



**SGGS Institute OF ENGINEERING & TECHNOLOGY,
NANDED.**

BIO-DATA



GENERAL INFORMATION

a) Personal Information

Full Name:	DR. MRS. VIJAYA RAVINDRA THOOL	
Designation:	Associate Professor	Highest qualification: BE(Instrumentation) ME (Instrumentation) Ph.D.(Instrumentation)

Date of joining:	Joined the institute on 31 August 1995 as lecturer in Instrumentation Department.	Date of birth: 28th January 1969.
		Blood group: B+

Local address: 204,Shri Sai Apartment, Tilak Nagar, Near Nehru English School, Nanded- 431 602	Permanent address: 204,Shri Sai Apartment,,Tilak Nagar, Near Nehru English School , Nanded- 431 602		
Phone:	Office: 02462-229361,M9960899486	Res:02462-261264	Fax: 02462-229236

E-mail:	vrthool@yahoo.com vrthool@sggs.ac.in	College WebSite: http://sggs.nic.in
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b) Employment Details

S N	Institute	Post	From	To
1	SGGS Institute of Engineering & Technology, Vishnupuri Nanded	Associate Professor, Instrumentation Department	31 st August 1995 as Lecturer	Till Date

c) Educational Qualifications (in descending order)

SN	Degree	Institute	University/ Board	Year	%tage	Class	Remarks/ Specialization
5	Ph. D.	SRTMU ,Nanded	SRTMU,Nanded	2009			Instrumentation
4	ME (Instrumentation)	SGGS College of Engineering & Tech. Nanded	Marathwada University	October-94	66.94	First	Instrumentation
3	BE (Instrumentation)	SGGS College of Engineering & Tech. Nanded	Marathwada University	August-90	58.53	Second	Instrumentation
2	HSC	GBMM Junior College Hinganghat	Nagpur Board	March-86	65.83	First	Science
1	SSC	GBMM High School Hinganghat	Nagpur Board	March-84	74.42	First	Science

2) EDUCATIONAL ACHIEVEMENTS

a) Details about ME Dissertation and Ph. D. Thesis

	Title	Field/Area	Guide	No. Of Pub.
ME	PC Based Sprinkler Irrigation System	Agricultural Instrumentation	Dr. B.M.Patre ,SGGSIE&T, Nanded.	01
Ph D	Instrumentation Schemes and Optimization of Parameters of Drip Irrigation Systems.	Agricultural instrumentation	Dr. T.K.Basu,IIT Kharagpur	08

b) Membership of Professional Bodies

S N	Organization	Membership Details		
		Type	Date	Number
1	Indian Society for Technical Education	Life member	July 1995	21180
2	American Society Of Agricultural and Biological Engineers	Member	15 April 2003	1023115
3	Instrument Society of India	Life Member	3 Dec.2005	1322

c) Membership of Any Committees at University/State/National Level

S N	Committee	Institute/Organization	Membership Type
1	Paper setter and examiner	Nagpur University	
2	Paper setter and examiner	Osmania University	

3	Paper setter and examiner	Dr.Babasaheb Ambedkar Technical University, Lonare	
4	Paper setter and examiner	Amravati University	
5	Paper setter and examiner	Solapur University	
6	M.Tech dissertation examiner	Sant Gadge Baba Amravati university	

3) **HONORS, AWARDS, ACHIEVEMENTS**

3.1 Awards Received

SN	Award	Organization	Details
1	Best Teacher Award for the year 1998-99	SGGSCE&T, NANDED	College Students Council 1999
2	Selected by International who's who organization for publishing name in their proceeding from women.	International who's who organization	Marquies Who's Who proceeding 2007.
3	State level Mahatma Jyotirao Phule shishak purskar	Mahatma Jyotirao Phule shishak Parishad	2016
4	State level Mahatma Jyotirao Phule Nariratna purskar	Mahatma Jyotirao Phule shishak Parishad	2017

3.2 International conference paper Reviewer

S N	Reviewer	Organization	Details
1	ASABE Journal	ASABE	USA

3.3 Achievements:

1. Selected as a Professor of Instrumentation Engineering by MPSC in 2014.
2. Sanctioned Research promotion scheme of 8.50 lakhs on “Design and Development of Low Cost Solar Powered Various Precision Agriculture Systems” by AICTE in 2017.

4) **PUBLICATIONS**

a) Papers Published in Journals

National and Internationals Journals

SN	Authors	Paper Title	Journal	Vol	No.	Pages	Year
1	V.R.Thool,		IETE Special	Vo	3		2003

	R.C.Thool, Shrivastav, Ullagaddi.	Automation in Drip Irrigation System	issue on Agriculture Electronics. May-June 2003	1 20			
2	V.R.Thool S.R.Pokharkar	Early Pest Identification In Greenhouse Crops Using Image Processing Techniques	Paper Id 'IJCSN-2012-1-3-49' IJCSN Volume 1, Issue 3, June 2012	V1	3		2012
3	V.R.Thool,S. Nandurkar	Design of a soil moisture sensing unit for smart irrigation application.	IJCA ,USA 2012				2012
4	N.D.Agham,V .R.Thool	Labview-Based physiological parameters monitoring system for patient healthcare.	International journal of engineering research and technology(IJERT) ,Vol-3 Issue 2 ,February 2014.				2014
5	A.Biradar,R.C .Thool, V.R.Thool	Genetic algorithm based energy efficient intelligent unipath routing for MANET	ICC-2014			276- 282	2014
6	P. S. Vikhe · V. R. Thool	Mass Detection in Mammographic Images Using Wavelet Processing and Adaptive Threshold Technique	Journal of Medical System				2016
7	P. S. Vikhe · V. R. Thool	A Wavelet and Adaptive Threshold Based Contrast Enhancement of Masses in Mammograms For Visual Screening	Journal of Medical System				2017
8	V.V. Mandhare, V. R. Thool R.R. Manthalkar	A novel approach to improve quality of service in MANET using cache update scheme for on-demand protocol	Int. J. Communication Networks and Distributed Systems, Vol. 18, Nos. 3/4, 2017 353				2017

b) Papers Published in Conferences

International Conferences

SN	Authors	Paper Title	Conference Name and Place	Pages	Year
1	V.R.Thool, R.C.Thool, B.M.Patre	PC Based sprinkler irrigation systems,	INCARF 96, New Delhi		96
2	V.R.Thool, R.C.Thool,	Automation in Level Control, in Electrical Engineering, Feb.21-23, 2002.	Int'l conference on Computer Applications in Electrical Engineering, Feb.21-23, 2002,Roorki		2002

3	VijayaThool, Dr.T.K.Basu, Dr.L.M.Wagh amare, Dr.R.C.Thool.	Instrumentation in Drip Irrigation System.	International Conference on Instrumentation, 2004. PIET, PUNE 19-21 December 2004.	CP- 005, PP: 3	2004
4	, V.R.Thool, A.C.Birajdar, M.G.Poddar	Design and Construction of irrigation control in greenhouse Model.	International Conference on Instrumentation, 2004. PIET, PUNE 19-21 December 2004.		2004
5	V.R.Thool, A.C. Birajdar, M.G.Poddar	Optimization of remotely controlled drip Irrigation System,	International Conference on Instrumentation, 2004. PIET, PUNE 19-21 December 2004.		2004
6	T.K.Basu,R.C .Thool,V.R.Th ool, H.R.Birahde	Artificial Neural Network Controller for Climate Control inside the Greenhouse Model,	International conference in world congress on computers in agriculture in Orlando, Florida, USA, on 24 th -27 th July 2006, WCCA2006.		2006
7	T.K.Basu, R.C.Thool, V.R.Thool, A.C. Birajdar.	Computer Based Drip Irrigation Control System with Remote Data Acquisition System.	International conference in world congress on computers in agriculture in Orlando, Florida, USA, on 24 th -27 th July 2006, WCCA2006.		2006
8	V.R.Thool, T.K.Basu, R.C.Thool.	Design and Development of Resistive soil moisture sensor and Its Signal Conditioning Circuit.	The second international symposium on soil water measurement using capacitance impedance and time domain transmission, Beltsville, Maryland, USA, Oct 28- Nov.02, 2007.		2007
9	V.R.Thool, R.C.Thool, W.S.Khandlika r, A. G.More.	Development of Microcontroller Based Grape Dryer	World conference on agricultural information and IT, Tokyo, Japan, 24- 27 August, 2008.		2008
10	V.R.Thool,P. Vikhe,Nehe	Heart Sound Abnormality Detection Using Short Time Fourier Transform and Continuous Wavelet Transform	2nd International Conference on Emerging Trends in Engineering and Technology,IEEE,Nagpur,16 -18 Dec.2009.		2009
11	V.R.Thool, D.S.Puri, P.D.Gaikawad, S.S.Bante	Automatic Bottle Filling Process Using PLC and SCADA	International conference on Instrumentation (ICI- 2009and NSI-34), January 21-23, 2010		2010
12	Ms.Sandhya Waghmare ,	DICOM specification in file format	International Conference on Biomedical Engineering and		2010

	Mrs. Vijaya Thool, Mr. Pramod Sing		Assistive Technologies BEATS-2010, Dated 17-19 DEC 2010 souvenir page no is 61		
13	V.R.Thool, R.C.Thool, J.Dhule	Enhancement and Segmentation of Mammographic Images By Digital Image Processing Techniques.	NSI-35, Symposium Hubli		2010
14	V.R.Thool, S.Nandurkar	Design of a soil moisture sensing unit for smart irrigation application.	International Conference on Emerging technology trends on advanced engineering research, Kollam, 20-21 February 2012.		2012
15	V.R.Thool, S.Nandurkar	Design and development of precision agriculture system using wireless sensor network	International conference on automation ,control,energy and system,kolkatta,1-2 feb.2014.		2014
16	V.R.Thool,N. Agham		International conference on		2014
17	V.R.Thool,A.G .Lolure	Wavelet transform based EMG feature extraction and evaluation using scatter graphs.	International conference on industrial instrumentation and control (IEEE Conference),28-30 May 2015 ,Pune		2015
18	V.R.Thool,S.A. Walke	Differentiating nature of cough sounds in time domain analysis	International conference on industrial instrumentation and control (IEEE Conference),28-30 May 2015 ,Pune	1022-1026	2015
19	Sagar B. Tambe, Ravindra C. Thool, Vijaya R. Thool	Power Consumption and Congestion Control of Rendezvous Node for Wireless Biosensor Network.	International Conference on ICT for Sustainable Development,Ahmadabad		2015
20	Sagar B. Tambe, Ravindra C. Thool, Vijaya R. Thool	Cluster Based Wireless Mobile Healthcare System for Physiological Data Monitoring	International Conference on Information Security & Privacy (ICISP2015), 11-12 December 2015, Nagpur, INDIA		2015
21	M. R. Bendre, R. C. Thool and V. R. Thool	Big Data in Precision Agriculture : Weather forecasting for Future Farming	2015 1 st International conference in next generation computing technologies NGCT-2015, Deharadun	744-750	2015

22	M. R. Bendre, R. C. Thool and V. R. Thool	Big Data in Precision Agriculture Through ICT : Rainfall prediction using Neural Network Approach	International Congress on Information and Communication Technology, ASIC series9999		2015
23	P. S. Vikhe · V. R. Thool	Intensity based Automatic Boundary Identification of Pectoral Muscle in Mammograms.	Conference ICCCV 2016 (MulticonW 2016),Mumbai		2016

National Conferences

SN	Authors	Paper Title	Conference Name and Place	Pages	Year
1	V.R.Thool, Prof. S.G. Kahalekar, Ms.vaidya S.J., Ms.Subhedar R.V.	Women's participation in Technical Education,	National conference Bombay		1995
2	V.R.Thool, R.C.Thool, Shrivastav, Mr.Ullagaddi.	Automation in Drip Irrigation	Conference on Sensors and transducers at Hyderabad. Paper NO. 45, 2002		2002
3	V.R.Thool, R.C.Thool, Manish Saswadkar	Personal Computer Based Phonocardiogram.	National Symposium on Instrumentation (NSI-27) Bharathiar University, Coimbatore on 27 th –29 th November 2002.		2002
4	V.R.Thool, R.C.Thool.	Automation in Hospital.	Regional Conference IEEE Engineering in Medicine & Biology. At Koimtur. 27 th –29 th November 2002		2002
5	T.K.Basu,	Application of Artificial Neural	National conference		2006

	V.R.Thool, H.R.Birahde.	network model for greenhouse climate control	organized by Aurangabad Engineering College, TSyGECA-06 on 23 rd and 24 th January 06.		
6	V R Thool,Pikle	Solar powered green house automation	National Conference on Instrumentation, Control and Signal Processing (ICSP-2013) on 8-9 July 2013.		2013
7	V.R.Thool,S.A. Walke	Discrimination between dry and wet cough sound using signal processing Tools.	Indian conference on signal and image processing,SGGSIE&T,Nan ded.July 2015	68-71	2015

5) OTHER ACTIVITIES

List of important activities assigned/undertaken (other than routine activities) for the overall development of the department, college and society in general.

SN	Year	Activity	Details
1	98-99	Co-coordinator in gathering.	I have worked as Co-coordinator in various programs in college gathering like Art Exhibition, Fashion show.
2	99-00	Complaints Committee.	I am working on Complaints Committee, which is for issues of Sexual harassment and violence against women at workplaces, which is directed from AICTE, New Delhi.
3	00-01	Convener for Women's Empowerment 2001 program.	I have worked as Convener for Women's Empowerment 2001 program. I have coordinated one program in college campus.
4	00-01	Garden committee, Alumni Committee, Teacher Association society.	Worked in various committees.
5	00-01	Member in NBA committee	Worked on NBA committee
6	01-02	Coordinator in gathering	I have worked as art exhibition coordinator..
7	02-03	Canteen committee.	Developed Canteen in college campus and it is running smoothly.
8	02-03	Co-operative credit society member as women representative.	Worked in CCS.

9	02-03	Institute site development committee	Worked on Institute planning committee.
10	2005-2006	Coordinator of three days short term course on "Biomedical Instrumentation" in Instrumentation Department on 15-17 April 2006.	Lectures given in this program.
11	2005-2007	Working as a member of Tribal development program.	Program arranged like Personality development, Advanced programming for SC/ST students.
12	2008	Working as a Chief Superident of Examinations	Examinations of institute held in 2008.
13	2008	Worked in NBA committee	Worked in lodging and hospitality committee
14	2009	Working as a Joint Superident of Examinations	Examinations of institute held in 2009.
15	2009	Working as a Coordinator of M.Tech.(Instrumentation)	Conducted admission of M.Tech.(Instrumentation)
16	2009	Working as a Coordinator of TEQIP of Instrumentation Department.	Preparing project for TEQIP-II
17	2010	Two day workshop on Industrial Instrumentation, 2 Days,16,17 March 2011	Coordinator of the workshop
18	2011	Two - day workshop on Texas Instruments MSP430 Development tools in collaboration with TI India University Program and Cranes Software 26-27 th September, 2011	Coordinator of the workshop
19	2012	Working as a executive member of alumni association.	Coordinator of registration committee in alumni meet 2012 and Member of Sadbhavana Scholarship award.
20	2013	Working as member of TCS best project and best student award committee	Member of the committee.
21	2013	Working as a purchase and evaluation coordinator in Instrumentation Dept in TEQIP-II	Around 80 lakhs equipment are purchased.
22	2014	Worked as a coordinator of sadbhavana scholarship	Distributed around 13 student scholarship.
23	2014	Three day workshop on Labview On 21-23 Feb. 2014	Coordinator of the workshop
24	2015	Co-ordinator of Alumni meet Dec 2014	28-29 Dec 2014
25	2015	Co-ordinator of one week workshop on Biomedical signal processing.	30 th March to 3 th April 2015
26	2015	Worked as a coordinator of summer term examination	2015
27	2015	Worked as committee member of female complaint.	2015
28	2015	Worked as a University nominee in faculty selection committee	2015

29	2105	Worked as a scrutiny committee for contract based faculty	2015
30	2015	Worked as a canteen committee member	2015
31	2015	Coordinator of institute level open elective Human Physiology.	2015

6) ANY OTHER IMPORTANT POINTS

DETAILS OF REFRESHER COURSES ATTENDED

Short term courses attended

Sr.No.	Title of Course	Organizing Institute	Duration	No. of Weeks
1.	Microprocessors in Instrumentation arranged by S.G.G.S.Instt. Of Engg. & Tech., nanded from 17th June to 28th June 1996.	SGGSIE&T, Nanded	17 th June to 28th June 1996	2 week
2.	Industry Institute partnership arranged by S.G.G.S.Instt. Of Engg. & Tech., nanded from 3rd to 8th March 1997	SGGSIE&T, Nanded	3 rd to 8th March 1997	1 week
3.	Digital signal processing arranged by S.G.G.S.Instt. Of Engg. & Tech., nanded from 16th to 27th March 1998.	SGGSIE&T, Nanded	16 th to 27th March 1998.	2 week
4.	Digital signal and image Processing arranged by S.G.G.S.Instt. Of Engg. & Tech., nanded from 5th to 17th June 2000.	SGGSIE&T, Nanded	5 th to 17th June 2000.	2 week
5.	Digital signal processing: Fundamentals, Advances and Applications	SGGSIE&T, Nanded	18 th to 23 rd December, 2006	1Week
6.	Recent Trends in Instrumentation and Control	SGGSIE&T, Nanded	27 th to 29 th January 2006	3 Days
7.	Recent Trends in signal and Image Processing	SGGSIE&T, Nanded	16 th to 18 th January 2006	3 Days
8.	Institutional capacity building for future	SGGSIE&T, Nanded	26-30 December, 2005	5 Days
9.	Programming Paradigms: Verification and Perspective	SGGSIE&T, Nanded	8 th to 20 th December 2004	2 Weeks
10.	VLSI design using VHDL	SGGSIE&T, Nanded	24-05-2004 to 05-06-2004	2 Weeks
11.	Neural Networks and Fuzzy Logic: Theory and Applications	SGGSIE&T, Nanded	11 th to 23 rd June 2001	2 Weeks
12.	Computer Applications in System Engineering	SGGSIE&T, Nanded	21-05-2001 to 02-06-2001	2 Weeks
13.	Programming with C and C++	SGGSIE&T, Nanded	29-06-2000 to 19-07-2000	3 Weeks
14.	System Engineering Techniques and Applications	SGGSIE&T, Nanded	18 th to 28 th June 2000	2 Weeks
15.	Digital signal and Image processing	SGGSIE&T, Nanded	05 th to 17 th June 2000	2 Weeks

16.	Advanced project management using MS-Project & primavera	SGGSIE&T, Nanded	11 Dec 07 to 14 Dec 07	4 Days
17.	Comprehensive electrocardiography:ECG lead systems,signal processing interpretation,clinical application.	IIT , Roorkee	18.10.08 to 22.10.08	1 week
18.	Pedagogical Training in engineering Education	SGGSIE&T, Nanded	6-7 March 2009.	2 Days
19.	Texture Analysis and Applications	SGGSIE&T, Nanded	10 Nov. 2009	1 Day
20	ECG Analysis and Interpretation	SGGSIE&T, Nanded	17 February 2010	1 Day
21.	Recent advances in speech, Image and Video processing	SGGSIE&T, Nanded	12-23 Dec. 2011	2 week
22	Labview and its applications	G.H.Raisoni college of Engineering & Technology, Nagpur	17-21 Dec.2012	1 week
23	Analytical Techniques for Applied Research	SGGSIE&T, Nanded	21-25 January 2013	1 week
24	Wireless Sensors and Their Applications	SGGSIE&T, Nanded	18-22 March 2013	1 week
25	Emerging Trends in Nanoscience and Nanotechnology	SGGSIE&T, Nanded	6-10 August 2013	1 Week
26	Workshop on Biodesign	SGGSIE&T, Nanded	8-9 August 2013	2 Days
27.	Research avenues in Bio-Engineering	VNIT Nagpur	9-13 December 2013	1 Week
28	Biometrics	SGGSIE&T, Nanded		1 Week
29	Workshop on Rethinking, Teaching and Learning	SGGSIE&T, Nanded	20 January 2014	1 Day
30	Workshop on GPU Programming and Applications	IIT Bombay	24-26 February 2014	3 Days
31.	Workshop on Training and Identification of Master Trainers and Evaluators on outcome based accreditation process and parameters	SGGSIE&T, Nanded	21-23 March 2014	3 Days
32	Workshop on Drip Irrigation Management	Sakal International learning center	29-30 July 2014	2 Days
33	Advanced control of underwater vehicles	SGGSIE&T, Nanded	9 -10 January 2015	2 Days
34	Biomedical signal processing	SGGSIE&T, Nanded	30March-3 April 2015	1 Week

Ph.D. Student Guided(On-Going):

S.No.	Name of Student	Project Topic	Registered Year
1	Pratap S. Vikhe	Studies of computer-aided diagnosis schemes for early breast cancer	Under QIP 2014-15(SGICO3)

		detection.	
2	Anjali Birajdar	Heart rate variability	Under SRTMU 2015
3	Balasaheb More	Smart grid	Under SRTMU 2015
4	Ramya Ramteke	Stress Analysis	Under SRTMU 2017
5	Chavan P.	Greenhouse Automation	Under SRTMU 2017

M.Tech Dissertation Completed:

Registration No.	Name of Student	Project Topic	Pass out Year
2013MIN013	Sheetal A.Walke	Feature Extraction for the discrimination of cough sounds and analysis of disorder in respiratory system.	2015
2013MIN007	Amol G.Lolure	EMG feature extraction based on wavelet transform and its classification	2015
2012MIN018	Narendra D. Gattuwar	PLC based grape drying system	2015
2012MIN 009	Nishigandha D.Agham	Labview based real time monitoring of patients parameters from remote location	2014
2011MIN 012	Pikle Umeshchandra K.	Solar Powered Greenhouse Automation	2013
2011MIN 013	Potdar Gajanan	Heart Rate Variability Analysis	2013
2010MIN 008	Sweety R. Nandurkar	Design of Soil moisture sensing Unit for Smart Irrigation Application	2012
2010MIN 011	Sameer R.Pokharkar	Early Pest Identification in Various Crops using Image Processing Technique	2012
2009MIN 013	Sukaikar Mayura P.	Automation of Tar separation plant Burnpur	2011
2009MIN 004	Bhavsar Sarika V.	Automation of vapor Absorption Machine/Chiller	2011
	Babulgaonkar Sandhya	Mammography	2011
	Dhule	Mammography	2010
2008MIN	Vikhe Pratap S.	Heart Sound Analysis	2009
2007MIN	Lakde Chetna A.	Fuzzy Logic Based Greenhouse Automation	2008
2006MIN	More A.G	PIC Microcontroller Based Grape Dryer	2007
2005MIN	Kaitke Swati	Microcontroller based drip irrigation system	2006

2004MIN	Patil Varsha V.	Microcontroller Based Energy Meter	2005
2003MIN	Birajdar A.C	Drip Irrigation Control System With Remote Data Acquisition Facility	2004
2002MIN	Harsh Birade	Neural network based Greenhouse	2003
2001MIN	Nalawade Pravin M.	Microcontroller Based Temperature Transmitter	2002
2000MIN	Dhananjay S.Patil	Development of PLC-SCADA for Starch plant	2001

Conferences Attended:

S N	Conferences Attended
1	2-day National Conference on sensors and Transducer at College of IT, Hyderabad 2001.
2.	2 day International Conference on Indo-European Conference on Multilingual Communication Technologies organized by C-DAC India, MSH-France and GAIA-Spain held during 24 th -25 th June ,2002 in Pune ,India.
3	3 day State level conference on opportunities in Information Technology with special reference to Information Technology policy of Government of Maharashtra during 5 th November to 7 th , 2004,SGGS ,Nanded.
4	International Conference Systemics, Cybernetics and Informatics, ICSCI-2009, held during 07-10,January 2009 in Hyderabad.
5	2nd International Conference on Emerging Trends in Engineering and Technology,IEEE,Nagpur,16-18 Dec.2009.
6	15 th ISTE Karnataka section faculty convention on 7-8 December 2012.
7	2 Day National Conference on Instrumentation, Control and Signal Processing ,SGGS Nanded(ICSP-2013) on 8-9 July 2013.
8	National Conference on signal and image processing at SGGSI&T, Nanded on 10-11 July 2015.
9	Attended Two day International conference on Information security and Privacy on 11 -12 December 2015 ,at G H Raisonni College of Engineering ,Nagpur ,India.

7) ACADEMIC CONTRIBUTION

a) 1. Subjects Taught: under graduate and post graduate

1	Sensors and Transducers
2	Biomedical Instrumentation-I
3	Electronic Instrumentation
4	Analog and Digital Instrumentation
5	Biomedical Instrumentation-II
6	Metrology and Precision
7	Computer Programming C and Basic.
8	Electrical Engineering

9	Advanced Sensors
10	Chemical and Analytical Instrumentation
11	Computer Oriented Numerical Methods
12	Computer Network
13	Sugar Instrumentation
14	Biomedical Instrumentation(UG AND PG)
15	Instrumentation & Control
16	Data Communication for automation

2. Laboratory In charge:

a)

Laboratory incharge of Biomedical Instrumentation (UG & PG)
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b) **Product :**

Product development:

- | |
|---|
| <p>1. I have developed a sensor for Moisture Measurement, which can be used for automatic irrigation system.</p> <p>2. Developed a software and Hardware for computer controlled sprinkler/drip irrigation systems.</p> |
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c) **Memorandum of Understanding**

<p>Establishment of a database of ECG recorded from a healthy native Indian population. Prof. P.W.Macfarlane, University of Glasgow, June 2006.</p>

d) **Book Published:**

Instrumentation Schemes and Optimization of Parameters in Drip Irrigation System

Vijaya Thool, Tapan Kumar Basu and Ravindra Thool
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Paperback: 220 pages

Publisher: LAP Lambert Academic Publishing (18 July 2012)
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Language: English

ISBN-10: 3846500054

ISBN-13: 978-3846500057

e) **Book chapter Published:**

Sagar B. Tambe ,	Cluster Based	International Conference on	Proceedea Computer science -	2015
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Ravindra C. Thool , Vijaya R. Thool	Wireless Mobile Healthcare System for Physiological Data Monitoring	Information Security & Privacy (ICISP2015), 11-12 December 2015, Nagpur, INDIA	78(40-47)	
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Dr.Vijaya Ravindra Thool