



**RAVI KUMAR, Ph.D.**

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#### **MEMBERSHIP OF PROFESSIONAL SOCIETIES**

Institution of Engineers (IE-Fellow), India

Indian Society of Heating, Refrigerating & Air Conditioning Engineers (ISHRAE)

American Society of Heating, Refrigerating Air Conditioning Engineers (ASHRAE)

Institut International du Froid International Institute of Refrigeration (IIFIR)

American Society of Mechanical Engineers (ASME)

Indian Society of Heat and Mass Transfer (ISHMT)

#### **EDUCATION**

Ph.D.	Mechanical	2000	University of Roorkee, Roorkee, India
M.Tech.	Thermal	1990	Regional Engineering College, Bhopal, India
B.E.	Mechanical	1987	Regional Engineering College, Bhopal, India

#### **AREA OF SPECIALISATION**

Refrigeration & Air-conditioning; Two-phase Flow & Heat Transfer; Fire Dynamics

#### **CURRENT AREA OF RESEARCH**

Two-phase flow: boiling and condensation of refrigerants; transfer processes in capillaries and microchannel; fire dynamics, nuclear safety: LOCA.

#### **EXPERIENCE**

Teaching & Research	15 Years
Industry	15 Months

#### **ADMINISTRATIVE RESPONSIBILITIES**

##### **National Level**

- Chairman, Refrigeration and Air-conditioning Sectional Committee, Bureau of Indian Standards (BIS), New Delhi.

##### **Institute Level**

- Coordinator, Technology Incubation and Entrepreneurship Development Activity (TIEDA) Centre.
- Coordinator, Science & Technology Entrepreneurship Park (STEP).

## PROJECTS

1. Center for Heat Transfer Studies In Eco-friendly Refrigeration Systems, Ministry of Human Resources & Development, ₹ 7.00 Lac (completed).
2. Channel Heat-up Experiment: pressure tube sagging in accidental coolant loss, Department of Atomic Energy, ₹ 40.50 Lac (completed).
3. Modernisation of mechanical engineering laboratories, Ministry of Human Resources & Development, ₹ 9.0 Lac (completed).
4. Channel heat-up Experiment: ballooning of pressure tube, Department of Atomic Energy, ₹ 43.47 Lac (completed).
5. A Study of Forced Convection Condensation of Eco-friendly Refrigerants Inside a Horizontal Tube, Department of Science & Technology, ₹ 18.96 Lac (completed).
6. A Parametric Study of Performance of a Coriolis Mass Flow Rate Meter, Department of Science & Technology, ₹ 19.88 Lac.
7. Development of Energy Efficient Heat Exchangers for Refrigeration & Air-conditioning Industries, Department of Science & Technology, New Delhi and Ministry of Science & Technology, Kiev, Ukraine , ₹ 6.55 Lac.
8. Studies on The Enhancement of Heat Transfer and Ventilation Strategies during High Performance Evaporative Cooling of Buildings, Department of Science & Technology, New Delhi and Indo-German (DST-DFG) Programme of Co-operation in Science & Technology, ₹ 5.24 lac.
9. Experimental Investigation of the Asymmetric Heating of Pressure Tubes, Department of Atomic Energy, ₹ 77.23 Lac.
10. Experimental Investigation of the Rewetting of Fuel Rod Cluster, Department of Atomic Energy, ₹ 78.95 Lac
11. Full Length Channel Heat Up Experiments, Department of Atomic Energy, ₹ 236.62 Lac
12. Development of Fire Test Facility for Defining the Design Fire Environment Relevant For NPPs, Department of Atomic Energy, ₹ 400.00 Lac.
13. Enhancement of Heat Transfer During Condensation of Ozone Safe Refrigerants Over Single Horizontal Integral-Fin Tubes, Department of Science & Technology, ₹ 19.5 Lac.
14. Studies on Effectiveness of Iodine and Heat Removal from PHWR Primary Containment during LOCA by Spray System, Department of Atomic Energy, ₹ 111.89 Lac
15. Critical Heat Flux Data Collection under Pool Boiling Conditions, Department of Atomic Energy, ₹ 7.72 Lac.
16. Assessment of Radiation Heat Transfer for 19 Pin PHWR fuel bundle under Heat-up Condition, Department of Atomic Energy, ₹ 54.96 Lac.

## CONTINUING EDUCATION COURSES ORGANISED

- Refrigeration & air-conditioning System Design for the Officers of Prasar Bharti (Broadcasting Corporation of India), May 19-31, 2003.
- Air-conditioning System Design & Maintenance for the Officers of Prasar Bharti (Broadcasting Corporation of India), May 19-29, 2004.
- Air-conditioning System Design & Maintenance for the Officers of Prasar Bharti (Broadcasting Corporation of India), July 19-28, 2005.

## CONFERENCES

- Joint Organizing Secretary, XIII National Conference of India Society of Mechanical Engineers, Indian Institute of Technology, Roorkee, December 30-31, 2003.
- Treasurer, 3<sup>rd</sup> Uttarakhand State Science & Technology Conference, November 10-11, 2008
- Principal Coordinator, Indo German Winter Academy, December 13-19, 2012.

## SCHOLARSHIPS AND AWARDS

1. DAAD (Germany) fellowship under IIT-DAAD faculty exchange Programme, 2007.
2. DST-DfG (Germany) fellowship 2008-10.
3. DST-MST (Ukraine) fellowship 2008-10.
4. Indo Ireland Cooperative Science Programme (2011-13)
5. Star performer in IIT Roorkee during the academic years 2003-2004, 2004-2005 and 2005-2006.
6. Outstanding Teacher Award, Indian Institute of Technology Roorkee- 2011.

## STUDENTS

### Doctoral (Ph.D.)

SN	Thesis Title	Name of Student	Duration	Status
1	A Study of the Flow Characteristics of Refrigerant HFC-134a Flowing inside a Capillary Tube	Md. Kaleem Khan	Jan 2004-May 2008	2008
2	Performance Evaluation of Double Pass Solar Air Collector with and without Porous Material	Ramani Bharat	Jan 2005-Sep 2008	2008
3	Investigations on Pool and Cross Flow Boiling outside Tube Bundles	Vikas Lakhera	Jul 2004-July 2009	2009
4	Pool Boiling of Nanofluids	R Kathir Ravan	Jul 2006-Sept 2010	2010
5	Augmentation of Heat Transfer During Forced Condensation of Refrigerants	R K Shrivastava	Jul 2004-Ma 2010	2010

	inside Horizontal Tubes			
6	Heat Transfer during Condensation of Refrigerants over Single Horizontal Finned tubes	P P Rathode	Jul 2006-Jul 2010	2010
7	Flow Characteristics of R-407C in Adiabatic and Diabatic Coiled Capillary Tubes	Madhup Mittal	Jan 2007-Sep 2010	2010
8	Heat Transfer Enhancement by inserts during Condensation of R-245fa inside a Horizontal Tube	Parmanand Kumar	Jul 2006-Nov 2010	2010
9	Experimental Simulation of Heat Transfer During the Accidental Coolant Loss	Gopal Nandan	Jan 2004-Apr 2011	2011
10	A Study on the Rewetting of Hot Surfaces by Impinging Jet Cooling	Chitranjan Agrawal	July 2009-2013	2013
11	Enhancement of Heat Transfer during Condensation of Refrigerants	Abhinav Gupta	Dec 2009	in progress
12	Asymmetrical ballooning of fuel rod cluster	Ashwini Yadav	Dec 2009	in progress
13	Rewetting of Fuel Rod Bundle in AHWR	Mithlesh Kumar	July 2010	in progress
14	Study of Flow Boiling Heat Transfer of Refrigerants through Tubes	Arijit Kundu	Jan 2011	in progress
15	Vapour Condensation of Refrigerant over a Horizontal Integral-Fin Tube	Sanjeev Kumar Sajjan	Aug 2011	In progress
16	Experimental Investigation of Fire in Nuclear Power Plant	B. K. Dhurander	Jan 2012	In Progress
17	Assessment of Radiation Heat Transfer for 19 Pin PHWR Fuel bundle under Heat-up Condition	Nitin Rai	Jan 2013	In Progress

#### **Masters (M.Tech.)**

SN	Thesis Title	Name of Student	Status
1	Heat Transfer During Pool Boiling of R-134a over a Horizontal Tube	KK Gupta	2002
2	Heat Transfer During Condensation of R-134a Over a Horizontal Integral-Fin tube	SK Vishvakarma	2003
3	Evaluation of Air Exchange Efficiency in a Naturally Ventilated Room	Vinod Gupta	2004
4	Modeling of Pool Boiling over Horizontal Tubes	M Suresh	2004
5	Augmentation of Heat Transfer During Flow Boiling Inside a Horizontal Tube	Sachin Kulkarni	2004
6	A Study of Heat Transfer during Pool Boiling of Water over a Large Diameter Tube	Manoj Pandey	2005
7	An Experimental Study of Flow Boiling Heat	Alok Pandey	2005

	Transfer in a Microchannels		
8	Flow Boiling Characteristics of R-134a Refrigerant Inside a Horizontal Tube	Saurabh Jain	2005
9	Heat Transfer Studies During Forced Air Precooling of Perishable Food Products	U Narain Murthy	2005
10	Modeling of Condensation Process over Single Horizontal Integral-Fin Tubes	Saurabh Gupta	2005
11	Modeling of Condensation Process inside Smooth Horizontal Tubes	Anil Verma	2005
12	Studies of Flow Boiling Heat Transfer Enhancement Inside a Horizontal tube Using Turbulence Promoters	Anuj Kumar	2006
13	Numerical analysis of Ventilation System of an Isolation Room in a Hospital	Rajeev Kumar	2006
14	Prediction of Dry Out and Post Dry Out Behaviour of Clad Surface During Flow of Water Over a Vertical Heated Rod	Mukesh Kumar	2006
15	Experimental and Theoretical Analysis of Phase Change energy Storage System	TLVS Sankar	2006
16	Cold preservation of Perishable Food Products	Omer Adil Zainal Albayati	2006
17	Heat Transfer Mechanism in Nucleate Pool Boiling under High Heat Flux Condition	Basant Singh Sikarwar	2007
18	Boundary Estimation of Two Dimensional Inverse Heat Conduction Problem	Shiv Shankar Singh Patel	2007
19	Experimental and Theoretical Analysis of Latent Heat Energy Storage System with & without Extended Surfaces	Md. Fahad Naziri	2007
20	Investigation of Nucleate Pool Boiling Heat Transfer in a Vertical Tube Bundle	Vineet kumar	2008
21	Investigation of Convection Heat Transfer from Plain and Corrugated Plates	Satya Prakash	2008
22	Enhancement of the Cooling Efficiency of an Evaporative Cooling System	Sagar Pradhan	2008
23	Heat Transfer Coefficient of an AD warm heat is supplied from the bottom plain and corrugated surface.	Bhupindra Mangla	2009
24	Augmentation of Flow Boiling Heat Transfer inside a Horizontal Tube	Nutan K Banala	2009
25	Parametric Study of a Coriolis Mass Flow Rate Meter	Ashish Vasudev	2009
26	Exergy analysis of Power plant	Pankaj Sharma	2009
27	Investigation of Convective Heat transfer from	Tabish Alam	2010

	Heated Bottom Plain and Corrugated Plate of Rectangular Air Duct		
28	Analytical and experimental investigation of Heat Transfer Characteristics of Fins	Sanjeev K Sajjan	2010
29	Analysis of a Salt Gradient Solar Pond	Hari Mohan	2010
30	Performance Analysis of Double Pass Solar Air heater	Hari K Yadav	2010
31	Performance Evaluation of Coriolis Mass Flow Rate Meter	Prabhakar Singh	2010
32	Heat Transfer Studies during Cold Preservation of Food Products	Rajshekhar Tamboli	2011
33	A Study of Pool Boiling of Ozobe Safe Refrigerants	Kapil Gupta	2011
34	Heat Boiling Studies in Microchannels	Pradeep Singh	2011
35	Flow Boiling Heat Transfer of Ozone Safe Refrigerants	Amit Kumar	2011
36	Experimental Investigation and Analysis of Liquid Fuels Pool Boiling	Pramod Ramteke	2012
37	Experimental Investigation and Analysis of Fire Involving Solids	Ajit Kumar	2012
38	A Study of the Flow of Refrigerant R-134a through Capillary Tube	Nitin Rai	2012
39	S Pool Boiling of Ammonia/Water Mixture over a Horizontal Tube	Sandeep Rathi	2012
40	A Study of Pool Boiling of Refrigerants over a Horizontal Tube	Atul Ranjan	2012
41	Design and Development of Solar Dryer for Herbs	Pragati S. Gautam	2012
42	Performance Evaluation of Flat Plate Solar Dryer	Veer Singh	2013
43	Effect of Surface Roughness on Pool Boiling Characteristics of Calendria Tube using Water under Subcool Conitions	Ashish Bhatt	2013
44	A Study of Heat Transfer during Pool Boiling over a reentrant Cavity Horizontal Tube	Jitendra Kaushik	2013
45	Experimental and Analytical Investigation of Cable Fire	Himanshu Bansal	2013
46	To Investigate the Effect of Ventilation on the Development of Fire in a Compartment	Sriyak Yadav	2013
47	Effect of Nozzle Diameter on the Rewetting of Hot Surfaces	Shikant Tiwari	2013
48	Burning Characteristics of Powered and Unpowered Cables	Sandeep Kumar Gupta	In Progress
49	Effect of Surface Roughness on Critical Heat Flux of and Calendria Tube under Pool Boiling of Water	Subodh Kumar Yadav	In Progress

## Undergraduate (B.E.)

Supervised 37 projects.

## RESEARCH PUBLICATIONS

### INTERNATIONAL REFEREED JOURNALS

1. Kumar,R., Varma,H.K., Mohanty,B. and Agrawal,K.N., Augmentation of Outside Tube Heat Transfer Coefficient During Condensation of Steam Over Horizontal Copper Tubes, **Int. Comm. Heat and Mass Transfer**, Vol.25, No.1, pp.81-91, 1998.
2. Kumar,R., Varma,H.K., Mohanty,B. and Agrawal,K.N., Condensation of R-134a Vapour Over Single Horizontal Circular Integral-Fin Tubes With Trapezoidal Fins, **Heat Transfer Engineering**, Vol.21, No.2, pp. 29-39, 2000
3. Kumar,R., Varma,H.K., Mohanty,B. and Agrawal,K.N., A Comprehensive Study of Modified Wilson Plot Technique To Determine The Heat Transfer Coefficient During Condensation Over a Horizontal Tube, **Heat Transfer Engineering**, Vol. 22, No.2, pp.3-12, 2001.
4. Singh,S.K., Kumar,R., and Mohanty,B., Heat transfer during condensation of Steam over a Vertical Array of Horizontal Integral-Fin Tubes, **Int. J. of Applied Thermal Engineering**, Vol.21, pp.717-730, 2001.
5. Kumar,R., Varma,H.K., Mohanty,B. and Agrawal,K.N., Prediction of Heat Transfer Coefficient During Condensation of Steam and R-134a Over Single Horizontal Integral-Fin Tubes, **Int. J. of Refrigeration**, Vol.25, pp.111-126, 2002.
6. Kumar,R., Varma,H.K., Mohanty,B. and Agrawal,K.N., Augmentation of Heat Transfer During Film-Wise Condensation of Steam And R-134a Over Single Horizontal Finned Tubes, **Int. J. of Heat and Mass Transfer**, Vol.45, pp.201-211, 2002.
7. Agrawal,K.N., Kumar,R., Lal S.N., Varma,H.K., Heat Transfer Augmentation By Segmented Tape Inserts During Condensation Of R-22 Inside A Horizontal Tube, **ASHRAE Trans.**, Vol. 110, pp. 143-150, 2004.
8. Rajullu,K.G., Kumar,R., Mohanty,B., Varma,H.K., Enhancement Of Nucleate Pool Boiling Heat Transfer By Reentrant Cavity Horizontal Tubes, **Int. J Heat Exchangers**, Vol. 5(2). pp. 310-314, 2004.
9. Rajullu,K.G., Kumar,R., Mohanty,B., Varma,H.K., Enhancement of Nucleate Pool Boiling Heat Transfer Coefficient by Reentrant Cavity Surfaces, **J of Heat and Mass Transfer**, vol.(41), pp. 127-132, 2004.
10. Kumar,R., Agrawal,K.N, Lal S.N., Varma,H.K., An Experimental Study on Condensation Enhancement of R-22 By The Turbulence Promoter, **ASHRAE Trans.**, Vol.111, pp.18-25, 2005.

11. Kumar,R., Gupta,A., Vishvakarma,S., Condensation of R-134a Vapour Over Single Horizontal Integral-Fin tubes: Effect of Fin Height, **Int. J. of Refrigeration**, Vol. 28(3), pp. 428-435, 2005.
12. Singh,H.N., Kumar,R., Mohanty,B., Pool Boiling of Water and Benzene on Horizontal Plain Tubes in a Vertical Grid, **Int. J. of Heat & Technology**, Vol. 23(1), pp. 69-72., 2005.
13. Behabadi, M.A.A., Salimpore, M.R., Kumar, R., Agrawal, K. N., Augmentation of Forced Convection Condensation Heat Transfer Inside a Horizontal Tube Using Spiral Spring Inserts, **Int. J. Enhanced Heat Transfer**, Vol.12, Issue 4, pp.373-384, 2005.
14. Singh,H.N., Kumar,R., Mohanty,B., Pool Boiling Heat Transfer on Wire Screen Wrapped Horizontal Tubes, **Int. J. Heat and Technology**, vol.24(1), 2006.
15. Srivastava, R. K., Verma, A. K., Kumar, R., Mohanty B., Prediction of Condensation Heat Transfer Coefficient Inside a Plain Horizontal Tube, **Int. J. Heat Exchangers**, Vol. 8, pp. 139-150, 2007
16. Behabadi M.A.A., Kumar, R., Mohseni, S.G., Condensation Heat Transfer of R-134a inside a Microfin Tube with Different Tube Inclinations, **Int J Heat & Mass Transfer** Vol. (5), pp. 4864-4871, 2007.
17. Khan, M.K., Kumar, R., Sahoo, P.K., Flow Characteristics of Refrigerants Flowing Inside an Adiabatic Spiral Capillary Tube, **Int J HVAC & R Research**, Vol. 13 (5), pp. 731-748, 2007.
18. Albayati, O. A. Z., Kumar, R. and Chauhan, G., Forced Air Precooling Studies of Perishable Food Products, **Int. J. Food Engineering** , Vol.3, no. 6 (8), pp. 1-11, 2007.
19. Kumar, R., Kumar, A., Murthy, U.N., Heat Transfer Studies During Forced Air Precooling of Perishable Food Products, **Biosystems Engineering** , Vol. 99 (2) pp. 228-233, 2008.
20. Khan, M.K., Kumar, R., Sahoo, P. K., A Homogeneous Flow Model for Adiabatic Helical Capillary Tube, **ASHRAE Trans.**, Vol. 114(1). Pp. 239-248, 2008.
21. Akhavan-Behabadi, M. A., Kumar, R., Rajabi-najar, A., Augmentation of Heat Transfer by Twisted Tape Inserts during Condensation of R-134a inside a Horizontal Tube, **J of Heat and Mass Transfer**, Vol. 44, pp. 651-657, 2008.
22. Khan, M.K.,Kumar, R., Sahoo, P. K., An Experimental Study of the Flow of R-134a inside an Adiabatic Spirally Coiled Capillary Tube, **Int. J. Refrigeration**, Vol.31, pp. 970-978, 2008.
23. Kumar, R.,Kumar, R., Gupta, A., Analysis of the Ventilation System of an Isolation Room for a Hospital, **Int J Ventilation**, Vol. 7, No. 2, pp. 139-149, 2008.
24. Khan, M.K.,Kumar, R., Sahoo, P. K., Experimental and Numerical Investigation of R-134a Flow through Lateral Type Diabatic Capillary Tube, **HVAC & R Research** Vol. 14, No. 6, pp. 871-904, 2008.



25. Khan, M.K., Kumar, R., Sahoo, P. K., An Experimental Study of the Flow of R-134a through an Adiabatic Helically Coiled Capillary Tube, **HVAC & R Research** Vol.14(5), pp. 749-762, 2008.
26. Lakhera, V., Gupta, A., Kumar, R., Investigation of Coated Tubes in Cross-Flow Boiling, **Int J Heat and Mass transfer** Vol. 52, Issues 3-4, 31, pp. 908-920, 2009.
27. Behabadi, M.A.A., Kumar, R., and M. Jamali, Investigation of Heat Transfer and Pressure Drop during Swirl Flow Boiling of R-134a in a Horizontal Tube, **Int J Heat & Mass Transfer** Vol. 52, 1918-1927, 2009.
28. Khan, M.K., Kumar, R., Sahoo, P. K., Experimental Investigation on Diabatic Flow of R-134a Through Spiral Capillary Tubes, **Int J Refrigeration**, Vol. 32, pp. 261-271, 2009.
29. Khan, M.K., Kumar, R., Sahoo, P. K., Performance Prediction of Adiabatic Capillary Tubes by Conventional and ANN approaches- A Comparison, **ASHRAE Trans.** Vol. 115 Part 1, pp. 93-105, 2009.
30. Khan, M.K., Kumar, R., Sahoo, P. K., Experimental Investigation on the Flow of R-134a Through Adiabatic and Diabatic Capillary Tubes, **ASHRAE Trans.** Vol. 115 Part 1, pp. 82-92, 2009.
31. Khan, M.K., Kumar, R., Sahoo, P. K., Flow Characteristics of Refrigerants Flowing through Capillary Tubes- A Review, **J Applied Thermal Engineering** Vol. 29, issue 8-9, pp. 1426-1439, 2009.
32. Behabadi, M.A.A., Kumar, R., and A. Mohammadpour, Effect of Twisted tape Insert on Heat Transfer and Pressure Drop in Horizontal Evaporators for the Flow of R-134a, **Int J Refrigeration**, Vol. 32, pp.922-930, 2009.
33. Mittal, M. K., Kumar, R., Gupta, A., Numerical Analysis of Adiabatic Flow of Refrigerant through a Spiral Capillary Tube, **Int J of Thermal Science** volume 48(7), pp. 1348– 1354, 2009.
34. Kathiravan, R., Kumar, R., Gupta, A., Chandra, R., Characterization and Pool Boiling Heat Transfer Studies of Nanofluids, **ASME J Heat Transfer** , Vol. 131, 088902, 2009.
35. Kathiravan, R., Kumar, R., Gupta, A., Pool Boiling Characteristics of Carbon Nanotube based Nanofluids over a Horizontal Tube, **ASME J Thermal Science and Engineering Application** Vol. 1, 022001-7, 2009.
36. Zhelezny, V.P., Sergey, V. Nichenko, Yuri,V.S., Kosoy, B.V., Kumar, R., Influence of Compressor Oil Admixtures on Theoretical Efficiency of a Compressor System, **Int J Refrigeration**, Vol. 32, pp. 1526-1535, 2009.
37. M.A. Akhavan-Behabadi, Kumar, R., and M.R. Salimpour, Azimi, R., Pressure Drop and Heat Transfer Augmentation due to Coiled Wire Inserts during Laminar Flow of Oil inside a Horizontal Tube, **Int J Thermal Science** Vol. 49(2), pp. 373-379, 2010.
38. Gupta, A., Kumar, R., Kumar, V., Nucleate Pool Boiling Heat Transfer over a Bundle of Vertical Tubes, **Int Comm Heat & Mass Transfer**, Vol. 37, pp. 178-181, 2010.

39. Nandan, G., Sahoo, P.K., Kumar, R., Chatterjee, B., Mukhopadhyay, D., Lele, H. G., Thermo-mechanical Behavior of Pressure Tube of Indian PHWR at 20 Bar Pressure, **Int J Mechanical, Industrial and Aerospace Eng**, Vol.4(1), pp.63-71, 2010.
40. Kathiravan, R., Kumar, R., Gupta, A. Chandra, R., Pool Boiling Characteristics of Nanofluids over a Flat Plate Heater, **Int. J. Heat & Mass Transfer**, Vol.53, pp.1673-1681, 2010.
41. Ramani B.M, Gupta, A. and Kumar, R., Performance of a Double Pass Solar Air Collector, **Solar Energy**, Vol. 84, pp.1929–1937, 2010.
42. Nandan, G., Sahoo, P.K., Kumar, R., Chatterjee, B., Mukhopadhyay, D., Lele, H. G., Experimental Investigation of Sagging for a Completely Voided Pressure tube of Indian PHWR under heatup Condition, **Nuclear Engineering Design**, Vol. 240(10), pp. 3504-3512, 2010.
43. Mittal, M., Kumar, R., Gupta, A., An experimental study of the flow of R-407C in an Adiabatic Apiral Capillary Tube, **ASME J Thermal Science and Engineering Application**, Vol. 1(4), 041003, 2010.
44. Mittal, M., Kumar, R., Gupta, A., An Experimental Study of the Flow of R-407C in an Adiabatic Helical Capillary tube, **Int J Refrigeration** Vol. 33, pp. 840 – 847, 2010.
45. Kathiravan, R., Kumar, R., Gupta, A., Chandra, R., and Jain, P.K., 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.
46. Nandana, G., Sahoo,P.K., Kumar, R., Chatterjee, B, Mukhopadhyay, D., Lele, H.G., Thermo-mechanical Behavior of Pressure Tube of Indian PHWR at 20 Bar Pressure, **International Journal of Aerospace and Mechanical Engineering**, Vol. 5(3), pp. 209-217, 2011.
47. Kathiravan, R., Kumar, R., Gupta, A., Chandra, R., Preparation and Pool Boiling Characteristics of Silver Nanofluids over a Flat Plate Heater, **Heat Transfer Engineering**, Vol. 33, No.2, pp.69–78, 2012.
48. Lakhera V., Gupta, A., Kumar, R. Enhanced Boiling outside  $8 \times 3$  Plain and Coated Tube Bundles, **Heat Transfer Engineering**, Vol. 33(9), pp.763–764, 2012.
49. Nandan, G., Majumdar, P., Sahoo, P. K., , Kumar, R. Chatterjee, B., Mukhopadhyay, D., Lele, H. G, Study of Ballooning of a Completely Voided Pressure Tube of Indian PHWR Under Heat-up Condition,, **Nuclear Engineering and Design**, Vol. 243, pp.301– 310, 2012.
50. Chitrnanjan, 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, 25-37, 2012.
51. Chitrnanjan, Kumar, R., Gupta, A., Chatterjee, B., Rewetting and Maximum Surface Heat Flux during Quenching of Hot Surface by Round Water Jet Impingement, **Int. J. Heat & Mass Transfer**, Vol. 55, pp. 4772–4782, 2012

52. Yadav, A.K; Majumdar, P; Kumar, R; Chatterjee, B; Gupta, A; Lele, H.G; 2012, Experimental investigation of symmetric and asymmetric heating of pressure tube under accident conditions for Indian PHWR, **Nuclear Engineering and Design**, Vol. 254, pp. 300-307, 2013.
53. Yadav, A.K; Majumdar, P; Kumar, R; Chatterjee, B; Gupta, A; Mukhopadhyay, D; 2012, 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.
54. 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.
55. Ramteke, P. C., Gupta, A, Kumar, R., Gupta, A. K., Sharma, P. K., Experimental Investigation and CFD Simulation of Hydrocarbon Pool Fire, **J. of Applied Fire Science**, Vol. 22 (2), pp. 201-222, 2013.
56. Chitranjan, Kumar, R., Gupta, A., Chatterjee, B., Determination of Rewetting on Hot Horizontal Surface With Water Jet Impingement Through a Sharp Edge Nozzle, **ASME J. Thermal Science and Engineering Applications** Vol. 5, 011007-1-10, 2013.
57. Chitranjan, Kumar, R., Gupta, A., Chatterjee, B., Determination of rewetting on hot horizontal surface with water jet impingement through a sharp edge nozzle, **Int J Thermal Science**, Vol. 71 310-323, 2013.

## CONFERENCES

58. Agrawal,K.N., Mohanty,B., Kumar,R. and Varma,H.K., Enhancement of Heat Transfer Rates During Condensation of Refrigerants Over Horizontal Finned Tubes, **Proc. 2nd International Symposium of Two-Phase Flow Modelling & Experimentation, Pisa, Italy**, May 23-26, 1999, pp. 505-510.
59. Agrawal,K.N., Kumar,R., Mohanty,B. and Varma,H.K, Enhancement of Heat Transfer Rates During Forced Convection Condensation of R-134a on Horizontal Finned Tubes, 2000 **International Refrigeration Conference, Perdue**, July 24-28, 2000.
60. Singh,S.K, Kumar,R. and Mohanty,B., Condensation Of Steam Over A Vertical Grid Of Horizontal Integral-Fin Tubes, **2nd International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, Zambia**, June 23-26 2003.
61. Agrawal,K.N., Kumar,R., Kaushik,M., Compressor Response and Heat Transfer Characteristics of A Room Airconditioner Working With R-22 and R-134a, **International Congress on Refrigeration, Washington DC**, August 17-22, 2003.

62. Agrawal,K.N., Kumar,R., Lal,S.N., Varma,H.K., Swirl Flow Heat Transfer During Forced Convection Condensation of R-22 in a Horizontal Tube Fitted With Segmented Tapes, **Fourth National Conference on Thermal Systems**, BHU, Varanasi, pp. 152-157, Feb.22-23, 2003.
63. Gupta,K.K., Kumar,R., Pool Boiling Of Refrigerants On A Horizontal Tube, **XIII National Conference of Indian Society of Mechanical Engineers**, December 30-31, 2003, Indian Institute of Technology, Roorkee.
64. Kumar,R., Agrawal,K.N., Mohanty,B., Varma,H.K., An Experimental Study For The Enhanced Condensation Rate of R-134a Vapor on Single Horizontal Integral-Fin Tubes, **3<sup>rd</sup> International Symposium on Heat Transfer Enhancement and Energy Conservation**, Guangzhou, China January 12-15, 2004.
65. Lakhera, V.J., Gupta, A., Kumar, R., Boiling Outside Tube Bundles : A State-Of-The-Art Review, International Conference of Indian Society of Mechanical Engineers, **DCE, New Delhi**, Dec. 12-14, 2005.
66. Kumar,R., Gupta, A., Vishwakarma, S., Effect of Fin Height During Condensation Of R-134a Over A Single Horizontal Integral-Fin Tube, **Proc. ISHMT-ASME Heat Transfer Conference, IIT Guwahati**, January 4-6, 2006, pp. 1109-1114 .
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