

SKCET



Buzz

27th August - 02nd September 2022



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Principal

Co-Editor

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CSE/M.TECH CSE | SMART INDIA HACKATHON 2022 - SOFTWARE EDITION



SKCET - SIH 2022 Software Hackathon - First Prize Winners

The enthusiastic Technophiles of SKCET created a headway honour, yet again at SIH 2022 Software Edition, making it an 'All-time' affair.

Team Name: Cardinality

First Prize: Rs.1,00,000/-

Team Members:

- Prithika Andrea Angelina.F - II CSE
- Shametha K G - IV CSE
- Aswathy H - III CSE
- Kumaraguru T - IV CSE
- Sasidharan - II CSBS
- Bhuvanesh T G - II M.TECH CSE

Mentor: Ms.A.Priya, AP/CSE

Problem Statement:

DR723 -Centralized grievance system portal

Organization: AICTE

Nodal Centre: IIT BHU, Varanasi.



CSE | SMART INDIA HACKATHON 2022 - SOFTWARE EDITION



Student team from the Department of CSE has won **First prize** in Smart India Hackathon SIH-2022.

Team Name: Golden Dawn

First Prize: Rs.1,00,000/-

Team:

- Monish Kumar A -II CSE
- Rahul R N - II CSE
- Prajwal Pandi - II CSE
- Mohammad Suhail J - II CSE
- Prajeet Kumar - II CSE
- Priyadharshini B - III CSE



Mentor: Dr.M.Sujaritha, Professor, CSE

Problem Statement:

DR708 -AI based tool to get information about 5 good institutes based on AISHE

Organization: AICTE

Nodal Centre: GMR Institute of Technology, Andhra.

IT | SMART INDIA HACKATHON 2022 - SOFTWARE EDITION



Student team from the Department of IT has won **First prize** in Smart India Hackathon SIH-2022.

Team Name: Caffinated Coders

First Prize: Rs.1,00,000/-

Team Members

- Krupaasree K III IT
- Naveen S III IT
- Mohamed Ali Raihan M III IT
- Kavya P III IT
- Logesh S III IT
- Kiruthika E III IT



Team Mentor: Dr.T.Keerthika, Associate Professor, IT

Nodal Centre: G.H.Raisoni College of Engineering, Nagpur

CSBS | SMART INDIA HACKATHON 2022 - SOFTWARE EDITION



Student team from the Department of CSBS has won **First prize** with a cash prize of **Rs. 1 Lakh** in Smart India Hackathon SIH-2022 on 25th & 26th August 2022 held at Sikkim Manipal Institute of Technology, Sikkim.

Team Name: Free Thinkers

Team Members:

- Hareeswaran O S
- Jaisakthi K
- Tharun M
- Sadurathaman V
- Srihari M
- Krishna G



Team Mentor:

Dr. S. Oswalt Manoj, Assistant Professor - CSBS.

MCT | SMART INDIA HACKATHON 2022 - HARDWARE EDITION



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

Team: The Hephaestus

Team Members:

- Udayasri S, III MCT
- Arul Murugan S, III MCT
- Nellaiappan B, III MCT
- Shannon Abishek S, III MCT
- Tharun kumar C, III MCT
- Vijeth R, III MCT



Team Mentors:

Dr.M.Lydia, HoD/MCT, Mr.T.Vignesh, AP/MCT

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

Organization: Department of School Education & Literacy (DoSEL), Ministry of Education.

Nodal Centre: Galgotias University, Greater Noida, Uttar Pradesh.

EEE/CSE | SMART INDIA HACKATHON 2022 - HARDWARE EDITION



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

Team: Innovative Hackers

Team Members:

- Surjith Surya V - III EEE
- Surya M - III EEE
- Sankaranarayanan G - III EEE
- Tharani S - III EEE
- Yeshika S - III CSE

Congratulations!

Team Mentor:

Dr. Ramji Tiwari, Assistant Professor, EEE

Problem Statement: RK767- Lower Extremity Exoskeleton

Organization: Ministry of Social Justice and Empowerment

Nodal Centre: Forge Factory, Coimbatore.

MECH/ECE/IT | SMART INDIA HACKATHON 2022 - HARDWARE EDITION



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

Team: The Mitigators

Team Members:

- Pavan Kumar MA, III MECH (Team Leader)
- Sridharsni S, IV IT
- Swathi M Nair, IV ECE
- Rithani Rajyasree V, IV IT
- Trisha S, IV ECE
- Joshan Regobert M, III MECH

Team Mentor:

Mr. N. Ramachandran, AP/Mech

Organization: Ministry of Ayush

Nodal Centre: Amal Jyothi College of Engineering, Kerala



MECH/CSBS | SMART INDIA HACKATHON 2022 - HARDWARE EDITION



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

Team: Krenoviantz

Team Members:

- Rithish M S, IV MECH (Team Leader)
- Sakthivel B, IV MECH
- Sembulingam M, IV MECH
- Vel Prakash, IV MECH
- Srinithi B, IV MECH
- Monisha D, IV CSBS

Team Mentor:

Mr. N. Ramachandran, AP/Mech

Problem Statement: Virtual Laboratory for Science subjects at school level

Organization: Ministry of Social Justice and Empowerment

Nodal Centre: Galgotias University, Greater Noida, Uttar Pradesh



MCT | SMART INDIA HACKATHON 2022 - HARDWARE EDITION



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

Team: Tech Mutants

Team Members:

- Krishna Prasath, IV MCT
- Vishnu Prakash, IV MCT
- Neelash Kannan, IV MCT
- Vishal, IV MCT
- Ramya, III MCT
- Dheeraj, A III MCT



Team Mentor:

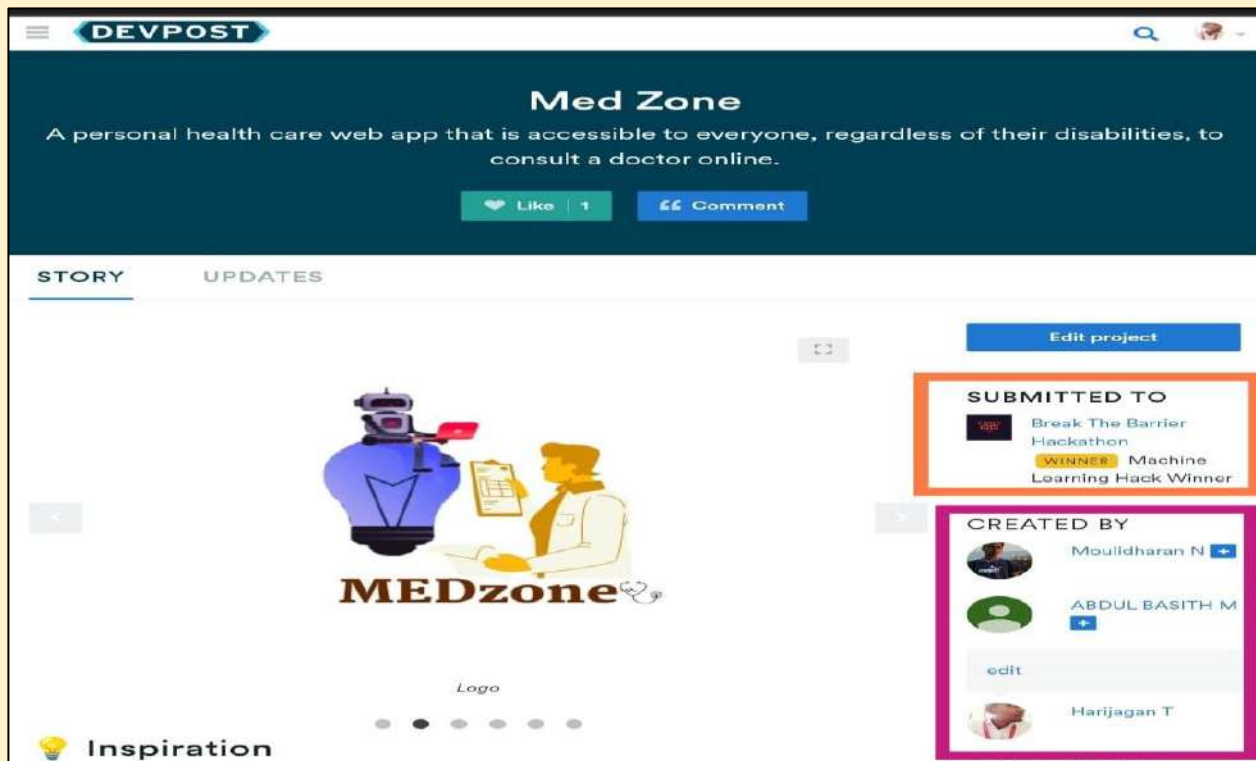
Mr.T.Vignesh, AP/MCT, Mr.VigneshRamkumar,(Industry Mentor)

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

Organization: Ministry of Electronics and Information Technology (MEITY)

Nodal Centre: Galgotias University, Greater Noida, Uttar Pradesh.

AI & DS | ONLINE HACKATHON



Student team from AI & DS has won first place in **Machine Learning Hack**, Online Hackathon hosted by LDRP Institute of Technology and Research on 29.08.2022 and will be receiving prizes worth Rs. 10,000/-.

Project Title: MedZone

Team Members:

- ❖ Harijagan T (III AI & DS)
- ❖ Moulidharan N (III AI & DS)
- ❖ Abdul Basith (III AI & DS)



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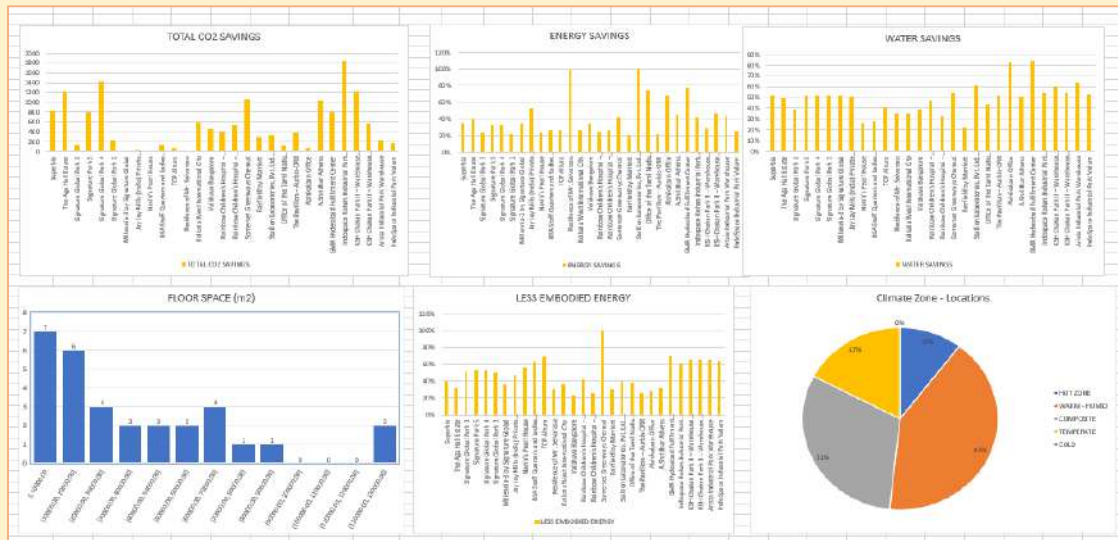


Feedback



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CIVIL | SUMMER FELLOWSHIP PROGRAMME



S M Oviyaa, student of **Final year Civil Engineering** has successfully completed her Summer Fellowship Programme (SFP) - 2022 from 27th June to 27th July 2022 in Building Technology and Construction Management stream of the Department of Civil Engineering, Indian Institute of Technology Madras (IITM), Chennai. She has undergone the fellowship programme under the supervision of **Dr. Sivakumar Palaniappan**, Assistant Professor, IITM. She was trained on different green building rating systems available in India and performed comparative analysis of different rating systems using EDGE software.

MCT & EEE| GO KART DESIGN CHALLENGE



E- KART Team Brainiacs, a student team from the Department of Mechatronics Engineering and Electrical and Electronics Engineering has won

- Best Innovation Award
- 2nd place in Skip pad
- 3rd place in Auto cross

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

Team Mentors

Mr. T Vignesh AP/MCT

Dr. Gopinathan ASP/MCT

Mr. Boobalan AP/EEE

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EEE | SIH 2022 PARTICIPATION - HARDWARE EDITION



Third year students team from department of EEE has participated in Smart India Hackathon 2022 - Hardware Edition.

Team Name: FACT ARCHITECTS_03

Team Members

- Ramshi S
- Ramya C
- Madhubalan S
- Kavi Raam Pranau A

Team Mentor: Dr. Vinoth Kumar. P

Industrial Mentor: Mr.Suresh Subramanian

Nodal Centre: Amal Jyothi College of Engineering-Kottayam, Kerala

MECH/IT | SIH 2022 PARTICIPATION - HARDWARE EDITION



A team '**Techno Panthoms_06**' comprising of students from Department of **Mechanical Engineering** and **Information Technology** has participated and presented their project entitled '**Non- invasive glucometer**' in hardware edition of Smart India Hackathon 2022. The problem statement was posted by the Department of Science and Technology. The project was highly appreciated by the expert team.

Team Members:

- R.Rahul - IV Mech 'B'
- R.Kalidhasan - IV Mech 'B'
- P.M.Logesh - IV Mech 'B'
- U.S.Jivithesh - IV Mech 'B'
- R.Chujeetha - IV IT 'A'
- S.Deenathayalan - IV IT 'A'

Team Mentor: Dr. V P. Srinivasan – AP/Mech

EEE | SIH 2022 PARTICIPATION - SOFTWARE EDITION



Third year students team from department of EEE has participated in Smart India Hackathon 2022 – Software Edition.

Team Name: SYNDICATE

Team Members:

- Murugesh R
- Madhana Bala S K
- Matheswaran V
- Prathap Prakash
- Mounika Sri A
- Moumitha R

Team Mentor: Mr.Boobalan S

Industrial Mentor: Sudarshan Kali Mukunthan

Nodal Centre: Kongu Engineering College, Erode

IT | SIH 2022 PARTICIPATION - SOFTWARE EDITION



Students of Third year IT , Logeshwaran E, Preethikha G, Nivithra V, Nidharshana, Ramanathan S P, and Navaneethakannan have Participated in SIH 2022 Software edition held at VNR Vignana Jyothi College of Engineering and Technology, Secundrabad during 25-26th August 2022. The team was mentored by Mrs. A.Raihana, Assistant Professor, Department of IT.

MCT | SIH 2022 PARTICIPATION - SOFTWARE EDITION



Students team from Department of MCT has participated in the **Smart India Hackathon 2022** – Software Edition.

Team Name: Jasper _03

Team Members:

- Helan Jemima, III MCT
- Karthikeyan B, III MCT
- Linga Sri P, III MCT
- Adhithyan S, III MCT
- Athish R, III MCT
- Lalith Shankar R, III MCT

Team Mentor: Mrs. R. Priyadharshini, AP/MCT

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

Nodal Centre: Jai Bharath College of Management and Engineering Technology, Kerala

MECH | SIH 2022 PARTICIPATION - SOFTWARE EDITION



Team '**Peril Platoon**' comprising of students from Department of **Mechanical Engineering** has participated and presented their project entitled '**SHE - She helps herself Everywhere**' in the Software edition of Smart India Hackathon 2022. The problem statement was posted by Cyber Crime Unit, Special Cell, Delhi Police. The project was highly appreciated by the expert committee and suggested some changes to make the project on big scale.

Team Members:

- Badma Rani R - IV Mech 'C'
- Dharini A C - IV Mech 'C'
- Meenu Priya M - IV Mech 'C'
- Sanjeevi M R - IV Mech 'C'
- Santhosh B - IV Mech 'C'

Team Mentor: Mr. A. Sathish Kumar, AP/Mech



ECE| SEMINAR ON EMERGING AND FUTURISTIC TRENDS AND TECHNOLOGY DEVELOPMENT IN NETWORKING



Department of ECE organized a Seminar on "Emerging and Futuristic Trends and Technology Development in Networking" on 29.08.2022. Mr. P.Pradeepkumar, Solution Architect, Wipro Technologies, Coimbatore was the Resource Person. Legacy Network Systems, Virtual Private Network, IPV6, Cloud computing layers, Real time examples for cyber-attack were the session highlights.

ECE| SOFT SKILLS PROGRAM IN ASSOCIATION WITH QUINBAY



Department of ECE in association with **Quinbay Technologies**, conducted Additional Credit Course on **Soft Skill Training (Day-2) (Phase - 3)** on 25.08.2022 and 26.08.2022 for the **Third** year ECE students. The session was handled by **Mr. Abhijit Bhide** and **Mr. Rahul Bhide**. Session Takeaways: Quality understanding, Product quality and product branding, Quality assurance vs Quality engineering, Automated vs Manual Testing, Full stack Quality Engineering, Metrics and measurements, KPI - Key Performance Indicator, KPI setup process and SaaS e-commerce.

EEE | ASSOCIATION INAUGURATION



Department of EEE inaugurated **Electrical and Electronics Engineering Association - 'TESLAENIANS'** and organized an Expert talk on '**Advanced Technologies in Electrical Systems**', on 25-08-2022. **Mr. K.Jagadeesh**, Senior Manager, L&T Electrical and Automation, Coimbatore was the Chief Guest. The Office Bearers of EEE Association for the academic year 2022-23 were conferred with badges and also released the first edition of the Magazine - **Vidhyuth '22**.

Session Highlights:

- # Advanced techniques in the Power generation.
- # Industrial revolution.
- # Building blocks of 4.0.
- # Modern Power System architecture with advanced online temperature system.

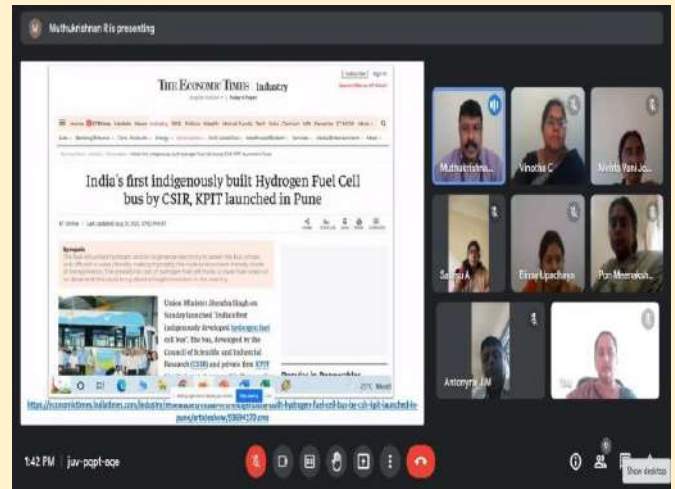
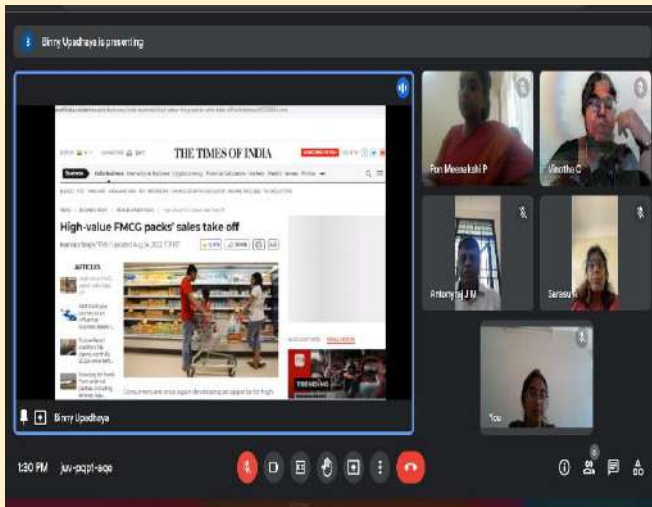
SOM | FACULTY FORUM PROGRAM



School of Management conducted week three of Faculty Forum from 22.08.2022 to 27.08.2022. Faculty members presented their insights on various topic that had a fruitful discussion for forty five minutes.

SL. NO	FACULTY NAME	TOPICS
1	Dr.C.Vinotha	A book review on "I Brought the Monk's Ferrari by Ravi Subramanian
2	Dr.A.Sarasu Kanan	21 HR Jobs in 2030-HBR
3	Mr.R.Muthukrishnan	Cookies and Privacy in the Digital World
4	Ms.Mehta Vani Joghee	Parables and Management Principles
5	Mr.J.M.Antony Raj	How to make your D2C Brand stand out of Competition
6	Ms.Binny Upadhaya	The Vegan Trend in India

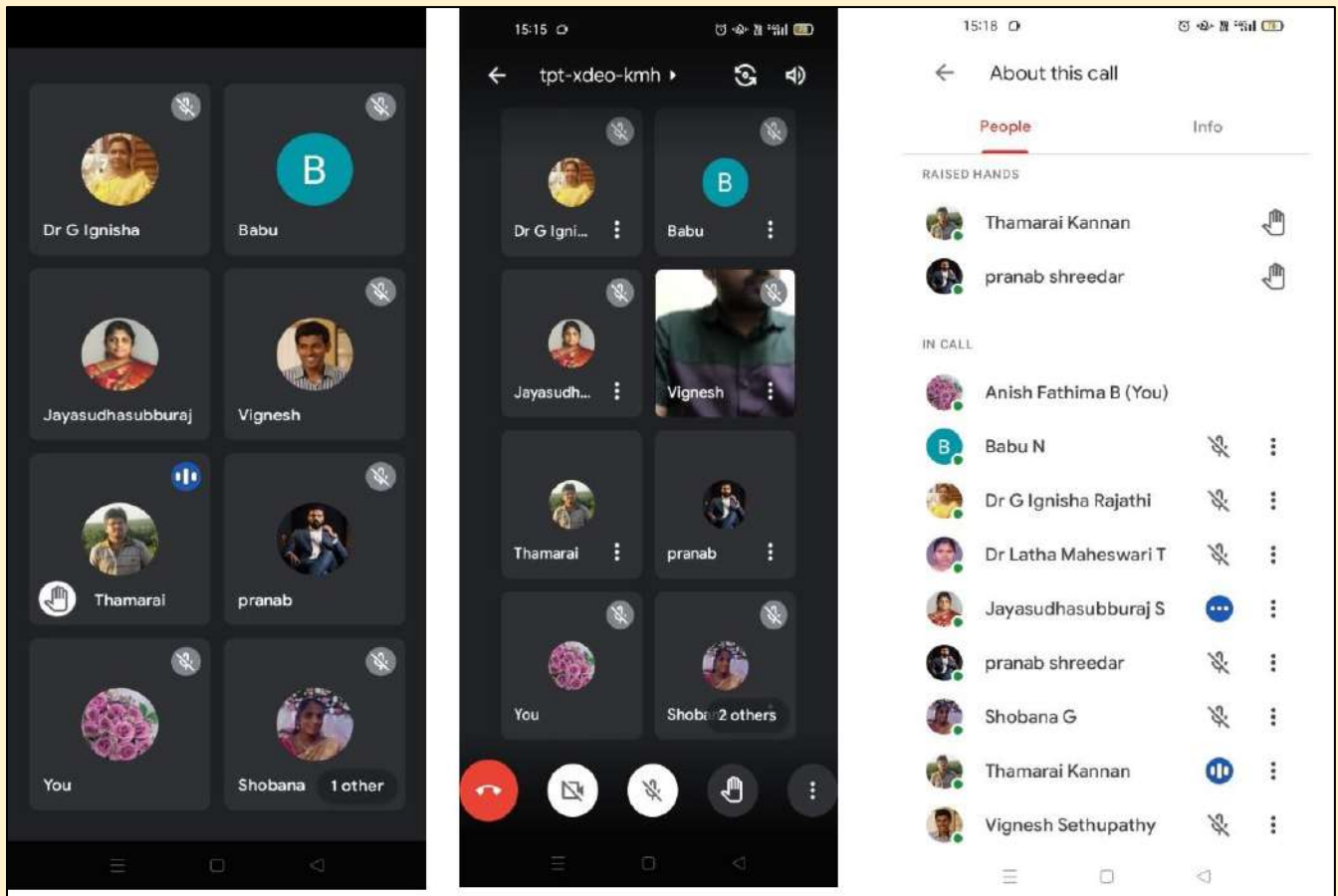
SOM | LETS DISCUSS PROGRAM



School of Management conducted week three of Let's Discuss Program from 22.08.2022 to 27.08.2022. Faculty members virtually presented the current business news from reputed business dailies.

SL. NO	FACULTY NAME	TOPICS
1	Dr.A.Sarasu Kanan	Infosys Variable Pay Q1Fy 2023
2	Dr.R.Suyam Praba	Challenges of PM's Crop Insurance scheme in Tamil Nadu
3	Mr.Muthukrishnan	Recent Implementation of Green Energy in Automotive
4	Ms.Mehta Vani Joghee	What happens when a state wants to add new districts?
5	Ms.Binny Upadhaya	High-value FMCG packs sales take off
6	Mr.J.M. Antony Raj	Silicon Ambitions-Steps taken by India towards developing a semiconductor ecosystem.

SKCET | ALUMNI ASSOCIATION MEETING



Alumni Association of SKCET conducted a virtual Meeting on 25.08.2022. **Dr.Jayasudha Subburaj**, SKCET Alumni Coordinator, Office Bearers of Alumni Association **Mr.Thamarai Kannan**, **Mr. Vignesh**, **Mr. Pranab Sundar**, **Mr.Dilip** and department alumni coordinators discussed on various upcoming Alumni Events and activities.

AI&DS | ASSOCIATION INAUGURATION



Department of Artificial Intelligence and Data Science inaugurated its Association “ARTIFICIX - Untangle the Power of AI”. Dr. S. Venkata Lakshmi, HOD, AI&DS cordially welcomed the gathering. Dr. T. Sujatha, Associate Professor, AI&DS introduced the office bearers for the academic year 2022-2023. Mrs. Kavitha Prem Anand, Project Manager, North America Portfolio Lead, Cognizant Technologies Ltd, Bangalore, chief guest of the event addressed the students’ on “Data Science and Predictive Analysis”. A glimpse of the memorable journey was also witnessed with great felicity. Prizes were distributed for winners for designing the Association Logo.

Session Highlights:

- Introduction to Predictive Analysis
- Use Cases of Predictive Analysis
- Working of Data Science Lifecycle
- Prerequisites of Data Science
- Roles of Data Scientist

CSE| GUEST LECTURE ON CROSS PLATFORM APPLICATION FRAMEWORK



Department of CSE organized a guest lecture on "**Cross platform application framework**" for the **Second** year students. **Mr.Kalaivanan Eswaramoorthy**, Technical Specialist, Automations, IBM India Pvt. Ltd, Chennai was the Resource person. He gave a deep insight on how to work with cross platform applications and its future trends.

Session Highlights:

- Operating systems and its types
- Necessity for cross platform frameworks
- Developing cross platform applications
- Open source systems
- Essential Technologies for future purpose

ECE| CST MICROWAVE STUDIO SUITE - SOFTWARE FOR DESIGNING, ANALYZING AND OPTIMIZING ELECTROMAGNETIC (EM) COMPONENTS AND SYSTEMS



Department of Electronics and Communication Engineering organized an Orientation program on "CST Microwave studio suite- Software for designing, analyzing and optimizing electromagnetic (EM) components and systems" at Fourier Lab on 30.08.2022.

Resource Person: Mr. Vinay Kumar, VIAS Technologies, Bangalore.

Session Take-aways: Tool Specific Introduction, Availability of domain specifications, Global optimization using in-built optimizer, User-friendly interface, Ease of calculations and interpretations.

CIVIL | TRANSPORT DEMAND MANAGEMENT - HOW TO REDUCE CONGESTIONS AND MAKE THE TRANSPORT SYSTEM MORE EFFICIENT



Civil Engineering Association and IIC, Department of Civil Engineering organized a Guest Lecture on "Transport Demand Management - How to reduce congestions and make the transport system more efficient" on 30th August 2022. The resource person was **Dr. Andreas Rau**, Faculty Head and Principal Investigator, Technical University of Munich Asia, Singapore.

Session Highlights:

- Generation of Traffic
- Transport Demand Management
- Push and Pull Approach
- Land Use and Transport Master Plan 2040 Singapore
- Parking Scheme in Singapore.

EEE | HIGHER EDUCATION FAIR



Student team from **Third** year EEE visited **Higher Education Fair** at Coimbatore and gained an insight on the overseas educational opportunities in countries like UK, Australia, USA and Canada.

SOM | INTERNSHIP REVIEW



Hybrid model of Internship Review 1 was conducted by **SOM** for the First year **MBA** students. The session was highly based on the content that delivered about the Industrial introduction and the specification of every department. The students acquired some extensive knowledge through their Internship which helped them gain a good practical knowledge.

AI&DS | ORIENTATION TALK



Dr. S. Venkata Lakshmi, HoD, Artificial Intelligence and Data Science addressed the Second year students of AI & DS. The pointers of discussion were: Key attributes of the department, Curriculum structure, Department Accolades, Placement opportunities and motivated students to enhance their skill set in emerging fields and to participate in Hackathon and Technical events.

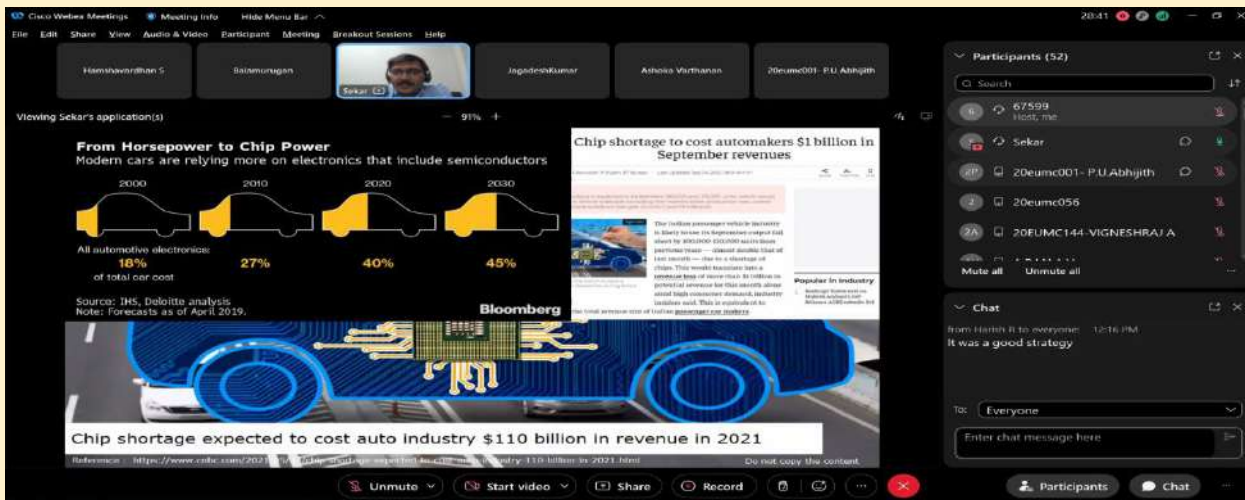
IT | ERP AND LEARNING JOURNEY WITH SAP



Department of Information Technology organized a workshop on "ERP and Learning journey with SAP" on 27th August 2022. Second and Third year students of IT Department participated and gained knowledge in ERP and SAP. **Session Highlights:**

- SAP and its Evolution
- Modules of SAP
- SAP ABAP
- Job opportunities in SAP

MECH | INDUSTRIAL PRACTICE: METHOD



Department of Mechanical Engineering and Association of Mechanical Engineers organized a webinar on **Industrial Practice: Method Study** by Mr.S.Sekar, General Manager (Quality Control), Hyundai Motors India private limited, Chennai on 28.08.2022. **Second and Third year Mechanical Engineering** students attended the session. The resource person explained the challenges and expectations of the automotive industry to the students.



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R&D | PAPER PUBLICATION | ECE



Dr. V. Nandalal, Professor, Department of ECE has published an **Annexure – I, SCI-E** and Scopus Indexed Journal titled “**Implementation of FSS substrate on microstrip patch antenna for terahertz communication**” in the Journal of Optoelectronics and Advanced Materials.

R&D | BOOK CHAPTER PUBLICATION | EEE

Dr. Ramji Tiwari, Assistant Professor, EEE has published a book chapter entitled “**Analysis of a fuel cell-fed BLDC motor drive with a double boost converter for electric vehicle application**” in Smart Grids for Renewable Energy Systems, Electric Vehicles and Energy Storage Systems, Book Volume with ISBN:978-1-032-30095-5 DOI:10.1201/9781003311195 published by Taylor & Francis Group.

Chapter 4
Analysis of a fuel cell-fed BLDC motor drive with a double boost converter for electric vehicle application

K. Kumar and V. Lakshmi Devi
Sri Venkateswara College of Engineering (SVCE), Tirupati, India

Avagaddi Prasad
Sasi Institute of Technology & Engineering, Tadepalligudem, India

Hanumantha Reddy Gali
Sri Venkateswara Engineering College (SVEC), A.P., India

Ranji Tiwari
Sri Krishna College of Engineering and Technology, Kuniamathur, India
DOI: 10.1201/9781003311195-4

Contents

- 4.1 Introduction
- 4.2 Proposed fuel cell fed electric vehicle system design
 - 4.2.1 Fuel cell
 - 4.2.2 Double boost converter
- 4.3 Proposed system control techniques
 - 4.3.1 MPPT controller
 - 4.3.2 Hall Effect controller for VSI
- 4.4 Result and discussion
- 4.5 Conclusion
- References

4.1 Introduction

R&D|SCIENTIFIC ARTICLE PUBLICATION | MECH

Dr.K.P.Yuvaraj, Assistant Professor, Mechanical Engineering has published a scientific research article titled 'Impact of AlN-SiC Nanoparticle Reinforcement on the Mechanical Behavior of Al 6061-Based Hybrid Composite Developed by the Stir Casting Route' in the Journal of Advances in Materials Science and Engineering- An Hindawi Publications. It is a SCI, WoS and SCOPUS Indexed Journal with IF: 2.098.

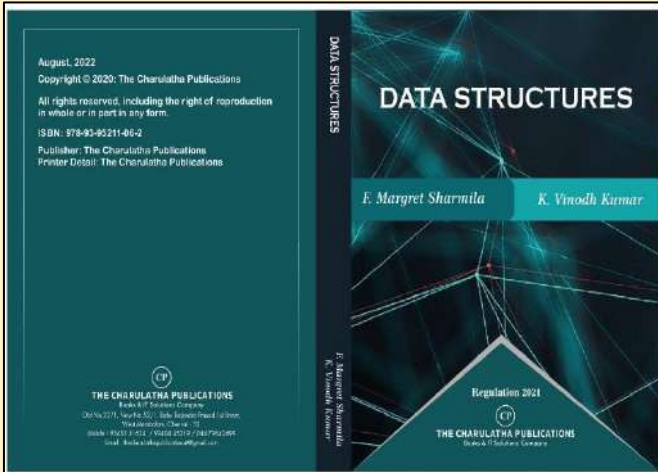


R&D|JOURNAL PUBLICATION | MCT



Dr.R.Manikandan, Associate Professor, Mechatronics Engineering has successfully published a paper entitled “Influence of Cowpat ash particles on micro structure, mechanical and tribological properties of Al 7075 composites” in the Journal of Ceramic Processing Research. This is an A1 Journal with an impact factor of 0.636.

R&D|BOOK PUBLICATION | CSE



Ms.F. Margret Sharmila, Assistant Professor, Department of CSE has published a book titled “Data Structures”, by Charulatha Publications, Book Volume with ISBN: 978-93-95211-06-2.

R&D|PATENT PUBLICATION | CSE

Dr.D.Rasi, Professor, Department of CSE has published a patent titled “High Performance Computing (HPC) Integration of IoT and Big Data Analytics: Design and Experimental Evaluation of an HPDA Framework for eScience at Scale” on 26th August, 2022 with the application number 202211045530.

Application Details	
APPLICATION NUMBER	202211045530
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	09/08/2022
APPLICANT NAME	1. Dr. Bharat Bhushan Agarwal 2. K. Rama Krishna 3. R.Sudha 4. Dr.D.Rasi 5. Prof. Akh B. Patel 6. Dr.T.Dinesh Kumar 7. Dr.T.M.A.Archara 8. Dr. M.Jemimah Carmichael 9. Dr.M. Shanmugapriya 10. H.Ramprasad 11. Dr. Hanikumar Pallathadka
TITLE OF INVENTION	High Performance Computing (HPC) Integration of IoT and Big Data Analytics: Design and Experimental Evaluation of an HPDA Framework for science at scale
FIELD OF INVENTION	BIOTECHNOLOGY
E-MAIL (As Per Record)	senanipindia@gmail.com
ADDITIONAL-E-MAIL (As Per Record)	admin@senanip.com
E-MAIL (UPDATED ONLINE)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	26/08/2022

R&D | JOURNAL PUBLICATION | MCT

Dr. G. Veerappan and Dr. D. Pritima, faculty members of MCT, have successfully published a paper entitled “Effect of Copper on the Mechanical Properties and Corrosion Behaviour of Powdered Metallurgy Processed Ni - Co - Cr- Fe - Mn- Cu_x High Entropy Alloy” in Arabian Journal of Science and Technology (Springer). This is a WOS Journal listed in Anna University, Annexure - I.

Arabian Journal of Science and Engineering
<https://doi.org/10.30554/2022-42-07943-8>

RESEARCH ARTICLE - MECHANICAL ENGINEERING

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

G. Veerappan¹, M. Ravichandran^{2*}, V. Mohanavel³, D. Pritima⁴, S. Rajesh⁵

Received: 15 December 2021 / Accepted: 7 June 2022
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Abstract
 High entropy alloys (Ni-Co-Cr-Fe-Mn-Cu_x, (x denotes the atomic fraction of copper) were synthesized by powder metallurgy route. In this investigation, different Cu content was added (x = 2 at.%, 4 at.%, 6 at.%, and 8 at.%) in the Ni-Co-Cr-Fe-Mn. The compacted specimens were subjected to two different sintering temperatures such as 1200° C and 1300° C, and further, alloys were subjected to scanning electron microscopy (SEM) and optical microscopy test. The sintered specimens were also subjected to compression test, hardness test and corrosion test. The densification behavior of sintered specimens was also investigated. Ni₂₀Co₂₀Cr₂₀Fe₂₀Mn₂₀Cu₁₀ (4 at.%) alloy sintered at 1300° C established high compression strength, high corrosion resistance and high hardness. SEM shows the formation of dendrites and electron dispersive spectroscopy analysis confirms the presence of Ni, Co, Cr, Fe, Mn and Cu throughout the matrix. Potentiodynamic investigations pointed out that corrosion resistance for Ni₂₀Co₂₀Cr₂₀Fe₂₀Mn₂₀Cu alloy 06 at.% Cu sintered at 1300° C is highest with corrosion rate of 0.22 mA per year cm².

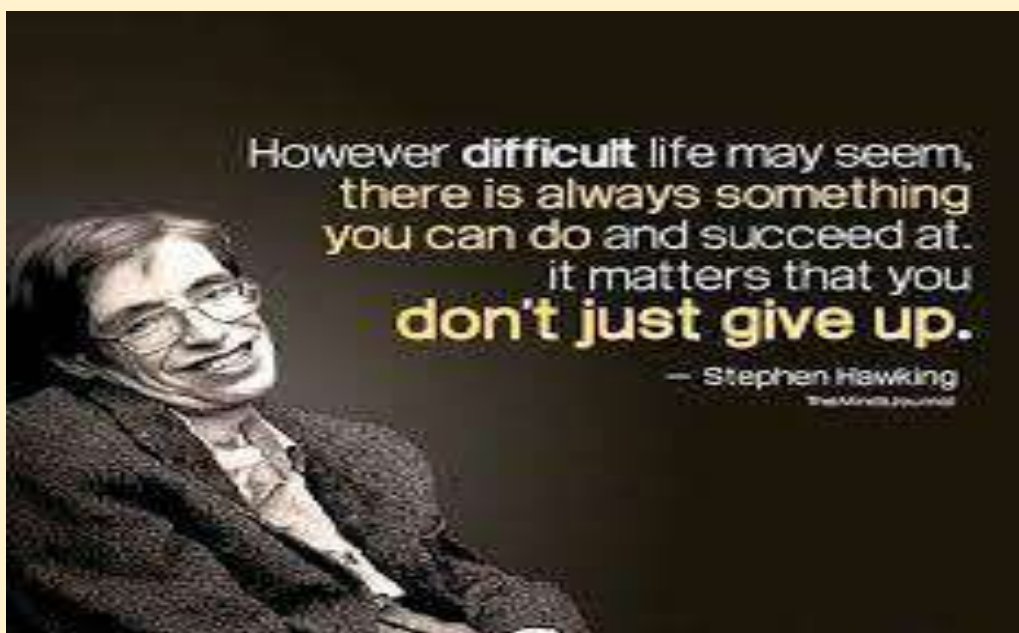
Keywords: High entropy alloy · Powder metallurgy · Densification · Sinterability · Corrosion

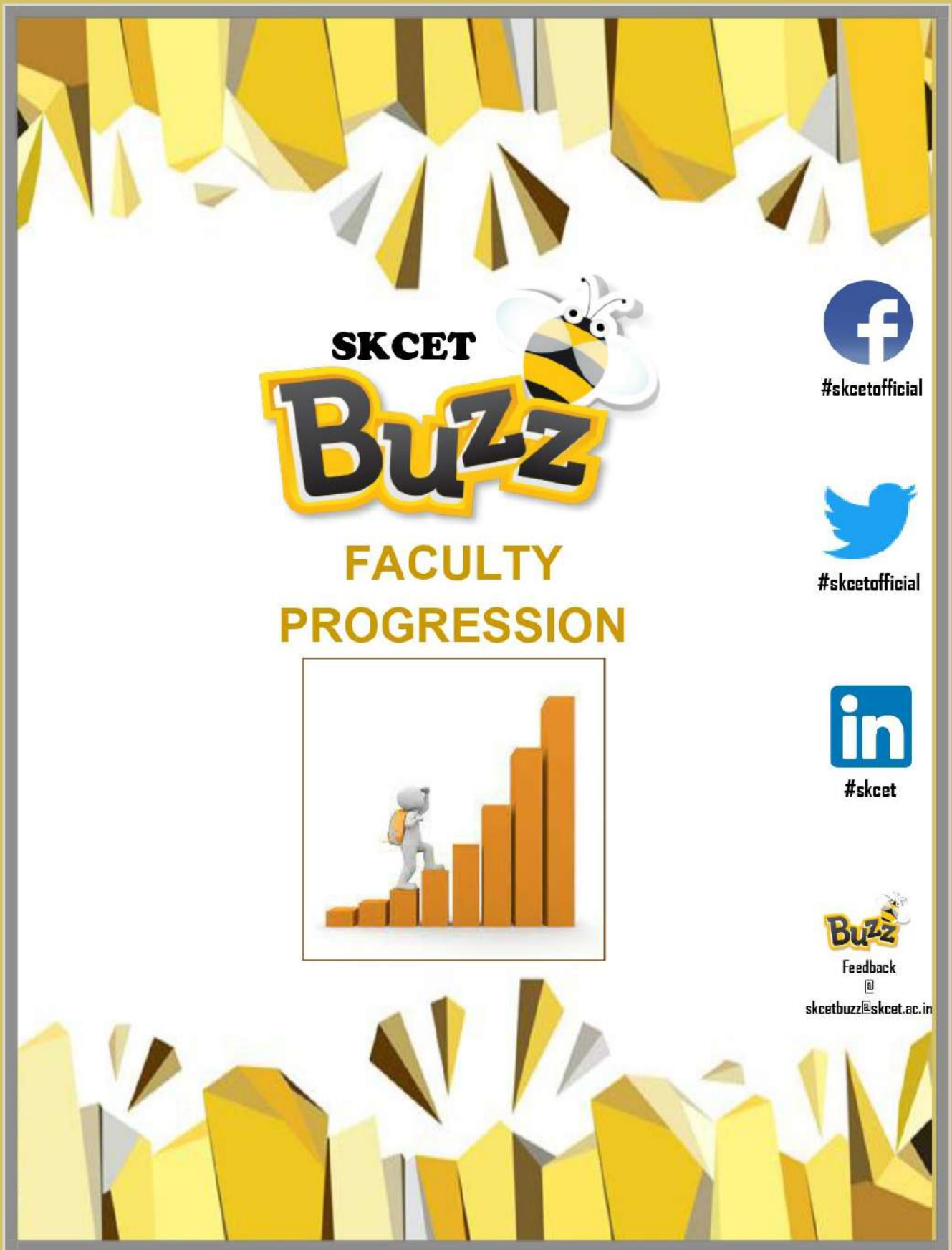
1 Introduction
 High entropy alloys (HEAs) are a novel category of advanced metallic material that is gaining a lot of consideration in the materials field. HEAs exhibit better mechanical and physical properties and also were chosen as high-temperature materials, coating materials, and other materials that require a lot of hardness and wear resistance with a lot of strength [1]. The HEAs concept was coined by Yeh and Li in the 1990s and it was also called as high-entropy degree alloys because of its high difference in atomic sizes of mixing elements. [2] HEAs have simple microstructures and prefer to form amorphous and nanocrystalline structures rather than complex intermetallic compounds [3]. HEAs are classified under multi-principle component alloy (MPCAs), which contains at least five elements without a significant base element with near-equiatomic compositions, separating them from the traditional approach to alloying, which usually includes a single-based element with the inclusion of lesser proportion of other components [4]. HEAs are multi-element alloys containing minimum 5 principle elements which are mixed in equiatomic or close-to-equiatomic proportions. Fe, Ni, Co, and Cu are the common used elements which belong to the core group of transition metals. Another set of alloying elements, likewise pertaining to the transition metals (save Ni), is employed less frequently: Al, Ti, Cu, and Mn. The most typical strategy for HEAs design is to maximize configurational entropy in order to stabilize the disordered phase

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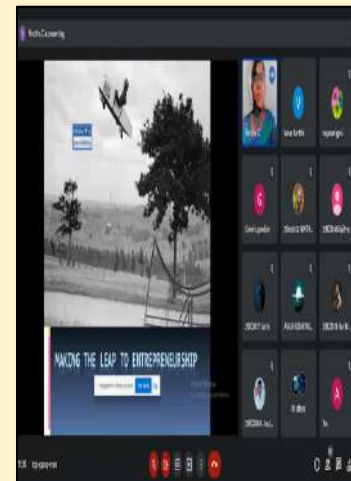
EEE | SESSION CHAIR



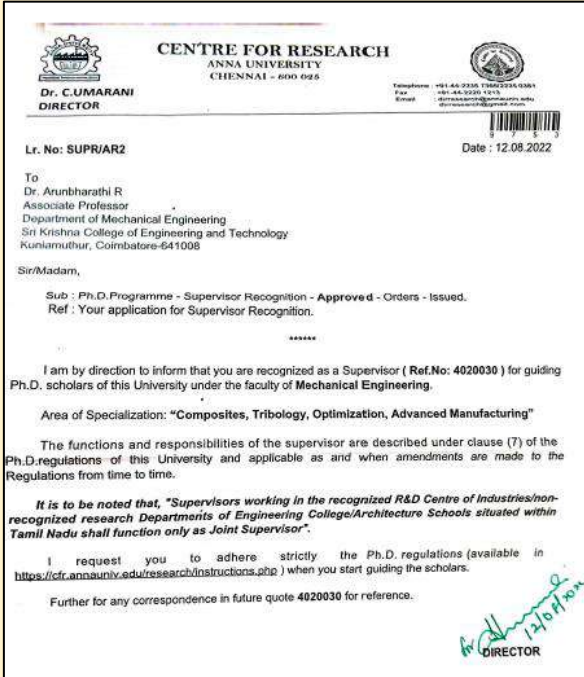
Dr.S.Sivaranjani, Professor,
Department of EEE has been the
Session Chair in the 2nd Asian
Conference on Innovation in
Technology -ASIANCON-August
2022.

SOM | GUEST LECTURE - RESOURCE PERSON

Dr C. Vinotha, Associate Professor,
School of Management has been the
Resource person for a guest lecture on
“Making the Leap to Entrepreneurship”
at PSG College of Arts and Science. She
explained about ways to become
entrepreneur and motivated the students
to become successful entrepreneur.



MECH| SUPERVISOR RECOGNITION FROM ANNA UNIVERSITY



Dr.R.Arunbharathi, Assistant Professor, Mechanical Engineering has been recognized as Supervisor for guiding Ph.D scholars by Anna University, Chennai. His area of specialization are Composites, Tribology, Optimization and Advanced Manufacturing.

S&H| VEETTUKKU ORU VIGNANI

Dr. S. Packiaraj and Dr. J. Jayaprakash of S&H Department have been the judge for VEETTUKKU ORU VIGNANI Science Exhibition competition organised by Puthiyathalaimurai TV held at Velammal Bodhi Campus, Vellakinaru, Coimbatore on 30.08.2022. More than 100 teams presented different types of models pertaining to various branches of Science like: Science and Technology (Drone, Internet over thinking, Artificial intelligence, Machine learning, 5G and Big data analysis), Conservation of Natural resources and Impact of Technology on society.



CSBS | RESOURCE PERSON FDP



Dr.S.Balakrishnan, Professor and Head, Department of **Computer Science and Business Systems**, has been the Resource Person for the Faculty Development Program on “**Computer Organization and Architecture**” organized by **Tata Consultancy Services**, on 24.07.2022, through Microsoft Teams. The target audience were the Nationwide Faculty Members from the Department of Computer Science and Business Systems.

WORD OF THE WEEK | STOICISM

Stoicism

The quality of experiencing pain or trouble without complaining or showing your emotions. (*Noun*)

- He endured the pain of his wounds with great **stoicism**.
- She endured his criticism with her usual **stoicism**.



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CSE | DESIGNING AND MODELLING OF IOT, AI&ML SYSTEMS



Ms. V.R. Azhaguramyaa, Assistant Professor, Department of CSE has participated in the Workshop on “Designing and Modelling of IoT, AI&ML Systems” organized AICTE, ATAL Academy during August 1st to August 5th 2022.

ECE | FDP ON INFORMATION SECURITY: ANALYTICS, TOOLS, USE CASES AND DEMOS

Mr. J. R. Dinesh Kumar and Ms. K. Priyadharsini, Assistant Professors, Department of ECE, has attended two days FDP on “Information Security: Analytics, Tools, use cases and Demos”, conducted by VIT, Chennai from 05.08.2022 to 06.08.2022.

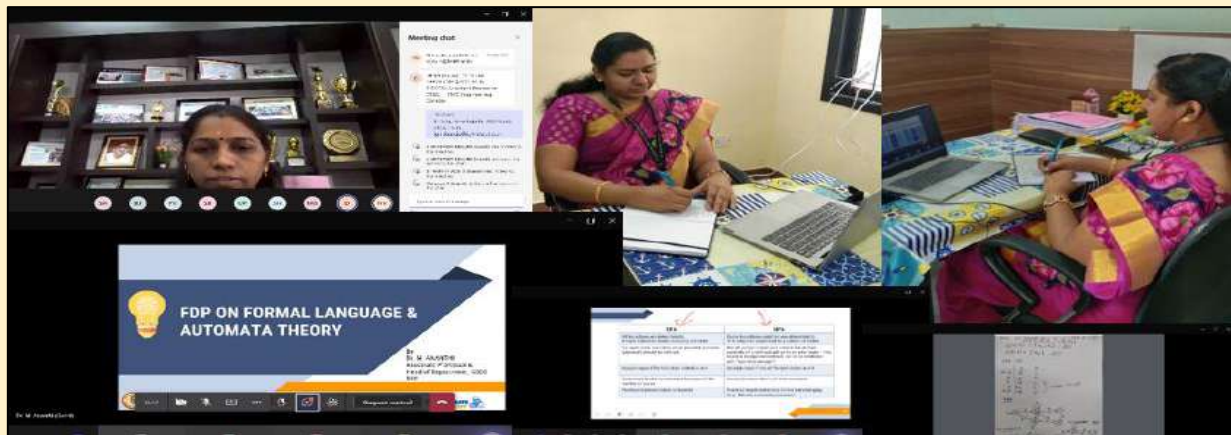


CSE | EMERGING TRENDS IN VLSI DESIGN & PRACTICAL APPROACH



Mr.Vengateshwaran, Assistant Professor, Department of CSE has participated in the Faculty Development Program on “Emerging Trends in VLSI Design & Practical Approach” organized by Aditya College of Engineering, Madanapalle from August 1st to August 6th 2022.

CSBS | TCS - “TRAIN THE TRAINER” FDP



Dr. G. Ignisha Rajathi, Associate Professor, Department of Computer Science and Business Systems, has successfully completed the “Train the Trainer” Faculty Development Programme for the subject “Formal Languages and Automata Theory” organized by TCS, on 30.08.2022, through Microsoft Teams. The session was resourced by Dr.N.Ananthi, Associate Professor and Head, Department of Computer Science and Business Systems, Sairam Engineering College, Chennai, facilitated by Mr.BJ. Mageshwaran, TCS.

EEE | FDP ON INFORMATION SECURITY: ANALYTICS, TOOLS, USE CASES AND DEMOS



Dr.R.Sumathi, Dr.G.Radhakrishnan, Ms.N.Subhalakshmi, Mr.R.Kavin, Mr.S.Karthikeyan, faculty members of EEE Department have participated in an Online Faculty Development Program on "Information Security: Analytics Tools, Use Cases And Demo" organized by School of Electronics Engineering(SENSE), Vellore Institute of Technology, Chennai.

AI&DS | FDP ON INFORMATION SECURITY: ANALYTICS, TOOLS, USE CASES AND DEMOS



Ms.S.Sathiya, Ms.B.Kiruba and Mr.G.S.Pugalendhi, Assistant Professors, Department of Artificial Intelligence and Data Science has participated in the Faculty Development Program on “Information Security: Analysis Tools, Use Cases and Demo” conducted by Vellore Institute of Technology on 5th and 6th of August, 2022.



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EEE | CONFERENCE PRESENTATION



Mr. R. Kavin, Assistant Professor, EEE Department along with R. Jayashree, P. Jenitta, V. Aswini and S. Keerthana Students of Final year EEE students have presented and published a paper entitled “A multifunctional wireless EV charger with new V2V charging assistance” at the 3rd International Conference on Electronics and Sustainable Communication Systems (ICESC 2022) organized by the Department of ECE, held at Hindusthan Institute of Technology, Coimbatore.

EEE | CONFERENCE PRESENTATION

Ms. N. Subhalakshmi, Assistant Professor, EEE along with A. K. Harini, J. Helina, T. R. Kamalashini and M. Kaviya students of Final year EEE have presented and published a paper entitled “Four Port DC-DC Buck Boost Converter for Hybrid Renewable Energy Sources” at the 3rd International Conference on Electronics and Sustainable Communication Systems (ICESC 2022) organized by the Department of ECE, held at Hindusthan Institute of Technology, Coimbatore.



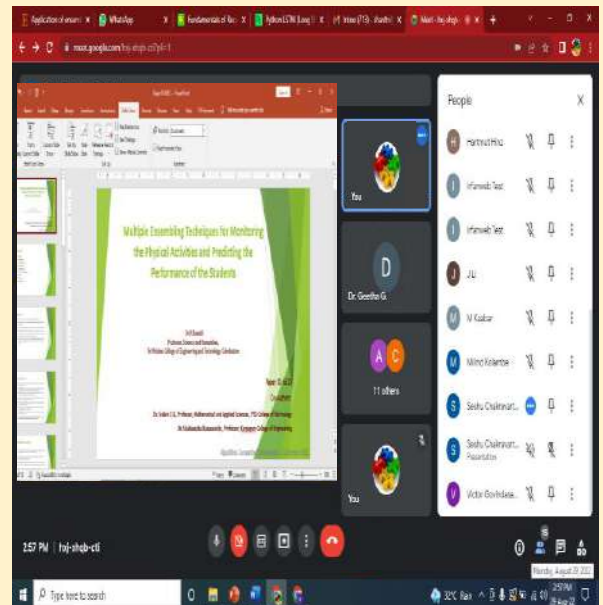
EEE | CONFERENCE PRESENTATION



Dr.S.Sivaranjani, Professor, EEE Department has presented a research paper entitled “**Design of a Robust Controller for Totempole Bridgeless PFC Converter**” in the 2nd Asian Conference on Innovation in Technology-ASIANCON-August 2022.

S&H | CONFERENCE PRESENTATION

Dr. P. Shanthy, Assistant Professor, Department of Science and Humanities has presented a paper on **Multiple Ensembling Techniques for Monitoring the Physical Activities and Predicting the Performance of the Students** at Algorithms Computing & Mathematics Conference (ACM) on 29th August 2022 at Chennai.





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Ms. K. Priyadharsini,
Assistant Professor,
Department of ECE

MCT | CAMCURVE



Ms. S. Kannaki,
Assistant Professor,
Department of **MCT**