

# Publications

## Mechanical Engineering

Year 2023

### *Journals*

- 1- Naseri, Majid, Mohammad Alvand, Ehsan Ahmadi, Seyedmehdi Hosseini, Davood Gholami, Abdel-Hamid I. Mourad, and Ehsan Borhani. "Effect of cube texture on local softening of friction stir welded joints for nanostructured AA2024 processed by accumulative roll bonding." *Journal of Materials Research and Technology* (2023).
- 2- Elsheikh, Ammar, Karrar A. Hammoodi, Ahmed Ibrahim, Abdel-Hamid I. Mourad, Manabu Fujii, and Walaa Abd-Elaziem. "Augmentation and evaluation of solar still performance: A comprehensive review." *Desalination* (2023): 117239.
- 3- Khan, Rehan, Michał Wieczorowski, Abdel-Hamid I. Mourad, Asiful H. Seikh, and Tauseef Ahmed. "Evaluation of erosion of AISI 1045 carbon steel due to non-cohesive microparticles." *Journal of Materials Research and Technology* (2023).
- 4- Iftikhar, Syed Haris, Jaber Abu Qudeiri, and Abdel-Hamid Ismail Mourad. "Adhesive reinforced friction stir welded thermoplastic tube-to-tubesheet hybrid joints." *Polymer Testing* 129 (2023): 108275.
- 5- Krishnapriya, R., C. Nizamudeen, and A-HI Mourad. "Platinum nanoparticles decorated multiwalled carbon nanotube composites as highly transparent, bifacial counter electrodes for dye-sensitized solar cells." *Materials for Renewable and Sustainable Energy* (2023): 1-9.
- 6- Iftikhar, Syed Haris, Abdel-Hamid Ismail Mourad, Dinu Thomas Thekkuden, Nizamudeen Cherupurakal, and R. Krishnapriya. "Friction stir welding of carbon black reinforced high-density polyethylene tube-to-tubesheet joints." *International Journal of Lightweight Materials and Manufacture* 6, no. 4 (2023): 589-605.
- 7- Rajhi, Wajdi, Ahmed Mohamed Mahmoud Ibrahim, Abdel-Hamid I. Mourad, Mohamed Boujelbene, Manabu Fujii, and Ammar Elsheikh. "Prediction of milled surface characteristics of carbon fiber-reinforced polyetheretherketone using an optimized machine learning model by gazelle optimizer." *Measurement* 222 (2023): 113627.
- 8- Khan, Rehan, AH I. Mourad, A. H. Seikh, Jana Petru, and H. Ya Hamdan. "Erosion impact on mild steel elbow pipeline for different orientations under liquid-gas-sand annular flow." *Engineering Failure Analysis* 153 (2023): 107565.
- 9- Sabry, Ibrahim, Abdel-Hamid Ismail Mourad, Mohammad Alkhedher, Mohammad Reza Chalak Qazani, and Ahmed El-Araby. "A Comparative Study of Multiple-Criteria Decision-Making Methods for selecting the best process parameters for friction stir welded Al 6061 alloy." *Welding International* just-accepted (2023): 1-41.
- 10- Nieto, Michelle Guzman, Sandeep Suresh Babu, Mostafa SA ElSayed, and Abdel-Hamid Ismail Mourad. "A Comparative Analysis of the Response-Tracking Techniques in Aerospace Dynamic Systems Using Modal Participation Factors." *Applied Mechanics* 4, no. 4 (2023): 1038-1065.
- 11- Kumar, Ashish, V. P. Singh, Akhileshwar Nirala, R. C. Singh, Rajiv Chaudhary, Abdel-Hamid I. Mourad, B. K. Sahoo, and Deepak Kumar. "Influence of tool rotational speed on mechanical and corrosion behaviour of friction stir processed AZ31/Al<sub>2</sub>O<sub>3</sub> nanocomposite." *Journal of Magnesium and Alloys* 11, no. 7 (2023): 2585-2599.
- 12- Rekrak, Yasmine, Ahmed Yahiaoui, Aicha Hachemaoui, Abdelkader Dehbi, Leila Mouacher, Abdelkarim B. Reguig, and Abdelhamid Ismail Mourad. "Synthesizing Conducting Poly (Aniline-co-Aminoacetophenone) Nanocomposites based on Polyhydroxy Iron Cation-modified Clay." *Letters in Organic Chemistry* 20, no. 10 (2023): 958-966.
- 13- Almomani, Abdulla, and Abdel-Hamid I. Mourad. "The fracture toughness of Schwarz Primitive triply periodic minimal surface lattice." *Theoretical and Applied Fracture Mechanics* 125 (2023): 103924.
- 14- AlHarmoodi, Khaled, Amir Hussain Idrisi, Abdel-Hamid Ismail Mourad, and Basim Abu-Jdayil. "Utilization of Mechanically Recycled Carbon Fibers in Vinyl Ester Composites." *Polymers* 15, no. 4 (2023): 1016.
- 15- Sabry, Ibrahim, Abdel-Hamid Ismail Mourad, Heba Atef Abd El-Aziz, and A. M. Hewidy. "Experimental Investigation of Self-Cleaning Behavior of 3D-Printed Textile Materials with Different Printing Parameters." *Journal of Hunan University Natural Sciences* 50, no. 9 (2023).

- 16- Zaareer, Moath N., Abdel-Hamid Ismail Mourad, Tariq Darabseh, Kassim Abdullah, and Mostafa SA ElSayed. "Aeroacoustics wind noise optimization for vehicle's side mirror base." *International Journal of Thermofluids* 18 (2023): 100332.
- 17- Zaareer, Moath Nayef M., Abdel-Hamid Ismail Mourad, Tariq Darabseh, Sanan H. Khan, and Mahmoud Elgendi. "Impact of a vehicle exhaust pipe position on the lift and drag coefficients: 2D and 3D simulations." *International Journal of Thermofluids* 18 (2023): 100321.
- 18- Nizamudeen, C., R. Krishnapriya, M. S. Mozumder, AH I. Mourad, and T. Ramachandran. "Photovoltaic performance of MOF-derived transition metal doped titania-based photoanodes for DSSCs." *Scientific Reports* 13, no. 1 (2023): 6345.
- 19- Ramachandran, Tholkappiyan, Abdel-Hamid Ismail Mourad, and Mostafa SA ElSayed. "Nb2CTx-Based MXenes Most Recent Developments: From Principles to New Applications." *Energies* 16, no. 8 (2023): 3520.
- 20- IBRAHIM, Ahmed Mohamed Mahmoud, L. I. Wei, Abdel-Hamid Ismail MOURAD, A. E. Mohamed, Ahmed Mustafa ABD EL-NABY, Mohammad S. Al SOUFI, Muhammad F. EZZAT, and Ammar El SHEIKH. "Cooling and lubrication techniques in grinding: A state-of-the-art review, applications, and sustainability assessment." *Chinese Journal of Aeronautics* (2023).
- 21- Elgendi, Mahmoud, Maryam AlMallahi, Abdel-Hamid I. Mourad, Hamdan Al Surihi, Sultan Saad, Ahmed Al Baek, Mansour Al Dhaheri, and Nizamudeen Cherupurakal. "A Review of the Applications of Nanomaterials to Augment Solar Still Productivity." *Water Resources Management and Sustainability: Solutions for Arid Regions* (2023): 433-446.
- 22- Sharma, Priyaranjan, Hargovind Soni, Sunita Sethy, Sudhansu Ranjan Das, Mohammed Y. Tharwan, Sharaf Al Sofyani, Abdel-Hamid I. Mourad, and Ammar Elsheikh. "Surface characterization of SAE 304 after WED cutting: an experimental investigation and optimization." *Journal of Materials Research and Technology* 23 (2023): 5723-5732.
- 23- Babu, Sandeep Suresh, Abdel-Hamid I. Mourad, Khalifa H. Harib, and Sanjairaj Vijayavenkataraman. "Recent developments in the application of machine-learning towards accelerated predictive multiscale design and additive manufacturing." *Virtual and Physical Prototyping* 18, no. 1 (2023): e2141653.
- 24- Thekkuden, Dinu Thomas, Abdel-Hamid Ismail Mourad, Abdel-Hakim Bouzid, and Muhammad M. Sherif. "Investigation of expansion percentages and groove inclusions on the performance of welded, expanded, welded-expanded tube-to-tubesheet joints." *Journal of Materials Research and Technology* 22 (2023): 2078-2092.
- 25- Almomani, Abdulla, Suleyman Deveci, Abdel-Hamid I. Mourad, and Imad Barsoum. "Constitutive model calibration for the thermal viscoelastic-viscoplastic behavior of high density polyethylene under monotonic and cyclic loading." *Polymer Testing* 118 (2023): 107911.
- 26- Mourad, Abdel-Hamid Ismail, John Victor Christy, Pradeep Kumar Krishnan, and Mohammad Sayem Mozumder. "Production of novel recycled hybrid metal matrix composites using optimized stir squeeze casting technique." *Journal of Manufacturing Processes* 88 (2023): 45-58.
- 27- Mourad, Abdel-Hamid I., Abdulla Almomani, Irfan Ahmad Sheikh, and Ammar H. Elsheikh. "Failure analysis of gas and wind turbine blades: A review." *Engineering Failure Analysis* (2023): 107107.
- 28- Almomani, Abdulla, Abdel-Hamid I. Mourad, Suleyman Deveci, Jung-Wook Wee, and Byoung-Ho Choi. "Recent advances in slow crack growth modeling of polyethylene materials." *Materials & Design* (2023): 111720.
- 29- Thekkuden, Dinu Thomas, Abdel-Hamid Ismail Mourad, Syed Haris Iftikhar, and R. Krishnapriya. "Friction stir weld processing for achieving maximum tube-to-tubesheet leak path." *Materials and Manufacturing Processes* (2023): 1-7.
- 30- AlHarmoodi, Khaled, Amir Hussain Idrisi, Abdel-Hamid Ismail Mourad, and Basim Abu-Jdayil. "Utilization of Mechanically Recycled Carbon Fibers in Vinyl Ester Composites." *Polymers* 15, no. 4 (2023): 1016.

Shanmugam, A. R., **Park, K. S.**, and Sohn, C. H., Comparison of the Power Extraction Performance of an Oscillating Hydrofoil Turbine with Different Deflector Designs, *Energies*, Vol. 16, No. 8, 2023, 3420.

- Huh, J., and **Park, K. S.**, Effect of Structural Materials on Monopropellant Thruster Propulsion Performance in Micro Scale, *Aerospace*, Vol. 10, No. 4, 2023, 362.
- 31- **Jeongmoo Huh**, [Kisun Park](https://doi.org/10.3390/aerospace10040362), “Effect of Structural Materials on Monopropellant Thruster Propulsion Performance in Micro Scale”, *Aerospace*, Vol. 10, No. 4-362, Apr 2023. <https://doi.org/10.3390/aerospace10040362>
- 32- Liu, Y., Chai, J.C., Cui, X., Yan, W., Li, N., and Jin, L.W., 2023, “Multi-Objective Optimization of Air Dehumidification Membrane Module Based on Response Surface Method and Genetic Algorithm,” *Energy Reports*, Vol. 9, pp. 2201 – 2212.
- 33- Duan, X.Y., Huang, B.H., Zhu, Y.X., Song, X., Zhu, C.Y., Chai, J.C., Gong, L., 2013, “Cavitating flows in microchannel with rough wall using a modified microscale cavitation model,” *Case Studies in Thermal Engineering*, Vol. 52, pp. 103735.
- 34- Dinumol Varghese, Fadi Alnaimat, Bobby Mathew, 2023, Characteristics of MEMS heat sinks using serpentine microchannel for thermal management of concentrated photovoltaic cells, *IEEE Access*, vol. 11, pp. 10483-10498.
- 35- Fadi Alnaimat, Khadije El Kadi, Bobby Mathew, 2023, CFD investigation of R134a and propane condensation in square microchannel using VOF model: Parametric study using steady state solution, *Thermal Science and Engineering Progress*, vol. 38, art. no. 101662
- 36- Anas Alazzam, Nahla Alamoodi, Bobby Mathew, Mohammad Abutayeh, Saud Khashan, 2023, Transparent, patterned graphene oxide films with tunable electrical conductivity using thermal, chemical, and photoreduction techniques for lab-on-a-chip applications, *Analytical and Bioanalytical Chemistry*, vol. 415, pp. 1339-1346
- 37- Anas Alkhazaleh, Fadi Alnaimat, Mohamed YE Selim, Bobby Mathew, 2023, Liquid cooling of microelectronic chips using MEMS heat sink: Thermohydraulic characteristics of wavy microchannels with pin-fins, *International Journal of Thermofluids*, vol. 18, art. no. 100313
- 38- Fadi Alnaimat, Bobby Mathew, 2023, Flow distribution in microchannel devices with U-shaped manifolds, *International Journal of Thermofluids*, vol. 19, art. no. 100391
- 39- Anas Alkhazaleh, Fadi Alnaimat, Bobby Mathew, 2023, Characterization of MEMS heat sinks having straight microchannels integrating square pin-fins for liquid cooling of microelectronic chips, *Thermal Science and Engineering Progress*, vol. 45, art. no. 102154
- 40- Anas Alkhazaleh, Fadi Alnaimat, Bobby Mathew, 2023, Fluid flow and heat transfer behavior of a liquid based MEMS heat sink having wavy microchannels integrating circular pin-fins, *International Journal of Thermofluids*, vol. 20, art. no. 100480
- 41- [Jatropha’s rapid developments and future opportunities as a renewable source of biofuel—a review](#) Journal: *Energies*
- 42- [A review of wind turbines in complex terrain](#) Journal: *International Journal of Thermofluids*,
- 43- [Machine learning algorithms for a diesel engine fuelled with biodiesel blends and hydrogen using LSTM networks](#) Journal: *Fuels*
- 44- [Application of heat sinks inside the pyramid solar distiller: experimental study on distiller performance under various operating conditions](#) Journal: *Environmental Science and Pollution Research*
- 45- [Determining the appropriate conditions for the drainage process of a solar still](#) Journal: *Environmental Science and Pollution Research*
- 46- [Improving the solar still productivity using thermoelectric materials: A review](#) Journal: *Alexandria Engineering Journal*
- 47- [Impact of a vehicle exhaust pipe position on the lift and drag coefficients: 2D and 3D simulations](#) Journal: *International Journal of Thermofluids*,
- 48- [Calculating the impact of meteorological parameters on pyramid solar still yield using machine learning algorithms](#) Journal: *International Journal of Thermofluids*,
- 49- [Benefits of pretreated water hyacinth for enhanced anaerobic digestion and biogas production](#) Journal: *International Journal of Thermofluids*,
- 50- [Analysis of solar-powered adsorption desalination systems: current research trends, developments, and future perspectives](#) Journal: *International Journal of Thermofluids*,
- 51- [Sustainable geothermal cooling of a residence in UAE using different refrigerants: a numerical analysis](#) Journal: *Modeling Earth Systems and Environment*,

52- [Hydrogen and ammonia as a primary fuel—A critical review of production technologies, diesel engine applications, and challenges](#) Journal: Fuel

53- [A case study on bio-oil extraction from spent coffee grounds using fast pyrolysis in a fluidized bed reactor](#) Journal: Case Studies in Chemical and Environmental Engineering

54- [Recent progress in nanoparticle-based ion exchange membranes for water desalination](#) Journal: Case Studies in Chemical and Environmental Engineering

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### Conferences

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2. Hussain, Arsalan, Ali Usman, Farhan Ausaf, Samad Ali Taj, and Abdel Hamid Ismail Mourad. "Parametric Optimization of Friction Stir Welding (FSW) of Dissimilar Aluminum Alloys with Newly Developed Tool." In International Conference on Mechanical, Automotive and Mechatronics Engineering (ICMAME 2023), 29-30 April 2023, Dubai, UAE. ICMAME, 2023.
3. Subhan, Abdul, Abdel-Hamid Ismail Mourad, and Mohammad Sayem Mozumder. "Research and Development trend of Utilizing Solar Energy in GCC countries." In 2023 Advances in Science and Engineering Technology International Conferences (ASET), pp. 1-8. IEEE, 2023.
4. Kumar, Swarna Mayuri, Mohamed Okasha, Mostafa SA ElSayed, Ryan Des Cotes, Wan Faris Aizat Wan Aasim, Ahmed Deif, and Abdel-Hamid I. Mourad. "Dynamic Stability of a Blended Wing Body Unmanned Aerial Vehicle." In 2023 Advances in Science and Engineering Technology International Conferences (ASET), pp. 1-9. IEEE, 2023.
5. Wongyo Seo, Jungwon Kuk, [Hongrae Kim](#), Dongsoo Kang, and [Jeongmoo Huh](#), "Micro/nano scale emission tip fabrication for field emission electric propulsion" IEEE 22nd International Conference on Micro and Nanotechnology for Power Generation and Energy Conversion Applications (PowerMEMS 2023), Abu Dhabi, UAE, Dec. 11-14 (13th), 2023. <https://ieeexplore.ieee.org/document/10417347>
6. Adil Mahroof Acheere, Rashed Albraiki, Mohamed Yaser Ahmed, Abdallah Abulhassan, and [Jeongmoo Huh](#), "Thermally decomposed hydrogen peroxide for small scale monopropellant propulsion applications", 74th International Astronautical Congress (IAC) 2023, Baku, Azerbaijan, 2-6(5th) October, 2023.
7. Mohamed Yaser Ahmed, Abdallah Abulhassan, Rashed Albraiki, Adil Mahroof Acheere, and [Jeongmoo Huh](#), "Fabrication and propulsion performance testing of a 100 mN class resistojet thruster", 74th International Astronautical Congress (IAC) 2023, Baku, Azerbaijan, 2-6(5th) October, 2023.
8. Mousa Aqailan and [Jeongmoo Huh](#), "The effect of swirl injection parameters on a vortex-cooled thruster fabricated using thermoplastics and metal", 74th International Astronautical Congress (IAC) 2023, Baku, Azerbaijan, 2-6(5th) October, 2023.
9. Dinumul Varghese, Afra Ali Salem Al Darmaki, Fadi Alnaimat, Bobby Mathew, 2023, Thermal management of concentrated photovoltaic cells using zig-zag microchannel MEMS heatsink embedded with square pin-fins, 2023 Advances in Science and Engineering Technology International Conferences (ASET), Dubai, UAE
10. Dinumul Varghese, Ahmed Thaher, Fadi Alnaimat, Bobby Mathew, 2023, CFD analysis of a microchannel heat exchanger based 3D-printed solar receiver, Water Resources Management and Sustainability: Solutions for Arid Regions, Dubai, UAE, pp. 243-254
11. [Comparison between silicon and gallium solar cells for mini PV systems based on life cycle analysis](#) Conference: 2023 Advances in Science and Engineering Technology International
12. THE APPLICATION OF POROUS BEDS CONSISTED OF CRUSHED RUBBER AND WASTED SPONGE IN IMPROVING SOLAR DESALINATION Conference: 50th Computers & Industrial Engineering Conference
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14. WASTEWATER TREATMENT IN UAE USING GEOTHERMAL ENERGY Conference: 50th Computers & Industrial Engineering Conference

15. DIRECT AND INDIRECT USES OF GEOTHERMAL ENERGY Conference: 50th Computers & Industrial Engineering Conference.
16. IMPACT OF COLORED FILTERS ON PV MODULES PERFORMANCE: AN EXPERIMENTAL INVESTIGATION ON ELECTRICAL AND SPECTRAL CHARACTERISTICS Conference: 50th Computers & Industrial Engineering Conference.
17. Evaluation Performance of Concentrated Solar Photovoltaic Thermoelectric Collector Using Air as Cooling Fluid Under Hot Climatic Conditions Conference: 50th Computers & Industrial Engineering Conference.
18. PERFORMANCE ASSESSMENT OF THE SOLAR CHIMNEY POWER PLANT UNDER HOT CLIMATIC CONDITIONS Conference: 50th Computers & Industrial Engineering Conference.
19. ENVIRONMENTAL, ECONOMICAL AND DEGRADATION ASSESSMENT FOR A 2.88 KW GRID-CONNECTED PV SYSTEM UNDER SHARJAH WEATHER CONDITIONS Conference: 50th Computers & Industrial Engineering Conference.
20. POTENTIAL OF BIODIESEL PRODUCTION IN THE UNITED ARAB EMIRATES BASED ON THE LOCALLY AVAILABLE FEEDSTOCK Conference: 50th Computers & Industrial Engineering Conference
- 21.

#### *Book Chapters*

#### [A Review of the Applications of Nanomaterials to Augment Solar Still Productivity](#)

Book chapter: Water Resources Management and Sustainability: Solutions for Arid Regions

#### *Patents*

- 1- Granted Patent "Buffing Dust Waste/Polystyrene Thermal Insulator". U.S. Patent No. 16/293,405.