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Mechanical Engineering Association
DEPARTMENT OF MECHANICAL ENGINEERING

KUMARAGURU college of technology
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Professor & Head

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Assistant Professor - II

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CONTENTS

From the Editors…

Dear Readers,

We are delighted to present the latest edition of our newsletter, which showcases the academic and research achievements of our esteemed faculty members and students. The newsletter also features the details of various programs organized by the department, along with the names of the faculty members who acted as resource persons.

We are proud to share that our faculty members have presented several papers and published them in renowned journals. They have also reviewed numerous manuscripts, which reflect their expertise in their respective fields. Additionally, the newsletter includes a list of faculty publications and their participation in various programs.

Our students have equally contributed to the department's growth by presenting papers and participating in various events. We are particularly proud of our final year students who have successfully completed their degree and are ready to embark on new journeys.

The newsletter also features an article written by our student, which showcase his creativity and analytical skills. Moreover, the newsletter provides insights into the Institution and Department's Vision, Mission, POs, PSOs, and PEOs, which guide us in providing the best education to our students.

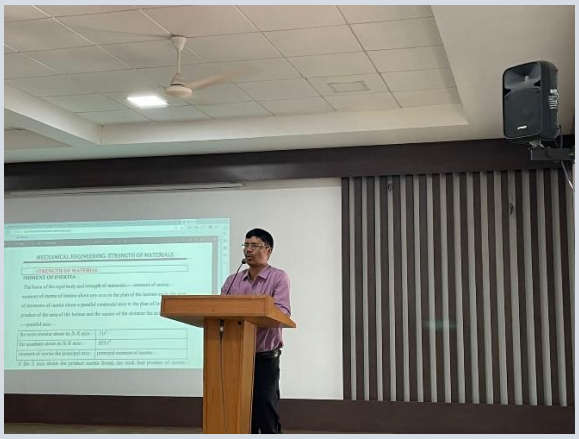
We hope this newsletter gives you a glimpse of the academic and research excellence of our department.

Best regards,

Editors….

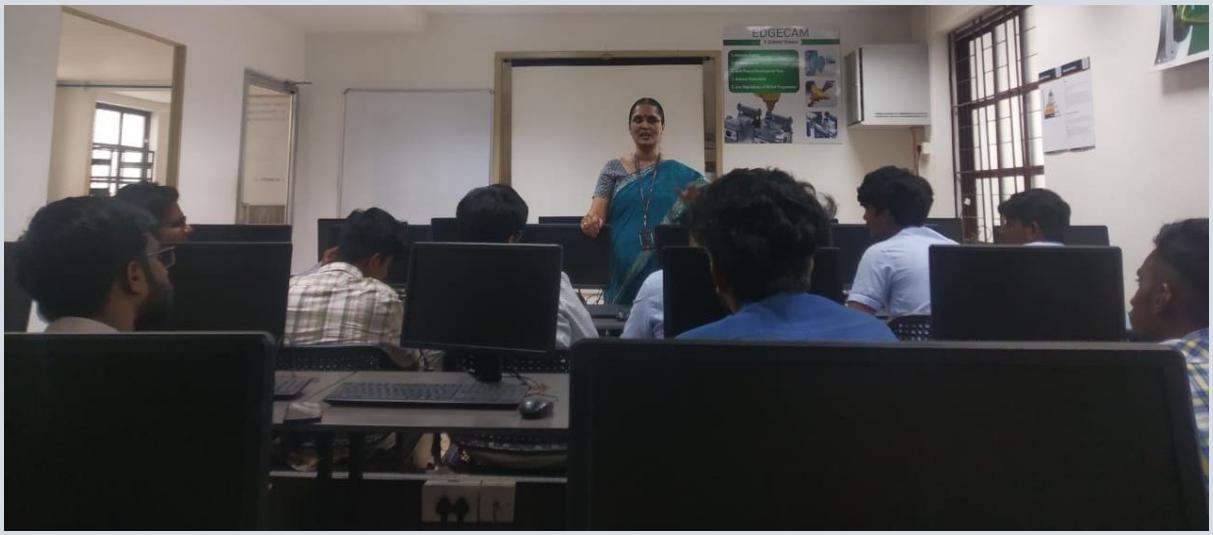
PROGRAMMES ORGANIZED

A guest lecture under Technical Talk on “5S Concepts” was organized in the department on 20-04-2023. **Mr. A. Paramasivan,** MD - Augment 3Di was the resource person. **Dr. V. R. Muruganantham,** Associate Professor and **Mr. K. Murugesan,** Assistant Professor – II of Mechatronics Engineering Department were the coordinators.



A seminar on “Preparation for Competitive Exams” was organized on 12-04-2023. **Mr. R. Surendran,** Assistant Professor, Mechanical Engineering Department, GCT, Coimbatore was the resource person. **Dr. M. Thirumalaimuthukumaran,** Assistant Professor - III and **Dr. N. Sangeetha**, Sr. Associate Professor were the coordinators.

Along with Civil Engineering Department an international conference on "Sustainable Innovative Practices - SIP '23" was organized on 19-04-2023. **Dr. M. Subramanian,** Professor & Head Department of Aerospace Engineering SNS College of Technology Coimbatore was the resource person. **Dr. K. K. Arun,** Assistant Professor - III coordinated the conference.



A Session on "Personality Development & Placements" was organized on 19-04-2023. **Mrs. S. Vallikala,** Senior Student Counsellor, KCT was the resource person. **Dr. M. A. Vinayagamoorthi,** Assistant Professor – II, **Dr. B. N. Sreeharan,** Assistant Professor – II, and **Dr. V. Manivelmuralidharan,** Assistant Professor – III were the coordinators.

RESOURCE PERSONS

Dr. R. Manivel, Professor w as the Anna University Nominee for conducting 19th BoS meeting of Mechanical Engineering Department at MCET, Pollachi on 12-04-2023.

PAPERS PRESENTED

Dr. V. R. Muruganantham, Associate Professor, presented his paper entitled "Application of Lean Manufacturing Tools To Improve The Productivity In A Fabrication Industry" in the International Conference on "Sustainable Innovative Practices (SIP-23)" organized by Kumaraguru College of Technology during 19-04-2023 and 20-04-2023. He also presented a couple papers titled "Implementation of 5s Concept to Improve Productivity in a Fabrication Industry" and "Implementation of an Automatic Polishing Process with a Conveyor Mechanism" in 2nd International conference on Sustainable Design, Manufacturing and Materials Engineering organized by Dr. NGP Institute of Technology, Coimbatore during 05-04-2023 and 06-04-2023.

Mr. S. Sivakumar, Assistant Professor – II, presented his paper entitled "Study on increasing Efficiency on solar panel Using ETHE" in the International Conference on Sustainable Innovative Practices (SIP-23), organized by Kumaraguru College of Technology during 19-04-2023 and 20-04-2023.

Dr. B. N. Sreeharan, Assistant Professor – II, presented a paper entitled "Effective Cleaning of Water Can Using Semi-Automatic System" in the 5th International Conference on "Recent Innovations in Science &Technology (RIST 2023) organized by Holy Grace Academy of Engineering, Thrissur and ISET Research, India during 07-04-2023 and 08-04-2023.

Dr. S. Thirumurugaveerakumar, Associate Professor, presented his paper entitled "Production improvement in a small-scale industry using lean methodology" in the International Conference on Sustainable Innovative Practices (SIP-23), organized by Kumaraguru College of Technology during 19-04-2023 and 20-04-2023. He also published another paper entitled "Product Design and Development of Industrial Automated Guided Vehicle System" in 1st International Conference on Advancements in Materials, Manufacturing & Automation (AMMA-2023), organized by the Amrita school of Engineering, Chennai during 07-04-2023 and 08-04-2023.

Dr. M. Thirumalaimuthukumaran, Assistant Professor – III, presented his paper entitled "Value Stream Mapping in Valve Manufacturing Industry" in the 2nd International conference on Sustainable Design, Manufacturing and Materials Engineering, organized by Dr. NGP Institute of Technology, Coimbatore during 05-04-2023 and 06-04-2023.

Dr. M. A. Vinayagamoorthi, Assistant Professor – II, presented following paper in International Conference on Sustainable Innovative Practices (SIP-23) organized by Kumaraguru College of Technology during 19-04-2023 and 20-04-2023.

1. "Experimental Study on Interlaminar Shear Strength"
2. "Study on Effect of Process Parameters Influencing the Surface Finish in Electric Discharge Machining"
3. "Experimental Study on Mechanical Behaviour of Natural Fibre Reinforced Composite For Automotive Interior Panel Applications"
4. "Experimental Study on Wear Behaviour of Mild Steel MS 1020, Aluminium Alloy Al 6063 and Copper"

PAPERS PUBLISHED

Dr. T. Karuppusamy, Assistant Professor – II, published his paper entitled "Tribological Study on Heat-Treated Aluminium Matrix Composites" in the International Research Journal of Engineering and Technology (IRJET), Volume: 10 Issue: 04 | Apr 2023 | p-ISSN: 2395-0072.

Mr. P. D. Devan, Assistant Professor – II, published a couple of papers entitled "Design and Analysis of Disc Rotor for Formula Student Vehicle" and "Vibration study on Journal Bearing" in the International Journal of Advance Research and Innovative Ideas in Education, 9(2), 1924-1930, e-ISSN: 2395-4396, DOI:16.0415/IJARIIE-19718 and 2096-2108 16.0415/IJARIIE-19754.

MANUSCRIPTS REVIEWED

Dr. P. S. Samuel Ratna Kumar, Assistant Professor – I, reviewed a manuscript entitled "Empirical Analysis of Multiwalled Carbon Nanotube Deposition for Enhancing Mechanical and Tribological Characteristics in Aluminium-Based Metal Matrix Composites" for the Jordan Journal of Mechanical and Industrial Engineering, an International Journal.

PROGRAMMES ATTENDED

Mr. S. Sivakumar, Assistant Professor – II, participated in an FDP on "Recent advances in Composite Materials" from 27-03-2023 to 31-03-2023, organized by NIT-Puduchery, NIT-Puduchery.

Dr. V. R. Muruganantham, Associate Professor, participated in an QP - Final committee on "QP - Finalization - Co Creation mode" on 29-04-2023 organized by Dr MCET, Pollachi.

Dr. S. Thirumurugaveerakumar, Associate Professor, participated in a Webinar on "Unlock the Mind Power" organized by Women cell of SRM - Madurai Institute of Engineering and Technology, Sivagangai on 13-04-2023.

Dr. P. S. Samuel Ratna Kumar, Assistant Professor – I, participated in a Workshop on "Processing, Characterization and Application of Aluminium Alloys- An Approach Towards Circular Economy" on 13-04-2023 organized by SREC, Coimbatore.

LIST OF FACULTY PUBLICATIONS

Academic Year 2022-23

Number of Papers published in Scopus Journal	**:**	**72**
Number of Papers published in Non Scopus Journal	**:**	**13**
Number of Papers presented in Conference	**:**	**08**
Total Number of Papers Published	**:**	**93**

List of Scopus Publications

S. No.	Details of Paper publication
1	S. Pradeep, **C. Velmurugan**, S. Balasubramanian, B. Sabitha , K. R. Aranganayagam and B. Vaishnavi, Experimental Investigations on Effect of Magnesium on Wear Properties of Cast Iron, AIP Conference Proceedings 2446, 160005 (2022); https://doi.org/10.1063/5.0108628. Published Online: 29 November 2022 160005-1 - 160005-4. 2022

S. No.	Details of Paper publication
2	D. S. Ebenezer Jacob Dhas, **C. Velmurugan**, K. Leo Dev Wins, S. Senthilkumaran and Sumanth Ratna Kandavalli, Mathematical Modelling of Machining Performance during Dry Face Milling of AA5052/Tungsten Carbide/Graphite Hybrid Composite AIP Conference Proceedings 2446, 180043 (2022), https://doi.org/10.1063/5.0108750 Published Online: 29 November 2022 180043-1 - 180043-5. 2022
3	S. Thirugnanam, **C. Velmurugan** and Binnu Kurian Mathew, A Practical Study on Mechanical Characteristics of Al6061- Ash-SiC Metal Matrix Composites AIP Conference Proceedings 2446, 040023 (202S. Thirugnanam, C. Velmurugan and Binnu Kurian Mathew A Practical Study on Mechanical Characteristics of Al6061-Ash-SiC Metal Matrix Composites AIP Conference Proceedings 2446, 040023 (2022); https://doi.org/10.1063/5.0108848 Published Online: 29 November 2022 040023-1- 040023-14 2022
4	S. Thirugnanam, **C. Velmurugan** and Binnu Kurian, An Experimental Investigation on Mechanical Properties of Aluminium-7075 Based Graphite and Bagasse Ash Particles Reinforced Metal Matrix Composite, AIP Conference Proceedings 2446, 040018 (2022); https://doi.org/10.1063/5.0108849 Published Online: 29 November 2022 040018-1- 040018-12 2022
5	S. Gnanasekaran, P. Vadivel, **C. Velmurugan** and C. Samson Jerold Samuel The Effect of Arc Current on Microstructural and Mechanical Properties of Nickel Hardfaced Deposits Created using PTA Processes, AIP Conference Proceedings 2446, 170005 (2022); https://doi.org/10.1063/5.0108881 Published Online: 29 November 2022, 170005-1- 170005-7 2022
6	Sivamani Palanisamy Suvetha, Thiyagarajan Sathishkumar, Kuppamuthu Kumaraesan, Vinohar Stephen Rapheal, **Velayutham Muthukumaran**, Natarajan Thirugnanam., " Purified novel and new diferuloyl glycerate related phenolic acid from Pandanus odoratissimus flowers shows antioxidant, invertase inhibition and control against diabetic foot ulcer (DFU) causing bacterial pathogens – An in vitro study to establish an effective regulation over type 2 diabetes mellitus" Brazilian Journal of Pharmaceutical Sciences, vol 58, e19484, 2022.
7	C.Lavanpriya, **V.Muthukumaran**, P.Manoj Kumar., "Evaluating Suppliers Using AHP in a Fuzzy Environment and Allocating Order Quantities to Each Supplier in a Supply Chain" Mathematical Problems in Engineering, Volume 2022, 2022.
8	A.JEEVARATHINAM, **V. MUTHUKUMARAN**, V.S KAUSHIK., "Mechanical and Corrosion behavior of plasma nitrated tests on SS316L & Ti6Al7NB" NeuroQuantology, VOLUME 20, ISSUE 9, PAGE 5965-5970.
9	Selvambikai, V. Raaghul , Akash Sushil, **V. Muthukumaran**, S. Kiruthika, R. Kannan and R. Sivakumar., "Study on Wear Behaviour of Nickel Tungsten Coated Mild Steel using Finite Element Analysis (FEA)" AIP Conference Proceedings 2446, 170009 (2022).
10	Dhiviyalakshmi and **V. Muthukumaran**., "A study of prevalence of microorganisms in specific areas of hospitals" AIP Conference Proceedings 2446, 020002 (2022).
11	Saravanan and **V. Muthu Kumaran** ., "Optimization of squeeze casting for the green composite production" AIP Conference Proceedings 2446, 040011 (2022).
12	V.M. Brathikan, **N. Sangeetha**, B. Sangeethkumar, Kavi Scidarth, Influence of various blank diameter in deep drawing, Materials Today: Proceedings, Volume 68,

S. No.	Details of Paper publication
	Part 6, 2022, Pages 1995-1999, ISSN 2214-7853, https://doi.org/10.1016/j.matpr.2022.08.281. (1.46)
13	**Sangeetha N**, Brathikan V M , Nitheeshwar R K and Jayabalu S (2022). Experimental investigation in the selection of blank material during deep drawing process using finite element analysis. Journal of Ceramic Processing Research,23(4), 529-534. (IF- 0.636)
14	**Sangeetha, N.**, Brathikan, V. M., Gideon, D., & Sangeethkumar, B. (2022). Experimental investigation of frictional force and coefficient of friction for brass, titanium and steel employed under several lubricants. Journal of Ceramic Processing Research, 23(5), 617-624.
15	Sam Vimal Kumar S., S. Kiruthika, **N. Sangeetha**, K. C. Senthamarai Kannan; Design and validation of dynamic characteristics of vibration of test fixture for automobile application. AIP Conference Proceedings 29 November 2022; 2446 (1): 140002.
16	Study on ageing behaviour of silicon carbide, graphite reinforced hybrid Al6061 compositesCite as: AIP Conference Proceedings 2446, 040002 (2022); https://doi.org/10.1063/5.0109460 Published Online: 29 November 2022, **T. Karuppusamy** and S. Bhaskar
17	Experimental analysis of EDM parameters on machining aluminium hybrid composites with Taguchi methodCite as: AIP Conference Proceedings 2446, 040001 (2022); https://doi.org/10.1063/5.0108948 Published Online: 29 November 2022 **S. Bhaskar** and T. Karuppusamy
18	Review on analysis of foundry defects for quality improvement, Industrial Engineering journal, UGC care list, ISSN 0970-2555, February 2023, Volume XVI & ISSUE NO. 02, Manoranjan R, **Dr. S. Bhaskar** , & Dr. Balaji M
19	**KM Senthilkumar**, N Kathiravan, L Girisha, M Sivaperumal, " Experimental investigation and optimization of machining parameters during machining of glass fibre reinforced epoxy based composite using desirability function analysis", Journal of Ceramic Processing Research 23 (4), 541-545 August 2022.
20	**KM Senthilkumar**, VR Navaneeth, S Prabhu, M Giriraj, Optimization of surface roughness during turning operation in super duplex stainless steel - Materials Today: Proceedings, 2022
21	**K.M.Senthil Kumar**, K.Akila, K.K. Arun, S.Prabhu, C.Selvakumar", Implementation of 5S practices in a small scale manufacturing industries" Materials Today: Proceedings, 2022, Pages 1913-1916.
22	**Senthilkumar, K.M.**, Navaneeth, V.R., Prabhu, S., Ramesh kumar, M., Giriraj, M. "Experimental investigation of turning process parameter under several cutting conditions for duplex steels for minimization of cutting temperature .Materials Today: Proceedings, 2022, 62, pp. 1917–1920. https://doi.org/10.1016/j.matpr.2022.01.447
23	**V. R. Muruganantham**, P. Muraleedharan, P. D. Devan published a paper titled Six Sigma - DMAIC Method for Choice of Material in Natural Fibers in Polymer Composite Based Wall Brick , AIP Conference Proceedings 2446, 150002 (2022); https://doi.org/10.1063/5.0108188 Published Online: 29 November 2022https://doi.org/10.1063/5.0108115 150002-1 to 150002-5
24	**Balaji, M.**, Kumar, K. P., Kanimozhi, K., & Muralidaran, V. M. (2022, November). Exhibiting MCDM in material processing of tea for sustainable productivity. In AIP

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	Conference Proceedings (Vol. 2446, No. 1, p. 110004). AIP Publishing LLC.
25	**M. Balaji**, B. Logesh, R. Prabhu, (2022). Enhancing effective industrial sustainability through green manufacturing practices by waste reduction using lean tools in manufacturing sector via productivity improvement, In NeuroQuantology, (Vol.20 , No.10, p.4304-4322)
26	**M Balaji**, M Bhuvana,(2022, November) Online Teaching Learing Process - Outcomes and Quality Concerns.Industrial Engineering Journal, (Vol.15 , No.11, p.41-42)
27	**S. Balasubramanian**, R.S.Mohan kumar, M.A.Vinayagamoorthi, P.Dhanabal Prediction of Thermal Distruption and Microstructure study on Cast Iron pump casing in metal removal process, AIP Conference Proceedings 2446, 160004-5 (2022); https://doi.org/10.1063/5.0109647
28	M.Malavika, Benin B Oliver, A.Hariharan, U.Vineethkrishna, G.Rajkumar, **S.Balasubramanian,** R.Vijayanandh Experimental and computational structural cum fatigue data investigations on various lightweight materials under tensile load. AIP Conference Proceedings 2446, 180048-1 - 180048-6(2022); https://doi.org/10.1063/5.0108365
29	R.Balamurugan, **S.Balasubramanian**, B.Aravindh Roughness measurement of Mild steel plate by speckle images, AIP Conference Proceedings 2446,170011-1-170011-5(2022); https://doi.org/10.1063/5.0108111
30	R.Prakasam, R.Balamurugan, **S.Balasubramanian** A comparative surface roughness study of silicon wafer by Laser speckle technique, Atomic force Microscopy and Stylus profilometry, AIP Conference Proceedings 2446, 170012-1 - 170012-5 (2022); https://doi.org/10.1063/5.0108226
31	Surendran, Srinivasan, **Thirumurugaveerakumar Sundaram**, and P. Sathish Kumar. "Optimization of Surface Roughness and Tool Wear during Machining of AMMC using Taguchi Technique."Chiang Mai J. Sci. 2022; 49(6): 1653-1662
32	Srinivasan, S., **Thirumurugaveerakumar, S.** Investigations on mechanical, wear and machining behavior of Titanium reinforced AlMg0. 5Si composites. Surface Review and Letters(2023), worldscientific.com/doi/10.1142/S0218625X2350049X
33	Srinivasan, S., Prabha, D., Raffic, N. M., Babu, K. G., **Thirumurugaveerakumar, S.**, & Sangeetha, K. (2022). Automated Vehicle Number Plate Recognition System, Using Convolution Long Short-Term Memory Technique. In Object Detection with Deep Learning Models (pp. 101-115). Chapman and Hall/CRC.
34	**Thirumurugaveerakumar, S**., Srinivasan, S., Raffic, N. M., & Babu, K. G. (2022, November). Experimental investigation on turning process parameters for AA7075 by Taguchi's orthogonal array. In AIP Conference Proceedings (Vol. 2446, No. 1, p. 040026). AIP Publishing LLC.
35	Gokilakrishnan.G, Prabha,D, S.Srinivasan, **S.Thirumurugaveerakumar,** A critical Analysis of the block chain in Manufacturing system implementation, IEEE Journal, 2023
36	**S. Sivakumar,** P. Somasundaram " An investigation on influence of battery materials for efficient lithium-ion battery pack design" AIP Conference Proceedings 2446, 080001 (2022); https://doi.org/10.1063/5.0108156 Published Online: 29 November 2022.

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37	**S. Sivakumar,** P. Somasundaram " Exploring the efficacy of nano fluid (Al2O3) based battery thermal management system using CFD " AIP Conference Proceedings 2446, 130003 (2022); https://doi.org/10.1063/5.0108198 Published Online: 29 November 2022.
38	**S. Sivakumar,** G. Sritharan, N. Mokisnayagam " Effect of ferromagnetic and diamagnetic coil materials study on a wireless energy transfer system using mathematical model" : AIP Conference Proceedings 2446, 180064 (2022); https://doi.org/10.1063/5.0108229 Published Online: 29 November 2022.
39	**S. Sivakumar,** G. Thenmozhi, K. S. Sabir Ali " Thermal analysis of stacked type supercapacitors for different material structures"AIP Conference Proceedings 2446, 180047 (2022); https://doi.org/10.1063/5.0108260 Published Online: 29 November 2022.
40	G. Thenmozhi, **S. Sivakumar**, B. Arun" An investigation on the performance of permanent magnet brushless DC motor based on different materials" AIP Conference Proceedings 2446, 100004 (2022); https://doi.org/10.1063/5.0108137 Published Online: 29 November 2022.
41	**Arun, K. K.**, Jasmin, N. M., Kamesh, V. V., Pramod, V. R., Krishnaraj, S., Suresh, V., & Subbiah, R. (2023). Applications of Artificial Neural Network Simulation for Prediction of Wear Rate and Coefficient of Friction Titanium Matrix Composites. Materials Research, 26, e20220306.
42	**Arun, K. K.**, Rajeshkannan, S., Ezhilarasi, P., & Natrayan, L. (2022). A preliminary study on the reactive suspension approach to create bioactive polymer nanocomposites for dental applications. Digest Journal of Nanomaterials and Biostructures, 17(3), 931-939.
43	**Arun, K.K.,** Navaneeth, V.R., Prabhu, S., Ramesh kumar, M., Giriraj, M. "Optimization of surface roughness during turning operation in super duplex stainless steel" Materials Today: Proceedings, 2022, 62, pp. 1939–1942 .https://doi.org/10.1016/j.matpr.2022.02.014
44	**KK Arun,** VR Navaneeth, S Prabhu, M Giriraj, Experimental investigation of turning process parameter under several cutting conditions for duplex steels for minimization of cutting temperature - Materials Today: Proceedings, 2022
45	Jasmin, N. M., Sathish, S., Senthil, T. S., Naidu, B. A., Das, A. D., **Arun, K. K.**& Srinivasan, K. (2023). Investigation on natural fiber reinforced polymer matrix composite. Materials Today: Proceedings, 74, 60-63.
46	**AP, Arun.,** Kaliappan, S., & P Patil, P. (2022). Mechanical, fracture toughness, and Dynamic Mechanical properties of twill weaved bamboo fiber-reinforced Artocarpus heterophyllus seed husk biochar epoxy composite. Polymer Composites, 43(11), 8388-8395.
47	**Manivelmuralidaran, V.,** Balaji, M., & Arun, V. (2022). Design of Workplace in Assembly Unit Using Ergonomic Principles. In Recent Advances in Manufacturing, Automation, Design and Energy Technologies: Proceedings from ICoFT 2020 (pp. 19-26). Springer Singapore.
48	**Manivel Muralidaran Velumani,** , Senthilkumar Krishnasamy, , Seranthian Ramanathan, and Chidambaram Subramanian, Investigation of cold cracking resistance of HSLA 950A steel by taguchi optimization technique, Metall. Res. Technol. 120, 206 (2023).

S. No.	Details of Paper publication
49	**Krishnamoorthi, K.,** Arun, A. P., & Muralidaran, V. M. (2022). Effect of B4C particle reinforcement on tensile properties of Al7075/B4C composites. Materials Today: Proceedings, 62, 692-695.
50	Raaj Khishorre K. R., Rahul P, Harshavardhanan S, **Seranthian Ramanathan**, "A Critical Review of Thermo-Hydraulic Performance of Vortex Generators Using Field Synergy and Exergy Principles", Journal of Thermal Analysis and Calorimetry- Accepted.
51	Muthusamy Ponmurugan, Muthaiyan Ravikumar and **Seranthian Ramanathan,** "Novel technique of heat transfer enhancement in backward-facing step flow using a flapping vortex generator", Journal of Mechanical Science and Technology 37 (8) 2023.- Accepted
52	Varuna Jayachandran, Vishnu Shankar Dhandapani , Elango Muniappan* , Dongkyou Park * , Byungki Kim, Arun and **P. R. Ayyappan** "Assessment of the Synergetic Performance of Nanostructured CeO2-SnO2/Al2O3 Mixed Oxides on Automobile Exhaust Control" Materials (MDPI) , Nov 2022, 15(23), 8460; https://doi.org/10.3390/ma15238460, IF:3.745
53	**M. A. Vinayagamoorthi,** R. A. Indrajith, D. Deepachandran, G. Suriya, A study on mechanical properties of aluminium alloy AA6061 using pneumatic drilling machine, AIP Conference Proceedings 2446, 040019 (2022); https://doi.org/10.1063/5.0108944 Published Online: 29 November 2022
54	M.Prince , A.Pravin Kumar ,E.Mahesh ,G.Surya Raj, **M.A. Vinayagamoorthi** ,P.Sivaraman ,M.K.Prabhu, Mechanical characterization of alkaline treated Ananus Comosus and Musa Sepientum fibers reinforced epoxy hybrid composites, Materials Today: Proceedings, Volume 62, Part 4 ,2022, Pages 2320-2325
55	B. Saranyan, M. Sambathkumar, **B. N. Sreeharan,** An investigation on selection and validation of suitable material to a steering knuckle of quad bike, AIP Conference Proceedings 2446, 110003 (November 2022); https://doi.org/10.1063/5.0108320
56	G. Kishore, K. S. Rajeswaran, S. Mugunth, N. Mohan Raj, **B. N. Sreeharan**, An investigation on selection and validation of suitable material to a roller of an automated solar panel cleaning system using DEAR algorithm, AIP Conference Proceedings 2446, 110005 (November 2022); https://doi.org/10.1063/5.0108389
57	M. Thiagarajan, **B. N. Sreeharan**, J. Yoganandh, N. V. Manish Kumar, Cutting process parameter optimization of CF8M steel, AIP Conference Proceedings 2446, 160001 (November 2022); https://doi.org/10.1063/5.0108338
58	P. Yashwanth, T. Bala Kumaresh, C. K. Krishnakanth, M. Viswanath, **B. N. Sreeharan,** Application of DEAR algorithm in selection of material for making a flexible fixture for ATV control arms, AIP Conference Proceedings 2446, 180017 (November 2022); https://doi.org/10.1063/5.0108345
59	**B. N. Sreeharan,** R. K. Nitheeshwar, R. Aswin Baalaje, T. Kannan, Optimization of GMAW control factors over weld bead parameters of AA 6351 material using Taguchi L16 orthogonal array, AIP Conference Proceedings 2446, 110001 (November 2022); https://doi.org/10.1063/5.0108326
60	**B.N. Sreeharan,** J. Yoganandh, R. Sudhakar, T. Kannan, Investigation of gas metal arc welding process parameters of aluminium alloy weldment using Taguchi-grey-fuzzy integrated approach, Transactions B: Mechanical Engineering, Scientia

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	Iranica B (January 2022) 29(6), 3084-3097, doi: 10.24200/sci.2022.60003.6545
61	S.R. Surya, **B.N. Sreeharan, R.K.** Nitheeshwar, Experimental Investigation on Hardness, Wear and Microstructure of Aluminium Metal Matrix Composite Reinforced with Aluminium Oxide and Boron Carbide, International Journal of Vehicle Structures & Systems, 14(7), 836-839, ISSN: 0975-3060 (Print), 0975-3540 (Online); February 2022, doi: 10.4273/ijvss.14.7.02
62	N. Mary Jasmin, T. Beena, S. Senthil, S. Sakthi, **M. Ramesh Kumar,** S. Rahul Alex, Ram Subbiah " Machinability behaviours of synthesised beryllium composite "November 2022 Materials Today: Proceedings 2022, Volume 74, Part 1, 2023, Pages 40-43 https://doi.org/10.1016/j.matpr.2022.01.447
63	**Mohan Kumar R S,** Arun, A. P., Ramanathan, S., & Dhanabal, P. (2022, November). A study on influencing process parameter on product quality. In AIP Conference Proceedings (Vol. 2446, No. 1, p. 110002). AIP Publishing LLC.
64	NM Jasmin, V Rahul, NS Kannan, **VR Navaneeth,** Optimization of welding strength on zirconium plate - Materials Today: Proceedings, 2023
65	**R. Manivel,** M. Vignesh, M. Jagannathan and B. Jeeva, "Experimental Study on Heat Transfer Enhancement for the Multi-Channel Flow of Graphene Nanofluid", AIP Conference Proceedings 2446, 130002-1 – 130002-5, (2022); https://doi.org/10.1063/5.0108494, Published online November 2022, PP 1-5.
66	**B. Jeeva,** S. Susilnath, K. Sidharth and R. Riyas Ahamed, "Two Phase Numerical Analysis of Graphite Nanoparticle in Circular Pipe", AIP Conference Proceedings, 2446, 030004-1 -030004-5, (2022); https://doi.org/10.1063/5.0108357, published online, November 2022, PP. 1-5.
67	**B. Jeeva,** R. Manivel, S. Susilnath, K. Sidharth and R. Riyas Ahamed, "Numerical Study of Heat Transfer Characteristics of Graphite Nanofluid in Flat Tubes", AIP Conference Proceedings, 2446, 030001-1 - 030001-5 (2022); https://doi.org/10.1063/5.0108346, published online, November 2022, PP. 1-5.
68	**B. Jeeva,** P. Madhumitta, T. Saran, S. Balaji, R. Sanjai and P. Senthamil Selvan, "Drying Kinetics of Turkey Berry Using Solar Tunnel Dryer: Natural Convection", AIP Conference Proceedings 2446, 180014-1 - 180014-5 (2022); https://doi.org/10.1063/5.0108383, published online November 2022, PP. 1-5.
69	R. Gokula Krishnan, R. Prasanna, Y. Robin, **B. Jeeva,** and P. Rahul, "Numerical Analysis: Cross-Section Optimization of Printed Circuit Heat Exchanger using Supercritical CO2 for Low Temperature Regenerator of Brayton Cycle", Emerging Trends in Mechanical and Industrial Engineering (Select Proceedings of ICETMIE 2022), Lecture Notes in Mechanical Engineering, PP.45 – 61. ISBN 978-981-19-6944-7, ISBN 978-981-19-6945-4 (eBook), ISSN 2195-4356, ISSN 2195-4364 (electronic). Jan 1st, 2023 (Published online). doi: https://link.springer.com/chapter/10.1007/978-981-19-6945-4_4.
70	**P D Devan,** VR Muruganantham and G Rajkumar published a paper titled Prediction of Mechanical Characteristics of Aluminium 7075 Metal Matrix Composites, in AIP Conference Proceedings 2446, 040013 (2022); https://doi.org/10.1063/5.0108115 Published Online: 29 November 2022, 040013-1 to 0401003-5.
71	Rajkumar, G., & **Devan, P. D.** (2022, November). Experimental study on hybrid fuel storage tank to reduce evaporative emission. In AIP Conference Proceedings (Vol. 2446, No. 1, p. 080003). AIP Publishing LLC.

S. No.	Details of Paper publication
72	**K. Manikanda Prasath,** S.R. Tamilmaran, Enhancing Overall Equipment Effectiveness of Powder Coating Machine In Construction Equipment Manufacturing Industry By Implementing Lean Tools vol. Xv & Issue No. 09 September - 2022 Industrial Engineering Journal Pp 31-45

List of Non-Scopus Publications

S. No.	Details of Non-Scopus Paper publication
1	Vivien Wilfred S , Kavibharathi R P , Rishi Maran E , **Balasubramanian S** Fabrication of Casing forAutomatic Seat Belt Using Resin Printing, International Journal of Advances in Engineering and Management, Volume 5, Issue 4 April 2023, pp: 529-533, DOI: 10.35629/5252-0504529533
2	**Thirumurugaveerakumar S** , Indirajith M , Rakesh S , Sharan D R, 2023, Ergonomic Design and Development of Stair Climbing Wheel Chair, INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH & TECHNOLOGY (IJERT) Volume 12, Issue 02 (February 2023),
3	**Thirumurugaveerakumar S**, Indirajith M , Rakesh S , Abishek Manu V, 2023, Design and Fabrication of Automated Glass Curtain Cleaning Machine, INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH & TECHNOLOGY (IJERT) Volume 12, Issue 02 (February 2023),
4	**S.Sivakuma**r.Praveen kumar.j,Mohamed Azar.S, Akash Thanga.G "Driver Alert system for detection of Potholes and Humps dtection using Ultrasonic Sensor"International journal for Engineering Research Volume-10,Issue-4,April-2023, pg.n0 162-168
5	TRIBOLOGICAL STUDY ON HEAT-TREATED ALUMINIUM MATRIX COMPOSITES / Volume: 10 Issue: 04 | Apr 2023 / p-ISSN: 2395-0072 International Research Journal of Engineering and Technology (IRJET) Volume: 10 Issue: 04 | Apr 2023
6	Barani M, Rakul P R, Mohammed Thoufeek, **M.A. Vinayagamoorthi**, DESIGN OF STEERING SYSTEM FOR AN ALL-TERRAIN VEHICLE, International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 09 Issue: 07 | July 2022
7	Prabhakaran P, Dinesh S, Akilesh M, **Vinayagamoorthi M A**, Design and fabrication of multiple press tools for sheet metal operation, International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 09 Issue: 09 | Sep 2022
8	Tharun J, Aswin Baalaje R, Raj Kumar R, **Sreeharan B N**, A Review on Green Supply Chain Management: Driving And Barrier Factors, International Journal of Engineering Development and Research (IJEDR), Volume 10, Issue 3, October 2022
9	Manav R Samant, S. Kishore Krisna, K.R. Raaj Khishorre, **B. N. Sreeharan**, A Systematic Way of using Preference Selection Index Methodology for Selecting Suspension Coil Spring Material, Materials Today Proceedings, Volume 68, Part 6, November, 2022, Pages 2249-2257, https://doi.org/10.1016/j.matpr.2022.08.443
10	**Dr Rajesh S** , Arul Manoj R , Jagatheeswaran S , Vikram M "Wear Analysis of Aluminium Hybrid Metal Matrix Composites" International Journal of Research Publication and Reviews, Vol 4, no 4, pp 2873-2878, April 2023.
11	Ashok Kumar C, Sarvesh Chinniah A, Pranesh G, Mohan Kumar R S, **Sreeharan B N**, Critical Study on Vital Factors Influencing Productivity Improvement, International Journal for Research in Applied Science & Engineering Technology (IJRASET), Volume 10 Issue IX Sep 2022

S. No.	Details of Non-Scopus Paper publication
12	Kritikesh M P, S Karthik, Nishank, **S Subbiah.,** An investigation on the application of natural fibre reinforced polymer composite for design and fabrication of long skate board., IJIRT Vol 08 Issue 12., ISSN 2349-6002
13	A review on solar desalination techniques using vacuum technology P Rahul, **S Ramanathan,** R Dhivagar, P Karthi… - Proceedings of the Institution of Mechanical Engineers Part C: Journal of Mechanical Engineering Science, Pages 09544062221145465, SAGE Publications

List of Conference Publications

S. No.	Details of Paper publication
1	**Muruganantham V.R** , Thirumalaimuthukumaran M , Akila K , Bhuvanesh D, Praveen R,Implementation of an automatic polishing process with a conveyor mechanism,presented in the Second International Conference, ISDMME 2023 - on April 5-6,2023,organized by department of Mechanical Engineering,Dr. N.G.P. Institute of Technology,Coimbatore.
2	**Muruganantham V R**, Tharun J, Aswin Baalaje R, Thirumalaimuthukumaran M , Dev darshan G R, Implementation of 5s Concept To Improve Productivity In A Fabrication Industry, presented in the Second International Conference, ISDMME 2023 - on April 5-6, 2023,organized by department of Mechanical Engineering,Dr. N.G.P. Institute of Technology,Coimbatore.
3	**B Senthilkumar,** M Sujithra and Mani Barathi S P S, Mobile Malware Attacks, Classification, Propagation, Analysis, Detection, Challenges and Future Directions – A Survey, Hinweis International Conference on Advances in Information, Telecommunication and Computing-AITC, PP 237 - 243
4	**M.Thirumalaimuthukumaran,** VR.Muruganantham, Value Stream Mapping: A case study in the valve manufacturing industry, presented in the Second International Conference, ISDMME 2023 - on April 5-6, 2023,organized by department of Mechanical Engineering,Dr. N.G.P. Institute of Technology,Coimbatore.
5	**M.Thirumalaimuthukumaran,** N. Lalitkishore, K. Mohamad Asik, G.S.Vikash, Optimization of machining parameters for turning process by using Grey relational analysis and Runge Kutta method, presented in the SERB sponsored International Conference TAMMIE 2023 on May 5-6,2023, organized by department of Mechanical Engineering, KPR Institute of Engineering and Technology, Coimbatore.
6	Pravin K, **Subbiah S,** Krishnakanth S, Pravin D.,, Implementation of paddle shift intwo wheelers ., International conference on sustainable innovative practices SIP 2023.
7	**Jeeva B,** Raaj kishore Subbiah S., Experimental and CFD analysis of shell and tube heat exchanger., International conference on material design and manufacturing, ICMDM2022.
8	Sanjay S, **Subbiah S,** Vetrivel, S Dhanush., Investigation of mechanical properties of hybrid aluminium7075 - T6 composites., International conference on sustainable innovative practices SIP 2023.

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PAPER PRESENTATIONS

- **Mr. Manav R Samant** (19BME006), **Mr. R. Padrinarayan** (19BME010), **Mr. S. Kishore Krisna** (19BME013) presented their paper titled "Effective Cleaning of Water Can Using Semi-Automatic System" in the 5th International Conference on "Recent Innovations in Science &Technology (RIST 2023) organized by Holy Grace Academy of Engineering, Thrissur and ISET Research, India during 07-04-2023 and 08-04-2023 under the guidance of **Dr. B. N. Sreeharan,** Assistant Professor – II.

- In the International Conference on Sustainable Innovative Practices (SIP-23), organized by Kumaraguru College of Technology during 19-04-2023 and 20-04-2023 following students presented their works as detailed below.

  - ❑ Under the guidance of **Dr. M. A. Vinayagamoorthi,** Assistant Professor – II, the following students presented their works.

    - **Mr. S. Jayabalu** (19BME219), **Mr. B. Sangeethkumar** (19BME234), and **Mr. T. Mohanprasad** (19BME051), "Experimental Study on Interlaminar Shear Strength"

    - **Mr. S. Marikannan** (19BME144), **Mr. K. Anbarasu** (19BME139), **Mr. Dhanush** (19BME112), "Study on Effect of Process Parameters Influencing the Surface Finish in Electric Discharge Machining"

    - **Mr. P. Prabhakaran** (19BME229), **Mr. S. Dinesh** (19BME214), **Mr. T. Fred Sajjo** (19BME215), "Experimental Study on Mechanical Behaviour Of Natural Fibre Reinforced Composite For Automotive Interior Panel Applications"

    - **Mr. P. Naviin Harihara Dhanush** (19BME138), **Mr. S. Naveen Kumar** (19BME140), **Mr. R. Manibharathi** (19BME137), "Experimental Study on Wear Behaviour of Mild Steel MS 1020, Aluminium Alloy Al 6063 and Copper"

- **Mr. D. Akash Velanganni** (20BME008), **Mr. R. Gowtham** (20BME037), **Mr. G. Guru** (20BME008), **Mr. K. Siva** (20BME037), **Mr. G. Thibakaran** (20BME039), under the guidance of **Mr. B. Jeeva**, Assistant Professor – II.

- **Mr. S. Gohul** (19BME149), **Mr. K. Jagadeep** (19BME142), **Mr. M. Yogeswaran** (19BME141) under the guidance of **Mr. S. Prabhu (Jr),** Assistant Professor - II and **Mr. B. Jeeva**, Assistant Professor – II.

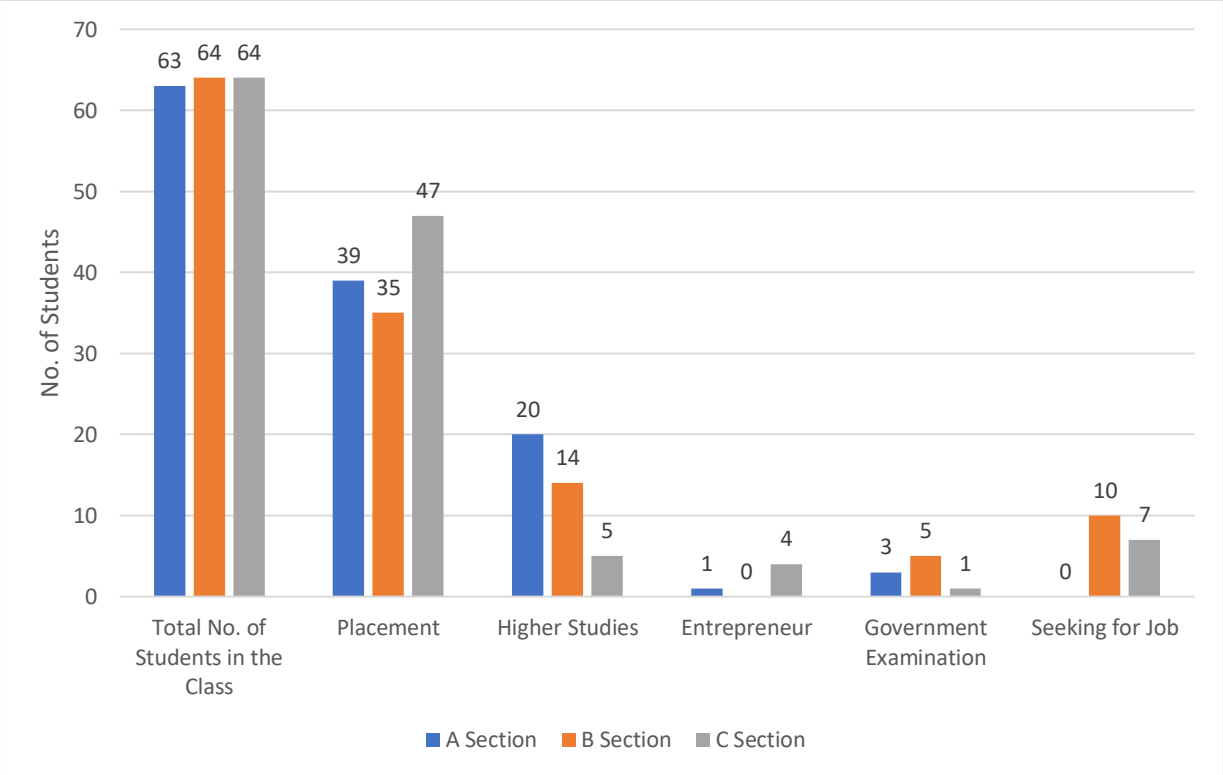
- **Mr. Vigneshraj** (19BME102), **Mr. Yogeshkumar** (19BME098), **Mr. Muthukumaran** (19BME086) under the guidance of **Mr. S. Sivakumar,** Assistant Professor - II

PARTICIPATIONS

- **Mr. D. Akash Velanganni** (20BME008), **Mr. R. Gowtham** (20BME037), **Mr. G. Guru** (20BME008), **Mr. K. Siva** (20BME037), **Mr. G. Thibakaran** (20BME039), under the guidance of **Mr. B. Jeeva**, Assistant Professor – II participated in the Idea Pitch competition" organized by TiE University, Wester California under Pitchfest during 15-02-2023 to 07-04-2023 and ended up as Finalist in the event.

Final year (2023 Passed Out Student Details)

Section	Total No. of Students in the Class	Placement	Higher Studies	Entrepreneur	Government Examination	Seeking for Job	Total
A	63	39	20	1	3	---	63
B	64	35	14	Nil	5	10	64
C	64	47	5	4	1	7	64
Total	**191**	**121**	**39**	**5**	**9**	**17**	**191**



International Hybrid Mode Internship Training on IC Engines, Electric and Hybrid Vehicle 2023 - Top Engineers

Category: Internship/Training
Event Type: Hybrid Mode
Start Date: 19th May 2023
Last Date to Register: 18th May 2023
Location: Chennai.
Organizer: Top Engineers & IIT - Madras.
Registration Fees: INR 1999/-
Internship Details:

• **Internship Duration:** 10 days

OFFERS:

- GROUP DISCOUNT OFFER.
- Group of 5 & above will get 5% Discount.
- Group of 10 & above will get 10% Discount.
- Students who attend any three TOP ENGINEERS workshop can attend the fourth workshop free of cost.

Requirements:
1. A desktop or laptop computer is required. Windows 10 is recommended.
2. Stable internet connection
3. A microphone is strongly recommended for trainer communication.

BENEFITS:
1) Certificate from Top Engineers in association with MECHANICA'23 IIT-MADRAS with ISO certified number and hologram sticker will be provided by the end of the workshop which will add value during placements.

CONTACT DETAILS:
CONTACT: 9840728806 / 09940322437.
MAIL: admin@topengineersindia.com.
WEBSITE: https://www.topengineersindia.com

Workshop on IC Engines and Electric Vehicle 2023

Category: Internship/Training
Event Type: Hybrid Mode
Start Date: 28th May 2023
Last Date to Register: 27 May 2023
Location: Chennai.
Organizer: Top Engineers & MIT – Anna University.
Registration Fees: INR 999/-

Internship Details:

Internship Duration: 1 day

OFFERS:

GROUP DISCOUNT OFFER:

- Group of 5 & above will get 5% Discount.
- Group of 10 & above will get 10% Discount.
- Students who attend any three TOP ENGINEERS workshop can attend the fourth workshop free of cost.

Requirements:
1. A desktop or laptop computer is required. Windows 10 is recommended.
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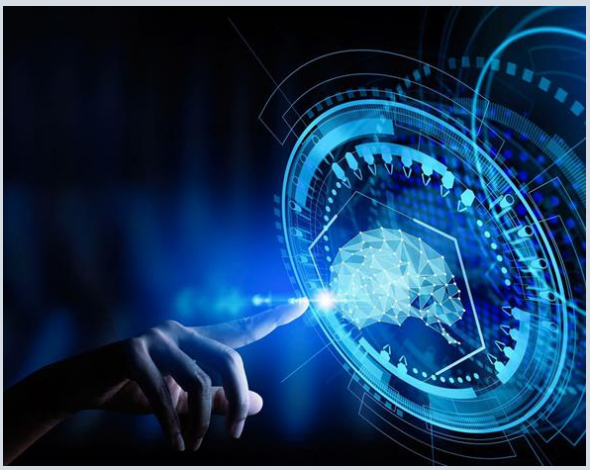
MAIL: admin@topengineersindia.com.
WEBSITE: https://www.topengineersindia.com.

MACHINE LEARNING

Mr. S. V. Nithesh
20BME080
3rd Year
Mechanical

It may be explained as the subset of AI (Artificial Intelligence) where the systems learn the data which is not programmed. It generally creates computational algorithms. It uses a large set of training data to feed the systems effectively in the way of resulting in solving the problems with data.

Machine learning includes many types namely, Supervised learning, unsupervised learning, Reinforcement learning.



Supervised learning:

It is provided with the data set along with the set of inputs and outputs. This theory helps the machine to learn to provide the desired output. This supports intelligent data classification and active learning strategies.

Unsupervised learning:

It is provided with a set of unstructured data with none of the intended outputs. This algorithm is expected to use the data to derive the pattern and to lead a self-directed strategy. This learning is common in probability and statistics.

Reinforcement learning:

It is an virtual environment and has a cumulative reward for statistically advantageous actions towards the goals. This is typically used in places like agent – based applications, like online game players, etc,.

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. **Modern tool usage:** 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. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

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):

PO1 : An ability to independently carry out research /investigation and development work to solve practical problems.

PO2 : An ability to write and present a substantial technical report/document.

PO3 : 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.

PO4 : Apply knowledge and competencies in manufacturing, analytics, supply chain, quality and engineering management.

PO5 : Apply principles of industrial engineering to solve problems in industry.

PO6 : An ability to work as part of interdisciplinary teams, communicate effectively, model and design engineering systems optimally.