


## R E S U M E

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### 01. Educational Qualification:

Sr. No.	Name of Examination	Name of Examining Body	Year of Passing	Class %Marks
01	Bachelor of Engineering. (Instrumentation)	Dr. B. A. Marathwada University Aurangabad	1987	First class with Distinction 67.40
02	Master of Engineering. (Instrumentation)	-do-	1992	First Class 66.68
03	Ph. D. Area of specialization: (Biomedical Signal Processing )	IIT Roorkee	2001	Khosla Annual Research Award – 2002 of IIT, Roorkee for the best research paper

**Title of M. E. Thesis:** Software for Stability and Design of Linear Control System and its Implementation on a Physical System.

**Title of Ph. D. Thesis:** Analysis and Interpretation of ECG Signal using Wavelet Transform.

### 02. Award :

Khosla Annual Research Award - 2001. ( The research paper titled ECG Data Compression using Non-redundant Templates has got the First Khosla Research Prize and a MEDAL of I.I.T. Roorkee.)

### 03. Experience

#### a) Teaching:

Sr. No.	Post Held	From	To	Name of the Employer	Total Experience
I	Lecturer in Instrumentation Engineering	26.08.87	August 1993	SGGS Institute of Engg. & Technology, Vishnupuri, Nanded (M.S.), India	06 years
II	Lecturer in Instrumentation (Senior	August 1993	August 98	--do--	05 years

	Scale)				
III	Lecturer in Instrumentation (Selection Grade)	August 1998	August 2001	--do--	03 years
IV	Assistant Professor of Instrumentation (CAS)	16.08.2001	01.01.2006	--do--	05 years
V	Associate Professor of Instrumentation (CAS)	01.01.2006	2009	--do--	05 years
VI	Professor of Instrumentation (CAS)	August 2009	Till today	--do--	03 years

b) **Administrative:**

	In-charge, Electrical Maintenance Cell	2005	2006	--do--	02 years
	Controller of Examinations	11.07.2006	02.06.2008	--do--	02 years
	Chairman, Central Library	01.03.2009	01.08.2009	--do--	½ year
	Coordinator of Academic Activities	2011	2012	--do--	02 years
	Dean Academics	21.09.2012	16.09.2014	--do--	02 years
	Dean R&D	16.09.2014	Till date	--do--	02 years
	Head of the department	30.05.2016	Till date	--do--	---

c) **Research:**

Since last eight years, the research work is being carried out in the field of Biomedical Engineering, particularly on bioelectric signals. Effective use of wavelet transform in ECG signal analysis and interpretation is proved to be of immense help to society.

Use of wavelet transform for heart rate variability (HRV), ventricular late potential (VLP) and His potential and in ECG data compression has been carried out. Work is continued to develop reliable automated cardiac disease diagnosis system.

d) **Training:**

Did training on ECG signal processing at CORE laboratory of University of Glasgow, Scotland, UK during June, 2006. Jointly working on a project to establish ECG database from healthy native population. Coordinators are Professor P. W. Macfarlane, who is a Director of Clinical Research center, University of Glasgow, Scotland, Prof Vinod Kumar from IIT, Roorkee and Dr. Dilbag Singh from NIT, Jalandhar.

**TATA Honeywell, Pune 3 weeks Industrial training :** Attended the training course on TDC 300 & LCS 620 Implementation.

**2008 Indo-US Collaboration for Engineering Education (IUCEE) one week Workshop :** Hands on Engineering using LABVIEW training at Infosys Campus, Mysore.

**04. Guiding Ph.D.**

(Guiding 08 Ph.D. Students and 05 Ph.D. thesis completed.)

Title of Ph.D. thesis:

1. Study and Analysis of R-R Time Series Signal in Spinal Cord Injury Patients.
2. Use of disease coding and scoring patterns for diagnosis of heart diseases.
3. ECG data compression and telemedicine.
4. Analysis of ECG signal using Spatial velocity function and its interpretation by Minnesota coding.
5. Study of effect of diabetes on ECG.
6. Analysis of ECG signal for measurement and detection of Q-T, S-T segments and T wave alternans.
7. Investigations and analysis of Mach-Zehnder interferometry based fiber optics biosensors.
8. Arrhythmia analysis and interpretation.
9. Masticatory force measurement and analysis.
10. Brain tumor image processing and feature extraction.

## **05. Projects Guided (P. G.):**

1. Title: Genetic Algorithm Based Fuzzy Logic Controller

Abstract: In this project we have developed a software to design a Fuzzy Logic Controller using Genetic Algorithm

2. Title: Signal analysis and disease diagnosis using multilead ECG

Abstract : In this project we have developed a software to analyse multilead ECG signals and also to carryout the disease diagnosis.

3. Title: Speaker Independent Isolated Word Speech recognition Using MEL-Frequency Cepstrum Coefficients.

Abstract : In this project we have developed a software to recognise the words uttered to read the numbers from 1 to 10 by the speaker.

4. Title: ECG Data Compression using Various Techniques.

Abstract : In this project four techniques for compressing ECG data are implemented. These techniques are AZTEC, FAN, Peak Picking and Modified Fourier Descriptors.

5. Title: Image Compression with Variable Block Size Segmentation.

Abstract : Image compression is now essential for applications such as data transmission and storage. An LGB algorithm is presented for the design of vector quantizers, which is based on a long training sequence of data. Scheme for image compression of gray images based on the vector quantization coding technique is presented.

6. Title: Applications of Telemedicine.

Abstract : Telemedicine is an application, not a technology . The simplest definition of telemedicine is that it uses multimedia (voice, video and data) technology to deliver medical services. Broadly defined, telemedicine is the transfer of electronic medical data from one location to another.

7. Title: Modeling And Simulation of Combustion Process in Boiler

Abstract :To increase the production of any industry, increase the efficiency of boiler and is a challenging work for the concern engineer. In this work an algorithm using visual basic –6 software has been developed to simulate and optimise the working of boiler. This work utilised the actual operating data from a new steam generation plant of RCF, Trombay, Mumbai.

## 06. Subjects Taught:

### a) Under Graduate

Sensors and Transducers  
Linear Integrated Ckts. and Applications  
Biomedical Instrumentation  
Control System Components  
Instrumentation Component Design  
Numerical Methods  
Process Control and Instrumentation  
Electrical Engineering  
“C” Language

### b) Post Graduate

Biomedical Instrumentation  
Biomedical Signals and Processing  
Process Instrumentation  
Advanced Sensors and Transducers

## 07. Other Activities:

1. Worked as editorial board member for National and International conference proceedings:
  - a) the Proceedings of International Conference CERA 97 on Computer Applications in Electrical Engineering, 8-11 September 1997, University of Roorkee, ROORKEE.
  - b) the Proceedings of National Conference on Biomedical Engineering, 21-22 April, 2000, University of Roorkee, ROORKEE.
  - c) Coordinated the activity to conduct the regular short term courses on Biomedical Instrumentation for Engineers, Doctors and Technicians at Biomedical Centre, SGGSC&T, Nanded.
  - d) Co-ordinated different activities at Institute level such as : Preparation and execution of DCA projects, Conduct of University exams, Preparation of Institute Staffing pattern. Worked as a member of FE and ME admission committee and vehicle committee. Worked as Overall In-charge of FE classes administration. Arranged short and long industrial tours for students. Arranged health check up camps for SGGSC employees and their family. Worked as Incharge, Electrical Maintenance Cell for two years and **Controller of Examinations** for two years. At present working as **Chairman, central library.**

## 08. Attended/ Papers presented in the following International and National Conferences:

- a) 5<sup>th</sup> International Congress and Exhibition, hosted by National Foundation of Indian Engineers (NAFEN), November 21-22, 1991, New Delhi.
- b) First Regional Conference of IEEE Engineering in Medicine & Biology Society and 14<sup>th</sup> Conference of the Biomedical Engineering Society of India. February 15-18, 1995, New Delhi.

- c) International Conference CERA 97 on Computer Applications in Electrical Engineering, 8-11 September 1997, University of Roorkee, ROORKEE.
- d) International Conference on Instrumentation (ICI-2009) & National Symposium on Instrumentation (NSI-34), Organised by ISA IISc Bangalore and Maharshi Karve Shree Shikshan Samstha's Cummins College of Engineering for Women, Pune, January 21-23, 2010.
- e) SBME – NM 2000, Symposium on Bio-medical Engineering & Nuclear Medicine, Organised by BARC, Mumbai, January 27-29, 2000.
- f) National Conference on Biomedical Engineering, 21-22 April, 2000, University of Roorkee, ROORKEE.
- g) National Conference on Biomedical Engineering, 21-22 April, 2000, University of Roorkee, ROORKEE.
- h) Innovation – 2008 Conference for Engineering Teachers, Jointly Organised by Board of College and University of Pune and Sinhgad Technical Education Society, Pune, 2008
- i) National Conference on Innovations & Trends in Computer & Communication Engineering, 25-27 February, 2011, MET's Institute of Engineering, Nashik.
- j) National Conference on TEQIP II: Best Policies and Practices, Jointly organised by SPFU and SGGS Institute of Engineering & Technology, Nanded, 10-11, January, 2014.
- k) International Conference on Industrial Instrumentation and Control (ICIC) Organised by College of Engg, Pune, pp 247-251, May 28-30, 2015.

## **08. List of Publications :**

### **Journal Papers :**

1. Saxena S.C., Vinod Kumar and Hamde S. T., "ECG Data Compression Using Non-Redundant Templates", IETE Technical Review, Vol. 17, No. 5, pp 299-310 September-October, 2000.
2. Saxena S.C., Vinod Kumar and Hamde S. T., "Feature Extraction from ECG Signal using Wavelet Transforms for Disease Diagnostics", International Journal of Systems Science, Vol. 33, No. 13, pp 1073-1085, U.K., 2002.
3. Saxena S.C., Vinod Kumar and Hamde S. T., "QRS Detection Using New Wavelets", Journal of Medical Engineering and Technology, Vol.26, No. 1, pp 7-15, U.K., 2002.
4. A. G. Patil, R. H. Chile, and Hamde S. T., "RR Variability in Spinal Cord Injured Patients", Internet Journal of Bioengineering, vol.3, No.1, 2008.
5. A. G. Patil, R. H. Chile, and Hamde S. T., "Wireless System for Measurements of RR Variability During Physical Activity", Internet Journal of Bioengineering, vol. 3, No. 2, 2009.

6. Channappa Bhyri, Kalpana.V., S.T.Hamde and L.M.Waghmare, , Estimation of ECG features using LabVIEW, International Journal of Computing Science and Communication Technologies, Vol. 2, No.1, July 2009.
7. P.B. Patel, V.S. Rane, S.T. Hamde and B.S. Chaudhari. "Characterization of the Properties of an Optical Wave Field : an Investigation." International Journal of Environmental Research and Development, Vol. 4, No. 2, pp 549-553, India, 2009.
8. Channappa Bhyri, S.T. Hamde and L.M. Waghmare," ECG feature extraction and disease diagnosis," Journal of Medical Engineering & Technology, 35(6-7), 354-361 2011.
9. Channappa Bhyri, S.T. Hamde and L.M. Waghmare, " ECG Acquisition and Analysis System for Diagnosis of Heart Diseases," Sensors & Transducers Journal, Vol. 133, Issue 10, pp. 18-29, October 2011.
10. V. Kalpana, S.T. Hamde and L.M. Waghmare, "A Hybrid Technique For ECG Parameter Extraction Using LabVIEW and MATLAB," RESEARCH ARTICLE, Journal of Medical Imaging and Health Informatics, Vol. 1, No.4,pp 360-365, 2011.
11. A. G. Patil, R. H. Chile, and Hamde S. T., "Statistical analysis of RR series variability in spinal cord injured persons", Journal of Medical Engineering & Technology,36(3): 180-184, 2012.
12. V. Kalpana, S.T. Hamde and L.M. Waghmare, "Non-invasive estimation of diabetes related features from ECG using graphical programming language and matlab," Journal of Mechanics and medicine in biology, Vol. 12, No. 4, 2012.
13. V. Kalpana, S.T. Hamde and L.M. Waghmare, "ECG feature extraction using Principal Component Analysis for studying the effect of diabetes," Journal of Medical Engineering and Technology, 37(2), pp 116-126, 2013.
14. Aruna Deogire and Satish Hamde, "T-wave alternans detection, quantification and pattern definition" SciVerse ScienceDirect, Abstract in Journal of Electro cardiology, vol.46, issue 4, pp e34, July-August 2013.
15. P. W. Macfarlane, I. A. Katibi, S. T. Hamde, D. Singh, E. Clark, B. Devine B. G. Francq, S. Lloyd, V. Kumar, "Racial differences in the ECG – selected aspects", ELSEVIER Journal of Electrocardiology, Vol.47, pp 809 - 814, 2014.
16. Peter W. Macfarlane, Suzanne M. Lloyd, Dilbag Singh, Satish Hamde, Elaine Clark, Brian Devine, Bernard G. Francq, V. Kumar, "Normal limits of the electrocardiogram in Indians", ELSEVIER, ScienceDirect Journal of Electrocardiology, 2014.
17. Dipali Shinde, Laxman Waghmare and Satish Hamde, "Model Reference Learning Approach with Predictive PI for Higher Order Systems," International Journal of Computer Science and Electronics Engineering (IJCSEE), Vol. 2 Issue 1 ISSN 2320-401x-EISSN 2320-4028, 2014.
18. Dipali Shinde, Satish Hamde and Laxman Waghmare, "Nonlinear Predictive Proportional Integral Controller for Multiple Time Constants," International Journal of Innovative Research in Advanced Engineering (IJIRAE), Vol. 1 Issue 7 ISSN 2349-2163, 2014.
19. R. K Kanhe and S.T. Hamde, "Wavelet –based compression of ECG signals," Int. Journal Biomedical Engineering and Technology, Vol. 14, No. 4, 2014.
20. Aruna Deogire and Satish Hamde, "Effect of a multi-lead PCA approach on modified moving average method for T-wave alternans detection," Journal of Medical Engineering and Technology (JMET), 38(8), pp 396-401, 2014.
21. Aruna Deogire and Satish Hamde, "Single vs. multi-lead performance of the Poincare mapping method for T-wave alternans detection," Inderscience Enterprises Ltd., Int. Journal of Biomedical Engineering and Technology, vol.18, No.3, pp 240-253, 2015.

### **Papers Published in Conference Proceedings:**

22. Chile R.H., Jamkar R.G. and Hamde S.T., "Problems and difficulties of entrepreneurs," Proceedings of seminar on "Role and responsibility of technical institute in innovation and entrepreneurship," Organised by SGGSIET, Nanded on 20<sup>th</sup>-21<sup>st</sup> Jan.1990.
23. Chile R.H. and Hamde S.T., "Implementation of complex control scheme using 8085 microprocessor," Proceedings of 5<sup>th</sup> International Congress, New Delhi, pp.36-39, 21<sup>st</sup> – 22<sup>nd</sup> Nov. 1991.
24. Hamde S.T. and Chile R.H., "Microprocessor based tool position control of workshop machine," Proceedings of 5<sup>th</sup> International Congress, New Delhi, pp.40-43, 21<sup>st</sup> – 22<sup>nd</sup> Nov.1991.
25. Chile R.H. and Hamde S.T., "The need of industry and engineering institute interaction in economic development," 21<sup>st</sup> Annual convention of ISTE on 14<sup>th</sup>-16<sup>th</sup> Dec. 1991.
26. Hamde S.T. and Chile R.H., "Vibration measurement, analysis and monitoring by 8085 microprocessor," Proceedings of All India Conference on Applied Instrumentation at University of Roorkee, Roorkee, pp.27-30, 14<sup>th</sup>-15<sup>th</sup> Feb.1992.
27. Chile R.H. and Hamde S.T., "8085 Microprocessor based frequency response analyser," Proceedings of All India Conference on Applied Instrumentation at University of Roorkee, Roorkee, pp.31-34, 14<sup>th</sup>-15<sup>th</sup> Feb.,1992.
28. Hamde S.T. and Chile R.H., "Microprocessor based D.C. motor speed control," Proceedings of All India Conference on Applied Instrumentation at University of Roorkee, Roorkee, pp.285-288, 14<sup>th</sup>-15<sup>th</sup> Feb.,1992.
29. Kahalekar S.G., Hamde S.T., Chile R.H., and Jamkar R.G., "Biomedical Engineering Education," Proceedings of the first Regional Conference IEEE Engineering in Medicine & Biology Society & 14<sup>th</sup> Conference of the Biomedical Engg Society of India, An International Meet, 15-18, Feb.1995.
30. Saxena S.C., Vinod Kumar and Hamde S. T., "A new Technique for Identification of QRS Complex", Proceedings of National Conference on Bio-Medical Engineering, Manipal Institute of Technology, Manipal, India, pp. II-25-27, April 9-11, 1998.
31. Saxena S.C., Vinod Kumar and Hamde S. T., "Computerized Cardiac Disease Diagnostics Using Wavelet Transforms and Modified Scoring Criteria", Proceedings of the Symposium on Bio-Medical Engineering and Nuclear Medicine, BARC Training School Hostel, Mumbai, India, pp. 210-218, January 27-29, 2000.
32. Saxena S.C., Vinod Kumar and Hamde S. T., "Study and Analysis of the Heart Rate Variability using Wavelet Transforms and Power Spectral Density Distribution", National Conference on Bio-Medical Engineering, Department of Electrical Engineering, University of Roorkee, Roorkee, India, pp.107-118, April 21-22, 2000.
33. Hamde S. T., Saxena S.C. and Vinod Kumar, "Adaptive Wavelets for QRS enhancement", International conference on Computer Applications in Electrical Engineering (CEERA), India (Communicated), 2001.
34. G. B. Mahajan, R.S. Wankhede, and S. T. Hamde, "Image based fingerprint verification," Proceeding of the International Conference on Soft Computing, Bharat Institute of Higher Education & Research, Deemed University, Selaiyur, Chennai, 28-29<sup>th</sup> May 2004.
35. G.B.Mahajan, R.S. Wankhede and S. T. Hamde, "Fingerprint based computer vision – a case study," Proceeding of National Conference on Recent trends in computer & communication networking, Jawaharlal Darda Institute of Engg. & Tech., Yevatmal, (MS).2004
36. A.G. Patil and S. T. Hamde, "System for Study and Analysis of R – R Time Series Signal in Spinal Cord Injury Patients, National Conference on Biomedical Engineering, Pune (BIOCON-2005), September 2005

37. A.G. Patil and S. T. Hamde, Spinal Cord Injury Alters RR Variability: A Comparative Study Between Normal and Spinal Cord Injured Persons”, World Congress on Bioengineering, ,Bangkok, Thailand 9-11 July 2007.
38. Channappa Bhyri, Kalpana.V., S.T.Hamde and L.M.Waghmare, “ECG Filtering and R-peak Detection usinf Wavelet Transform”, Proceedings of First International Conference on Information Processing (ICIP), Organised by University Visvesvaraya College of Engineering, Bangalore University, pp 341-346, August 10-12, 2007.
39. P. B. Patel, S. T. Hamde, B. S. Chaudhari and V. S. Rane, Characterization of the Properties of an Optical Wave-field-An Investigations”, International Congress of Environmental Research BITS–Pilani, Goa Campus, Zuari Nagar, December 18-20, 2008.
- 40.V.S. Rane, P.B. Patel, S.T. Hamde and A.R. Agrawal, “Measurement of Bite Force after the Treatment of Mandibular Angle Fracture.”, International Congress on Instrumentation, ISA, IISc, Bangalore, India, January 21-23, 2010.
41. Channappa Bhyri, S.T.Hamde and L.M.Waghmare, “Feature Extraction and Analysis of Multi-lead Electrocardiogram”, Souvenir of International Conference on Biomedical Engineering and Assitive Technologies (BEATS – 2010) Organised by Dr.BRA NIT, Jalandhar, paper ID\_268 pp 33, December 17-19, 2010.
42. Aruna Deogire and Satish Hamde, “Overview of T-wave alternans”, Souvenir of International Conference on Biomedical Engineering and Assitive Technologies (BEATS) Organised by Dr.BRA NIT, Jalandhar, paper ID\_308 pp 47, December 17-19, 2010.
- 43.Aruna Deogire and Satish Hamde, “Removal of baseline wander from the ECG”, Proceedings of the National Conference on Innovations and Trends in Computer and Communication Engineering (ITCCE), MET’s Institute of Engg, Bhujbal Knowledge City, Nashik, pp 148-150, February 25-27, 2011.
44. Aruna Deogire and Satish Hamde, “T-wave alternans detection, quantificationand pattern definition” Proceedings of 40<sup>th</sup> International Congress on Electrocardiology, Glasgow, pp 100-105, August 7-10, 2013.
45. Aruna Deogire and Satish Hamde, “Comparison of Three Methods for Fetal QRS detection”, Proceedings of Computing in Cardiology, Zaragoza, Spain, S43 pp 84, September 22-25, 2013.
- 46.Umesh Thorkar and S.T. Hamde, “Variation of Biophysical Parameters of the skin (Hydration and Trans Epidermal Water Loss) with respect to Anatomical Body Regions”, “3<sup>rd</sup> International Conference on Biomedical Engineering and Assitive Technologies (BEATS-2014), 14-15 February, 2014.
47. Aruna Deogire and Satish Hamde, “A Collaborative Approach to Improve TWA Detection” International Conference on Industrial Instrumentation and Control (ICIC) Organised by College of Engg, Pune, pp 247-251, May 28-30, 2015.
48. Aruna Deogire and Satish Hamde, “A Collaborative Approach to Improve TWA Detection” International Conference on Industrial Instrumentation and Control (ICIC) Organised by College of Engg, Pune, pp 247-251, May 28-30, 2015.

## 09. STTP/FDP Conducted:

- a) Organised one week STTP Sponsored by Center of Excellence, TEQIP – II on Biomedical Signal Processing course during 30<sup>th</sup> March to 3<sup>rd</sup> April, 2015.

## 10. List of Short Term Courses Attended

Sr	Course Title	Organisation & Duration
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No		
01	Recent Trends in Biomedical Instrumentation (ISTE Sponsored)	University of Roorkee 19.06.88 to 02.07.1988 (Two weeks)
02	Electronic Measurements & Equipment Maintenance. (ISTE Sponsored)	IIT New Delhi, July 1990.(Two weeks)
03	Process Control & DCS Overview (SGGSCE&T Sponsored)	Organised by SGGS CE & T, Nanded in Coordination with TATA Honeywell, Pune 26.04.93 to 30.04.1993. (One week)
04	TDC-3000 & LCS 620 Implementation (TATA Honeywell & SGGS Sponsored)	TATA Honeywell, Pune. 01.11.93 to 19.11.1993 (Three weeks)
05	Enhancing Training Placement Skills of T & P Officers.(ISTE Sponsored)	SGGS CE & T, Nanded. 16.05.94 to 30.05 94, (Two weeks)
06	Strategic Planning and Institutional Deveelopment. (ISTE Sponsored)	SGGS CE & T, Nanded. 30.11.94 to 02.12.1994 (03 days)
07	Medical Instrumentation: Present Scenario (ISTE Sponsored)	TKI of Engg. & Tech. Warnanagar, 20.06.94 to 02.07.1994. (Two weeks)
08	Microprocessors in Instrumentation (ISTE Sponsored)	SGGS CE & T, Nanded. 17.06.96 to 28.06.1996 (Two weeks)
09	Creativity Design Process & Training (AICTE Sponsored)	QIP Centre, University of Roorkee. 06.09.1997 (01 day)
10	Biomedical Instrumentation (AICTE Sponsored)	University of Roorkee 08.03.99 to 12.03 1999, (One week)
11	Bioelectric Signals & Processing (AICTE Sponsored)	University of Roorkee. 04.10.99 to 08.10 1999, (One week)
12	Digital Signal Processing (AICTE Sponsored)	STEP, University of Roorkee.06.03.2000 to 10.03.2000, (One week)
13	Computer Applications in Systems Engineering (ISTE Approved self sponsored)	SGGS CE & T, Nanded 21.05.2001 to 02.06.2001 (Two weeks)
14	Water Management : Basic Principles and Interdisciplinary Approach (ISTE Approved self sponsored)	SGGS CE & T, Nanded 25.06.01 to 07.07.2001 (Two weeks)
15	Mobilisation of financial resources in technical institutes by Industry Institute Interaction. (ISTE Sponsored)	MGM's College of Engg., Nanded. January 7-18 <sup>th</sup> 2002. (Two weeks)
16	Institutional Capacity Building for Future a training course conducted by ASCII Hyderabad (TEQIP)	SGGS CE & T, Nanded 2006 (One week)
17	Building World Class Institutions a training course conducted at Lonavala (TEQIP).	Sinhagad Institute of Technology, Lonavala, Pune. (Nov,2007, One week)
18	Digital Signals and Image Processing (STC, AICTE Sponsored)	IIT, Roorkee 08.12.2007 to 14.12.2007, (One week)
19	Hands-on Engineering using LABVIEW conducted by Infosys, Mysore under Indo-US Collaboration for Engg Education (IUCEE)	Infosys Technologies, Mysore 14.07.2008 to 18.07.2008, (One week)
20	Comprehensive Electrocardiography:ECG Lead Systems, Signal Processing (Computer) Interpretation, Clinical Application	I.I.T., Roorkee, 18.10.2008 to 22.10.2008 (One week)
21	Biosignal and Medical Image Processing conducted by Electrical Engg. Deptt., IIT, Roorkee	I.I.T., Roorkee, 21.06.2010 to 25.06.2010 (One week)
22	Workshop on Biomedical Instrumentation conducted by Instrument Society of India (ISOI), IISc, Bangalore	30-31 January 2010 (Two days)
23	Pune Spine Cadaveric Course conducted by Poona Orthopaedic Society at MIMER Medical College, Talegaon, Pune	21-22 August 2010 (Two days)
24	Workshop on Industrial Instrumentation conducted by Prof. Alok Barua, IIT, Kharagpur at SGGSIE&T< NANDED	16 March 2011 (One day)
		30 weeks

## 11. Personal Details :

Date of Birth : 1<sup>St</sup> February, 1963  
Nationality : Indian  
Category : NT 3  
Hobbies : Yoga, Playing and watching games  
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## 12. References

1. Prof. Dr. Vinod Kumar, VC, JAYPEE, Solan, HP
2. Prof. Dr. S. C. Saxena, Group of Institutes, Noida, New Delhi

**SATISH T. HAMDE**