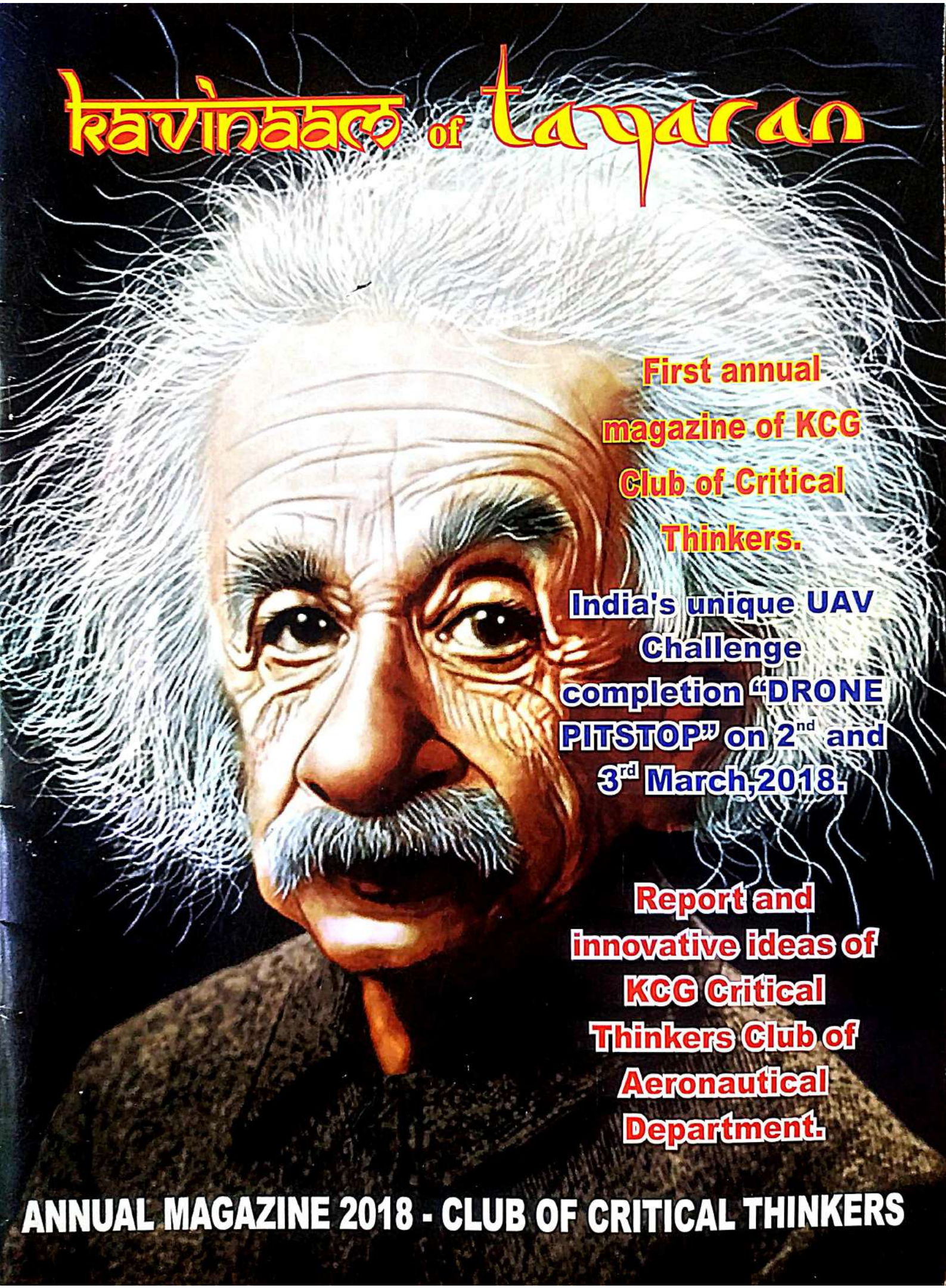
kavinaam of tayaran



First annual magazine of KCG Club of Critical Thinkers.

India's unique UAV Challenge completion "DRONE PITSTOP" on 2nd and 3rd March,2018.

Report and innovative ideas of KCG Critical Thinkers Club of Aeronautical Department.

ANNUAL MAGAZINE 2018 - CLUB OF CRITICAL THINKERS

The unexpected way of thinking starts here

"KavinaaM of Tayaran" is combination of language gives the meaning **"Great Thinkers of Aviation".** KavinaaM is the word taken from the Sanskrit language giving the definition **"Great Thinkers"**. Tayaran is the word which is been found from Arabic language means **"Aviation"**.

KCG
COLLEGE OF TECHNOLOGY
(A Unit of Hindustan Group of Institutions)

Best wishes for "DRONE PITSTOP"

DPS DRONE PITSTOP

A National UAV Racing Competition

Editor

VIEW POINT

As Barbara Januszewicz once said, "Creative thinking inspires ideas. Ideas inspire change." And I say that these ideas will shape the course of your future, maybe even the world. The club of critical thinkers was started six months ago with the vision of having a group of people who can guide you and your ideas in the right direction. This club will work in such a way that you're out of box ideas are made into a reality. Being engineering students most of us have parallel ambitions or goals. For example my parallel aim is to have a sustainable environment, to be able to co-exist with the nature and the surrounding by implementing the idea of reusing and recycling but I lacked clear perspective, this is where all of us face an obstacle. This obstacle hinders our process of achieving the goal. This is where the Club of Critical Thinkers will be your knight in shining armor; it will be your light in the darkness.

This group will further consists of a panel of experts that will consists twenty member experienced staff and ten member student body. The best part being that this club is open to all. Doesn't matter if you are an average student or a student who is above average, all it takes is your idea. No matter how small or big, impossible or imaginary it is, your idea will be judged and discussed upon and we will help you make that dream of an idea a reality. Your idea needn't be a one that has already been on Google or YouTube. It has to be your idea, you might have come up with it while day dreaming in the class, or while you were having lunch or maybe even when you were questioning your own existence. Each one of you has hidden potential in yourselves which most of you fail to realize or at times are too scared to come out. This is one reason that we have a student body in this club, if you are too scared to approach the staff with the idea you can always bring it to our notice and no matter how silly or small it sounds we will take it forward and if it proves to be important then-'congratulations you just crossed another milestone'.

There have been reports about the world ending in a few years but I'd say that the world will end the day there is no new invention, the day people like us stop thinking. My message here is that, "never stop thinking and don't ever doubt the idea you get or the dream you have." At times our fate is decided by just a pen similarly your fate is in your hands, is in your minds.

Come. Share. Become a Critical Thinker.

Publisher : Club of Critical Thinkers

Patrons : Dr. Elizabeth Verghese (Chairperson HGI)
Dr. Anand Jacob Verghese (Director & CEO HGI)
Dr. Annie Jacob (Director KCG)

Editor : R. Jagadeesh

Coordinator : Syam Narayanan S

Editorial Team: S. Madhu Mathi
P. Kavyashri
M. Muthu Kumar
S. Gopinath
Raja Ravi Kiran

Critical Thinkers Panel Members

Staff Members

- Dr. G. Prabhakaran
- Dr. Anita Manuel
- Dr. K. Vijayaraja
- Dr. R. Asad Ahmed
- Mr. Jayababu
- Mr. Bikash Kumar Mondal
- Mr. Syam Narayanan S
- Mrs. Susan Jacob
- Mr. S. Venkatramanan
- Mr. S. Manishankar
- Mr. Ravichandran
- Mr. Vinod Kumar
- Mrs. Anbarasi

Student Members:

- R. Jagadeesh
- S. Madhu Mathi
- M. Muthu Kumar
- S. Gopinath
- P. Kavyashri
- Raja Ravi Kiran
- C. V. Ruban
- V. Sathyanadhan
- Jedi Diah Paulraj

DRONE PIT STOP

Aasish C, Bessy Benny, Gayatri Devi

KCG TEAM RECEIVING BEST TEAM AWARD IN AERIAL ROBOTIC CONFERENCE CHINA

Drone is one of the most efficient and economical unmanned aircraft which is not only used in the aviation field but also in many other commercial fields. Soon it will become as a mandatory gargets to all other fields. A globally recognized event that can ensure unique hands on experience in drone tech and also to promote job creation, team building, social commitment in the field of Aerospace and to serve for the nation building for which our college ,KCG College of Technology conducted a national level event "DRONE PIT STOP" on March 2nd and 3rd 2018. It also contained many other technical and non- technical events which were useful as well as encouraging for the students to bring out their ideas. The drone event had 3 rounds. The first one is inspection; copter should be made as per the rules and regulations. The drone should be in dismantled state, the round two is assembly. The teams have to assemble the copter within the specified time; based on the timing the teams will be valuated. A drone with innovative ideas will be awarded, drone assembled in shortest will be awarded with bonus points, and drone should be able to take off. The round three will be race, the copter has to flown to the obstacles' without hitting them, and

performance of the team will be evaluated in each and every stage. Quad copter used in first and second round allowed in third round. Teams can participate in all the three rounds, teams can also skip rounds, all participants receive participation certificate. Percentage of rounds, assembly 30%, best timers (bonus points 5%), connecting on-board video to the LED screen 5%, racing 60%. The team scoring highest points out of hundred will be winner of the event. The cash money allocated for the winner was 2 lakhs rupees. We thank our management and the aeronautical department for the exposure.

REVIEW MEETING OF CRITICAL THINKERS CLUB

A snap from First innovation analysis meeting of critical thinkers

---

Students presenting their innovative ideas in front of panel members

PLATINUM SPONSORS:

HINDUSTAN
INSTITUTE OF TECHNOLOGY & SCIENCE
(DEEMED TO BE UNIVERSITY)

O.F.S
ORIENT FLIGHT SCHOOL

DIAMOND SPONSORS:

MMC™
www.mmcuav.com

Wasserchem®
Enthralling everyone

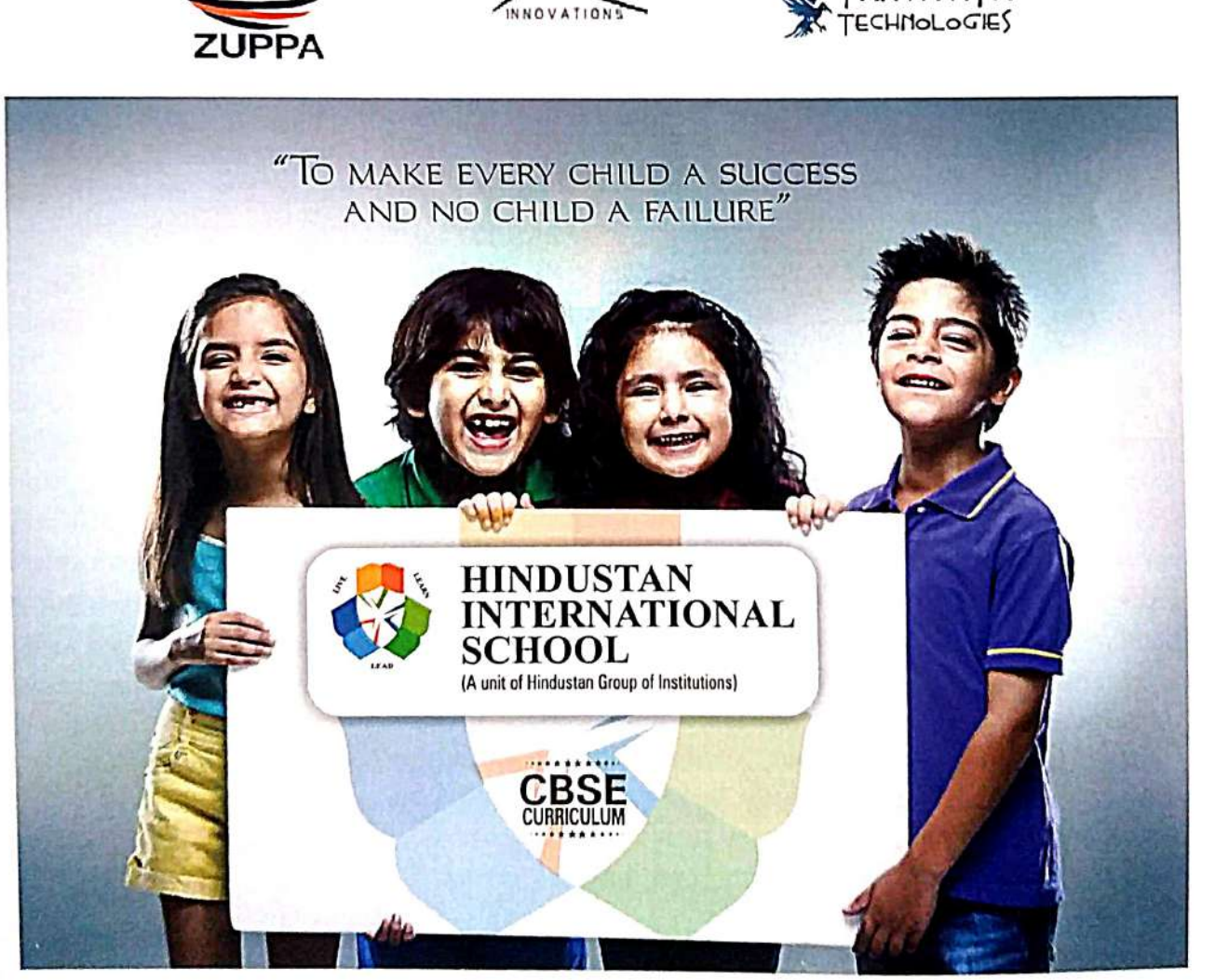
BYJU'S
The Learning App

GOLD SPONSORS:

MFTRE™
Nurture Engineering Skills

PRECISE 3D

SILVER SPONSORS:



SPY QUAD HACKING

By N. MUJIBUR RAHMAN

This is the idea of breaking the binding of the transmitter and receiver to make the quad inactive. During surveillance of the military camps in case of spotting the spy quad they will be destroying the quad, so we cannot collect the data from the quad. In this method we can penetrate through the binding of the transmitter and receiver so that the quad fails to function and falls into the land and data's can be collected from the quad. It is made possible through the process of reverse engineering. We can find the frequency through which the communication of transmitter and receiver is done. By using radio protocol we are able to penetrate through the frequency and disturb the binding between the transmitter and receiver.

START-UP MARKETING

By S. MADHU MATHI

So here we all are mostly unemployed. Why can't you find a way to make your own startup company? So the next steps "MARKETING" many products may cause harm to human body, but the product which is trendy gives benefits are there in a society. If we compare marketing and quality, the marketing will first reach the people, then they will check for quality so, the brands which are getting higher profit are which is concentrating more on marketing. The product which is highly fascinating on a banner will create the eagerness among the people to buy that product. They will not check any quality; it's not about the people's mistake it's all about the psychology. So our product should be attractive while marketing. It is not necessary to tell all the process at quality available in that project. The marketing should be in knowing its quality.

We should market like we are replacing the people's negativity with our product. We should not show our negative things.

CUP TO PLATE

By R. JAGADEESH

The folding of the sheet can be changed so that it can be made into a plate. A plate can be either rectangle or square. The bottom surface of the cup is decided and its size is determined. Then the long sides are been measured and it is folded. Then the short sides are measured and folded. Then four triangular pieces are there at the corners. Just stick it to the short edges. So the when the pack is taken home the fixed portion can be removed and made into plate.

➢ NANO DRONES

By V.MOHAN KUMAR

Drones have emerged greatly in our society for various purposes like spying, surveillance, demining, agriculture, attack and for recreation.

The main objective of this abstract is to deal with the military applications and the drones used in the military.

There are various practical problems faced by the army due to their enemies, to tackle and overcome the problems and to watch the movement of the enemies, drones are used very significantly today. The main reason to use the drones is for attacking the enemy camps whenever it is required. To achieve these two tasks, a drone should be manufactured for taking the photographs and it should also act a self destructing bomb.

UAVs can be used for this purpose but due to its large size, it cannot be used efficiently. So the next generation of drones have emerged, it is micro aerial vehicle (MAV), nano drones.

First type of construction

The MAV and the nano drones can be constructed very small like a house fly, humming bird etc. For aerial photography purpose and tracking any person in a huge crowd.

Second type of construction:

Secondly, it can be constructed along with many ports for loading the weapons to attack the enemies when the command is given by the controller. It should also act as a self destructing weapon when it is captured by the enemies.

Third type of construction

A nano drone should be manufactured by the stealth material, so that it cannot be noticed by the radar and the drone never be targeted by any missile.

The most advantageous point is the manufacturing cost. A report states that the cost of manufacturing a nano drone is very much less when compared to a UAV's cost.

The most commonly used UAV.

The nano drone that is used in India is

Zano -This particular drone is used only for photographs in India. But if many researches go on, we will be able develop the concept of nano drones very well and our military can be the most powerful military in spying and destruction work.

➢ TAX TRANSPERENCY SYSTEM IN INDIA

By NANDHINI

In India, taxes have been collected for many purposes from the citizens. It is said that those currencies are mainly used to develope our nation. But still ....because of some people, the money is not going to the correct places for good things.

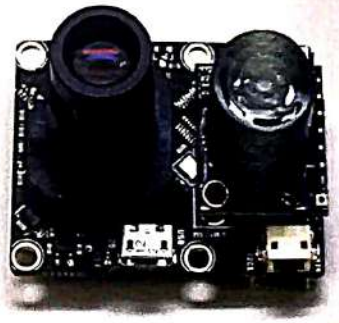
So here we have the idea of making the tax money which we are paying as "TRANSPERENCY" for Indian people.

Everyone is paying tax to government, but we don't know how they are using our tax and in what way.

It could be better if people see their tax money has been invested in particular scheme for particular period. So if it is clearly evident to them, the taxes will be paid correctly.

By this government can give assured to people that their tax money is being used in a way.

We are paying from our income, so all we have the rights to know, what government is doing and how much income every year government gets, and how it is utilizing our tax money.



➢ DRONE SONAR AUTONOMOUS SYSTEM IN DEFENCE FIELD

By A MEMBER OF CRITICAL THINKERS

Drones with obstacle detection and collision avoidance sensors are becoming more prevalent in both the consumer and professional sectors. This year, we have quite a few drones with collision avoidance technology. This obstacle detection and avoidance technology started with sensors detecting objects in front of the drone. At the time of writing there is 1 drone which has all 6 directions of obstacle detection. In this article we take a quick view at the top drones with obstacle detection and collision avoidance technology. We also give you a brief overview of the type of obstacle detection sensors being used along with information on software algorithms and SLAM technology which is used to interpret the images being scanned by the sensors. Surprisingly, there is not just one type of obstacle detection sensor being used by the drone manufacturers. We are seeing Stereo Vision, Monocular Vision, Ultrasonic, Infrared, Time-of-Flight and Lidar sensors being used to detect and avoid obstacles. Manufacturers are fusing these various sensors together to create the obstacle detection and collision avoidance systems. This sensor are widely used in drones, to develop this technology will help to reduce man work, this are also easily communicate with autonomous system and communication.

➢ INTERGALACTIC TRAVEL

By VENKAT RAMANA

The recent mission of Chandrayan utilized the gravitational force of earth and the centrifugal force that is being produced due to the force of gravity of the earth. The gravity of the earth was more than enough to propel the satellite from the earth to mars. In our solar system the largest planet found is Jupiter. If we can use the gravity of

Jupiter we can achieve the intergalactic travel. The gravity of Jupiter is so high that if a satellite is made to revolve around the Jupiter and if released at the right time we can propel the satellite to outer space. There are many asteroids which were bound to hit the earth were deflected by a significant amount because of Jupiter's influential gravity.

Jupiter is one planet is nearly 2.5 times the mass of the earth and the force of gravity is very high. This can be used to our advantage. There is a propulsion system /journal where in the space satellite is propelled using laser propulsion. This laser propulsion can be used to make the satellite to go into rotator orbit in Jupiter. Once the satellite is placed and is made to revolve such that the average radius of the orbit keeps increasing every revolution. If the satellite is released at the right time then the satellite would travel a long distance. Once the satellite covers the longest orbit and comes back close to Jupiter (apogee) then we can access this data using laser amplified signals.

Halley's comet is one such example of Jupiter's gravity where the gravity of Jupiter plays a major role in directing this comet from a point outside our solar system and comes back into the closest point in our solar system that is all planets have some gravity which influence the direction of motion of this comet but Jupiter has an essential part in controlling its motion.

➢ FARMING AS GOVERNMENT JOB

By NANDHINI

It will be better if the government announce farming as a government job and if the farmers are government employees.

Even the new generation can come forward to do farming, as everyone need some sufficient money to survive.

It can be evident from the amount of people those who are attending TNPSC and other group exams.

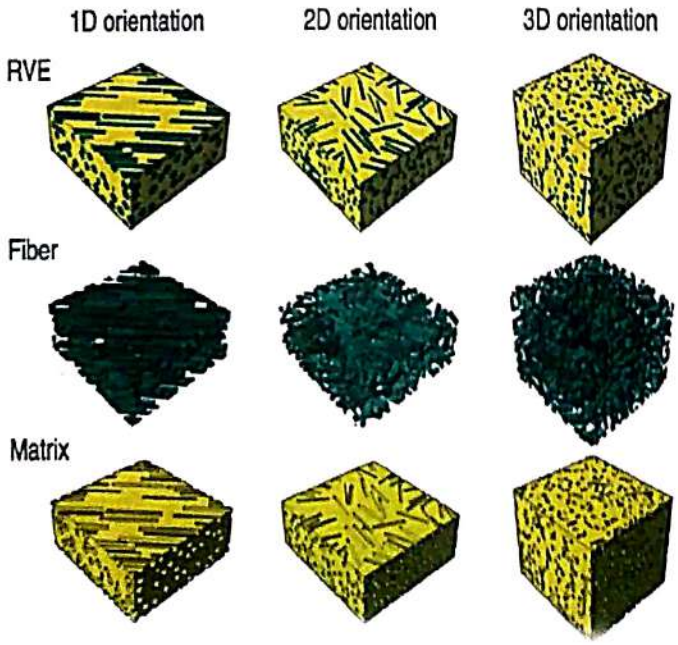
If this idea came to practical, people those who are farming will get a good salary.

As a dream of A.P.J ABDUL KALAM, soon our nation will become a wealthy one. It can lead our country in a way of mass production of food materials when compared to other countries.

The benefits of this idea are,

- By this farmers will get good recognition and they will also get a pension after their retirement.
- One more thing is, it could be better if all the farmers have a minimum qualification of studies and a minimum awareness about economy so that no one will cheat farmers.
- By this the pity stage of farmers can be avoided permanently.

Composition of composites



➢ GREEN COMPOSITES

By SIVAGAMI

Cellulose, Starch and Lignin's in the room temperature ionic liquid

- Mechanical property
- Can be recycled
- Thermal stability

Problems that also to be taken to succeed

- Less homogenous than glass
- Tend to absorb moisture
- More preprocessing and treatment required
- Developed Bio-resin is logging.

➢ UZHAVAN

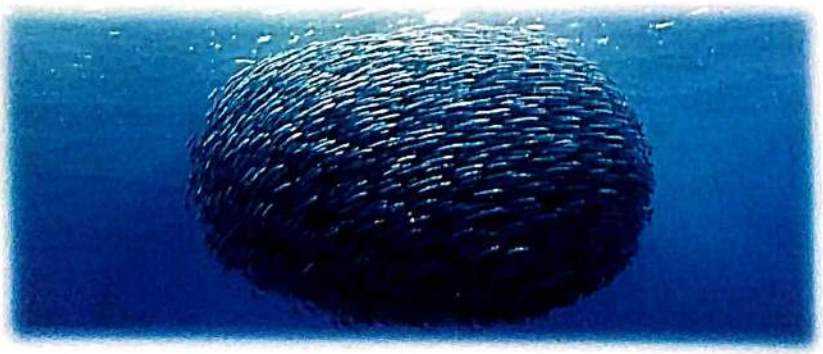
By S. MADHU MATHI

"UZHAVAN"...the name itself sounds like the most prestigious person, who is our famers. NGO-Non- Governmental organization usually contains a group of people who are always available to help people, and the fund will be collected by other helping hands in this world.

So, here an idea proposal to start a NGO for Farmers named"UZHAVAN", especially for our state. So it will quiet better if we start NGO in all state for the farmers, so that we can easily concentrate on each and every farmer.

The funding can be collected from the helping hands those who are wishing to develop farming. Many of our Tamil people have become as a foreigner. But many of them are eagerly wishing to help for their nation which brought up them to be a disciplined man.

This NGO will be providing awareness to all the villages and will give the hope to them in their profession. It will also provide financial help to the farmers to do farming based on their stage on society.



➢ ADVANCED FISHING TECHNIQUE

By N. MUJIBUR RAHMAN

Now days there are more difficulties in fishing like we have to be very cautious about the borders which are the major issue in the recent times. So we cannot be able to fish some kind of fishes which is only present in the other side of the border. So this idea is to stay safe in the own borders and do fishing by making the fishes to come to the side which we are fishing. So that we can reduce the risk of crossing the border, which enhances the security of the fishermen's. This idea is to use the sonar sensor which emits frequency which is similar to the frequency used by the fishes to communicate. The fishermen can set frequency in sonar sensor and put it into sea so that it attracts the fishes near to it and fishermen can be able to do fishing without any problems.

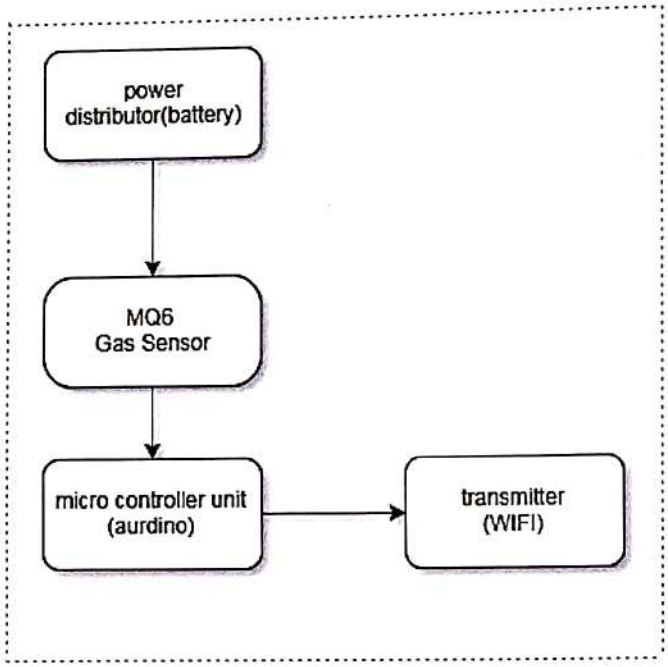
➢ GAS DETECTION AND SAFETY SYSTEM

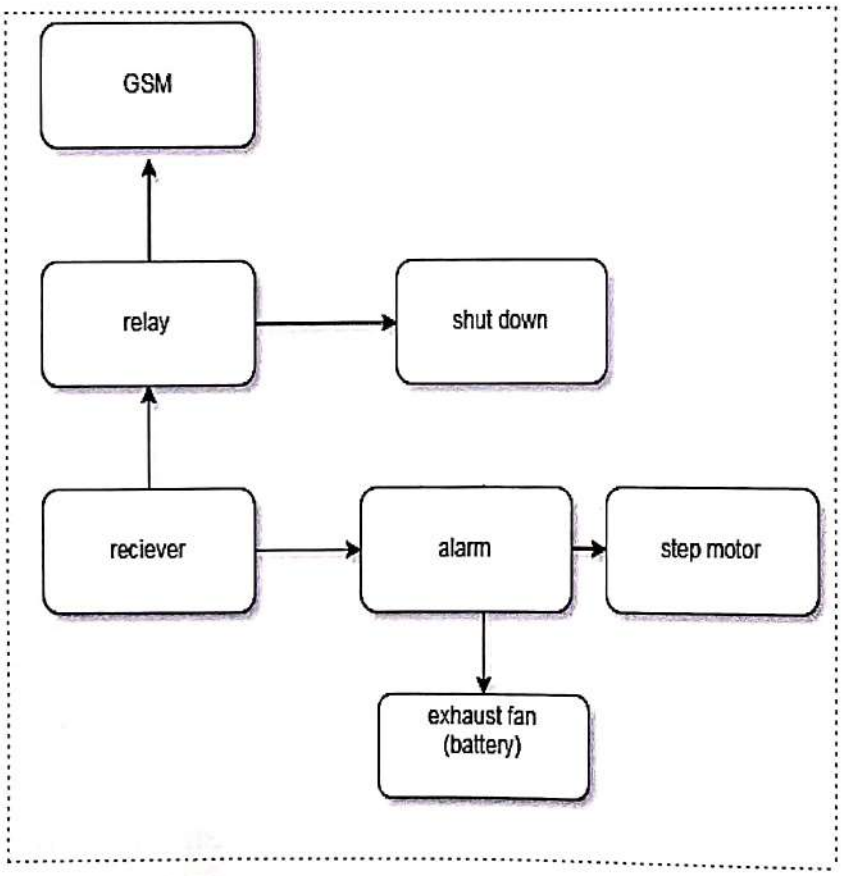
By M. MUTHUKUMAR

S. GOPINATH

P. L GAYATHRI

KUVVARAPU TEJASWI





This project is totally based on IOT-Internet of things. In many houses and other places, where the gases have been used for the cooking or other purpose, there may be some disaster due to the leakage of gases. So the idea is "GAS DETECTION AND SAFETY SYSTEM" which will be useful in tough situations like when the gas leaks. The working of this system is quiet interesting. For example consider a house where the gases leaks, what the system will do is, first it will cut the main power supply of the particular house in a precaution that no current spark should get generated. The next step is to reduce the density of gases inside the house by starting the exhauster presented inside the kitchen with the use of insulated external power supply. The third step is really interesting, what it will do is, the system will automatically make an alert call to the house mates phone number which have been programmed previous itself.

VOICE CONTROLLED CONTROL SURFACE

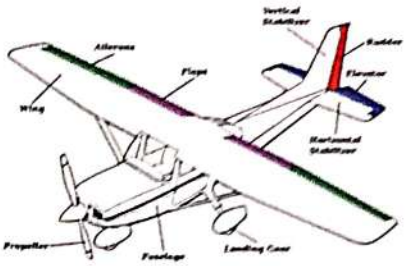
By M. MUTHU KUMAR

From the earlier days till the current days, the mechanical and fly by wire systems have been used to control the control surfaces. Here we have an innovative idea of controlling control surfaces by voice control, so this entire system will be placed in the cockpit with a certain actions programmed into it. Whenever the command is given, the control surfaces will be moving according to it. For example if the command is given like take off, the thing which we have programmed in that will be sending the signals to the flap and the flap will be immediately moving to the certain degree to produce lift.

HOME AUTOMATION SYSTEM AT LOW COST

By R.JAGADEESH

This century is updating with everything. One of the new things which have been developing in everyone's home is HOME AUTOMATION SYSTEM, but really at the high cost. What actually the home automation system is to make the interconnectivity among all the electronic and electrical gargets which is presented inside a particular area. So the comfortableness of the operator at the home will get increased as it is fully controlled by a single app which is presented in their mobile. If we see the history of cost of this project at outside, the large amount will be given as a bill to the customers. But here we are trying to make a home automation system with the low cost but at the good quality of materials. This is the first change and we could make in this society of comfortableness.



PREVENTING BIRD STRIKE IN AIRCRAFT

By M. KEERTHIKA

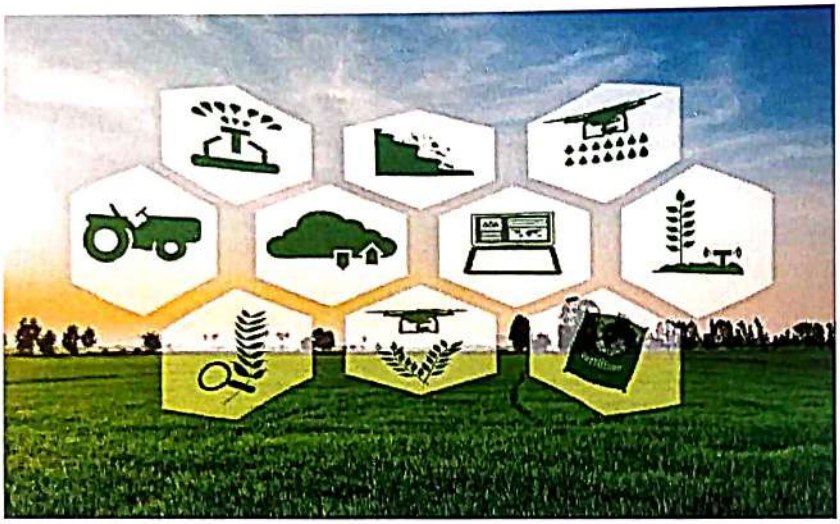
There is a way to prevent bird strike in aircraft in my point of view we can place a sensor type model that can protect birds around the aircraft. I searched some of the sensors and there is sensor named PIR motion sensor that can prevent the bird to strike the aircraft but some of them put water jet to prevent the aircraft, it will give some disturbance in that sensor we put solar panel and it will automatically operate. The motion sensor detection range works up to 500 square feet; it will activate the system to emit ultrasonic frequency when detecting movement in certain range. If we keep the sensor in the aircraft it will prevent the aircraft from birds strike. In my view if we kept inside the cockpit which means more reaction of the aircraft with a thin material to close to the sensor. It will prevent the aircraft. No one know this idea to prevent the aircraft.

➢ INNOVATION IN AGRICULTURE

By LAKKAD HARSH RAMESHBHAI

Advances in technology are key to the future of agriculture as farmers strive to feed the word with limited natural resources.

These are an estimated 570 million farms in the worldwide, in a neat twist of number synergy, according to Val oral advisors, funding rounds in technological innovations along the agriculture and food value chain also raised around $570 million in 2014



POWER OF A NO-SALT DIET:

Water efficiency in farming and food production whether for traditional rural irrigation arid regions or urban farms, represents a key metric in the face of global population growth and climate change.

Considered together scarcity of freshwater resources and the fact that 71 percent of the earth's surface is nevertheless covered in water, therefore make a compelling argument for desalination. The stumbling block, historically, has been its energy-hungry nature and prohibitively high summing costs relative to agricultural profit margins.

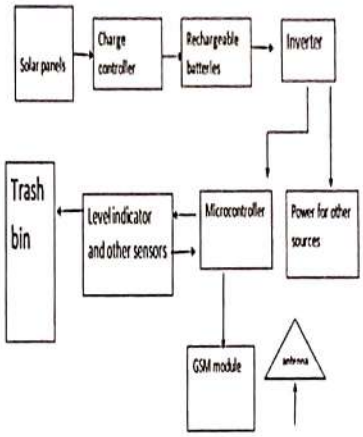
The innovative solution offered by Sun drop farms draws on one of the few renewable resources in even more abundant supply than sea water, sunlight, sun drop farms harvests solar power to generate energy for desalination to supply hydroponic green houses.

Requiring no freshwater, farmland or fossil fuels, this potential game change for sustainable farming is creating 300 jobs in port Augusta, south Australia with a ten years construct won to grow tomatoes for close supermarket.

DATA PRESERVED IN SOIL:

For traditional farming models perhaps the primary determination of the supply capacity is simply the availability and suitability of land. However any idea of future potential must be built on current data with what data there is then mapped to tell the story of a region. This story is efficiently written in the dirt and the soil. Digital soil mapping, especially in data sparse regions such as Africa, is key to planning sustainable agricultural intensification and natural resources management with open access, these interactive maps are publicly available to be explored on Google earth.

SMART BIN



By S. SYAM NARAYANAN, VENKATRAMANA, E. VIJAY ANAND, G RAKESH KUMAR

The idea is very simple, by using solar panels on the top and side surfaces of the bin we produce enough power to satisfy our different needs such as maintaining the particular temperature inside the bin to prevent the development of micro and macro organism, the bio-gas which is obtained can be stored in a separate chamber which can be later used as a fuel. The idea of smart bin can be familiarised among people with the help of a mobile app. This mobile app would tell you where to find the nearest robotic smart bin and ensures the Panchayat offices when the bin are full and need to be cleaned government can link the mobile app with their Aadhar car so that people get reward points when they put their trashes into the bins. Cameras can be attached at the sides of the smart bin in order to spot any person who throws waste outside the canand can also be used instead of traffic cameras. Like this we get can find lot of different applications.

SEYALI

By S. MADHU MATHI

This is the century which made infinite changes in human lives. App is one of the kinds of developed which we could say all the times. The need for apps become a lot now a days. The app can make a drastic change in the society, where people couldn't do in the reality till before the apps was created. We could say that the social media are the backbone of building the society. It is giving a lot of opportunities to others to put their own perception regarding a particular thing in front of public. There were an 'n' number of changes made by the social media. Why can't we use it to develope our "Tamizh" language. The app named as "SEYALI" which is nothing but the Tamil name of app. This app will provide facilities to create their own account. This app will be fully for the Tamil poetry. Every new Tamil poetry books will be updated here so that the reviews of the books also will be there. This will increase the counting of Tamil lovers and will motivate the Tamil poets if their poet is getting an appreciation by the famous poets. It can also let others know the exciting information about the language "Tamizh" so our history based on our talents also will be revealed here. As many people wish to know about our history more but many people don't have time to go and visit any book shop or the historical places. So if we update them through app daily about our history and a mesmerizing poet, we are in our way to create temptation among more number of people to get more exposure to Tamil.

"VAZHGA TAMIZH VALARGA TAMIZH
SAMUDHAYAM"

➢ SLUM CLEARANCE SYSTEM

By S. MADHU MATHI

We have our public corporation to clear slum and to do waste management process yet we can't see the effective result of their work. This idea is nothing going to do with their work. This is the separate work which is totally funded by the public at the time of initiating work. This work will be fully done by the surveillance of public by updating them day to day work.

This work is not organized or coordinated by the government engineers. This work should be fully finished by the student who are in third year of their own stream. So the government has to do the entire process of selection of candidate to work through the entire project. They should be allotted as a government officer for a particular job and for a particular period.

No other persons should work again in that scheme for other project as it is not a permanent job. We don't need to worry about the quality engineers after any kind of work as there are thousands of engineers are emerging per annum. So, here are some details about the funding for this slum clearance. We have around 2crores of people in Tamil Nadu

Even if it is possible to collect Rs.100 from every family, it will be coming around 100crores. If we go and see the budget to clear the entire slum in our state it will come around 65crores approximately. Here we have the enough money to make a change in our state.

The collected money should be in a separate account which should not merge with the other government scheme. From this we can also avoid getting loan from other countries even for the development schemes.

Every engineer who has been allotted for the work should not work after the completion of work assigned for them by the chief engineer. So that every engineer will get the job as an experience and the work will be completed effectively. There will be the chief engineer who will be allotted for the complete work.

The website will be opened regarding this system and there will be a day to day updating of work, so that no cheating will be there in any manner.

As this work is fully done by the students, there will not be any cheating throughout the process. As a result the students should be certified by the government in the name of "EFFECTIVE EMINANCE". Here this system may initialize many upcoming changes in this state.

➢ AI AND THE FUTURE OF DRONES

By M. MANOJ KUMAR

For many, drones are simply a novel gadget, a fun toy to fly around the neighborhoods, snapping aerial images or even spying on neighbors. Rapidly growing in popularity, the unmanned aerial vehicles (UAVs) already have been purposed in a variety of scenarios, far beyond their use as robotic toys.

In just a few years, drones have enhanced and redefined a variety of industries. They are used to quickly deliver goods, broadly study the environment and scan remote military bases. Drones have been employed in security monitoring, safety inspections, border surveillance and storm tracking. They even have been armed with missiles and bombs in military attacks, protecting the lives of armed-forces personnel that would otherwise be required to enter these combat zones.

Entire companies now exist to provide drones for commercial use. The potential of these remote-controlled flying robots is unlimited.

"Drone-captured data is an innovative solution for delivering sophisticated analytics to stakeholders and provides an affordable way to improve estimating, designing, progress tracking, and reporting for worksites," Drone Base's Patrick Perry wrote in a blog post.

Still limited by their human controllers, the next generation of drones will be powered by artificial intelligence. AI allows machines such as drones to make decisions and operate themselves on the behalf of their human controllers. But when a machine gains the capacity to make decisions and "learn" to function independently of humans, the potential benefits must be weighed against the possible harm that could befall entire societies.

When it comes to AI, we are entering unknown territory, and the only guide is our imagination. Some of the brightest minds of the past century have already forecast what might happen.

It was in this collection that the Three Laws of Robotics, the set of rules that dictated how AI could harmoniously co-exist with man. For those unfamiliar, the Three Laws state:

1. A robot may not injure a human being or, through inaction, allow a human to be harmed.

2. A robot must obey orders given to it by humans unless the orders conflict with the First Law.

3. A robot must protect its own existence unless such protection conflicts with the First or Second Laws.

Sure, the Three Laws create compelling fiction, but introduced readers to a very real and dangerous concept. When a machine is able to function independently of humans, if it can learn and make choices based on its advancing knowledge, what prevents it from overtaking a mortal society?

As AI jumps from the pages of science fiction into reality, we are faced with real-life scenarios in which those Three Laws could come in handy. What happens when robotic military weapons are deployed with the potential to kill millions in a single raid?

"We are not talking about things that will look like an army of Terminators," Steve Goose.

AI weapons, specifically drones, are approaching much sooner than anticipated. Though the Pentagon issued a 2012 directive calling for the establishment of "guidelines designed to minimize the probability and consequences of failures in autonomous and semi-autonomous weapons systems," unmanned combat drones have already been developed and even deployed along the South Korean border. The developments have led to major figures in the tech industry – including well-known names such as Elon Musk – to call for a ban on "killer robots."

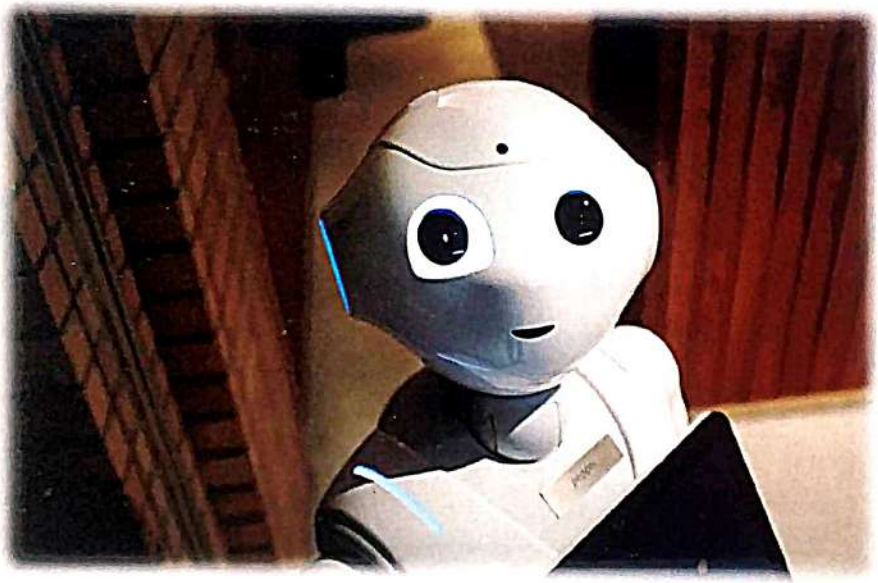
"We do not have long to act," Musk, Stephen Hawking, and 114 other specialists wrote.

"Once this Pandora's Box is opened, it will be hard to close.

The Future of Life Institute drove the point home with its recent release of Slaughter bots, a terrifying sci-fi short film that explores the consequences of a world with unregulated autonomous killing machines

"While government ministers and military lawyers are stuck in the 1950s, arguing about whether machines can ever be 'truly autonomous' or are really 'making decisions in the human sense', the technology for creating scalable weapons of mass destruction is moving ahead. The philosophical distinctions are irrelevant; what matters is the catastrophic effect on humanity."

The film, set in the near future, depicts the launch of an AI-powered killer drone that eventually falls into the wrong hands, becoming an assassination tool, targeting politicians and thousands of university students. The production supports FLI's call for a ban on autonomous killing machines. That and similar movements were the focus of the recent United Nations Convention on Conventional Weapons, attended by representatives from more than 70 nations.



We too late to stop a future robotic apocalypse? The technology is already available, and Stuart warns the failure to act now could be disastrous. According to him, the window to prevent such global destruction is closing fast.

"This short film is more than just speculation, it shows the results of integrating and miniaturizing technologies that we already have," Russell warns in the film's conclusion. "[AI's] potential to benefit humanity is enormous, even in defence. But allowing machines to choose to kill humans will be devastating to our security and freedom – thousands of my fellow researchers agree."

The technology is already available. Robot cists from Carnegie Mellon University published a paper earlier this year, entitled "Learn to Fly by Crashing." The research explores the robot cists tests of an AR Drone 2.0 that they watched teach itself to navigate 20 different indoor environments through trial and errors. In just 40 hours of flying time, the drone mastered its aerial environment through 11,500 collisions and corrections.

"We build a drone whose sole purpose is to crash into objects," the researchers wrote. "We use all this negative flying data in conjunction with positive data sampled from the same trajectories to learn a simple yet powerful policy for UAV navigation."

"Artificial intelligence is poised to help us solve some of our most daunting challenges by accelerating large-scale problem-solving, including unleashing new scientific discovery,"

Likewise, GE subsidiary Avitas Systems has begun deploying drones to automate inspections of infrastructure, including pipelines, power lines and transportation systems. The AI-powered drones not only perform the surveillance more safely and efficiently, but their machine-learning technology can also instantly identify anomalies in the data.

BNSF Railway has also utilized drones in its inspections.

"They can pre-program [the drone] to actually follow the tracks and while it's following the tracks". It has cameras on board taking pictures of the tracks. It's taking huge amounts of data; these are high-resolution cameras. And what's happening now is they're using artificial intelligence to do analytics on the data."

So are AI-powered drones more helpful or harmful? It all depends on what we do next. The potential benefits are too numerous to count if we wisely enter into the realm of machine learning, but the risks of inaction are insurmountable.

ELECTRICITY FROM ROTATING TURBINE UNDER SEA

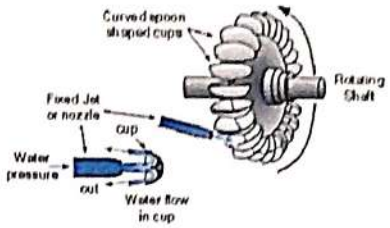
By R.JAGADEESH
M.MUTHU KUMAR
S.GOPINATH

This innovation is nothing but the idea of generating electricity from the rotating turbine fixed under the sea. So the complete set up of this system will be like, the turbines will be fixed under the sea water at a certain feet. So the forces to rotate the turbines will be produced by the pressure created by the waves in the sea. The brushes and the entire set up to produce electricity will be connected to the turbine, so that the current will be passed to the power station. We already have the tidal energy production system but the different thing is, in that system the force will be created artificially to run the turbine but in our system the turbine will be rotated by the movement of the waves.

HIGH LIFT PRODUCTION

By S.MANIKUMAR

The basic principle in aerofoil is, the lift will be produced by the relative pressure between the upper surface and the lower surface. The more the pressure between the surfaces, the lift will be produced. As the pressure is directly proportional to temperature, if we increase the temperature in the lower surface, the thermal stresses will be produced and it will be affecting the lift production. But then if we reduce the pressure at the top surface, the relative pressure will be increased and there will be more lift production.



REUSING OF PLASTIC

By SIVAGAMI

IDEA:

To use/reuse the plastic that has already been used to create notebooks and base for sanitary napkins.

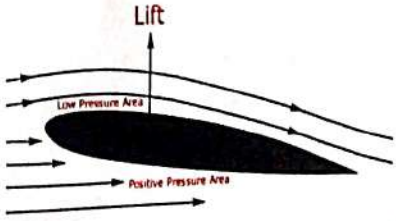
THEORY:

Every year 100,000 of the tress are cut in order to produce the 'A' quality paper that we use daily. I have come up with an idea to use the waste of trees and the wasted plastic to mix up with such a composition that it can be replaced, instead of the regular paper we use. Plastic is non-biodegradable and hence reusing it to manufacture paper and for sanitary hygiene can be seen as a possibility.

OUTCOME:

We attain the principle of sustainable development by

1. Saving trees from being cut further for production of paper
2. Reusing the plastic which is non-biodegradable



➢ SOLAR POWERED CARS

By A MEMBER OF CRITICAL THINKERS

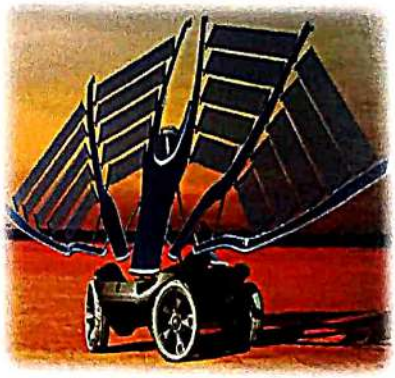
Solar power is arguably the cleanest, most reliable form of renewable energy available, and it can be used in several forms to help power your home or business.

Solar-powered photovoltaic (PV) panels convert the sun's rays into electricity by exciting electrons in silicon cells using the photons of light from the sun.

This electricity can then be used to supply renewable energy to your home or business.

To understand this process further, let's look at the solar energy components that make up a complete solar power system.

In most solar systems, solar panels are placed on the roof. An ideal site will have no shade on the panels, especially during the prime sunlight hours of 9 a.m. to 3 p.m.; a south-facing installation will usually provide the optimum potential for your system, but other orientations may provide sufficient production.



Trees or other factors that cause shading during the day will cause significant decreases to power production.

The importance of shading and efficiency cannot be overstated. In a solar panel, if even just one of its 36 cells is shaded, power production will be reduced by more than half.

Experienced installation contractors such as NW Wind & Solar use a device called a Solar Pathfinder to carefully identify potential areas of shading prior to installation.

Cars having top of the roof film which is more wide and useful for placing solar panels to produce solar energy.

Cases:

✓ In the parking condition, mobile solar buses in static condition, charging cars etc.

Advantages:

✓ Comparatively cheaper than petrol.
✓ Eco friendly.

SEPERABLE BALLISTIC FUSELAGE

By S. VENKAT RAMANA

In this idea, we are taking the fuselage to be in small in size, roughly about 100 seater with small glider like wings.

These are placed in the place of engines in the case of a normal aircraft and is made detachable.

In the place of the main fuselage part we are placing an engine which could produce common thrust for the 2 smaller fuselages (common thrust).

The whole vehicle is launched in the air and is made to climb high altitudes in order for the fuselage to glide safe to the destination.

This could bring possible the advantages like low fuel consumptions and high efficiency. This could also reduce the air traffic.

For example, let us consider this type of flight with 2 separable fuselages. Let the flight travel of fuselage 1 be from Chennai to Bangalore and the 2nd one from Chennai to Mumbai.

In this case the separable fuselage flight is allowed to takeoff from Chennai and is flown at high altitudes. Once this airplane reaches the cruising point and when the flight is close to the Bangalore airport the fuselage 1 is allowed to be detached and it is allowed to glide through and is made to land safely at Bangalore airport with the modern landing systems.

The rest of the flight is flown until Mumbai where it is allowed to detach from the main fuselages (engine) and is made to land safely.

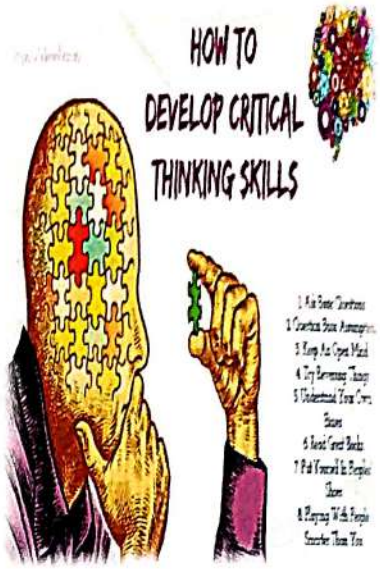
This remaining part is made to land in another airport where in another 2 fuselages are connected and is flown.

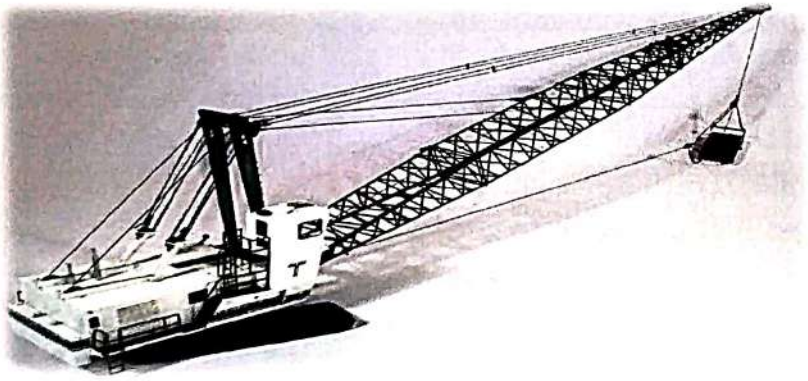
This would reduce the air traffic between cities and could bring down the cost of air travel to a large aircraft. The aim of the scheme will be met by this idea.

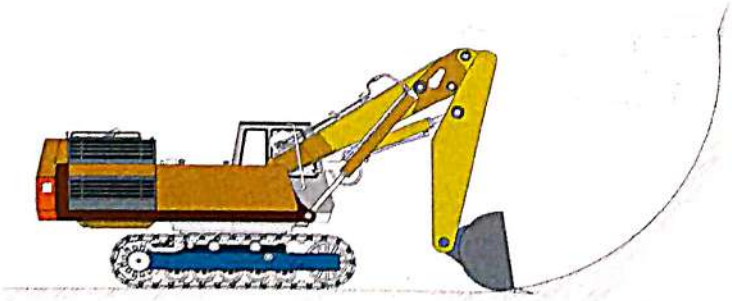
➢ SNOOPING

By S.MADHU MATHI

Snooping is a kind of app which will be playing a vital role in the development of this CRIICAL THINKERS club. So we will be having the users all over the world for this app. It is mainly useful for the KCG collage as it is emerged here. This club has around 20 members. So the weekly report of this club will be updated here in this snooping app. So that everyone will be aware of what development is going in the people's mind. The club will be having every professors of the collage as a member. So that the ideas can be easily discussed and new ideas can be emerged easily. There will be a team who will be always updating about new ideas all around the world so that it will become as a spark of ideas for our collage students. Every talent in this collage will be showing their own techniques here. So there will be many streams, and the new ideas will be posted according to the stream. As I said before, this app will be accessed by all around the world. But the main purpose to develope the creativity of KCG students. So, here this the contribution to our collage from the critical thinkers club. The mission of this snooping is to develope more intellectual and creative persons.







➢ ELECTRIC EXCAVATOR

By A MEMBER OF CRITICAL THINKERS

PRINCIPLE:

By using nut and bolt the actuation of Aem's with the help of electric motor. If it rotates clockwise direction the cylinder get shrink and if it rotates anticlockwise cylinder get expand.

Example for 8 kg load actuation. It needs

1. 1000 rpm motor with 3.5 kqm torque
2. 15 cm actuation cylinder with fix inside bolt niter threaded cylinder with the scale per rotation – 1mm movement.
3. 12 v battery capacity.

➢ INDIAN SYSTEM OF EDUCATION

By SIVAGAMI

First and foremost thing is I am also a product of this education system. In these few passages I would address my view of making/adapting to the trend in the educational system.

As all our fingers are not alike in shape and heights we are all not with same mindset or attitude and interest.

Some may be good at singing while the other may not. While some may be master of some kind of art while some may be jack of many talents, but master of none we cannot judge all these unique traits with a uniform syllabus. I consider it to be unfair for example it's like judging peacock crow eagle, emu based on their ability to dance only peacock can win, but it doesn't mean that rest are fit for nothing rather it only means that dance is not their only way to prove them.

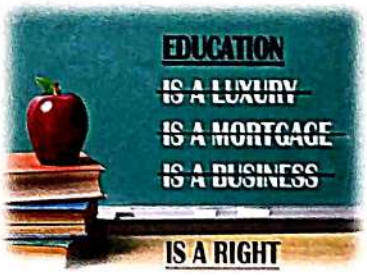
Likewise rating or ranking individual based on a uniform syllabus is not fair.

My suggestion, these are just suggestions which can/ cannot be opted.

The change must occur from kindergarten, we have to teach kids to find solutions rather than following the Squeeze.

Allow them to think, choose and option failure and then learn from mistakes, being over protective can also be harmful to their growth at times.

Provide space for them to find out their abilities rather by having classes from 8am to 4pm



Regular classes, sessions are too annoying for kids that's why learning has become as bitter as Neem seed instead of being as sweet as honey.

We shall allow the kids to choose their own interest and we shall guide them to be successful in their way

They should also be provided a chance to reconsider their decision whenever they needed

There shouldn't be burden of getting marks or ranks, they don't even can't judge kids knowledge

To improvise the test pattern from answering the question in paragraph to objectives through their smart apps or computer/gadgets. Why aren't we updating the system while we try to be updating mobile phones the other things these are just some suggestions, where we can enjoy learning, be involved in our studies on our area of passion without mere compulsion.

➢ NANOBOT

By A MEMBER OF CRITICAL THINKERS

A machine or robot built on the nano scale that can manipulate nano scale objects with precision. These kind of nano machine has their influence in the current scenario in the medical and industrial field. In the medical field, it is used for many aspects. The most familiar/popular reciprocate, it is also on nano bot which measures about micron sizes that can be injected to human blood stream which can be provide the human about 234 times oxygen that the required oxygen content.

We suggest these nano devices can also be used for defense and nat6ional security by making the use of its size we can improvise its application in this field.

The currently existing model of smallest nano bot used in the defense sector is half the size of the human palm.

Through our idea we suggest to reduce the size of the self propel able machine about one finger box

In addition to this we also suggest to modify the structure of nano bot from a cross to a boomerang type with support at all three ends to reduce the size of the craft

We suggest to use the use of green composite material, (natural fiber reinforced composite) which are renewable and reusable.

The instruction to the nano bot can be fed through preprogrammed chip or by controlling it manually.

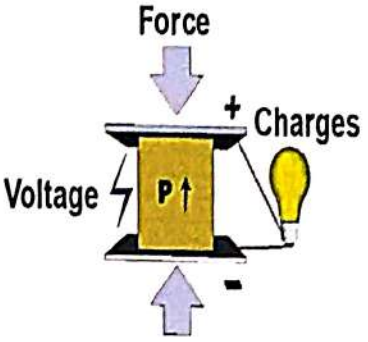
The payload cannot much because of its size, its application is restricted to surveillance and monitoring through our modification.

By the above listed suggestion the desirable nanobot will be able to penetrate even through the air conditioner opening, it can also be fitted with a led size camera for visual surveillance too.

The challenging task is to stabilize the craft as it is in similar size of that of the mosquito, these insects can feel the objects which are hindrance to their path of propulsion we shall also install the artificial intelligence to the craft for better stabilization and performance .

ADVANTAGES OF THE PRODUCT IS

- Smaller in size
- Since made up of composites ,cannot be easily detected in metallic device
- Visual inspection/monitoring can also be done
- Less manpower is used to monitor

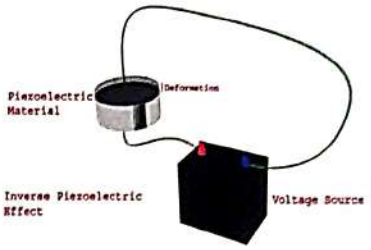


➢ ENERGY FROM A PEIZOELECTRIC CRYSTAL

By VIJAY ANAND

A peizo electric crystal usually generates power in small amounts from vibrations. If the 2 phases of the crystal is subjected to vibrations we can generate some amount of energy from the other 2 phases .We can utilize the vibrations which are present naturally in cases like the aircraft wing .

the wing generally due to gust loads tends to vibrate for little amount of time in small gusts which would generate some energy . in some cases the aircraft wing is subjected to greater disturbances due to severe gust loads .we could utilize this energy outburst to



Power some of the internal appliances in aircraft. The internal appliance like some parts of the avionics uses a large amount of energy which can be satisfied with the help of this energy. This will reduce the work load of the turbine and can generally help in producing higher speeds.

The energy obtained by this means can be utilized in many ways . The energy can be stored in a compartment in an aircraft and can be use in case of emergencies or can be utilized for ground application like storing cabin baggage in the aircraft.

➢ AVALANCHE RESCUE SYSTEM

By Parthiban.V, Bharani S ,Aashish.M.R, Dinesh.P, Karthick P,Abbas I,Elgin C

Indian soldiers were buried during avalanche in snow fields like siachen etc . The rescue team were informed and arrived after the incident , but they didn't knew the exact position of the victims , which lead to time consumptions . Some were identified but some aren't. Here we can't use a digger because it is a matter of Living being. The victims' chances of death are 75% after 15 minutes. Thus it is important to rescue them within 15 minutes. One end of the rope will be connected to the bag and the other will be attached to small rocket. The top of the rocket will have a RED LED light, less weight camera which captures the initial and final position of the victim, chemicals for smoke generating, GPS, signal transmitter to notify emergency situation to the base station . When the avalanche is identified, the person triggers the cord which in turn fires the rocket and will take the rope to the top and land down slowly with the help of parachute present inside the rocket. After the person buried inside the snow the rope on the top will be used to identify his position by tracing it. Using this he can be rescued as early as possible.

YASAGAN

By Manisankar V, Muthukumar M

This is the idea to help the orphans with the NGO YASAGAN The main concept of this idea is to provide the orphans with the living space and making shelter for them. Here the funds for the NGO raises in the way that we will be arranging small level labour works for them with the sufficient pay and let them work and will be paid the excess amount from their payment will be used as the funds for the NGO. the working of the organization is that we will be initially providing the shelter place for the orphans then we will be singing the agreement with the local shops and workplace for the jobs of the orphans. They will be worming there and will be paid on the mostly basis in which their needs will be fulfilled. the excess money from their pay will be used as the fund for the adoption of the further orphans. This will lead our India in the path of removing the poor people like beggars. This organizing ensure that even other who are willing to fund by their own are most welcomed even with the small amount

FiTER quad

(way to live safe)

Inspired from fire+water

By, Harish G.S

We are researching to build drone to ensure safety mainly for fire fighters and rescue team, our fiter quad will survive heat and even water

We are in a mid stage searching for best materials and components at less cost to build our fiter quad

Though there are many products in market we trying to make production at affordable cost so it reaches easily to any citizen

We are mainly concentrating in the body of our fiter quad which it should be water tight and the innner parts are coated with silicon coating which provides a secondary safety to our drone

The fpv fitted in our fiter quad directs us to reach the civilians in touble easily , the fpv is also covered by the same material used in the body to make it fire proof

Discussions are going on to maker our fiter quad fire proof on what materials we gonna use

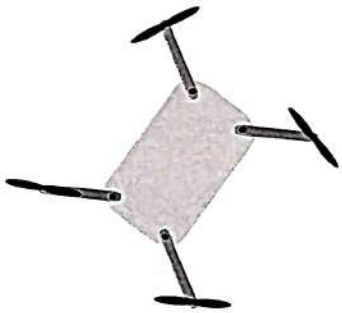
We also focus on our design to make our fiter quad aerodynamic and also focusing on foldable arms and even retactable arms

Hopefully we come out with our fiter quad soon

Pros:-

Save lives of many rescuers

At affordable cost compared to other drones



Foladble arms

Retractable arms

*images are just to represent the type not the original fiter quad

கலைகளில் சிறந்தக் கலை
சிற்பக்கலை. கல்லிலே
கலைவண்ணம்;
சிற்பத்திலே சித்திரம்;
விண்ணையிடிக்கும்
விஸ்வரூபம் பிரம்மாண்டம்;
அருள் மொழிவர்மனின்
அற்புதபடைப்பு;
தஞ்சையின்
தனிச்சிறப்பு ஆயிரம்
ஆண்டுகள் கடந்தும்
அழியாப்புகழுடைய தஞ்சை
பெரியகோவில்
பல்லாண்டுவாழ்க.

- நந்தினி

DRIVING THE FUTURE THROUGH ENTREPRENEURSHIP & INNOVATION

KCG
COLLEGE OF TECHNOLOGY
(A Unit of Hindustan Group of Institutions)
Affiliated to Anna University and Approved by AICTE, New Delhi
An ISO 9001 - 2008 Certified Institution and Accredited by NBA
OMR - CHENNAI

COURSES OFFERED

UNDER GRADUATE PROGRAMMES
- B.E. Aeronautical Engineering
- B.E. Civil Engineering
- B.E. Computer Science and Engineering
- B.E. Electrical and Electronics Engineering
- B.E. Electronics and Communication Engineering
- B.E. Electronics and Instrumentation Engineering
- B.E. Mechanical Engineering
- B.Tech. Information Technology
- B.E. Automobile Engineering (Subject to approval)
- B.Tech. Fashion Technology (Subject to approval)

POST GRADUATE PROGRAMMES
- M.E. Communication Systems
- M.E. Computer Science and Engineering
- M.E. Manufacturing Engineering
- M.E. Power Electronics and Drives

Anna University Counseling code **1311**

VALUE ADDED PROGRAMMES
- CCNA Level 1 & 2
- Cyber Security Tools
- MATLAB
- Advanced Metrology Training
- REVIT ARCHITECTURE
- Labview
- Embedded Systems
- PLC DCS
- LINK Flight Simulator
- Java Application Development and Jasper Report Generation
- Python Programming
- Analog and Digital VLSI Design tools and techniques
- Networking &Communication design tools and techniques
- PHP Programming
- GATE Training
- Internet of Things (IoT) for latest & futuristic Smart Technology.

AICTE-CII Awarded KCG College of Tech. as "Best Industry-Linked Electrical Engineering and Allied Institute"

KCG College of Technology, has been awarded as the National Best Private Engineering College in India for the year 2016 by ISTE

KCG College of Technology Received Indo -American award for Education Technology in Indo - American Education Summit 2016

LINK Flight Simulator

BEST | i-Cell& e-Cell | MoU WITH LEADING INDUSTRIES | JOB ORIENTED PROGRAMMES | 2.5 CRORES BEST SCHOLARSHIPS | 100 UNIVERSITY RANKS IN LAST 3 YEARS

ASSOCHAM NATIONAL EDUCATION EXCELLENCE AWARDS 2015

PLACEMENT 95% of students placed in IT & Core Companies

SCHOLARSHIP ₹.2.5 crore worth Merit Scholarships awarded in the last couple of years

RANKS Over 100 University Ranks in the last 3 years

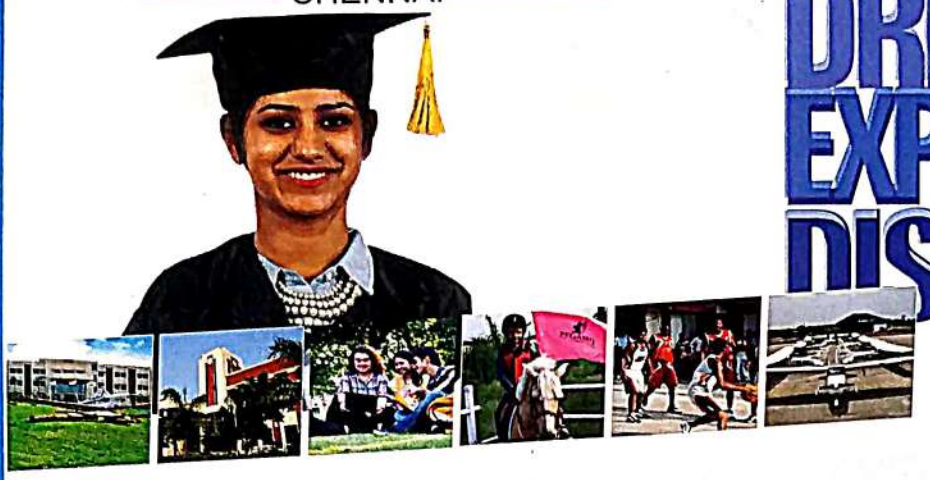
BEST ENGINEERING COLLEGE IN INDIA - SOUTH BY ASSOCHAM

PLACEMENTS

Infosys, HCL, Cognizant, Polaris, Royal Enfield, IBM, Amazon, Virtusa, Hexaware, Syntel, Accenture, Unitech, Tech Mahindra, Juspay

Campus: KCG Nagar, Rajiv Gandhi Salai (OMR), Karapakkam, Chennai - 600 097. **Email:** info@kcgcollege.com
Regd. & Admin. Office: No. 40, G.S.T Road, St. Thomas Mount, Chennai - 600 016.
Phone: 044 2234 2508 / 0980 / 2155 **Mobile:** +91 73959 59825
Toll Free:1800 425 44 38 **www.kcgcollege.ac.in**

HINDUSTAN
GROUP OF INSTITUTIONS
CHENNAI



DREAM. EXPLORE. DISCOVER.

DISCOVER YOUR TRUE POTENTIAL AT HINDUSTAN.

HINDUSTAN
INSTITUTE OF TECHNOLOGY & SCIENCE
(DEEMED TO BE UNIVERSITY)

SCHOOL OF ENGINEERING & TECHNOLOGY
B TECH (4 years)
Aeronautical Engineering
Aerospace Engineering
Automobile Engineering
Bio Technology
Bio Medical Engineering
Chemical Engineering
Civil Engineering
Computer Science & Engineering
Electrical & Electronics Engineering
Electronics & Communication Engineering
Mechanical Engineering
Mechatronics Engineering
Information Technology
IT (Cyber Security)
B. Des. Interior Architecture
B.Des. Fashion Design
SCHOOL OF ARCHITECTURE
B.Arch.
SCHOOL OF MANAGEMENT
B.B.A. : General
Travel & Tourism Management
B.Com. General / Banking Management
SCHOOL OF ARTS / APPLIED SCIENCES / HUMANITIES
B.Sc.
Fashion Design
Food Technology
Cardiovascular Technology
Perfusion Technology
Anesthesia Technology
Visual Communication
B.C.A.
General
Database Systems
Multimedia & Animation
B.A. Economics

Ph: 7395959825
www.hindustanuniv.ac.in

KCG
COLLEGE OF TECHNOLOGY

Affiliated to Anna University and approved by AICTE, New Delhi.
An ISO 9001-2008 Certified Institution
Accredited by National Board of Accreditation (NBA, New Delhi)

COURSES OFFERED
B.E. Courses (4 yrs)
Aeronautical
Civil
Computer Science
Electronics & Communication
Electrical & Electronics
Electronics & Instrumentation
Mechanical
B.TECH Course (4 yrs)
Information Technology
M.E. Courses (2 yrs)
Communication Systems
Computer Science
Engineering Design
Manufacturing Engineering
Power Electronics & Drives
VLSI Design

Highlights
- Awarded the "Best Engineering College in India - South" by ASSOCHAM.
- The only Anna University affiliated college to launch Technology Business Incubator (TBI).
- State-of-the-art infrastructure.
- Recognized as Center for research by Anna University in the Dept. of CSE / ECE / Physics & Mechanical.
- Active Innovation Cell & Entrepreneurship Cell to mentor student innovation & facilitate student start-ups.
- Placement training from the first semester.

Ph: 7395959825
www.kcgcollege.ac.in

HIET
HINDUSTAN INSTITUTE OF ENGINEERING TECHNOLOGY

AVIATION COLLEGE
Approved by DGCA, Govt. of India
An ISO 9001 – 2008 Certified Institution
Aircraft Maintenance Engineering (A.M.E 3 yrs)
Avionics Stream
Mechanical Stream
Option to do Simultaneously:
B.Sc Avionics
B.Sc Aircraft Maintenance Engg.
(Degree Course Under Hindustan University)
Eligibility: A Pass in +2 with Maths, Physics, Chemistry from Board or University, 3 years diploma or its Equivalent
POLYTECHNIC COLLEGE
Approved by AICTE, Govt. of India, New Delhi
Affiliated to Directorate of Technical Education, Govt. of Tamil Nadu
DIPLOMA COURSES
Automobile Engg. (D.A.E)
Computer Engg. (D.C.E)
Civil Engg. (D. Civil)
Electrical & Electronics Engg. (D.E.E.E)
Electronics & Communication Engg. (D.E.E.E)
Mechanical Engg. (D.M.E)
Industry Interaction
VG-TAP India, Audi

Ph: +91 9677164570 /7708468225
www.hiet.in

ORIENT FLIGHTS AVIATION ACADEMY
MYSURU
24 YEARS OF FLYING

Commercial Pilot Licence: (CPL) - 200hrs
Aviation Degree Course under Hindustan University (Recognized by UGC-MHRD, Govt. of india)
Eligibility: Pass in +2 or its equivalent with Maths, Physics & English and Class I & II Medical.
Private Pilot Licence (PPL) - 50hrs
Eligibility: Pass in 10th Std & Class II Medical
The Pilot Orientation programme (PPOP): 10hrs + DGCA Written exams
Eligibility: A Pass in 12th std (Physics, Maths & English) & Class-II in Medical Fitness.
Age 17yrs Completed

Ph: 9566236363
www.orientflights.com

HINDUSTAN INTERNATIONAL SCHOOL
CBSE & CIE CURRICULUM

Hindustan International School is dedicated to give your child a contemporary educational environment that promotes intellectual and personal growth, and we prepare your child for a bright future.

THE ECONOMIC TIMES INDIA - 2016 | THE TIMES SCHOOL RANKINGS 2017 | INTERNATIONAL DAY SCHOOL IN CHARU, NAGPUR

Ph: 044-22316848
www.hindustanschools.in

HINDUSTAN FIRST GRADE COLLEGE
MYSURU
(Affiliated to University of Mysore)
Courses Offered:
B.Com / B.B.A. / B.C.A*
www.hindustancollege.in

HINDUSTAN
COLLEGE OF ARTS & SCIENCE

COURSES OFFERED
UNDER GRADUATE
Life Sciences
B.Sc Biotechnology / Microbiology
Computer Science
B.Sc Computer Science / B.C.A. Computer Applications
Business Studies
B.B.A.
B.Com Computer Applications / Information System Management / General / Bank Management / Corporate Secretaryship
Media Studies
B.Sc Visual Communication / Electronic Media
Electronics & Communication Science
B.Sc ECS
Mathematics B.Sc Maths
Languages B.A. English Literature
POST GRADUATE
Life Sciences
M.Sc Biotechnology / Applied Microbiology
Computer Science / Information Technology
Social Work
Master of Social Work (HRM, CD, M&P)
RESEARCH PROGRAMMES
M Phil Microbiology /Biotechnology

Ph: 044-24469714
www.hcaschennai.com

Aviation I Management I Engineering I Applied Sciences I Architecture I Humanities I Fashion Design

Regd. & Admin Office: No. 40, G.S.T. Road, St. Thomas Mount, Chennai - 600 016
Ph: 044 2234 2155 / 0980 / 1389 / 2508 Fax: 044 2234 2170 I Email: info@hindustanuniv.ac.in

www.hindustan.ac.in
Toll free No.: 1800 425 44 38