NEERAJ AGRAWAL
Professor & Head
Dept. of Mechanical Engg.
Dr. Babasaheb Ambedkar Technological University
Vidyavihar, Lonere 402103, Maharashtra State

neeraj.titan@gmail.com neerajagrawal@dbatu.ac.in
9422472997 / 7030984106

Date of Birth: March 29, 1967
Permanent Address: 27 Pathshala Colony, Ganj Basoda 464 221, Dist: Vidisha (M.P.)

EDUCATION

- PhD from IIT Kharagpur in Mechanical Engineering, 2008
  PhD Thesis: Transcritical Carbon Dioxide Heat Pumps: Studies on Multistaging and Capillary Tube Systems
- MTech (Refrigeration and Air-conditioning), IIT Madras (1998), CGPA: 8.58
  MTech Thesis: Performance of High Temperature Heat Pumps with Hydrocarbon Mixtures
- BE in Mechanical Engineering: Samrat Ashok Technological Institute, Vidisha (M.P.), affiliated to Barkatullha University Bhopal (formerly Bhopal University), 1989, 75.6%

Academic Distinction

- Secured third place in BE Final Year
- **PhD thesis was recommended for best thesis award by overseas examiner**

PROFESSIONAL EXPERIENCE

- Research assistant at Samrat Ashok Technological Institute, Vidisha in the Department of Mechanical Engg. between 18th Oct. 89 to 29th June 90
- Lecturer in the Department of Mechanical Engineering at Pravara Rural Engineering College, Loni (M. S.) between 26th Nov. 90 to 31st Dec. 93
- Presently working as Associate Professor in the Department of Mechanical Engineering at Maharashtra state Technical University Dr. Babasaheb Ambedkar Technological University, Lonere (M. S.)

Total Teaching Experience: 25 Years

SUBJECTS TAUGHT

B. Tech.

i. Refrigeration & Air-conditioning
ii. Heat Transfer
iii. Basic Thermodynamics
iv. Applied Thermodynamics
v. Power Plant Engineering
vi. Theory of Machines
vii. Numerical Methods for Engineers
viii. Cryogenic Engineering

ix. Basic Mechanical Engineering

M.Tech:

i) Design of Air-conditioning systems
ii) Numerical Methods and Computer Techniques
iii) Advanced Heat Transfer
iv) Conservation of Energy in Buildings
v) Mathematical modeling and analysis in Thermal Engineering
vi) Advanced Refrigeration
vi)Cryogenic Systems

ACADEMIC ACTIVITIES

- Expert lectures delivered at various institutes across country
- 5^{th}, 6^{th} and 9^{th} Bry-Air award at national level for B. Tech. and M. Tech. projects, respectively
- Member, Board of Studies of Mechanical Engineering, Dr. B. A. Technological University Lonere, 2009 – 2010.
- Refrigeration and Air-conditioning lab development
- Contribution in the formation of syllabus for the subjects such as Advanced Refrigeration, cryogenics etc
- Member, Advisory Boards of Don Bosco Institute of Technology Kurla and Finolex Academy Ratnagiri
- Guided the team of Runner up of ISHRAE National Student Design Competition (NSDC) in the year 2018-19 for designing of air conditioning system for a sports complex building for better indoor air quality and energy efficiencies

INNOVATION/STARTUP

- An innovative idea An Innovative and safe Motor Bike Helmet accessories with all Weather Comfort and Ventilation got funded Rs. 1 lakh for start up for the group of five students Vijay Chougale, Rahul Salvi, Ashutosh Biradar, Vivek Mohite, Deepak Swant under Innovation & Incubation and Entrepreneurship (I2E) and patent is granted.

RESEARCH RECOGNITION

- 700+ paper citations
- Reviewed more than 70 + manuscripts of international Journals such as Int. J Ref., Applied Thermal Engineering, ISHRAE Transactions, Int J Thermal Sciences, Int. J. Energy Research, Int J of heat and mass transfer, Int J of Exergy, Int J of Low Carbon technology, Int J of Ambient Energy, Int J of Green Energy etc
- Awarded with outstanding contribution in reviewing by Energy Conversion and Management and Applied Thermal Engineering, the leading Int. Journals in the field of Energy Published by ELSEVIER

- Research Project worth Rs. 2.75 Lakh from ISHRAE Mumbai Chapter.
- Research paper presented in international conferences; 22nd IIR Beijing, 9th GL Sydney and 23rd ICR, Prague, Czeck Republic and 24th ICR, Yokohama Japan
- Nomination of PhD research work for INAE Innovative project award
- Selected by INAE for the research scheme 'Mentoring of Engineering Teacher by INAE Fellow and worked for two months (June – July 2010) at IIT Kharagpur
- Inclusion of name in Marquis Who's Who in Science and Engineering 2011-2012
- PhD research work is presented in the conference ATMOSPHERE 2010 at Brussels as a representation from India; link http://www.r744.com/articles/2010-10-05-atmosphere-2010-strong-political-support-for-natural-refrigerants-and-co2-system-innovations-ii.php
- Indian Patent (202021005846) A device for cleaning visor of safety helmets
- Google scholar link **https://scholar.google.co.in/citations?user=ltxy7lYAAAAJ&hl=en**

PG RESEARCH SUPERVISION

- Fifty seven M.Tech. projects supervised
- Three PhD completed

MEMBERSHIP OF PROFESSIONAL SOCIETIES

- Life Member of Indian Society of Technical Education
- Life Member of Indian Society of Mechanical Engineers
- Associate Member of The Institution of Engineers (India)
- Member: ISHRAE membership

TRAINING PROGRAMMES/ CONFERENCES/ SEMINARS/ WORKSHOPS ORGANISED

- One week short term Training Programme organized on "Advances and practices in Heating, Ventilation, Air conditioning and Refrigeration" during 8 – 12 Jan 2013 under TEQIP II
- Two weeks AICTE FDP on Heating, Ventilation, Air-conditioning & Refrigeration (HVAC&R): Problems & Prospects was sanctioned with the financial assistance of Rs. 7,00,000 (Rupees seven lacs only) (F. No. 1-7/AICTE/RIFD/FDP/Govt.(2)-31/2012/2012-13, Jan 30th, 2013. However, programme could not be conducted due to unavailability of the minimum no of participant 50.
- Two days National Conference on Energy: Needs and Current Trends (ENACT2014) during 19-20 December 2014 under TEQIP II.
- One week short term Training Programme organized on "Advances in Energy Research" during 7 – 11 Dec 2015 under TEQIP II
- One week short term Training Programme organized on "Safety Measures in Laboratories" during 25 – 29 Feb 2016 under TEQIP II
- Faculty orientation programme for TEQIP II sponsored Piping Engineering course organized by IITB.
- Coordinated TEQIP II sponsored Piping Engineering course organized by IITB for students.

- One week AICTE short term Training Programme organized on "Mathematical Modeling and Numerical Techniques" during 9 – 13 Dec 2019.

BOOK WRITING/CHAPTER CONTRIBUTION

- Chapter contribution on 'Capillary tube as an expansion device in a CO_2 (R744) transcritical heat pump system' in Int. Hand book of Research on Advances and Applications in Refrigeration systems and Technologies, published by IGI Global Hershey, Pennsylvania
- Passive Cooling and Human Thermal Comfort: A Case Study, Recent Advances in Mechanical Infrastructure, Springernature, 10.1007/978-981-16-7660-4.

INTERNATIONAL CONFERENCE PRESENTATION

- 22nd IIR International Congress of Refrigeration, ICR 2007, Beijing China, Aug 21–26, 2007
- International Technical conference Acreconf 2007 at New Delhi, December 7 & 8, 2007
- 9th Gustav Lorentzen on Natural Refrigerants, Sydney Australia, 12 – 14 April, 2010
- 23rd IIR International Congress of Refrigeration, ICR 2011, Prague, Czech Republic, 21-26 Aug. 2011
- 24rd IIR International Congress of Refrigeration, ICR 2015, Yokohama, Japan, 16-22 Aug. 2015.

TRAINING PROGRAMMES/ CONFERENCES/ SEMINARS/ WORKSHOPS PARTICIPATED

1. 'Solar Cooling & Heating Technology' at IIT Madras during 9th June to 13th June 1997
2. 'Modern Measurement Techniques of Turbo-machinery', IIT Madras, 7-13 July 1997
3. 'Stirling Cycle Liquid Nitrogen' at IIT Bombay during 15th June to 19th June 1998
4. 'Special Topics in Fluid Mechanics' at IIT Kanpur during 20th July to 25th July 1998
5. 'Alternate Eco Friendly Refrigerants' at MACT Bhopal during 30th Nov. to 12th Dec. 1998
6. 'Education Technology' at Dr. BATU, Lonere during 10th May to 21st May 1999
7. 'Non-conventional Refrigeration & Cryogenic Technology' at GNDCE, Ludhiana during 21st July to 3rd August 1999
8. 'Recent Trends in Refrigeration Technology' at KREC Surathkal during 12th Nov. to 26th Nov. 1999
9. 'Application of ISO 9000 in Technical institution' at Bhopal Engg. College, Bhopal during 20th Dec. to 31st Dec. 1999.
10. 'Treatment Technology for Waste Management and Bio-energy' at MACT Bhopal during 5th June to 17th June 2000
11. 'System Modeling and Simulation' at SLIET Longowal during 16th July to 27th July 2001
12. All India Seminar on Refrigeration and Air-conditioning organised by The Institute of Engineers (India) Aurangabad local centre, Oct. 30-31,1998
13. National seminar on Recent trends in energy efficient lighting system at SATI Vidisha, Feb. 5-6, 1999
14. 18th International Cryogenic Engineering conference at IIT Bombay, Feb. 21-25, 2000

15. Workshop on Alternative Refrigerants and Cycles at NCL, Pune, July 17-19, 2000
16. National Conference on thermal Power Plant Operation and Maintenance Strategies at MACT Bhopal, Feb 24-25,2001
17. 17th National Convention of Mechanical Engineers at GSITS Indore, Nov 26-27,2001
18. International Conference on Non-conventional Energy Resources at Pune, 14th Dec. 2001
19. International Conference on Recent Advances in Solar Energy Conversion Systems at MACT, Bhopal, Sep. 28-29, 2002
20. International Conference on Computational Fluid Dynamics, Acoustics, Heat Transfer and Electromagnetics at College of Engineering Andhra University Visakhapatnam, July 24-25, 2006.
21. 22nd IIR International Congress of Refrigeration, Beijing, China, Aug 21-26, 2007.
22. ISHRAE &ASHRAE sponsored Int Conference Acreconf 2007 Challenges to Sustainability, Dec. 7 & 8, 2007.
23. CEP course on Cryocoolers - Theory, Design and Practice, IIT Bombay, 19–22 Feb, 2008.
24. 9th IIR Gustav Lorentzen Conference on Natural Working Fluids, Sydney, 2010.
25. Int. conference iCOST 2011 on Sunrise Technologies, SSSVP Dhule, Jan, 13-15, 2011.
26. One week program on "Advances in Material and Manufacturing Processes" at Dr. B. A. Technological University Lonere, 27June – 1 July 2011.
27. 23nd IIR International Congress of Refrigeration ICR 2011, Prague, Czech Republic, 21-26 Aug. 2011.
28. Faculty Development programme in Entrepreneurship at SMVDTU Jammu sponsored by NSTEDB and organized by EDI Ahemdabad, 12 – 23 March, 2012.
29. State Level workshop on Industry Institute Interaction at COEP Pune, Aug. 11, 2012.
30. One week TEQIP program on Research Methodology at Dr. B. A. Technological University Lonere, 26 – 30 Nov 2012.
31. 57th ISTAM congress at Defence Institute of Advanced Technology Pune, Dec. 17 – 20 2012.
32. One week program on Institute Building Through Appreciative Mindset at IIT Bombay under TEQIP II during Aug 29, Sept 2 – 4, 16 2013.
33. One week program on Inter-disciplinary aspects of Modelling of manufacturing processes at IIT Bombay under TEQIP II during Oct 2– 6, 16 2013.
34. National Conference on Refrigeration and Air Conditioning 2013, Dec 12 -14 2013, IIT Madras.
35. Recent trends in Mechanical and Production Engineering 2013, Dec 19 -20 2013, Vidisha
36. 22nd National & 11th ISHMT-ASME Heat and Mass Transfer Conference, Dec 28 - 31, 2013, IITKgp.
37. Two days workshop on Measurement techniques in thermal engineering at IIT Indore, May 30 – 31, 2014.

38. One-week DST sponsored National Training Programme on Entrepreneurship Development and Management for Scientists & Technologists working in Govt. Sector conducted by EDI Ahemdabad, during December 8-12, 2014.
39. Two days workshop on Pedagogy under TEQIP II conducted by Dr. BATU Lonere, during December 29-30, 2014.
40. 24th IIR International Congress of Refrigeration ICR 2015, Yokohama, Japan, 16-22 Aug. 2015.
41. Piping Engineering course conducted by Department of Chemical Engineering IIT Bombay 2016
42. Three days workshop on Outcome Based Education at DBATU Lonere during June 2016.
43. One week Automation course at BOSCH automation center Maysore, 17 – 22 Oct 2016.
44. Recent Advances in Air-conditioning and Refrigeration (RAAR 2016) at C. V. Raman College of Engineering Bhubenshear, 10 – 12 Nov 2016.
45. CII summits in 2017 and 2018
46. Int Conference on Renewable Energy and Climate Change REC 2019 at IITRAM Ahmadabad, 1 -2 Feb 2018.
47. Int. Mech. Engg. Congress on Sustainable Development in Mechanical Engineering at NIT Trichi, 28 – 30 Nov 2019.
48. Conference on Technology of Future Cities 2021 (CTFC 2021) at Pillai College of Engineering 8 – 9 Oct 2021.
49. Participated in AICTE Examination reform workshop during 23 - 25 Aug 2021
50.

PUBLICATIONS

International Journals

1. **Agrawal N**, Bhattacharyya S, Sarkar J. Optimization of two-stage transcritical carbon dioxide heat pump cycles, Int. J. Thermal Sciences, 2007; 46(2); 180-187. Impact Factor 4.041, citation 94
2. **Agrawal N**, Bhattacharyya S. Studies on a two-stage transcritical carbon dioxide heat pump cycle with flash inter-cooling, Appl. Thermal Engg, 2007; 27(2-3); 299-305. Impact factor 3.634, citation 49
3. **Agrawal N**, Bhattacharyya S. Adiabatic capillary tube flow of carbon dioxide in a transcritical heat pump cycle, Int. J. Energy Research, 2007; 31(11); 1016-1030. Impact factor 2.598, citation 31
4. **Agrawal N**, Bhattacharyya S. Non-adiabatic capillary tube flow of carbon dioxide in a transcritical heat pump cycle, Energy Convers Mgmt., 2007; 48(9); 2491-2501. Impact factor 5.472, citation 16
5. **Agrawal N**, Bhattacharyya S. Performance evaluation of a non-adiabatic capillary tube in a transcritical CO_2 heat pump cycle, Int. J. Thermal Sciences, 2008; 47(4); 423-430. Impact Factor 4.041, citation 18

6. **Agrawal N**, Bhattacharyya S. Optimized transcritical CO2 heat pumps: performance comparison of capillary tubes against expansion valve, Int J Refrigeration, 2008; 31(3); 388-395. Impact factor 2.877, citation 40
7. **Agrawal N**, Bhattacharyya S. Homogeneous versus separated flow models: capillary tube flow in a transcritical CO_2 heat pump, Int. J. Thermal Sciences, 2008; 47; 1555-1562. Impact Factor 4.041, citation 23
8. **Agrawal N**, Bhattacharyya S. Parametric study of a capillary tube-suction line heat exchanger in a transcritical CO_2 heat pump cycle, Energy Convers Mgmt, 2008; 49; 2979-2985. Impact factor 5.472, citation 8
9. **Agrawal N**, Bhattacharyya S. Exergy assessment of an optimized capillary tube based transcritical CO_2 heat pump cycle, Int. J. Energy Research, 2009; 33(14); 1278-1289. Impact factor 2.598, citation 10
10. Sarkar J, **Agrawal N**. Performance evaluation and optimization of transcritical CO2 cycle with parallel compression economization, Int. J Thermal Sciences 2010; 49; 838-843. Impact Factor 2.470, citation 6
11. Bhattacharyya S, **Agrawal N**, Burnwal S. Flow rate prediction of an adiabatic capillary tube in a transcritical CO_2 system: an analytical approach, Int. J Low Carbon Technology, 2010 5(4) 245 - 249. Impact Factor 1.054
12. **Agrawal N**, Bhattacharyya S. Experimental investigations on adiabatic capillary tube in a transcritical CO_2 system for simultaneous water cooling and heating, Int. J Refrigeration, 2011 34(2) 476 – 483. Impact factor 2.877, citation 14
13. **Agrawal N**, Sarkar J, Bhattacharyya S. Thermodynamic analysis and optimization of novel two-stage transcritical N_2O cycle, Int. J Refrigeration, 2011 34 991-999 . Impact factor 1.793, citation 4
14. **Agrawal N,** Bhattacharyya S, Nanda P. Flow characteristics of capillary tube with CO_2 transcritical refrigerant using new viscosity models for homogeneous two phase flow, Int. J Low Carbon Technology, 2011 6 243 - 248. Impact Factor 1.054
15. Sawant A., **Agrawal N**, Nanda P. Performance assessment of an evaporative cooling assisted window air-conditioner, Int. J Low Carbon Technology, 2012 7(2) 128 – 136. Impact Factor 1.054
16. **Agrawal N,** Bhattacharyya S. Study of helical coiled adiabatic capillary tubes for transcritical CO_2 Expansion, Int. J Low Carbon Technology, 2013 8(4) 245 – 252. Impact Factor 1.054
17. Dyma A.**, Agrawal N,** Nanda P. Energetic and exergetic assessment of transcritical N2O heat pump system, Int. J Low Carbon Technology, 2014, 9(4), 277 – 283. Impact Factor 1.054
18. **Agrawal N,** Naik S S**, Gawale Y.** Experimental investigation of Vortex Tube using natural substances, Int. Communication Heat and Mass Transfer, 2014, 52, 51 - 55. Impact factor 2.208
19. **Sahu A K,** Agrawal N, Nanda P. A parametric study of transcritical CO_2 simple cooling cycle and combined power cycle, Int. J Low Carbon Technology, 2017 12(4) 383 – 391. Impact Factor 1.054
20. Jadhav P, **Agrawal N**. A comparative study in the straight and a spiral adiabatic capillary tube, International Journal of Ambient energy, 2019, 40(7). https://doi.org/10.1080/01430750.2017.1422146.

21. Jadhav P, **Agrawal N**. Numerical study on choked flow of CO_2 refrigerant in helical capillary tube, International Journal of Air-Conditioning and Refrigeration, 2018, 26(3) 1850027.

22. Kishor Mane, **Neeraj Agrawal**, Abhijit Date, Some Investigations of External Shading Devices on Thermal and Day lighting Performance of a Building**, ICAER,IIT Bombay, 2017, Springer Proceedings in Energy,** ADVANCES IN ENERGY RESEARCH, VOL 1, 978-981-15-2665-7, 469280_1_En (41)**.**

23. Jadhav P, **Agrawal N**. Flow behavior of spiral capillary tube for CO2 transcritical cycle, Journal of Thermal Analysis and Calorimetry, 2019 (Springer, 2.084) accepted.
24. Patil O P**,** S. Shet, M.Jadhav**, Agrawal N**, Energetic and Exergetic studies of modified CO2 transcritical Refrigeration Cycles, Int. J Low Carbon Technology (Accepted), 2019.
25. Jadhav, P., Agrawal, N. (2020). "Choked flow behavior of CO_2 refrigerant flowing through the spiral capillary tube", *International Journal of Air-Conditioning and Refrigeration*, (Accepted), 2019.
26. Jadhav, P., Agrawal, N. (2020). "Comparative study on a straight and helical capillary tube for CO_2 and R22 refrigerant", *Journal of Thermal Science and Engineering Applications* (ASME)(Accepted), 2019.
27. Jadhav P, **Agrawal N**. A comparative study of flow characteristics of adiabatic spiral and Helical capillary tube in a CO2 transcritical system, International Journal of Ambient energy, https://doi.org/10.1080/01430750.2021.1913645
28. Date Abhijit, Patil Omprakash, Shet Shrikant, **Agrawal N**. Experimental studies on Transcritical CO_2 heat pump system for simultaneous water cooling and heating application**,** Int. J. Green Energy, An Int. j. of Taylor and Francis, https://doi.org/10.1080/15435075.2021.1941045
29. Jadhav P, **Agrawal N**. A Review of Flow Characteristics of the Straight and Coiled Capillary Tubes, Int. J of Air conditioning and Refrigeration, 29(3), 2130004, 2021, DOI10.1142/S2010132521300044.

Articles in National Journal and Trade Magazines

1. **Agrawal N**, Verma S. K. Integrated Design Approach- A New Strategy for Energy Conservation in Buildings, IREDA News, 2004; 14(4); 55-57.
2. **Agrawal N**, Bhattacharyya S, Nanda P. Un estudio experimental sobre la evaluación del rendimiento de un sistema de bomba de calor con co2 transcrítico variando la carga de refrigerante, Frio-Calor-Aire Acondicionado, Sept. 2011, Nr 439, Volume XXXIX.
3. **Agrawal N**, Bhattacharyya S. Carbon Dioxide: A Promising Natural Alternative Refrigerant, Cooling India Magazine, March 2012.
4. **Agrawal N**, Aditya Sawant, Prashant Nanda. Improving Energy Efficiency in Window Air-conditioner, Cooling India Magazine, May 2012.
5. **Agrawal N,** Patil Omprakash**,** A Novel Energy Efficient Water Cooler, Vol. 8 No. 7, Cooling India Magazine, Oct 12.
6. **Agrawal N.** Passive cooling - A case study, Cooling India Magazine, Nov 12
7. **Agrawal N,** Digvijay A Patil. Indirect-direct evaporative cooling system– A cost effective solution for cooling, Cooling India Magazine, Oct 13.
8. **Agrawal N,** Nilesh Babar. Nocturnal cooling assisted evaporative cooling system, Cooling India Magazine, Feb 15.
9. **Agrawal N,** S. S. Naik, Gawale Y. Vortex Tube: An alternate cooling solution, Cooling India Magazine, Oct 15.

10. **Agrawal N**, Try Generation: Way of sustainability, Cooling India Magazine, 2018

Conference Proceedings

1. **Agrawal N**, G. Venkatarathanam, S. Shrinavasmurthy; Study of Ternary Hydrocarbon Zeotropic Mixture as Alternatives to CFC 114 in High Temperature Heat Pumps at IIR Conference, IIT New Delhi.
2. **Agrawal N**; Energy Efficient and Effective Lighting' at National Seminar, SATI, Vidisha.
3. **Agrawal N**; 'Performance of High Temperature Heat Pumps With Hydrocarbon Mixture' At National Seminar, Bhopal.
4. **Agrawal N**, C.P.Tupe, V. L. Wagmare; 'Sizing of Capillary Tube for Stratospherically Safe Alternate Refrigerant R-134a' at 17^{th} National Convention of Mechanical Engineers, Indore.
5. **Agrawal N**, H.N. Warhatkar; 'Some Observations on Energy Conservation in Buildings' at International Conference, Pune.
6. **Agrawal N**, S.K.Verma; 'Improved Solar Water Heating System: A case Study' at International Conference, Pune.
7. **Agrawal N**, S.K. Verma, Parag Hardas; 'Simulation and Experimental Verification of Thermosyphon Solar Water Heating System' ICSECS, Bhopal.
8. **Agrawal N**, S. K. Verma; 'Integrated Design Approach- A New Strategy for Energy Conservation in Buildings' at AEC 2003 organized by The Institute of Engineers (India) M.P. State Centre, Bhopal, 1-2 Nov 2003.
9. **Agrawal N**, Bhattacharyya S. Adiabatic capillary tube flow in a transcritical carbon dioxide heat pump, 7th IIR Gustav Lorentzen Conference on Natural Working Fluids, Trondheim, Norway, May 28-31, 2006.
10. **Agrawal N**, Bhattacharyya S. Studies of non-adiabatic capillary tube flow characteristics of carbon dioxide in a transcritical heat pump cycle, International Conference on Computational Fluid Dynamics, Acoustics, Heat Transfer and Electromagnetics, Visakhapatnam, India, July 24-25, 2006.
11. **Agrawal N**, Bhattacharyya S. Optimization of capillary tubes in a transcritical carbon dioxide heat pump system for simultaneous cooling and heating application, 22^{nd} IIR International Congress of Refrigeration, Beijing, China, Aug 21-26, 2007, paper no. ICR07-E2-705.
12. **Agrawal N**, Bhattacharyya S. Capillary tube-suction line heat exchanger performance in a transcritical CO_2 heat pump system, 19^{th} National & 8^{th} ISHMT-ASME Heat and Mass Transfer Conference, January 3-5, 2008.
13. **Agrawal N**, Bhattacharyya S. Experimental investigations on an adiabatic capillary tube in a transcritical carbon dioxide heat pump system, 8th IIR Gustav Lorentzen Conference on Natural Working Fluids, Copenhagen, Denmark, September 7-10, 2008.
14. **Agrawal N**, Bhattacharyya S, Nanda P. An experimental study on performance assessment of transcritical CO_2 heat pump system under varying refrigerant charge, 9th IIR Gustav Lorentzen Conference on Natural Working Fluids, Sydney, 2010.
15. Warkhade G, **Agrawal N**. Experimental studies on desiccant wheel based hybrid air-conditioning system, ICARE, MANIT Bhopal, 2010.

16. Fulpagare YS, **Agrawal N**, Patil MG, An experimental study of air temperature profile in an air-conditioned room, i-COST, SSSVP Dhule, 13-15 Jan 2010.
17. **Agrawal N**, Bhattacharyya S. Study of helically coiled adiabatic capillary tubes for transcritical CO_2 expansion, HEFAT 2011, Mauritius, 11 – 13 July 2011.
18. Sawant Aditya, **Agrawal N**, Nanda P. Performance improvisation of window air-conditioner employing indirect evaporative cooling, ICR 2011, Prague, Czech Republic, 21-26 Aug. 2011.
19. Ganacharyya Prabhu**, Agrawal N**, Nanda P. Optimization and performance evaluation of a combined power and refrigeration cycle, ICAMB 2012, VIT Vellore, 9-12 Jan. 2012.
20. Dhumal Onkar , **Agrawal N**. Experimental Investigation of the solid desiccant hybrid air-conditioning system, ICORT 2012, Pune, 9-12 Feb. 2012.
21. Chandratre Nitin, **Agrawal N.** Thermodynamic analysis and optimization of two stage transcritical Nitrous oxide heat pump cycle, ETEE 2012, DIT, Dehradun.
22. **Agrawal N**, Pandit U, Pawar D, Aher M, Fulpagare Y. Experimental investigation of energy conservation in buildings employing natural cooling techniques, ICGTI 2012, 29 – 30 March 2012, RCE, Mumbai.
23. Gawale Y, **Agrawal N**, Naik S. Exprimental investigation of Vortex tube using natural substances, 57th ISTAM Congress, 17 – 20 Dec 2012, DIAT Pune.
24. **Agrawal N**, Milind S Patil. Draft: Heat Loss characterization of Solar Scheffler Receiver, ASME 2013 gas turbine conferenece GTIINDIA 2013, Dec 5 -6 2013, Banglore.
25. Patil D, **Agrawal N**, Experimental investigations of the two stage indirect direct evaporative cooling system, RTMPE 2013, Dec 19 -20 2013, Vidisha.
26. **Agrawal N**, Sawant A. Experimental investigations of direct evaporative cooling system, NCRAC 2013, Dec 12 -14 2013, IIT Madras.
27. Patil O P**, Agrawal N**, Nanda P. Performance evaluation of a Novel energy efficient water cooler, NCRAC 2013, Dec 12 -14 2013, IIT Madras.
28. **Agrawal N**, Bhattacharyya S. Reverse heat transfer and re-condensation phenomena in non-adiabatic capillary tube of transcritical CO_2 systems, 22nd National & 11th ISHMT-ASME Heat and Mass Transfer Conference, Dec 28 - 31, 2013, IITKgp.
29. **Agrawal N,** Nilesh Baber, Sawant Aditya, Experimental investigation of nocturnal cooling assisted evaporative cooling system, ICR 2015, Yokohama, Japan, 16-22 Aug. 2015.
30. Omprakash Patil**, Agrawal N** Energetic comparison of Transcritical CO_2 Heat Pump system cycle configurations, in Int. Conference on Energy systems and Development ICESD 2015, Pune.
31. Shrikant Seth**,** Omprakash Patil, **Neeraj Agrawal** Energetic and Exergetic studies of Modified CO_2 Transcritical Refrigeration Cycles, 12th IIR Gustav Lorentzen Conference on Natural Working Fluids, Edinburgh, Scotland, Aug 21-24, 2016.
32. Pravin Jadhav, **Agrawal N,** Omprakash Patil Flow Characterization of Helically Coiled Capillary Tubes for Transcritical CO2 Refrigerant Flow, Int. Conference on Recent Advancement in Air Conditioning and Refrigeration, RAAR 2016, 10-12 November 2016, Bhubaneswar, India, Published in **ELSEVIER Energy Procedia**.
33. **Agrawal N,** Shriganesh Patil, Prasant Nanda Experimental Studies of a Domestic Refrigerator Using R290/R600a Zeotropic Blends, Int. Conference on Recent Advancement

in Air Conditioning and Refrigeration, RAAR 2016, 10-12 November 2016, Bhubaneswar, India, Published in **ELSEVIER Energy Procedia**.

34. Mayur Brahmankar, Neeraj Agrawal, Abhijit Date, Performance analysis of windows with Integration of daylight and artificial light: A case study, Int Conference on ATSMDE 2017, VJTI Mumbai, 21-22 Dec 2017,**SSRN eLibrary**.

35. Prathamesh Gund, **Neeraj Agrawal**, Food supply Chain management: Need of the Hour, Conference on Technologies for future cities, Mahatma Education Society's Transactions and Journals' Conference Proceedings ISBN 978-93-82626-27-5 8-9 Jan 2019

36. Juned R Kazi, **Neeraj Agrawal**, Experimental Investigation of Dehumidifier Hybrid Air conditioner Integrated Zeotropic Refrigerant Blend R-407C Air Source Water Heat Pump, REC 2019, IITRAM Ahemdabad, https://doi.org/10.1007/978-981-32-9578-0_16, **ISBN 978-981-32-9577-3, PP 175 – 183, Springer Nature Singapore**

37. Gajbhiye M, Agrawal N, Naik SS. Experimental studies of the multi nozzle Ranque-Hilsch vortex tubes, 25th National & 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC), Dec 28 - 31, 2019, IIT Roorkee, India.

38. Date Abhijit, N Agrawal. Capillary tube flow characterization of a transcritical CO2 cycle using separated two-phase flow model, Int. Conference on Recent Advancement in Air Conditioning and Refrigeration, RAAR 2019, 28-30 November 2019, Bhubaneswar, India, Published in Lecture notes in Mechanical Engineering, **Springer,** ISBN 978-981-15-6360-7 (eBook), https://doi.org/10.1007/978-981-15-6360-7.

39. Abhijeet Mane, N Agrawal, Pravin jadhav, M. Thomre. Flow behaviour of capillary tube with transcritical N_2O cycle, International Mechanical Engineering Congress, 29 – 1 Dec 2019, NIT Trichi.

40. Pravin Jadhav, **Agrawal N,** Ajit Mane Comparative Study of the Straight Capillary Tube for CO2 and R22 refrigerants, Proceedings of Int. Conference in Mechanical and Energy Technology ICMET 2019, Published by Springer Smart Innovation, systems and Technologies Book series, https://doi.org/10.1007/978-981-15-2647-3

41 Pravin Jadhav, Agrawal N, Sahu A, Patil S, Aldar D, Tapase A Influence of geometric and operating parameters on the performance of the helical capillary tube for the R744 refrigerant, 3rd Int. conf on Advances in Mechanical Engineering (ICMAE 2020), IOP Conf. Series: Materials Science and Engineering **912** (2020) 042046 IOP Publishing doi:10.1088/1757-899X/912/4/042046

42 Kiran Shende, Neeraj Agrawal, Passive Cooling and Human Thermal Comfort: A Case Study, 3rd Int. conference on Recent Advances in Mechanical Infrastructure at IITRAM Ahmedabad, 6 – 8th Aug 2021.

43 Prathamesh Gund, Neeraj Agrawal, Studies on Fish supply chain management: A case study, ICAET Conference 5 – 6th Sept 2021 at VIMEET, Khopali.

44 Kiran Shende, Neeraj Agrawal, Enhancement of thermal and noise comfort environment using High Volume Low Speed Fan (HVLS): A Case Study in Conference on Technologies for future cities at PCE Panvel, 8 – 9th Oct 2021

ADMINISTRATION

Past

- Sports Chairmen, 2002-2004, Dr. BATU Lonere
- Faculty Advisor- ISTE Students' Chapter, 2001- 2003, Dr. BATU Lonere
- NCC Officer 2002 - 2003
- Faculty advisor- M. Tech. (Thermal & Fluids Engg.) programme 2009 – 2016
- Coordinator, Industry Institute Interaction Cell, TEQIP II

Present

- Training and Placement officer since 2008
- Faculty Advisor- ISHRAE Students' Chapter Dr. BATU Lonere since 2008
- Member of various committees
- Head of the Department, Mech.Engg. since, 18th June 2020