

List of Publications as on 21.01.2025

Book :

1. Yan Fan, Poh Seng Lee, **Pawan Kumar Singh**, Yong Jiun Lee, “**Thermal Transport in Oblique Finned Micro/Minichannels**: Simulation, Experiment and Analysis, Springer Briefs in Thermal Engineering and Applied Science, 2015.

Patent:

1. A SYSTEM FOR MEASURING THICKNESS OF FLAT AND OBLIQUE FILM OF POLAR LIQUID AND NANOFLUID, Indian Patent Application No. **202331006061** dated **31.01.2023** in the name of **Indian Institute of Technology (Indian School of Mines), Dhanbad-Applied**
2. AN IMPROVED MICRO-CHANNEL HEAT SINK DEVICE WITH CURVED SECTION FOR EFFICIENT COOLING OF ELECTRONIC DEVICES, Indian Patent Application No. **202331032045** dated **05.05.2023** in the name of **Indian Institute of Technology (Indian School of Mines), Dhanbad-Applied**

Journals Papers:

2024

1. Motilal Chavhan, Pawan Kumar Singh, Enhancing heat pipe performance through hybrid wick structures: Balancing pore size and permeability, Applied Thermal Engineering 256 (2024) 124079, <https://doi.org/10.1016/j.applthermaleng.2024.124079>
2. Saumya Singh , Ankit Kumar, Soubhik Kumar Bhaumik, Pawan Singh & Subramanian Narayanan, Thickness Profile Measurements of Acoustic Induced Maneuvering of Thin Film Evaporation, Heat Transfer Engineering (Accepected)
3. Dilip Singh Naruka, Ritesh Dwivedi, and Pawan Kumar Singh (2024), Experimental Investigation to Elucidate the Temporal Effect of Nanofluids on the Thermal Performance of Heat Pipes, Heat Transfer Engineering, [DOI:10.1080/01457632.2024.2325278](https://doi.org/10.1080/01457632.2024.2325278)
4. Meet Naik, Saumya Singh, Pawan Kumar Singh, An experimental and numerical investigation of thermofluidic properties on the novel curved microchannel heat sink with slotted section, Applied Thermal Engineering, Volume 243, 15 April 2024, 122493, [DOI:10.1016/j.applthermaleng.2024.122493](https://doi.org/10.1016/j.applthermaleng.2024.122493)

5. Ritesh Kumar, Badyanath Tiwary, Pawan Kumar Singh, Parametric Influence on the Thermofluidic Characteristics of the Branched Wavy Heat Sink, *J. Thermal Sci. Eng. Appl.* Apr 2024, 16(4): 041004 (12 pages), <https://doi.org/10.1115/1.4064596>
6. K. Gopi Kannan , K.R. Suresh Kumar, R. Dhivagar, S. Sathyanarayanan, Pawan Kumar Singh , Dheeraj Kumar, S. Kalaiselvam, Experimental analysis of the storage of thermal power by a thermosyphon amalgamated nanophase change material in thermal management systems (2024), *Journal of Energy Storage*, Volume 92, 1 July 2024, 112183
7. Gopi Kannan K.;Dhivagar R.;Singh P.K.;Nandhakumar E., Synergistic effect of stearic acid/bismuth oxychloride/cupric oxide for thermal storage applications: preparation, stability, rheological and thermophysical analysis, *Physica Scripta*, **Volume** 99, **Year** 2024, [DOI:10.1088/1402-4896/ad49e2](https://doi.org/10.1088/1402-4896/ad49e2)
8. Singh G.;Singh P.K.;Saxena A.;Kumar N.;Singh D.B., Investigation of conical passive solar still by incorporating energy metrics, efficiency, and sensitivity analyses for sustainable solar distillation, *Journal of Cleaner Production*, **Volume** 434, **Year** 2024, [DOI:10.1016/j.jclepro.2023.139949](https://doi.org/10.1016/j.jclepro.2023.139949)

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9. K Gopi Kannan, KR Suresh Kumar, R Dhivagar, S Sathyanarayanan, R Parameshwaran, Pawan Kumar Singh , An experimental study on heat power stored by thermal dissipation in electronic components using thermosyphon integrated hybrid nanocomposite phase change material, *Journal of Energy Storage*, Volume 72, Part D, 30 November 2023, 108630, <https://doi.org/10.1016/j.est.2023.108630-Q2>
10. Gajendra Singh, Pawan Kumar Singh, Abhishek Saxena, Ritvik Dobriyal, Navneet Kumar & Desh Bandhu Singh, Exergo-enviro-economic and yearly productivity analyses of conical passive solar still for sustainable solar distillation, *Environmental Science and Pollution Research* (Accepted) <https://doi.org/10.1007/s11356-023-29519-0-Q2>
11. S. Singh, P.K. Singh, S.K.Bhaumik, Magnetic-field induced flattening of evaporating ferro-nanofluid meniscus for enhanced cooling, *International Journal of Heat and Mass Transfer*, **Volume** 218, **January** 2024, 124785, [DOI:10.1016/j.ijheatmasstransfer.2023.124785-Q1](https://doi.org/10.1016/j.ijheatmasstransfer.2023.124785-Q1)
12. Sakshi Tyagi, Pawan Kumar Singh, Arun Kumar Tiwari , Advancements in Performance of Zinc Oxide/Carbon Quantum Dots based Photovoltaic Trigeneration System using Genetic Algorithm and Particle Swarm Optimization, *Sustainable Energy Technologies and Assessments*, **Volume** 60, **December** 2023, 103501, <https://doi.org/10.1016/j.seta.2023.103501-Q3>

13. S. Singh, P.K. Singh, S.K.Bhaumik, Experimental investigation of thickness profile in an extended meniscus of thin film evaporation using reflectometry, *Experimental Thermal and Fluid Science*, Volume 151, 1 February 2024, 111069, <https://doi.org/10.1016/j.expthermflusci.2023.111069>. -Q1

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14. Sakshi Tyagi, Pawan Kumar Singh, Arun Kumar Tiwari (2022) Photovoltaic Parameter Extraction and Optimisation of ZnO/GO based Hybrid Solar Trigenation System using SCAPS 1D, *Energy for Sustainable Development*, Volume 70, October 2022, Pages 205-224, <https://doi.org/10.1016/j.esd.2022.08.001>, IF-5.655, Q1
15. Badyanath Tiwary, Ritesh Kumar, Pawan Kumar Singh (2022) Influence of oblique angle variations on the thermo-hydraulic characteristics of the oblique fin heat sink with Al₂O₃ water nanofluid, *Numerical Heat Transfer, Part A: Applications* (Accepted), <https://doi.org/10.1080/10407782.2022.2107839>, IF-2.569, Q1
16. Ritesh Dwivedi and Pawan Singh (2022) Thin Film Evaporation: New insights with Nanofluid Inclusion and Component of the Electrostatic Interactions" *Physics of Fluids* 34, 102005 ; <https://doi.org/10.1063/5.0117978>. IF-4.980, Q1
17. Ritesh Dwivedi, Saumya Singh and Pawan Singh (2022) Effect of Nanofluid and Electrostatic Disjoining Pressure on Heat Transfer from an Evaporating Meniscus, *Heat Transfer Engineering*, Volume 44, Number 19, 28 October 2023, pp. 1733-1746(14), <https://doi.org/10.1080/01457632.2022.2148344>, IF-2.431, Q2

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18. Ritesh Kumar, Badyanath Tiwary, Pawan Kumar Singh (2021) Thermofluidic Analysis of Al₂O₃-water nanofluid cooled branched wavy heat sink, , *Applied Thermal Engineering* (Accepted)-Q1
19. Devendra Yadav, Dilip Singh Naruka & Pawan Kumar Singh (2021), The insight flow characteristics of concentrated MWCNT in water base fluid: experimental study and ANN modelling, *Heat and Mass Transfer* (Accepted). -Q2
20. Badyanath Tiwary, Ritesh Kumar, Pawan Kumar Singh (2021), Thermofluidic characteristic of a nanofluid-cooled oblique fin heat sink: An experimental and numerical investigation, *International Journal of Thermal Sciences*, Volume 171, January 2022, 107214-Q1
21. Sakshi Tyagi, Pawan Kumar Singh, Arun Kumar Tiwari, Pritam Pain (2021), Optimization and Comparison of Photovoltaic Parameters of Zinc Oxide (ZnO)/Graphene Oxide (GO) and Zinc Oxide

(ZnO)/Carbon Quantum Dots (CQDs) Hybrid solar cell using Firefly Algorithm for application in Solar Trigenation System in Commercial Buildings, Sustainable Energy Technologies and Assessments, Volume 47, October 2021, 101357.-Q2

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22. Dilip Singh Naruka, Ritesh Dwivedi & Pawan Kumar Singh (2020), Experimental investigation of heat pipe: performance evaluation for different fluids, Experimental Heat Transfer (Accepted), <https://doi.org/10.1080/08916152.2020.1713254-Q1>
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25. Ritesh Kumar, Badyanath Tiwary, Pawan Kumar Singh (2020) Influence of secondary pass location on thermo-fluidic characteristic on the novel air-cooled branched wavy minichannel heat sink: A comprehensive numerical and experimental analysis, Applied Thermal Engineering, Volume 182, 5 January 2021, 115994. <https://doi.org/10.1016/j.applthermaleng.2020.115994.-Q1>
26. Ritesh Dwivedi, Sukumar Pati & Pawan K. Singh (2020), Combined effects of wall slip and nanofluid on interfacial transport from a thin-film evaporating meniscus in a microfluidic channel, *Microfluidics and Nanofluidics* volume 24, Article number: 84 (2020) <https://doi.org/10.1007/s10404-020-02390-y.-Q2>

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27. Ritesh Dwivedi & Pawan Kumar Singh (2019) Numerical analysis of an evaporating thin film region: Enticing influence of nanofluid, Numerical Heat Transfer, Part A: Applications, 75:1, 56-70, DOI: 10.1080/10407782.2018.1562745. –Q1 when published.
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30. Sanjeev Kumar, Pawan Kumar Singh (2019) A Novel Approach to Manage Temperature Non-Uniformity in Minichannel Heat Sink by Using Intentional Flow Maldistribution, Applied Thermal Engineering, Volume 163, 25 December 2019, 114403.-Q1
31. Badyanath Tiwary, Ritesh Kumar, Poh Seng Lee & **Pawan Kumar Singh** (2019) , **Numerical investigation of thermal and hydraulic performance in novel oblique geometry using nanofluid**, Numerical Heat Transfer, Part A: Applications, Volume 76, 2019 - Issue 7, DOI: 10.1080/10407782.2019.1642076.- Q1 when published.
32. Shitanshu Sapre, Kapil Pareek, Rupesh Rohan, **Pawan Kumar Singh** (2019), H₂ refueling assessment of composite storage tank for fuel cell vehicle, International Journal of Hydrogen Energy Volume 44, Issue 42, 3 September 2019, Pages 23699-23707. –Q2
33. Shitanshu Sapre, Kapil Pareek, Rupesh Rohan, **Pawan Kumar Singh** (2019), Investigation of compressed hydrogen refueling process of 60L type IV tank used in fuel cell vehicles, Energy Storage (Accepted). <https://doi.org/10.1002/est2.91>
34. Devendra Yadav, Prabhat Dansena, Subrata Kumar Ghosh, **Pawan Kumar Singh** (2019), A Unique Multilayer Perceptron Model (ANN) for Different Oxide/EG 2 Nanofluid's Viscosity from the Experimental Study, Physica A: Statistical Mechanics and its Applications (Accepted) DOI: <https://doi.org/10.1016/j.physa.2019.124030-Q2> when published

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35. **Pawan K. Singh** , Dilip Singh Naruka, Lee Poh Seng (2018), Numerical Investigation Of Flow And Heat Transfer Of Nanofluids In A Wavy Microchannel, International Journal of Energy for a Clean Environment, Volume 19, 2018 Issue 1-2, **pages 19-35**,

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37. Mou N, Yong Jiun Lee, **Pawan K Singh**, Saif Khan, Lee Poh Seng (2016) Investigations on the Influence of Flow Migration on Flow and Heat Transfer in Oblique Fin Microchannel Array. ASME- J Heat Transfer, Oct 2016, 138(10): 102403 (13 pages) <https://doi.org/10.1115/1.4033540> -Q2
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41. Kalpana Sarojini K G; Manoj Siva V; **Pawan K Singh**; Pradeep T and Sarit K. Das; Electrical conductivity of metallic and ceramic nanofluids, Colloids and Surfaces A: Physicochemical and Engineering Aspects, Volume 417, 20 January 2013, Pages 39–46(2012). –Q2
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45. Waka Tesfai, Pawan K. Singh, Salim J. S. Masharqa, Tewfik Souier, Matteo Chiesa, and Youssef Shatilla, “Investigating the effect of suspensions nanostructure on the thermophysical properties of nanofluids”, J. Appl. Phys. **112**, 114315 (2012)-Q1.
46. **Pawan K. Singh**, P.V. Harikrishna, T. Sundararajan, S.K. Das, “Experimental and numerical investigation into the heat transfer study of nanofluids in microchannel”, ASME- J. of Heat Transfer. Volume 133, issue 12, December 2011. (In top 10 most downloaded papers in J. heat transfer in Oct 2011-December 2011).-Q1.

47. Soujit Sen Gupta, V. Manoj Siva, Sreenath Krishnan, T. S. Sreeprasad, Pawan K. Singh, T. Pradeep, and Sarit K. Das, Thermal Conductivity enhancement of nanofluids containing Graphene nanosheets, "J. Appl. Phys. **110**, 084302 (2011)-Q1.
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3. **Pawan K. Singh**, T. Sundararajan, SK Das, "Hydrodynamic Study of nanofluid in Microchannel", ASME 2009 Micro/nanoscale Heat and Mass Transfer International Conference December 18-21, 2009, Shanghai, China.
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6. **Pawan K. Singh**, Nouman Ahmed, S.K. Das, Youssef Shatilla, "Exergy analysis of nanofluids in microchannel" Proceeding of ASME 2011 9th International Conference on Nanochannels Microchannels, and Minichannels, ICNMM2011, Edmonton, Canada, June 19-22, 2011.
7. Nouman Ahmed, Pawan K. Singh, Isam Janajreh, Youssef Shatilla, "simulation of flow inside heat pipe: sensitivity study, conditions and configuration", Proceedings of ASME 2011 5th International Conference on Energy

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 14. Dilip Singh Naruka, **Pawan K. Singh**, Prabhat Dansena, H.E. Patel, " Experimental evaluation and ann modeling of thermal conductivity of Al_2O_3 nanoparticles dispersed in different base fluids", Proceedings of the 24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTTC-2017), December 27-30, 2017, BITS Pilani, Hyderabad, India.
 15. Gautam, Dilip Singh Naruka, Ritesh Kumar, **Pawan K. Singh**, " Heat Transfer Performance of a Novel Composite Heat Sink", Proceedings of the 24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTTC-2017), December 27-30, 2017, BITS Pilani, Hyderabad, India.
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23. Ritesh Dwivedi and **Pawan Kumar Singh** "Decisive influence of nanofluid on thin evaporating meniscus". **23rd International Conference THERMOPHYSICS 2018** in Smolenice, Slovakia (7th – 9th Nov, 2018). *AIP Conference Proceedings* (Vol. 1988, No. 1, p. 020043). DOI: <https://doi.org/10.1063/1.5047637>.
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