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Area of Specialization: Special Electrical Machines; Artificial Intelligence; Materials.

List of Publications:

Journal Publications (SCI / Scopus / Web of Science – Indexed)

1. “Analysis and classification of faults in switched reluctance motors using deep learning neural networks”, Arabian Journal for Science and Engineering, Springer, Vol. 46 & Issue 2 & Pg. No: 1313 – 1332, November 2020, ISSN: 2193-567X
2. “Epoxy/silicon carbide (sic) nanocomposites based small scale wind turbines for urban applications”, International Journal of Energy and Environmental Engineering, Springer, Vol. 13 & Issue 1 & Pg. No: 191-206, August 2021, ISSN: 2251-6832
3. “Application of aluminium oxide–water nanofluids to augment the performance of shallow pond: a numerical study”, Process Integration and Optimization for Sustainability, Springer, Vol. 6 & Issue 1 & Pg. No: 211 -222, December 2021, ISSN: 2509-4246
4. “Fabrication and experimental analysis of treated snake grass fiber reinforced with polyester composite”, Advances in Materials Science and Engineering, Hindawi, Vol. 2021, Page No: 1 – 13, December 2021, ISSN: 1687-8442
5. “Sisal fiber-reinforced polymer composite-based small horizontal axis wind turbine suited for urban applications—a numerical study”, Emergent Materials, Springer, Vol. 5 & Issue 2 & Pg. No: 565-578, February 2022, ISSN: 2522-574X
6. “Analysis of the hybrid of mudar/snake grass fiber-reinforced epoxy with nano-silica filler composite for structural application”, Advances in Materials Science and Engineering, Hindawi, Vol. 2022, Pg. No: 1 – 10, January 2022, ISSN: 1687-8442
7. “Diagnosis of COVID-19 using 3D CT scans and vaccination for COVID-19”, World Journal of Engineering, Emerald Publishers, Vol. 19 & Issue: 02. Pages: 189 – 194, June 2021, ISSN: 1708-5284.
8. “Novel Low-Noise CMOS Bioamplifier for the Characterization of Neurodegenerative Diseases”, Advances in Experimental Medicine and Biology, Springer, ISBN: 978-3-030-78787-5. Pages: 221-226, January 2022, ISSN: 0065-2598

9. "Visual Exploration of Fault Detection Using Machine Learning and Image Processing", International Journal of Engineering Systems Modelling and Simulation, Inderscience, Vol. 14 & Issue: 1. Pages: 8 – 15, December 2022, ISSN: 1755-9758
10. "Blockchain with deep learning-enabled secure healthcare data transmission and diagnostic model", International Journal of Modeling, Simulation, and Scientific Computing, World Scientific, Vol. 13 & Issue 4, Pages: 2241006, August 2022, ISSN: 1793-9623
11. "Finite-element design and analysis of switched reluctance motor for automobile applications", Multiscale and Multidisciplinary Modeling, Experiments and Design, Springer, Vol. 5 & Issue: 3. Pages: 269 – 277, September 2022, ISSN: 2520-8179
12. "Sea sand abrasive wear of red mud micro particle reinforced cissus quadrangularis stem fiber/epoxy composite", Journal of Natural Fibers, Taylor & Francis, Vol. 19 & Issue: 16. Pages: 13216 – 13231, November 2022, ISSN: 1544-046X.
13. "Employing Novel Si-Over-Si Technology to Optimize PV Effect in Solar Array", Silicon, Springer, Vol. 14 & Issue: 18. Pages: 12823 – 12835, December 2022, ISSN: 1876-990X
14. "Influence of nanoclay filler material on the tensile, flexural, impact, and morphological characteristics of jute/E-glass fiber-reinforced polyester-based hybrid composites: experimental, modeling, and optimization study", Journal of Nanomaterials, Hindawi, Vol. 2022. Pages: 1 – 7, June 2022, ISSN: 1687-4110
15. "Escalating the resolution of an urban aerial image via novel shadow amputation algorithm", Earth Science Informatics, Springer, Vol. 15 & Issue: 12. Pages: 905 – 913, June 2022, ISSN: 1865-0473
16. "Detailed study of efficient water jacket cooling system for induction motor drive used in electric vehicle", International Journal on Interactive Design and Manufacturing, Springer, Vol. 17 & Issue: 01. Pages: 1277 – 1288, November 2022, ISSN: 1955-2513
17. "A detailed review of contrast-enhanced fluorescence magnetic resonance imaging techniques for earlier prediction and easy detection of COVID-19", Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization, Taylor & Francis, Vol. 11 & Issue: 04. Pages: 1450 – 1462, November 2022, ISSN: 2168-1163
18. "Wind turbines with aramid fiber composite wind blades for smart cities like urban environments: Numerical simulation study", MRS Energy & Sustainability, Springer, Vol. 10 & Issue: 1. Pages: 138 – 156, January 2023, ISSN: 2329-2237
19. "Differential Evolution Algorithm Supported Random Forest Classifier for Effective Feature Selection and Classification of Power Quality Disturbances", UPB Scientific Bulletin, Series C: Electrical Engineering and Computer Science, Vol. 85 & Issue 1, Pages: 131 – 142, March 2023, ISSN: 2286-3540
20. "Novel Development of Fuzzy Controller Based Multi-Agent System for Efficient Navigation of Autonomous Robots", International Journal of Uncertainty, Fuzziness and

Knowledge-Based Systems, World Scientific, Vol. 31. Pages: 17 – 30, May 2023, ISSN: 0218-4885

21. “Natural-Fibre-Reinforced Composite-Based Micro-Size Wind Turbines: Numerical Analysis and Feasibility Study”, Journal of Composites Science, MDPI, Vol. 7 & Issue: 5. Pages: 1 – 21, May 2023, ISSN: 2504-477X
22. “Revolutionizing Polymer Composites: Boosting Mechanical Strength, Thermal Stability, Water Resistance, and Sound Absorption of Cissus Quadrangularis Stem Fibers with Nano Silica”, Silicon, Springer, Online First Article, May 2023, ISSN: 1876-990X
23. “A Detailed Review on Wind and Solar Hybrid Green Energy Technologies for Sustainable Smart Cities”, Polytechnica, Springer, Vol. 6 & Issue: 1. Pages: 1 – 15, June 2023, ISSN: 2520-8497.
24. “Biosynthesis of a tri-metallic nanoalloy for magnetic and biomedical applications”, Applied Organometallic Chemistry, Wiley, Online First Article, June 2023, ISSN: 1099-0739
25. “Mechanical strength enhancement of natural fibre composites via localized hybridization with stitch reinforcement”, International Polymer Processing, De Gruyter, Online First Article, July 2023, ISSN: 2195-8602
26. “Experimental analysis of localized hybridization by means of adding woven polyester strip”, International Polymer Processing, De Gruyter, Online First Article, July 2023, ISSN: 2195-8602
27. “Mechanical characterization of randomly oriented short Sansevieria Trifasciata natural fibre composites”, International Polymer Processing, De Gruyter, Online First Article, July 2023, ISSN: 2195-8602
28. “Investigation of Solar Air Collectors with Carbon-Nanotube-Based Turbulators and Pin Fin Arrangements”, Journal of Composites Science, MDPI, Vol. 7 & Issue: 8. Pages: 1 – 24, August 2023, ISSN: 2504-477X
29. “Impact of Silicon Steel Laminating Materials in Modified Segmented Rotor Switched Reluctance Motor: Electromagnetic and Vibrational Analysis”, Journal of Vibration Engineering & Technologies, Springer, Online First Article, August 2023, ISSN: 2523-3920.
30. “Hybrid metal complex with TiO₂/SiO₂ composite-doped polymer for the enhancement of photo energy conversion in silicon solar panels”, Journal of Materials Science: Materials in Electronics, Springer, Vol. 34 & Issue: 23, August 2023, ISSN: 0957-4522.

Conference Proceedings (SCI / Scopus / Web of Science – Indexed)

1. “A hybrid solar-battery power source with nano-grid smart home with plug-in electric vehicle” In *AIP Conference Proceedings* (Vol. 2690, No. 1), 2023, AIP Publishing.
2. “Finite Element Analysis of Silicon Heat Sink with CNT Nanofluids for Microelectronics Applications” In *International Conference on Future technologies in Manufacturing, Automation, Design and Energy* (pp. 489-497), 2023, Singapore: Springer Nature Singapore.

3. "Improving the Maximum Power Point Tracking in Wind Farms with PID and Artificial Intelligence Controllers for Switched Reluctance Generators" In *2022 International Conference on Futuristic Technologies (INCOFT)* (pp. 1-6). IEEE.
4. "An application of the frequency-based matrix converter used in a wind energy conversion system using a synchronous generator with synchronous variable-speed, pulse width modulation technique" In *AIP Conference Proceedings* (Vol. 2519, No. 1), 2022, AIP Publishing.
5. "Energy management system for charging stations for electric and hydrogen vehicles using solar, hydrogen and fuel cell technology" In *AIP Conference Proceedings* (Vol. 2519, No. 1), 2022, AIP Publishing.
6. "Performance Analysis of Carbon Nanotube Transistors-A Review" In *2022 6th International Conference on Trends in Electronics and Informatics (ICOEI)* (pp. 25-31). IEEE.
7. "Soft Switching Techniques for R-Converter for Domestic Induction by using MATLAB" In *2022 6th International Conference on Computing Methodologies and Communication (ICCMC)* (pp. 573-577). IEEE.
8. "Experimental investigation of the solar distiller using nano-black paint for different water depths" *Materials Today: Proceedings*, 56, 1406-1410, 2022, Elsevier.
9. "VLSI implementation of discrete cosine transform approximation recursive algorithm" In *Journal of Physics: Conference Series* (Vol. 1817, No. 1, p. 012017), 2021, IOP Publishing.
10. "Finite element analysis of composite wind turbine blades" In *2021 7th international conference on electrical energy systems (ICEES)* (pp. 585-589). IEEE.
11. "Finite element design and thermal analysis of an induction motor used for a hydraulic pumping system" *Materials Today: Proceedings*, 45, 7100-7106, 2021, Elsevier.
12. "Finite element analysis of lightweight robot fingers actuated by pneumatic pressure" In *Recent Advances in Manufacturing, Automation, Design and Energy Technologies: Proceedings from ICoFT 2020* (pp. 379-385), 2021, Singapore: Springer Singapore.
13. "Minimization of torque ripple and incremental of power factor in switched reluctance motor drive" In *Recent Trends in Communication and Intelligent Systems: Proceedings of ICRTCIS 2020* (pp. 125-133), 2021, Singapore: Springer Singapore.
14. "Comparing DevOps procedures from the context of a systems engineer" *Materials Today: Proceedings*, 2020, Elsevier.
15. "Static 2D-Finite Element Analysis of Eccentricity Fault in Induction Motor" In *Smart Technologies for Energy, Environment and Sustainable Development, Vol 1: Select Proceedings of ICSTEESD 2020* (pp. 409-422), 2022 Singapore: Springer Nature Singapore.
16. "Deep learning based image processing approaches for image deblurring" *Materials Today: Proceedings*, 2020, Elsevier.

17. "Neural network based control for switched reluctance motor drive" In *2013 IEEE international conference on emerging trends in computing, communication and nanotechnology (ICECCN)* (pp. 678-682), 2013, IEEE.