

Dr. Arvind Gupta

Qualifications

1. Ph.D., from Indian Institute of Technology, Delhi (IIT-D).

Thesis titled “**CFD Modeling for Hydraulic and Pneumatic Conveying of Solids through Pipeline**”.

2. M. Tech. (Energy), Indian Institute of Technology, Delhi (IIT-D).

3. B.Tech. (Mechanical), Z. H. College of Engineering and Technology, Aligarh Muslim University (AMU), Aligarh.

GATE – 1999 : Qualified in Mechanical Engineering.

Experience: Twenty five years experience in Teaching and industry.

Area of Research Interest: Thermal Engineering, Refrigeration and Air Conditioning (RAC). Fluid Engineering, Computational Fluid Dynamics (CFD), Multiphase flow, Energy Conservation and Management, Lean Manufacturing.

Courses Taught :

1. Refrigeration and Air Conditioning
2. Air Conditioning Equipments
3. Fluid Mechanics
4. Fluid Machines
5. Strength of Material
6. Thermodynamics
7. Applied Thermodynamics
8. Energy Conservation and Energy Management.
9. Material Management

Ph.D. Students

On going

1. Mr. Kamarpal
Thesis Title: CFD modelling for particulate flow through straight pipes and bends.
2. Mr. Sachin Gupta
Thesis Title: Augmentation of heat transfer in internal flow.
3. Mr. Vinod Sehrawat
Thesis Title: Performance Evaluation of Solar Absorption Cooling Systems.

M.Tech. Projects

1. Finite Element Modeling and Simulation of Magnetic Flux Leakage from Metal loss Defects in Steel Pipelines (Mr. Saurabh Kumar).
2. Experimental Simulation of Magnetic Flux Leakage from Metal loss Defects in Steel Pipelines (Mr. Rajan).
3. Performance Improvement of Vapour Compression Refrigeration System (Mr. Tarun Kumar).
4. Waste reduction through Implementation of Lean Manufacturing (Mr. Mounis Malik)
5. Performance Analysis of Compact Heat Exchanger (Ms. Manju Singh).
6. Attribute based selection and comparison of manufacturing system using Topsis (Mr. Naveen Kumar).

B.Tech. Projects: Guided 16 no. of students project. One of the B.Tech. Project “Compressor control of a Transcritical cycle in mobile air conditioning system” beg second prize for the Danfoss Innovator Award in year 2014.

Short Term Courses, workshop and conferences attended: 16

Short Term Courses / Workshop organized: 04

Consultancy Project Handled: Pressure drop analysis in Penstock of hydro power plant for Andritz Hydro Pvt. Ltd. (a German Consultancy firm).

Membership: Life member- (i) Institute of Engineer (India)

(ii) Indian Society for Technical Education

(iii) Society for Fluid Mechanics and Fluid Power

Publications:

International Journals

1. Kaushal, D.R., **Kumar, A.**, Tomita, Y., Kuchii, S. And Tsukamoto, H. (2013), "Flow of Mono-Dispersed Particles through Horizontal Bend", **International Journal of Multiphase Flow, Elsevier Publications, 52 (2013) 71–91.**
2. **Kumar, A.**, Kaushal, D.R., and Kumar, U., (2008). Slurry pipeline bend pressure drop: Experiments versus FLUENT. Journal of Engineering and Computational Mechanics, Taylor and Francis Publications, (1), 164-178.
3. V.B.Gupta, Vinay,H.K.Gupta, **Arvind Kumar Gupta** and C.V.C. Rao. (2004). "A Market-Based Approach to Managing Industrial SPM Emissions in India's Jamshedpur Region". Journal of Environment Quality Management, Vol. Summer 2004 in Jhon Willy publication, USA.
4. Kumar, N., Kaushal, D.R. and **Kumar, A.** (2013), Computational study of the two-Phase Flow in horizontal slurry pipeline, International Journal of Mechanical and Production Engineering(IJMPE)ISSN 2314-4489, Vol-1, Iss-1.
5. Sachin Gupta, **Arvind Gupta** (2013), Transient Analysis of Cooling Load, IJMRS's International Journal of Engineering Sciences, Vol. 02, Issue 02,139-143.
6. **Arvind Kumar**, D.R. Kaushal, Navneet Kumar CFD modeling for pneumatic conveying through pipeline system. YMCAUST Journal, Vol-1, Issue02, 65-70.
7. **Arvind Gupta**, Jitender Dabas(2012), “Green Buildings: Eco-Efficient Infrastructure”, IJMRS's International Journal of Engineering Sciences, ISSN (Online): 2277-9698 181-187.
8. **Arvind Gupta**, Sachin Gupta (2014), Heat Transfer Enhancement -A Review, IJMRS's International Journal of Engineering Sciences, Vol. 03, Issue 01, March 2014,1-9.
9. **Arvind Kumar**, Kamarpal, Sachin Gupta, D.R.Kaushal (2014), CFD Modelling of Slurry Flow in Pipeline System for Solid Concentration Distribution. International Journal of Applied Engineering Research, Vol.09,733-742.
10. **Arvind Kumar**,(2013). CFD modeling for Concentration Distribution and Pressure Drop for two Phase flow through Pipe Bend, International Journal of Engineering Sciences, Vol. 02, Issue 04,9-14.
11. **Arvind Kumar**, Kamarpal, Sachin Gupta, D.R.Kaushal, (2014). CFD Modelling for Pressure drop in Pneumatic Conveying through Pipe. International Journal of Advances in Engineering Research, Vol.04, issue-03,1-4.
12. Manju Singh and **Arvind Gupta** : Performance Analysis of Compact heat Exchanger, IJIRST –International Journal for Innovative Research in Science & Technology| Volume 1, issue 12(503-505), May 2015.

13. Manju Singh, **Arvind Gupta** and Nitin Panwar: Selection of Heat Exchanger using Graph Theoretic Approach, IJRST –International Journal for Innovative Research in Science & Technology| Volume 2, Issue 1, June 2015.
14. Vinod Sehrawat, **Arvind Gupta** and Gulshan Sachdeva,: Review of thermal energy storage options for solar energy powered Absorption cooling systems International Journal of Engineering Research & Technology (IJERT) Volume 4, issue 03,2015.
15. Kanwarpal Singh, **Arvind Kumar**, K. M. Assefa, D. R. Kaushal,: Experimental investigation on the rheological behaviours of fly ash slurries without and with the addition of chemical agents, International Journal of Engineering Research & Technology (IJERT) Volume 4, issue 03,2015.
16. **Arvind Kumar**, Kanwarpal, Sachin Gupta, D.R. Kaushal: CFD modeling for solid liquid flow in pipeline, YMCAUST IJR, Volume 3, Issue 1 Jan 2015.

Conferences: International and National

1. **Kumar, A.**, Kaushal, D.R. and Kumar, U., (2008). 3D CFD Modeling and Experimental Validation for Pressure Drop and Concentration Profiles in Slurry Flow Through Pipe Bend. *9th Biennial ASME International Conference on Engineering Systems Design and Analysis*, Haifa (Israel).
2. **Arvind Kumar**, Dr. D.R. Kaushal, Umesh Kumar,(2007). CFD modeling and experimental validation for pressure drop in slurry pipe bend using Fluent software. ANSYS India , **International Conference**, Bangalore.
3. Gupta, A and Grover, S (2010). “Air pollution in urban cities of India” **National Conference**, Institute of Engineers, Faridabad Local centre, YMCA University, Faridabad, 21st May, 2010.
4. Nikhil Dev, **Arvind Gupta**, Bhupender Singh, Rajesh Attri. (2011). Thermodynamics and the Design, Analysis and Improvement of a 30 MW CHP System Competitive Manufacturing: Strategies & Decision Support Systems, GLA university Mathura, Oct.-2011.
5. **Kumar, A.**, Kaushal, D.R. and Kumar, N. (2012), “CFD modeling for pressure drop at different solid concentration in slurry pipeline”, Proceedings of the International Conference on Computational Mechanics and Simulations (ICCMS2012), IIT Hyderabad, Dec 9-12.
6. Kumar, N., Kaushal, D.R. and **Kumar, A.** (2012), “CFD simulation of solid-water slurry flow in horizontal pipeline”, Proceedings of the International Conference on Computational Mechanics and Simulations (ICCMS2012), IIT Hyderabad, Dec 9-12.
7. **Kumar,A.**, Kaushal, D.R. and Kumar, N. (2012), “CFD modeling for pneumatic conveying”, Proceedings of the National Conference on Trends and Advances in Mechanical Engineering, YMCA University of Science & Technology, Faridabad, Haryana, Oct 19-20, 2012, pp 221-227.
8. Sachin Gupta, **Arvind Gupta** (2013), “Time Dependent Analysis of Cooling Load Using FDM”, Approach Proceedings of the National Conference on Trends and Advances in Mechanical Engineering, YMCA University of Science & Technology, Faridabad, Haryana, Oct 19-20, 2012, pp 206-216.
9. Kanwar Pal, Sombir Sharma, B. N. Pathak, **Arvind Kumar** (2012), “An Analysis of Surface Roughness and Machinability of Al-Fe-Si Alloys”, Proceedings of the National Conference on Trends and Advances in Mechanical Engineering, YMCA University of Science & Technology, Faridabad, Haryana, Oct 19-20, 2012, 567-570.

10. **Arvind Gupta**, Sachin Gupta, Munish Gupta , use of FDM in the Designing of Air-conditioning system, Recent Trends in Materials Engineering” (RTME-2013) at Behal, October 4 -5, 2013.
11. Kanwarpal, **Arvind Kumar**, Navneet Kumar, CFD modelling for slurry pipeline flow: A Literature Review. Proceeding of National Conference on Recent Trends and Innovation Civil Engineering held at BRCM CET, Bahal during 15th-16th November, 2013.
12. Navneet Kumar, Kanwarpal , **Arvind Kumar**, D. R. Kaushal, (2013). Numerical Simulation of finer particles at higher concentration for pipeline flow. Proceeding of National Conference on Recent Trends and Innovation Civil Engineering held at BRCM CET, Bahal during 15th-16th November, 2013.
13. Sonu Ghanghas, Kanwarpal Singh, **Arvind Kumar**,(2013), Mechanical Behaviour of Aluminium (al-fe-si) based alloys using Powder Metallurgy (pm) Technique, Recent Trends in Materials Engineering” (RTME-2013) at Behal on October 4 -5, 2013.
14. Sachin Gupta, **Arvind Gupta**,(2014). A Review on Techniques for Heat Transfer Augmentation, National conference on Recent Advances in Mechanical & Civil Engineering Ajay Kumar Garg Engineering College, Ghaziabad (RAMCE-2014) April 4th and 5th 2014.
15. Vinod Sehrawat, **Arvind Gupta**,(2014). Review of Thermal Storage Options In Solar Absorption Refrigeration System, National conference on Recent Advances in Mechanical & Civil Engineering Ajay Kumar Garg Engineering College, Ghaziabad (RAMCE-2014) April 4th and 5th 2014.
16. Kanwarpal, **Arvind Gupta** (2014). CFD Modeling of Slurry Transportation in Pipeline for Concentration Distribution Using Different Models, National conference on Recent Advances in Mechanical & Civil Engineering Ajay Kumar Garg Engineering College, Ghaziabad (RAMCE-2014) April 4th and 5th 2014.
17. Vinod Sehrawat, Tarun Kumar Gupta, **Arvind Kumar**, Gulshan Sachdeva: Performance review of solar absorption cooling systems worldwide Inetrnational conference on Emerging Trends in Mechanical and Industrial Engineering (ICETMIE-2015) - July 18, 2015 at ITMU, Gurgaon.
18. Sachin Gupta, **Arvind Gupta**, “Numerical Investigation of Cooling load in Designing of Air Conditioning System” International Conference on "Tools, Techniques and Practices for Improving Sustainable Manufacturing" 23-24th January, 2016 at G.L.A. University, Mathura.
19. Kanwarpal Singh, **Arvind Kumar**, D. R. Kaushal, “Experimental investigation of effects of chemical additives on the rheological properties of slurry in sustainable pipeline transportation ” International Conference on "Tools, Techniques and Practices for Improving Sustainable Manufacturing", 23-24th January, 2016 at G.L.A. University, Mathura.
20. Jayant Sardana, Suresh Jangra, Ajay Mahendru, **Arvind Kumar**, “Effect of temperature & holding time on recrystallization behaviour of al-3%mn alloy”. International Conference on "Tools, Techniques and Practices for Improving Sustainable Manufacturing" 23-24th January, 2016 at G.L.A. University, Mathura.
21. Vinod Sehrawat, **Arvind Gupta**, Gulshan Sachdeva “Performance evaluation of solar cooling absorption cooling system”, International Conference on "Tools, Techniques and Practices for Improving Sustainable Manufacturing" 23-24th January, 2016 at G.L.A. University, Mathura.