

MONTHLY EDITION  
(DECEMBER 2024)

# 2024 CURRENT AWARENESS BULLETIN

(List of Research papers /Articles published by  
Faculty and Students of DTU)

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**CURRENT AWARENESS BULLETIN****DECEMBER 2024****LIST OF RESEARCH PAPERS/ARTICLES PUBLISHED BY  
FACULTY AND STUDENT OF DTU**

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| 1. | <b><u>A Comprehensive Study on Hydrocarbon-Based Solutions for Enhanced Diesel Fuel Properties and Engine Emission Reduction</u></b>   | Gautam, R.,<br>Kumar, N.,<br>Saxena, V.,                 | Emission Control<br>Science and<br>Technology, 11(1), art.<br>no. 1.   |
| 2. | <b><u>A Critical Analysis of Landslide Susceptibility Studies in Himachal Himalaya</u></b>   | Paul, S.R.,<br>Sarkar, R.                                | Journal of the Geological<br>Society of India, 100(11),<br>pp. 1545-1556.                                    |
| 3. | <b><u>A DECell intensified anaerobic co-digestion process for high-quality biomethane production using ultrasound energy: Optimization and robustness tests with ML-RSM-TLBO algorithm</u></b> | Ahmad, A.,<br>Hasan, S.<br>Pal, A.,<br>Yadav, A.K.,      | Journal of<br>Supercomputing, 81(1),<br>art. no. 65.   |
| 4. | <b><u>A Radiation-Hardened Double Node Upset Latch Design for Nanoscale CMOS Technologies</u></b>  | Kumar, C.I.<br>Kumar, P.,<br>Mandal, P.,<br>Singh, S.V., | 2024 IEEE Workshop on<br>Complexity in<br>Engineering, COMPENG<br>2024.                                      |
| 5. | <b><u>A Raspberry Pi 4 and Arduino-based Automated Intercom Door Lock System</u></b>   | Aggarwal, S.,<br>Ranga, V.                               | 2024 1st International<br>Conference on<br>Advanced Computing<br>and Emerging<br>Technologies, ACET<br>2024. |



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| 6.  | <u>A review on unleashing the potential solution of thermal comfort: Exploring the cutting-edge progress of advanced engineering application of phase change materials integrated textiles</u> | Kaur, R.<br>Singh, P.,<br>Varshney, G.,<br>Yadav, S.,         | Sustainable Energy Technologies and Assessments, 72, art. no. 104089.                |
| 7.  | <u>A robust, low power and high speed radiation hardened 12T SRAM cell for space applications</u>  | Pandey, N.,<br>Soni, L.                                       | Microelectronics Journal, 156, art. no. 106502.                                      |
| 8.  | <u>A Semi-Analytical Approximation for a Coupled System of Singularly Perturbed Convection-Diffusion Equations with Shifts</u>   | Jain, S.,<br>Kaushik, A.                                      | International Journal of Computational Methods, art. no. 2450076.                    |
| 9.  | <u>A two-CFOA-based multi-function circuit</u>   | Bhaskar, D.R.,<br>Raj, A.,<br>Senani, R.,<br>Srivastava, D.K. | AEU - International Journal of Electronics and Communications, 189, art. no. 155602. |
| 10. | <u>Accelerating cosmological <math>f(R, L_m, T)</math> gravity model along with bulk viscous fluid</u>   | Lepse, P.V.,<br>Sharma, M.R.<br>Sharma, S.,                   | Astrophysics and Space Science, 369(12), art. no. 120.                               |



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| 11. | <u>Agro-residue-derived biochar for environmental management: Conversion techniques and applications (Open Access)</u>  | Deepika,<br>Haritash, A.K.,<br>Tyagi, A.,            | Clean Energy: Technology, Advances, and Applications, pp. 304-317.  |
| 12. | <u>AN EFFECTIVE HYBRID NOVEL GENETIC AND ADAPTIVE ARTIFICIAL BEE COLONY (NG-AABC) METAHEURISTIC ALGORITHM FOR TRANSFORMING CONCURRENT SCHEDULING PROBLEMS</u> | Kaur, G.,<br>Mishra, R.S.,<br>Madan, A.K.            | International Journal of Industrial Engineering : Theory Applications and Practice, 31(6), pp. 1255-1273. |
| 13. | <u>ANALYSIS AND SOLUTION OF FRACTIONAL ORDER DIFFERENTIAL EQUATIONS USING SINGULAR KERNEL</u>   | Singh, M.,<br>Das, L.,<br>Verma, P.                  | Journal of Nonlinear and Convex Analysis, 25(9), pp. 2387-2396.   |
| 14. | <u>Analysis of Different Comparator Architectures of Successive Approximation Register ADC</u>  | Jindal, E.,<br>Kumar, C.,<br>Mittal, P.<br>Singh, D. | Lecture Notes in Electrical Engineering, 1246 LNEE, pp. 299-310.  |
| 15. | <u>Analytical Modeling of Silicon Nanowire Dielectric Modulated Reconfigurable FET Biosensor Open Access</u>  | Kale, S.,<br>Kumar, A.                               | ECS Journal of Solid State Science and Technology, 13(11), art. no. 113005.                               |



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| 16. | <u>Anatomic site distribution of Neisseria gonorrhoeae in men who have sex with men attending a tertiary care hospital in North India</u> | Gupta, N., (...),<br>Gupta, S.,<br>Mala, R.,<br>Sood, S.<br>Verma, R. | Indian Journal of Sexually Transmitted Diseases and AIDS, 45(2), pp. 116-119.                                 |
| 17. | <u>Android Malware Detection Using Graphical Technique</u>  | Gupta, R.,<br>Sahu, M.K.,   | INDISCON 2024 - 5th IEEE India Council International Subsections Conference: Science, Technology and Society. |
| 18. | <u>Annual energy, exergy, and efficiency analyses for conical solar still combined with N number of evacuated collectors</u>              | Kumar, A.,<br>Kumar, R.   | Environmental Progress and Sustainable Energy.  |
| 19. | <u>Application of Geospatial Tools for Prediction of Landslides Using Decision-Based Method</u>   | Rudra Paul, S.,<br>Sarkar, R.   | Lecture Notes in Civil Engineering, 475 LNCE, pp. 15-32.  |
| 20. | <u>Application of Machine Learning in Prediction of Load Settlement Behavior of Piles Based on CPT Data</u>                               | Aggarwal, M.,<br>Gupta, A.K.  | Lecture Notes in Civil Engineering, 538 LNCE, pp. 97-107.   |



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| 21. | <u>Assessment of Rainfall Threshold Using an Empirical Equation for Landslide Occurrence in Chamoli District</u>   | Sarkar, R.,<br>Sonkar, A.  | Lecture Notes in Civil Engineering, 475 LNCE, pp. 33-44.                              |
| 22. | <u>Automated defects detection of AA 6063-MgAZ31B TIG welding using radiographic images and deep learning</u>  | Agarwal, M.,<br>Bansal, A.,<br>Kumar, M.,<br>Verma, N.,<br>Vettivel, S.C.,                 | Multiscale and Multidisciplinary Modeling, Experiments and Design, 8(1), art. no. 40. |
| 23. | <u>Black Phosphorus-Based Slotted D-Shaped PCF SPR Sensor for Cancer Detection</u>   | Bhuyan, A.,<br>Khamaru, A.,<br>Kumar, A.   | Plasmonics, art. no. 111897.  |
| 24. | <u>Characterization of Wood Plastic Composites (WPC) Based on High Density Polyethylene (HDPE), Hardwood Sawdust Residues and Butadiene Rubber (Tyre Dust)</u> | Khattar, D.,<br>Srivastava, A.N.,<br>Purwar, S.,<br>Shah, M.,<br>Singh, G.,<br>Singh, S.K. | Asian Journal of Water, Environment and Pollution, 21(6), pp. 23-29.                  |
| 25. | <u>Chiral perovskite based metasurface for linear and circular dichroism</u>   | Sharma, V.,<br>Kalra, Y.,<br>Sinha, R.K.   | Journal of Optics (United Kingdom), 26(12), art. no. 125103.                          |



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| 26. | <u>Comparative analysis of thermally evaporated nanoscale CdS thin film's structural, morphological, optical and nanomechanical properties</u>                    | Chaudhary, A.,<br>Gaur, S.K.,<br>Mishra, R.S.,<br>Murtaza, Q.       | Journal of Molecular Structure, 1324, art. no. 140850.                         |
| 27. | <u>Comparative analysis of two novel chaotic systems, and validation of hybrid function projective and complete synchronization using active-adaptive control</u> | Bansal, R.,<br>Khattar, D.,<br>Sirohi, M.                           | Physica Scripta, 99(12), art. no. 125244.                                      |
| 28. | <u>Comprehensive study on thermal, structural, and luminescent properties of BiYWO6: Eu<sup>3+</sup> phosphors synthesized by various methods</u>                 | Jayasimhadri, M.,<br>Maurya, I.                                     | Journal of Materials Science: Materials in Electronics, 35(33), art. no. 2106. |
| 29. | <u>Computation studies of phytochemicals of Papaver somniferum and Boswellia serrata for diabetes management</u>  | Jan, H.,<br>Luthra, R.,(...),<br>Satija, G.,<br>Raj, S.,<br>Roy, M. | Journal of Integrated Science and Technology, 13(2), art. no. 1040.            |
| 30. | <u>Convolutional neural networks and transfer learning for medical image analysis: A comprehensive review</u>   | Dubey, V.,<br>Gupta, A.,<br>Katarya, R.                             | Advancing Healthcare through Data-driven Innovations, pp. 104-120.             |



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| 31. | <u>Deep convolutional architectures for optimizing multi-element airfoil systems</u>   | Chatterjee, D.,<br>Goel, A.,<br>Kumar, R.,<br>Vishnu, K. | Physics of Fluids, 36(11), art. no. 113622.                      |
| 32. | <u>Degradable pH-Sensitive Calcium-Crosslinked Tragacanth Gum/<math>\beta</math>-Cyclodextrin/Sodium Alginate Hydrogel Microspheres Prepared via Ionotropic Gelation Technique for Hydrophobic Drug Delivery</u> | Meena, P.,<br>Singh, P.,<br>Warkar, S.G.                 | Journal of Polymers and the Environment.                         |
| 33. | <u>Design and analysis of a far-infrared metamaterial perfect absorber with sensing applications</u>   | Ankit, Kishor, K.,<br>Sinha, R.K.                        | Applied Optics, 63(35), pp. 8994-9001.                           |
| 34. | <u>Design and optimization of a terahertz photonic crystal fiber based biosensor to detect malaria disease</u>   | Chaudhary, V.,<br>Singh, S.                              | Journal of Computational Electronics, 24(1), art. no. 1.         |
| 35. | <u>Developing novel spectral indices for precise estimation of soil pH and organic carbon with hyperspectral data and machine learning</u>   | Jain, S.,<br>Sethia, D.,<br>Tiwari, K.C.                 | Environmental Monitoring and Assessment, 196(12), art. no. 1255. |





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36. **DHG-BiGRU: Dual-attention based hierarchical gated BiGRU for software defect prediction** Malhotra, R., Singh, P. Information and Software Technology, 179, art. no. 107646.
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37. **DiabeticChain: a novel blockchain approach for patient-centric diabetic data management** Mehra, P.S Mishra, D.K. . Journal of Supercomputing, 81(1), art. no. 166.
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38. **Did You Tell a Deadly Lie? Evaluating Large Language Models for Health Misinformation Identification** Naseem, U., Thapa, S., Rauniyar, K.,(...), Razzak, I. Veeramani, H. Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 15440 LNCS, pp. 391-405.
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39. **Discussion on 'A review of physical and numerical modelling for settling efficiency of desilting chamber' by M.Z. Qamar, M.K. Verma & A.P. Meshram (27 Apr 2024): ISH journal of hydraulic engineering, DOI: 10.1080/09715010.2024.2345338** Mazumder, S.K. ISH Journal of Hydraulic Engineering.
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40. **Dopamine-D2-agonist targets mitochondrial dysfunction via diminishing Drp1 mediated fission and normalizing PGC1- $\alpha$ /SIRT3 pathways in a rodent model of Subarachnoid Haemorrhage** Kumar, P., Parvez, S., Rehman, A.S. Neuroscience, 564, pp. 60-78.



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| 41. | <u>Effect of antiepileptic drug monotherapy on endogenous sex hormonal profile in men and women with epilepsy</u>                                | Guin, D.,<br>Kanojia, N.,<br>Kukreti, R.,<br>Kukreti, S.,<br>Machahary, N., (...), | Multiscale and<br>Multidisciplinary Modeling,<br>Experiments and Design,<br>8(1), art. no. 42. |
| 42. | <u>Effect of tool pin profile on mechanical and microstructural properties of cooling assisted friction stir welding of AA6063-T6 weld joint</u> | Jaiswal, D.,<br>Kumar, S.  | Materials at High<br>Temperatures.   |
| 43. | <u>Efficient Detection and Multi-level Classification of Tomato Plant Leaves Using Fused Deep and Hand-Crafted Features and LSTM-ANFIS</u>       | Sharma, A.,<br>Kumar, A.   | Communications in<br>Computer and<br>Information Science, 2268<br>CCIS, pp. 157-166.           |
| 44. | <u>Elucidating the Effects of Aromatic Mutations on the RNA Binding Efficacy of CELF2 Protein</u>  | Bhavesh, N.S.<br>Hasija, Y.,<br>Kumari, N.,  | Molecular Biology, 58(6),<br>pp. 1293-1311.  |
| 45. | <u>EMH or AMH? Evidence from the emerging Indian equity market</u>   | Aggrawal, D.,<br>Monga, R.,<br>Singh, J.   | International Journal of<br>System Assurance<br>Engineering and<br>Management.                 |



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| 46. | <u>EmoMBTI-Net: introducing and leveraging a novel emoji dataset for personality profiling with large language models</u><br><u>Open Access</u>                  | Jain, D.,<br>Kumar, A.  | Social Network Analysis and Mining, 14(1), art. no. 234.                                      |
| 47. | <u>Energy Transfer Studies on Red Emitting CaGdSbWO<sub>8</sub>: Sm<sup>3+</sup>/Eu<sup>3+</sup> Phosphor for w-LEDs and Indoor Plant Growth Lighting System</u> | Parashar, J.,<br>Prasad, A.,<br>Rao, A.S.<br>Seema, (...),<br>Yadav, G. | Journal of Fluorescence.  |
| 48. | <u>Enhancing durability and strength of concrete through an innovative abrasion and cement slurry treatment of recycled concrete aggregates</u>                  | Kumar, A.,<br>Panghal, H.   | Minerals Engineering, 220, art. no. 109109.   |
| 49. | <u>Enhancing Robustness of Remote Heart Rate Estimation In Varied Illumination Environments</u>  | Gupta, T.,<br>Panchal, S.,<br>Sangwan, V.<br>Yadav, P.                  | 2024 1st International Conference on Advanced Computing and Emerging Technologies, ACET 2024. |
| 50. | <u>Ensemble Classifier for EEG-Based Stress Classification: An Empirical Study on Stacking Classifiers</u>   | Indu, S.,<br>Sethia, D.,<br>Shikha, S.                                  | Lecture Notes in Networks and Systems, 959 LNNS, pp. 389-400.                                 |



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| 51. | <u>Estimation of tropical cyclone's radius of maximum wind using ensemble machine learning approach</u>                                       | Das, L.,<br>Kant, S.,<br>Yadav, M.  | Journal of Earth System Science, 133(4), art. no. 239.  |
| 52. | <u>Experimental and statistical analysis of apricot (<i>Prunus armeniaca</i>) oil-based biolubricant under various temperature conditions</u> | Chaudhary, R.,<br>Kumar, A.,<br>Singh, R.C.                               | International Journal of Materials and Product Technology, 68(3-4), pp. 273-293.              |
| 53. | <u>Fractional-order multiple notch filter-cross feedback network for multi-operational grid-connected solar photovoltaic system</u>           | Badoni, M.,<br>Chittora, P.,<br>Pandey, S.,<br>Singh, A.,<br>Singla, S.K. | Electric Power Systems Research, 239, art. no. 111241.  |
| 54. | <u>Future perspectives and research trends in advanced chemo-mechanical magneto-rheological finishing for enhanced surface quality</u>        | Naji, F.A.A.,<br>Murtaza, Q.,<br>Khaled, N.I.,<br>Nasr, M.M.              | Advances in Materials and Processing Technologies.  |
| 55. | <u>Harnessing ChatGPT in Financial Services: Opportunities and Challenges</u>   | Kanjolia, A.,<br>Tiwari, A.,<br>Kumar, B.,<br>Mehra, P.S.                 | 2024 1st International Conference on Advanced Computing and Emerging Technologies, ACET 2024. |



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| 56. | <u>High-performance optimization and analysis of Cs<sub>2</sub>CuSbCl<sub>6</sub>-Based lead-free double perovskite solar cells with theoretical efficiency exceeding 27 %</u> | Alla, M.,<br>El-assib, H.,<br>Fares, B.,<br>Rouchdi, M.,<br>Tourougui, S., (...). | Renewable Energy, 239, art. no. 122092.   |
| 57. | <u>Hindi Speech Recognition Using Deep Learning: A Review</u>  | Bhatt, N.,<br>Bhatt, S.,<br>Garg, G.  | Communications in Computer and Information Science, 2267 CCIS, pp. 227-237.   |
| 58. | <u>Hybrid Golden Jackal-Sea Lion and Sea Horse Optimization Algorithm for Improved Keystroke Dynamics User Authentication</u>  | Gautam, M.,<br>Manav.,<br>Singh, I.,<br>Toshwal, M.,                              | ICSINTESA 2024 - 2024 4th International Conference of Science and Information Technology in Smart Administration: The Collaboration of Smart Technology and Good Governance for Sustainable Development Goals, pp. 50-55. |
| 59. | <u>Impact of hydrogen induction on atomization combustion performance and emissions in diesel engines fueled with heated biodiesel blends</u>                                  | Caliskan, H.,<br>Gautam, R.,<br>Said, Z.,<br>Wu, H.,<br>Yadav, P.S.               | Energy, 313, art. no. 134026.   |
| 60. | <u>Important Feature Filtering in IoT Network Traffic to Enhance ML-based Classification</u>   | Gupta, R.,<br>Shukla, A.  | INDISCON 2024 - 5th IEEE India Council International Subsections Conference: Science, Technology and Society.   |



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| 61. | <u>Influence of samarium ions doping on electrical and optical properties of bismuth antimony fluoroborate glasses</u>                                   | Mahajan, G.,<br>Prasad, M.V.V.K.S.,<br>Swapna, K., (...),<br>Mahamuda, S.,<br>Rao, A.S.                 | Journal of Materials<br>Science: Materials in<br>Electronics, 35(32), art. no.<br>2055. |
| 62. | <u>Innovative Pathways in Carbon Capture: Advancements and Strategic Approaches for Effective Carbon Capture, Utilization, and Storage (Open Access)</u> | Biswas, S.,<br>Prakash Gupta, J.,<br>Raghav.,<br>Chaturvedi, K.,<br>Saxena, A.,<br>Tiwary, J.K., (...). | Sustainability<br>(Switzerland), 16(22), art.<br>no. 10132.                             |
| 63. | <u>In-silico realization of YX (X = N, P, As) pnictide monolayers as highly efficient thermoelectric materials</u>                                       | Sangeeta.,<br>Kumar, R.,<br>Singh, M.   | Surfaces and Interfaces,<br>55, art. no. 105442.  |
| 64. | <u>Investigation of MoS<sub>2</sub>-hydrogen interaction using in-situ X-ray diffraction studies</u>   | Chourasia, N.K.,<br>Kulriya, P.K.,<br>Kumar, M.,<br>Kumar, R.,<br>Singh, V.                             | Applied Physics A:<br>Materials Science and<br>Processing, 131(1), art. no.<br>14.      |
| 65. | <u>Investigations on structural, optical and mechanical parameters of Pr<sup>3+</sup>-doped oxyfluoro antimony borate glasses</u>                        | Katarya, R.,<br>Mahamuda, S.,<br>Pravallika, C.,<br>Rao, A.S.,<br>Swapna, K.,<br>Venkateswarlu, M.,     | Journal of Materials<br>Science: Materials in<br>Electronics, 35(36), art. no.<br>2250. |



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| 66. | <u>Lac-based-biosynthesis of zinc-copper mixed metal oxide nanoparticles and evaluation of their antifungal activity against A.alternata and F. oxysporum</u> | Kumar, R.,<br>Majhi, P., (...),<br>Pathak, J.,<br>Singh, P.,<br>Yadav, S. | Materials Chemistry and Physics, 330, art. no. 130152.                             |
| 67. | <u>Leveraging rANS for synchronized high capacity reversible data hiding in encrypted image</u>   | Ankur.,<br>Jung, K.-H.,<br>Kumar, R.,<br>Ranjan, P.                       | Expert Systems with Applications, 267, art. no. 126181.                            |
| 68. | <u>Load deformation of multi-blended granular columns using geosynthetic encasement</u>   | Sahu, A.K.<br>Singh, I.,  | Zeitschrift der Deutschen Gesellschaft fur Geowissenschaften, 175(3), pp. 441-455. |
| 69. | <u>Mitigation of Residential EV Charging Effects on Power Distribution Networks with Optimal Allocation of DGs Using Coati Optimization</u>                   | Bhowmick, S.,<br>Painuli, S.,<br>Saha, R.                                 | Arabian Journal for Science and Engineering.                                       |
| 70. | <u>Molecularly imprinted polypyrrole decorated Ti3C2Tx electrochemical sensor for highly selective and sensitive detection of levofloxacin</u>                | Hudda, D.,<br>Kumar, D.   | Journal of Materials Science.  |



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| 71. | <u>Multimodal Integration of Mel Spectrograms and Text Transcripts for Enhanced Automatic Speech Recognition: Leveraging Extractive Transformer-Based Approaches and Late Fusion Strategies</u> | Agarwal, R.,<br>Mehra, S.,<br>Ranga, V.                    | Computational Intelligence, 40(6), art. no. e70012.      |
| 72. | <u>Novel Synthesis, and Application of Carboxymethylated Cassia fistula-Based Hydrogel for Extended-Release of Dinotefuran</u>  | Gupta, R.K.,<br>Nandal, M.,<br>Prashar, V.,<br>Tyagi, Y.K. | ChemistrySelect, 9(46), art. no. e202403421.             |
| 73. | <u>Numerical optimization of cold gas dynamic spray process parameters through response surface methodology</u>   | Murtaza, Q.,<br>Singhal, C.,                               | Advances in Materials and Processing Technologies.       |
| 74. | <u>Numerical simulation of core shell dual metal gate stack junctionless accumulation mode nanowire FET (CS-DM-GS-JAMNWFET) for low power digital applications</u>                              | Anupama,<br>Pandey, N.,<br>Rewari, S.                      | Micro and Nanostructures, 196, art. no. 207995.          |
| 75. | <u>Optimising Intake Manifold to Increase the Efficiency of I.C. Engine</u>   | Arya, A.,<br>Bhatnagar, A.,<br>Chauhan, A.,<br>Zunaid, M.  | Journal of Mines, Metals and Fuels, 71(12), pp. 112-120. |





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| 76. | <u>Optimizing passive micromixers: Enhancing mixing efficiency through computational fluid dynamics and metaheuristic algorithms</u>                  | Gautam, S.,<br>Mustafa, M.G.,<br>Zunaid, M.                                     | Canadian Journal of<br>Chemical Engineering.                                       |
| 77. | <u>Performance Evaluation of Sustainable Downstream Logistics: a Hybrid Multi Criteria Decision Making Framework</u>                                  | Aggrawal, D.,<br>Aggarwal, S.   | Operations Research<br>Forum, 5(4), art. no. 109.                                  |
| 78. | <u>Performance evaluation of the combined helium Brayton cycle and organic Rankine cycles for solar power tower application – A comparative study</u> | Anjum, A.,<br>Asdaque, P.M.G.B.<br>Khan, Y.,<br>Kumar, S., (...),<br>Singh, D., | Journal of Renewable and<br>Sustainable Energy, 16(6),<br>art. no. 065501.         |
| 79. | <u>Performance Evaluation of Thermography-Based Computer-Aided Diagnostic Systems for Detecting Breast Cancer: An Empirical Study (Open Access)</u>   | Agrawal, R.K.,<br>Gupta, T.,<br>Rao, S.A.,<br>Sangal, R.,                       | ACM Transactions on<br>Computing for Healthcare,<br>5(4), art. no. 24.             |
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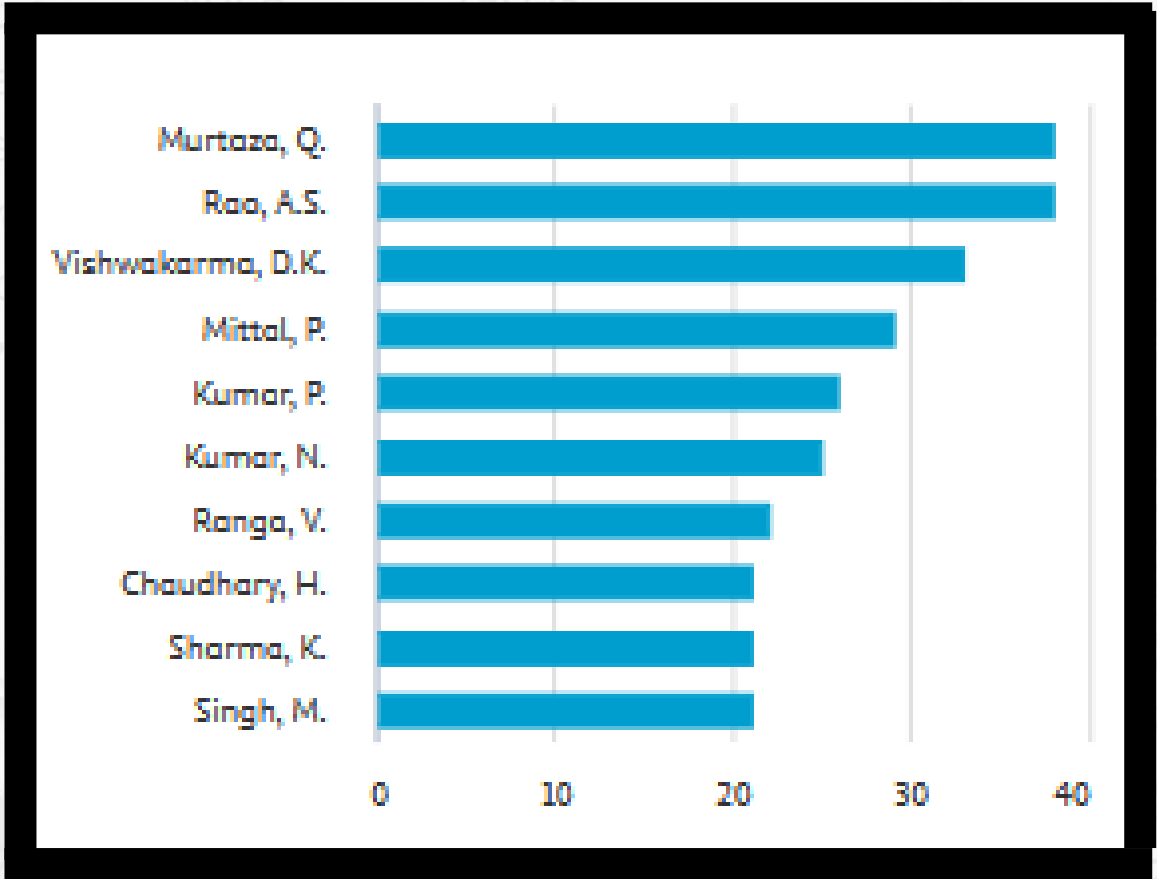
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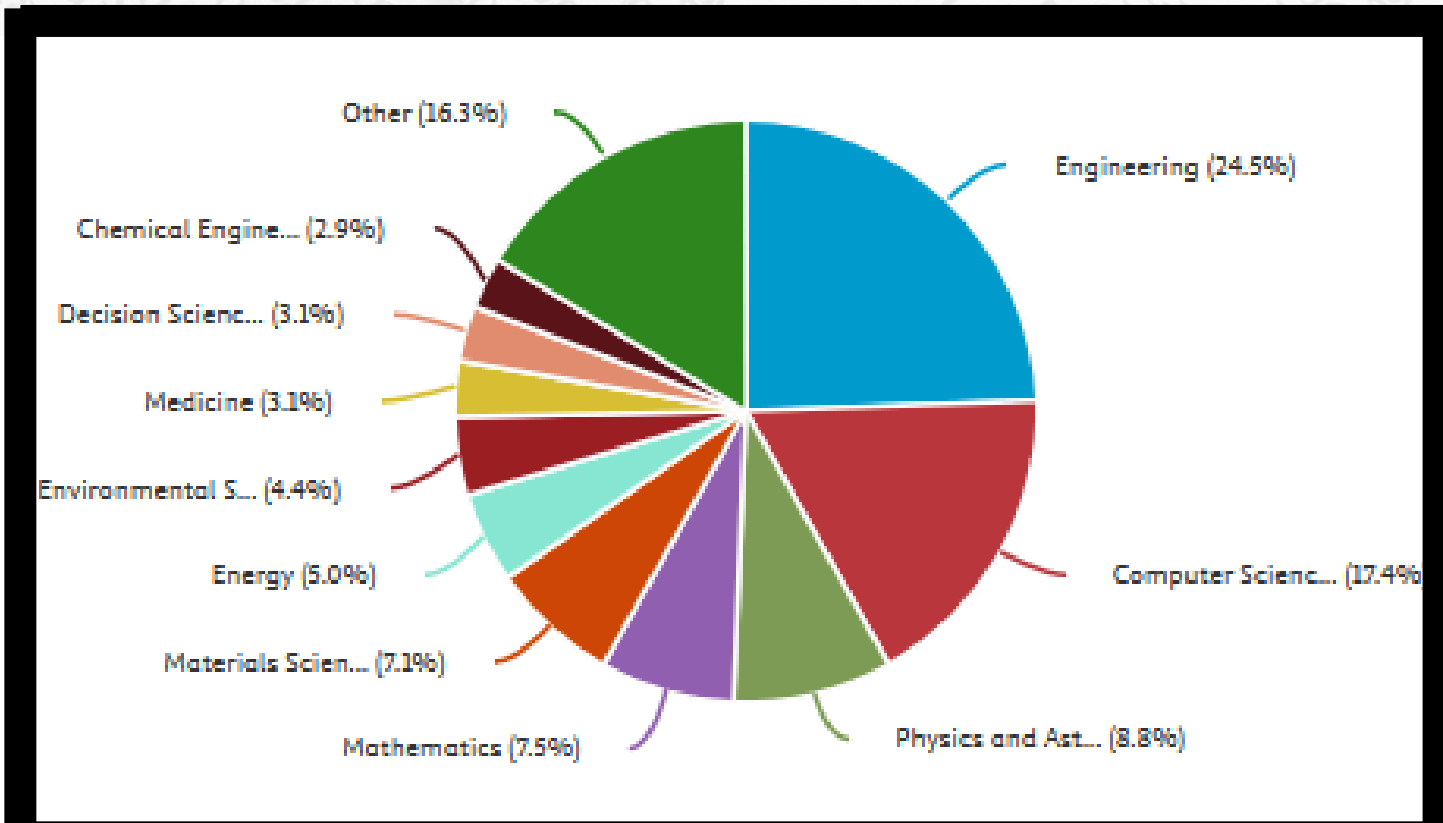
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