



SRI KRISHNA
COLLEGE OF ENGINEERING AND TECHNOLOGY
AN AUTONOMOUS INSTITUTION, ACCREDITED BY NAAC 'A' GRADE



VOLUME 4
ISSUE 1

ECHO

MAGAZINE OF

MECHATRONICS

ENGINEERING DEPARTMENT

"ONCE YOU LEARN TO READ, YOU WILL BE FOREVER FREE."
- FREDERICK DOUGLASS



Editorial

I deem it my pleasure to pen down my thoughts in the editorial column for this issue of ECHO. Even as the whole world is still on the path of recovery from the impacts of COVID, the pandemic has unleashed a plethora of medical and technical challenges. According to reports, 7.5% of people who were diagnosed with COVID-19 more than two years ago have not recovered their sense of smell (IEEE Spectrum, Nov. 22). Richard Costanzo and his team at Virginia Commonwealth University, Richmond, USA have developed a neuroprosthetic nose for smell, in which once the sensor detects an odour, the transmitter would send a signal to a stimulator implanted in the brain. Since the olfactory system has access to parts of the brain that other senses don't, the work on this bionic nose has been a great challenge. In the words of Costanzo, "Restoring people's ability to smell and taste is the ultimate goal. My goal is to provide hope for these people". It's indeed heartening to note how scientific innovations and disruptive technologies can prove to be a panacea for human needs, inabilities and challenges.

It's a delight to bring to you the newest updates of the Department, technical news and a glimpse of our faculty and students' feats and creative skills through yet another edition of ECHO. I place on records my sincere gratitude to the faculty and student coordinators of ECHO. Happy reading!

Dr. M. Lydia

Professor & Head



Faculty Editor:

Mr. S. Madhankumar, Assistant Professor



Student Editors:

2019-23 Batch

C. Bero
S. Gedendhar
P. Kishore
S. Vishal

2020-24 Batch

K. V. Deepak
S. Sooraj
A. Dheeraj

2021-25 Batch

S. Mohit
J. Abdul Wahid
R. Dhivya Dharshini
R. Mohan
G. Sree Karthika



SYNOPSIS

- ✿ **DEPARTMENT EVENTS**
- ✿ **RESEARCH & DEVELOPMENT**
- ✿ **EXPLORE THE TECH**
- ✿ **SPIRIT LIFE UNLEASHED**
- ✿ **A STORY WITHOUT LETTERS –
ART & CANDID**
- ✿ **THOUGHT MANIACS**
- ✿ **THINK! DO! TREAT!**
- ✿ **ACHIEVEMENTS**



**“Rockets are cool. There’s
no getting around that.”**

– Elon Musk

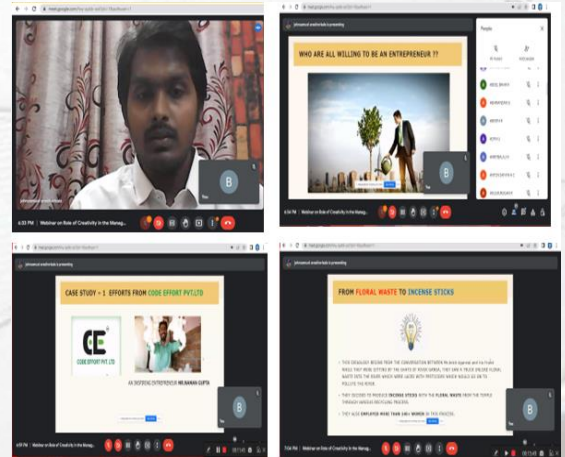
MEA INAUGURATION



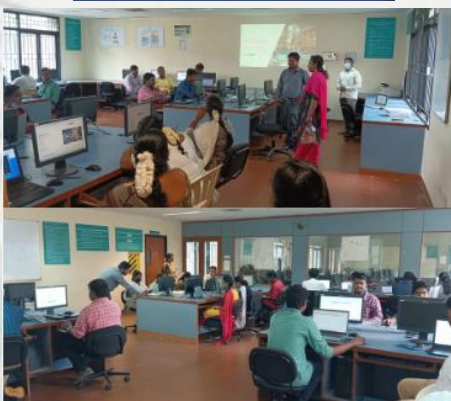
Department inaugurated **Mechatronics Engineering Association** and organized an Expert talk on **"State space Navigation for Intelligent Robotic Agents"**. Dr. Anand Paul, Director, Connected Computing and Media Processing Lab, Kyungpook National University, South Korea was the resource person for this event on 04.08.2022. Session highlights were state space navigation, Wumpus World, Search algorithms and Linear and Binary search.

WEBINAR

Department organized a webinar on **"Role of Creativity in the Management of Innovation"** on 16.06.2022. Mr. P. John Samuel, Director, Sales and Sourcing, Arasi Herbal Products, Madurai was the Resource Person. Session highlights were Innovative thinking, Challenges faced by the Entrepreneur, Management Process, Case studies of Real Entrepreneur and Product conversions.



WORKSHOP



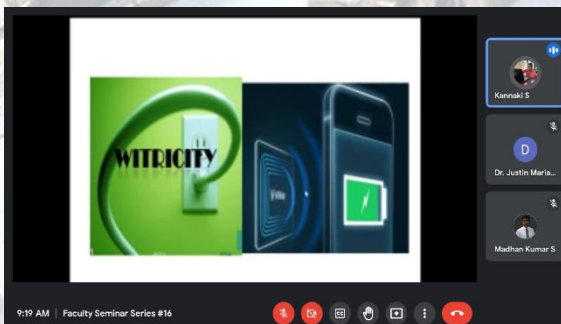
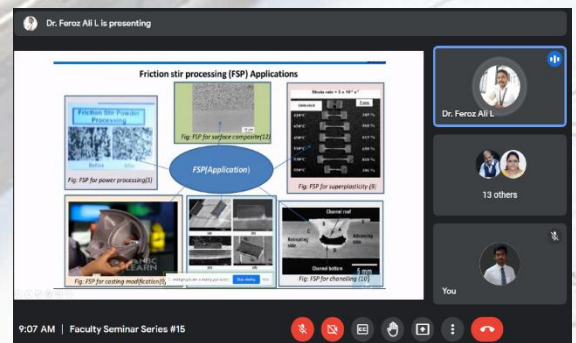
Department organized an exclusive Two days' workshop on **"Product Development using Fusion 360"** in association with USAM Cadsoft, Coimbatore, a partnering company with Autodesk from 06.07.2022 to 07.07.2022. 17 students and 29 faculty members from Mechatronics and Mechanical Engineering were benefitted by this workshop.

FACULTY SEMINAR SERIES



Dr. R. Manikandan, Assistant Professor shared his views on the topic “**Natural Fibers and its Applications**” on 05.07.2022. Session highlights were Natural Fibers and its Applications in automotive Industries, Effects of ceramics reinforcements in Aluminium composites and Wear process parameters optimization using response surface methodology.

Dr. L. Feroz Ali, Assistant Professor shared his views on the topic “**Recent Trends in Friction Stir Processing**” on 08.07.2022. Session Highlights were Friction stir welding and its Applications and Effects of FSP for casting modification.

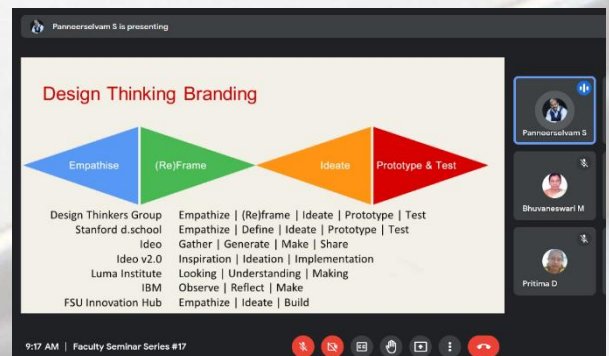


Mrs. S. Kannaki, Assistant Professor has shared her views on the topic “**WiTricity**” on 12.07.2022. Session Highlights:

- WiTricity and its Applications
- Wireless E- Vehicle charging system
- Spintronics Technology

Mr. S. Panneerselvam, Assistant Professor has shared his views on the topic “**Design Thinking**” on 29.07.2022. Key Highlights:

- Design thinking success stories of GE Healthcare, Uber, OTT platforms
- Prototype and Implementation.
- Implementation of design thinking



Mr. M. Vigneshwaran, Assistant Professor has shared his views on the topic “**Lean Life**” on 03.08.2022. Session highlights were Lean vs Traditional Method, Waste Management Techniques and Lean Practices in life style.

INDEPENDENCE DAY ACTIVITIES



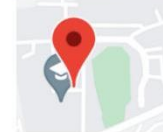
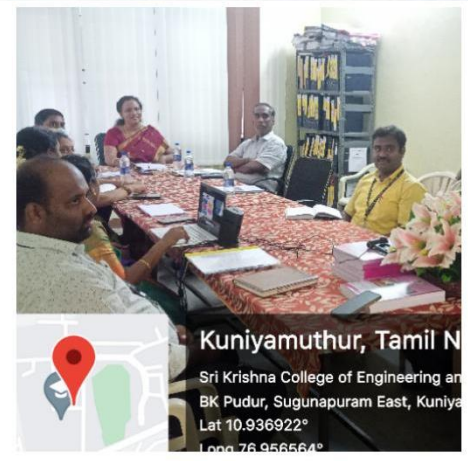
As a part of **76th Independence Day celebration**, the Department organized **Drawing competition, Elocution competition on Freedom Fighters and their Patriotism, and Quiz Competition.**

Students enthusiastically participated and reminded the sacrifices of our freedom fighters to make our mother India as an independent nation in this august occasion of Azad Ka Amrit Mahotsav.



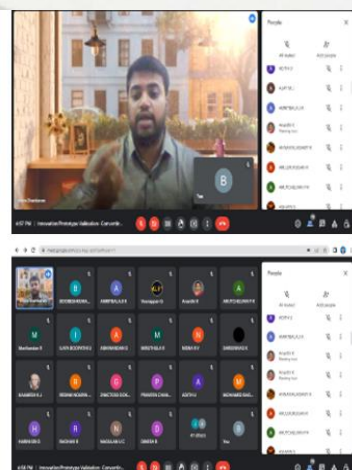
BOS MEETING

Department conducted a **13th Board of Studies meeting on 25.06.2022** for the students admitted under the regulation 2020 and 2022. The meeting was convened by **Dr. M. Lydia**, Professor and Head. The members pooled in their vast experience and technical knowledge to fine-tune the syllabi in order to improve our students' skills and equip them with the latest technical know-how.



Kuniyamuthur, Tamil N
Sri Krishna College of Engineering an
BK Pudur, Sugunapuram East, Kuniya
Lat 10.936922°
Long 76.956564°

WEBINAR



Department organized a webinar on **"Innovation/Prototype Validation – Converting Innovation into Startup"** on 17.06.2022. Mr. R. Sivashankaran, Director of Business Development, KR Power Supports Pvt Ltd, Coimbatore was the Resource Person. Session Highlights were Innovation into Startup, Time management, Real stories of Entrepreneur, Team work and Communication.

JOURNAL PUBLICATIONS

CYBER-PHYSICAL SYSTEMS
<https://doi.org/10.1080/23335777.2022.2104378>



ARTICLE

Check for updates

Securing the cyber-physical system: a review

M. Lydia^a, G. Edwin Prem Kumar^b and A. Immanuel Selvakumar^c

Indexing: Scopus

Cite score: **2.5**

DOI: <https://doi.org/10.1080/23335777.2022.2104378>

Indexing: SCI & Scopus

Cite score: **20.4**

DOI: <https://doi.org/10.1016/j.apenergy.2022.119746>



Applied Energy

Volume 324, 15 October 2022, 119746



Computational and experimental study of a novel corrugated-type absorber plate solar collector with thermal energy storage moisture removal device

S. Madhankumar^a, R. Karthickeyan Viswanathan^b, R. S.

Research Article-Mechanical Engineering | Published: 19 July 2022

Effect of Copper on Mechanical Properties and Corrosion Behavior of Powder Metallurgy Processed Ni-Co-Cr-Fe-Mn-Cu_x High Entropy Alloy

G. Veerappan, M. Ravichandran, V. Mohanavel, D. Pritima & S. Rajesh

Arabian Journal for Science and Engineering (2022) | [Cite this article](#)

142 Accesses | 1 Citations | [Metrics](#)

Indexing: Scopus & SCI

Cite score: **4.4**

DOI: <https://doi.org/10.1007/s13369-022-07041-8>

Indexing: Scopus

Cite score: **2.3**

DOI: <https://doi.org/10.1016/j.matpr.2022.07.114>

materialstoday:
PROCEEDINGS

Volume 69, Part 3, 2022, Pages 679-683



Study on the mechanical properties of a hybrid polymer composite using egg shell powder based bio-filler

B. Ashok Kumar^a, Rajasekaran Saminathan^b, Mohammed Tharwan^b, M. Vigneshwaran^c, P. Sekhar Babu^d, S. Ram^e, P. Manoj Kumar^f, R. S.

Computer Systems Science & Engineering
 DOI:10.32604/csse.2023.024612
 Article

Tech Science Press

Intelligent Deep Learning Enabled Human Activity Recognition for Improved Medical Services

E. Dhiravidachelvi¹, M.Suresh Kumar², L. D. Vijay Anand³, D. Pritima⁴, Seifedine Kadry⁵, Byeong-Gwon Kang⁶ and Yunyoung Nam⁷

Indexing: SCI & Scopus

Cite score: **1.0**

DOI: <https://doi.org/10.32604/csse.2023.024612>

Indexing: SCI & Scopus

Cite score: **1.9**

DOI: <https://doi.org/10.36410/jcpr.2022.23.4.511>

Influence of cowpat ash particles on micro structure, mechanical and tribological properties of Al 7075 composites

Journal of Ceramic Processing Research

약어: J. Ceram. Process. Res.

2022, vol.23, no.4, pp.511 - 522

DOI: 10.36410/jcpr.2022.23.4.511

발행기관: 한양대학교 청정에너지연구소

연구분야: 재료공학

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B. Varun¹, S. Gopi², R. Manikandan³

EXTENDED REALITY

Extended Reality (XR) is the combination of human & computer-generated graphics interaction, which is in reality as well as the virtual environment. In basic terms, Extended Reality is a superset of Augmented Reality (AR), Virtual Reality (VR) & Mixed Reality (MR).

The concept of Extended Reality (XR) came into the picture when technologies like Augmented & Virtual reality, were being used by developers and tech-companies all across the globe. Many Sci-fiction movies have used the concept of Extended Reality (XR), but operating it in the real world is very different than in the reel world.

Applications of Extended Reality:

1. Entertainment Industry: The entertainment industry can hugely benefit from XR, just the same way they are benefitting from AR & VR. The entertainment industry can find new and amazing ways to utilize this technology and earn profits.

2. Sales & Marketing: Companies can advertise their product via XR, & can give their users a hands-on experience about their product or service. This can be beneficial, as companies will have to spend less on their advertisement, rather they can directly give their customers the experience of using the product.

3. Housing & Real Estate: One can easily find the suitable housing via a brief walkthrough using XR, & owners can also find potential buyers from various other locations, as there will be no need to go through physically. The role of brokers would be eradicated in such a scenario.

4. Education & Training: The use of XR can be a boon for this industry. Students all across the globe can find and choose the right colleges & study there is at their location. Anyone could use this technology to study in any institution around the globe. Also, the training of employees and workers can be done remotely using XR.

5. Work from Home for Remote Areas: The employees & staff can visualize a live environment of their office or workplace & can attend meetings from their homes, and also instruct others on how to work, from their homes. Especially, when the area is remote & difficult to work, XR can be used so that the work can be done from home.

- **Mr. S. Madhankumar**
Assistant Professor

DIGITAL JEWELLERY

Digital jewelry is the fashion jewelry with embedded intelligence. "Digital jewelry" can help you solve problems like forgotten passwords and security badges. "Digital jewelry" is a nascent catchphrase for wearable ID devices that contain personal information like passwords, identification, and account information. They have the potential to be all-in-one replacements for your driver's license, key chain, business cards, credit cards, health insurance card, corporate security badge, and loose cash. They can also solve a common dilemma of today's wired world – the forgotten password.

Soon, cell phones will take a totally new form, appearing to have no form at all. Instead of one single device, cell phones will be broken up into their basic components and packaged as various pieces of digital jewelry. IBM has developed a prototype of a cell phone that consists of several pieces of digital jewelry that will work together wirelessly, possibly with Blue tooth wireless technology, to perform the functions of the above components.

Cell phones may one day be comprised of digital accessories that Work together through wireless connections.

**Devices:**

Earrings – Speakers embedded into these earrings will be the phone's receiver.

Necklace – Users will talk into the necklace's embedded microphone.

Ring – Perhaps the most interesting piece of the phone, this "magic decoder ring" is equipped with light-emitting diodes that flash to indicate an incoming call. It can also be programmed to flash different colors to identify a particular caller or indicate the importance of a call.

Bracelet – Equipped with a video graphics array display, this wrist display could also be used as a caller identifier that flashes the name and phone number of the caller. With a jewelry phone, the keypad and dialing function could be integrated into the bracelet, or else dumped altogether - it's likely that voice-recognition software will be used to make calls.

- Dr. M. Bhuvaneshwari
Assistant Professor

KARATE - A WAY OF LIFE

Growing up, sports especially "karate", has always been a major part of my life. I began my karate training when I was 6 years old. I was interested in joining karate because of my brother. He started karate a year before me and I was so excited to learn something new that I got to learn together with my brother.

By the time I was 10 I was well trained and I began participating in tournaments. My first tournament was in 2013 at Hindustan institutes. In my first tournament I didn't win any medal and was disappointed badly but it is a nostalgic memory. I got my **black belt** when I was 12 years old. I felt very successful and made my family proud. I am currently in my 6th black belt - III DAN CONFORMATION. It was real hard work and dedication through all these years to reach this height. I am also a coach and started training students when I was in 12th grade. Apart from being a sport, karate has become my source of income which has helped me to manage my own expenses during college days. Karate has helped me understand many things in life. It taught me how to deal with failures and how to embrace each victory. Over all these years I have participated in a number of tournaments, had my nose broken several times, turned muscles, and had broken bones. But I never thought about stop doing what I do. Everything pushed me towards success. Through all these years I have won 7 - Coimbatore district championships, 4 - Tamilnadu state championships, 2 - All India championships and more than 20 privately held tournaments. Some of my recent achievements are winning gold medal in 23rd Tamilnadu state championship held at PSG college of Technology and won 2 medals (silver and bronze) in NATIONAL URBAN GAMES- 2022 held at Raipur, Chhattisgarh. I am grateful for having very supportive parents and family. I am also thankful for my master sensei. P. Balasubramaniam for inspiring me and pushing me towards success without all of their support it would have not been possible to be where I am today. I also thank my college professors and department for being supportive during these academic days.

Thank you for reading!

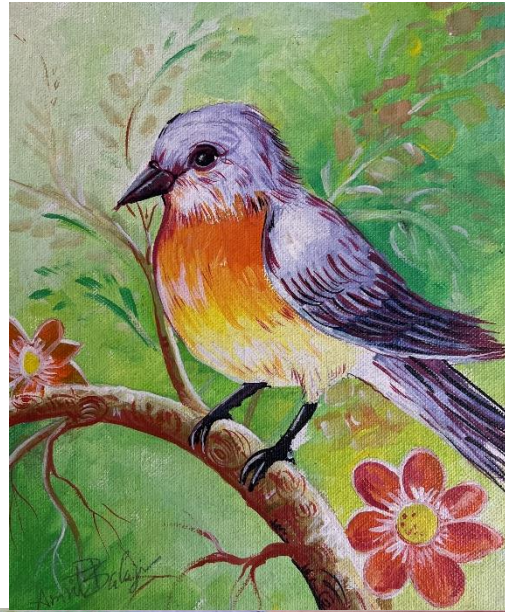
- J. Bharanidharan
(2021-25 Batch)

"It' s not the will to win that matters - everyone has that. It' s the will to prepare to win that matters."

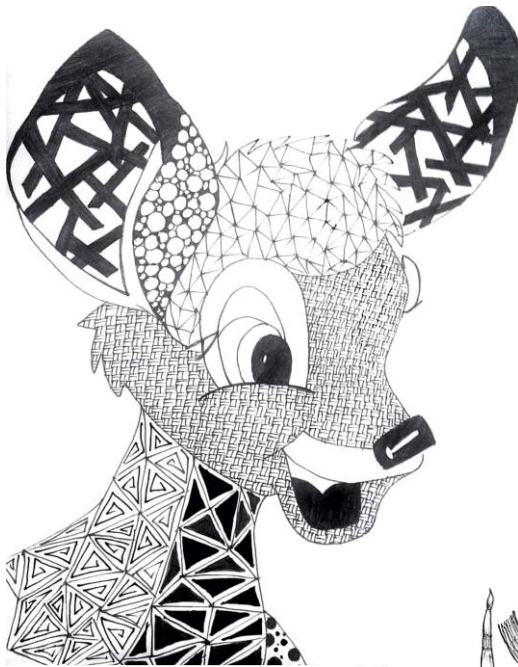
- Paul Bryant



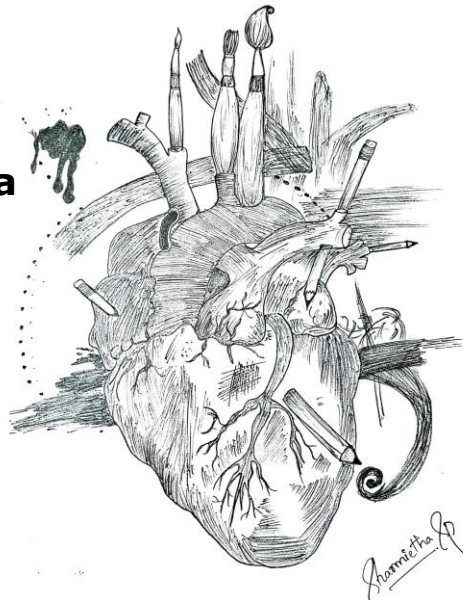
- **K. Sriram**
(2020-24 Batch)



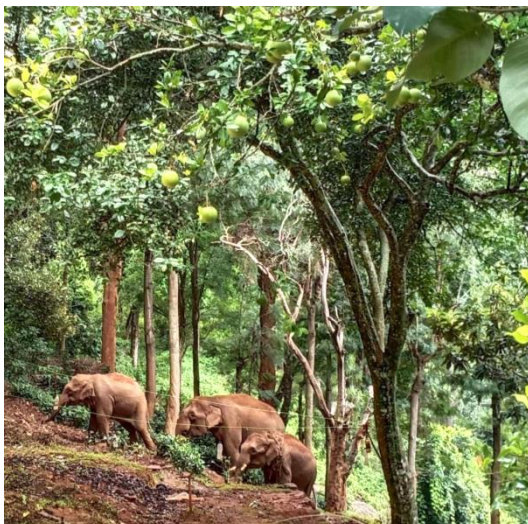
- **K. Amrit Balaji**
(2021-25 Batch)



- **S. P. Sharmietha**
(2021-25 Batch)



- **B. Naveen Pandiyan**
(2020-24 Batch)

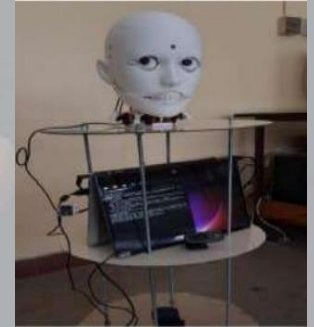


- **Ms. S. Kannaki**
Assistant Professor

IDEATHON 2K22



Vishnu Prakash N, Vishal S and Neelashkannan A, Final year student team has won Second prize in Ideathon 2K22 for the topic **AI based Interactive Robot For elderly care** organized by the Department of M.Tech CSE and AI&DS, SKCET. Mentor: Mr. T. Vignesh, Assistant Professor



PAPER PRESENTATION

Paper entitled "**Design and Fabrication of a Wheeled Carrier Equipped with a Robotic Arm for Material Handling**" has been presented by Aditya Ramesh, Ijas Ahamed and Akshey students of MCT Department, in the Research Conclave conducted by PSG College of Technology. The paper was adjudged as the **Best Paper** and has been awarded the **First prize** with a cash reward of Rs 5000/-.



Ph.D. COMPLETION



Mrs. J. Indirapriyadharshini, Assistant Professor has successfully defended her **Ph.D Viva voce** on the topic, "Certain Investigations on Design and Analysis of Loop Shaping Controller for Non-Linear Multivariable System with Control Challenges Using Optimization Techniques" on 08.08.2022. The examiners highly appreciated her research work.



E-KART



The **E- KART Team Brainiacs**, a student team won

- ✿ **Best Innovation Award**
- ✿ **2nd place in Skip pad**, and
- ✿ **3rd place in Auto cross**

with cash prize of Rs. 12000 in 9th Go Kart Design Challenge held at Bangalore from 22.08.2022 to 25.08.2022.

Mentors:

Mr. T. Vignesh, Assistant Professor and
Dr. R. Gopinathan, Associate Professor



SMART INDIA HACKATHON

Student team from the Department won **First Prize** in the **Smart India Hackathon 2022** - Hardware Edition with a Cash Award of **Rs. 1 Lakh**.

Team Name: The Hephaestus

Problem Statement: Identify slow learners for remedial teaching and capacity building for innovative methods.

Team Members: Udayasri S, Arul Murugan S, Nellaiappan B, Shannon Abishek S, Tharun kumar C and Vijeth R

Team Mentors: Dr. M. Lydia, HoD and Mr. T. Vignesh, Assistant Professor



Student team from the Department has won **Special Award** in the Smart India Hackathon 2022 - Hardware Edition.

Team Name: Tech Mutants

Team Members: Krishna Prasath, Vishnu Prakash, Neelash Kannan, Vishal, Ramya and Dheeraj.

Team Mentor: Mr.T.Vignesh, Assistant Professor

Problem Statement: Virtual Laboratory for Science Subjects at school level.

FITOGRAPHY



P. Praveen Kumar, Final year student has won **Second prize** (Fitography) in the event "**WOW TAMILNADU 2021**" and has received a cash prize of Rs.5000/-. The award was presented by our esteemed Minister for Tourism, Govt. of Tamilnadu and Mr.C.Vettrimarvan, Film Director.



SMART INDIA HACKATHON

Students team has participated in the **Smart India Hackathon 2022 – Software Edition**.

Team Name: Jasper _03

Team Members: Helan Jemima, Karthikeyan B, Linga Sri P, Adhithyan S, Athish R and Lalith Shankar R

Team Mentor: Mrs. R. Priyadarshini, Assistant Professor

Problem Statement: Virtual Reality based solution for training medical students Ministry of Ayurveda.



KARATE CHAMPIONSHIP



J. Bharanidharan student of Second year has secured First place with a Gold medal in the "**29th Tamilnadu Karate Championship-2022**" held on 20th and 21st of August 2022 at PSG College of Technology, Coimbatore.

GO-KART

Student team from the Department participated in the **9th Go Kart Design Challenge** from 22nd - 25th August 2022 at Aruani Grid, Bangalore.

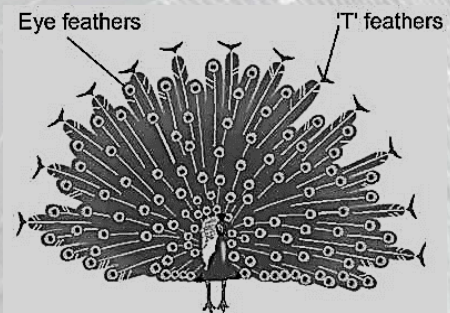


PEACOCK FEATHERS

- Mrs. S. Kannaki
Assistant Professor

Most birds have two types of tail feather: flight feathers and tail-coverts. The flight feathers provide stability during flight, while the tail-coverts 'cover' and protect the tail region.

The peacock tail contains spectacular beauty because of the large feathers, bright, iridescent colours and intricate patterns. The colours in the tail feathers are produced by an optical effect called thin-film interference. The eye pattern has a high degree of brightness and precision because the colour-producing mechanisms contain an extremely high level of optimum design.

**BRAINTEASERS**

1. You have two light bulbs in a 100-story building. You want to find out what floor the bulb will break on, using the least number of drops.
2. If you had an infinite supply of water and a 5-liter and 3-liter bucket, how would you measure exactly 4 liters? The buckets do not have any intermediate markings.
3. If you had 5,623 participants in a tournament, how many games would need to be played to determine the winner?
4. There are 20 different socks, of two types, in a drawer in a completely dark room. What is the minimum number of socks you should grab to ensure you have a matching pair?
5. If you have a square room with no roof, and you had four flagpoles you had to plant on the walls so that each flagpole touched two walls, how would you do it?

Answers: 1. 16, 2. A lot of wasted water, 3. 1, 4. 11 and 5. Put them in the corners dummy.

- Mr. S. Madhankumar
Assistant Professor

ME AND MY HEART #1

Yeah it was me and you,
Sitting in the cafe as a perfect duo,
Waiting for the ordered coffee to rescue,
From the drizzling cold monsoon dew
You were reciting all that you knew,
And I was listening like my mind flew,
Mesmerized by your eyes view,
With absolutely no clue,
Just stuck to it like blended with glue
Everything happened there was very new
And I felt completely real and true,
Hoping that it will be forever me and you...

ME AND MY HEART #3

Even the brighter days are dark
In the absence of her presence
The far from her near
Is the weakest part of his strongest heart
His feelings goes in vain instead of gain
Her love on him has no match to her hate
She is backing away inspite of going near
Pretending to be happy makes even more sad
But hiding is better than showing off
Because ignoring is easier than accepting...

ME AND MY HEART #6

In the middle of the cold night breeze
I was sitting on the roof in freeze
Listening to all your charismatic dreamz
With my heart full of untold love
Aching me to tell it loud
With the witness of the cloud
And some courage and bold
Before it becomes too cold...

ME AND MY HEART #2

Each steps count,
When we walk out
Even the ordinary brook,
Stunned by your look,
Looked like a magical valley
I had made my foot here daily,
But it never seemed like that before
Maybe it liked you more
That entire evening's gaze
Looked like a fairy tale maze
With your head on my shoulder
Undoubtedly, it was my finest sunset...

ME AND MY HEART #4

That cheeky smile was new
Whether it's a clue?
Your lips are hiding in the blue
But your eyes say that I knew...

ME AND MY HEART #5

Even the small things you do,
Makes me a lot of things to undo,
A few things to re-do,
And many more to never do...

ME AND MY HEART #7

In the midst of the tensed crowd
He was walking with his head bowed
Suddenly his wandering eyes stopped,
For the beauty that popped,
In front of him like a flower,
That blooms once in a year,
To mark its presence,
By breaking the silence,
Just to make his heart skip a beat,
To feel that moments treat...

ME AND MY HEART #8

Got struck in a sphere,
Where everyone disappeared
Even the moon looked scary,
By the way you made me weary
Felt guilt for falling by your actions,
Thinking you too felt the same reactions
Believing that it just now took off,
Without realizing you already left off...

ME AND MY HEART #9

August

The month with full of mixed emotions,
Including lots of strong life narations
Starting from many optimistic resolutions,
Till falling into lots of magical illusions,
That revealed many painful confessions,
The time when I made a lot of conclusions...

மழை

சாரல் துளிகள் பூமியில் படுகையில்
மண் வாசம் ஏனோ நெஞ்சை தொடுகையில்
புவியில் உணர்கிறேன் சொர்கத்தை
மழை வரும் நேரத்தில் மழலையாய் மாறினோம்
நம் மனதின் பாரத்தை நாமே மறக்கிறோம்
கானல் நீர்மட்டும் காணும் நிலைக்கு
நாமே செல்கிறோம்
நம்மை நாமே அளிக்கிறோம்
தமிழ் இலக்கியமும் தடுமாறும்
மழையை வர்ணிக்க
இன்னல்களில் வரும் கண்ணீர் தவறாகும்
மின்னல்களால் வரும் தண்ணீர் வரமாகும்

**ME AND MY HEART #10**

The longing to see your eyes,
Still after a lot of tries,
Makes me feel low at time,
But that's not the prime,
That defines my love for you,
As love is not a spell to brew.
It's always never too late,
For the one who knows the worth of wait.
Because, the more it takes,
The more it tastes...

- C. Elango
(2020-24 Batch)



மாரி பெய்து பூக்கள் பூக்க
இந்த பூமி செழிக்கும்
குளிரோ வெயிலோ எதுவாயினும்
மழையின் அழகை நெருங்காதே
மழையால் வரும் பேரிடர்
மனிதம் விதைக்கும்
மழையால் வரும் பேரிடர்
நம் இடையே மனிதம் விதைக்கும்
எல்லையில்லா இவ்வுலகம்
உன் வருகைக்கு காத்திருக்கும்.....

- S. Jitendra
(2021-25 Batch)

15th August is a day when we feel proud of and celebrate our victory in the struggle for independence. This is a day of joy and happiness for all Indians, irrespective of where they reside in any part of the world. It is also a day on which we remember our valiant soldiers and security forces, thank them for their bravery and commitment, and hope that they will continue to be alert in the service of the nation.

Mahatma Gandhiji had also dreamt of the same independence when he launched the Dandi March many years ago. Through that struggle, he shook the foundations of the greatest and most powerful empire the world had ever seen. Today, we need to once again remember the sacrifice and commitment of the Father of the Nation Mahatma Gandhi and also his dreams for an independent nation. We also need to reflect on how far we have been successful in fulfilling his dreams.

- Dr. A. P. J. Abdul Kalam



As a part of **76th Independence Day** celebration, Department faculty members have paid respect to our National Flag and celebrated the event.

LET YOUR SPIRITS FLY HIGH WITH THE INDIAN FLAG TODAY.