CHANDIGARH ENGINEERING COLLEGE

Buiding Careers. Transforming lives.

Mechnotimes

Newsletter

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2022

Vision of the Chandigarh Engineering College

To become a leading institute of the country for providing quality technical education in a research based environment for developing competent professionals and successful entrepreneurs.

Mission of the Chandigarh Engineering College

1. To provide state of the art infrastructure and engage proficient faculty for enhancing the teaching learning process to deliver quality education.
2. To give a conducive environment for utilizing the research abilities to attain new learning for solving industrial problems and societal issues.
3. To collaborate with prominent
industries for establishing advanced labs and using their expertise to give contemporary industry exposure to the students and faculty.
4. To cater opportunities for global exposure through association with foreign universities.
5.To extend choice based career options for students in campus placements, entrepreneurship and higher studies through career development program.

Vision of the Department

To emerge as centre of quality education for creating competent mechanical engineers catering to the ever-changing needs of industry and society.

Mission of the Department

M1: To provide quality education by constantly updating departmental resources andusing effective teaching learning methodology.

M2: To promote research practices in the field of mechanical engineering in pursuit of academic excellence and for the benefit of society.

M3: To establish industrial collaborations for imparting contemporary knowledge tokeep pace with the technological challenges in the interdisciplinary and core areas ofmechanical engineering.

M4: To provide opportunities to the students for global exposure through international collaborations.

M5: To nurture students through pre-placement training programs to succeed in campus placements and to provide guidance for entrepreneurship and higher studies.

EDITOR'S COLUMN

The departmental Newsletter will definitely help to showcase the activities that are happening in the Department. It also helps in building up teamwork which is very much needed today in the competitive world. It provides a platform for exposing the merits and academic achievements of the faculties and students. This enhances the documentation culture among the students. It would definitely create an impact in the mind of readers, by providing larger visibility and dimension to the department. We hope that this culture of releasing Newsletter continue forever and become a quoted example for all to follow.

AISHNA MAHAJAN
EDITOR-IN-CHIEF
MECHNOTIMES

FROM EDITORIAL'S BOARD

Welcome to Issue 1 of Volume 7 of the Mechnotimes of Mechanical Department Newsletter of Chandigarh Engineering Colleges, Landran.
We are really proud and exuberant that each quarterly issue of this Newsletter acts as a recap of the events and expert lectures which were hosted by our department. It covers recent events and attempts to formulate viewpoints based on an objective analysis of happenings and conflicting/contrary opinions. The positivity and enthusiasm is being spread among the students through this innovative idea as well as Faculty's hard work.
We sincerely hope that the readers will find the events interesting, relevant and intellectually stimulating leading to building up diverse outlook about the department.

Deepak Yadav M.Tech 2nd Sem(2102545)
Aditya Yadav B.Tech 6th Sem(1902789)
Kaustubha Srivastava B.Tech 6th Sem(1902851)
Nishant Thakur B.Tech 6th Sem(1902875)

NATIONAL SCIENCE DAY CELEBRATION

National Science Day is celebrated every year on 28th February to honor the discovery of the Raman Effect by Sir Chandrashekhara Venkata Raman. The main aim of the celebration is to share the importance of science and inculcate scientific temperament among the students through competitions and project display.

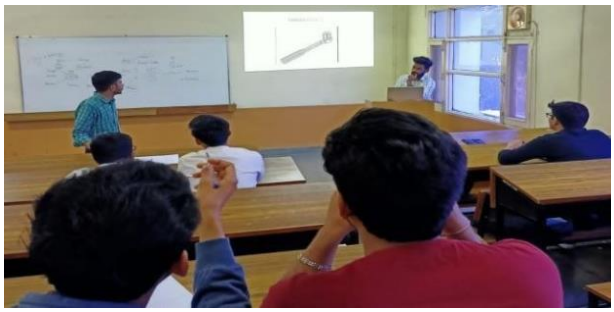
On the occasion of National Science Day, the students of Mechanical Department, CEC, demonstrated different interesting and innovative projects among the students of Chandigarh Group of Colleges, Landran.

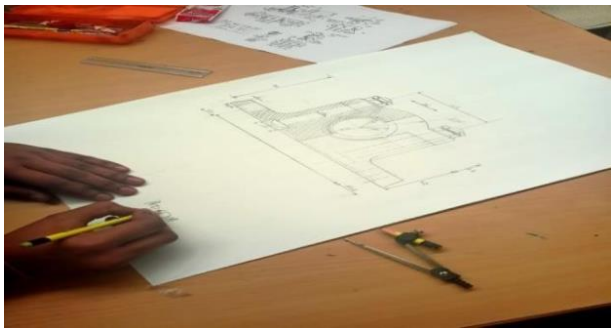
Some innovative projects include Go Kart, F1 Car, Automatic Tyre Inflation System, Automatic Bike-Stand, drone, Speed Breaker Power generator, Fire Fighting Spider.

"MECH FIESTA 2022" held on **7 march 2022** organized by

"SOCIETY OF FUTURISTIC MECHANICAL TECHNOLOGIES" (SFMT)

The day of extravaganza witnessed on overwhelming participation of students to enhance and grill their knowledge. The fest was organized with the objective to provide platform for the students to showcase their skills and intellectual with a competitive spirit.





The top 3 participants in the events are listed below:

RAW-N-DRAW:- 1. Shubham Sharma

2. Nishant Thakur

3. Aditya Yadav

BRAIN-O-FEST:- 1.Team D (Nishant Thakur and Aditya Yadav)

2. Team B (Suraj and team)

3. Team C (Abhay Dhiman and team)

GUESS-THE-MESS:- **1.**Nishant & Aditya **2.**Suraj&Deves **3.** Nikhil & Kanishka

WORKSHOP/ TRAINING SESSION REPORT

- **Session by : Er. Pritam Parkash**

Company/Organisation: P2P Analysis & Solutions

Topic: LINKING THE PRACTICAL DESIGN & CONCEPTS – MECHANICAL DESIGN APPROACH (A CASE STUDY AND WORKSHOP WITH CAD & CAE)

Date: 23.02.2022

OBJECTIVE- This Session was conducted to make students learn about use CAD and CAE and its application in industrial areas.

TOPICS COVERED- During the Session he explained following Points:

1. About Company
2. About Services
3. Explained the use of CAD
4. Explained the use of CAE using CATIA and Ansys
5. Cases Study based on using CATIA and Ansys

USEFULNESS-

- Students learned about methodology of using CAD and CAE and practically saw how to implement these software and tools.

EXPERT TALK

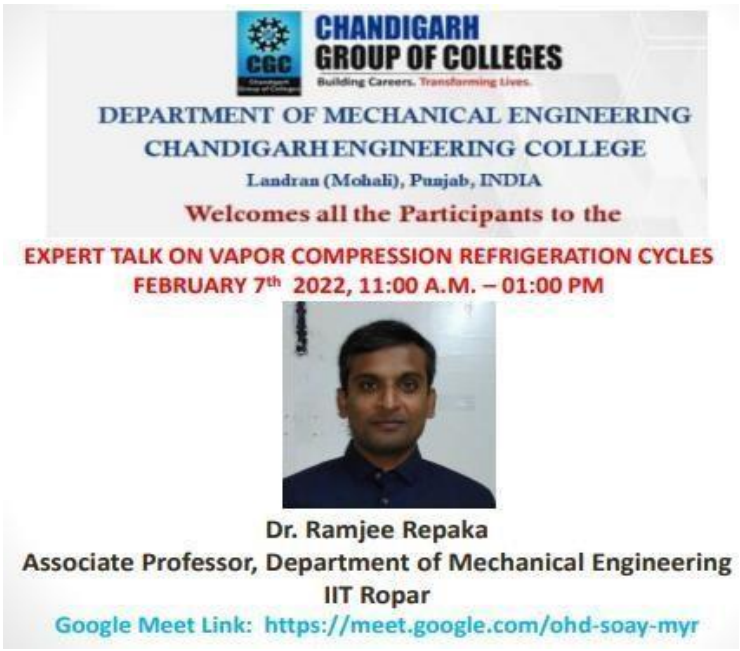
- **Session by :** Dr. Ramjee Repaka

Topic- The topics Covered are:

- Vapor Compression Refrigeration Cycle
- Numerical on Vapor Compression Refrigeration Cycle

Date- 07.02.2022

Time-11:00 AM – 12:30 PM



- **OBJECTIVE**- Students will be able to learn Vapor Compression Refrigeration Cycles, latest advancements and numerical analysis.

. **TOPICS COVERED**- During the lecture/Talk he explained following Points:

- Basic Introduction To Purpose Of Refrigeration
- Introduction to Gas Cycles
- Rankine cycle
- Vapour Compression Refrigeration Cycles
- Numericals

USEFULNESS- Students gained the knowledge about basics of refrigeration and its applications. Students also gained knowledge about latest use in various industries and new advancements being made in the area of refrigeration. Some Case studies related to this was also shown and numerical analysis was also explained.

EXPERT TALK

Expert Talk by: Dr. Sanjeev Kumar

Designation: Professor & Dean Academic Affairs

Institute: PEC Chandigarh

- **Topic:** Machining of Advanced Materials using Non-Conventional Machining.

- **Date: 03.03.2022**
- **OBJECTIVE**- This lecture was conducted to make students learn Non-Conventional Machining which is one of the latest machining technologies in current industrial Scenario.

TOPICS COVERED- During the lecture/Talk he explained following Points:

1. Introduction to Advanced Materials
2. Introduction to Non-Conventional Machining.
3. Explained in details the concept of Non-Conventional Machining with practical examples (daily use).
4. Advanced research in Materials
5. Applications of Non-Conventional Machining in modern manufacturing.

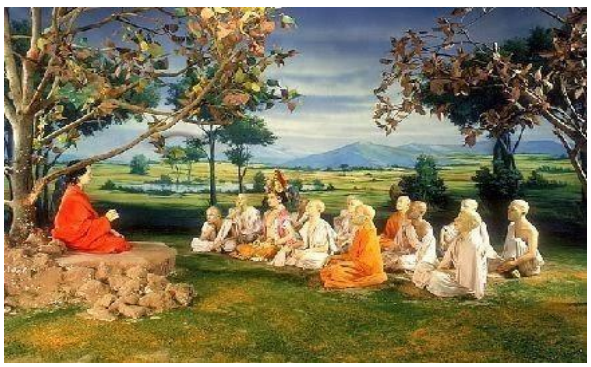
USEFULNESS-

- Students learned about various Non-Conventional Machining Processes, Practical Examples shown made students aware about latest Industrial Machining Scenario and will help them to be ready for it in near future.
- Students were told of the fact that Non-traditional machining, also known as “non-conventional machining” or “modern machining method”, generally refers to the machining method of removing or adding materials with energy of electricity, heat energy, light energy, electrochemical energy, chemical energy, sound energy and special mechanical energy, so as to realize materials being removed, deformed, changing properties or being plated.

ADVANCED AVIATION TECHNOLOGY OF VEDIC AGE

-BY YUVRAJ SINGH SEM 4th (2003092)

"Access to the Vedas is the greatest privilege this century may claim over all previous centuries." – Robert Oppenheimer



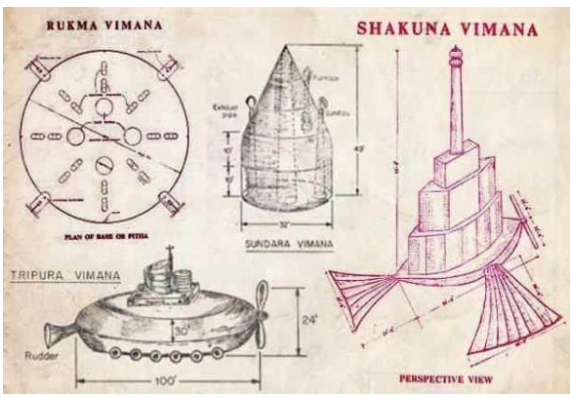
India is the oldest continuously existing civilization in the world. According to archaeological evidence it is at least 9000+ years old, probably much older. Ancient India was not only the oldest but also highly advanced, rich and prosperous in almost every field. Veda literally mean knowledge.

Vedic sciences are considered to be richest and most comprehensive of ancient India. They include various disciplines of sciences like *Physics, mathematics, astronomy, aviation, metallurgy, medicine etc.* **The Upanishads** dealt with questions like the origin of the universe, birth and death, material and spiritual world, nature of world and many other questions.

Our ancient rishis(sages) Used enormous mind power and possessed great scientific knowledge that they applied for benefit of the community.

Now let's dive deep into the amazing technology of Vimana (Aviation Technology) –

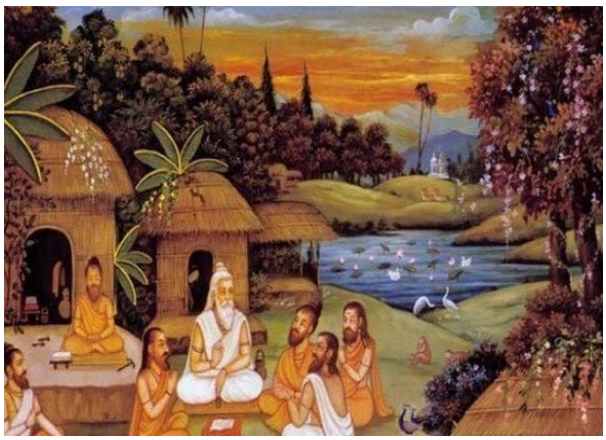
Vimāna is a mythological flying palace or chariot described in Hindu texts and Sanskrit epics like Rigveda, Yajurveda, Mahabharata, Ramayana and other. Vimanas were sophisticated machines of various shapes and sizes which were also able to travel into space and under water.



It was **Acahrya Bharadvaja** (800 BC) who wrote an ancient Sanskrit text **"Vaimanika Shastra"** which was part of "Yantra Sarvada" which describes in detail the operation of vimanas and included information on the steering, propulsion devices, aerodynamics, precautions for long flights, protection of airship from storms and lightning, Suitable diet and clothes for pilot and much more. Using *mercury vortex system*, these vimamas can remain motionless in the air and become invisible.

In 1875, 'Vaimanika Shastra' was rediscovered in a temple in India. He has described three categories of flying machine: a) one that flies on earth from one place to another; b) one that flies from one planet to another; and c) one that travels from one universe to another. His designs and description have impressed and amazed aviation engineers of today.

Even **NASA** admits that designs of vimana described in ancient text is aerodynamically accurate. **NASA** started experiments on some of the aspects mentioned in this book. After sustained efforts around 1978, they successfully used Mercury Vortex engines by ionising the mercury gases exactly as explained in "Vymanika Shastra".



At the **102nd Indian Science Congress held at the Mumbai University** in Jan 2015, Anand Bodas,a pilot & Ameya Jadhav, an MA in Sanskrit & an M Tech. delivered a presentation on Vaimanika Shastra.

Our ancient history is filled with vast treasure of advanced knowledge of every field. But, unfortunately it's been lost by certain reasons over a period of time. Therefore, I highly encourage the readers to learn more about remarkable contributions of our great scientist whose work is unfortunately unrecognized. You would sure be fascinated and inspired by learning about our great ancient culture. No development of any nation is possible until it's countrymen take pride in it's history.

"A person without the knowledge of their past history, origin, and culture is like a tree without roots."

– Marcus Garvey

ADAPTIVE CRUISE CONTROL

-BY SANDEEP MISHRA SEM 4TH (2003081)

It maintains distance from other vehicles on road .It can gave you a comfortable and safe ride. It help driver to keep a steady vehicle speed at a given moment.

It uses a sensors, how fast traffic around you going and how closed the vehicles around you. It receiving information from all the direction by using lasers, front and rear cameras, radar and sensors

It automatically adjusts the vehicle speed to maintain a safe distance from vehicle ahead. It mainly controls the acceleration and breaking of a vehicle by monitoring other vehicles on road

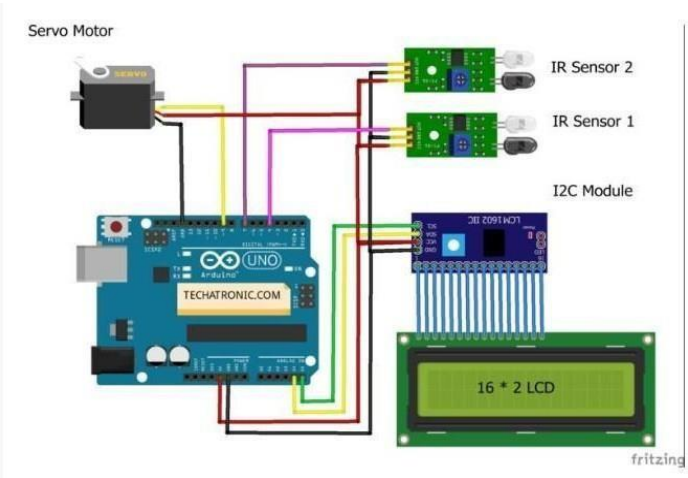
AUTOMATIC CAR PARKING SYSTEM USING ARDUINO

-BY MOHAMMAD SHAHANAWAZ SEM 4TH (2003069)

In the parking near us, the staff is present to manage the space and the entry-exit of the vehicles. In this article, we are going to make an automatic car parking system project using Arduino UNO. For detecting the movements of the vehicles we are using IR sensor and the display the parking status we are using a 16×2 LCD.

COMPONENTS REQUIRED:-

1. Arduino UNO.
2. Two IR sensors.
3. Servo Motor
4. Jumper wires and a breadboard.
5. 16×2 LCD and a 12C module.
6. USB cable for uploading the code.



PLASTIC DISASTER - BE THE PART OF SOLUTION NOT THE POLLUTION

-BY KASHISH JOSHI SEM 6th (1902850)

Today we know we have worst of times but it is best of times, because we still have chance. Plastic is cheap, durable and component of daily life. Our life is addicted and dependent on this versatile substance. We throw it out after usage, but it goes no-where, just had contrary effects on human ecosystem as well as wildlife. A dump truck's worth of plastic enters our oceans every minute. Tiny bits of plastic are in many of the sea foods we eat. Under the influence of solar UV radiation, wind, currents and other natural factors, **plastic breaks down into small particles** called micro plastics (particles smaller than 5 mm) or Nano plastics (particles smaller than 100 nm). The small size makes them **easy for marine life to ingest** accidentally and million tonnes of plastic are Swirling around the world's oceans.

Very little of the plastic we discard every day is recycled or incinerated in waste-to-energy facilities. Much of it ends up in landfills, where it may take decades to decompose, leaching potentially toxic substances into the soil as well as water.

Now a days, the manufacturing companies used recyclable plastic that can be refurbished and reused for other purposes or the same. Again you may ask: **"if it's recyclable, why do we throw so much of it away?"** And the answer, again, is that unfortunately, it doesn't always make sense financially to reuse this material. Polypropylene recycling is **difficult** and **expensive** and, in many cases, it's hard to get rid of the smell of the product this plastic contained in its first life. The plastic used in daily life for various functions are: -

Polyethylene Terephthalate (PET or PETE or Polyester)
High-Density Polyethylene (HDPE)
Polyvinyl Chloride (PVC)
Low-Density Polyethylene (LDPE)
Polypropylene (PP)
Polystyrene (PS)

All the plastics are structure of Polypropylenes which can be recycled or degraded by some or other forms by new gen technologies. **The most widely recycled plastic** in the world is **PET** (Soda and water bottles, shampoo bottles, containers etc.). Then comes HDPE (Toys, Chemical Containers, Pipe Systems, Milk Jugs, Recycling Bins., Grocery Bags). These are some examples to recyclable plastics.

So we have come up with the solution: Introduction to plastic themed parks.

By using plastic waste as modifier, we can reduce the plastic pollution as well as its diverse effects on our planet to make it clean and green. Plastic roads mainly use plastic carry bags, disposable cups and PET bottles that are collected from garbage dumps as important ingredients of the construction materials. Making plastic bricks from LDPE and HDPE can be used to create footpath lines which require some less stress factors. Fitness equipment's, plastic fabricated fences, artificial trees or sculptures, awareness or sign boards, etc. are the things that can made easily made in plastic parks with new technologies so that there can be minimum plastic pollution. They can be the eco-friendly future parks. Plastic Parks can be the key to rejuvenate health of our environment because they can play a critical role in maintaining healthy ecosystems and awareness can be created for inferior usage of plastic. Therefore, people can shift to alternates or substitutes of plastic.

BIOGRAPHY OF OUR SUPERHERO

CDS GENERAL BIPIN RAWAT

-BY ANKIT SEM 6TH (1902806)

Bipin Rawat Born on 16 march 1958 in Pauri Garhwal district present day Uttarakhand state India. Born into a Hindu Garhwalli Rajput family. His family is serving in Indian Army of multiple generation. Rawat attended Cambrian Hall School in Dehradun and the St. Edward's School Shimla. He joined NDA(NATIONAL DEFENCE ACADEMY) Khadakwasla and the IMA (Indian Military Academy) Dehradun where he was awarded by Sward of Honour. He has Mphil degree in the defense studies as well as Diploma in Management and Computer studies from university of Madras. In 2011 he was awarded in Doctorate of Philosophy by Choudhary Charan Singh University Meerut for his research on military- Media Strategic Studies.

Career:

After Passing out from IMA Bipin Rawat join 11 Gorkha Rifles on 11 December 1978 in his father regiment. Bipin Rawat served in the Army for 43 years. During his career of nearly 43

years he was awarded for Gallantry and Distinguished service with the Param Vishisht Seva Medals, Uttam Yudh Seva Medal, Ati Vishisht Seva Medal, Sena Medal and Vishist Seva Medal.

Something Interesting:

He was third officer from the Gorkha Brigade to become the Chief of Army Staff. He become the Army Chief on 01 Jan 2017. Bipin Rawat was first CDS General officer was appointed on 31 December 2019 as a CDS. This post was given to him a day before his retirement. Bipin Rawat had 10 years of Anti terror operation experience. He was master in high altitude. After the Pulwama attack , there was surgical strike in 12kotla then the Army Chief was Bipin Rawat. The attack by the Indian Army on the hideouts of terrorist in 2015 Mayanmar was under the leadership of Biin Rawat. He had 4 decades of experience. When someone say anything bad about 11Gorkha they feel very bad. Pakistan called him slanting hat on 01 Jan 2017. On 04 Jan 2017 Indian TV anchor interviewed Bipin Rawatin which he started talking without asking question and he took the meaning of Gorkha slant cap and remined Pakistan when did those with slanting hats kills Pakistan. He reminded that in 1971 war the Army Chief Manik Shaw belonged to the Gorkha regiment. The commander who lead its operation in the 1999 Kargil war that was General Mahendra Puri. In 2016 there was a surgical strike then Indian Army Chief is Dalbir Singh Suhag and he belonged to 11 Gorhkha Rifles. Bipin Rawat said that be a little afraid of the slanting cap. He used to say that everything is acceptable but there is nothing against the people of Indian and the Army.

Such was our Bipin Rawat who is no more with us today. On 8th December he was brought for tribute.

THE BEST -KEPT SECRET OF BUSINESS GROWTH

-BY GURJESH SINGH CHIB SEM 4TH (2003062)

“To be successful, you have to have your heart in your business, and your business in your heart”.

-Thomas Watson, former CEO, IBM

In today’s business world, the pressure to grow is persistent and unwavering. A company must continue to evolve to stay innovative, relevant and competitive.

In almost every individual's mind, growth is the definition of success whether it be a decision-maker, an investor or a customer, growth is something everyone craves to be a part of .In part, it can be explained as psychological effect, but the reality is, if a company is not growing, it is declining.

There are many different strategies that a company will peruse in order to achieve its individual growth goals. These strategies might be: to expand on or add a new array of strengthen competitive advantages or to explore untapped potential, to name a few. With companies under such immense pressure to expand and grow, something it is pursued with little forethought. Preplanning is necessary in order to make the correct move and without it, there can be major risks associated.

It is imperative to have a deep-rooted understanding which type of growth is best suited for your individual company. The vast majority of growth comes from competing in the right markets and from making acquisition that provide scale and increase market pressure that will last overtime.

An option for growth that many are unaware of is that of brand licensing. Brand licensing itself is not actually a growth strategy, in the sense that it won't make something grow that isn't growing already. And while not without risk, it can help a growing brand broaden its reach exponentially. Brand exponentially, Brand expansion, occurs when a brand broadens its presence into markets where it has high awareness and preference but lacks the competency or capacity to succeed. To fill the experience and capacity gap, brand owners reply on licenses. They pursue this option for a range of reasons. The most powerful reason is that, where brand extension is based on continuation. The brands are, in effect, intending to carry the emotional relationship they have build with consumers from one sector to another. It's a lateral jump, intended to achieve a greater share of life.

Consider the fact that car pillar has been able to carry its reputation for toughness into areas that are unexpected. It has allowed the business to business brand to build a very powerful direct-to-consumer connection over 25 years. Caterpillar's success points to the power of building on your reputation.

Everyday brand that is looking to go beyond what it is currently known for, regardless of the mechanism it intends to use, needs an expansion point-a pivotal characteristic that translates powerfully from one product variant to another, or from one sector to another-to give consumers even more of what they want from the brand.

FPV DRONE

-BY SANDEEP RANA 6TH SEM (1902906)

First-person view (FPV) drones provide an immersive flight experience for pilots. In FPV flying, the pilot wears a pair of goggles that display the video feed from the drone in real time. This allows them to fly the drones as if they were sitting on top of it, thus creating an immersive experience similar to virtual reality and giving the sensation of free flight. Due to these characteristics, FPV flying is becoming popular for recreational purposes (e.g. drone racing). In this paper, we present that the majority of pilots prefer acrobatic flight mode for both racing and freestyle flying. Additionally, we found that FPV flying introduces users to technical fields as the majority of the pilots built their drones, even without having any previous technical background. Lastly, we also present how pilots prefer to interact with remote controllers.