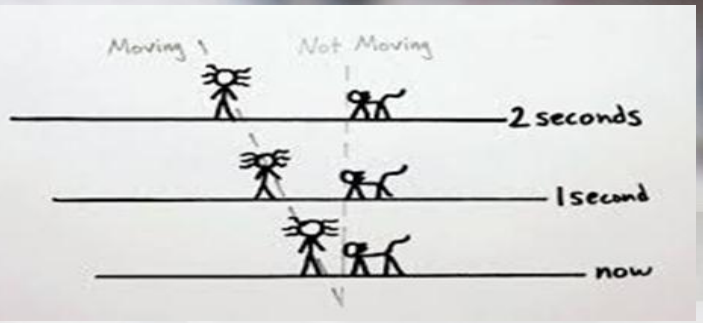
Yes, Time Travel Is Possible!

Time travel is little mysteries rates the plausibility of popular science fiction concepts. We all love to travel to our past and future as portrayed in movies. It is mind-boggling to think about time travel. What if you went back in time and prevented your father and mother from meeting? You would prevent yourself from ever having been born! But then if you hadn't been born, you could not have gone back in time to prevent them from meeting. Is time travel really possible???The answer is from a pure physics point of view, the future is not at all impossible and in fact happens all the ...time."We can travel at different rates to the future," said Seth Lloyd, a professor of quantum mechanical engineering at the Massachusetts Institute of Technology."To go into the past and mess around with it, that's more controversial.".

We all travel in time. During the last year, I've moved forward one year and so have you. Another way to say that is that we travel in time at the rate of 1 hour per hour. But the question is, can we travel in time faster or slower than "1 hour per hour"?Or can we actually travel backward in time, going back, say 2 hours per hour, or 10 or 100 years per hour?

The great 20th century scientist Albert Einstein developed a theory called Special Relativity through which we can understand about time dilation. Time dilation basically refers to the idea that time passes more slowly for a moving clock than it does for a stationary clock. This is why the clocks on the International Space Station tick just a little bit more slowly than clocks on Earth do. Since the space station is moving so fast and is less affected by less gravity, time moves more quickly. It's also why no clock on the Earth is perfectly accurate, since the effect of time dilation means that time moves more slowly closer to the planet's surface. According to the special theory, the faster an object moves relative to another object, the slower it experiences time. We all know that the Earth rotates itself and revolve around the Sun. So, you should accept that object and life on the earth is also rotates along the earth

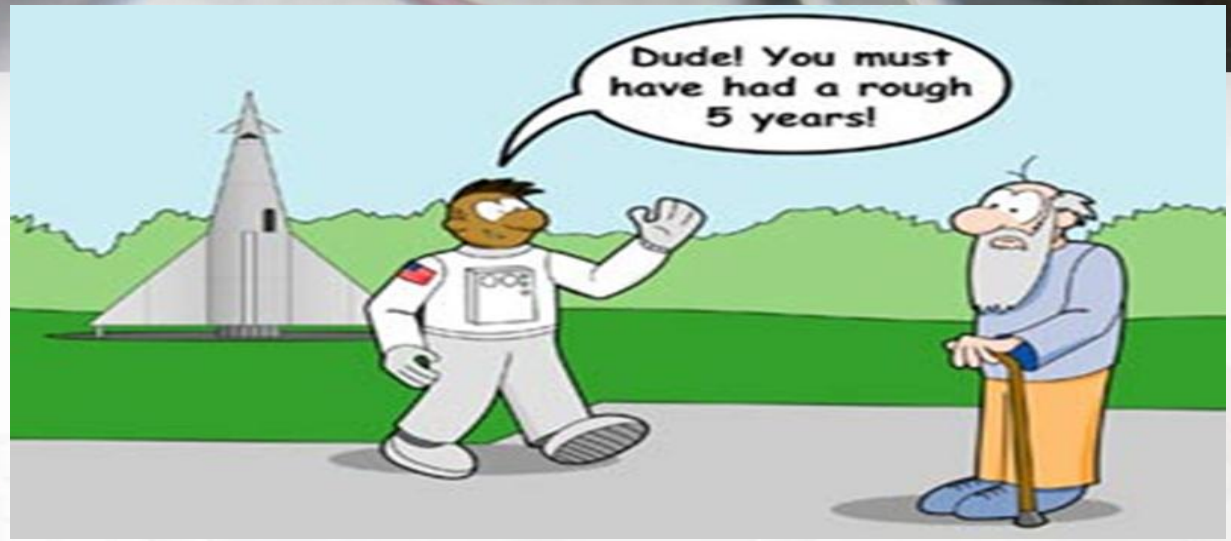




The greater the gravity and the greater the velocity, the greater the difference in time. This idea of Special Relativity is very hard to imagine because they aren't about what we experience in everyday life, but scientists have confirmed them. This theory says that space and time are really aspects of the same thing—space-time. There's a speed limit of 300,000 kilometers per second (or 186,000 miles per second) for anything that travels through space-time, and light always travels the speed limit through empty space.

Special Relativity also says that a surprising thing happens when you move through space-time, especially when your speed relative to other objects is close to the speed of light. Time goes slower for you than for the people you left behind. You won't notice this effect until you return to those stationary people.

Say you were 15 years old when you left Earth in a spacecraft traveling at about 99.5% of the speed of light (which is much faster than we can achieve now), and celebrated only five birthdays during your space voyage. When you get home at the age of 20, you would find that all your classmates were 65 years old, retired, and enjoying their grandchildren! Because time passed more slowly for you, you will have experienced only five years of life, while your classmates will have experienced a full 50 years.



So, if your journey began in 2003, it would have taken you only 5 years to travel to the year 2053, whereas it would have taken all of your friends 50 years. In a sense, this means you have been time traveling. This is a way of going to the future at a rate faster than 1 hour per hour. Time travel of a sort also occurs for objects in gravitational fields. Einstein had another remarkable theory called General Relativity, which predicts that time passes more slowly for objects in gravitational fields (like here on Earth) than for objects far from such fields. So there are all kinds of space and time distortions near black holes, where the gravity can be very intense.

In the past few years, some scientists have used those distortions in space-time to think of possible ways time machines could work. Some like the idea of "worm holes," which may be shortcuts through space-time. No wormhole has ever been discovered, and even if it was, it would be far too small for scientists to manipulate for the purposes of time travel – measuring just a billion-trillion-trillionth of a centimeter across. They also pose a significant risk, bringing with them the threat of sudden collapse, high levels of radiation and contact with dangerous exotic matter. In the same way that excessive feedback between a microphone and a speaker will fry the equipment, a wormhole is damaged by the radiation feedback it generates. "As soon as the wormhole expands, natural radiation will enter it, and end up in a loop," he explains. "So although tiny wormholes do exist, and it may be possible to inflate one someday, it won't last long enough to be of any use as a time machine." This and other ideas are wonderfully interesting, but we don't know at this point whether they are possible for real objects. Still the ideas are based on good, solid science. In all time travel theories allowed by real science, there is no way a traveler can go back in time to before the time machine was built. In 140 million years, a day on Earth is expected to last 25 hours. With these ideas try to build a time machine, so that we can go back to past and check it out.

V.DEEPIKA,
ECE-A, III YEAR

DR . A . P . J . ABDUL KALAM

Message From People's President

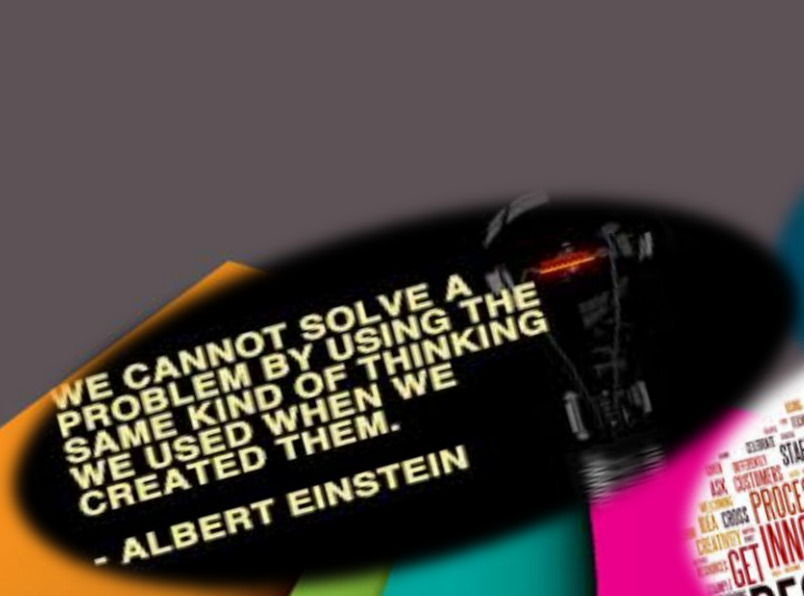
- *"My message, especially to young people is to have courage to think differently, courage to invent, to travel the unexplored path, courage to discover the impossible and to conquer the problems and succeed."*
- *"Dream, dream, dream! Conduct these dreams into thought, and then transform them into action."*
- *"Dream is not that which you see while sleeping. It is something that does not let you sleep."*
- *"You have to dream before your dreams can come true."*
- *"If a country is to be corruption free and become a nation of beautiful minds, I strongly feel there are three key societal members who can make a difference. They are the father, the mother and the teacher."*

- *“Failure will never overtake me if my definition to succeed is strong enough.”*
- *“Don’t take rest after your first victory because if you fail in second, more lips are waiting to say that your first victory was just luck.”*
- *“Man needs difficulties in life because they are necessary to enjoy the success.”*
- *“It is very easy to defeat someone, but it is very hard to win someone.”*
- *“All of us do not have equal talent. But, all of us have an equal opportunity to develop our talents.”*
- *“Without your involvement you can’t succeed. With your involvement you can’t fail.”*

- *To succeed in your mission, you must have single-minded devotion to your goal."*
- *"We should not give up and we should not allow the problem to defeat us."*
- *"If you want to shine like a sun. First burn like a sun."*
- *"Look at the sky. We are not alone. The whole universe is friendly to us and conspires only to give the best to those who dream and work."*
- *"All Birds find shelter during a rain. But Eagle avoids rain by flying above the Clouds. Problems are common, but attitude makes the difference."*
- *"Great dreams of great dreamers are always transcended.*

C.PRIYADHARSHINI
III YEAR,ECE B

INNOVATIONS



LASER KEYBOARD

AN ELECTRO-ADHESIVE BULLETIN

REMOTE ENTRYWAY LOCK SYSTEM

MAGNETIC LIGHT SWITCH COVER

BLIND-SPOT FREE REAR VIEW MIRROR

SKY WI-FI SMART PEN

SOLAR-POWERED CAMPING TENT

3DOODLER: THE 3D PRINTING PEN

CONUNDRUM FEST

-INDHUMATHI DHARMALINGAM

&

-R.S.NEEVETHA

✓THERE ARE NO EXTRA PIECES IN THE UNIVERSE. EVERYONE IS HERE BECAUSE HE OR SHE HAS A PLACE TO FILL, AND EVERY PIECE MUST FIT ITSELF INTO THE BIG JIGSAW PUZZLE.

1)FIND A 10-DIGIT NUMBER WHERE THE FIRST DIGIT IS HOW MANY ZEROS IN THE NUMBER, THE SECOND DIGIT IS HOW MANY 1S IN THE NUMBER ETC. UNTIL THE TENTH DIGIT WHICH IS HOW MANY 9S IN THE NUMBER.

SOLUTION: **6210001000**

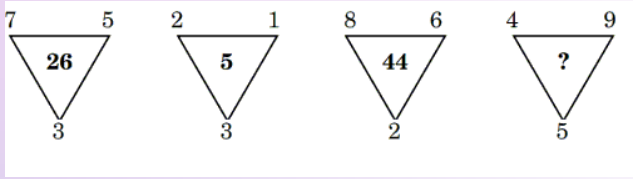
2) WHAT IS UNIQUE ABOUT 8549176320 ?

SOLUTION: IT IS THE DIGITS 0 TO 9 IN ALPHABETICAL ORDER.

3) FIND A NUMBER WITH ITS LETTERS IN ALPHABETICAL ORDER.

SOLUTION: FORTY. IT IS THE ONLY NUMBER WE KNOW OF IN ENGLISH WITH ITS LETTERS IN ALPHABETICAL ORDER. AND THAT IS THE CORRECT SPELLING.

4) WHAT IS THE MISSING NUMBER IN TRIANGLE FOUR?



SOLUTION: 29

5) A PEARL NECKLACE HAS 33 PEARLS WITH THE LARGEST AND MOST VALUABLE IN THE MIDDLE.
STARTING FROM ONE END, EACH SUCCESSIVE PEARL IS WORTH $100 MORE THAN THE ONE BEFORE (UP TO THE MIDDLE ONE), BUT STARTING FROM THE OTHER END EACH PEARL IS WORTH $150 MORE THAN THE ONE BEFORE, UP TO THE BIG PEARL. THE WHOLE NECKLACE IS WORTH $65 000. WHAT IS THE VALUE OF THE MIDDLE PEARL?

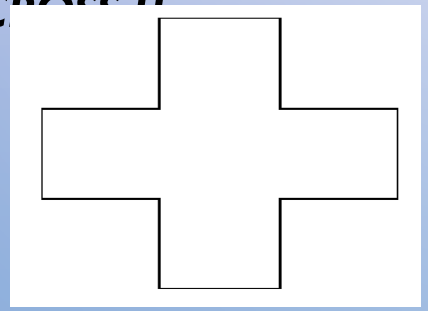
SOLUTION: ***THE VALUE OF THE CENTRAL PEARL IS $3000. THE PEARL AT ONE END (FROM WHICH THEY INCREASED IN VALUE BY $100): $1400. THE PEARL AT THE OTHER END: $600.***

5) TAKE FROM A PACK OF CARDS ALL THE ACES, KINGS, QUEENS AND JACKS. ARRANGE THEM IN A 4 × 4 SQUARE SO THAT EVERY ROW, COLUMN AND DIAGONAL CONTAINS ONE CARD OF EACH VALUE (A,J,Q,K) AND ONE CARD OF EACH SUIT (HEART, SPADE, DIAMOND, CLUB).

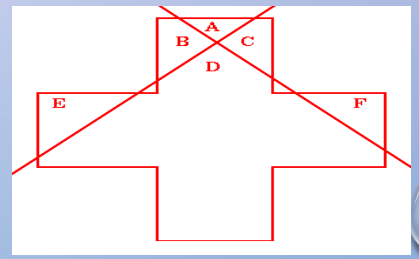
SOLUITON:

A♠	J♦	K♣	Q♥
Q♣	K♥	J♠	A♦
J♥	A♣	Q♦	K♠
K♦	Q♠	A♥	J♣

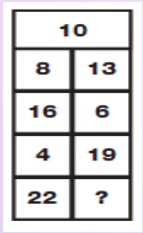
6) HERE IS AN ORDINARY CROSS. YOU ARE ALLOWED TO MAKE TWO STRAIGHT CUTS ACROSS IT



SOLUTION:



7)WHICH NUMBER REPLACES THE QUESTION MARK?



10	
8	13
16	6
4	19
22	?

SOLUTION: 2. STARTING WITH THE 10 AT THE TOP, ONE SET OF NUMBERS INCREASES BY 3 EACH TIME, WRITTEN IN ALTERNATE BOXES AS YOU MOVE DOWN THE DIAGRAM, AND THE OTHER SET OF NUMBERS DECREASES BY 2, WRITTEN IN THE BOXES REMAINING.

8) WHAT DO YOU GET IF YOU ADD 3 TO 300 FIVE TIMES?

SOLUTION: 303 , 303 , 303 , 303 , 303

9) FIND THREE POSITIVE WHOLE NUMBERS THAT HAVE THE SAME ANSWER ADDED TOGETHER OR WHEN MULTIPLIED TOGETHER.

SOLUTION: *1,2, & 3. 1 X 2 X 3 = 6 AND 1 + 2 + 3 = 6*

10) WHEN DEEPAK WAS SIX YEARS OLD HE HAMMERED A NAIL INTO HIS FAVORITE TREE TO MARK HIS HEIGHT. FIVE YEARS LATER AT AGE ELEVEN , DEEPAK RETURNED TO SEE HOW MUCH HIGHER THE NAIL WAS. IF THE TREE GREW BY TEN INCHES EACH YEAR, HOW MUCH HIGHER WOULD THE NAIL BE?

SOLUTION: *THE NAIL WOULD BE AT THE SAME HEIGHT SINCE TREES GROW AT THEIR TOPS.*

11)THERE ARE 100 STATEMENTS.
1ST ONE SAYS : AT LEAST ONE IS WRONG.
2ND ONE SAYS : AT LEAST TWO ARE WRONG.
3RD ONE SAYS : AT LEAST THREE ARE WRONG.
4TH ONE SAYS : AT LEAST FOUR ARE WRONG.
AND SO ON.100TH ONE SAYS : AT LEAST 100 ARE WRONG.
HOW MANY STATEMENTS ARE ACTUALLY WRONG AND HOW MANY ACTUALLY RIGHT ?

SOLUTION:

100TH STATEMENT IS DEFINITELY WRONG BECAUSE IT SAYS AT LEAST 100 ARE WRONG. BUT IF THAT IS CORRECT, THEN 100 STATEMENT ITSELF CANNOT BE RIGHT.
=> 100TH STATEMENT IS WRONG AND
=> 1ST STATEMENT IS CORRECT.
99TH STATEMENT CANNOT BE CORRECT BECAUSE IF IT WERE CORRECT, THEN TWO STATEMENTS WOULD BECOME CORRECT (1ST AND 99TH ITSELF.)
BUT 99TH STATEMENT SAYS THAT ATLEAST 99 ARE WRONG.
=> 99TH IS WRONG AND
=> 2ND IS CORRECT. CALCULATING SO ON...
50 STATEMENTS ARE RIGHT (THE FIRST 50 ONES)
REMAINING 50 STATEMENTS ARE WRONG.

12)HOW MANY SQUARES ARE ON A CHESS BOARD?

SOLUTION:

IF YOU THOUGHT THE ANSWER IS 64, THINK AGAIN!
A 1×1 SQUARE CAN BE PLACED ON THE CHESS BOARD IN 8 HORIZONTAL AND 8 VERTICAL POSITIONS, THUS MAKING A TOTAL OF 8 X 8 = 64 SQUARES. LET'S CONSIDER A 2×2 SQUARE. THERE ARE 7 HORIZONTAL POSITIONS AND 7 VERTICAL POSITIONS IN WHICH A 2×2 SQUARE CAN BE PLACED. WHY? BECAUSE PICKING 2 ADJACENT SQUARES FROM A TOTAL OF 8 SQUARES ON A SIDE CAN ONLY BE DONE IN 7 WAYS. SO WE HAVE 7 X 7 = 49 2×2 SQUARES. SIMILARLY, FOR THE 3×3 SQUARES, WE HAVE 6 X 6 = 36 POSSIBLE SQUARES. SO HERE'S A BREAK DOWN.

1×1 8 X 8 = 64 SQUARES
2×2 7 X 7 = 49 SQUARES
3×3 6 X 6 = 36 SQUARES
4×4 5 X 5 = 25 SQUARES
5×5 4 X 4 = 16 SQUARES
6×6 3 X 3 = 9 SQUARES
7×7 2 X 2 = 4 SQUARES
8×8 1×1 = 1 SQUARE
1^2 + 2^2 + 3^2 + . . . N ^2
TOTAL = 64 + 49 + 36 + 25 + 16 + 9 + 4 + 1 = 204 SQUARES

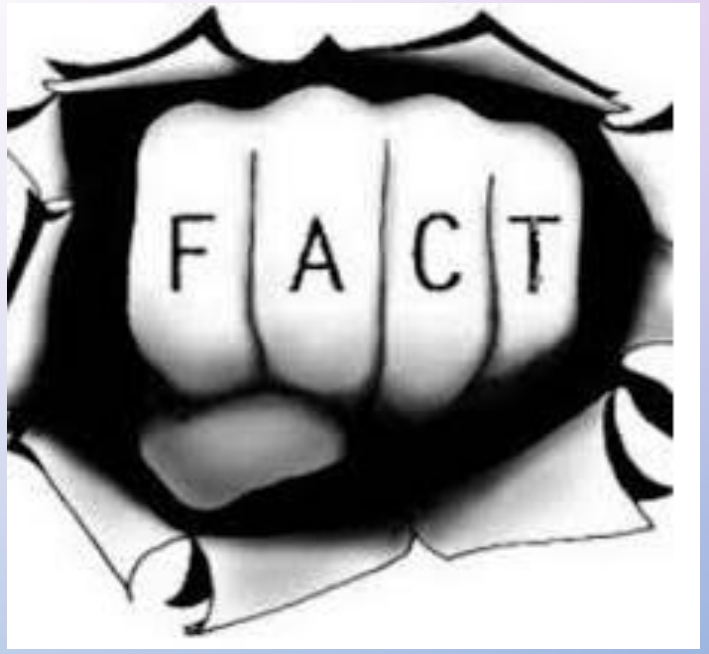
13)YOU HAVE TWO SAND TIMERS WITH YOU. ONE CAN MEASURE 7 MINUTES AND THE OTHER SAND TIMER CAN MEASURE 11 MINUTES. THIS MEANS THAT IT TAKES 7 MINUTES FOR THE SAND TIMER TO COMPLETELY EMPTY THE SAND FROM ONE PORTION TO THE OTHER. YOU HAVE TO MEASURE 15 MINUTES USING BOTH THE TIMERS. HOW WILL YOU MEASURE IT ?

SOLUTION:

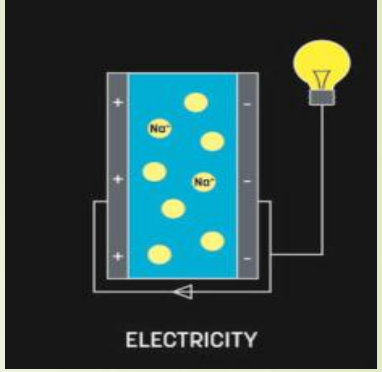
MATHEMATICALLY 7 MINUTES SAND TIMER FINISHED. TIME REMAINING IN 11 MINUTES TIMER – 4 MINUTES. REVERSING THE 7 MINUTES TIMER – 4 MINUTES WILL ELAPSE. 3 MINUTES WILL LEFT. ONCE 11 MINUTES GETS OVER REVERSE THE 11 MINUTES TIMER AGAIN TO USE THAT 3 MINUTES. 8 MINUTES LEFT. NOW REVERSE 7 MINUTES TIMER TO MEASURE 7+8 = 15 MINUTES.

CUE CORNER
-INDHUMATHI DHARMALINGAM

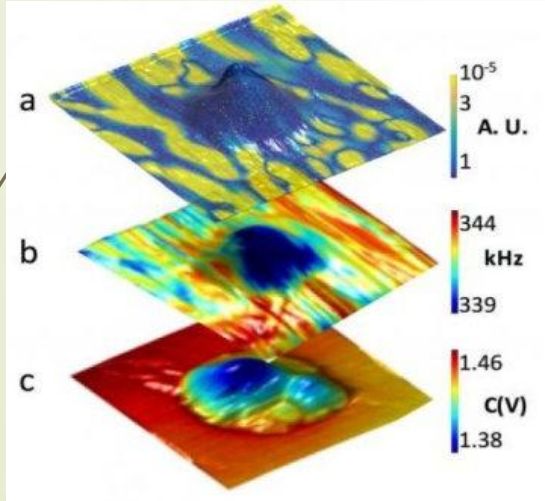
- *GIVEN A CHOICE BETWEEN THEIR WORLDVIEW AND THE FACTS, IT'S ALWAYS INTERESTING HOW MANY PEOPLE TOSS THE FACTS*



Super condenser stores heat as electricity

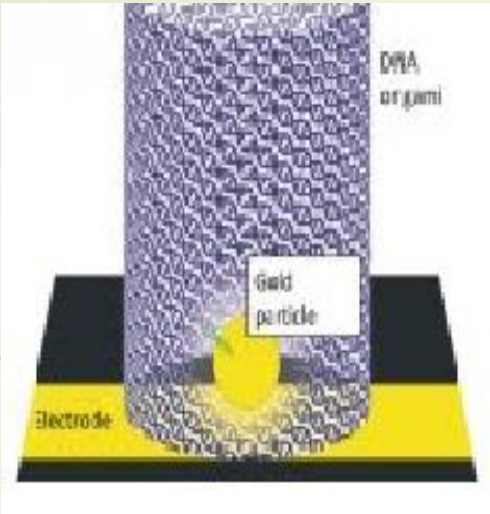


A supercondenser is energy storage: a type of battery that consists of an electrolyte of charged particles ions between two electrodes. The charge is stored next to the electrodes, most often in carbon nanotubes. one end is warm and the other cold, the ions rush towards the cold side and an electric current arises. The thermoelectric effect is used to make electricity of heat



Replacement for silicon devices looms big with new discovery

Everyone is looking for the next material -- the thing that will replace silicon for transistors," said Belianinov, the lead author. "2-D devices stand out as having low power consumption and being easier and less expensive to fabricate without requiring harsh chemicals that are potentially harmful to the environment. "Reducing power consumption by using 2-D-based devices could be as significant as improving battery performance.

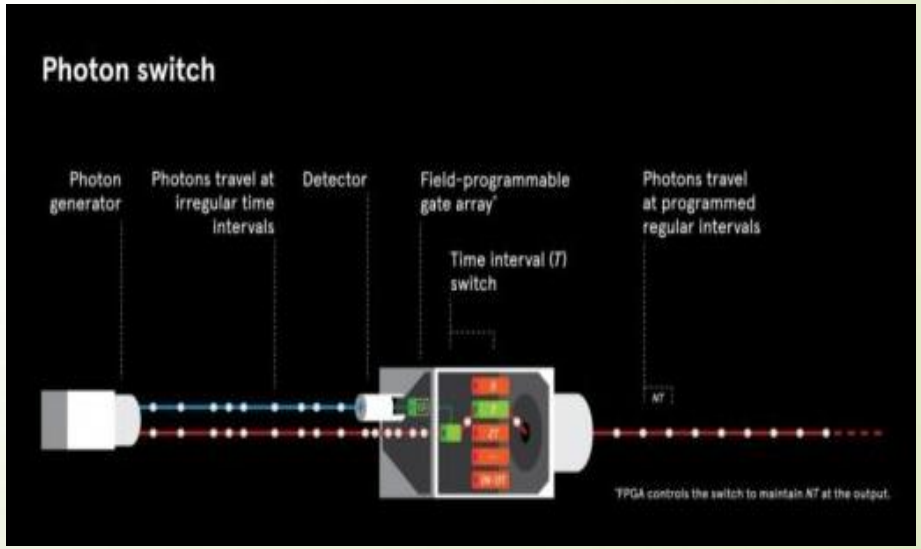


DNA 'origami' could help build faster, cheaper computer chips

Electronics manufacturers constantly hunt for ways to make faster, cheaper computer chips, often by cutting production costs or by shrinking component sizes. Now, researchers report that DNA, the genetic material of life, might help accomplish this goal when it is formed into specific shapes through a process reminiSCEnt of the ancient art of paper folding

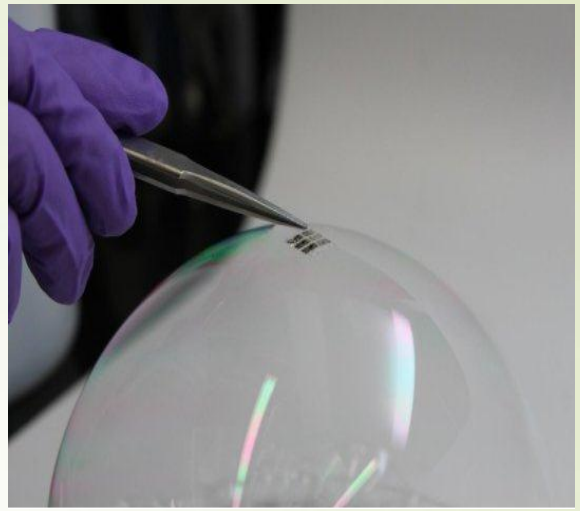
Breakthrough technology to improve cyber security

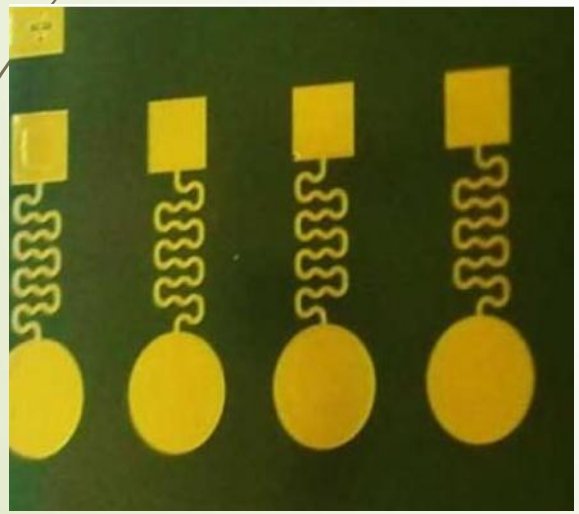
An international research team has made a breakthrough in generating single photons, as carriers of quantum information in security systems. The interdisciplinary research is set to revolutionize our ability to exchange data securely -- along with advancing quantum computing, which can search large databases exponentially faster.



Solar cells as light as a soap bubble

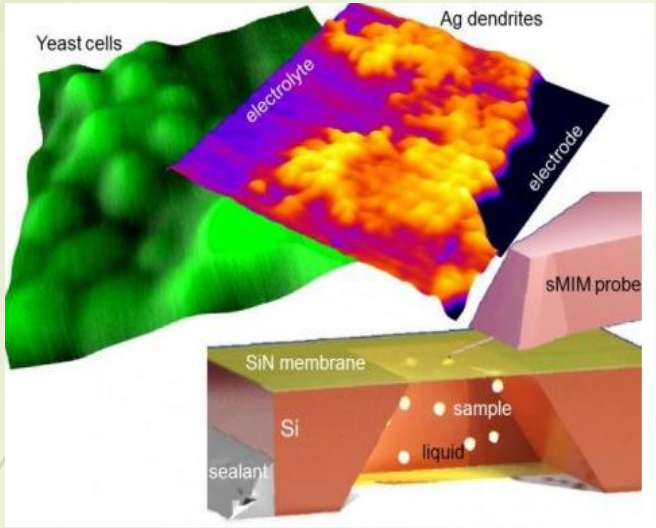
Imagine solar cells so thin, flexible, and lightweight that they could be placed on almost any material or surface, including your hat, shirt, or smartphone, or even on a sheet of paper or a helium balloon. Researchers have now demonstrated just such a technology: the thinnest, lightest solar cells ever produced.





Nano motors could help electronics fix themselves

As electronics grow ever more intricate, so must the tools required to fix them. Anticipating this challenge, scientists turned to the body's immune system for inspiration and have now built self-propelled nanomotors that can seek out and repair tiny scratches to electronic systems. They could one day lead to flexible batteries, electrodes, solar cells and other gadgets that heal themselves

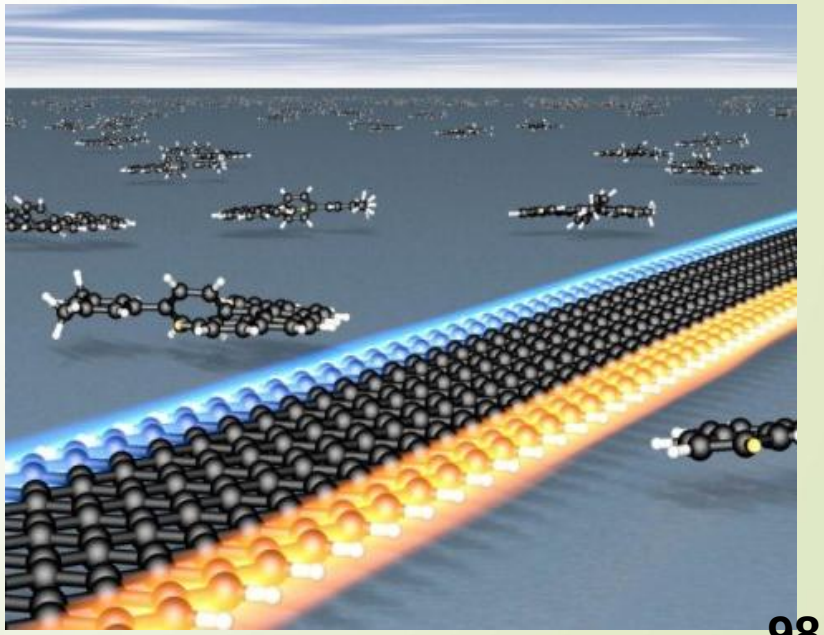


New microwave imaging approach opens a nanoscale view on processes in liquids

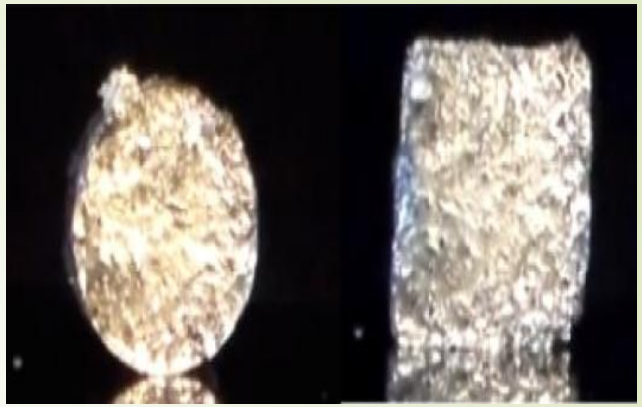
New microwave imaging approach trumps X-ray and electron-based methods that can damage delicate samples and muddy results. And it spares expensive equipment from being exposed to liquids, while eliminating the need to harden probes against corrosive, toxic, or other harmful environments.

Graphene nanoribbons: It's all about the edges

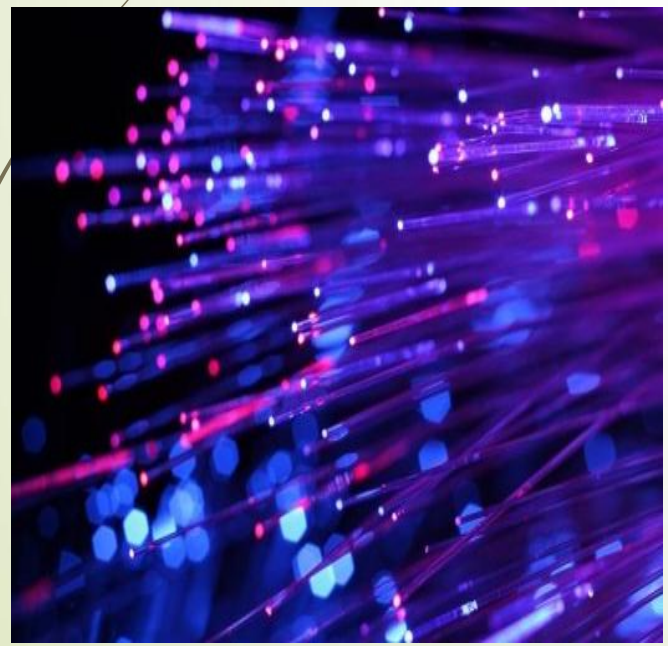
As electronic components are becoming ever smaller, the industry is gradually approaching the limits of what is achievable using the traditional approach with silicon as a semiconductor material. Graphene, the material with a number of "miraculous" properties, is considered a possible replacement. The one atom thin carbon film is ultra-light, extremely flexible and highly conductive.



Morphing metal shapes future of soft robotics



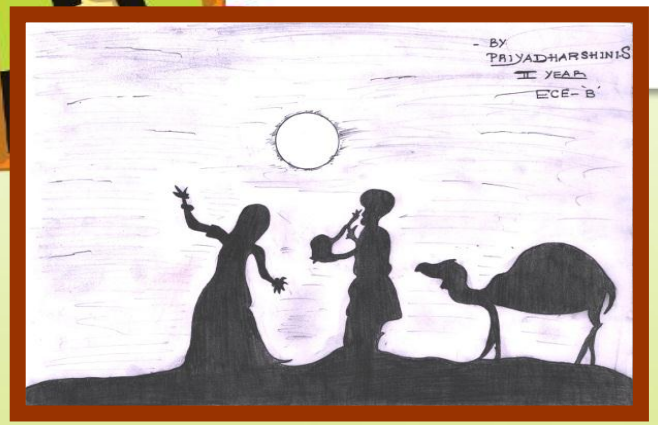
Engineers have created a hybrid material featuring stiff metal and soft, porous rubber foam that combines the best properties of both -- stiffness when it's called for, and elasticity when a change of shape is required. The material also has the ability to self-heal following damage.



5G wireless spectrum

New research by engineers has demonstrated how a massive antenna system can offer a 12-fold increase in spectrum efficiency compared with current 4G cellular technology. Multiple antenna technology, referred to as MIMO, is already used in many Wi-Fi routers and 4G cellular phone systems. Normally this involves up to four antennas at a base station. Using a flexible prototyping platform from NI based on LabVIEW system design software and PXI hardware, the Bristol configuration implements Massive MIMO, where 128 antennas are deployed at the base station.

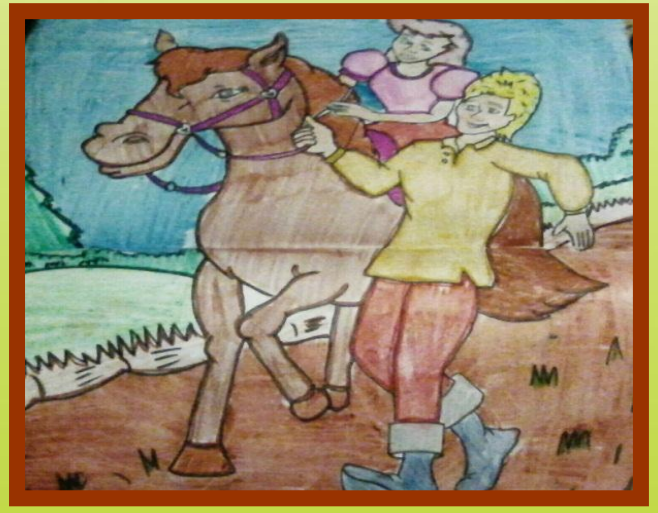
STUDENT'S GALLERY



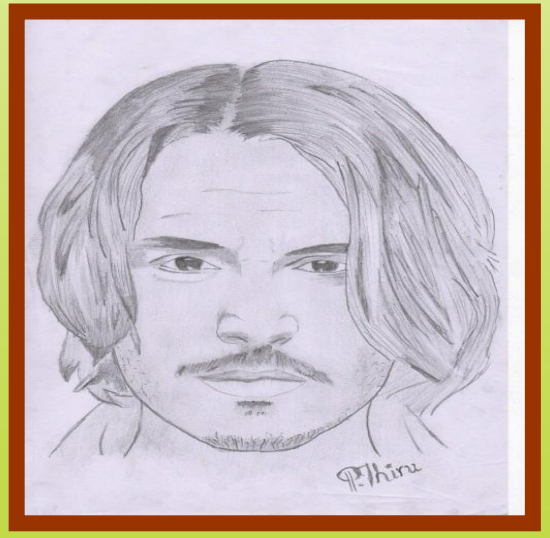
PRIYADHARSHINI, II YEAR, ECE B

SIVAKAMI, III YEAR, ECE B

SALAI CHANDAR RAJAN,III YEAR, ECE B



SIVAKAMI, III YEAR, ECE B



THIRUMAVALAVAN,
II YEAR, ECE B

ROSIE RITHIKA K.S ,
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