

MExpress

**Mechanical Engineering Department's Official Newsletter
VOLUME 05 - Issue 11**



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JULY 2022

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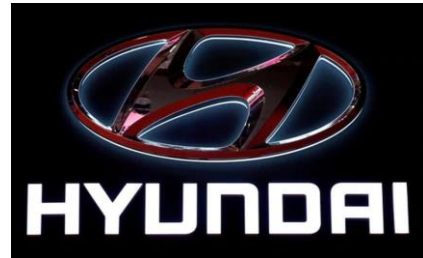
HYUNDAI'S NEW EV UPDATE



Mr. Nithesh S V
20BME080
2nd Mech.- B

Introduction:

The Hyundai has announced the release of a new EV vehicle, which will be small and affordable. At present, surely electric vehicles are the future of mobility. Among all the competing brands, Hyundai has announced that they will launch their new EV vehicle in India. Hyundai has started working on this and is going to bring more premium models to India. Hyundai not only focuses on this car, but they are also working on building the charging ecosystem.



Hyundai Ioniq 5:

This is the most popular electric car in Hyundai's history and has also won the "World Car of the Year" and many other awards. This car is expected to launch in India during the festive season. This would be the most powerful electric-AWD variant in India.

Company's words:

They have not yet shared the timeline of the new small electric car. Hyundai's small EV programme was part of a larger plan to invest \$40 billion to launch six electric vehicles in India by 2028. This has been decided to reduce air pollution. Our current EV share is less than 1%, and our government intends to increase it to 30% by 2030. By the comparison of the IC engine with this EV, Hyundai has a different approach, they mentioned. They also say that Ioniq 5 would be completed in India, so that the price tag would be lower.



FACULTY AS RESOURCE PERSONS

From 06-06-2022 to 11-06-2022, **Dr. B. N. Sreeharan**, Assistant Professor – II, provided training on "Introduction to Excel" to the Cameron Engineers through Sakthi Excellence Academy. He also provided training on "Introduction to Power BI" from 20-06-2022 to 25-06-2022.



Dr. S. Bhaskar, Associate Professor, gave a farewell speech on "Campus to Reality" to PG E & T students on 23-06-2022.

Mr. P. D. Devan, Assistant Professor – II, was the External Evaluator for a Lab Exam conducted at Sri Ramakrishna Engineering College, Coimbatore on 06-07-2022.



On 29-06-2022, **Dr. P. R. Ayyppan**, Assistant Professor (SRG) served as an examiner at the Government College of Technology in Coimbatore.

PAPERS PRESENTED

Following faculty members presented their respective papers in the ICDM 2022 conducted on 21-06-2022.

- **Dr. M. Balaji**, Associate Professor
- **Dr. S. Balasubramanian**, Associate Professor
- **Mr. B. Jeeva**, Assistant Professor - II
- **Dr. S. Bhaskar**, Associate Professor
- **Mr. P. D. Devan**, Assistant Professor - II
- **Dr. R. Manivel**, Professor
- **Dr. M. Thirumalaimuthukumaran**, Assistant Professor - III
- **Dr. V. R. Muruganantham**, Associate Professor





In addition to the above, **Mr. B. Jeeva**, Assistant Professor – II presented his paper entitled “Numerical Investigation of Three Bladed Inclined Savonius Hydrokinetic Turbine” at the Research conclave 2022 organized by PSG college of Technology, Coimbatore from 03.06.2022 to 04.06.2022.

MANUSCRIPT SUBMISSION

The following faculty members submitted their respective prepared manuscripts to the Scopus/SCI indexed journals:

Dr. R. Manivel , Professor	1	SCI/Scopus
Dr. V. Manivelmuralidaran , Assistant Professor – III	1	SCI



PAPER PUBLICATION

Dr. R. Manivel, Professor, published his paper entitled "Design and Multi-Perspective based Computational Analyses of Flying Wing UAV for Rescue Applications at Cryogenic Environments" in a Scopus indexed International Journal which has an impact factor of 2.12.



PAPERS REVIEWED



Dr. B. N. Sreeharan, Assistant Professor – II, reviewed a paper titled “Optimization of operating conditions of the Fischer-Tropsch synthesis based on multi-objective differential evolution algorithm” for a Scopus indexed International Journal of the Brazilian Society of Mechanical Sciences and Engineering.

PATENT GRANTED

A patent was granted to **Mr. B. Jeeva**, Assistant Professor – II for his patent application no. 3787/MUM/2014, dated 24/11/2014, titled “Compression Ignition Internal Combustion Engine Operating on diesel or gasoline”.



PROGRAMMES ATTENDED / COURSES COMPLETED



Dr. M. Thirumalaimuthukumar, Assistant Professor – III, completed a 4-week online course on "Grant Proposal" through Coursera conducted by MIPT.

Mr. S. Sivakumar, Assistant Professor-II, participated in a training programme on "Virtual Training on Compressed Air Systems" from 14-06-2022 to 16-06-2022, organised by the Confederation of Indian Industry, Chandigarh.



The following faculty members participated in an online workshop on "IPR, Patents and Design Filing" on 27-06-2022 organised by IEMS B-School in association with RGNIPM, Nagpur.



Dr. V. Manivelmuralidaran, Assistant Professor - III

Dr. M. A. Vinayagamoorathi, Assistant Professor - II

Dr. S. Balasubramanian, Associate Professor

Mr. B. Jeeva, Assistant Professor - II



Dr. S. Thirumurugaveerakumar, Associate Professor

Dr. M. Thirumalaimuthukumar, Assistant Professor - III

Dr. V. R. Muruganantham, Associate Professor



Dr. S. Bhaskar, Associate Professor, participated in a workshop on "Online session to NAAC" on 25-06-2022, organised by KCT IQAC, KCT.



Dr. B. N. Sreeharan, Assistant Professor-II, participated in a Workshop on "Machine Learning: Trends, Perspectives, and Prospects" from 31-05-2022 to 06-01-2022, organised by KCT, Coimbatore.

INDUSTRIAL VISITS



Dr. S. Balasubramaian, Associate Professor, and **Dr. M. A. Vianayagamoorathi**, Assistant Professor – II, arranged industrial visits for the 2nd semester and 2nd year students at **M/s. ZF Wind Power**, Coimbatore on 03-06-2022.



Dr. N. Sangeetha, Senior Associate Professor and her team, **Dr. K. Kavitha**, Professor/ECE, **Mr. J. Mohamed Musthafa Usama**, Final year student, 18BEC148, **Mr. K. Ajey Bhalajee**, Final year student, 18BEC097, visited **M/s. Coimbatore Pump Industries**, 380 Vilankurichi Road, Peelamedu, Coimbatore – 641 004, on 26.05.22 & 1.30 pm -6.30 pm for conducting research experiments in the pump Industry, publication on research.

SNAP SHOTS



Industrial Visit to M/s. ZF Wind Power, Coimbatore, Coordinated by **Dr. S. Balasubramaian**, Associate Professor and **Dr. M. A. Vinayagamorrthi**, AP (II)/ME



Industrial Visit to Coimbatore Pump Industries, Coimbatore by **Dr. N. Sangeetha**, Sr. ASP/ME



Training Programme for Cameron Engineers by **Dr. B. N. Sreeharan**, AP (II)/ME



INTEC 2022 visit by our Supporting Staff Team on 06-06-2022: **Mr. K. Rangarajan**, **Mr. K. Arumugam**, Senior Technical Associates, **Mr. R. Subburaj**, Senior Grade Turner, **Mr. N. Jeyabal**, Lab Instructor, **Mr. S. Rajendran**, Machinist.

Second Virtual International Conference on Modern Computing Trends and Technology ICMCTT 2022, Kristu Jyoti College of Management and Technology, Kerala, India and RSP Research Hub, Coimbatore, Virtual International Conference, Chethipuzha, Kerala, 30th - 31st July 2022

- **Category** : Virtual International Conference
- **Start Date** : 30th July 2022
- **End Date** : 31st July 2022
- **Event Mode** : Online
- **Organiser** : Kristu Jyoti College of Management and Technology, Kerala, India and RSP Research Hub, Coimbatore
- **City** : Chethipuzha
- **State** : Kerala

REGISTER:

https://docs.google.com/forms/d/1021fuWLhQ-uBEcUDtx3Ux-Q8JAvdUlw898tKgFd_Rmk/edit

- Paper submission last Date: 24/07/2022
- Open to All: Students (UG/PG), Research Scholars, Professors & Educators
- For Abstract & Full Paper Registration: tinyurl.com/ICMCTT2022

REGISTRATION FEES

- Conference only / Poster Presentation - INR 1499 (Three to Five Authors)
- Student - Conference+ publication in CROSSREF DOI , Academia & Google scholar indexed journal - INR 2799
- Faculty - Conference+ publication in CROSSREF DOI , Academia & Google scholar indexed journal - INR 2999
- Foreign Authors -Conference+ publication in CROSSREF & Google scholar indexed journal \$ 100 / Rs. 5999

International Embedded System Workshop 2022, NGCS, Hands-on Real Time Training Workshop, Chennai, Tamil Nadu, 10th July 2022

- **Category** : Hands-on Real Time Training Workshop
- **Start Date** : 10th July 2022
- **End Date** : 10th July 2022
- **Day** : Sunday
- **Timings** : 11.00 AM to 04.00 PM
- **Event Mode** : Offline
- **Organiser** : NGCS
- **City** : Chennai
- **State** : Tamil Nadu

REGISTER: <http://ngcs.in/register/>

- Total Cost : Rs. 750/-
- Mode of payment : online
- Venue: IIT Madras Research Park, No: 32 kanagam road, kanagam Periyar nagar, Taramani Kanagam, Taramani, Chennai , Tamilnadu- 600113
- # Certificates will be provided@end of the workshop
- #No Age limits
- #Open for all departments
- #Whoever interested to learn embedded systems are welcome to our event
- #Since it was a basic level of workshop there is no prerequisites required

Topics Covered :

1. Introduction to Embedded C
2. Difference between C & Embedded C
3. Embedded C Constructs & Data Formats
4. Mapping PIC16F877A Architecture to Embedded C
5. Introduction to Hi-tech C Compiler & its features
6. General discussions & Overview of Embedded Systems
7. PIC16F877A Microcontroller: Explanation of Architecture & Pin Diagram
8. Hardware Details: SFRs, Ports, Timers & Counters
9. Addressing Modules & Instruction Set
10. Interrupts & Serial Programming Techniques

5th Edition of World Nanotechnology Conference Nanotechnology 2022, Magnus Group, International Conference, Chicago, NA, 21st - 22nd September 2022

- **Category** : International Conference
- **Start Date** : 21st September 2022
- **End Date** : 22nd September 2022
- **Event Mode** : Online
- **Organiser** : Magnus Group
- **City** : Chicago

REGISTER: <https://nanotechnology.magnusconferences.com/register>

LAST DATES FOR REGISTRATION

- Early Bird Registration: June 30, 2022
- Mid Term Registration: August 17, 2022
- Late Registration: September 21, 2022

REGISTRATION FEES

- Presenter \$439
- Listner \$539
- Exhibitor \$1500

PAPER PRESENTATIONS

- **Mr. U. Mahesh Kumar** (18BME122) presented a paper titled “Enhancing the Solar Panel Efficiency by reducing Thermal radiation” at international conference on Materials, Design and Manufacturing – 2022 organised by Department of Mechanical Engineering, KCT from 21.06.2022 - 22.06.2022. Under the guidance of Mr. S. Sivakumar.
- **Mr. A. Prabhujith Eshwar, Mr. Y. Dushyanth, Mr. KVK. Navinadhidhyaa**, presented a paper at international conference on Materials, Design and Manufacturing, – 2022, KCT, titled “A Study on the Flow of Particles using Duct Passage in Tea Leaf Cutting Machine” under the guidance of Dr. Vinayagamoorthis M A.
- **Mr. V. Logesh Rathinam, Mr. T. Aswin Sundar, Mr. S. G. Viswa**, presented a paper at international conference on Materials, Design and Manufacturing, – 2022, KCT, titled “Automatic seed sowing Machine” under the guidance of Dr. Vinayagamoorthis M A.
- **Mr. C. AldenBinoy, Mr. L. Kavi arasu, Mr. Abdul Anas, Mr. N. Yogeswaran, Mr. N. Tharan kumar**, presented a paper at international conference on Materials, Design and Manufacturing, – 2022, KCT, titled “Experimental Investigation on Drilling Process Using Taguchi Method on Aluminium Alloy 6061” under the guidance of Dr. Vinayagamoorthis M A.
- **Mr. S. Sam Sharon (18BME138)** presented the paper titled “Design and Simulation of Savonius turbine at low water Speeds” at international conference on Materials, Design and Manufacturing – 2022 organised by Department of Mechanical Engineering, KCT from 21.06.2022 - 22.06.2022. Under the guidance of Mr. S. Sivakumar.
- **Mr. K. R. Raaj Kishore, Mr. Manav R Samant, and Mr. K Kishore Krisna** presented their paper titled “A Novel Way of using DEAR Algorithm for selecting Suspension Coil Spring Material” at the International Conference on Material, Design and Manufacturing (ICMDM’22), 21st & 22nd June 2022, Kumaraguru College of Technology, Coimbatore, under the guidance of Dr. B. N. Sreeharan.
- **Mr. B. Ibrahim Basha, Mr. A. Sameer Ahamed Khan, Mr. S. Karthick**, presented their paper titled “Smart Spark Plug Cleaning System” at the International Conference on Material, Design and Manufacturing (ICMDM’22), 21st & 22nd June 2022, Kumaraguru College of Technology, Coimbatore, under the guidance of Dr. B. N. Sreeharan.
- **Mr. P. Kavinprabhu, Mr. M. G. Kanish, Mr. M. Praveen**, presented their paper titled “Novel Approach in Riveting Process using Semi-Mechanized Pneumatic Drilling Cum Riveting Machine” at the International Conference on Material, Design and Manufacturing (ICMDM’22), 21st & 22nd June 2022, Kumaraguru College of Technology, Coimbatore, under the guidance of Dr. B. N. Sreeharan.

- **Mr. R. Aswin Baalaje and Mr. R. K. Nitheeshwar**, presented their paper entitled “Application of Lean Thinking for enhancing Productivity in an Automotive Industry” at the International Conference on Material, Design and Manufacturing (ICMDM’22), 21st & 22nd June 2022, Kumaraguru College of Technology, Coimbatore, under the guidance of Dr. B. N. Sreeharan.
- **Mr. R. K. Nitheeshwar**, presented a paper titled “Experimental Investigation on Hardness, Wear and Microstructure of Aluminium Metal Matrix Composite Reinforced with Aluminium Oxide and Boron Carbide” at the International Conference on Material, Design and Manufacturing (ICMDM’22), 21st & 22nd June 2022, Kumaraguru College of Technology, Coimbatore, under the guidance of Dr. B. N. Sreeharan.

PRIZES WON

Mr. Kishore Krisna S – (19BME013) of third year Mechanical Engineering A section and **Mr. Gowshick – (20BME034)** of second year Mechanical Engineering A section has attended an Event named as “Dhruva 22” organized by Karpagam College of Engineering and Technology from 03/06/2022 to 04/06/2022 and got **1st place**.

TWINROD 650



Mr. Nithesh S V
20BME080
2nd Mech.- B

Introduction:

The Twinrod 65 is the name of the customised Interceptor 650 by Royal Enfield. This was done by "Bulleter Customs", which has turned into a low-slung cruiser Royal Enfield Interceptor 650 and Continental GT650, which is a twin combination.



Twinrod-650:

The Twinrod 650 is a modified Interceptor 650, which was done by "Bengaluru based Bulleter customs," which made a transformation into a low-slung cruiser. The overall design is like the Harley-Davidson V-rod. This current bike has undergone many heavy modifications, and even the bike dimensions have been changed. It comes with a beautiful aftermarket LED headlight at the front and a custom headlamp cowl. This gets a new custom one-piece handlebar that has been mounted in custom raisers. It also gets a beautiful bar-end mirror.

Specifications:

It gets a fuel tank which is a bit wider than the stock tank, with the fenders painted in white (both front and rear) and the rest in black paint. It gets a flat single seat with a sleek rear fender. It gets new aftermarket alloy wheels with different designs. The tyre is a massive 360-sectioned, which gives a good muscle look to the vehicle. It also gets a twin exhaust system with insulated wraps to give it a more rugged look.

They have named this motorcycle "Twinrod 650 White Fang".



**KUMARAGURU**
college of technology

COIMBATORE – 641 049

Department of Mechanical Engineering**INSTITUTE VISION:**

The vision of the college is to become a technical university of International Standards through continuous improvement.

INSTITUTE MISSION:

Kumaraguru College of Technology (KCT) is committed to providing quality Education and Training in Engineering and Technology to prepare students for life and work equipping them to contribute to the technological, economic, and social development of India. The College pursues excellence in providing training to develop a sense of professional responsibility, social and cultural awareness and set students on the path to leadership.

DEPARTMENT VISION:

To emerge as a centre, that imparts quality higher education through the programme in the field of Mechanical Engineering and to meet the changing needs of the society.

DEPARTMENT MISSION:

The department involves in sustained curricular and co-curricular activities with competent faculty through teaching and research that generates technically capable Mechanical Engineering professionals to serve the society with delight and gratification.

B. E. MECHANICAL ENGINEERING**PROGRAM EDUCATIONAL OUTCOMES (PEO's):**

- PEO 1 :** Graduates will take up career in manufacturing and design related disciplines.
- PEO 2 :** Graduates will be involved in the execution of Mechanical Engineering projects.
- PEO 3 :** Graduates will take up educational programme in mastering Mechanical sciences and management studies.

PROGRAM OUTCOMES (PO's):

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Engineering knowledge:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
7. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
8. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
9. **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSO's):

1. Apply the fundamentals of science and mathematics to solve complex problems in the field of design and thermal sciences.
2. Apply the concepts of production planning and industrial engineering techniques in the field of manufacturing engineering.

M. E. INDUSTRIAL ENGINEERING**PROGRAM EDUCATIONAL OBJECTIVES (PEO's):**

- PEO 1 :** Graduates will be mid to higher level management / engineering professionals with responsibilities in engineering management, data analysis and business operations.
- PEO 2 :** Graduates will be engineering professionals, and technology leaders who would manage such functions as plant engineering, production, supply chain and quality management.
- PEO3 :** Graduates would function as educators or researchers in academic institutions.

PROGRAM OUTCOMES (PO's):

- P01 :** An ability to independently carry out research /investigation and development work to solve practical problems.
- P02 :** An ability to write and present a substantial technical report/document.
- P03 :** Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.
- P04 :** Apply knowledge and competencies in manufacturing, analytics, supply chain, quality and engineering management.
- P05 :** Apply principles of industrial engineering to solve problems in industry.
- P06 :** An ability to work as part of interdisciplinary teams, communicate effectively, model and design engineering systems optimally.

PROGRAM SPECIFIC OUTCOMES (PSO's):

- PS01 :** Graduates will be able to apply the engineering management and data management concepts in industrial engineering areas.
- PS02 :** Graduates will be able to apply industrial engineering skills and knowledge to effectively manage the functions of production and supply chain management.