PROFILE

Dr. Shrikantha S Rao
Associate Professor
Mechanical Engineering Department

Qualification:
B.E. (Mech. Engg.)
M.Tech(Advanced Manufacturing)
Ph.D. Specialization: Application of Neuro-Fuzzy System in Intelligent Manufacturing

Work Experience:
1 year as System Analyst/Programmer at Kirloskar Computers Ltd, B'lore
2 years as Software Specialist at Wipro Infotech, B'lore
22 years in Teaching at KREC/NITK.

No. of Ph.D.s awarded: 07
No. of on-going Ph.D. works: 05 (3 FT and 2 PT)

Sl No	Name	Ph.D. thesis title	Status
1	Raviraj Shetty	Modeling, Analysis and Experimental Investigation on Machining of Discontinously Reinforced Aluminium Composites	Completed(2008)
2	Shailesh Rao A	Investigation of Fluid Flow Behaviour in Centrifugal Casting	Completed(2009)
3	M.Sridhar Datta	Development of a Prediction System for Tool Wear in Face Milling OPeration	Completed(2012)
4	Rajesh Rai P	Study of Milling Process and Optimization of Cutting Parameters	Completed(2012)
5	Ramakrishna N Hegde	Investigations on Pool Boiling Heat Transfer Characteristics of CuO and Alumina Fluids	Completed(2012)
6	Dayananda Pai K	Performance Evaluation and Optimization of Surface Grinding Process for Aluminium Based Metal Matrix Composites using Response Surface Methodology and a Novel Genetic Algorithm Approach	Completed(2013)
7	Nigalye Akshay Vithal	Modelling and validation of Behavior of mushy state rolled Al-4.5 Cu-5TiB2 composite using neural network techniques.	Completed(2013)
8	Arun KumaR	Characterization of Friction stir welded AA6061+4.5Cu+5SiCp composite.	ongoing
9	Gururaj Udupa	Characterization and drillability of Carbon Nanotube reinforced Aluminium Functionally graded Composite	Ongoing
10	Gautham Revnakar	Investigative Studies on the Effect of Burnishing Process for Turned Titanium Alloys(Ti-6Al-4V)	Ongoing
11	Rashmi L. Malaghan	Development of Error Compensation Technique based Adaptive Control System for CNC operation	Ongoing
12	Charitha Rao	Studies on Perforated Surface Single Point Cutting Tool for Turning Operation	ongoing

Subjects Handled:

ME321: Synthesis of Mechanism
ME 301: Design of Mechanical Drives
MF818: Application of Artificial Intelligence in Manufacturing
ME455: DBMS
MC703: Web Based Manufacturing

No. of Govt. sponsored projects: TWO completed
- MHRD Project, "Automation in Manufacturing" of Rs.8 lakhs (2001-03)
- DRDO Project "Simulation and Development of Flapping Mechanisms" of Rs.17.80 lakhs (2010-   13) as Co-Investigator

Total No. of International Journal papers published: 50
Total No. of International/National conference papers: 34

(a) Referred Journal Papers in the current year

1. Arun kumar, Giridhar, Mervin Herbert and Shrikantha Rao. "Microstructural Characerazation and hardness evaluation of friction stir welded composite AA6061-4.5Cu-5SiC (wt.%), Defence Science Journal, 63(4),(2013) 1-6.

2. Prasanna Kumar**,** Mervin A. Herbert and Shrikantha S. Rao**, "**AI Technique Applications in Inventory Management: A Review and Analysis of Literature" *International Journal of Business and Management Tomorrow,* 3(5)**,** (2013), 1-13.

3. Rashmi L Malghan, Dr.Shrikantha S Rao,, Dr.R J Souza, " Review of Developments in Web Based Manufacturiing", Intl. Jl. Of Engineering Research and Development, Vol.8, Issue 2 (2013), 8-18

4. Gururaja Udupa, S.Shrikantha Rao, K.V.Gangadharan, "A Review of Carbon Nanotube Reinforced Al-Composite and Functionally Graded Composites as a Future Material for Aerospace", Intl. Jl. Of Modern Engineering Research, Vol4, Iss.2, Feb,2014 (open Access)

5. S.Usha, P.V.Shashikumar,G.C.Mohankumar, S.Shrikantha Rao,"Through Focus optical Imaging Technique to Analyze Variation in nano scale Indents", Intl. Jl. Of Engineering, Research & Technology, Vol.2, Issue 5, 2013S

(b) Referred Conference Research Papers in the current year

1. Giridhar Salian, Arun Kumar Shettigar, Mervin A. Herbert and Shrikantha S. Rao. Minamata International Symposium on Environment and Energy Technology (Mission-2013). "Structure property correlation of friction stir welded Aluminium copper based SiC composites". 4-6 December, (2013) Kumamoto, Japan,1-6.

2. Arun Kumar, Veeresh Nayak, Mervin A. Herbert and Shrikantha S. Rao. Matrial Research Innovation. " Microstructure and hardness of friction stir welded aluminum-copper matrix based composite reinforced with 10wt.% SiCp." 1st

International. Conference on the Science & Engineering of Materials - ICoSEM-2013, November 13-14, 2013, University of Malaya, Kaulalumpur, Malaysia.

3. S.Usha, P.V.Shashikumar,G.C.Mohankumar, S.Shrikantha Rao,"Through Focus Signature Analysis for Nano Features", 1st Natl. Conf. On Micro and Nano Fabrication, CMTI, Bangalore, 2013

4. S.Usha, P.Madhuri, V.Kavitha, P.V.Shashikumar,G.C.Mohankumar, S.Shrikantha Rao,"Optical Microscope for Inspection of Nanoscale Features Through Defocused Image Analysis", Intl. Colloquium on Materials, Manufactring and Metrolgy, (ICMMM) IIT, Madras 2014

Other Achievements:

- Developed CAD Lab under TEQIP-I, with 50 nos. of workstations and a suite of CAD/CAM s/w

- Developed CNC Lab with 4 nos. of trainer machines, a turning center,a milling center and 2 nos. of Rascal Manipulator Robots.

- Developed Microcontroller lab with microcontroller kits,system modeling s/w , PLC unit

- Actively involved in alumni association activities like community services, green revoljution project in the campus

- Conducted no. of continuing education programs for employees of neighbouring industries, students and teachers

Course Evaluation Plan for MF818: Application of Artificial Intelligence in Manufacturing (*Elective for VI & VIII Sem. UG students*)

Objectives:
To understand the role of AI in mechanical engineering applications
Apply different AI techniques to solve engineering problems

Course contents:
Introduction, AI systems, Semantic Networks, Heuristic systems, Knowledge Engineering, Patterns, Search Strategies, Expert Systems, Knowledge Base, Inference Engines, Artificial Neural Network(NN) models like Multi Layer Feed Forward NN, Recurrent NN, Adaptive Resonance Theory and their algorithms, Fuzzy Logic Control systems, Genetic Algorithm.

Course Outcome:
The students will be exposed to the field of AI through the sequence of CONCEPT-ARCHITECTURE-ALGORITHM-IMPLEMENTATION for each of the major techniques. Emphasis will be given to mechanical engineering problems during the discussion of case studies. They are encouraged to try out the development of AI models through coding of the algorithms, as well as with the aid of Matlab Toolbox. The students are also given a demonstration of the research findings of AI applications to machining process, by the research scholars, who have undertaken research in the AI field.

Thus, with theoretical and practical inputs on AI system concepts and implementation, the students gain confidence in applying AI techniques to process modeling and appreciate its advantages over other methods in the area of prediction, decision making, handling uncertainties and tackling optimization problems.

International Journals:

1. Dayanand Pai, Shrikanth S Rao, Raviraj Shetty, "Application of response surface methodology on surface roughness in grinding of aerospace Materials (6061al-15vol%SiC)", ARPN Journal of Engineering and Applied Sciences 5,(6), ISSN 1819-6608, June,2012

2. Dayananda Pai, Shrikantha S Rao, Raviraj Shetty, "Application of statistical Tool for optimisation of specific cutting energy and surface roughness on surface grinding of $Al6061$-SiC_{35p} composites", International Journal for science and statistical computing; CSC journals Vol.2 (1) ISSN 2180-1339, May 2011

3. Dayanand Pai, Shrikanth S Rao, Rio D'Souza, "Multi Objective Optimization of Surface Grinding Process by Combination of Response Surface Methodology and Enhanced Non-dominated Sorting Genetic Algorithm", International Journal of Computer Applications Vol.36(3),ISSN 0975-8887,Dec 2011

4. Dayanand Pai, Shrikanth S Rao, Raviraj Shetty, "Application of Taguchi and Response Surface Methodologies for Metal Removal Rate and Surface Roughness in Grinding of DRAC's", International Journal of Engineering and Management Sciences Vol. 3 (1) ISSN 2229-600X, Jan 2012

5. Deviprasad, Prasad Krishna, Shrikantha S Rao, "Prediction of Surface Finish and Optimization of Machining Parameters in Turning", Advanced Materials Research Vols. 463-464 (2012) pp 679-683,© (2012) Trans Tech Publications, Switzerland

6. Tribological studies on discontinuously reinforced aluminium composites based on the orthogonal arrays, *ARPN Journal of Engineering and Applied Sciences,* Vol.3,no.1, **2008,** pp.94-92, **ISSN 1819-6608**

7. .Study of Surface roughness minimization in turning of DRACs using Response surface methodology and Taguchi under pressured steam jet approach, *ARPN Journal of Engineering and Applied Sciences,* Vol.3, no.1, **2008,** pp.59-67, **ISSN 1819-6608**

8. .A pressured steam jet approach to tool wear minimization in cutting of metal matrix composites ,*Materials Science Forum*, Vol. 561-565, **2007,** pp.643-646, **ISSN 0255-5476**

9. .Steam as coolant and lubricant in turning of Metal Matrix Composites, *Journal of Zhejiang University Science*, Vol.9(09), **2008,** pp.1245-1250, **ISSN1673-565X** (Print); **ISSN 1862-1775** (Online)

10. Finite element modeling of stress distribution in the cutting path in machining of discontinuously reinforced aluminium composites, *ARPN Journal of Engineering and Applied Sciences*, Vol.3, no.4, **2008,** pp.25-31, **ISSN 1819-6608**

11. Machinability study on DRACs using Response Surface Methodology and Taguchi's Design of Experiments under dry cutting condition, *Maejo International Journal of Science and Technology*, Vol. 2(01), **2008***, pp.227-239, **ISSN 1905-7873**

12. Experimental studies on turning of discontinuously reinforced aluminium composites under dry, oil water emulsion and steam lubricated conditions using TAGUCHI's technique, *Gazi University Journal of Science*, Vol.21, no.2, **2009,** pp.33-36, **ISSN 1303-9709**

13. Experimental and Analytical study on chip formation mechanism in machining of DRACs, *ARPN Journal of Engineering and Applied Sciences*, Vol.3, no.5, **2008,** pp.27-32, **ISSN 1819-6608**

14. Taguchi's Technique in Machining of Metal Matrix Composites, *Journal of Brazilian Society of Mechanical Sciences*, Vol.XXXI, no.1, January-March **2009,** pp.12-20, **ISSN 0100-7386**

15. S. D. Mhalsekar, S.S. Rao and K V Gangadharan,(2010) "Investigation on feasibility of recurrence quantification analysis for detecting flank wear in face milling." Int. Journal of Engineering, Science and Technology, Volume 2,(2010) No.5. pp.23-38.

16. Shridhar D. Mhalsekar, Mohan G., Shrikantha S. Rao and K. V. Gangadharan,(2009) "Determination of transient and steady state cutting in face milling operation using recurrence quantification analysis." ARPN Journal of Engineering and Applied Sciences, Volume 4, No.10.pp.36-46.

17. Shridhar D. Mhalsekar, C. Harikrishna, Shrikantha S. Rao And K. V. Gangadharan,(2010) "Tool Wear Prediction Using Recurrence Quantification Analysis and Fuzzy Logic System for Face Milling Operation." Int. Journal of Production Research (Communicated)

18. Shailesh Rao A, P G Mukunda, Shrikantha S Rao, "Inference of Optimal Speed for Sound Centrifugal Casting of Tin" Canadian Metallurgy Quarterly and Material Science, Volume 48, Number 2, April 2009,157-166

19. Shailesh Rao A, P G Mukunda, Shrikantha S Rao, "Influence of Rotational Speed during Centrifugally Cast on Sliding Wear Behaviour of Al-2Si Alloy" Frontiers of Materials Science of China, Springer Verlag Publication, Vol 3, 2009, 339-343

20. Shailesh Rao A, P G Mukunda, Shrikantha S Rao, "Influence of Fluid Flow Behaviour in Centrifugal Casting", Journal of Advanced Fluid Mechanics Vol 2, 2008, 49-53

21. Shailesh Rao A, P G Mukunda, Shrikantha S Rao, "Influence of teeming temperature of molten metal of Tin during centrifugal casting" IJCMR, Vol 23, 2010, 51-54

22. Shailesh Rao A, P G Mukunda, Shrikantha S Rao, "Influence of Rotational speed of Centrifugal Casting Process on Appearance, Microstructure and Sliding wear behaviour of Al-2Si cast alloy" Metals and Materials International, Springer Verlag Publication, Vol. 16, No. 1 (2010), pp. 137-143

23. Shailesh Rao A, Mukunda P G, Shrikantha S Rao, "Inference of Optimal Speed for Sound Centrifugal Casting of Al-12Si Alloys", JOM, May 2011

24. Rajesh Rai, Shrikantha S Rao, N.Sriram, "Surface roughness modeling of Hot work Chromium Steel (AISI H11) in face milling", International journal of Manufacturing Science and Technology vol. 4 no 1, pp 1-13, June 2010.

25. Rajesh Rai, Shrikantha S Rao, N.Sriram, "Development of a surface Roughness Prediction system for machining of hot chromium steel (AISI H11) based on artificial neural network" ARPN journal of Engineering and Applied Sciences, vol 5 nov 2010

26. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Role of surface roughness in pool boiling with alumina-water nanofluid on a horizontal wire surface" Journal of Heat and Technology,29(1);165-171,2011,ETS Printers,Italy

27. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Behavioral study of Alumina nanoparticles in Pool boiling heat transfer on a vertical surface" *Heat Transfer Asian Research,* Wiley- Blackwell, International Journal,40(6),483-576,2011

28. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Experimental Study On CuO Nanoparticles in Distilled Water and its Effect On Heat Transfer" International Journal Of Nanoparticles, Inderscience Publications-Switzerland, 5(1),16-36,2012

29. **Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Experimental study on CuO nanoparticles and its effect on heat transfer on a vertical surface" Journal of Mechanical Science and Technology, Springer-Verlag Publications, 25(11),2927-2934,2011**

30. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "A Comparative Study Of Heat Transfer Enhancement in Pool Boiling with CuO and Alumina Nanofluids" International Journal of Nanotechnology and Applications, Volume 5(1),2011,RI publications

31. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Critical heat flux enhancement in pool boiling using Alumina Nanofluids "*Heat transfer Asian Research,* Volume 39 Issue 5**, Pages 323 – 331,2010,**Wiley-Blackwell, International Journal.

32. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Pool boiling heat transfer characteristics and flow visualization of Al_2O_3 - water nano-fluids", International Journal Of Mechanical And Automotive Engineers, Volume 08,Issue No 03, pp34-39, 2010

33. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Flow Visualisation,critical hat flux enhancement and transient characteristics in pool boiling using nanofluids",Jl. Of ASTM Internation(JAI) (accepted for publication)

34. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Investigations on boiling induced nanoparticle coating, transient characteristics and effect of pressure on a cylindrical surface",Experimental Heat Transfer, Taylor&Francis (accepted for publication)

35. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Boiling induced nanoparticle coating and its effect on pool boiling heat transfer on a cylindrical surface using CuO nanofluids",Heat and Mass Transfer,Springer-Verlag Publ., published online: 07 April 2012

36. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Investigations on Heat Transfer Enhancement in Pool Boiling with Water-CuO nanofluids",Journal of Thermal Science, Springer-Verlag Publ.,21(2),179-183,2012

37. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Flow Visualisation and study of CHF enhancement in pool boiling with Al_2O_3 water nano-fluids",Thermal Science-International Scientific Journal

38. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Studies on Nanoparticle Coating due to Boiling Induced Precipitation and Its Effect on Heat Transfer Enhancement on a vertical cylindrical surface",Experimental thermal and Fluid Science, Elsevier Publ.,38,229-236,2012

39. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Experimental studies on CHF enhancement in pool boiling with CuO-water nanofluid",Heat and Mass Transfer,Springer-Verlag Publ, published online:03 Jan 2012.

40. Ramakrishna Hegde, Shrikantha S Rao, R.P.Reddy, "Experimental Investigations of pool boiling heat transfer characteristics on a vertical surface using CuO nanoparticles in distilled water", Heat Transfer Engineering(HTE) Taylor and Francis Journal, accepted for publication in the special issue.

41. A.V.Nigayle, U J Amonkar,S.S.Rao,M.A.Herbert, "Convergence of Recurrent Neural Networks Using Partially Trained ANN", Intl. Journal of Engineering Research and Technology, ISSN: 2278-018, Vol. 1 Issue 5, July – 2012

42. Gururaj Udupa, Shrikantha S Rao, K.V.Gangadharan, "Application of Genetic Algorithm

for the Determination of Optimum Machining Parameters in Turning Al-SiC Metal Matrix Composite", Intl, Journal of Modern Engineering Research(IJMER),ISSN2249-6645, Vol.2, Issue 1, Jan-Feb,2012

43. R.N.Hegde,S.S.Rao, R.P.Reddy,"Investigations on Boiling Induced Nanoparticle Coating, Transient Characteristics, and Effect of Pressure in Cylinderical Surface", Experimental Heat Transfer,25:4,323-340,2012, Taylor&Francis Publ.

44. Arun kumar, Giridhar, Mervin Herbert and Shrikantha Rao. "Microstructural Characterazation and hardness evaluation of friction stir welded composite AA6061-4.5Cu-5SiC (wt.%), Defence Science Journal, 63(4),(2013) 1-6.

45. Prasanna Kumar, Mervin A. Herbert and Shrikantha S. Rao, "AI Technique Applications in Inventory Management: A Review and Analysis of Literature" *International Journal of Business and Management Tomorrow,* 3(5), (2013), 1-13.

46. Rashmi L Malghan, Dr.Shrikantha S Rao,, Dr.R J Souza, " Review of Developments in Web Based Manufacturiing", Intl. Jl. Of Engineering Research and Development, Vol.8, Issue 2 (2013), 8-18

47. Gururaja Udupa, S.Shrikantha Rao, K.V.Gangadharan, "A Review of Carbon Nanotube Reinforced Al-Composite and Functionally Graded Composites as a Future Material for Aerospace", Intl. Jl. Of Modern Engineering Research, Vol4, Iss.2, Feb,2014 (open Access)

48. S.Usha, P.V.Shashikumar,G.C.Mohankumar, S.Shrikantha Rao,"Through Focus optical Imaging Technique to Analyze Variation in nano scale Indents", Intl. Jl. Of Engineering, Research & Technology, Vol.2, Issue 5, 2013S

International / National Conferences:

1. Studies on Application of Response Surface Methodology for the analysis of Specific Energy during grinding of DRAC's", National conference on Advances in Mechanical Engineering (AIM-Engg,2011) at Manipal Institute of Technology, Manipal,Jan3-5,2011

2. Multi objective optimisation by combination of response surface methodology and desirability function for grinding of DRACs", International conference on Design and Advances in Manufacturing Engineering at SKP Engg. College, Tamilnadu, December 16-17, 2011

3. Study of tool wear in turning 15% SiCp reinforced 6061 aluminium metal matrix composite with steam as coolant, in; Proceedings of International conference on Advanced Material processing and characterization, *APMC- 2006*, Chennai, India

4. Tribological studies on PCBN tool in turning metal matrix composites with Steam as coolant ,Proc. of Intl. Tribological Conference, *AUSTRIB-2006*, Brisbane, Australia.

5. Application of Finite-element analysis in orthogonal cutting of aluminium metal matrix composites, Proc. of Intl Conf. on Advances in Mech Engg, *ICAME-06*, Chennai, India.

6. Chip and built-up edge formation in turning age hardened AA6061/15 vol. % SiCp composites with steam as coolant , in; Proceedings of Second International Conference on Recent Advances in Composite Materials, *ICRAM- 2007*,Newdelhi,India.

7. Steam as environment friendly lubricant in metal cutting process, in; Proceedings of 15th Symposium on Lubricants, Additives, Waxes and Petroleum Specialty Products, *LAWPSP-2007*, Mumbai, India.

8. Tribological studies of steam penetration in different directions in turning of metal matrix composites using steam as coolant, in; Proceedings of International Conference on Industrial Tribology, *ICIT-2006*, Bangalore, India. (CD-ROM)

9. Influence of lubrication condition on surface roughness in turning of metal matrix composites, in; Proceedings of Sixth International Conference on composite science and technology *ICCST/6* , Durban, South Africa (CD-ROM)

10. A pressured steam jet approach to tool wear minimization in cutting of metal matrix composites, in; Proceedings of International Conference in Composite Science and Technology, *PRICM-2007*,South Korea. (CD-ROM)

11. The statistical modelling of surface roughness in face milling of Hot work Chromium Steel (AISI H11), International Conference on Fascinating Advancement in Mechanical Engineering, *FAME-2008*,Tamilnadu(CD-ROM)

12. Finite-element analysis of chip-separation criterion with different rake angles in orthogonal cutting of aluminium metal matrix composites, in; Proceedings of National conference on Recent Trends in Mechanical Engineering, *NCRTME-2006*,Mysore, India.

13. 'Investigation of surface finish and tool wear using recurrence quantification analysis in face milling'. International Conference on Advances in Materials Mechanics and Management, January 14-15, 2010, College of Engineering, Trivandrum.

14. 'Estimation of the Wear in Milling Insert during Face Milling Operation.' International Conference on Micro Electromechanical Systems, Oct 22-23, 2008, Anjuman College of Engineering, Bhatkal.

15. 'Quantification of Milling Inserts using Time Series Analysis of Vibration Signals', National Conference on Evolving Trends in Mechanical Engineering, March 13-14, 2009, The Oxford

College of Engineering, Bangalore.

16. "Initial experiments of fluid flow behaviour of Al-Si alloys in centrifugal casting", ICMMM, 2008, Dr Mahalingam College of Engineering, Pollachi Dec 2008

17. "Understanding fluid flow behaviour in centrifugal casting" Tohoku University, Sedai, Japan, Dec 14 2007

18. "Mathematical modeling of face milling operations" proceedings of National Conference of README-2005 at PACE Mangalore between Dec 1st and 3rd 2005.

19. "Modeling for the prediction of surface roughness in face milling operation" proceedings of National Conference ETIME-2006 at BMSCE-Bangalore, Feb 10th and 11th 2006.

20. "Prediction of surface roughness in face milling operation Using factorial design of experiments" presented for the National conference RTIMES -2007 at SSIT Tumukur on Feb 21- 22 2008.

21. "The statistical modeling of surface roughness in face milling of hot work chromium steel (AISI H11)"presented for the International conference "FAME 2008"at MEPCO SCHLENK ENGG COLLEGE SIVAKASHI Tamilnadu Dec 11-13 2008.

22. "Surface roughness modeling in End Milling Operation" Proc. of the International Conference on Frontiers in Mechanical Engineering, (FIME- 2010) May 20-22, 2010 National Institute of Technology Karnataka, Surathkal – 575 025, India.

23. "Investigations on heat transfer enhancement using CuO –Water nanofluids" ,International conference at Chennai , ICFET-2010 ,Saveetha University, Chennai, April 29,30 2010

24. "Experimental investigation on heat transfer enhancement using Alumina –Water Nanofluids" International conference on Frontiers In Mechanical Engineering, FIME 2010, May 20, 21,22 2010

25. "Flow visualization in pool boiling with Al_2O_3 - water nanofluid on a horizontal test surface and its effect on CHF enhancement" International Conference AMMMT-2010, SIT Tumkur,Nov,18-19-2010

26. "Experimental Investigations of Pool Boiling Heat Transfer Characteristics on a Vertical Surface USing CuO Nanoparticles in Distilled Water"Accepted for presentation,International Conference On Thermal Energy and Environment, INCOTEE 2011,Kalasalingam University, Tamilnadu, March 24 - 26, 2011

27. "Microstructural Characterization and Microhardness Evaluation of Friction Stir Welded Composite AA6061-4.5Cu-5SiC(wt%)", Intl. Conf. on Functional Materials for Defence 2012, 18-20,May 2012, Defence Institute for Advanced Technoligy,PunePrediction of Grain Size and Hardness in Pre Hot Rolled Al-4.5 Cu-5 TiB$_2$ composite using Artificial Neural Networks",Intl. Conf. on Reliability, IT and Optimization, Nov 1-3,2010,Lingasaya Univ.,Faridabad,Haryana

28. "Correlation of Grain size and Hardness with Process Parameters in Al-4.5 Cu-5 TiB$_2$ composite using Artificial Neural Networks", Intl. Conf. on Advances in Mechanical Engineering-4,Sept 23-25,2010,SVNIT,Surat

29. "Correlation of hardness, microstructural properties and phase parameters with wear properties during the mushy state rolling of Al-4.5 Cu-5 TiB$_2$ composite Artificial Neural Networks", Mathematical Modelling and Applications to Industrial Problems(MMIP-2011),March 28-31,2011,NIT Calicut

30. "Future applications of Carbon Nanotube reinforced Functionally Graded Composite Materials", IEEE-Intl. Conf. On Advances In Engineering, Science And Management (ICAESM -2012) March 30, 31, 2012 399

31. Dayanand Pai, Shrikanth S Rao, Raviraj Shetty, Application of response surface methodology on surface roughness in grinding of aerospace Materials (6061al-15vol%SiC), *ARPN Journal of Engineering and Applied Sciences*, Vol 5,(6), ISSN 1819-6608