

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

Curriculum Vitae



Brief Profile:

B. Vasuki was born in Thanjavur, Tamil Nadu, India in 1967. She received the Bachelor's degree in instrumentation and control engineering from the Government College of Technology, Coimbatore, India, in 1989, the Master's degree in Power Systems, Regional Engineering College, Tiruchirappalli, in 1994 and the Ph.D. degree in instrumentation and control from the National Institute of Technology, Tiruchirappalli, India, in 2009. She worked as a lecturer in the department of Electrical and Electronics Engineering, Shanmuga polytechnic college, Thanjavur from 1989 to 1995 and she worked as Assistant Professor, in the department of Electronics and Instrumentation Engineering in Shanmuga Engineering College, Thanjavur from 1995 to 1997. She joined in the Department of Instrumentation and Control Engineering as a faculty member, National Institute of Technology, Tiruchirappalli, India, in 1997, where she is currently working as Associate Professor. Her research interests include Instrumentation systems and Interval Analysis.

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6. Field of Specialization: Instrumentation systems, Interval analysis

7. Employment Profile

Job Title	Employer	From	To
Associate Professor	National Institute of Technology, Tiruchirappalli	Dec 2010 onwards	-----
Senior Lecturer	National Institute of Technology, Tiruchirappalli	Dec 2002	Nov 2010
Lecturer	National Institute of Technology, Tiruchirappalli	Nov 1997	Nov 2002
Lecturer	Shanmuga College of Engineering, Thanjavur	Sep 1995	Oct 1997
Lecturer	Shanmuga Polytechnic, Thanjavur	July 1990	Aug 1995

8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division / Grade	Subjects
Ph. D	National Institute of Technology, Tiruchirappalli	2009	NA	Analysis of uncertainty for instrumentation systems using interval methods
M.E	Regional Engineering College, Tiruchirappalli	1995	First class	Power Systems
B.E	Government College of Technology, Coimbatore	1989	First Class	Instrumentation and Control Engineering
HSC	Sacred Heart Girls Hr. Sec School, Thanjavur	1985	First Class	State Board (MPCB)
SSLC	Sacred Heart Girls Hr. Sec School, Thanjavur	1983	First Class	State Board

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To
Head of the department	Department of ICE	2 nd Nov 2016	Till date

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10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To
Nil			

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization
Nil		

12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)
Nil				

13. Details of Academic Work

(i) Curriculum Development

1. Involved in the development of infrastructure and equipment for Instrumentation lab and Sensors and Transducers lab.
2. Developed experiments for Instrumentation , Sensors and transducers lab
3. Served and serving as Faculty advisor and PAC chairperson for various batches of students.
4. As a time table committee member prepared the work load allotment and time table for the department for past seven years.
5. Actively involved in the preparation of syllabus for new M.Tech program in the instrumentation department.

(ii) Courses taught at Postgraduate and Undergraduate levels

THEORY SUBJECTS HANDLED

1. Electrical and Electronic measurements
2. Optoelectronics and laser based instrumentation
3. Power electronics for UG and PG (Applied Physics)
4. Mechatronics for Mechanical department
5. Instrumentation and Control engineering for metallurgy department

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6. Instrumentation system design
7. Microprocessor and microcontrollers
8. Industrial instrumentation-II
9. Instrumentation system for Electrical departmentt

LAB SESSION HANDLED

1. Sensor and transducer lab
2. Instrumentation lab
3. Mechatronics lab (Mechanical Engineering)
4. Instrumentation lab (Metallurgy Engineering)
5. Instrumentation systems lab (EEE)
6. Electrical circuits and devices lab
7. Microprocessor and Microcontroller lab
8. PC interfacing lab

(iii) Projects guided at Postgraduate level

1. Load frequency control of isolated wind-diesel hybrid power systems (2002)
2. Active vibration control axially moving string (2003)
3. Instrumentation system design using interval analysis (2004)
4. Design and Development of electronic system for Piezo based smart structure control Phase-1(2006)
5. Measurement of conductivity using analog electronic interface circuit and microcontroller based circuit (2006)
6. Design and development of electronic system for piezo based smart structure control-Phase-II(2006)
7. PWM and Constant current source circuit design for SMA excitation (2006)
8. Tolerance Analysis of Strain gage circuits (2007)
9. Uncertainty Analysis of Thermocouple circuits (2007)
10. Dynamic System Parameter Optimization Using Interval Algorithm(2008)
11. Dynamic system- Global optimization using interval algorithm(2008)
12. Selection of optimal values of parameters based on nominal and tolerance design (20011)
13. Modeling and design of Linear Variable Differential Transformer (2012)
14. Modeling and simulation of PN junction actuator using COMSOL Multiphysics(2012)

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15. Frequency response analysis of hybrid piezoelectric cantilever beam(2012)
16. Vibration control of beam by using damping material(2013)
17. Modeling and simulation of PN junction actuator using COMSOL Multiphysics-Phase –II (2013)
18. Neural network based liquid level measurement using IR sensor-phase -I (2015)
19. LVDT conditioning module – simulation -improve range of measurement without loosing sensitivity –Phase –II (June 2016)

(iv)Other contribution(s)

1. One of the editors of the Proceedings of ICECON 05.
2. Involved in preparing the TEQIP proposal for the department.
3. As an organizing committee member for the workshop on” Programmable Logic Controllers”, January 19th and 20th 2002 for other engineering college students; prepared an extensive course material.
4. Member in question paper setter board of Periyar University, Salem, Madras University, Anna university and other Autonomous universities and institutes
5. Member of Syllabus Committee– Periyar Centenary Girls Polytechnic, Vallam
6. Member of Syllabus Committee- Jeyaram College of Engineering Trichy

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
Development of Mechatronics laboratory modules	MHRD, GOI, Thrust Area in Technical Education.	2003	2005	Completed
Uncertainty analysis of chain error in instrumentation system for space application	ISRO, Bangalore	2007	2008	Completed
Design, Fabrication & Testing of Meso and Micro Scale Resonant Sensors with Electronics	SERB-DST,GOI	2014	2017	Ongoing

15. Number of PhDs guided

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Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award
S. Sathiya (Full Time)	Resonating piezoactuated cantilevers for liquid pumping and property sensing	Supervisor	Ongoing
V. Sivakami (Part Time)	Instrumentation	Supervisor	Ongoing
Manoranjan Das (Full Time)	Signal conditioning for sensors	Supervisor	Ongoing
Amit Pal (Full Time)	Instrumentation	Supervisor	Ongoing

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date (s)	Title of Activity	Level of Event (International/ National/ Local)	Role (Participant/ Speaker/ Chairperson, Paper presenter, Any other)	Event Organized by	Venue
13 th -24 th , May, 2002	QIP Short Term Course- Advanced topics in Linear Systems Theory	National	Participant	IIT Bombay	IIT Bombay
18 th – 29 th , November, 2002	AICTE-ISTE Short Term Training-Systems Modeling and Simulations	National	Participant	Pondicherry Engineering College	Pondicherry Engineering College, Pondicherry
9 th – 14 th June, 2003	AICTE-ISTE Short Term Training Programme - Computer Buses for Process Automation	National	Participant	Madras Institute of Technology Chennai	Madras Institute of Technology Chennai
29 th Nov - 10 th Dec, 2004	ISTE- Short Term Training Programme - Numerical Linear Algebra	National	Participant	IIT Madras	IIT Madras
8 th – 10 th , August, 2005	SICE Annual Conference 2005	International	Paper presenter	Okayama University	Okayama, Japan

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9 th -12 th , May 2006	International MEMS Conference (iMEMES2006)	International	Paper presenter	International MEMS Conference (iMEMES2006)	Biopolis, Singapore
11 th to 16 th , December, 2006	MEMS	National	Participant	Indian Institute of Science	IISc, Bangalore
4 th , Jan 2007	Nano-,Neuro-,Bio-,Info- Technologies, MEMS,NEMS and Neurosurgery	International	Participant	NIT, Tiruchirappal li	NIT, Tiruchirappalli
9 th - 10 th April, 2007	Indian Nanoelectronics Users Programme (INUP- Awareness Programme	National	Participant	Indian Institute of Science	IISc, Bangalore
13 th -17 th , March, 2007	Short term programme QIP -STC -Recent Trends in Process Architecture	National	Participant	NIT, Tiruchirapalli	NIT, Tiruchirapalli
30 th June-5 th July, 2008	Engineering Design Principles and New Product Development	National	Participant	IIT Madras	IIT Madras
29 th Feb 2008	TEQIP Workshop on Nano materials and its applications in Process Industries	National	Participant	NIT, Tiruchirapalli	NIT, Tiruchirapalli
30 th June to 5 th July, 2008	AICTE Sponsored Short term Programme Engineering Design Principles and New Product Development	National	Participant	AICTE Sponsored Short term Programme	IIT Madras
12 th -14 th November 2008	National workshop on Power Electronics (NWPE2008)	National	Participant	NaMPET	NIT, Tiruchirapalli
26 th - 30 th July 2010	Workshop on MEMS and its CAD tools	National	Participant	ICE Dept	NIT, Tiruchirapalli
16 th -18 th November, 2011	Workshop on Understanding Design, conducted by Industry Programme and Projects (IP&P)	National	Participant	National Institute of Design	Ahmedabad
5 th -7 th January, 2012	International Conference on Smart Materials, Structures and Systems	International	Participant	ISSS	IISC, Bangalore

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Feb 19 th - 21st Feb 2013	IEEE Sensors Applications Symposium	International	Paper presenter	IEEE Sensors Applications Symposium	Galveston ,Texas, USA
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17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/
Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue
Process control	National	4 th to 8 th Dec. 2001	Speaker	Dept of ICE, NIT, Tiruchirappalli
Design of Experiments for UG courses on Instrumentation and Control & Electronics and Instrumentation	National	11 th to 15 th June 2002	Speaker	Dept of ICE, NIT, Tiruchirappalli
Programmable Logic Controllers	National	January 19 th and 20 th 2002	Organizing committee member	Dept of ICE, NIT, Tiruchirappalli
Modern trends in Instrumentation	National	August 10 th and 11 th 2002	organizing committee member	Dept of ICE, NIT, Tiruchirappalli
First National conferences ICECON'03	National	2003	Organizing member	Dept of ICE, NIT, Tiruchirappalli
Second National Conference ICECON'05	National	2005	Organizing Secretary	Dept of ICE, NIT, Tiruchirappalli
Proceedings of Second National Conference ICECON 05	National	2005	Editor	Dept of ICE, NIT, Tiruchirappalli
Third National conferences and ICECON'07	National	2007	Organizing member	Dept of ICE, NIT, Tiruchirappalli
5 th International conference TIMA 2007	International	4 th to 7 th , January 2007	Treasurer	Dept of ICE, NIT, Tiruchirappalli
Optoelectronics	Oxford University Press		Reviewer	

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18. Invited Talks delivered

Topic	Date	Inviting Organization
Process control	4 th to 8 th December 2001	Dept of ICE, NIT, Tiruchirappalli
Design of Experiments for UG courses on Instrumentation and Control & Electronics and Instrumentation	11 th to 15 th June 2002	Dept of ICE, NIT, Tiruchirappalli

19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date
Life member	ISTE	LM 31303, 1998
Life member	ISOI	LM 1472, 2006
Life member	ISSS	LM 181, 2005
Life member	IEI	M-139327-2, 2009
Life member	SSI	LM-31629, 2011

20. Academic Foreign Visits

Country	Duration of Visit	Programme
USA	Feb 19 th -21st Feb 2013	IEEE Sensors Applications Symposium

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal (Optional)
S Sathiya, B Vasuki	Higher resonant mode effect on the performance of piezo	Microsystem Technologies	22	1-15	2016	0.974

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	actuated 2-DOF rectangular cantilever shaped resonators (2-DOF RCR) for liquid viscosity and density sensing					
S Sathiya, B Vasuki	A structural tailored piezo actuated cantilever shaped 2-DOF resonators for viscosity and density sensing in liquids	Sensors and Actuators A: Physical	247	277–288	2016	2.201
S Sathiya, M Umapathy, B Vasuki, G Uma	Simple liquid pumping system using piezoelectric actuated cantilever beam	Instruments and Experimental Techniques	59	142-148	2016	0.353
S Sathiya, M Umapathy, B Vasuki	Performance enhanced piezo actuated resonant liquid pumping system with two degree of freedom (2-DOF) resonators	Sensors and Actuators A: Physical	236	44-56	2015	2.201
B. Vasuki, M. Umapathy, A. R. Senthilkumar	Uncertainty analysis of strain gage circuits: Interval method and interval algorithm	International Journal on Smart Sensing and Intelligent Systems	2	477-489	2009	
B.Vasuki, M. Umapathy, S.K.Velumani	Uncertainty analysis of thermocouple circuits	Sensors & Transducers Journal	100	11-15	2009	
Meenatchisundaram, S. Venkateswaran,P.R Uma, G., Vasuki, B	Signal acquisition and display of pulse waveform from the radial artery using pressure sensor	Modelling, Measurement and Control	69	47-57	2008	

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B. Vasuki, M. Umapathy, G. Uma, M. Shanmugavalli	Uncertainty Analysis of Temperature Measurement System using Analytical and Interval Algorithm	Instrumentation Science and Technology	36	81-87	2008	0.525
S. Neduncheliyan, D. Ezilarasi, M. Umapathy, and B.Vasuki	Control of Piezo actuated structure using interval method	Instrumentation Science and Technology	35	385-397	2007	0.525
B.Vasuki. M. Umapathy, S. Akhilan	Uncertainty Analysis of Temperature Measuring System using Interval Arithmetic	Sensors and Transducers portal	10	1619-1624	2007	
M Shanmugavalli, G Uma, B Vasuki ,M Umapathy	Design and Simulation of MEMS Devices using Interval Analysis	Institute of Physics Publishing Journal of Physics: Conference Series	34	601–605	2006	

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year
B Vasuki, S Sathiya, Y Sujan	Flow rate enhancement for a resonance based liquid pump with 2 DOF resonators	Seventh ISSS International Conference on Smart Materials Structures and Systems ISSS 2014	1-5	Smart Materials Structures and Systems	IISc, Bangalore	2014
B Vasuki, S Sathiya, K Suresh	A New Piezoelectric Laminated Cantilever Resonance based Hydraulic Pump	IEEE SAS 2013	197-201	Sensors Applications Symposium	Galveston ,Texas, USA	2013

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Y.Sujan, B.Vasuki, G. Uma, M. Umopathy, S. Harihara Krishnan	Sensitivity Enhanceme nt of Surface Micromachi ned Resonant Pressure Sensor	Sixth ISSS International Conference on Smart Materials Structures and Systems ISSS 2012.	1-8	Smart Materials Structures and Systems	IISc, Bangalore	2012
Y Sujan, Vasuki B, G Uma, D Ezhilarasi, K Suresh	Thickness Sensor for Ferromagnet ic Sheets	Sixth International conference of on Sensing Technology(IC ST-2012)	93-96	Sensing Technology	Kolkata	2012
Sujan Y and Vasuki B and Uma G	T-Shaped Resonating Beam Pressure Sensor	10th IEEE International Conference on Semiconductor Electronics 2012 (IEEE- ICSE2012)	271- 275	Semiconduct or Electronics	Malaysia	2012
M. Shanmugavalli, G. Uma, B. Vasuki, M. Umopathy	Parameter variation analysis of Cantilever beam	Proceedings of 3rd National Conference on Instrumentatio n and control Engineering ICECON 07	109 - 112	Instrumentati on and control Engineering	NIT Trichy	2007
B.Vasuki, M.Umopathy, G.Uma, M.Shanmugavalli, S.Meenachisundara m	Uncertainty Analysis of micro resonator using classical and interval methods	SPIE Conference- Nanosensors, Microsensors and Biosensors and Systems 2007	6528- 23	Nanosensors, Microsensors and Biosensors and Systems	SanDieogo, USA	2007

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K. Dhanalakshmi, C.Chandravathanam , M. Umopathy, B. Vasuki	Vibration Control of Shape Memory Alloy Actuated Structure Using Fast Output Sampling Feedback Control	Proceedings of 2 nd International Congress on Computational Mechanics and Simulation (ICCMS 2006)	460- 466	Computational Mechanics and Simulation	IIT Guwahati	2006
G.Uma, B.Vasuki, S.Meenachisundar	Signal Acquisition and Display of Pulse Waveform from the radial Artery using Piezosensor	National Conference on Bio- Instrumentation 2005		Bio- Instrumentation	Royal Institute of Technology, Andhrapradesh	2005
B.Vasuki, M.Shanmugavalli	Uncertainty Analysis of Instrumentation Systems: Classical and interval Methods	SICE Annual Conference 2005	3725- 3728	Structural Integrity	Okayama, Japan	2005
M.Thirumagal, B.Vasuki	Load Frequency of isolated Wind-Diesel Hybrid Power Systems	Proceedings 1 st National Conference on Modern Trends in Electrical and Instrumentation Systems	153- 157	Electrical and Instrumentation Systems	GCT, Coimbatore	2002

(C) Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number
Nil				