Agni College of Technology

Approved by AICTE / UGC, New Delhi, Accredited by NBA, Affiliated to Anna University, Chennai.
ISO 9001:2015 Certified Institution.

JWALA

One Voice. One Choice

www.act.edu.in

ISSUE 8

A Monthly Magazine of Agni College of Technology

JANUARY 2019

For Internal Circulation Only

Agni glows bright @ ACTioneering

JANUARY 2019

"Study Nature, Love nature, Stay close to nature. It will never fail you."

-Frank Lloyd Wright

"A Thing of Beauty is a Joy Forever"

-John Keats

We, at Agni College of Technology, take effort in keeping the campus GREEN. The place which stood as a barren landscape almost two decades ago stands tall today, ranking as the best green campus in the Chennai city. In contrast to the din and dust of the Chennai city, Agni campus is where you get a breath of fresh air. Green spirits often referred as 'Spirits of healing' embalms the Agni's serene environment.

Here, in Agni the environment with abundant greenery helps the students' mind to stay relaxed and focused. Much of their spare time is spent with nature as it speeds up the healing process and gets their spirits back in alignment. All of this packed into a single spice is definitely a treat to our sight. No one can deny the fact that the Agni campus is fresh, green, clean, and simply beautiful. It is the natural and ideal place for learning.

Inside Jwala

JANUARY 2019

Inside Jwala

Hon. Advisor's Message

I am very happy that "Jwala" is being published. As Agni College of Technology grows in stature, the need for a regular college magazine sharing and deliberating on a wide range of issues becomes a necessity. Towards this end Jwala can play an important role. It is good to know that the major contribution in Jwala comes from the students themselves.

My congratulations and best wishes to the editorial team members and those who have contributed to this issue.

From the
Principal's Desk
Dr. R.S.kumar
Principal
Editor-in-Chief
Jwala

Education is the powerful weapon which you can use to change the world. The essential purpose of Agni college of Technology-JWALA Magazine is to inform, engage, inspire and entertain a diverse readership. In the originality of its conception, in the excellence of its writing and visual presentation and in its commitment to accuracy, healthy discourse and editorial balance, the magazine endeavours to reflect the values and the quality of the institution itself. Apart from regular curriculum activities the college stresses on students and staff to update knowledge in their chosen areas of expertise.

While the ultimate purpose of the magazine is to engage and strengthen its readers' association with the College, the Institution recognizes that it can do so effectively only by earning and retaining the respect and faith of its readers. We infuse an enterprising spirit among students in shaping a better future for mankind by developing effective and socially responsible individuals contributing to the process of nation building.

I would like to take this opportunity to express my gratefulness to the editors, the staff team and the student team for their meticulous work which is evident in the articles published. I am sure the team will progress to achieve propelling the organization into Himalayan success in the process of ACTioneering.

Message from
Dean, Academics
Dr. Srinivasan Alavandar
Dean Academics

I express my sincere gratitude to all my editorial team members for the release of JWALA MAGAZINE-January Edition. I express my considerable appreciation to all the authors of the articles in this magazine. These contributions have required a generous amount of time and effort. It is this willingness to share knowledge, concerns and special insights with fellow beings that has made this magazine possible. Fostering creativity and inspiring innovation are two of the key elements of a successful education, and a college magazine is the perfect amalgamation of both. I wish volume should increase in near future and hope this magazine will definitely be an inspiration and motivation for the students and staff to perform better and add on the contributions in the forthcoming issues. May all our students soar high in uncharted skies and bring brilliance to the world and their profession with the wings of education!

JANUARY 2019

Agni Anthem

We are the people of the beautiful motherland
We are the people who nurture our talent
We sow the seeds for scientific revolution
We are the evidence of technical evolution
We are aiming at the planet's renovation
We will make it possible by modern innovation
Our goal is victory and a place in history
Our goal is victory and a place in history, we unite
To serve the society in the state of ecstasy
To serve the society in the state of ecstasy, we unite
The name itself shows who we are, Agni
Who we are Agni
We are Agnians.....
We are Agnians.....
We are Agnians.....

Penned by
K. Ponraj
B.E. Mechanical, III year

Editor's desk

Mr. TamilSelvanne, Dept.of English

Dear Readers,

It gives me great opportunity to present the eighth issue of JWALA for the academic year 2018-19, the measure of progress. The past month was full of various activities by the students and faculty in academic, co curricular, extra-curricular as well as industry and alumni connects. JWALA of ACT gives pleasure to all the brilliant minds who traverse through the portals of this temple of learning. I am happy to see the amount of enthusiasm of eminent members of the college to contribute to the magazine. Not to be outdone, our students have devoted time and plunged into creating powerful stories, heart-warming poems, vivid drawings and informative articles. I stand awed by the sheer number of articles that have come pouring in for the magazine. This shows the positive and creative energy of faculty members and students present in the college. We proudly publish the eighth issue of our college magazine in order to show to the outside world, and also to remind the progress we have made in January 2019. We intend to continue presenting the talent and creativity of our staff and students through JWALA. I invite you to read and immerse yourself in the unfolding art and be exulted.

Wish you all best luck.

Put your heart, mind, and soul into even your smallest acts.
This is the secret of success.
-Swami Sivananda

AGNI Pride

STUDENTS PROJECT PRESENTATION @ ACMA

1	PROJECT 01: SACIRTOD - EXPECT THE UNEXPECTED (II – ECE)
2	PROJECT 02: TUMBLE WHEEL (III & IV – ECE & MECH)
3	PROJECT 03: ROBOTIC ARM (II & III MECH & AUTOMATION)
4	PROJECT 04: ELECTRIC GO KART (II & III - MECH)
5	PROJECT 05: IOT BASED SOLAR POWERED AUTOMATIC IRRIGATION SYSTEM (IV - MECHATRONICS)
6	PROJECT 06: UNMANNED FERTILIZER SPRAYER (III - MECHATRONICS)

The second edition of the ACMA's (Automotive Component Manufacturers Association of India) - Sectoral Exhibition and Meet between Engineering Institutions and Automotive Industry was held at Hotel Feathers, Chennai on 22nd January, 2019, Tuesday. The team Agni – PRIDE Coordinated this Project Exhibition & Meet. In this grand event, Agni College of Technology participated with six Innovative Projects from the department of Mechanical, Mechatronics, Mechanical &Automation and Electronics & Communication Engineering. In this Expo, our projects are the most visited by the Industry personnel.

Our students showcased futuristic technology and advancements in their projects that displayed a glimpse of the future, the various projects that Agni College of Technology presented had captured the attention and imagination of the members of ACMA

This event was organised by ACMA, which is the apex body representing the interest of the Indian Auto Component Industry. Its membership of over 780 manufacturers contributes more than eighty five per cent of the auto component industry's turnover in the organised sector. ACMA's charter is to develop a globally competitive Indian Auto Component Industry and strengthen its role in national economic development and also promote business through international alliances.

The main Moto of this event is to create a unique opportunity to the institutions to interact with decision makers and expose institutions to National

Board of ACMA, OEMs & other members creating synergies to foster better Industry-Academia Connect. This event was an excellent platform for our students to present their innovations to prestigious companies and esteemed investors. This event was inaugurated by Mr. A. Venkataramani, President, ACMA in the forenoon session followed by visit of industry experts to students projects. future and the students from Agni College of Technology surely impressed:

Inauguration of Sectoral Exhibition and Meet by Mr. A. Venkataramani, President, ACMA

Project No: 1

Title: Sacirtod - Expect the Unexpected

Group Members: Students from the Department of ECE (II Year)

(S.Balaji, M.Nandhabalan and J.Jayakumar)

Faculty Guide: Mr. S.Sudharsan, AP/ECE

Description of the Project:

The name SACRITOD stands for Smart Automated Car in Real Time Obstacle (object) Detection.

This project concentrates on the concept of accident prevention and obstacle detection. Heavy vehicle drivers in the highways can expect unexpected threats in the pathway which may even turn out to be fatal. Always a human eye could not be trusted to find out the prospective obstacles the vehicle is going to face during the travel. So we have developed a prototype which could detect the obstacles, regardless of its size, using the help of ultrasonic sensors which can vary its range in accordance to the speed of the vehicle. A groove coupler is used to measure the speed of the vehicle so the output could be used to vary the range of the ultrasonic sensor. The velocity of the car is proportional to the range of the ultrasonic wave produced by the sensor, so when a car moves in a high speed due to increase in the range of the sensor (ultrasonic) it can detect the obstacle in advance and the vehicle could be prevented from an accident either with an alert signal or with a brake. Due to the deployment of image processing techniques we can easily identify different obstacles in the pathway.

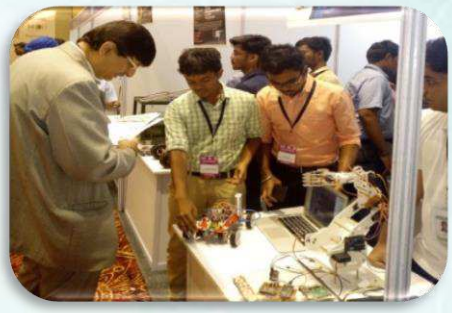
These image processing techniques add more detail in finding out the type of obstacle faced by the sensor.

Our prototype can be used either in transportation vehicles or as a surveillance bot. If the image processing techniques are enhanced, more detailed and precise faults could be identified. It can also be used to surveillance the labours working in a large assembly line and their minor activities could also be monitored more effectively.

Since we are using real time obstacle detection, our bots could be more effectively used to monitor the wild animals in the forest and the people living nearby can be alerted if the animals try to enter into their habitat.

Features:

- It can be implemented as a unit for accident prevention and obstacle detection in automobiles.



Mr. T .R. Parasuraman, Dy. Managing Director, Toyato Industries – Engine, discussing with our students

- As a bot it could be used in the field of surveillance.

Orders / Industry Connect for the Projects:

ECE Students briefing projects to Mrs. Shripriya Subramaniyan, Marketing and Communication Manager from Visteon India

- Students presented their innovation to Mr. P. Raju, Sr. Manager - TEI, WABCO Vehicle Control Systems. Impressed by the projects, he invited our students and Heads to visit WABCO for an Industry Connect through projects, CoE, Interns, etc.
- From VISTEON INDIA, Mrs. Shripriya Subramaniyan, Marketing and Communication Manager adored our students' Smart Automated Car project and has asked for further details to initiate a tie up. Brakes India Ltd., is one among the multiple companies that were interested to consider the possibilities of a joint venture with the technology used in the Smart Automated Car which could be of huge use to many people.

Students showcasing their talents to the industry experts

Project No: 02

Title: TUMBLE WHEEL

Group Members: Students from ECE & Mechnaical – III & IVYear(T.Ariharan,B.Elangovan, V.Hemantharajan&M.Pragadeeshwaran)
Faculty Guide: Mr. J.P.Josh kumar, AP/ECE

Description of the Project:

Tumble wheel is the idea of developing an AUTOPILOT enabled Artificially intelligent UGV (Unmanned Ground Vehicle).

Students briefing projects to Mr. R. Sheshaiyan, Senior Manager, Hyundai Motor Pvt., Ltd.,

This design is aimed to bring up a series of military combat applications like soldier assistance, medical and military supply to distant camps and spying operations like border surveillance, land mine detection, image mapping of complex terrains etc., without on-board human presence. Unlike other existing robots, Tumble wheel will feature both Ultra long range encrypted communication system for manual controlling, and autopilot systems for path following with obstacle avoidance navigation control along with failsafe mechanisms.

The core objective of Tumble wheel is to overcome the disadvantages left unfixed by already existing UGVs and to kick start a new way for transportation. The objective of this prototype is to address such problems in existing UGV technology as non-availability of common control bandwidth for many UGVs, limited range of manual control, Obstacle collision issues, Decision making errors etc. The primary objective of this design is to assist soldiers by means of transportation of military

essentials, distribution of medical kits during war (payload of Prototype is upto 8kgs). Tumble wheel will transport the supplies to the war field in a comparatively faster and safer manner. So the troop needs not wait for manual help. **All we need to do is load the cargo and set the path (waypoints) and destination (by using Ground Control Station), tumble wheel will handle the rest despite the complexity and distance.**

Industry Connect for the Projects:

- Mr. Shamed Dalha, Engineering Department, Brakes India Pvt., Ltd., expressed his interest to our students project AUTOBOT and asked for presentation at their industry site.
- Students presented their innovation to Mr. P. Raju, Sr. Manager - TEI, WABCO Vehicle Control Systems and he was quite impressed. He invited our students and Heads to visit WABCO for Industry connect through projects, CoE, Interns, etc.
- Our students presented their innovative projects to Mr. Biju Balendra, MD & CEO of Renault

Nissan and received lot of technical inputs and suggestions.

- Mr. Parasuraman, Dy. Managing Director, Toyato Industries Engine India Pvt. Ltd. He

offered industry connect and tech support to our students project

Mr. Seshaiyan, Senior manager, Hyundai Motors listened to Team-Tumble Wheel's presentation and voiced his interest on our students' project AUTOBOT and has invited them for a presentation at their industry site.

Project No: 03

Title: ROBOTIC ARM

Group Members: Students from Mechanical & Automation (Shorn Philip and G. Dinesh, P. Ajithkumar, Roshan Ajit, & A. Mohamed Asfar)
Faculty Guide: Mr. Maheshkumar, AP/M&A

Description of the Project:

The main objective of this project is to control the Robotic Arm manually and automatically using Programmable Logic Control (PLC) to pick the moving object on a conveyor belt. The end effector of the robotic arm can be used for multiple purposes like welding, drilling etc. In industries highly advanced robots are used, but still the controlling is done manually or by processors

like Arduino, microprocessors etc. There are several disadvantages while using these processors such as micro controllers cannot work in the environments with the high levels of vibrations, corrosion, humidity, and other environmental factors. This project focuses to create and build more compact, useful and cheaper robotic arm to perform various functions where human is proven too dangerous to perform a specific task and also to eliminate human errors to get more precise work.

Industry Connect for the Projects:

- Mr. Thirushankar, Manager, Production Development, Honon
- Systems appreciated our students' project and asked to write officially to have further industrial connect.
- Mr. Seshaiyan R, Senior Manager, Hyundai Motor Pvt. Ltd. asked our students to present their innovation at their industry site.

Mr. Ahamed Dalha, Director Engineering Dept., Brakes India with our students

Project No: 04

Title: ELECTRIC GO KART

Group Members: Students from Mechanical - III & II Year (Venkat G surya, Vishnu shaji, S.R.SreeNivas and R.Vigneshkumar)
Faculty Guide: Mr. P. Purushothaman, AP/MECH

Students from Mech & Auto briefing their projects to the members of WABCO Pvt., Ltd.,

Description of the Project: A Go Kart is a fundamental part of the automation society, may it be in terms of locomotion or entertainment. Following the rise of eco-friendly technology, these Go Karts have gone electric. Their popularity has risen substantially after the boom in Kart racing and casual usage of Go Karts. Electric Go Karting is a crowd favourite among the junior divisions of the Formula-E fanbase too. Developing an efficient and yet fun version of an Electric Go Kart is expensive and tedious. We have developed a working model of a Go Kart that can be used for locomotion for more

Mechanical Engineering students showcasing their talents to the industry experts

hard-core racing at an affordable price. It uses the basic understanding of automation and electrical to develop a Go Kart ready for show and go.

Industry Connect for the Projects:

Our students' presented their innovative projects to Mr. Biju Balendra, MD & CEO of Renault Nissan and got lot of technical inputs and suggestions

Project No: 5

Title: IOT BASED SOLAR POWERED AUTOMATIC IRRIGATION SYSTEM

Group Members: Students from Mechatronics – IV Year (N. Deliganesh, K. Maniyarasan, A. Aswin, R. Prakash)

FacultyGuide: Mr. Karthikeyan, AP/Mechatronics

Description of the Project:

The main objective of this project was to design a small-scale irrigation system that would use the bore well water in an organized way in order to prevent excess water loss and minimize the cost of labor and it also produces electricity by means of renewable solar energy. This project aims at reducing human intervention and still ensures proper irrigation and reduces the need for electricity to run the system. The errors which may arise during manual irrigation are also rectified for the most part using this method. The economy is highly based on agriculture demands and innovative methods of irrigation that are reliable. The shortcomings of manual methods of irrigation can be rectified using the automated process. The task of automatic irrigation is done through the assistance of soil moisture sensors. The electricity required by components is provided through solar panels hence this liberates us from interrupted power supply due to load shedding. The water content is constantly judged and whenever moisture level of soil gets low, the system sends a signal to motors instructing them to turn on. The motors automatically stop after soil reaches its maximum upper threshold value which is decided by the user. Every time the motor starts or stops automatically, the user will get an SMS about the status of the operation. The major advantages of the project include avoidance from water wastage, the growth of plants to their maximum potential, fewer chances of error due to less labor and uninterrupted supply of water due to solar energy.

Project No: 6

Title: UNMANNED FERTILIZER SPRAYER

Group Members: Students from IV year - Mechatronics(S.K. Lakshmanan, R. Harikrishnan, R.Pasupathy and V.Lokesk Praeen)

Faculty Guide: Mr. M. PrasanaaKumaar, AP/ Mechatronics

Description of the Project:

Here we propose a low cost automated Arduino controlled by unmanned bot for spraying fertilizer. Our proposed work optimizes the manual power with efficiency. In our project, we are using Arduino Uno which is used to control motor control board. Through motor control board the wheels of the bot are controlled. Here the Arduino program plays a vital role. Based on the size of the farm the program has been made. The wheels of the bot remain same for all farms. Therefore, based on the timer input in a program the bot is moved over the farm. When the timer is finished, the bot is stopped and then it can take left/right turn twice and then it moves over the farm. Whenever the wheel is linearly moving, the sprayer sprays the fertilizer through nozzles. The pump is placed at the front. It will get fertilizer from the manually filled fertilizer tank and supply it to the sprayer.

Team Agni PRIDE – Students and Faculty Members @ ACMA – EXPO and Industry Academia Connect

Conclusion: Overall, it was a one of a kind experience for the students who had a chance to communicate directly to the top core industry leaders. They received their due credits for their hard-work along with lots of encouragement to keep pursuing their ideas. We are delighted to conclude that our students got lot of industry connects as their ideas and technologies are in line with the current industry requirements. This intern will soon convert into several orders for their works which now promises a plausible opportunity to bring their ideas out into the market.

They have new-found interest and are looking forward to the next event of the similar type. They are all excited to get to work and it has turned out to be a great learning experience for the students - not only the ones that presented their projects but also the ones who visited the expo. They whole-heartedly thanked the management for giving them the opportunity to have such a great learning experience.

Monthly Activities

DEPAREMENT OF BIO MEDICAL ENGINEERING

1. ACADEMICS

On 10.01.2019, in the presence of Mrs. M. Kayalvizhi, HOD BME, Mr S.Atheena Milagi Pandian, Mrs. Roshni, Mrs.Karthiga, Mrs.Nithiya, Ms. S. Arunthathi, Mr. S. Mukesh, Ms. N. sweatha, and Mr. krishnakumar the following points are discussed:

1. CSIR team coming from Pune on 20th January and witnessed the project work.
2. Project work prototype for final year students should be reported
3. Placement for those who are not placed yet.
4. Question paper standard for IA 2

Industrial Project by students

Project nu 1

INTEGRATION OF MEDICAL DEVICES USING IoT by NIVETHA B, VISHUPRIYA, PRISCILLA at MGM HEALTH-CARE HOSPITAL PROJECT AT CHENNAI

Internship / In-plant Training (Internship Training)

HARISH, SARAVANAN P and RANJITH of final year BME did their 6-month internship at MGM HEALTH-CARE HOSPITAL PROJECT AT CHENNAI

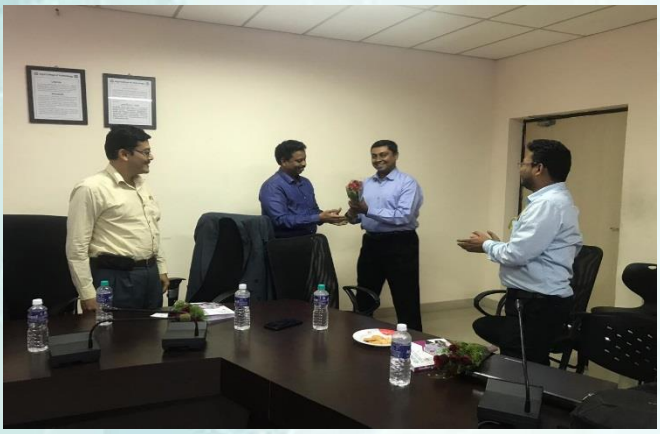
SUGANTHI, THASMIYA, NIRMALA, SABARI, SIVA SUBRAMANI of final year BME attending their 6 months internship ar B Braun

PRIYANKA of final year BME did her 6-month internship at AUROUS HEALTH CARE RESREACH & DEVELOPMENT INDIA PVT, Chennai

1.1. Student Club Activities

Inauguration of 300 women CEO's of AGNI college of Technology.

- It is a privilege in the history of Agni College of Technology to co-host "India Mission project", sponsored by the Govt of India and supported by LIT Academy. The Department of Computer science Engineering and Biomedical Engineering at Agni college of Engineering joined in as academic partners. Our beloved Principal, Dr.R.S.Kumar, hosted the Principal Scientist Dr. Ram Rup Sarkar, and Mr. Saikat Chowdry Scientist, from CSIR - NCL Pune. Heads and members of the CSIR team graced the meeting along with Mr. Saugata Chakraborthy, CEO LIT Academy. The day was witnessed by Dr.SriKrishnan, Head of Computer Science Engineering Department and Dr.Kayalvizhi M, Head of Biomedical Engineering and CSIR – Staff member team from Agni College of Technology. Dr.Kayalvizhi, BME / HOD received and welcomed Dr.Karthikeyan, Radio Oncologist from Dr.Rai Memorial Hospital who was briefed by Mr.Saikat regarding the Oncomechanics project. Dr.Karthik provided various inputs and expectations from the oncology solutions. Post lunch session was felicitated by Mr.Janardanan Menon, Director, Dr.SrinivasAlavandar, Dean – Academics, and HOD's of various departments in the college in the presence of Prominent Scientists and Mr. Saugata. Director. Mr.Janardanan Menon, Dean – Academics Dr.SrinivasAlavandar felicitated the guest.



A group of 10 students from our college including biomedical engineering students underwent the training for FIRST AID organized by "alert VoICE" Chennai, in the month of December and January, and got certificate and license for Professional First Aid Trainer.

DEPARTMENT OF CHEMICAL ENGINEERING

IIChE Student Chapter Inauguration:

IIChE student chapter was inaugurated in Agni College of Technology for the Department of Chemical Engineering on 5th January, 2019.

Chief Guest: Dr.N.Balasubramanian, Hon.Secretary, IIChE-CRC, Professor, Department of Chemical Engineering, AC Tech Campus, Anna University.

Guest of Honor: Mr.D.Gokul, Treasurer, IIChE-CRC, Scientist, SHAR- ISRO, Andhra Pradesh.

Industrial visit:

Department of Chemical Engineering arranged an Industrial visit to CIPET on 7th January, 2019 for the students of II & III Year.

DEPARTMENT OF CIVIL ENGINEERING

Effects of Soil-Structure Interaction on Direct Displacement-Based Assessment Procedure of Multi-Span Reinforced Concrete Bridges

This investigation deals with the relevance of non-linear dynamic soil-structure interaction (SSI) effects on the seismic assessment of single-column multi-span reinforced concrete bridges resting on rigid shallow foundations and non-liquefiable soil. The engineering motivation arises from the recent development of performance-based approaches, aiming at characterising the structural behaviour in terms of displacement, rotation, distortion and drift performance rather than in terms of strength criteria, and moreover, exploiting non-linear energy dissipation both at the superstructure and at the soil-foundation level. The need of an accurate, time efficient and readily implementable seismic assessment procedure is particularly important for bridges, which should still be functional after the earthquake for allowing the civil protection interventions and first aid organisations. Based on the framework of direct displacement-based seismic assessment procedure, a new iterative pseudo-static procedure (denoted as DDBA+SSI) satisfying these requirements is proposed. The predictions of both DDBA and DDBA+SSI procedures are compared to the results of incremental dynamic analyses for five hypothetical bridges. The salience influence of SSI effects on the seismic assessment is demonstrated.

By Mrs. Anandhi.L
Asst Professor, Civil Engineering

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Students Placement:

The following Students are placed in **GOLDEN PAY PVT LTD as Web Developer with 1.8 LPA** through On-Campus.

1. Kaviya sree
2. Bharathi priya
3. Tamil selvan
4. Mahalakshmi
5. Elangovan
6. Kamesh
7. Pavithra

There are 8 Students from CSE got selected in **NETTY FISH Ltd**., as **Digital Marketing Consultant with a CTC of 1.8 LPA** through On-Campus.

1. Pooja
2. Pooja chellam
3. Shalini
4. Savietha
5. Tamilarasi
6. Sona
7. Ruthra devi
8. Rithish

1. Ms. Raja Gomathy and Shalini.J got selected in Virtusa Corporation Pvt., Ltd., as Software Developer through Off-Campus with a CTC of 3.2 LPA
2. 10 students from II CSE attended Agaram Workshop and Conference at Sathyabama University for 2 days

CSIR PROJECT

Scientists from CSIR Reviewed Phase I Process at Agni College of Technology Campus on 21st January 2019 on once mechanics project and interacted with students.

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Student achievement:

- ECE Department students Ms. Jegapriya J. (IV ECE A), Ms. Priyadarshini Babu (IV ECE B), Mr. Shebin W. (IV ECE C) and Mr. P. Arun (III ECE A) are doing project titled **"Agri Bot"** for **"Mitsubishi Electric cup"** guided by Mr. T. Rajasekar.

- ECE Department students Mr. Santhosh Kumar (II ECE B) and Mr. Sabari Janath (II ECE B) won 2nd prize in Idea Presentation.

- About 31 ECE students from 3rd and 2nd year participated in various workshops, symposium etc.

- ECE students Mr. Ariharan (III ECE A), Mr. Hemantharajan (III ECE A), Mr. Elangovan (III ECEA), Mr. Balaji (II ECE A), Mr. Jayakumar (II ECE A) and Mr. Nandhabalan (II ECE B) has attended "Sectoral Exhibition and Meet between Engineering Institutions and Automotive Industry" organized by the Automotive Component Manufacturers Association of India (ACMA) on January 22.

- ECE students Ms. Minisha (II ECE B) & Ms. Rajalakshmi (II ECE B) won second prize in Mariner Challenge @ Fitness Challenge organized by Indian Coast Guard and VIT University.

- Many ECE students participated in Mariner Challenge @ Fitness Challenge organized by Indian Coast Guard and VIT University

1) PRIDE Activities:

- Mr. Hemantharajan V, Mr. T. Ariharan, Mr. B. Elangovan and Mr. S. Balaji from III ECE and II ECE doing project titled **"Tumble Wheel"** to e-Yantra Lab under the guidance of Mr, J.P. Josh Kumar.
- Mr. Sherbin, Ms. Jegapriya, Mr. P. Arun and Ms. Priyadharshini Babu from IV ECE and III ECE submitted a project proposal titled **"A^3 Bots"** to Texas Instruments (IICDC 2018) under the guidance of Mr. T. Rajasekar. This project was shortlisted for the second round.

- Mr. Hemantharajan V, Mr. T. Ariharan, Ms. Jayakarthiga A., Mr. E. Karan and Mr. S. Balaji from III ECE and II ECE submitted project proposal titled **"Vugha Security Solutions"** to Texas Instruments (IICDC 2018) under the guidance of Dr. R. Karthikeyan (HOD, Mechanical). This project was shortlisted for the second round.

- ECE Department students Ms. Jegapriya J. (IV ECE A), Ms. Priyadarshini Babu (IV ECE B), Mr. Shebin W. (IV ECE C) and Mr. P. Arun (III ECE A) are doing project titled "**Agri Bot**" for **"Mitsubishi Electric cup"** guided by Mr. T. Rajasekar.

- ECE students Mr. Ariharan (III ECE A), Mr. Hemantharajan (III ECE A), Mr. Elangovan (III ECEA), Mr. Balaji (II ECE A), Mr. Jayakumar (II ECE A) and Mr. Nandhabalan (II ECE B) has attended "Sectoral Exhibition and Meet between Engineering Institutions and Automotive Industry" organized by the Automotive Component Manufacturers Association of India (ACMA) on January 22.

2) Placement:

- 27 students were placed in NETTYFISH by the ON CAMPUS held on 28.1.19. The students were recruited for the position of Digital Marketing Consultant.
- 01 student was placed in GOLDEN PAY by the ON CAMPUS held on 25.01.19. The students were recruited for the position of Web Development
- 04 students were placed in S.K. ACADEMY by the ON CAMPUS held on 24.1.19. The students were

recruited for the position of Junior Faculty Trainee

- 02 students were placed in NINJACART by the ON CAMPUS held on 07.1.19. The students were recruited for the position of Graduate Trainee Engineer
- 06 students were placed in BHARTI AXA by the ON CAMPUS held on 08.1.19. The students were recruited for the position of Unit Manage / Agency Manager

5) Industrial Visit:

- ECE II year students visited CIPET at Guindy on 10.1.19. Three faculty members accompanied the students. They are Mr. Nagarajan, Mr. Sudarson and Mrs. Renuga.

6) Internship:

- 83 final year students attended Internship in companies like ELINT LABZ, ABE SEMICONDUCTOR DESIGNS, GARUDA AEROSPACE, VALEO PVT. LTD., SERTEL ELECTRONICS, MALAR ELECTRONICS, OHM ENERGY MANAGEMENT SYSTEMS, GEN WORKS LTD., AVANCER SOFTWARE SOLUTIONS, NARL and TESLA MINDS.
- 04 III year students attended Internship in companies like TRUEKEM.
- About 03 second year students attended Internship in companies like FLEXTRONICS.
- 2 students from IV year attended internship at Thought works.

DEPAREMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Students Article

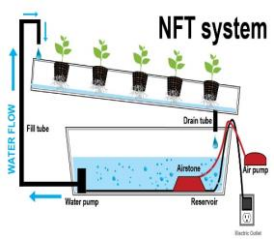
EARTH-FRIENDLY GARDEN THROUGH HYDROPONICS

Our planet contains one third of water and two third of soil. Water, known to be the elixir of life, needs to be efficiently utilized towards agriculture as we know that the increase in population leads to the destruction of the agriculture. Some of the essential techniques in Hydroponics are the Deep Flow Technique (DFT), Nutrient Film Technique (NFT) and Aeroponic system which are in the plant factories.

Hydroponics is about enriching water with the very same nutrient salts as found in nature. Its all about creating and maintaining a nutrient solution that is perfectly balanced for plants.

In this system, adequate management of water and nutrients in the hydroponic system, electrical conductivity, pH level, percentage of dissolved oxygen and temperature will be

measured, because ion concentration in the nutrient solution change with time, resulting in a nutrient imbalance in closed hydroponic systems. Therefore, real time measurement of all nutrients are required. But such measurements are not available due to technical problems. Periodic analysis of nutrient solution and adjustment of nutrient ratio can improve the nutrient balance. As an advanced method, ion-selective electrodes



and soft computing methods can be efficient tools for estimating the concentration of each ion. For stable crop production, disinfection systems using filters, heat, ozone and ultraviolet radiation are required in hydroponic systems. This proposed system has the benefit of yielding an organic food with less human work, and 70% of insects and other species are not harmed in this method.

Name: K.NATARAJAN,
Year: 2nd YEAR, EEE

Students Participation In Conference

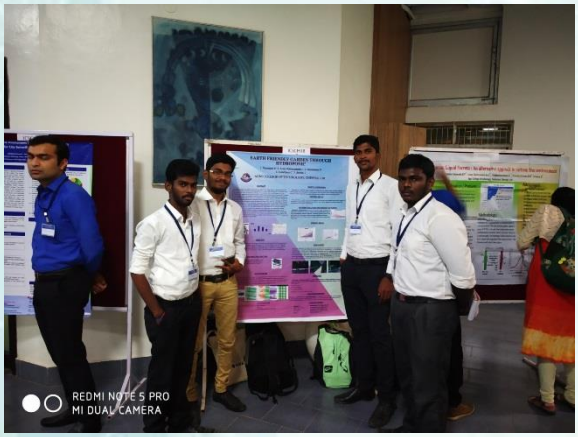
Final year students **Mr.M.seeman** and **Mr.R.Kesavan** from the Department of Electrical and Electronics Engineering participated in INTERNATIONAL CONFERENCE ON SMART CITY MODEL 2019 at IIT madras and presented poster tittled "SUSTAINABLE DEVELOPMENT AND URBANISATION BY SMART CITY"

Kavithai

வருமை
குடும்பம் தலைவன்
காத்துயிருக்கிறான்
இறங்கிவிட்ட போதையை
ஏற்ற.....
வேலைக்கு சென்ற குடும்ப
தலைவி
காத்துயிருக்கிறாள்
கூலிக்கு.....
குழந்தைகள்
காத்துயிருக்கிறார்கள்
போன தாய்தந்தைக்காக.....
வருமை காத்துயிருக்கிறது
இவர்களை மொத்தமாய்
விழுங்க.....
அரசியல்வாதியும்
காத்துயிருக்கிறான்
அடியோடு இவர்களை
ஏய்க்க.....
எல்லோரும்
காத்துயிருக்கின்றனர்
நல்ல வாழ்வுக்கு.....
நடக்குமா!!!!!!!!!!!

இயக்கம்....
வே.தினகரன் (IV EEE)

Second year students **Mr.N.Ramajayan** and **Ms.S.Swetha** from the Department of



Electrical and Electronics Engineering participated in a workshop on COASTAL GUARD STORM FITNESS CHALLENGE 2019

Final year students **Mr.K.Natarajan** and **Mr.T.Belsin** and **Mr.P.Annamalai** from the Department of Electrical and Electronics Engineering participated in the INTERNATIONAL CONFERENCE ON SMART CITY MODEL 2019 at IIT Madras and presented a poster tittled "**EARTH-FRIENDLY GARDEN THROUGH HYDROPONICS**"

DEPARTMENT OF INFORMATION TECHNOLOGY

PLACEMENT ACTIVITIES:

Mr.Sathish.R was placed in NETYFISH NETWORKS PVT LTD as Digital Marketing Executive with the annual pay of Rs.1,80,000/- on 28-01-2019

Mr.Vignesh.V was placed in NETYFISH NETWORKS PVT LTD as Digital Marketing Executive with the annual pay of Rs. 1,80,000/- on 28-01-2019

Mr.Vigneshwaran.K was placed in NETYFISH NETWORKS PVT LTD as Digital Marketing Executive with the annual pay of Rs. 1,80,000/- on 28-01-2019

Mr.NalluPrabhu.P was placed in NETYFISH NETWORKS PVT LTD as Digital Marketing Executive with the annual pay of Rs. 1,80,000/- on 28-01-2019

Mr.Vignesh.R was placed in NinjaCarts as Digital Marketing Executive with the annual pay of Rs. 1,80,000/- on 28-01-2019

Mr.Ayyanarapan.N was placed in NinjaCarts as Digital Marketing Executive with the annual pay of Rs. 1,80,000/- on 28-01-2019

DEPARTMENT ACTIVITIES:

A one day Seminar on "Network Security & Its Firewall Issues" was organized for II & III year IT students by Mr.Kumara Dev and Mr.Gowsutheen senior software engineers at Sansbound Solution Pvt Ltd on 25.01.2019.

Faculty Achievements:

Mrs.K.Pushpavalli, AP/IT participated in NPTEL SPOC FELICITATION Workshop held at IIT Madras on 19.1.2019.

Mrs.R.Durga, AP /IT received Best Mentor Certificate from Texas Instruments for participation in Entrepreneurship events.

Mrs.R.Durga, AP/IT acted as External Resource Person – for one day Guest Lecture on Artificial Intelligence held at Dhanalakshmi Srinivasa College of Engineering,

DEPARTMENT OF MECHANICAL ENGINEERING

The students of Mechanical Engineering are currently doing projects with the Industries listed below

- Ashok Leyland
- Renault Nissan
- Ford India
- Eagle Burgman
- Vignesh Tools
- Hyundai
- Super Auto Forge
- Butterfly
- Mando Brakes
- Srivari Electricals
- Cipet

Plant visit

Mr. J. Elwith and Mr.Rajan P were invited for a discussion with Mr. Santhanakrishnan Hr, Henkel Anand India Pvt Ltd on 11.12.2018.

Plant visit- Super Auto Forge

- Dr. R. Karthikeyan along with our MD and few HoD's participated in the discussions regarding projects and internships with Mr. Rajagopal Deputy General Manager SAF on 27.12.18
- Mr. Purusothaman along with Mr. Sugavanesh and Mr. vivek students of 3rd mechanical met Rajagopal DGM of SAF for project discussions on 2.01.19.

Corporate story - The Lamborghini

The Lamborghini Legacy

Legendary men have legendary conversations, and when two legends meet, the words they utter sometimes change the world. That was the case when a wealthy tractor manufacturer confronted Enzo Ferrari with some complaints about one of the Grand Old Man's automobiles. Myth is the vital element to brand mystique. There's definitely a healthy dose of myth and a whole lot of mystique in the lavish Lamborghini's origin story. This is an origin story when it comes to Lamborghini. Here it goes.

Ferruccio Lamborghini: The Early Years

Born to viticulturist parents in Itlay, 1916, Ferrucio Lamborghini showed significant

mechanical skill and knack for automobile engineering at an early age. His expertise was developed during his early days of fixing broken engines. During WWII, he was a

young mechanic in Italy's Royal Air Force. Following the war, the enterprising young man capitalized on all the spare military equipment lying about, converting it into farm tractors. After the war and due to post-war reform initiatives, his tractor manufacturing became very popular and lucrative.By 1960s, his tractor business was booming.

Like most wealthy people, he decided that the best way to celebrate was to buy himself a Ferarri! After he bought one to his dismay, he was quite disappointed with it. He thought that it could be better and more than that, he thought he knew how to make it better. So, like a loyal Ferrari customer he went to the owner himself; Enzo. He told him that he liked the Ferrari he had purchased but they had several mechanical issues. Particularly troublesome was the tendency for the clutch to burn out. He aired his grievances to make it much better. The legendary founder of the Ferrari brand turned him away, telling him that the problem wasn't with the car; it was with the "farmer". A snide reference to the fact that Lamborghini was a tractor manufacturer.

Ferrari's Folly: The Rivalry that Created a Legend

After that day, a rivalry was born. Very shortly after that, Lamborghini set out to produce a car superior to those that Ferrari offered. Within a few years, he had his first concept vehicle, the Lamborghini 350 GT built in a corner of his tractor factory in Sant'Agata Bolognese, Italy. The car bore a badge with the symbol of a bull, Ferrucio's birth sign and a challenge to the horse carried on Ferrari's cars.

The company struggled at first to produce a vehicle that was desirable to consumers and had to be buoyed along by the success of Lamborghini's other businesses. Since 1966 all Lamborghini's were named after famous

Spanish bull-fight breeding, such as Murciélago and Gallardo, with the only exception of the Lamborghini Countach. The

name Countach was chosen after an employee said out loud "countach" when he first saw the car, which is a local dialect expression in the Italian language for "amazing" or "stunning".

Each one is an ultimate car. Many were collector vehicles from the moment they rolled off the production line. Beneath their stunning bodywork lie chassis and powerplants bristling with the best technology of their respective eras.

Isn't the revenge sweet?

Ferruccio Lamborghini has shown us how incredibly successful you can become in life, a vision that evolved out of the problem and a competitor that truly spurred Lamborghini. And so the lesson of the story is to never underestimate anyone. If only Enzo Ferrari lowered his pride, his company wouldn't have to deal with what is now a very significant competition. If you fail to listen you leave the door wide open for others to stop telling you and to start showing you what they want. In some instances what is requested is in fact a better way of doing things and if those who were trying to give you feedback to help you stop telling you and start showing you, they can become your most fierce rival.

GEEK GADGETS

A VR headset that stands alone

Really good VR—the kind that can make your palms sweat when you stand on the edge of a virtual cliff—is hard to come by. Most people settle for lackluster experiences that rely on smartphones and suffer from blurry images and smudgy lenses. The Oculus Go is the first VR headset that can create real immersion experience all on its own, without the help of a high-end gaming PC that costs as much as your first car.

The 2560-by-1440-pixel LCD actually has more pixels dedicated to each one of your eyes than the Oculus Rift. And the visor's built-in speaker system adds to the sensory onslaught, pumping carefully timed audio that can trick your ears into thinking there's really a zombie sneaking up behind you. Go also launched with more than 1,000 VR experiences, from peaceful meditation apps to riding impossible roller-coaster rides. The 16.5-ounce headset doesn't feel like a phone

accessory or a watered-down version of its predecessor. That's because it's neither. It's a huge step in VR's journey out of the niche gaming community and into the mainstream.

HYDROGEN COMBUSTION ENGINES

We know we need to find a replacement for fossil fuels. Automakers are working hard to find solutions to the dilemma. Most of those solutions seem to involve getting rid of our beloved internal combustion engines. But couldn't we just redesign the typical piston engine to run on something cleaner, like hydrogen?

If only it was that easy. As Jason Fenske of Engineering Explained lays out, you could design a piston engine to run on hydrogen. It just wouldn't be very good.

Hydrogen is a tempting alternative fuel. When burned correctly, its only emission is water vapor. Fenske has been exploring hydrogen's possibilities in multiple videos already this month, both as a fuel for piston engines and rotary engines.

There are two major problems with a hydrogen internal combustion engine. First, hydrogen is not as energy-dense as other fuels, meaning that you need a whole lot of it to do a little bit of work. Couple that with the inherent inefficiency of a piston engine (at best, you're only turning about 30 percent of the fuel's energy into forward motion), and you've got a recipe for disappointment.

The second problem? When you combust hydrogen, you get other emissions besides water vapor. Mainly, you get NOx, the toxic emission at the heart of the Volkswagen diesel emissions cheating scandal. If you're looking for a clean alternative to gasoline, hydrogen's NOx emissions take it out of the running.

The answer? Use hydrogen in a fuel cell to generate electricity. Fuel cells are far more efficient than internal combustion engines, and a hydrogen fuel cell has cleaner emissions than an internal-combustion hydrogen engine.

Automatic lift gates

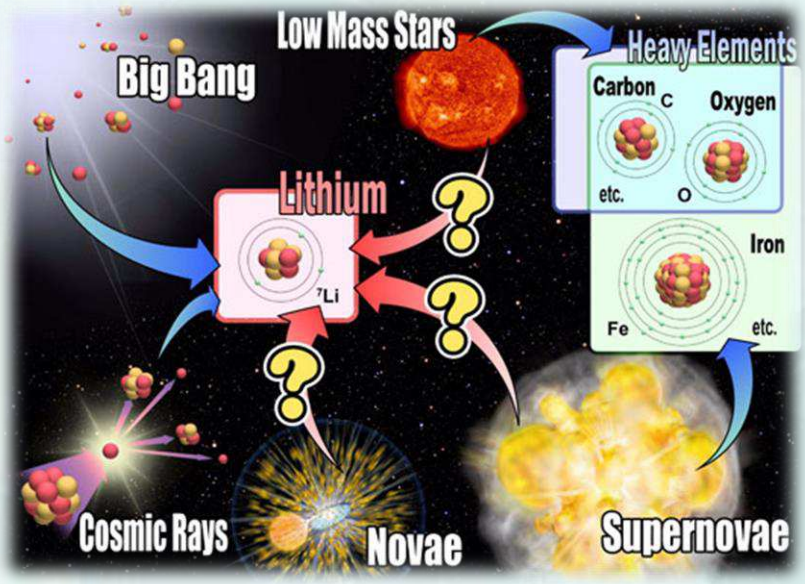
The 2013 Ford Escape is the best car in the world – If your hands are full of groceries in the pouring rain, the automatic liftgate start to function. The hands-free liftgate was first introduced on the aforementioned Escape crossover for the 2013 year model.

Though the "foot-activated" system didn't always work properly — leaving frustrated commuters kicking their cars like an angry Michael Flatley — it did pave the way for one of the most convenient and smart technologies out there.Thankfully, modern examples of the automatic liftgate don't require Taekwondo training to operate. Simply walk up to your vehicle with the key fob in range and the car will sense it and automatically open for you.

The Universe's Lost Lithium

A decades-old clash between modern cosmology and stellar observations may have just gotten worse. This article covers the problem that's had astronomers baffled for 30 years: the universe doesn't have enough lithium.

According to standard cosmology theory, Lithium, together with hydrogen and helium,



is one of three elements to have been synthesized in the Big Bang. Therefore, we should see a uniform abundance of Lithium throughout the universe. However, we don't. By experimental observation, the older stars seem to have less Lithium than they should (by a factor of 2 or 3), and some younger stars have far more. This discrepancy regarding the uniform abundance of Lithium and experimental analysis of older stars is one of the most distressing discrepancies with the Big Bang theory. In science, one significant discrepancy can dispute a theory. Therefore, this raised serious questions regarding the validity of the Big Bang theory.

About 30 years ago, Monique and François Spite reported that the isotope lithium-7 was far rarer in old, metal-poor stars in the Milky Way's halo than it should be. Relatively cool and with poor mixing between surface and interior, such stars should have lithium-7 levels in keeping with primordial abundances.

Yet these stars have at most one-third the amount of lithium-7 predicted. Even lower levels are found in the most primitive stars — stars with very low levels of heavy elements, which weren't created by big bang nucleosynthesis. This upper limit became known as "the lithium problem."

In 2006, astronomers Andreas Korn of Uppsala University in Sweden and colleagues in Denmark, France and Russia made an important discovery regarding the Lithium cosmic discrepancy.

Using a spectrometer on the European Southern Observatory's Very Large Telescope in Chile, Korn and co-workers studied 18 stars in a distant globular cluster and put forward a new model. They hypothesized that the lithium diffuses into the interiors of stars over time, where it is burnt up at temperatures of over 2.5 million Kelvin. Their model suggested that these stars originally contained 78% more lithium than we observe today. In other words, the predicted initial amount of Lithium agrees with predictions from the Big Bang theory.

However, in science old paradigms seem to only die when the scientists holding them die. And hence, the question still remains: where is all the lithium?

Mr. Venkat G Surya and Mr. Vishnu Shaji of Third Year Mechanical Engineering showcased an Electric Go Kart vehicle at ACMA 2019 in a special stall setup by Agni College of technology on 22nd Jan 2019 at Feathers Hotels, Porur. The team was accompanied by Mr. Purusothaman, Assistant Professor of Mechanical Engineering.

BIEC- Machine Tool Exhibition 2019

Mr. Durai Raj, student of Final year Mechanical Engineering participated in the "19th Indian Metal Cutting and Machine Tool Exhibition" on 30th Jan 2019 at Bangalore International Exhibition Centre.

OSHO ORATES

In Relationship You Come to Know Your Pitfalls

"When you are in relationship with people, in a thousand and one ways you are provoked, challenged, seduced. Again, and again you come to know your pitfalls, your limitations, your anger, your possessiveness, your jealousy, your sadness, your happiness all moods come and go, you are constantly in a turmoil. But this is the only way to know who you are.

"Up to now, men and women have not been living in relationship – because woman has never been thought equal. And relationship exists only between equal people; it cannot happen between unequal people. Unless woman is given total freedom, absolute equality, there will be no possibility to relate.

Treat Woman Equally!

Copper Water Bottles

Copper has suddenly made a big comeback hasn't it? I started finding it being sold in Yoga stores, Organic stores, all the spiritual franchises of ashrams and even on Amazon! It's definitely not a whimsical purchase for anyone, given that it is not cheap. I found friends making recommendations to their friends, and when I heard someone close to me telling me that I should absolutely must drink my water from a copper bottle, my functional nutrition mind and my itchy blogger fingers were on fire! So, here you go, I've broken it down into the areas of caution, so that you can make an informed decision after you are empowered with the knowledge.

From ancient times and through ancient scriptures of India, we've come across copper vessels. Perhaps our own grandparents stored water in copper vessels and we've seen this. You might have read that drinking from a copper bottle helps in purification,

digestion as it is anti-microbial and anti-fungal, helps weight loss, helps hypertension, slows down aging due to being an antioxidant, protects you from infection and illness, helps cool down the fires of inflammation and helps arthritic joints, helps anemia, gives you glowing skin, takes away chronic fatigue and much more! It is said to happen when water is stored in a copper vessel overnight, and a very small amount of copper ions gets dissolved into the water. This process is called Oligodynamic effect.

Yes, Copper is required for energy, formation of connective tissue, used in Iron metabolism and is essential to the nervous system. Ayurveda even says that drinking water from a copper vessel balances all three doshas of Vatha, Pitta and Kapha. That makes us even more reassured, since it seems as if it is the miracle drink for every single person! Is this really so?

What is really ironic is that a large number of places promoting copper bottles are also those places where consumers are perhaps likely to be vegan or vegetarian. Zinc and Copper are antagonistic minerals, meaning they are two minerals on either side of a balancing scale, so to speak. If one gets overloaded, then the other gets deficient. Vegetarian diets, where proteins come from beans, lentils, nuts and seeds, are mostly high in copper, which often leads to Zinc deficiency in this population. Zinc is instrumental in making new cells, enzymes and hormones, is required for immune function, is vital for fetal development, and helps wounds heal. When it is deficient, it can cause a loss in taste, poor immunity, reduced fertility, lack of appetite, poor skin, and even panic attacks or the fear of speaking in a crowd. With so many vegetarians opting for the copper bottle to drink their water from, they end up risking a further imbalance in Zinc and Copper, and becoming Copper toxic!

Copper toxicity can cause fatigue, feelings of doom, multiple anxiety and mental health issues, headaches and migraines, sluggish thyroid, cold extremities and feeling over sensitive and weepy. If you have any of these symptoms, think back to when you started using a copper water bottle and see if the dots connect. This is in no way

saying that a vegetarian or vegan diet is not optimal, but rather caution on what to be careful about.

Further, even in Ayurveda, it is not meant to be stored in a bottle all day long and constantly drinking the same water. It is only meant to be stored overnight and had in the morning on an empty stomach, and that was more than enough to provide the trace requirement of Copper. Also, it was not meant to be a constant lifelong practice. The ideal way was to use this for a month to three months and then give a break. This was to give your body an opportunity to excrete excess Copper. Another thing to watch out for is Copper that is not pure. Finding it from a good source is crucial!

So, if you are a Vegetarian or Vegan who has not been extra cautious and seen that you do not become Zinc deficient, a common concern in these diets, or you have any of the symptoms of Copper toxicity, drinking water from a Copper bottle is something that should be done with some amount of caution!

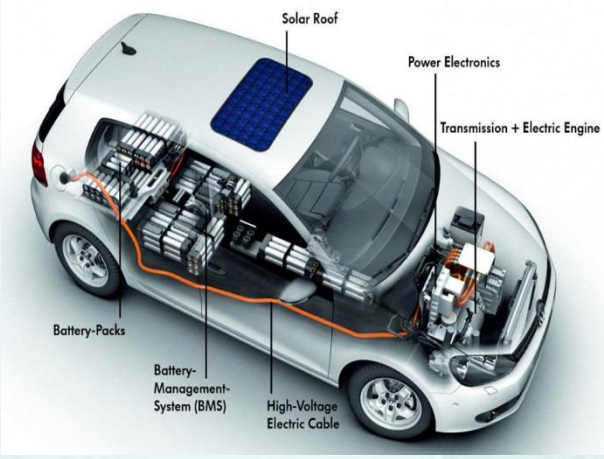
BATTERY CARS

Battery electric vehicles, or BEVs, use electricity stored in a battery pack to power an electric motor and turn the wheels. When depleted, the batteries are recharged using grid electricity, either from a wall socket or a dedicated charging unit. Since they don't run on gasoline or diesel and are powered entirely by electricity, battery electric cars and trucks are considered "all-electric" vehicles.

When driven, BEVs don't produce tailpipe pollution—they don't even have a tailpipe. However, the electricity they use may produce heat-trapping gases and other pollution at the source of its generation or in the extraction of fossil fuels. The amount of pollution produced depends on how the electricity is made. In the United States, battery electric cars charged off the dirtiest coal-dominated grid still produce less pollution than their gasoline-powered counterparts. BEVs powered by renewable energy sources like wind or solar are virtually emission-free.

Not using gasoline or diesel also means that battery electric cars are significantly cheaper to fuel than conventional vehicles. Exact comparisons depend on the vehicle model and fuel prices, but driving a BEV can save drivers over $1,000 annually in gasoline money.

Like other electric and hybrid-electric vehicles, BEVs minimize wasted energy by turning the car off when stopped ("idle-off") and by charging the battery when braking ("regenerative braking"). Electric motors are also inherently more energy-efficient than gasoline or diesel engines.



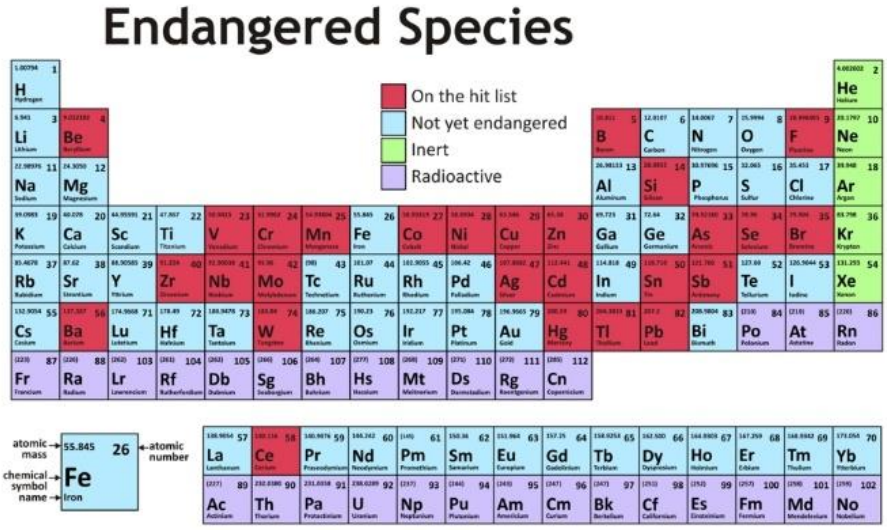
Fully-charged, most battery electric cars have a driving range of between 70 to 100 miles, well within the day-to-day range requirements of most Americans, though some BEVs can go up to 265 miles on a single charge. An increasing number of public and workplace charging stations provide added charging capacity.

More subjectively, many drivers appreciate the driving experience provided by all-electric cars. Electric motors generate near-instant torque, or turning-force, while the torque of internal combustion engines increases in tandem with the engine's revolutions (RPM). This means that BEVs have extremely fast acceleration and a "light" or "zippy" feel compared to conventional cars and trucks.

Scientists have warned some of the substances used to make phones are becoming increasingly scarce due to limited supplies, their location in conflict zones and the lack of recycling. To tackle this problem, they say people should avoid changing their phones every few years.

Researchers have developed a periodic table highlighting the scarcity of Earth's 90

Why you shouldn't be in a hurry to change phones (Endangered elements are running out quickly)



Vital chemical elements have been included on an "endangered list" because they are being thrown away in mobile phones at such a high rate.

naturally occurring elements, many of which are used in the production of devices like phones and TVs.

The work was carried out as part of a project by the European Chemical Society (EuChemS),

which represents more than 160,000 chemists from more than 40member societies and other chemistry-related organisations. The modernised periodic table was designed to mark the 150th anniversary of its creation in 1869.

It is estimated that about 10 million smartphones are discarded or replaced every month in the EU alone.

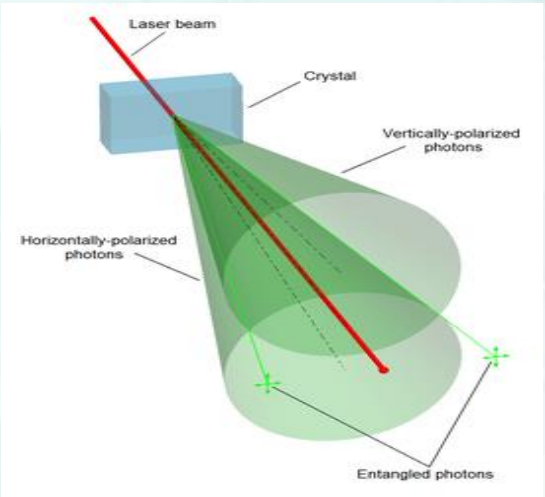
Smartphones are made up of around 30 elements, including copper, gold and silver for wiring and lithium and cobalt in the battery.

The bright colors of the display are produced by small amounts of rare earth elements, including yttrium, terbium and dysprosium. "It is astonishing that everything in the world is made from just 90 building blocks, the 90 naturally occurring chemical elements," said Professor David Cole-Hamilton, a chemist at the University of St Andrews.

"There is a finite amount of each and we are using some so fast that they will be dissipated around the world in less than 100 years. Many of these elements are endangered, so should you really change your phone every two years?" he said.

The periodic table will be launched at the European Parliament on Tuesday by Labour MEPs Catherine Stihler and Clare Moody. The event will also highlight the discovery of the oldest-known wallchart of the periodic table, discovered last year at the University of St Andrews.

Ms Stihler said: "As we mark the 150th anniversary of the periodic table, it's fascinating to see it updated for the 21st century. It's also deeply worrying to see how many elements are on the endangered list, including those which make up mobile phones."



"It is a lesson to us all to care for the world around us, as these naturally occurring elements won't last forever unless we increase global recycling rates and governments introduce a genuine circular economy," she added. Besides the problem of depleted reserves, many have raised concerns about the mines in which some elements used to make smartphones are extracted.

Extracting rare earth elements in China is known to have an enormous environmental impact, while cobalt mines in the Democratic Republic of the Congo have been highlighted as a major human rights concern.

DEPARTMENT OF MECHANICAL & AUTOMATION ENGINEERING

Department of Mechanical & Automation Engineering organized a one-day technical lecture on 30.01.2019. Mr.R.Raja B.E., Project lead, Sands Centre for Innovation, Chennai has presented "Edge Computing in IoT Automation using ARM in M0+".

Dr. R.S. Kumar, Principal, addressing the gathering during the technical lecture

Industrial Visit

Department of Mechanical and Automation Engineering had arranged an Industrial visit (IV) to Central Institute of Plastic Engineering and Technology (CIPET), Guindy at 1.00 PM on 11.1.19 for a batch of 50 Students. The session started with a technical lecture on waste-management on plastics and continued by visiting the various manufacturing processes like Injection moulding, Compression moulding, Blow moulding, Transfer moulding and Rotational moulding. The Tool room is a division of making the mould and it contains various special machines and finemachines.

QUANTUM ENTANGLEMENT

Quantum entanglement is a physical phenomenon which occurs when pairs or groups of particles are generated, interact, or share spatial proximity in such a way that the quantum state of each particle cannot be described independently of the state of the other, even when the particles are separated by a large distance.

STUDENT ACTIVITIES 22.01.2019

Name of the Students	Year	Event Name	Name of the Project
Shorn Philip Dinesh G Ajith Kumar P Roshan Ajith Mohanankrishnan M Mohamed Asfar A Nithya K	II & III Year	ACMA Project Expo	The Robotic Arm IB V 1.0 (ROBOTROOP)

Measurements of physical properties such as position, momentum, spin, and polarization, performed on entangled particles are found to be correlated. For example, if a pair of particles is generated in such a way that their total spin is known to be zero, and one particle is found to have clockwise spin on a certain axis, the spin of the other particle, measured on the same axis,

will be found to be counterclockwise, as is to be expected due to their entanglement. However, this behavior gives rise to seemingly paradoxical effects: any measurement of a property of a particle performs an irreversible collapse on that particle and will change the original quantum state. In the case of entangled particles, such a measurement will be on the entangled system as a whole.

Such phenomena were the subject of a 1935 paper by Albert Einstein, Boris Podolsky, and Nathan Rosen, and several papers by Erwin Schrödinger shortly thereafter, describing what came to be known as the EPR paradox. Einstein and others considered such behavior to be impossible, as it violated the local realist view of causality (Einstein referring to it as "spooky action at a distance") and argued that the accepted formulation of quantum mechanics must therefore be incomplete.

Later, however, the counterintuitive predictions of quantum mechanics were verified experimentally in tests where the polarization or spin of entangled particles were measured at separate locations, statistically violating Bell's inequality. In earlier tests it couldn't be absolutely ruled out that the test result at one point could have been subtly transmitted to the remote point, affecting the outcome at the second location. However the so-called "loophole-free" Bell tests have been performed in which the locations were separated such that communications at the speed of light would have taken longer in one case 10,000 times longer than the interval between the measurements.

According to some interpretations of quantum mechanics, the effect of one measurement occurs instantly. Other interpretations which don't recognize wave function collapse dispute that there is any "effect" at all. However, all interpretations agree that entanglement produces correlation between the measurements and that the mutual information between the entangled particles can be exploited, but that any transmission of information at faster-than-light speeds is impossible.

Quantum entanglement has been demonstrated experimentally with photons, neutrinos, electrons, molecules as large as buck balls, and even small diamonds. The utilization of entanglement in communication and computation is a very active area of research.

Quantum entanglement in living systems:

In October 2018, physicists reported producing quantum entanglement using living organisms, particularly between living bacteria and quantized light.

Midhun.G. B,
II year,
Mechanical and Automation.

DEPARTMENT OF MECHATRONICS ENGINEERING

INTERNSHIP / IN-PLANT TRAINING:

1. Sakthimurugan R, Raghul E, Yugendran K V, Harikrishna of IV year did their internship in the area of Auto forming ROBOTS at TVS Sundaram Clayton from Dec'18 to Feb'19

2. Khamrudeen J, Ramkumar R, Kamalanathan K and Porselvan M of IV year did their Internship at CUMI from Dec'18 to Feb'19.

3. A.Mukesh, A.Tamilselvan, P.Vaishnavraj and K.Partheeban of IV year did their Internship in the area of Vision-based Automatic system at OM SAI Automation from Dec'18 to Feb'19.

4. Santhosh.P, M.A Ajith, Prince A and Delliganesh of IV year did their Internship in the area of PLC at Posh Automats from Dec'18 to Feb'19.

5. A Madhanraj, Dhoddu kandasamy, Rukesh Prasanaa P K and Sethupandi of IV year Students did their Internship in the area of IOT at CIPET from Dec'18 to Feb'19.

6. Deepak K, Sangeetha S, Aswin A and Maniyarasan K of IV year did their internship in the area of IOT at SVP Laser from Dec'18 to Feb'19.

7. Lijin Joshua and Santhosh K V of IV year did their internship in the area of Non toxic fatal device MGH R&D Lab from Dec'18 to Feb'19.

8. Balaji S, Dinesh D, Lakshmanan S K and Lokesh Praveen V of IV year did their internship in the area of PLC at Propass from Dec'18 to Feb'19.

PAPERS PRESENTED BY STUDENTS:

Ramvignesh.A, Surendar.S and P.Ramkumar of III year Mechatronics presented a paper in a conference on Heavy Load Energy Transfer using CCWET (wireless) for smart city at IIT Madras on 20.1.19.

STUDENT PLACEMENT:

Final year student A.Madhanraj got placed in Bharath Axa Life Insurance as a Service Facilitator with the package of 2 LPA on 9-1-2019.

JANUARY 2019

PARTICIPATION OF STUDENTS IN WORKSHOPS / SYMPOSIUM:

Tharun.Y.C, Vignesh.R and Santhana Krishnan of II year Mechatronics attended Robotics Workshop and Automation workshop at Chennai Institute of Technology on 24.1.19 and 25.1.19.

INDUSTRIAL VISITS:

II year and III year students of Mechatronics went on an industrial visit to Central Institute of Plastic Engineering and Technology (CIPET), Guindy on 9.1.19.

Pongal Celebration 2019

RePublic Day Celebration 2019

Agni College of Technology

Estd. in 2001 | Affiliated to Anna University, Chennai. Approved by AICTE, Accredited by NBA, New Delhi. ISO 9001:2015 Certified Institution www.act.edu.in | OMR, Chennai