**Bio Data**

i. Name Dr. Akhilesh Gupta

ii. Address Dr. Akhilesh Gupta, Professor,

Department of Mechanical & Ind. Engg.

Indian Institute of Technology Roorkee

Roorkee - 247667

iii. Date of birth Nov.15, 1956

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iv. Present Institution's address IIT Roorkee, Roorkee-247667

v. **Academic qualifications**

Degree Year University/Institution

B.E.(Mechanical) 1977 University of RoorkeeMM M.Tech(Mech.-Thermal) 1983 University of Roorkee MBA(Finance) 2000 IGNOU, New Delhi Ph.D. (Mechanical) 1992 University of Roorkee

vi. **Employment History**

|  |  |  |  |
| --- | --- | --- | --- |
| Period | Name of Organization/ Institute | Present/Last Post | Specialization |
| 22.10.84 to contd. | IIT Roorkee | Professor | Heat Transfer, Refrigeration & Air-conditioning, Solar Energy, Energy Management, Fire Engg. |
| 9.7.87 to 29.03.88 | IFCI | Industrial Finance Officer (Technical) | Financing of Industries |
| 17.1.84 to 19.10.84 | NTPC | Engineer | Erection of Thermal Power Plants |
| 15.5.78 to 13.1.84 | BHEL | Engineer | Erection of Thermal Power Plants |

viii **Award/Prize/Certificate etc.**

(a) National Scholarship

(b) Gold Medal in M.Tech.for standing Ist in Ist class in M.Tech.(Thermal)

ix**. Research publications**

International Referred Journals : 51

Conf. Proceedings : 88

x **Number of Thesis Supervised** Awarded In progress

Ph.D. 14 3

M.Tech. 40 2

xi **List of subjects taught to U.G./P.G. Classes**

U.G.Classes P.G. Classes

Engg.Thermodynamics Advanced Heat Transfer

Fluid Mechanics Advanced Fluid Mechanics

Heat Transfer CFD & Heat Transfer

Fluid Machines Direct Energy Conversion

Thermal Power Plants Design of Thermal Systems

Solar Energy Solar Energy

Energy Management Refrig. & A.C. Systems

Workshop Ist year

Machine Drg. Ist year

xii **Sponsored R&D Projects**

1. Development of Fire Test Facility for Defining the Design Fire Environment Relevant For NPPs, Department of Atomic Energy, Rs. 400.00 Lac.

2. Full Length Channel Heat Up Experiments, Department of Atomic Energy, Rs. 236.62 Lac

3. Experimental Investigation of the Rewetting of Fuel Rod Cluster, Department of Atomic Energy, Rs. 78.95 Lac

4. Experimental Investigation of the Asymmetric Heating of Pressure Tubes, Department of Atomic Energy, Rs. 77.23 Lac.

5. Assessment of Radiation Heat Transfer for 19 Pin PHWR fuel bundle under Heat-up Condition, Department of Atomic Energy, Rs. 54.96 Lac.

6. Channel heat-up Experiment: ballooning of pressure tube, Department of Atomic Energy, Rs. 43.47 Lac

7. Channel Heat-up Experiment: pressure tube sagging in accidental coolant loss, Department of Atomic Energy, Rs. 40.50 Lac

8. Enhancement of Heat Transfer During Condensation of Ozone Safe Refrigerants Over Single Horizontal Integral-Fin Tubes, Department of Science & Technology, Rs. 19.5 Lac.

9. A Study of Forced Convection Condensation of Eco-friendly Refrigerants Inside a Horizontal Tube, Department of Science & Technology, Rs. 18.96 Lac

10. Modernisation of Heat Transfer Lab., AICTE N.Delhi, Rs. 10 lac

11. Critical Heat Flux Data Collection under Pool Boiling Conditions, Department of Atomic Energy, Rs. 7.72 Lac.

12. Development of Energy Efficient Heat Exchangers for Refrigeration & Air-conditioning Industries, Department of Science & Technology, New Delhi and Ministry of Science & Technology, Kiev, Ukraine , Rs. 6.55 Lac.

13. Developing highly efficient Counter flow solar air heater, AICTE N.Delhi Rs. 5.00 lac

**LIST OF PUBLICATIONS**

**International Referred Journals**

1. Akhilesh Gupta, J. S. Saini and H. K. Varma, Boiling Heat Transfer in Small Horizontal Tube Bundles at Low Cross Flow Velocities, Int. J. Heat Mass Transfer, Vol. 38, No. 4, pp. 599-605, 1995.

2. Akhilesh Gupta, J. S. Saini and H. K. Varma, Cross Flow Boiling Heat Transfer in small tube bundle, Journal of Energy Heat and Mass Transfer, Vol. 18, No. 1, pp. 9-15, 1996.

3. R.D. Misra, P.K. Sahu and Akhilesh Gupta, Application of the Exergetic Cost Theory to the LiBr/HsO Vapour Absorption System, J. of Energy, Vol. 27, No. 11, pp. 1009-1025, 2002,.

4. R.D. Misra, P.K. Sahu, S. Sahoo and Akhilesh Gupta, Thermoeconomic Optimization of a Single-Effect H2O/LiBr Absorption Chiller System, International Journal of Refrigeration, Vol. 26(2), pp. 158-169, 2003.

5. Sahoo, P.K., Misra, R. D., and Gupta, A., “Exergoeconomic Optimization of an Aqua Ammonia Absorption Refrigeration System”, International Journal of Exergy.,VoI.1 (1), pp. 82-93, 2004.

1. Misra, R. D., Sahoo, P.K., and Gupta, A., “Thermoeconomic Evaluation and Optimization of a Double-Effect H2O/LiBr Vapour-Absorption Refrigeration System”, International Journal of Refrigeration, Vol. 28*,* pp. 331-343, 2005.
2. Misra, R. D., Sahoo, P.K., and Gupta, A., “Thermoeconomic Optimization of a LiBr/H2O Absorption Chiller using Structural Method”, Transactions of ASME: Journal of Energy Resources Technology, Vol. 127, pp. 119-124, 2005.

8. Ravi Kumar, Akhilesh Gupta and SandeepVishvakarma, Condensation of R-134a Vapour Over Single Horizontal Integral-Fin Tubes: Effect of Fin Height, International Journal of Refrigeration,Vol.28, pp. 428-435, 2005.

9. Akhilesh Gupta, Enhancement of Boiling Heat Transfer in a 5x3 Tube Bundle, International Journal of Heat and Mass Transfer , Vol. 48, pp.3763-3772, 2005.

10. Misra, R. D., Sahoo, P.K., and Gupta, A., “Thermoeconomic Evaluation and Optimization of an Aqua-Ammonia Vapour-Absorption Refrigeration System”, International Journal of Refrigeration, Vol. 29, pp. 47-59, 2006.

11. Ritunesh Kumar, Akhilesh Gupta, and Nirupam Rohatgi, “Boiling Heat transfer on Wire-Mesh-Wrapped Extended Tube Surfaces” Ind. Eng. Chem. Res., Vol. 45, No.26, pp. 9156-9160, 2006.

12. Rajeev Kumar, Ravi Kumar and Akhilesh Gupta, “Analysis of the Ventilation System of an Isolated Room for a Hospital” International Journal of Ventilation, ISSN 1473-3315, Vol..7, No2. pp. 139-149, Sept. 2008.

13. Vikas J. Lakhera, Akhilesh Gupta and Ravi Kumar, “Investigation of Coated Tubes in Cross-Flow Boiling”, International Journal of Heat and Mass Transfer, Vol. 52, pp. 908-920, 2009.

14. M.K. Mittal, Ravi Kumar, Akhilesh Gupta, “Numerical Analysis of Adiabatic Flow of Refrigerant through a Spiral Capillary Tube”, International Journal of Thermal Sciences, 48, pp. 1348-1354, 2009.

15. R. Kathiravan, Ravi Kumar, Akhilesh Gupta, Ramesh Chandra, “Characterization and Pool Boiling Heat Transfer Studies of Nanofluids” ASME Journal of Heat transfer, Vol. 131 No.8 pp. 081902-1-8, August 2009.

16. D. Senthil Kumar, K. Murugesan and Akhilesh Gupta,”Effect of Thermo-Solutal Stratification on Recirculation Flow Patterns in a Backward-Facing Step Channel Flow”, Int. J. Numer, Meth. Fluids (2009). Published online in Wiley Inter Science ([www.interscience.wiley.com](http://www.interscience.wiley.com)), DOI: 10.1002/fld.2148.

17. Akhilesh Gupta, Ravi Kumar, Vineet Kumar, “Nucleate Pool Boiling Heat Transfer over a Bundle of Vertical Tubes”, Int. Comm. In Heat and Mass Transfer, Vol. 37, pp. 178-181, 2010.

18. D. Senthil Kumar, K. Murugesan and Akhilesh Gupta, “Thermo-Solutal Buoyancy Induced Mixed Convection in a Backward Facing Step Channel using velocity-Vorticity Formulation”,Numerical Heat transfer, Part A, 56, pp. 604-630, 2009.

19. R. Kathiravan, Ravi Kumar, Akhilesh Gupta, Ramesh Chandra, P.K.Jain “Pool boiling characteristics of carbon nanotube based nanofluids over a horizontal tube” ASME Journal of Thermal Science and Engineering Applications, Vol. 1, No. 2, pp. 022001-7, June 2009.

20. M.K. Mittal, Ravi Kumar, Akhilesh Gupta “An experimental study of the flow of R-407C in adiabatic helical capillary tube”, International Journal of Refrigeration, Vol. 33, pp. 840-847, 2010.

21. R. Kathiravan, Ravi Kumar, Akhilesh Gupta, Ramesh Chandra, “Preparation and pool boiling characteristics of copper nanofluids over a flat plate heater” International Journal of Heat and Mass Transfer, Vol. 53, pp.1673-1681, 201022. M.K. Mittal, Ravi Kumar, Akhilesh Gupta, “An experimental study of the flow of R-407C in an adiabatic spiral capillary tube”, ASME Journal of Thermal Science and Engineering Applications, Vol. 1, paper 041003, 2009.

23. D. Senthil Kumar, K. Murugesan, Akhilesh Gupta, “Numerical Analysis of Interaction between Inertial and Thermo Solutal Buoyancy Forces on Convective Heat transfer in a Lid Driven Cavity”, Journal of Heat Transfer, Vol. 132, pp.112501-11, Nov.2010.

24. B.M. Ramani, Akhilesh Gupta and Ravi Kumar, “Performance of a double pass solar air collector”, Solar Energy, Vol. 84 , pp.1929-1937, 2010.

25. R. Kathiravan,, R. Kumar, A. Gupta, R. Chandra, ,and P.K.. Jain, "Pool boiling characteristics of multiwalled carbon nanotube (CNT) based nanofluids over a flat plate heater, Int J Heat & Mass Transfer, Vol 54, 1289-1296, 2011.

26. Raja Kathiravan, Ravi Kumar, Akhilesh Gupta & Ramesh Chandra (2012): Preparation and Pool Boiling Characteristics of Silver Nanofluids Over a Flat Plate Heater, Heat Transfer Engineering, 33:2, (2012), 69-78

27. Vikas J. Lakhera, Akhilesh Gupta & Ravi Kumar (2012): Enhanced Boiling Outside 8 × 3 Plain and Coated Tube Bundles, Heat Transfer Engineering, 33(9), (2012), 828-834,

28. Chitranjan, Kumar, R., Gupta, A., Chatterjee, B., Effect of Jet Diameter on the Rewetting of Hot Horizontal Surfaces during Quenching, Experimental Thermal and Fluid Science, Vol.42, (2012),25-37

29. Chitranjan Agrawal, Ravi Kumar, Akhilesh Gupta, Barun Chatterjee, Rewetting and maximum surface heat flux during quenching of hot surface by round water jet impingement , International Journal of Heat and Mass Transfer 55 (2012) , pp. 4772–4782

1. Ashwini K. Yadav, Ravi Kumar, Akhilesh Gupta, P. Majumdar, B. Chatterjee, D. Mukhopadhyay, An Experimental Investigation on the behavior of Pressure Tube under Symmetrical and Asymmetrical Heating Conditions in an Indian PHWR, International Scholarly and Scientific Research & Innovation, World Academy of Science, Engineering and Technology, Vol:6, pp. 197-201, 2012
2. Ashwini Kumar Yadav, P. Majumdar, Ravi Kumar, Barun Chatterjee, Akhilesh Gupta, Lele H.G., "Experimental investigation of symmetric and assymetric heating of pressure tube under accident conditions for Indian PHWR", Nuclear Engineering and Design, Vol. 254, pp. 300-307, 2013
3. Pramod C. Ramteke, Akhilesh Gupta, Ravi Kumar, A.K. Gupta, Pawan K. Sharma, Experimental Investigation and CFD Simulation of Hydrocarbon Pool Fire, J. Applied Fire Science, Vol. 22(2), pp. 201-222, 2012-2013.

33. [Ajit Kumar](http://eng.scholar.cnki.net/result.aspx?q=AUTHOR%3a%28Ajit+Kumar%29), Akhilesh Gupta, Ravi Kumar, A.K. Gupta, Pawan K. Sharma, [Experimental Investigation and Analysis of Fires Involving Solids](http://d.scholar.cnki.net/detail/SJCR_U/SJCR14030400333802), [Journal of Applied Fire Science](http://eng.scholar.cnki.net/result.aspx?q=SOURCE%3a%28Journal+of+Applied+Fire+Science%29), 2012, Vol.22 (3), pp.313-342

34. Chitranjan Agrawal, Ravi Kumar, Akhilesh Gupta, Barun Chatterjee , Determination of rewetting velocity during jet impingement cooling of a hot surface, ASME J. of Thermal Science and Engineering Applications, Vol. 5 No. 1, pp. 0110071-10, March 2013.

35. Ashwini K. Yadav, P. Majumdar, Ravi Kumar, B. Chatterjee, Akhilesh Gupta, D. Mukhopadhyay, Experimental simulation of asymmetric heat up of coolant channel under small break LOCA condition for PHWR, Nuclear Engineering and Design, Vol. 255, pp. 138-145, 2013

36. Chitranjan A., Lyons, O.F., Kumar, R., Gupta, A., Murray, D.B., Rewetting of a hot horizontal surface through mist jet impingement cooling, Int. J. of Heat and Mass Transfer Vol. 58 188–196, 2013.

37. C. Agrawal, R. Kumar, A. Gupta, B. Chatterjee, Effect of Jet Diameter on Surface Quenching at Different Spatial Locations, World Academy of Science, Engineering and Technology, International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering Vol:8, No:1, pp. 19-22, 2014

38. Chitranjan Agrawal, Ravi Kumar, Akhilesh Gupta, Barun Chatterjee, Effect of nozzle geometry on the rewetting of hot surface during jet impingement cooling, Experimental Heat Transfer, Vol. 27, Issue 3 pp. 256-275, 2014

39. Chitranjan Agrawal, Ravi Kumar, Akhilesh Gupta, Barun Chatterjee, Determination of rewetting on hot horizontal surface with water jet impingement through a sharp edged nozzle, International Journal of Thermal Science, Int J Thermal Science, Vol. 71 Sept. 2013, 310-323.

40. Ashwini K. Yadav, Ravi Kumar, Akhilesh Gupta, B. Chatterjee, P. Majumdar, D. Mukhopadhyay, Thermo-mechanical behaviour of pressure tube under small break loss of coolant accident for PHWR, Journal of Pressure Vessel Technology, Vol. 135/041601, 2013

41. Ashwini K. Yadav, Ravi Kumar, Akhilesh Gupta, B. Chatterjee, P. Majumdar, D. Mukhopadhyay, Experimental investigation on circumferential and axial temperature gradient over fuel channel under LOCA, Heat and Mass Transfer, Vol. 50, pp.737-746, 2014

|  |  |
| --- | --- |
| 42. Chitranjan Agrawal, Ravi Kumar, Akhilesh Gupta, Barun Chatterjee, [Effect of jet diameter on the maximum surface heat flux during quenching of hot surface](http://www.sciencedirect.com/science/article/pii/S0029549313005335), Nuclear Engineering and Design, Volume 265, December 2013, Pages 727-736 |  |
|

43. Gupta A., Kumar, R., Gupta A., Condensation of R-134a inside a helically coiled tube-in-shell heat exchanger, Experimental Thermal and Fluid Science, 54, pp. 279-289, 2014

44. Arijit Kundu, Ravi Kumar, Akhilesh Gupta, Evaporative heat transfer of R134a and R407C inside a smooth tube with different inclinations, International Journal of Heat and Mass Transfer 76 (2014) pp. 523-533.

45. Arijit Kundu, Ravi Kumar, Akhilesh Gupta, Comparative experimental study on flow boiling heat transfer characteristics of pure and mixed refrigerants, International Journal of Refrigeration, 45 (2014) pp. 136-14

46. Arijit Kundu, Ravi Kumar, Akhilesh Gupta, Heat transfer characteristics and flow pattern during two-phase flow boiling of R134a and R407C in a horizontal smooth tube, Experimental Thermal and Fluid Science 57 (2014) pp. 344-352.

47. Arijit Kundu, Ravi Kumar, Akhilesh Gupta, Flow boiling heat transfer characteristics of R407C inside a smooth tube with different tube inclinations, International Journal of Refrigeration, 45 (2014) pp.1-12

48. Sajjan, S.K., Kumar, R., Gupta, A., Experimental investigation of vapor condensation of iso-butane over single horizontal plain tube under different vapor pressures, Applied Thermal Engineering, volume 76, issue , year 2015, pp. 435 – 440

49. Sanjeev K. Sajjan, ravi Kumar, Akhilesh Gupta, **Experimental investigation during condensation of R-600a vapor over single horizontal integral-fin tubes, International Journal of Heat and Mass Transfer.** 2015, Vol. 88, pp. 247-255.

50. Chitranjan Agrawal, Ravi Kumar, Akhilesh Gupta, Barun Chatterjee, Determination of Rewetting Velocity during Jet Impingement Cooling of Hot Vertical Rod, Journal of Thermal Analysis and Calorimetry, Vol. 121, No. 2, August 2015,

51. Chitranjan Agrawal, Ravi Kumar, Akhilesh Gupta, Barun Chatterjee, Rewetting of Hot Vertical Rod during Jet Impingement Surface Cooling, Heat and Mass Transfer, Published on line 24 July 2015 .

**Conferences/Symposia**

1. J. S. Saini and Akhilesh Gupta, Salt Gradient Solar Pond – Some Experimental Results, Proceedings National Solar Energy Conference, Baroda, 1983.

2. J. S. Saini and Akhilesh Gupta, Some Investigation on Stability and Thermal Performance of Solar Pond, Proceedings of US-India Symposium Workshop on Solar Energy Research and Applications, University of Roorkee, Roorkee, pp. 103-106, Aug. 9-11,1985.

3. Akhilesh Gupta, J. S. Saini, and H. K. Varma, Cross Flow Boiling Heat Transfer from Tubes in a Vertical Plane, Proceedings of the 8th ISME Conf.on Mechanical Engineering, I.I.T. New Delhi, pp. 81-86, March 5-6, 1993

4. Akhilesh Gupta, J. S. Saini, and H. K. Varma, Local Boiling Heat Transfer from Tube Bundles in Cross Flow, 9th National convention of Mechanical Engineers, 1.1. T. Kanpur, pp. 182-186, Oct. 15-17,1993

5. Akhilesh Gupta, J. S. Saini, and H. K. Varma, Cross Flow Boiling Heat Transfer in small Tube Bundles, First ISHMT - ASME Heat and Mass Transfer Conf., 12th National Heat and Mass Transfer Conf., B. A. R. C., Bombay, pp. 407-412, Jan.5-7,1994

6. Akhilesh Gupta and Bijay Kumar Singh, Ivestigation of Boiling Heat Transfer Coefficient in Two Tube Bundles under Cross Flow Velocity Conditions, Conference on Thermal Systems, Institute of Technology, B. H. U. Varansi, Jan. 28-30, 1995.

7. Akhilesh Gupta, H. K. Varma and Sanjay Gambhir, Boiling Heat Transfer over Finned Tubes Arranged in a vertical Plane, Proc. of llth National Convention of Chemical Engineers, pp. II-15-19, Sept. 28-29, 1995

8. Akhilesh Gupta, H. K. Varma and Sanjay Gambhir, Boiling Heat Transfer over Finned Tubes, International Conference on Advances in Mechanical Engineering, Indian Institute of Science, Bangalore, pp. 1883-1891, Dec. 20-22, 1995

9. Akhilesh Gupta and B. K. Singh, Boiling Heat Transfer in Independently Heated Two Tube Bundles, 2nd ISHMT - ASME Heat and Mass Transfer Conference, 13th National Heat and Mass Transfer Conference, Surathkal, Dec.28-30,1995

10. R. M. Sarviya, J. S. Saini and Akhilesh Gupta, Nucleate Boiling Heat Transfer Mechanism - A Perspective, National Convention of Chemical Engineers & National Seminar on Fire & Explosive Hazards in Chemical Industries, The Institute of Engineers, M. P. State Centre, Bhopal, Oct. 1997.

11. Niranjan Sahu and Akhilesh Gupta, Optimization of a Solar Driven Vapour Absorption System, National Solar Energy Convention, University of Roorkee, pp. 428-436, Nov. 30 - Dec. 2, 1998.

12. Akhilesh Gupta and J. S. Saini, Performance Evaluation of a Small Sized Solar Pond, Proceedings of the 23rd National Renewable Energy Convention, Devi Ahilya Vishwavidyalaya, Indore, pp. 98-101, Dec. 20-22, 1999

13. Akhilesh Gupta, Local and Average Boiling Heat Transfer in a Tube Bundle, 4th ISHMT/ASME Heat and Mass Transfer Conference, Institute of Armament Technology, Girinagar, Pune, pp. 699-704, Jan. 12-14,2000.

14. R. M. Sarviya, A. Gupta and N. Sahu, Optimization of Absorption Refrigeration System, Proceedings of National Seminar on Development of Eco-friendly Refrigerants, MACT Bhopal, Feb. 26-27, 2000.

15. S.K. Mahapatra, Akhilesh Gupta and H.K. Varma, Computer Aided Performance Evaluation of Air Washers, Proceedings of 16th National Convention of Mechanical Engineers, University of Roorkee, pp. 732-739, Sep.29-30, 2000.

16. C. Suresh and Akhilesh Gupta, Developing Software to Determine Thermodynamic Properties of Newer Refrigerants, Proceedings of 16th National Convention of Mechanical Engineers, University of Roorkee, pp. 740-746, Sep. 29-30, 2000.

17. Akhilesh Gupta, Nucleate Boiling in a 5X3 Tube Bundle, Proceedings of the 12th ISME Conference, Crescent Engineering College, Chennai, pp. 64-68, Jan. 10-12, 2001.

18. Akhilesh Gupta and A.K. Jain, Boiling Heat Transfer in a 5X1 Finned Tube Bundle, Proceedings of 3rd National Conference on Thermal Systems, Institute of Technology, BHU Varanasi, Feb. 17-18, 2001.

19. R.D. Mishra, P.K. Sahu and Akhilesh Gupta, Optimization of a LiBr/Water Vapour Absorption Refrigeration System Based on Exergetic Cost Analysis, International Conf. on Emerging Techniques in Air Conditioning & Refrigeration, New Delhi, pp. 225-239, Sept. 26-28, 2001.

20. Akhilesh Gupta and Niranjan Sahu, Optimization of a Vapour Absorption System, Proceedings 17th National Convention of Mechanical Engineers, Indore, Nov. 26-27, 2001.

21. R.D. Mishra, P.K. Sahu and Akhilesh Gupta, Exergoeconomic Evaluation and Optimization of a Solar Soption System for Air Conditioning, International Conf. on 'Recent Advances in Solar Energy Conversion Systems' Bhopal, pp. 115-125, Sept. 28-29, 2002.

22. Misra, R. D., Sahoo, P.K., and Gupta, A., “Exergoeconomic Evaluation of a Vapour Compression Refrigeration System”, International Conference on Emerging Technologies in Air Conditioning and Refrigeration at New Delhi, 10-12th Sept, 2003.

23. Sahoo, P.K., Misra, R.D., and Gupta, A., "Exergoeconomic Optimization of an Aqua-Ammonia Absorption Refrigeration System", Proceedings of the First International Exergy, Energy and Environment Symposium (IEEES-1), I. Dincer and A. Hepbasli eds. Ege University, Izmir, Turkey, July 13-17, 2003, paper no. 46, pp. 287-292.

24. B.M. Ramani, P. Prabhakaran and Akhilesh Gupta, Enhancing the Rate of Heat Transfer Using Extended Surface Over Buried Pipe Heat Exchanger, Proceedings of National Conference on Computational Methods in Mechanical engineering, Osmania University Hyderabad, pp. 240-244, Sept. 16-17, 2005.

25. Vikas J Lakhera, Akhilesh Gupta and ravi Kumar, Boiling Outside Tube Bundles : A State of the Art Review, Proceedings of the 14th ISME International Conference on Mechanical Engineering in Knowledge Age, DCE Delhi, paper No. 121, Dec. 12-14, 2005.

26. Ravi Kumar, Akhilesh Gupta and Sandeep Vishwakarma, Effect of Fin height During Condensation of R-134a Vapor Over Single Horizontal Integral Fin Tubes, Proceedings of the 18th National & 7th ISHMT-ASME Conference, IIT Guwahati, pp. 1743-1750, Jan. 4-6, 2006.

27. Vikas J Lakhera, Akhilesh Gupta and Ravi Kumar, Cross Flow Boiling Outside Horizontal Tube Bundles : A Review, Proceedings of the 18th National & 7th ISHMT-ASME Conference, IIT Guwahati, pp. 1743-1750, Jan. 4-6, 2006.

1. Srivastava R., Kumar R., Gupta A., and Lal S., “Heat Transfer Augmentation by Inserts During Condensation of refrigerant R-22 Inside a Horizontal Tube” Proceedings ‘International Refrigeration and Air Conditioning Conference, Purdue, No. R 035, pp. 1-7, July 17-20, 2006.
2. Ramani Bharat, M., Akhilesh Gupta, and Ravi Kumar, “Thermal Performance Characteristics of Double Pass Solar Energy Air Collectors – A Review”, National Conference on Advances & Futuristic Trends in Mechanical & materials Engineering, Giani Jail Singh College of Engineering & Technology, Bathinda, pp. 216-223, Nov. 10-11, 2006.
3. Ramani Bharat, M., Akhilesh Gupta and Ravi kumar, “ Study of Heat Transfer Augmentation Using Twisted Tape Swirl Geanerator Inside Rectangular Duct of Double Pass Solar Air Collector” Proceedings of IInd National Conference on Recent Developments in Mechanical Engineering, TIET, Patiala, Nov. 10-11, 2006.
4. B.M. Ramani, Akhilesh Gupta and Ravi kumar, “Measurement of Extinction Coefficient of Porous Absorber Used in Solar Air Collector” Proceedings of 3rd International Conference on Solar Radiation and Day Lighting (SOLARIS 2007), IIT Delhi, pp.143-147, Feb. 7-9, 2007.
5. Sikarwar Basant, Gupta Akhilesh and Kumar Ravi, “Heat Transfer Mechanism in High Heat Flux Region of Saturated Pool Boiling” Indo-Australian Workshop on “A CFD Approach on Fluid Flow, Heat and Mass Transfer” & Symposium on “CFD Applications in Multidisciplinary Areas” IIT Roorkee 12-14 April, 2007.
6. Ramani B.M., Akhilesh Gupta and Ravi Kumar, “Simulation Study of Double pass Solar Air Heater” Indo-Australian Workshop on “A CFD Approach on Fluid Flow, Heat and Mass Transfer” & Symposium on “CFD Applications in Multidisciplinary Areas” IIT Roorkee 12-14 April, 2007.
7. Sikarwar Basant Singh, Gupta Akhilesh, Kumar Ravi and Pundhir D.S., “ Simulation of Flow Development in a Pipe by FLUENT Software” Proceedings of National Seminar on CFD-The New 3rd Dimension in Flow Analysis & Thermal Design, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal, pp. 1-8, May 7-8, 2007.
8. Sikarwar Basant Singh, Gupta Akhilesh, Kumar Ravi and Bhadoria R.S. “ Numerical Analysis of Latent Heat Energy Storage” Proceedings of National Seminar on CFD-The New 3rd Dimension in Flow Analysis & Thermal Design, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal, pp. 1-8, May 7-8, 2007.
9. B.M. Ramani, Akhilesh Gupta and Ravi Kumar, “Performance Enhancement of Double Pass Solar Air Collector with Porous Absorber” Proceedings of the International Congress on Renewable Energy 2007, New Delhi , 27-28 November 2007.
10. Bharat M. Ramani, Akhilesh Gupta and Ravi Kumar, “Performance Evaluation of Double Pass Solar Air Collector With and Without Porous Absorber”, !9th national & 8th ISHMT-ASME Heat and Mass Transfer Conference, JNTU Hyderabad, Jan.3-5, 2008, Paper No: SHT-1.
11. D. Senthil Kumar, K. Murugesan and Akhilesh Gupta, “Parametric Study on Convective Drying of a Rectangular Brick using Finite Element Method and Mass Lumping Technique”, !9th national & 8th ISHMT-ASME Heat and Mass Transfer Conference, JNTU Hyderabad, Jan.3-5, 2008, Paper No: HMT-12.
12. R. Kathiravan, Ravi Kumar, Akhilesh Gupta and Ramesh Chandra, “Pool Boiling Characteristcs of Nanofluids”, !9th national & 8th ISHMT-ASME Heat and Mass Transfer Conference, JNTU Hyderabad, Jan.3-5, 2008.
13. D. Senthil Kumar, K. Murugesan and Akhilesh Gupta, “Analysis of Fluid Flow in a Lid-Driven Square Cavity with a Step Blockage using Global Matrix-Free Finite Element Algorithm” International conference on Intelligent Systems for Rural Development, Arunai Engineering College, Tiruvannamala, pp. 146-154, Aug. 28-30, 2008.
14. D. Senthil Kumar, K. Murugesan and Akhilesh Gupta, “Numerical Analysis of Laminar Double Diffusive Mixed Convection Over a Backward Facing Step using Velocity Vorticity form of Navier-Stokes Equations” Proceedings of 35th national Conference on Fluid mechanics & Fluid Power, FMFP-2008, pp. 100-107, PES Institute of Technology, Bangalore, Dec. 11-13, 2008.
15. R. Kathiravan, Ravi Kumar, Akhilesh Gupta and Ramesh Chandra, “Preparation and Characterizations of Copper nano particles and their Effects on Pool Boiling”, Proceedings of 35th national Conference on Fluid mechanics & Fluid Power, FMFP-2008, pp. 455-462, PES Institute of Technology, Bangalore, Dec. 11-13, 2008.
16. Ramani, B.M., Gupta, A., Kumar, R., Performance enhancement of double pass solar air collector with porous absorber, Prod. Int Conf on Advances in Mechanical Engineering, ICAME-2008, 15-17 December, 2008, SVNIT-Surat.
17. Ramani, B.M., Gupta, A., Kumar, R., Performance evaluation of double pass solar air collector with and without porous material, selected for publication and presentation in Procd. Int. Conf on Advances in Mechanical Engineering, ICAME-2009, Shah Alam, Malaysia June 24-27, 2009.
18. D. Senthil Kumar, K. Murugesan and Akhilesh Gupta, Numerical study of double diffusive natural convection in a rectangular cavity with discrete heat sources using velocity-vorticity equations, Proceedings of 20th National and 9th International ISHMT-ASME Heat and Mass Transfer Conference, Jan. 4-6, 2010, Mumbai, pp. 84-91.
19. Akhilesh Gupta, Ravi Kumar and Mukesh Kumar, Prediction of dryout and post dryout behavior of clad surface during flow of water over a vertical heater rod, Proceedings of 20th National and 9th International ISHMT-ASME Heat and Mass Transfer Conference, Jan. 4-6, 2010, Mumbai, pp. 675-681.
20. Vikas J Lakhera, Akhilesh Gupta and Ravi Kumar, Enhanced boiling outside 8x3 plain and coated tube bundles, Proceedings of 20th National and 9th International ISHMT-ASME Heat and Mass Transfer Conference, Jan. 4-6, 2010, Mumbai, pp. 1070-1076.
21. Bharat M. Ramani, Akhilesh Gupta and Ravi Kumar, Measurement of volumetric heat transfer coefficient of porous material, Proceedings of 20th National and 9th International ISHMT-ASME Heat and Mass Transfer Conference, Jan. 4-6, 2010, Mumbai, pp. 1186-1190.
22. Harkrishna Yadav, Akhilesh Gupta and Ravi Kumar, Performance analysis of double pass solar air collector with and without packed bed, Proceedings of National Conference on Emerging Trends in Mechanical Engineering (ETME-2010), May 14-25, 2010, Haryana College of Technology & Management, Kaithal, Paper No.27.
23. Akhilesh Gupta, Bhupendra Mangal, Tabish Alam and Ravi Kumar, Investigation of convective heat transfer from plain and corrugated plates in a rectangular air duct, Proceedings of international Conference on Advances in Renewable Energy, ICARE-2010, June 24-26, 2010, Maulana Azad National Institute of Technology, Bhopal, Ref. No. ICARE-223.
24. Harekrishna Yadav, Akhilesh Gupta and Ravi Kumar, Thermal performance of double pass solar air heater with and without packed bed, Proceedings of international Conference on Advances in Renewable Energy, ICARE-2010, June 24-26, 2010, Maulana Azad National Institute of Technology, Bhopal, Ref. No. ICARE-312.
25. Gupta, A., Kumar, P., Kumar, R., Chauhan, G., Pressure Drop By Twisted Tape Inserts During Condensation Of R-245fa Inside Horizontal Tube, National Conference on Refrigeration and Air Conditioning (NCRAC-2011) IIT Madras, Chennai, July 7-9, 2011
26. Gupta A., Kumar P., Kumar R., Chauhan G., Heat Transfer Enhancement by Twisted Tape Inserts during Condensation of R-245fa inside a Horizontal Tube, 23rd IIR International Congress of Refrigeration, Prague, August 21-26, 2011, pp. 604-610.
27. Akhilesh Gupta, Ravi Kumar and Bharat Ramani, Performance and Economic Analysis of Double Pass Solar Air Collector, 2011 Energy Sustainability Conference & Fuel Cell Conference, August 7-10, 2011, Washington-DC, USA., pp. 243-248.

55. A. K. Yadav, R. Kumar, A. Gupta, B. Chatterjee, D. Mukhopadhyay, H.G. Lele, Thermal behavior of pressure tube under fully and partially voided conditions using 19 pin fuel element simulator, 4th National Conference on Nuclear Reactor, BARC, Mumbai, March 4-6, 2011.

56. A. K. Yadav, R. Kumar, A. Gupta, P. Majumdar, B. Chatterjee, H.G. Lele, An experimental Investigation on the behavior of pressure tube under symmetrical and asymmetrical heating conditions in an Indian PHWR, Paper No.SMR-2011-6533, pp. 237-241, 2011

57. Pramod C. Ramtek, Pawan Kumar Sharma, Ravi kumar and Akhilesh Gupta, "Modelling and simulation of heat release rate of fire with CO2 extinguishing effect", Proceedings of national Conf. on Fire Science and Technology, CSIR-CBRI, Roorkee, Nov. 3-4, 2011, pp. 290-296,

58. Ajit Kumar, Pawan Kumar Sharma, Ravi kumar and Akhilesh Gupta, "CFD modeling of fire propagation: A review", Proceedings of national Conf. on Fire Science and Technology, CSIR-CBRI, Roorkee, Nov. 3-4, 2011, pp. 297-303.

59. Ashwini K. Yadav, Ravi Kumar, Akhilesh Gupta, B. Chatterjee, D. Mukhopadhyay, H.G. Lele, Experimental Investigation On Thermal Behaviour Of Fuel Channel Under Small Break Loca In Indian PHWR, International Conference on Nuclear Engineering, ICONE20, Anaheim, California, USA, July 30- Aug 3, 2012

60. B Dhurander, A Gupta, R Kumar, A Kumar, A K Gupta, P K Sharma, 'Experimental and Numerical simulations of solid fuels fires in a compartment', International conference in Advance Chemical Engineering **(ACE - 2013):** CHED, IIT Roorkee, **Feb. 22 - 24**, 2013

61. Deepak Sahu, Akhilesh Gupta, Ravi Kumar, Pramod C. Ramteke, A. K. Gupta, Pawan K. Sharma, 'Experimental Studies and Numerical Simulation of Hydrocarbon Pool Fires', International conference in Advance Chemical Engineering, **(ACE - 2013):** CHED, IIT Roorkee, **Feb. 22 - 24,** 2013.

62. B Dhurander, A Gupta, R Kumar, A Dhiman, A K Gupta, S Kumar, Shashi, P K Sharma, 'FDS Simulation of compartment Fire and comparison with experimental data', International conference on Challenges in Disaster Mitigation and Management Strategies, IIT Roorkee, **Feb. 15-17, 2013**

63. Deepak Sahu, Shashi, Akhilesh Gupta, Surendra Kumar, Shorab Jain, Ravi Kumar, A. K. Dhiman, A.K.Gupta , Pawan K. Sharma, 'Compartment Fires: An Experimental Study', International conference on Challenges in Disaster Mitigation and Management Strategies, IIT Roorkee,  **Feb. 15-17, 2013**

64. A. K. Yadav, R. Kumar, A. Gupta, P.Majumdar, B. Chatterjee, D. Mukhopadhyay, 'Experimental Investigation on Thermal Behavior of Fuel Channel Under Small Break LOCA in Indian PHWR, NURETH-15, Pisa, Italy, Paper - 060, May 12-15, 2013

65. Gupta A., Kumar, R., Gupta A., An experimental study of pressure drop characteristics for flow condensation of R-134a inside horizontal straight tube, 4 th IIR (International Institute of Refrigeration) Conference on Thermophysical Properties and Transfer Processes of Refrigerants, Delft, The Netherlands, June 17-19, 2013.

66. A Kundu, R Kumar and A Gupta, Environmental and heat transfer performance review of replacement to HCFC refrigerants by Proceedings of the ACEEE 4th International Conference on Emerging Trends in Engineering & Technology, Geeta Institute of Management & Technology, Kurukshetra, India, pp. 671-679, Oct. 25-27, 2013

67. A Kundu, R Kumar and A Gupta, A Comparative study on the two phase flow heat transfer and environmental characteristics of alternatives to CFC and HCFC, Proceedings of the IVth International Conference on Advances in Energy Research ICAER, Indian Institute of Technology Bombay, India, pp. 349-360, Dec. 10-12, 2013

68. A Kundu, R Kumar and A Gupta, Experimental and environmental study of R22 replacement by zeotropic blend R407C, Proceedings of the 3rd National Conference on Refrigeration and Air Conditioning (NCRAC-2013), Indian Institute of Technology Madras, India, Paper no. NCRAC-2013-CON-B-28, Dec. 12-14, 2013

69. A Kundu, R Kumar and A Gupta, Performance Comparison of Zeotropic and Azeotropic Refrigerants in Evaporation through Inclined Tubes, Procedia Engineering, 10th International Conference on Mechanical Engineering, ICME 2013, , BUET, Dhaka, Bangladesh, Dec. 20-21, 2013

70. Gupta A., Kumar, R., Gupta A., Pressure drop during condensation of R-134a inside smooth tube, 10th International Conference on Mechanical Engineering, ICME 2013, , BUET, Dhaka, Bangladesh, Dec. 20-21, 2013

71. Yadav, A. K., Kumar, R., Chatterjee, B, Gupta, A., Mukhopadhyay, D., Majumdar, P., Experimental Investigation on sagging behavior of full length pressure tube with garter springs under LOCA, in Indian PHWR, ISHMT-ASME Heat and Mass Transfer Conference, Paper no. HMTC1300048, IIT Kharagpur, Dec. 28-31, 2013

72. Gupta A., Kumar, R., Gupta A., An experimental study of heat transfer characteristics of R-134a condensing inside horizontal straight tube, 22nd National and 11th International ISHMT-ASME Heat and Mass Transfer Conference, IIT Kharagpur, Dec. 28-31, 2013

73. A Kundu, R Kumar and A Gupta, Experimental study of HCFC-22 replacement with azeotropic and zeotropic blend refrigerants(HMTC1300693), Proceedings of the 22thNational and 11th International ISHMT-ASME Heat and Mass Transfer Conference, , Indian Institute of Technology Kharagpur, India, Dec. 28-31, 2013

74. A Kundu, R Kumar and A Gupta, Experimental investigation on flow boiling heat transfer of R410A through inclined tubes, Proceedings of the 1st International Conference on Mechanical Engineering: Emerging Trends for Sustainability ICMEETS, Maulana Azad National Institute of Technology, Bhopal, India, vol. II, pp. 1033-1041, Jan. 29-31, 2014

75. Sriyak Yadav, Akhilesh Gupta, Ravi Kumar, Pavan K. Sharma, To investigate the effect of ventilation on the development of fire in a compartment, National Conference on Fire Research and Engineering, IIT Roorkee, March 1 & 2, 2014

76. Himanshu Bansal, Akhilesh Gupta, Ravi Kumar, Pavan K. Sharma, Experimental and analytical investigation of cable fire, National Conference on Fire Research and Engineering, IIT Roorkee, March 1 & 2, 2014

77. B.K. Dhurander, Akhilesh Gupta, Ravi Kumar, S. Kumar, A.K. Gupta, Pavan K. Sharma, Analysis of fires involving solid fuels in a compartment, National Conference on Fire Research and Engineering, IIT Roorkee, March 1 & 2, 2014

78. Deepak Sahu, Akhilesh Gupta, Shorab Jain, Ravi Kumar, A.K. Gupta, Surendra Kumar, A.K. Dhiman, Pavan K. Sharma, An experimental studies on propane pool fire inside a compartment To investigate the effect of ventilation on the development of fire in a compartment, National Conference on Fire Research and Engineering, IIT Roorkee, March 1 & 2, 2014

79. Saumya Agarwal, Ravi Kumar, Sarbjit Singh, Akhilesh Gupta, Modelling and simulation of compartent fires, International conference on "Emerging fire protection technologies for rolling stock" Vigyan Bhawan, New Delhi, April 24th & 25th, 2014

80. Lakhera Vikas J., Akhilesh Gupta and Ravi Kumar, 'Investigations on pool boiling outside horizontal tube bundles', 10th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, Orlando, Florida, July 14-16, 2014

81. Chitranjan Agarwal, R Kumar, A Gupta, B Chatterjee, [Effect of Surface Orientation on The Rewetting Phenomena during Jet Impingement Cooling](https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=nd1m1bUAAAAJ&citation_for_view=nd1m1bUAAAAJ:Se3iqnhoufwC), 15th International Heat Transfer Conference, IHTC-15, Kyoto, Japan, , Aug. 11-15, 2014

82. A Kundu, R Kumar and A Gupta, Experimentation on horizontal flow evaporation of pure and mixed refrigerants: A comparative study, Proceedings of the 14th ASME 2014 International Mechanical Engineering Congress and Exposition IMECE14, Montreal, Canada (paper 39730), Nov. 14-20, 2014,

83. S.K. Sajjan, Ravi Kumar, Akhilesh Gupta, ‘Comparison of vapor condensation heat transfer coefficients of R-600a over a smooth tube and integrated fin tube of 28 fpi’ International Conference on Industrial, Mechanical and Production Engineering: Advancements and Current Trends (ICIMPACT-2014), , MANIT, Bhopal, Nov. 27-29, 2014

84. Arijit Kundu, Ravi Kumar, Akhilesh Gupta, A Comparative Study on the Heat Transfer and Environmental Characteristics of R22 Replacements (Paper No. IAE1214204), Int. Conf. on Production and Mechanical Engineering (ICPME’2014), Dec 30-31, 2014, Bangkok.

85. R. Kathiravan, Ravi Kumar, Akhilesh Gupta, Ramesh Chandra, Preparation and Characterization of Nanofluids, Int. Conf. Mechanical and Industrial Engineering, March 21-23, 2015, Singapore.

86. Avinash Chaudhary, Sandeep Kumar Gupta, Akhilesh Gupta, Ravi Kumar and A K Gupta, Burning characteristics of power cables in a compartment, The International Conferenceon “Global Challenges and Policy Framework for Mining of Mineral and Fossil Energy Resources (GCPF: 2015-20)", NITK*,*Surathkal, 17-18 April*,* 2015, Procedia Earth and Planetary Science, vol. 11, pp. 376 - 384, 2015

87. Deepak Sahu, Shorab Jain, Shashi and Akhilesh Gupta. “Experimental study on methanol pool fires under low ventilated compartment”. The International Conference on “Global Challenges and Policy Framework for Mining of Mineral and Fossil Energy Resources (GCPF: 2015-20)", NITK*,*Surathkal, 17-18 April*,* 2015, Procedia Earth and Planetary Science 11 ( 2015 ) 507 – 515

88. Bhisham K. Dhurandher, Ravi Kumar, Amit Dhiman, "[Impact Assessment of Thermal Radiation Hazard from LPG Fireball](http://www.sciencedirect.com/science/article/pii/S1878522015001010)", The International Conference on “Global Challenges and Policy Framework for Mining of Mineral and Fossil Energy Resources (GCPF: 2015-20), NITK*,*Surathkal, 17-18 April, 2015, Procedia Earth and Planetary Science, vol. 11, pp. 499 - 506

**Details of Review**

1. Reviewed the book entitled “ Thermal Sciences Engineering Data Book” by B.N. Nijaguna, Published by Tata McGraw-Hill Publishing Company Limited New Delhi.
2. Reviewed Self Instruction Material on “Applied Thermodynamics” (ME08D) prepared by Co-ordinator, DDE, TIET-Patiala.