CURRICULUM VITAE

Prof. Sudhakar Subudhi

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Department of Mechanical & Industrial Engineering
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RESEARCH INTERESTS

Natural Convection, Solar energy, Nanofluids, Thermoregulatory mechanism of human body

EMPLOYMENT HISTORY

Sl. No.	Position	Organization/Institution	From	To	Duration
1	Scientist-SC	ISRO Satellite Centre, Bangalore	26-09-2007	20-05-2010	2 years 8 months
2	Assistant Professor	National Institute of Technology Calicut	21-05-2010	12-10-2012	2 years 5 months
3	Assistant Professor	Indian Institute of Technology Roorkee	15-10-2012	28-04-2016	3 years 6 months
4	Associate Professor	Indian Institute of Technology Roorkee	29-04-2016	31-07-2023	7 years 7 months
5	Professor	Indian Institute of Technology Roorkee	01-08-2023	Continuing	

ACADEMICS

Jan. 2004 – 2009: PhD
Department of Mechanical Engineering
Indian Institute of Science, Bangalore, India

Jan.2002 – Dec. 2003: M.Sc. (Engg.)
Department of Mechanical Engineering
Indian Institute of Science, Bangalore, India

1996 – 2000: Bachelor of Technology (Mechanical Engineering)
Odisha University of Agriculture & Technology, Bhubaneswar, India

RESEARCH PUBLICATIONS

Publications

Patent

Sudhakar Subudhi, Geleta Fekadu Daba, Sajesh M & Kalpana "A SOLAR ASSISTED COMPACT LIQUID DESICCANT COMFORT SYSTEM". Patent file no: 202011056779 dated 28.12.2020.

Book

Aditya Kumar, Sudhakar Subudhi, "Thermal Characteristics and Convection in Nanofluids" Springer Nature, ISBN: 978-981-334-247-7, Jan 2021. DOI: 10.1007/978-981-33-4248-4.

Book Chapters

1. Aditya Kumar, Sudhakar Subudhi, "Natural Convection in an Open Cavity Containing Water Based Fe3O4 Magnetic Nanofluids" Advances in Engineering Research, Nova Publishers, June 2020.
2. Sudhakar Subudhi, Aditya Kumar, "Application of Nanofluids for Radiator Cooling ", in Reference Module in Materials Science and Materials Engineering, Elsevier, 2019.
3. Geleta Fekadu and Sudhakar Subudhi, "Liquid Desiccant Dehumidification Using Solar Regenerated System", Springer Proceedings in Energy, Suneet Singh and Venkatasailanathan Ramadesigan (Eds): Advances in Energy Research, Vol 2, pp.229-238, 2020.
4. Pankaj Raj, Geleta Fekadu and Sudhakar Subudhi, "Study of Performance of Solar Flat Plate Collector Using Al2O3/Water Nanofluids", Springer Proceedings in Energy, Suneet Singh and Venkatasailanathan Ramadesigan (Eds): Advances in Energy Research, Vol 2, pp.149-158, 2020.

Journals

1. Amit Kumar, Ravi Kumar and Sudhakar Subudhi, "Experimental investigations on the effects of periodic airflow reversal on cooling heterogeneity during forced-air precooling of apples". Journal Food Engineering(Accepted).
2. Kalpana and Subudhi S., 2023. An experimental analysis of the performance parameters for a compact solar-assisted liquid desiccant cooling system. *Sadhana (Springer)* (Accepted)
3. Krishan Upadhyay, Rajasekar Elangovan and Sudhakar Subudhi, "Evaluation of thermal comfort of Indian subjects through climate-chamber based study". Advances in Building Energy Research (Accepted).
4. Deepak Kumar and Sudhakar Subudhi, "Buoyancy Induced Convection in Magnetite Nanofluid Filled in Enclosure with Thick Fin under Magnetic Field Produced by a Magnetic Source", Journal of Magnetism and Magnetic Materials, Vol. 575, page-170725, 2023.
5. Deepak Kumar, Aditya Kumar and Sudhakar Subudhi, "Thermal Behavior of Magnetite Nanofluid under Magnetic Field: An Experimental Study and Development of Predictive Model to Predict Thermal conductivity", Journal of Engineering Thermophysics, Vol. 32, page. 100-116, 2023.
6. Deepak Kumar and Sudhakar Subudhi, "Numerical Investigation Of Twin Fins Of Different Materials On Buoyancy-Induced Convection In Magnetite Nanofluid Under Magnetic Field ", Computational Thermal Sciences-An International Journal, Vol. 15(1), page. 51-73, 2023.

7. Amit Kumar, Ravi Kumar and Sudhakar Subudhi. Numerical modeling of forced-air pre-cooling of fruits and vegetables: A review", International Journal of Refrigeration, Vol. 145, page. 217-232, 2023.
8. Kalpana Singh, L. Vashney and Sudhakar Subudhi, "Heat transfer and pressure drop in a double pass solar air heater with arc shaped artificial roughnes". ASME-J. Solar Energy Engineering, Vol. 144(6), page. 061002, 2022.
9. Soumalya Ghosh and Sudhakar Subudhi, "Developments in Fuel Cells and Electrochemical Batteries using Nanoparticles and Nanofluids". Energy Storage, Vol. 4(3), page. 1-26, 2022.
10. Shashikant Das and Sudhakar Subudhi, "Study of Human Body Temperature and Different Modes of Heat Transfer Using Steady-State Energy Balance Model". Advances in Energy Technology (Springer), Vol.766, pp.571-581, 2021. DOI: 10.1007/978-981-16-1476-7_51
11. Deepak Khurana & Sudhakar Subudhi, "Heat transfer and pressure drop performance of Al_2O_3/water and TiO_2/water nanofluids in tube fitted with simple or modified spiral tape inserts", ASME- J. Therm. Sc. Eng. Appl., Vol.14 (5), page. 051012, 2022.
12. Kalpana Singh and Sudhakar Subudhi, "Developments in liquid desiccant dehumidification system integrated with evaporative cooling technology". Int. J. Energy Res. Vol. 46 (1), page. 61-88, 2022.
13. Shashikant Das and Sudhakar Subudhi, "A review on different methodologies to study thermal comfort". International Journal of Environmental Science and Technology, Vol. 19, page. 2155-2171, 2022. https://doi.org/10.1007/s13762-021-03210-8, 2021.
14. Deepak Kumar, Aditya Kumar & Sudhakar Subudhi, "Effect of spatially varying magnetic field on the cooling of an electronic component through natural convection in magnetic nanofluids". ASME-J. Therm. Sc. Eng. Appl., Vol. 13(6), page. 061017, 2021.doi:10.1115/1.4050233, 2021.
15. Aditya Kumar and Sudhakar Subudhi, "Experimental investigation on the thermophysical properties of low concentration magnetic colloidal suspensions (nanofluids) with the variations in temperature & magnetic field", Journal of Magnetism and Magnetic Materials, Vol. 526, Page. 167723, 2021.
16. Deepak Kumar, Aditya Kumar & Sudhakar Subudhi, "Magnetic field effect on the buoyancy-driven convection in Fe3O4/water nanofluid filled enclosure with mutual orthogonal heaters". ASME-J. Therm. Sc. Eng. Appl., Vol. 13(4), Page-041021-1-12, 2021.
17. Deepak Khurana & Sudhakar Subudhi, "Effects of pH and surfactant on the forced convection of Al2O3/water and TiO2/water". ASME-J. Therm. Sc. Eng. Appl., Vol.13 (5), page. 051014, 2021.
18. Sajesh M, Geleta Fekadu, Kalpana Singh & Sudhakar Subudhi, "Liquid desiccant air conditioning using single storage solution tank, evaporative cooling and marquise shaped solar collector". ASME-J. Energy Res. Tech., Vol. 143. Page. 112001-1-12, 2021.
19. Aditya Kumar and Sudhakar Subudhi, "Thermal fluctuations and boundary layer properties of turbulent natural convection inside open cavities of different dimensions heated from below", Physics of Fluids, Vol. 32, 067114, 2020.
20. Aditya Kumar & Sudhakar Subudhi, "Preparation, characterization and heat transfer analysis of nanofluids used for engine cooling", Applied Thermal Engineering, Vol. 160, page. 114092-1-9, 2019.
21. Deepak Khurana & Sudhakar Subudhi, "Forced convection of Al2O3/water nanofluids with simple and modified spiral tape inserts". Heat and Mass Transfer, Vol. 55(6), Page. 1-13, 2019.
22. Rajesh Choudhury, Adarsh Saini & Sudhakar Subudhi, "Oberbeck-Boussinesq approximations and geometrical confinement effects of free convection in open cavity". Heat and Mass Transfer, Vol. 55, page. 2095-2102, 2019.
23. Sahil Arora, Geleta Fekadu & Sudhakar Subudhi, "Energy and Exergy Analysis of Marquise Shaped Channel Flat Plate Solar Collector Using Al2O3–Water Nanofluid and Water". ASME-Journal of Solar Energy Engineering, Vol.141, page.041008-1-9, 2019.
24. Geleta Fekadu & Sudhakar Subudhi, "Renewable energy for liquid desiccant air conditioning systems: A review". Renewable and Sustainable Energy Reviews, Vol. 93, page.364-379, 2018.

25. Pankaj Tiwary & Sudhakar Subudhi, “A review of studies using nanofluids in flat-plate and direct absorption solar collectors”. Renewable and Sustainable Energy Reviews, Vol. 84, page.54-74, 2018.
26. Aditya Kumar & Sudhakar Subudhi, “Preparation, characteristics, convection and applications of magnetic nanofluids: A review”. Heat and Mass Transfer, Vol. 54, page.241-265, 2018.
27. Aditya Kumar, Vivekanand & Sudhakar Subudhi, “Cooling and Dehumidification using Vortex tube”. Applied Thermal Engineering, Vol.122, page.181-193, 2017.
28. L Gangadhara Kiran Kumar, P Muthukumar & Sudhakar Subudhi, “Thermal comfort analysis of hostels in National Instituteof Technology Calicut, India”. Sadhana (Springer), Vol.42, page.63-73, 2017.
29. Devang Marvania & Sudhakar Subudhi, “Compressed Air Powered Engine”. Renewable and Sustainable Energy Reviews, Vol.70, page.1119-1130, 2017.
30. Rajesh Choudhury, Deepak Khurana, Aditya Kumar & Sudhakar Subudhi, “Stability analysis of Al2O3/Water nanofluids”. Journal of Experimental Nanoscience Vol.12, page.140-151, 2017.
31. Deepak Khurana, Rajesh Choudhury & Sudhakar Subudhi, “A critical review of forced convection heat transfer and pressure drop of Al2O3, TiO2 and CuO Nanofluids”. Heat and Mass Transfer Vol.53, page.343-361,2017.
32. Deepak Khurana, Rajesh Choudhury & Sudhakar Subudhi, “Investigation of Thermal Conductivity and Viscosity of Al2O3/Water Nanofluids using Full Factorial Design and Utility Concept”. Nano, Vol.11, No. 8, page.1650093-1-10, 2016.
33. Rajesh Choudhury & Sudhakar Subudhi, “Aspect ratio dependence of turbulent natural convection in Al2O3/water nanofluids”. Applied Thermal Engineering, Vol.108, page.1095-1104, 2016.
34. L Gangadhara Kiran Kumar, Shailesh Ranjan Kumar & Sudhakar Subudhi, “Experimental study of the turbulent free convection over horizontal smooth or grooved surfaces in an open cavity”. Heat and Mass Transfer, Vol.52, page.245-253,2016.
35. Sudhakar Subudhi & Mihir Sen, “Review of Ranque-Hilsch vortex tube experiments using air”. Renewable and Sustainable Energy Reviews, Vol.52, page.172-178,2015.
36. Sudhakar Subudhi, K R Sreenivas & Jaywant H Arakeri, “Study of buoyant jets in natural ventilation”. International Journal of Heat and Mass Transfer, Vol.64, page.91-97, 2013.
37. Sudhakar Subudhi, K R Sreenivas & Jaywant H Arakeri, “Removal of unwanted fluid”. Heat and Mass Transfer, Vol.49, page.95-106, 2013.
38. Sudhakar Subudhi, K R Sreenivas & Jaywant H Arakeri, “Study of submerged jet for suction of fluid”. Transactions in ASME: Journal of Fluids Engineering, Vol.134, page.094502-1-6, 2012.
39. Sudhakar subudhi, KR Sreenivas & Jaywant H Arakeri, "Natural ventilation in a model room”, Transactions in ASME: Journal of Thermal Science and Engineering Applications, Vol.4, page.011003-1-9, 2012.
40. Sudhakar subudhi & Jaywant H Arakeri,"Flow Visualization in Turbulent Free Convection over Horizontal Smooth and Grooved Surfaces", International Communication in Heat and Mass Transfer, Vol.39, page.414-418, 2012.
41. Sudhakar subudhi & Jaywant H Arakeri,"Plumes dynamics and heat transfer over horizontal grooved surfaces", Experimental Heat Transfer, Vol.25, page.58-76, 2012.
42. Sudhakar subudhi, KR Sreenivas & Jaywant H Arakeri,"Real Source-Sink Pair", International Journal of Heat & Mass Transfer, Vol.55, page.1650-1660, 2012.

Publications in Conferences

1. Kalpana and Sudhakar Subudhi, An experimental analysis of the performance parameters for a compact solar-assisted liquid desiccant cooling system, FMFP2022, IIT Roorkee, Dec. 14-16, 2022.
2. Puja Koch, Alankrita Singh and Sudhakar Subudhi, Flow and Heat Transfer Investigation of Liquid Heat Sink for an IGBT Module , FMFP2022, IIT Roorkee, Dec. 14-16, 2022.
3. Shashikant Das and Sudhakar Subudhi, Studying the physiology of the human body using a mathematical model of transient energy balance , FMFP2022, IIT Roorkee, Dec. 14-16, 2022.

4. Aditya Kumar, Sudhakar Subudhi, Deepak Kumar and Veena Chaudhary, Investigation of the Thermal Conductivity of Magnetic Nanofluids, FMFP2022, IIT Roorkee, Dec. 14-16, 2022.
5. Rajesh Choudhary, Amandeep Singh, Aditya Kumar and Sudhakar Subudhi, Experimental Investigations on the Thermal Contact Conductance using Al2O3 Nanoparticles in the Interfacial Material, FMFP2022, IIT Roorkee, Dec. 14-16, 2022.
6. Deepak Kumar, Aditya Kumar, T Sudhakar and Sudhakar Subudhi, Experimental Determination of Thermo-Physical Properties of Magnetite Nanofluid and its utilization for Numerical Study on Buoyancy Induced Convection with Fins of Different Materials, FMFP2022, IIT Roorkee, Dec. 14-16, 2022.
7. Deepak Kumar and Sudhakar Subudhi, Magnetohydrodynamic Natural Convection in an Enclosure Filled with Fe3O4/H2O Nanofluid Containing an Electronic Component, IHMTC2021, IIT Madras, Dec.17-20, 2021.
8. Shashikant Das, Sajesh M, and Sudhakar Subudhi, Thermal sensation assessment of human body in hot and cold thermal environments , IHMTC2021, IIT Madras, Dec.17-20, 2021.
9. Kalpana Singh, Geleta Fekadu, Sajesh M, and Sudhakar Subudhi, Performance analysis of a compact liquid desiccant cooling system , IHMTC2021, IIT Madras, Dec.17-20, 2021.
10. Krishan Upadhyay, Shashikant Das, Elangovan Rajasekar, Sudhakar Subudhi, Impact of Air velocity on Thermal Comfort during Sedentary Activity in a Controlled Climatic Chamber, IAQ 2020, Athens, Greece ,Sept. 13-15, 2021.
11. Geleta Fekadu, Sajesh M, Kalpana Singh and Sudhakar Subudhi, Experimental study of Internally Cooled Liquid Desiccant Dehumidifier Assisted by Solar Regeneration, FMFP-2020, IIT Guwahati, Dec.09-11, 2020.
12. Aditya Kumar and Sudhakar Subudhi, Thermal instability in the open cavity turbulent natural convection, FMFP-2020, IIT Guwahati, Dec.09-11, 2020.
13. Shashikant Das and Sudhakar Subudhi, Study of thermoregulation of the human body using the steady-state energy balance model, FMFP-2020, IIT Guwahati, Dec.09-11, 2020.
14. Shashikant Das and Sudhakar Subudhi, Study of body temperature and different modes of heat transfer using steady-state energy balance model, EMSME-2020, NIT Delhi, Oct.30-Nov.1, 2020.
15. Deepak Kumar, Aditya Kumar and Sudhakar Subudhi, MHD free convection of magnetite nanofluid in cooling of an electronic component, FMFP-2020, IIT Guwahati, Dec.09-11, 2020.
16. Shashikant Das, Krishan Upadhyay, Sudhakar Subudhi, Rajasekar Elangovan, Study of Physiological Thermoregulation of Human Body at Extreme Thermal Condition. IHMTC-2019, Pages 931-936, IIT Roorkee, Dec.28-31, 2019. Doi: 10.1615/Ihmtc-2019.1560.
17. Deepak Kumar, Aditya Kumar, Sudhakar Subudhi, Comparative Study of Natural Convection in Water and Al_2O_3-H_2O Nanofluid Filled in A Cavity with Two Localized Heaters, IHMTC-2019, Pages 1131-1136, IIT Roorkee, Dec.28-31, 2019. Doi: 10.1615/Ihmtc-2019.1900.
18. Geleta Fekadu, Sudhakar Subudhi, Experimental Study of Internally−Cooled Dehumidification of Liquid Desiccant for A Single Storage Tank, IHMTC-2019, Pages 1137-1142, IIT Roorkee, Dec.28-31, 2019. Doi: 10.1615/Ihmtc-2019.1910.
19. Aditya Kumar, Sudhakar Subudhi, Experimental Investigation on the Heat Transfer Properties of Fe_3O_4 Based Magnetic Nanofluid, IHMTC-2019, IIT Roorkee, Dec.28-31, 2019.

20. Aditya Kumar, Sudhakar Subudhi, 'Experimental investigation of convection instability and heat transfer characteristics by Fe_3O_4-water magnetic nanofluid' 10th International Conference on Multiphase Flow, (ICMF 2019), Rio de Janeiro, Brazil, May 19 – 24, 2019.
21. Geleta Fekadu Sudhakar Subudhi**, '**Liquid Desiccant Dehumidification Using Solar Regenerated System**'** 6th International Conference on Advances in Energy Research 2017 (ICAER 2017), IIT Bombay, Mumbai, India, December 12-14, 2017.
22. Pankaj Tiwary, Geleta Fekadu Sudhakar Subudhi**, '**Study of performance of solar flat plate collector using Al_2O_3/water nanofluids**'** 6th International Conference on Advances in Energy Research 2017 (ICAER 2017), IIT Bombay, Mumbai, India, December 12-14, 2017.
23. Geleta Fekadu Sudhakar Subudhi, 'Non-Conventional Energy Sources Used in Liquid Desiccant Dehumidification and Regeneration', 2nd International Conference on Sustainable Energy and Environmental Challenges (SEEC 2018), IISc, Bangalore, India, 01 Jan – 03, January, 2018**.**
24. Geleta Fekadu Sudhakar Subudhi, 'Experimental Study of Internally Cooled Desiccant Dehumidification System, 7th International and 45th National Fluid Mechanics and Fluid Power Conference (FMFP2018), IIT Bombay, Mumbai, India, December 10-12, 2018.
25. Geleta Fekadu Sudhakar Subudhi**, '**Novel Experimental Study of Internally Cooled Dehumidifier for Liquid Desiccant System**,** Third International Conference on Sustainable Energy and Environmental Challenges (3rd SEEC), IIT Roorkee, India, 18 –21 December, 2018.
26. Geleta Fekadu and Sudhakar Subudhi, 'Dehumidifcation and internally cooling in single liquid desiccant system', Ist Research Scholar day (RS-2018), MIED, IIT Roorkee, May 16th 2018.
27. Aditya Kumar, Deepak Kumar, Sudhakar Subudhi, 'Experimental Investigation of Natural Convection in an Open Cavity with Water and Fe3O4/Water Magnetic Nanofluid' 7th International and 45th National Conference on Fluid Mechanics and Fluid Power (FMFP – 2018), IIT Bombay, Mumbai, India, December 10-12, 2018.
28. Rajesh Choudhury, Himanshu Tripathi, Anuj Kumar Mishra and Sudhakar Subudhi, 'Statistical Analysis of buoyancy induced turbulent flow in a square enclosure filled with water-based Al2O3 nanofluids' 7th International and 45th National Conference on Fluid Mechanics and Fluid Power (FMFP – 2018), IIT Bombay, Mumbai, India, December 10-12, 2018.
29. Aditya Kumar, Sudhakar Subudhi, 'Investigation of Thermal Conductivity of Water Based Fe3O4 Magnetic Nanofluids', 12th International Conference on Complex Fluids and Soft Matter (COMPFLU-2018), IIT Roorkee, Roorkee, India, December 6- 9, 2018.
30. Deepak Kumar, Aditya Kumar, Sudhakar Subudhi, 'Numerical Study of Natural Convection of Al2O3/H2O Nanofluid in a square Cavity with Localised Heating' 7th International and 45th National Conference on Fluid Mechanics and Fluid Power (FMFP – 2018), Mumbai, India, December 10-12, 2018, IIT Bombay.
31. Aditya Kumar, Sudhakar Subudhi, 'Natural convection in Fe3O4/Water magnetic nanofluid', Ist Research Scholar day (RS-2018), MIED, IIT Roorkee, Roorkee, India, May 16th 2018.
32. Aditya Kumar, Sudhakar Subudhi, 'Temperature Dependent Thermal Conductivity of Low Particle Concentration Magnetite Nanofluids with Zero Additives' 44th National Conference on Fluid Mechanics and Fluid Power (FMFP-2017), Amrita University, Amritapuri Campus, Kollam, Kerala, India, December 14-16, 2017.

33. Sudhakar Subudhi, 'Rayleigh-Benard convection in nanofluids', Summer school and Discussion Meeting on Buoyancy driven flows, ICTS-TIFR, Bangalore, India, , June 12-20, 2017.
34. Aditya Kumar, Sudhakar Subudhi, 'Investigation of Stability of Water based Alumina Nanofluids', 6th International and 43rd National Conference on Fluid Mechanics and Fluid Power (FMFP-2016), MNNITA, Allahabad, U.P., India, December 15-17, 2016.
35. Rajesh Choudhary, Sudhakar Subudhi, 'Study of Natural Convection in an Enclosure with Water and α-Al_2O_3/Water Nanofluid for different Aspect Ratios using Statistical Analysis', ICMF2016, Firenze, Italy, , May 22-27, 2016.
36. Deepak Khurana, Aditya Kumar, Sudhakar Subudhi**, '**Experimental investigation of forced convection heat transfer under turbulent flow with water based Al_2O_3 and TiO_2 nanofluids**',** 42nd National Conference on Fluid Mechanics and Fluid Power (FMFP2015), NITK Surathkal, Karnataka, India, , December 14-16, 2015.
37. Deepak Khurana, Aditya Kumar, Rajesh Choudhary**,** Sudhakar Subudhi**, '**Time dependent suspention stability of TiO_2/water and Al_2O_3/water nanofluids', 23rd National Heat and Mass Transfer Conference and 1st International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC 2015), ISRO, Thiruvananthapuram, India, December 17-20, 2015.
38. Rajesh Choudhary, Adarsh Saini, Sudhakar Subudhi**, '**Experimental investigation of natural convection in an enclosure with water and α – Al_2O_3/water nanofluid for different aspect ratios**',** 42nd National Conference on Fluid Mechanics and Fluid Power (FMFP2015), NITK Surathkal, Karnataka, India, December 14-16, 2015.
39. Deepak Khurana, Aditya Kumar, Rajesh Choudhary**,** Sudhakar Subudhi**, '**Effect of zeta potential and sonication time on the stability of water based α-Al_2O_3 nanofluid', 23rd National Heat and Mass Transfer Conference and 1st International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC 2015), ISRO, Thiruvananthapuram, India, December 17-20, 2015.
40. Aditya Kumar, Deepak Khurana, Rajesh Choudhary**,** Sudhakar Subudhi**,** 'Preparation and stability analysis of water based aluminium oxide nanofluids' International Conference on Energy Systems and Developments (ICESD2015), Pune, Maharashtra, India, February 11-13, 2015.
41. Sudhakar Subudhi, 'Mathematical modeling of stack-driven natural ventilation in buildings', ASME 2014 8th International Conference on energy sustainability, Boston, USA, June 29-July 2, 2014,
42. Sudhakar Subudhi, 'Modifications of evaporative cooler using solar assisted desiccants', ASME 2014 8th International Conference on energy sustainability, Boston, USA, June 29-July 2, 2014.
43. Sudhakar Subudhi and Jaywant H. Arakeri, 'Turbulent free convection over grooved surfaces', ASME International Mechanical Engineering Congress Exposition (IMECE), Sandiego, USA, November 15-16, 2013.
44. Sudhakar Subudhi and V. Ramakrishnan "Thermal conductivity measurements of Carbon Phenolic material by calorimetric approach", 30th International Thermal Conductivity Conference/18th International Symposium of Thermal expansion (30th ITCC-18th ITES-2009), Pittsburg, USA, Aug 29th - Sep 2nd, 2009.
45. Sudhakar Subudhi, Jaywant H. Arakeri and K.R. Sreenivas, 'Experiments with Real Source-Sink pairs', 12th Asian Congress of Fluid Mechanics, Daejeon, Korea, August18-21, 2008.

46. Sudhakar Subudhi and Jaywant H. Arakeri, 'Turbulent free convection over horizontal grooved surfaces', Conference & Euromech Colloquim #480 on High Rayleigh number convection, Trieste, Italy, September4-8, 2006.
47. Sudhakar Subudhi and Jaywant H. Arakeri, 'Turbulent free convection over grooved surfaces', 11th Asian Congress of Fluid Mechanics, Kual Lumpur, Malaysia, May22-25, 2006.
48. Sudhakar Subudhi, Jaywant H. Arakeri and K.R. Sreenivas, 'Experiments with Real Source-Sink pairs', IISc-Centenary – International Conference on Advances in Mechanical Engineering, IISc, Bangalore, India, July2-4, 2008.
49. Sudhakar Subudhi, Jaywant H. Arakeri and K.R. Sreenivas, 'Fluid mechanics and heat transfer of Natural Ventilation', 19th National & 8th ISHMT-ASME conference, Hyderabad, India, January3-5, 2008. (**Best paper award**).
50. Sudhakar Subudhi, Jaywant H. Arakeri and K.R. Sreenivas, 'Real Source-Sink interactions', International Symposium-Fluid Days, JNCASR, Bangalore, India, December31,2007-January1, 2008.
51. Sudhakar Subudhi, Jaywant H. Arakeri and K.R. Sreenivas, 'Experiments in Natural ventilation using water', National conference of Research Scholars in Mechanical Engineering, IIT Kanpur, India, March23-24, 2007.
52. Sudhakar Subudhi and Jaywant H. Arakeri, 'Turbulent free convection over grooved surfaces', Symposium on Advances in fluid mechanics, JNCASR, Bangalore, India, July24-25, 2003.

Doctoral Theses Supervised

1. Title: Study of natural convection heat transfer in Al_2O_3/water nanofluids
   Year awarded: 24-02-2016.
   Name of the scholar: Mr. Rajesh Choudhary IIT Roorkee

2. Title: Study of thermal properties, forced convection & pressure drop in Al_2O_3 & TiO_2 nanofluids
   Year awarded: 23-10-2017
   Name of the scholar: Mr. Deepak Khurana, IIT Roorkee

3. Title: Study of liquid desiccant air conditioning system using marquise shaped channel solar collector
   Year awarded: 13-08-2020
   Name of the scholar: Mr. Geleta Fekadu Daba, IIT Roorkee

4. Title: Natural convection in magnetic nanofluids
   Year awarded: 21-12-2020
   Name of the scholar: Mr. Aditya Kumar, IIT Roorkee

5. Title: Numerical study of natural convection in rectangular cavity filled with nanofluids
   Year awarded: 09-06-2021
   Name of the scholar: Mr. Deepak Kumar, IIT Roorkee

6. Title: Study of thermoregulatory mechanism of human body

Year awarded: 28-12-2022
Name of the scholar: Mr. Shashikant Das, IIT Roorkee

7. Title: Tropical Summer index- a study of thermal comfort on Indian subjects
   Year awarded: Continuing
   Name of the scholar: Mr. Krishan Upadhyay, IIT Roorkee
   Name of Co-supervisor: Prof. Rajasekar Elangovan
8. Title: Study of heat and mass transfer in a single storage solar assisted liquid desiccant air conditioning System
   Year awarded: Continuing
   Name of the scholar: Ms. Kalpana, IIT Roorkee

9. Title: Forced-air pre-cooling of fruits
   Year awarded: Continuing
   Name of the scholar: Mr. Amit Kumar, IIT Roorkee
   Name of Co-supervisor: Prof. Ravi Kumar

10. Title: Study of heat pipe solar collector
    Year awarded: Continuing
    Name of the scholar: Mr. Sajesh M, IIT Roorkee
11. Title: Power generation using convection in magnetic nanofluids
    Year awarded: Continuing
    Name of the scholar: Ms. Puja Koch, IIT Roorkee
    Name of Co-supervisor: Prof. Alankrita Singh
12. Title: Turbulent natural convection in cavities with different fluids and geometries
    Year awarded: Continuing
    Name of the scholar: Mr. Adarsha Kumar, IIT Roorkee

Masters Theses Supervised

1. Title: Computational analysis of globe type control valve performance
   Year Awarded: 2011
   Name of the scholar: Bony Johns, NIT Calicut

2. Title: Study on ventilation using solar assisted desiccant wheel
   Year Awarded: 2014
   Name of the scholar: Surendra Singh, IIT Roorkee

3. Title: Natural convection in a rectangular cavity filled with water
   Year Awarded: 2014
   Name of the scholar: Ashvini Kumar Mishra, IIT Roorkee

4. Title: Effect of nano particle concentration on pressure drop and heat transfer in pipe flow
   Year Awarded: 2015
   Name of the scholar: Aditya Kumar, IIT Roorkee

5. Title: CFD simulation of a deformed nuclear reactor channel under heat up condition with hydrogen generation
   Year Awarded: 2015

Name of the scholar: Arun Jain, IIT Roorkee

6. Title: Thermal comfort using Ranque-Hilsch vortex tube
   Year awarded: 2016
   Name of the scholar: Mr. Vivekanand, IIT Roorkee

7. Title: Thermal comfort in building using solar assisted desiccant
   Year awarded: 2016
   Name of the scholar: Mr. Swaroop Kumar Gond, IIT Roorkee

8. Title: Enhancement of performance of solar flat plate collector using nanofluids
   Year awarded: 2017
   Name of the scholar: Mr. Pankaj Raj, IIT Roorkee

9. Title: Experimental and computational study of thermoregulatory mechanism of human body
   Year awarded: 2019
   Name of the scholar: Mr. Lovleet Kumar, IIT Roorkee

10. Title: Thermoregulatory mechanism of human body during cycling
    Year awarded: 2020
    Name of the scholar: Mr. Myat Sithu Lwin, IIT Roorkee

11. Title: Comparison of Performance of Series and Parallel Solar Collector
    Year awarded: 2021
    Name of the scholar: Mr. Kyaw Nyan Myint Soe, IIT Roorkee

12. Title: Performance Analysis of Evacuated tube solar collector for different configurations of absorber
    Year awarded: 2022
    Name of the scholar: Mr. Shivani Singh, IIT Roorkee
13. Title: Design of thermal comfort space for mushroom farming
    Year awarded: Continuing
    Name of the scholar: Mr. Sujith E, IIT Roorkee

Sponsored Projects as PI

SR. No.	Title of the project	Name of sponsoring agency	Amount (in Rs.)	Duration/date of submission	Co-PI
1	Flow visualization and temperature measurements for turbulent natural convection over a heated bottom surface of an enclosure	NIT Calicut	5,00,000	October 2010-September, 2012 (Completed)	
2	Natural Convection in Nanofluids	IIT Roorkee (FIG-100594-MID/13-14)	10,00,000	May, 2013 - March, 2016 (Completed)	
3	Thermal & flow interactions in the series and parallel networking of solar thermal collectors	Indo-US Science Technology Fund (DST-764-MID)	686000	May 2014-July 2014 (Completed)	
3	Experimental investigation of convective heat transfer characteristics and pressure drop in forced convection using nanofluids	Department of Science and Technology (DST) (SER-754-MID/13-14)	23,60,000	March, 2014 – February 2017 (Completed)	
4	Solar Assisted Liquid Desiccant Cooling System Using Single Storage Tank	Department of Science and Technology (DST) (DST-1417-MID/19-20)	3186,000	September, 2019-August, 2022 (Completed)	Prof. Manish Mishra
5	Design of Comfort Space for Mushroom Farming	Pervyukt Agrinnovaters Pvt. Ltd.	18,24,000	July, 2022-Ongoing	Prof. Akshay Dvivedi
6	Feasibility of using Special Engineering Fluid for Engine Cooling at Extreme Weather Conditions	DRDO (TD(T)/22-23/DMSR-566)	5859200	Accepted	Prof. Arup Kumar Das
9	Thermomagnetic convection cooling for space Application	ISRO	1873200	Submitted	Amit Kumar Sharma,ISRO

Sponsored Projects as Co-PI

SR. No.	Title of the project	Name of sponsoring agency	Amount (in Rs.)	Duration/date of submission	PI
1	Combustion, performance and emission analysis of pine oil based biodiesel fueled DI diesel engines	Uttarakhand Technical University	3,00000	October, 2019- (continuing)	Dr. Rajesh Kumar

Consultancy Projects

SR. No.	Title of the project	Name of sponsoring agency	Amount (in Rs.)	Duration/date of submission
1	Design vetting report for 6 border out posts at ITBP, Sikkim (MID-6013/19-20)	Oorja Energy	214500	November 2019- February, 2020 (Completed)
2	Design vetting report for 4 buildings at ITBP, Arunachal Pradesh (MID-6018/19-20)	Oorja Energy	143000	December 2019- March, 2020 (Completed)
3	Waste heat Recovery	Asahi India Glass Limited	150000	January 2022- July 2022 (Completed)

Professional activities

Professional responsibilities

1. Professor-incharge, Institute Transportation Section, IIT, Roorkee. Duration: February 2022-continuing
2. Core member for Institute Air conditioning Committee. Duration: April 2022-continuing
3. Chief Warden, Rajendra Bhawan, IIT Roorkee. Duration: July 2021-June 2022
4. Coordinator, Thermal Section, MIED. Duration: July 2022-Continuing
5. Professor-incharge, Maintenance, MIED. Duration: July 2019-June 2022
6. Member for Departmental Administrative Committee, Mechanical & Industrial Engineering Department, IIT Roorkee, Duration: August 2020-continuing.
7. Member for Departmental Research Committee, Mechanical & Industrial Engineering Department, IIT Roorkee, Duration: August 2020-June 2022.
8. Member for Departmental Academic Program Committee (DAPC), Mechanical & Industrial Engineering Department, IIT Roorkee, Duration: July 2018-August 2020
9. Prof.-in-charge for Refrigeration and A/C lab, June 2022-continuing
10. Prof.-in-charge for Fluid Mechanics Lab, IIT Roorkee. Duration: October 2012-June 2022
11. Coordinator/Co-coordinator, Examination time table, MIED. Duration: July 2017-June 2020
12. Member for Departmental Administrative Committee, Mechanical & Industrial Engineering Department, IIT Roorkee, Duration: July 2016-June 2017.
13. Member for Departmental Research Committee, Mechanical & Industrial Engineering Department, IIT Roorkee, Duration: July 2014-June 2017.
14. Faculty-in charge, MIED, Training and Placement centre, IIT Roorkee. Duration: July 2015-June 2018
15. Warden, Rajendra Bhawan, IIT Roorkee. Duration: July 2016-June 2017. Our mess got "Best Mess Award" among all messes.
16. Installation of "Temperature sensors calibration lab" at ISRO Satellite Centre, Bangalore
17. Lab-in charge for Hydraulics Lab, NIT Calicut
18. Programme Officer for NSS for NIT Calicut
19. Reviewers for journals:
    (i) Physics of fluids
    (ii) Renewable and sustainable energy reviews
    (iii) International J. Heat Mass Transfer
    (iv) Applied Thermal Engineering
    (v) Experimental heat transfer (Taylor and Francis),
    (vi) Heat and Mass Transfer (Springer),
    (vii) ASME-Micro/Nanoscale heat and mass transfer conference, March 3-6, 2012, Atlanta, USA
    (viii) 2013 ASME Mechanical Engineering Congress and Exposition, Nov. 15-21, 2013, Sandiego, USA
    (ix) ASME 2014 8th International Conference on Energy Sustainability, June 30-July 2, 2014, Boston, USA
20. Member for Doctoral Committee of Mechanical Engineering Department, NIT Calicut.

21. Member for Monitoring Committee for the DRDO project “Design and Development of Electro-magnetically Driven Miniature Cryocooler for IR Sensor Array”.
22. Member for Final year B.Tech Project Evaluation Committee of Mechanical Engineering Department, NIT Calicut.
23. Faculty Advisor for B.Tech Mechanical students, NIT Calicut.

Organization of Conferences/Short Term courses

1. Organizing Secretary for 49th National and 9th International Conference on Fluid Mechanics and Fluid Power (FMFP-2022) held at IIT Roorkee from 14th to 16th December 2022.
2. Organizing Secretary for 7th National Workshop on Research Methodology in Fluid Mechanics: Challenges in Computational Fluid Dynamics " held from 13th June to 17th June 2022 at IIT Roorkee.
3. Co-organizing Secretary for 25th National and 3rd International ISHMT-ASTFE Heat and Mass transfer Conference (IHMTC-2019) held at IIT Roorkee from 28th to 31st December 2019.
4. Coordinator for AICTE-sponsored workshop on “Recent Development of Power Plant Engineering”, 23rd January, 2016, IIT Roorkee.
5. Coordinator for AICTE-sponsored short term course on “Heat transfer on chemically reacting systems”, 8th December -12th December, 2014, IIT Roorkee.
6. Coordinator for 2-week ISTE Workshop on "Computational Fluid Dynamics", 12th June - 22nd June, 2012, NIT Calicut.
7. Coordinator for AICTE-sponsored Faculty Development Programme on “Advanced Flow Measurements and Visualization Techniques” conducted from 10th July to 16th July, 2011 at Department of Mechanical Engineering, NIT Calicut.
8. Coordinator for Two days National Workshop on “Energy Efficient Buildings” conducted from 14th October to 15th October, 2011 at Department of Mechanical Engineering, NIT Calicut.
9. Member of the Programme Coordination Committee of 22nd NATIONAL CONFERENCE ON I. C. ENGINES AND COMBUSTION (22nd NCICEC, 2011) 10-13, December, 2011, NIT Calicut.
10. Developed a new course titled “Experimental methods in fluid flow and heat transfer” in the year 2011 at NIT Calicut for UG level.

Professional training received

1. 2-week ISTE Workshop on "Heat Transfer", November 29-December 10, 2011, IIT Bombay.
2. AICTE sponsored Faculty Development Programme on "Advances in Hybrid Energy Systems", June 26- July 2, 2011, NIT Calicut.
3. 2-week ISTE Workshop on "Thermodynamics in Mechanical Engineering", June 14-24, 2011, IIT Bombay.
4. AICTE sponsored Faculty Development Programme on Alternative Energy options for IC Engines", June 28-July 3, 2010, NIT Calicut.
5. AICTE sponsored Faculty Development Programme on "Renewable Energy", June 21-26, 2010, NIT Calicut.
6. 2-week AICTE sponsored Faculty Development Programme on "Numerical Methods",May 22- June 2, 2010, NIT Calicut.
7. A NITC-NITK Joint Initiative Workshop on “Strategies to attain excellence in impact making research and development (SAEIMRD)”, February 3-4, NIT Calicut.
8. 2-week ISTE Workshop on "Computational Fluid Dynamics", March 12-16, 2012, IIT Bombay.

Professional Recognition/ Award/ Prize/ Certificate, Fellowship

1. Indo-US S&T Forum Bhaskar Advanced Solar Energy Fellowship and visited to University of Notre Dame, USA, 2014
2. Best paper award for the paper titled “Fluid mechanics and heat transfer of Natural Ventilation”, 8th ISHMT-ASME conference, January3-5, 2008, Hyderabad, India.
3. OUAT Merit Scholarship in B.Tech (It is given to first ten top rankers at the University)
4. Best student award in 10th standard
5. NRTS Scholarship in 7th standard

New Labs Installation

1. **Sustainable Power and Energy Systems Lab** in the year 2017
2. **Climate Simulation Lab** through IIT SMILE in the year 2018
3. **Solar Simulation Room** in the year 2019