Sushil Kumar Rathore

Present Address:

Dr. Sushil Kumar Rathore

Assistant Professor, Mechanical Engineering Department
National Institute of Technology Rourkela, Rourkela,
769008, Odisha
Email: **isushilrathore@gmail.com**

Educational Qualifications

Doctor of Philosophy (July 2010- June 2015)
Mechanical Engineering
Indian Institute of Technology Kharagpur
Thesis Title "***Computational study of wall-bounded flow and heat transfer using low-Reynolds number turbulence models*" ***

Master of Technology (2007-2009)
Mechanical Engineering (Thermal Science and Engineering)
Indian Institute of Technology Kharagpur, **8.62 out of 10 (CGPA)**
Thesis Title "***Computational analysis of natural convection in a cavity filled with nanofluid"***

Bachelor of Engineering (2003-2007)
Mechanical Engineering
Government Engineering College Bilaspur
Guru Ghasidas University Bilaspur, C.G., **8.17 out of 10 (CGPA)**

Higher Secondary (2003)
Chhattisgarh Board of Secondary Education, Raipur, **85 %**

Secondary (2001)
Board of Secondary Education, Madhya Pradesh Bhopal, **87.6 %**

Work Experience

- Assistant Professor (Grade I) in AGP 8000, Mechanical Engineering Department, National Institute of Technology Rourkela, from 13-02-2020 to present
- Assistant Professor (Grade II) in AGP 7000, Mechanical Engineering Department, National Institute of Technology Rourkela, from 21-02-2018 to 12-02-2020
- Assistant Professor (Grade II) in AGP 6000, Mechanical Engineering Department, National Institute of Technology Patna, from 29-07-2015 to 20-02-2018

Publications

International Journal

1. Behera, V. M. and Rathore, S. K., 2021. Numerical investigation of turbulent offset jet flow over a moving flat plate using low-Reynolds number turbulence model, **ASME: Journal of Thermal Science and Engineering Applications** 13(5), 051005 (15 pages) (https://doi.org/10.1115/1.4049751)

2. Chaudhuri S. and Rathore S. K., 2020. An analytical investigation of pressure-driven flow and heat transfer of a Sisko fluid flowing through parallel plates with viscous dissipation, **Sādhanā**, 45, 171 (17 pages) (10.1007/s12046-020-01413-2)

3. Rathore, S.K., Rathore, S.S. and Singh, S., 2019. Computational investigation of slot jet impinging on a heated flat plate using low-Reynolds number modeling, **Journal of Physics.: Conf. Ser.**, 1240, 012126. (9 pages) (doi:10.1088/1742-6596/1240/1/012126)

4. Rathore, S. K., 2019. Study of conjugate heat transfer from heated plate by turbulent offset jet in presence of freestream motion using low-Reynolds number modeling**, Journal of Applied Fluid Mechanics**, 12, 617-630. (doi: 10.29252/jafm.12.02.28974)

5. Chaudhuri, S. and Rathore, S. K., 2019. Semi analytical solution of heat transfer of magnetohydrodynamic third-grade fluids flowing through parallel plates with viscous dissipation, **ASME: Journal of Thermal Science and Engineering Applications** 11 (2019), 024504 (7 pages). (doi: 10.1115/1.4041682)

6. Rathore, S. K., Das, M. K., 2016. Numerical investigation on the performance of low-Reynolds number k − ε model for a buoyancy-opposed wall jet flow. **International Journal of Heat and Mass Transfer** 95, 636-649

7. Rathore, S. K., Das, M. K., 2016. Investigation on the relative performance of various low-Reynolds number turbulence models for buoyancy-driven flow in a tall cavity. **Heat and Mass Transfer** (Springer Publications) 52, 437-457

8. Rathore, S. K., Das, M. K., 2016. Effect of freestream motion on heat transfer characteristics of turbulent offset jet. **ASME: Journal of Thermal Science and Engineering Applications** 8, 011021-1 (12 Pages)

9. Rathore, S. K., Das, M. K., 2015. A comparative study of heat transfer characteristics of wall-bounded jets using various turbulence models**. International Journal of Thermal Sciences** 89, 337-356

10. Rathore, S. K., Das, M. K., 2013. Comparison of two low-Reynolds number turbulence models for fluid flow study of wall bounded jets. **International Journal of Heat and Mass Transfer** 61, 365–380

International Conference

1. Ade, S. S., Rathore, S. K., 2021, A comparative study of effect of heater orientation on flow and heat transfer characteristics in buoyancy driven flow in cryogenic liquid, Proceedings of the Conference on Advances in Thermal-Fluid Engineering (ATFE 2021), March 25-26, 2021, School of Technology, Pandit Deendayal Energy University, Gandhinagar, Gujarat, India.

2. Behera, V. M., Rathore, S. K., 2021, Numerical study on turbulent characteristics of wall jet in a quiescent environment over a plate in motion, Proceedings of the Conference on Advances in Thermal-Fluid Engineering (ATFE 2021), March 25-26, 2021, School of Technology, Pandit Deendayal Energy University, Gandhinagar, Gujarat, India.

3. Singh, D. P., Rathore, S. K., Chaudhuri, S., 2021, Study of non-Newtonian flow, heat transfer and entropy generation characteristics in trapezoidal corrugated channel, Proceedings of the Conference on Advances in Thermal-Fluid Engineering (ATFE 2021), March 25-26, 2021, School of Technology, Pandit Deendayal Energy University, Gandhinagar, Gujarat, India.

4. Kumar, S., Rathore, S. K., 2020, Computational study of flow and heat transfer characteristic of oblique laminar slot jet impingement on isothermally heated moving flat plate, Proceedings of the 8th International and 47th National Conference on Fluid Mechanics and Fluid Power (FMFP) December 09-11, 2020, IIT Guwahati, Guwahati-781039, Assam, India.

5. Behera, V. M., Rathore, S. K., 2020, Computational analysis of turbulent flow behaviour in offset jet flowing over a moving plate using low-Re turbulence model, Proceedings of the 8th International and 47th National Conference on Fluid Mechanics and Fluid Power (FMFP) December 09-11, 2020, IIT Guwahati, Guwahati-781039, Assam, India.

6. Maniarasu, R., Rathore, S. K., Murugan, S., 2020, Potential of using biomass based activated carbon for carbon dioxide capture, Proceedings of the First Virtual International Conference on Advances in Renewable and Sustainable Energy Systems (ICARSES 2020), December 3-5, 2020, SRM Institute of Science and Technology, Tamil Nadu, India.

7. Ade, S. S., Rathore, S. K., 2020, 3D computational study on buoyancy driven flow and heat transfer characteristics in cryogenic liquid nitrogen, Proceedings of the International Conference of 65^{th} Congress of the Indian Society for Theoretical and Applied Mechanics (ISTAM 2020), December 9-11, 2020, GITAM Deemed to be University, Hyderabad, India.

8. Saini, M. V., Rathore, S. K., Chaudhuri S., 2020, Numerical investigation of thermo-fluidic transport characteristics of non-Newtonian fluids flowing through wavy channels with a sinusoidal profile, Proceedings of the International Conference on Innovations in Thermo-Fluid Engineering and Sciences (ICITFES 2020), February 10-12, 2020, NIT Rourkela, Odisha, India.

9. Yadav, S. K., Rathore, S. K., 2019, Flow and Heat Transfer Characteristics of Turbulent Plane Wall Jet Flow in Presence of Freestream, Proceedings of the International Conference on Innovations in Thermo-Fluid Engineering and Sciences (ICITFES 2020), February 10-12, 2019, NIT Rourkela, Odisha, India.

10. Rathore, S. K., Rathore, S.S., Chaudhuri, S., 2019, Computational study of interaction of turbulent offset jet and wall jet flow using low-Reynolds number model, Proceedings of the 25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC-2019), December 28-31, 2019, IIT Roorkee, Roorkee, India.

11. Rathore, S.S., Verma, S.K., Rathore, S.K., 2019, Numerical Study of Flow and Heat Transfer Characteristics of Turbulent Oblique Offset Jet, Proceedings of the 25thNational and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC-2019), December 28-31, 2019, IIT Roorkee, Roorkee, India.

12. Kumar, S., Patil, S., Rathore, S., Sathapathy, A.K., 2019, Investigation of interaction of two negatively buoyancy opposed turbulent wall jet flow in a vertical channel, 2nd International Conference on Recent Advancement in Air-Conditioning and Refrigeration (RAAR 2019), 28th-30th November 2019, C.V. Raman College of Engineering Bhubaneswar

13. Rathore, S.K., Rathore, S. S., Singh, S., 2019, Computational investigation of slot jet impinging on a heated flat plate using low-Reynolds number modeling, 2nd International Conference on New Frontiers in Engineering, Science & Technology (NFEST 2019) with Theme of Advances in Mechanical Engineering, NIT Kurukshetra, India 18-22 Feb. 2019

14. Rathore, S. K., Pathak, A., Majumdar, A. and Chaudhuri, S., Computational investigation of mixed convection heat transfer from laminar offset jet and wall jet, Fifth International Conference on Computational Methods for Thermal Problems (THERMACOMP 2018), IISC Bangalore, India, 9-11 July 2018

15. Yadav, S.K., Rathore, S.K., 2017, Flow and heat transfer characteristics of turbulent plane wall jet interacting with coflowing freestream, 24th National and 2nd International ISHMT-ASTFE, Heat and Mass Transfer Conference, December 27-30 2017, BITS Pilani, Hyderabad Campus, India, Paper ID: IHMTC 2017-17-0571.

16. Rathore, S. K., Kumar G. K., Verma R. and Kumar R., 2017. Flow and heat transfer characteristics of laminar confined twin slot impinging jet flow over moving flat surface. Indian Conference on Applied Mechanics (INCAM) 2017, 5-7 July, 2017, MNNIT Allahabad, India.

17. Rathore, S. K., Das, M. K., 2013. Effect of freestream motion on heat transfer characteristics of turbulent offset jet. Proceedings of the 22nd National and 11th

International ISHMT-ASME Heat and Mass Transfer Conference, December 28-31, 2013, IIT Kharagpur, India.

18. Rathore, S. K., Das, M. K., 2012. Low Reynolds number modeling of an offset jet. International Conference on Applications of Fluid Engineering, 20-22 September, 2012, G. L. Bajaj Institute of Technology & Management, Greater Noida.

Research Grant

- Title: Study of near-wall flow behaviour and conjugate heat transfer characteristics of turbulent plane offset jet and wall jet flow over a heated moving flat plate using low Reynolds-number turbulence model

  Sponsor: SERB, DST, India (Period: July 2017- July 2020)
  Amount: 1393640 INR
  Role: Principal Investigator

- Title: Liquid-liquid flow through horizontal non-uniform cross sections tubes coupled with return bend
  Sponsor: MHRD-AICTE (Collaborative Research Scheme: TEQIP III)
  PI: Dr. Mukesh Sharma, BIT Meshra
  Co: PI Dr. Sushil Kumar Rathore, NIT Rourkela, and
  Dhaneswar Mahto, BIT Meshra
  Amount: 2091000 Rs.
  Duration: July 2019-Sep 2020

PhD Thesis Supervision
Ongoing: 4

PG Thesis Supervision
Completed: 5

Ongoing: 3

Honors

- Second Topper University (Guru Ghasidas University, Bilaspur) in Bachelor of Engineering, Mechanical Engineering Branch, 2007
- Secured all India rank 206 in Graduate Aptitude Test in Engineering (GATE) 2007 organized by IIT Kanpur

Short Term Course

- Attended a short term course on "Advanced Materials, Processing and Characterization" from 18-02-2016 to 20-02-2016 at NIT Patna
- Coordinator, Short term course on Carbon Capture and Storage held at NIT Rourkela during 15^{th}-19^{th} July 2019

Computational Skills

- Programming Language: C, C++
- Application Package Known: Tecplot, MATLAB, Ansys, Lyx, Windig
- Parallel Programming using OPEN MP
- Operating System Used: Linux, Windows

References

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Prof. Sandipan Ghosh Moulic
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Declaration

I hereby declare that the above written particulars are true to the best of my knowledge and belief.

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Sushil Kumar Rathore