

LIST OF PUBLICATIONS

Book Chapters:

- Gorai, B, Sahoo, S.; Energetic and exergetic analysis of an ejector based green refrigeration system employing evaporative cooling in the gas cooler, Book Chapter: Advances in Thermofluids and Renewable Energy (Chapter 8) (ISBN: 978-981-16-3496-3) Springer Singapore (2021)
- Gautam, Sahoo, S.; Heat and Mass Transfer Analysis of Cylindrical and Spherical Reactors for CO₂-based Adsorption systems. In Fluid Mechanics and Fluid Power (Vol. 1) Select Proceedings of FMFP 2021 2023 Mar 30 (pp. 385-390). Singapore: Springer Nature Singapore.
- Shakya G, Chaudhuri S, Sahoo S. Numerical and Analytical investigation on pressure and shear driven flow of Sisko fluid. In Fluid Mechanics and Fluid Power (Vol. 3) Select Proceedings of FMFP 2021 2023 Apr 18 (pp. 7-12). Singapore: Springer Nature Singapore.
- Singh, A., Sahoo, S. Computational Study on Heat Transfer and Fluid Flow Aspects of Adsorption-Based CO₂ Capture. In Advances in Thermal Engineering. ICFAMMT 2024. Lecture Notes in Mechanical Engineering. (pp. 81-90). Springer, Singapore (2024).
- Chaudhary, A., Sahoo, S. Performance Analysis of a Helical Reactor Configuration for Adsorbed Natural Gas Storage. In Advances in Thermal Engineering. ICFAMMT 2024. Lecture Notes in Mechanical Engineering. (pp. 91-100). Springer, Singapore (2024).

Journals Papers:

2025

1. Chaudhary, Anupam, and Satyabrata Sahoo., On the feasibility of novel reactor configurations for next-generation CH₄ storage as an energy carrier using computational, experimental, and statistical approach. International Journal of Thermal Sciences 208 (2025): 109485 (I.F.- 4.9) (SCIE) (Q1), <https://doi.org/10.1016/j.ijthermalsci.2024.109485>
2. Chaudhary, Anupam, and Satyabrata Sahoo., Design and development of solar systems for regeneration and thermal compression of adsorbed natural gas. International Communications in Heat and Mass Transfer. 161 (2025) 108464, (I.F.- 6.4) (SCIE) (Q1), <https://doi.org/10.1016/j.icheatmasstransfer.2024.108464>

3. Singh, Aditya, Anupam Chaudhary, and Satyabrata Sahoo., Thermal management of adsorption systems for greenhouse gas capture: A heat and mass transfer approach. *Applied Thermal Engineering* 264 (2025): 125468, (I.F.- 6.1) (SCIE) (Q1),
<https://doi.org/10.1016/j.applthermaleng.2025.125468>

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4. Gautam, Chaudhary, A., Singh, A., Singh, P K., and Sahoo S., Experimental Investigation and Thermodynamic Analysis of Coconut-Shell-Derived Activated Carbon for CO₂-Based Advanced Adsorption Cooling Systems. *Industrial and Engineering Chemistry Research* 63(5) (2024) 2395–2415 (I.F.- 4.2) (SCIE) (Q2),
<https://doi.org/10.1021/acs.iecr.3c03789>
5. Chaudhary, A., and Sahoo S., On thermodynamics and heat and mass transfer aspects of CH₄ adsorption onto coconut shell-based carbonaceous material, *International Journal of Heat and Mass Transfer* 225 (2024) 125410, (I.F.- 5.2), (SCIE) (Q1),
<https://doi.org/10.1016/j.ijheatmasstransfer.2024.125410>

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6. Gautam, Serafin, J, Vikram S, Dziejarski, B., Sahoo, S. An environmentally friendly synthesis method of activated carbons based on subabul (*Leucaena leucocephala*) sawdust waste for CO₂ adsorption. *Journal of Cleaner Production* 422 (2023) 137406 (I.F.- 11.1). (SCIE) (Q1), <https://doi.org/10.1016/j.jclepro.2023.137406>
7. Gautam, Chaudhary, A, Sahoo, S.; Exploring the feasibility of next-generation CO₂-based adsorption cooling systems using different adsorbent reactor configurations. *Energy Conversion and Management* 289 (2023) (I.F.- 10.4) (SCIE) (Q1),
<https://doi.org/10.1016/j.enconman.2023.117181>
8. Gautam, Chaudhary, A, Sahoo, S.; Experimental investigation on adsorbent composites for CO₂ capture application: An attempt to improve the dynamic performance of the parent adsorbent, *International Journal of Heat and Mass Transfer* 203 (2023) 123796. (I.F.- 5.2). (SCIE) (Q1) <https://doi.org/10.1016/j.ijheatmasstransfer.2022.123796>

9. Gautam, Chaudhary, A, Sahoo, S.; Comparative studies on thermal-hydraulic performance of adsorption vessels for CO₂ storage, *Heat Transfer Engineering* 46 (2023)1-19 (I.F.- 2.431) (SCIE) (Q3), <https://doi.org/10.1080/01457632.2023.2295084>
10. Kumar, G, Sahoo, S.; Thermodynamic Analysis of a Compression-Driven Adsorption-Based Cooling System Using CO₂ as the Refrigerant. *Journal of The Institution of Engineers (India): Series C*, 104(4) (2023). 853-860, <https://doi.org/10.1007/s40032-023-00955-8>
11. Chaudhary, A Gautam, Sahoo, S; Thermal management and optimization of the reactor geometry for adsorbed natural gas storage systems subjected to free convection and radiative environment, *Gas Science and Engineering* 109 (2023) 10485. (I.F.- 5.285) (SCIE) (Q2) <https://doi.org/10.1016/j.jngse.2022.104851>
12. Gautam, Sahoo, S, Sah, R P; A review on adsorption isotherms and kinetics of CO₂ and various adsorbent pairs suitable for carbon capture and green refrigeration applications, *Sadhana* 48 (27) (2023) (I.F.- 1.6) (SCIE) (Q4) <https://doi.org/10.1007/s12046-023-02080-9>

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13. Gautam, Sahoo, S.; A Comprehensive Thermodynamic Analysis and Performance Evaluation of A Transcritical Ejector Expansion CO₂ Adsorption Refrigeration System Integrated With Thermoelectric Sub-cooler, *The Journal of Supercritical Fluids* 182 (2022) 105517. (I.F.- 3.9) (SCIE) (Q2) <https://doi.org/10.1016/j.supflu.2022.105517>
14. Gautam, Sahoo, S Experimental investigation on different activated carbons as adsorbents for CO₂ capture, *Thermal Science and Engineering Progress* 33 (2022) 101339. (I.F.- 4.8) (SCIE) (Q1) <https://doi.org/10.1016/j.tsep.2022.101339>
15. Biswajit Gorai, Sahoo, S, Gautam; Comparative Exergy Analysis and Environmental Impact of a Dairy Plant Integrated with a Transcritical Heat Pump System: A Feasibility of Throttle Valve, Expander, and an Ejector as Expansion Devices, *Arabian Journal for Science and Engineering* 48 (2022) 3503–3521 (I.F.- 2.9) (SCIE) (Q2) <https://doi.org/10.1007/s13369-022-07147-z>

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16. Gautam, Sahoo, S.; Thermal management and optimization of adsorption vessels for CO₂-based green refrigeration systems: A heat and mass transfer approach, *Sadhana*, 46 (246) (2021). (I.F.- 1.6) (SCIE) (Q4) <https://doi.org/10.1007/s12046-021-01774>
17. Kinage, A., Sahoo, S., Chaudhuri S.; Effects of different electrical arrangements, and Thomson effect on the system performance as well as the optimum allocation of thermocouples in a self-driven two-stage TEC & TEC; *Journal of Thermal Science and Engineering Progress*, 25 (2021) 101035. (I.F.- 4.8) (SCIE) (Q1) <https://doi.org/10.1016/j.tsep.2021.101035>
18. Chaudhuri S, Sinha S, Chakraborty P, Das M, Sahoo S., Das B. Thermal characteristics of forced convection in combined pressure and shear-driven flow of a non-Newtonian third-grade fluid through parallel plates. *Heat Transfer*. (2021) Nov;50(7):6737-56. (SCIE) (Q2) <https://doi.org/10.1002/hjt.22201>

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19. Gautam, Kumar, G., Sahoo, S.; Performance improvement and comparisons of CO₂ based adsorption cooling system using modified cycles employing various adsorbents: A comprehensive study of subcritical and transcritical cycles; *International Journal of Refrigeration*, 112 (2020) 136-154. (I.F.- 3.9) (SCIE) (Q1), <https://doi.org/10.1016/j.ijrefrig.2019.12.008>
20. Gupta A., Gautam, Sahoo, S. Mohanty A. Performance evaluation of porous fin with prescribed tip temperature: An analytical and numerical approach, *International Journal of Heat and Mass Transfer*, 156 (2020) 119736. (I.F.- 5.2). (SCIE) (Q1), <https://doi.org/10.1016/j.jheatmasstransfer.2020.119736>
21. Gautam, Sahoo, S. Effects of geometric and heat transfer parameters on adsorption–desorption characteristics of CO₂-activated carbon pair, *Clean Technology and Environmental Policy*, 23 (2020) 1065-1085 (I.F.- 4.7), (SCIE) (Q2), <https://doi.org/10.1007/s10098-020-01866-3>
22. Chaudhuri S., Sahoo, S. Characterization of Fully Developed Pressure-Driven, Shear-Driven and Combined Pressure and Shear Driven Flow of Sisko Fluids Through Rectangular Channels, *Arabian Journal of Science and Engineering*, 45 (2020) 5925–5947. (I.F.- 2.9) (SCIE) (Q2) <https://doi.org/10.1007/s13369-020-04621-4>

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23. Dash SM, Sahoo S. A study on natural convection in a cold square enclosure with two vertical eccentric square heat sources using the ib–lbm scheme. *Journal of Thermal*

Science and Engineering Applications. (2019) Oct 1;11(5):051013. (I.F.- 1.6) (SCIE) (Q2)

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24. Patil, K., Sahoo, S.; Charge characteristics of adsorbed natural gas storage systems based on MAXSORB III; Journal of Natural Gas Science and Engineering 52, (2018) 267-282. (I.F.- 5.285) (SCIE) (Q2), <https://doi.org/10.1016/j.jngse.2018.01.008>

25. Inampudi, S. T., Marhi, Baji, Sahoo, S.; Entropy Generation in Water- Based Natural Circulation Loop; ASME Journal of Heat Transfer (ASME) 140, (2018) DOI: 10.1115/1.403976. (I.F.- 1.855) (SCIE) (Q3), <https://doi.org/10.1115/1.4039764>

26. Chaudhuri, S., Sahoo, S.; Effects of aspect ratio on the flow characteristics of magnetohydrodynamic (MHD) third grade fluid flow through a rectangular channel; Sadhana 43, (2018) 2-10. (I.F.- 1.6) (SCIE) (Q4), <https://doi.org/10.1007/s12046-018-0855-5>

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27. Sahoo, S., Ram Gopal, M., A new tank configuration for large scale storage of natural gas in adsorbed form; International Journal of Petrochemical Science and Engineering 2 (7) (2017) 208-217, <https://doi.org/10.15406/ipcse.2017.02.00059>

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28. Sahoo, S., Ramgopal, M.; Experimental studies on an indigenous coconut shell based activated carbon suitable for natural gas storage; Sadhana 41(4) (2016) 459-468. (I.F.- 1.6) (SCIE) (Q4), DOI 10.1007/s12046-016-0483-x <https://doi.org/10.1007/s12046-016-0483-x>

29. Sahoo, S., Ram Gopal, M.; Theoretical performance of adsorbed natural gas storage systems subjected to variable charge-discharge conditions; International Journal of Ambient Energy 37 (2016) 372–386, <https://doi.org/10.1080/01430750.2014.977495>

30. Sahoo, S., Ram Gopal, M., Simulation of an adsorbed natural gas storage system for large scale storage; Journal of Energy Heat and Mass Transfer 38 (2016) 11-30

2015 and before

31. Sahoo, S., Ram Gopal M., Regression equation for predicting discharge performance of adsorbed natural gas storage systems; *Applied Thermal Engineering* 86 (2015) 127–134. (I.F.- 6.4) (SCIE) (Q1), <http://dx.doi.org/10.1016/j.applthermaleng.2015.04.038>
32. Sahoo, S., Ram Gopal, M., A simple regression equation for predicting charge characteristics of adsorbed natural gas storage systems; *Applied Thermal Engineering* 73 (1) (2014) 1093–1100. (I.F.- 6.4) (SCIE) (Q1), <http://dx.doi.org/10.1016/j.applthermaleng.2014.08.031>
33. Sahoo, S., Ram Gopal, M.; Charge-discharge characteristics of an adsorbed natural gas storage system under ambient conditions; *Applied Mechanics and Materials* 592 (2014) 1448–1455. <https://www.scientific.net/AMM.592-594.1448>
34. Sahoo, S., Ram Gopal, M.; Comparative study on charge-discharge characteristics of different activated carbon based adsorbed natural gas storage systems; *Journal of Energy Heat and Mass Transfer* 36 (2014) 63–80.

Publication in Peer reviewed Conferences:

1. Sahoo, S., Ram Gopal, M.; Charge-discharge characteristics of an adsorbed natural gas storage system under ambient conditions; International Mechanical Engineering Congress 2014, June 13–15, NIT Tiruchirapalli, India.
2. Sahoo, S., Ram Gopal, M.; Performance of Adsorbed natural gas storage system subjected to different boundary conditions; International symposiums on aspects of mechanical engineering and technology for industry (AMATI 2014), December 6–8, NERIST Itanagar, India.
3. Sahoo, S., Ram Gopal, M.; Simulation of an adsorbed natural gas storage system for large scale storage; 23rd National Heat and Mass transfer conference and 1st international ISHMT-ASTFE heat and mass transfer conference IHMTTC-2015. December 17–20, Thiruvananthapuram, India.
4. Sahoo, S., Modi, A, Chaudhuri, S.; Pressure driven flow of a third grade fluid through a narrow channel with viscous dissipation; Proceedings of the 6th international and 43rd national conference on fluid mechanics and fluid power. December 15–17, 2016 MNNITA, Allahabad, U.P., India.
5. Sahoo, S., Ram Gopal, M., Chaudhuri, S.; Heat and mass transfer studies on adsorbed natural gas storage system; 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

6. Gautam , Sahoo, S. (2019). Water as Energy Storage Medium for CO₂ Adsorption. In Proceedings of the 25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTTC-2019). Begel House Inc. DOI: 10.1615/IHMTTC-2019.340
7. Gautam, Sahoo, S.; Effects of Geometric as well as Heat Transfer Parameters on Adsorption Characteristics of CO₂ and Activated Carbon Pair; 12th International Conference on Thermal Engineering: Theory and Application ,February 23-26, 2019, PDPU, Gandhinagar, India [ICTEA-2019]
8. Gautam, Sahoo S. Basic characterization and carbon capture study of an indigenous activated carbon, Proceedings of Advances in Thermal-Fluids Engineering (ATFE 2021), 25-26 March 2021, PDPU Gandhinagar, and Gujarat, India. IOP Conference Series: Materials Science and Engineering (Vol. 1146, No. 1, p. 012004). (Scopus indexed) IOP Publishing. doi:10.1088/1757-899X/1146/1/012004. **Won Best Paper award under the theme:** “Energy and Sustainability.”
9. Gorai B, Sahoo S. Energetic and exergetic analysis of an ejector based green refrigeration system employing evaporative cooling in the gas cooler, recent trends in developments of Thermo-fluids and Renewable Energy (TFRE-2020). 26-28 November 2020, NIT Arunachal Pradesh, India. **Won Best Paper award of Track-1** “Bio Heat Transfer, Computational Fluid Dynamics, Refrigeration and Air Conditioning”
10. Gautam, Sahoo, S.; Heat and Mass Transfer Analysis of Cylindrical and Spherical Reactors for CO₂-based Adsorption systems, Proceedings of 48th National Conference on Fluid Mechanics and Fluid Power [FMFP 2021], BITS Pilani, Pilani Campus, Rajasthan, India, 27 -29 December 2021.
WON: Best Paper of the session award.
11. Shakya G., Chaudhuri, S., Sahoo S., Numerical and Analytical investigation on pressure and shear driven flow of Sisko fluid, Proceedings of 48th National Conference on Fluid Mechanics and Fluid Power [FMFP 2021], BITS Pilani, Pilani Campus, Rajasthan, India, 27 -29 December 2021.
12. Gautam, Anupam Chaudhary, Aditya Singh, and Satyabrata Sahoo, Modeling and Simulation of Cylindrical and Spherical Adsorbent Reactors for Maxsorb III-CO₂ pair-

- based Adsorption Heat Pumps, In Proceeding of 9th International and 49th National Conference of FMFP (FMFP-2022), Dec 14-16, 2022, IIT Roorkee, India.
13. Anupam Chaudhary, Gautam, and Satyabrata Sahoo, Performance Enhancement of an Adsorbed Natural Gas Storage System Using Various Nanofluids: A Heat and Mass Transfer Approach, In Proceeding of 4th International Conference on Recent Advances in Mechanical Infrastructure (ICRAM-2022), Dec 16-18, 2022, IITRAM Ahmedabad, India.
 14. Anupam Chaudhary, and Satyabrata Sahoo, Performance Analysis of a Helical Reactor Configuration for Adsorbed Natural Gas Storage. International Conference on Futuristic Advancements in Material, Manufacturing and Thermal Sciences (ICFAMMT 2024), Jan 19-21 2024, IITRAM Ahmedabad, India. Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-97-4500-5_7.
 15. Aditya Singh, and Satyabrata Sahoo, Computational Study on Heat Transfer and Fluid Flow Aspects of Adsorption Based CO₂ Capture, International Conference on Futuristic Advancements in Material, Manufacturing and Thermal Sciences (ICFAMMT 2024), Jan 19-21 2024, IITRAM Ahmedabad, India. Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-97-4500-5_6.
 16. Anupam Chaudhary, and Satyabrata Sahoo, On performance enhancement of adsorbed natural gas storage systems employing phase change material as an energy storage medium, 8th National and 2nd International conference on Refrigeration and Air Conditioning. (NCRAC 2024) 13th -15th March 2024, IIT Madras, Chennai, India.
- Own Outstanding Presentation Award.**