

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

Curriculum Vitae

Brief Profile:

G. Uma was born in Madurai, 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 instrumentation engineering from the Madras Institute of Technology, Anna University, Chennai, in 1992, and the Ph.D. degree in instrumentation and control from the National Institute of Technology, Tiruchirappalli, India, in 2009. She worked as a teaching research fellow in Madras Institute of Technology, Anna University, Chennai, from 1990 to 1993, and worked as a Senior Technical Officer in the Department of Science and Technology sponsored project "Development of cross correlation flow meter" in Madras Institute of Technology, Anna University, Chennai, from 1993 to 1994. She worked as a Head of the Department of Instrumentation and Control Engineering, Sethu Institute of Technology, Madurai, from 1995 to 1999. She joined the Department of Instrumentation and Control Engineering as a Lecturer, National Institute of Technology, Tiruchirappalli, India, in 1999, where she is currently working as an Associate Professor.



Her research interests include design and development of instrumentation systems, design of sensors and actuators in meso and micro scale, MEMS, energy harvesting, bio-medical instrumentation, instrumentation and control for emission reduction in automobiles and transducer design using fractional calculus. In 2001, Dr. Uma received a Young Scientist fellowship from Tamil Nadu State Council for Science and Technology under which she worked in the Thin Film Laboratory, Department of Instrumentation, Indian Institute of Science, Bangalore.

1. Name: Dr. G. Uma	
2. Designation: Associate Professor	
3. Office Address: Department of Instrumentation and Control Engineering National Institute of Technology Tiruchirappalli-620015	
4. Telephone (Direct) (Optional): Telephone : +91-431-2503359	Extn (Optional): Mobile (Optional): +919443454987
5. Email (Primary): guma@nitt.edu	Email (Secondary) : gumagandhi@gmail.com
6. Field(s) of Specialization: Instrumentation and Control Engineering	

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

7. Employment Profile:

Job Title	Employer	From	To
Associate Professor	National Institute of Technology, Tiruchirappalli	31 st July 2011	Till Date
Lecturer (S.G)/Assistant Professor	National Institute of Technology, Tiruchirappalli	1 st July 2009	30 th July 2011
Lecturer (Senior Scale)	National Institute of Technology, Tiruchirappalli	17 th May 2004	30 th June 2009
Lecturer	National Institute of Technology, Tiruchirappalli	17 th May 1999	16 th May 2004
Lecturer and Head, Department of Instrumentation and Control Engineering	Sethu Institute of Technology, Madurai	Sept 1995	15 th May 1999
Senior Technical Officer	Madras Institute of Technology, Chennai	June 1993	May 1994
Teaching Research Fellow	Madras Institute of Technology, Chennai	Feb 1990	June 1993

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

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D	National Institute of Technology, Tiruchirappalli	2009		Design of Meso and Micro Resonators with Piezoelectric Sensing and Actuation
M.E	Madras Institute of Technology, Chennai	1992	First with Distinction	Instrumentation Engineering
B.E	Government College of Technology, Coimbatore	1989	First	Instrumentation and Control Engineering

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

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To
Faculty Advisor	G.E.Co Club	August 2014	Till Date
Associate Dean	Institute Development, NIT Trichy	October 2012	April 2013
Member, Legal Cell	NIT Trichy	December 2010	December 2012
Warden- Ladies Hostel	NIT Trichy	December 2010	December 2012
Department Coordinator for Central Library	NIT Trichy	2004	2007
Faculty Advisor of ISA	REC Trichy	2000	2006
Doctoral Committee Member	NIT Trichy		
Member	Hospital Committee, NIT Trichy		
Member	Purchase Committee (for the purchase of DG set)		
Member	Institute Legal Cell, NIT Trichy		

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To
HOD- Department of Instrumentation and Control Engineering	Sethu Institute of Technology, Madurai	September 1995	May 1999
Member of Syllabus Revision Committee	Madurai Kamaraj University	September 1995	May 1999
Selection committee member of the recruitment board	Sethu Institute of Technology, Madurai	September 1995	May 1999
Prepared laboratory manuals for Instrumentation and Process control lab	Sethu Institute of Technology, Madurai	September 1995	May 1999

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization

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

12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)
2001	Young Scientist Fellowship	Tamil Nadu State Council for Science and Technology	Sep 2001	Dec 2001

13. Details of Academic Work

(i) Curriculum Development

COURSES: Involved in formulating, updating and presenting the syllabus of following theory and laboratory courses in the **Board of Studies (BoS)** meetings held in the department since the 2000.

- Sensors and Transducers
- Industrial Instrumentation – I
- Industrial Instrumentation – II
- MEMS and Nanotechnology
- Micro System Design
- Biomedical Instrumentation
- Logic and Distributed Control Systems
- Process Control
- Smart Materials and Systems
- Sensor Networks
- Instrumentation and Control (for B.Tech MME Branch)
- Sensors and Transducers Laboratory
- Instrumentation Laboratory
- Process Control Laboratory

LABORATORY DEVELOPMENT: Involved in establishing the facilities, designing the experiments for UG and PG students in the following laboratories:

- Sensors and Transducers Laboratory
- Instrumentation Laboratory
- Process Control Laboratory

(ii) Courses taught at Postgraduate and Undergraduate levels

For B.Tech - Instrumentation & Control Engineering

1. Product Design and Development with practical part
2. Biomedical Instrumentation

National Institute of Technology, Tiruchirappalli:

Performa for CV of Faculty/ Staff Members

3. MEMS and Nanotechnology
4. Sensors and Transducers
5. Industrial Instrumentation-I
6. Industrial Instrumentation-II
7. Logic and Distributed Control Systems
8. Instrumentation Systems
9. Instrumentation System Design
10. Process Control
11. Sensors and Transducers Laboratory
12. Instrumentation Laboratory
13. Process Control Laboratory

For B.Tech – Electrical and Electronics Engineering and Materials and Metallurgical Engineering

1. Instrumentation Systems
2. Instrumentation and Control

For M.Tech - Process Control and Instrumentation

1. Instrumentation
2. MEMS
3. Logic and Distributed Control Systems
4. Instrumentation System Design
5. Measurement Systems
6. Industrial Instrumentation
7. Instrumentation and Control Laboratory

For Ph .D – Students

1. MEMS part in Research Methodology course.

(iii)Projects guided at Postgraduate level

S.No	TITLE OF THE DISSERTATION	NAMEOF THE STUDENT	Year
1	Design and Optimization of Fuzzy logic controller	G. Ramji	January 2002
2	Control of isothermal CSTR using neural networks	A. Srinivasan	January 2002
3	Generalized Predictive Control	Usha Rani	January 2002
4	Simulation of interface level control of three phase separators	Nizzamuddin	January 2003

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

5	Modeling and simulation of vibratory micro gyroscope.	J.Vijay	January 2004
6	Monitoring long term uterine contractions	M.Dhinesh	January 2004
7	Design and simulation of micro accelerometer.	J.Issac Samson	January 2003
8	Modeling and simulation of multiport RF switch.	J.Vijay	June 2004
9	Design and simulation of micro accelerometer.	J.Issac Samson	June 2004
10	Finite element modeling of a PVDF-MOSFET based MEMS hydrophone.	Sumy Jose	June 2004
11	Design and simulation of micro machined silicon load cell	R. Revathi	Dec 2004
12	Real time control of inverted pendulum	N.Senthil Manoharan	Dec 2004
13	Design of MEMS devices using Interval analysis	Shanmughavalli	June 2005
14	Structural vibration control using quantitative feedback theory.	N. Senthil Manoharan	June 2005
15	Design, simulation and analysis of micro actuator for hard disk drive	P. Srinivasa Rao	June 2005
16	Design, simulation and analysis of capacitive micro machined ultrasonic transducer.	S.A.Anbalagan	June 2005
17	Design and simulation of micromechanical resonator.	P.Vetrivel	Jan 2006
18	Vibration control in electrorheological fluid actuated vehicle suspension system.	M. Indhumathy	Jan 2006
19	Control block simulator.	M.Indhumathy	June 2006
20.	Developing common intermediate form for PLC programming language.	P.Vetrivel	June 2006
21	Design and optimization of micro resonator.	A.Girija	June 2006
22.	Micro controller based pressure measurement system	Pawan	June 2006
23.	Micro controller based temperature measurement System	I. Sharmila	June 2006
24	Design and analysis of micro differential pressure sensor	Rami Reddy	Dec 2007
25	Design and analysis of micro differential pressure sensor	Rami Reddy	June 2008
26.	Design and fabrication of micro accelerometer	T. Indhuja (Anna Univ, Chennai)	December 2010
27.	Design and simulation of dual mass resonant micro accelerometer	T. Indhuja (Anna Univ, Chennai)	May 2011
28	Breast cancer diagnosis using impedance	K. Harshavardhana Reddy	December

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

	spectroscopy		2010
29	Advanced control of HVAC systems	Dhanunjaya Davu	December 2010
30	Design of multi frequency current source for bio-impedance measurement	K. Harshavardhana Reddy	May 2011
31	A Robust model of predictive control design of HVAC system	Dhanunjaya Davu	May 2011
32	Design and simulation of digital logic gates using MEMS	Avasarala Venkata Sunil	December 2011
33	Signal averaging analysis of atrial repolarisation phase of electrocardiogram	N.Khaja Meeran	December 2011
34	Indication of left atrial enlargement and segmentation of heart sound using wavelets	N.Khaja Meeran	May 2012
35	Implementation of control for resonant sensor	Avasarala Venkata Sunil	May 2012
36	Piezoelectric MEMS shear-stress sensor for underwater flow measurements	Nevin Augustine	December 2013
37	Fabrication of thin film thermocouple for measuring temperature in a Gas turbine	Rakesh K.P	December 2013
38	A new resonant based method for the measurement of turbine blade tip clearance	Nevine Augustine	May 2014
39	Fabrication and calibration of thin film thermocouple for gas turbine	Rakesh K.P	May 2014
40	Controller design for piezo actuated pump	G Sruthi	December 2015
41	Source localization using acoustic vector sensor	Sreedevi Gopinath	December 2015
42	Design of closed loop micro accelerometer for performance improvement	G Sruthi	May 2016
43	Source localization using acoustic vector sensor	Sreedevi Gopinath	May 2016

(iv) Other contribution(s)

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
Design and Fabrication Micro Devices	National Program on Smart Materials (NPSM)	2002	2007	Completed
Development of Mechatronics laboratory modules	Ministry of Human Resources Development(MHRD)	2003	2005	Completed

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

Micro Resonating Beam Differential Pressure Sensor: Simulation and Electronic Interface Design	ISRO, Bangalore	2007	2008	Completed
Micro Pressure Sensor for Fuel level Indicator in Automobile	FTD Solutions Private Ltd, Singapore	2008	2009	Completed
Establishment of New National MEMS Design Center	National Programme on Micro and Smart Systems (NPMASS)	2009	2010	Completed
Design, Fabrication and testing of Meso and Micro Scale Resonant sensors with electronics	SERB DST, New Delhi	2013	2016	Completed
Sensor Development for the Detection of Oil Debris in Gas Trubine Applications	Gas Turbine Research Establishment (GTRE), Bangalore	2016	Ongoing	Ongoing

15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award
Ms. M. Shanmugavalli	Modeling and Experimental Investigation of Coriolis Flowmeter Using Piezoelectric Sensing and Actuation	Co-Supervisor	2011
Mr. J. Sivaraman	Investigations on the performance of a modified limb lead ECG recording system for the study of atrial P and Ta wave	Supervisor	2015

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

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
11th & 12th Oct 2000	Calibration for the Next Millennium			Electronics Test And Development Center, Chennai.	Chennai
13th to 24th May 2002	QIP Course on Advanced Linear Control Systems			IIT, Mumbai	Mumbai
2nd to 7th Jan 2003	Course on MEMS			Department of Electrical Engg, IIT, Madras	Madras
9th to 14th June 2003	AICTE-ISTE Sponsored STTP on Recent Trends in Computer Buses for Process Automation			Department of Instrumentation, MIT	Chennai
31st May to 13th June, 2004	AICTE –ISTE Sponsored two weeks STTP on Emerging Areas In Thin Film Science & Technology			Department of Physics, PSG College of Technology	Coimbatore.
22nd Decem ber. 2004	International Workshop on Recent advances in smart materials, structures and systems.	International		IISc., Bangalore.	Bangalore
2nd May to 6th May, 2005	Intensive Continuing Education Course on Microsystems			Department of Electronics, IISc., Bangalore.	Bangalore

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

	Technology				
20th June to 22nd June,20 05	Workshop on MEMS and Microfluidics using Coventorware			Technical Director, Coventor INC,USA and FTDPL Bangalore	Bangalor e
27th July 2005	Pre-Conference Workshop on BioMEMS & Neuroelectronic s			Institute of Smart Structures and Systems, IISc and National Aerospace Laboratories Bangalore.	Bangalor e
20th August 2005	Workshop on Renewable Energy – Energy of the Future			CEESAT, National Institute of Technology, Tiruchirapalli	Tiruchir apalli
April 05-07, 2006	Indo Chinese Workshop on MEMS			NPL, New Delhi	New Delhi
Marc 9th and 10th,20 07	Workshop on Indian nano User Program			IISc ,Bangalore	Bangalor e
4th ,Jan 2007	Nano-,Neuro- ,Bio-,Info- Technologies, MEMS,NEMS and Neurosurgery	Internatio nal	Joint Secretary	TIMA 2007 NIT, Tiruchirapalli	NIT Tiruchir apalli
13- 17,Mar ch 2007	Recent Trends In Process Architecture			NIT, Tiruchirapalli	NIT Tiruchir apalli
28,Feb 2008	Nano materials Synthesis, Characterisation and Process Application			NIT, Tiruchirapalli	NIT, Tiruchir apalli
5th & 6th ,March 2008	Nano 2008- Nano Materials and Characterisation			NIT, Tiruchirapalli	NIT, Tiruchir apalli
30th June to 5th	AICTE sponsored Short term program			IITM, Chennai	IITM, Chennai

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

July, 2008	on Engineering design principles and new product development				
. 8th - 9th August 2008	Workshop on Right to Information ACT, 2005 and Role of Information Officer			National Archives of India, RTI Cell, New Delhi	NIT, Tiruchirappalli
24th - 25th September, 2008.	Workshop on Advanced analog VLSI Design,			NIT, Tiruchirappalli	NIT, Tiruchirappalli
19th February, 2009	Computer Networking – Hardware and software			M/s.SANAT Technologies, Chennai	NIT, Tiruchirappalli
31st March and 1st April, 2009	CMOS-MEMS devices Technology and the future			Prof Takao, Toyohashi Univ of Technology, Japan	NIT, Tiruchirappalli
12th and 13th March 2009	Practical aspects of Computer networking			M/s. EXTREME Networks , Chennai	NIT, Tiruchirappalli
24 th to 28 th May 2010.	MEMS Software training program			IISC, Bangalore	IISC, Bangalore
9 th to 11 th January 2011	Joint Indo-canadian Meeting on development of low cost lab-on-a-chip medical devices for healthcare monitoring			IIT Bombay	IIT Bombay
17 th to 18 th	Hands-on-SOI MUMPs			IISC, Bangalore	Bangalore

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

June 2011	training workshop				
16 th to 18 th Nov 2011	Understanding design			IP&P, NID, Ahmadabad	Ahmada bad

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
5 th International Conference TIMA-07	International	January 4 th - 6 th , 2007.	Joint Secretary	NIT Tiruchirappalli
1st National Conference ICECON' 03	National	2003	Organizing Committee Member	NIT Tiruchirappalli
2 nd National Conference ICECON' 05	National	2005	Organizing Committee Member	NIT Tiruchirappalli
3 rd National Conference ICECON' 07	National	December 2007.	Organizing Secretary	NIT Tiruchirappalli
3 rd National Conference ICECON' 09	National	2009	Organizing Committee Member	NIT Tiruchirappalli
Workshop- Trends in Industrial Instrumentation		10 th & 11 th August 2002	Coordinator	
Workshop- "MEMS" for Practicing Engineers and Educators		5 th and 6 th August 2005	Coordinator	NIT Tiruchirappalli
Workshop- Familiarization of MEMS and its CAD tools		28 th to 29 th March 2011		
Faculty Development Programme on MEMS and its CAD tool		26th to 30th July 2010, AICTE-MHRD	Coordinator	

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

Tutorials on, “Nano-, Neuro-, Bio- & Info-Technologies, Mems, Nems And Nuerosurgery And Embedded Systems On Chip”		4 th January 2007	Organizer	
---	--	------------------------------	-----------	--

18. Invited Talks delivered

Topic	Date	Inviting Organization
MEMS		MIT, Manipal
PID control		Cethar Vessels Pvt Ltd
MEMS		MAM college of Engineering

19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date
Life Member	Indian Society of Technical Education	LM-25872
Life Member	Institute of Smart Structures and Systems	LM-145
Life Member	Instrument Society of India	LM-1473
Life Member	System Society of India	LM-31628
Member	Institute of Engineers India	M-139328-0

20. Academic Foreign Visits

Country	Duration of Visit	Programme
USA	Feb 19 th -21 st , 2013	IEEE conference

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

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal (Optional)
T. N. Satish, K. P. Rakesh, G. Uma , M. Umapathy, U. Chandrasekhar, A. N. V. Rao, V. Petley	Functional Validation of K-Type (NiCr-NiMn) Thin Film Thermocouple on Low-Pressure Turbine Nozzle Guide Vane (LPT NGV) of Gas Turbine Engine	Experimental Techniques (published online)			2016	0.716
J.Sivaraman, G. Uma , P. Langley, M. Umapathy, S. Venkatesan, G. Palanikumar	A study on stability analysis of axial repolarization variability using ARX model in sinus rhythm and atrial tachycardia ECGs	Computer Methods and Programs in Biomedicine	137	341-351	2016	1.862
Ramalingam Usharani, Gandhi Uma , Mangalanathan Umapathy	Design of High Output Broadband Piezoelectric Energy Harvester with Double Tapered Cavity Beam,	International Journal of Precision Engineering and Manufacturing-Green Technology	3	343-351	2016	2.54
Y. Sujan, G. Uma M. Umapathy	Design and testing of piezoelectric resonant pressure sensor	Sensors and Actuators A: Physical	250	177-186	2016	2.20
Y. Sujan, G. Uma M. Umapathy	Micro pressure sensor with three degrees of freedom resonator	Journal of Microsystem Technologies (published online)		1-14	2016	0.974
Y. Sujan, G. Uma , M. Umapathy,	Design and modelling of a resonant pressure sensor	Journal of Microsystem Technologies (published online)		1-9	2016	0.974

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

S. Sathiya, M. Umapathy, B. Vasuki, G. Uma	Simple liquid pumping system using piezoelectric actuated cantilever beam.	Journal of Instruments and Experimental Techniques	59	142-148	2016	0.353
S. Srinivasulu Raju, M. Umapathy, G. Uma.	Cantilever piezoelectric energy harvester with multiple cavities	Journal of Smart Materials and Structures	24	1-11	2015	2.769
A. Rami Reddy, M. Umapathy, D. Ezhilarasi, G. Uma.	Piezoelectric energy harvester with shape memory alloy actuator using solar energy	IEEE Transactions on Sustainable Energy	6 (4)	1409-1415	2015	3.727
Pankaj Shivhare, G. Uma, M. Umapathy	Design enhancement of a chevron electrothermally actuated microgripper for improved gripping performance	Journal of Microsystem Technologies	22 (11)	2623-2631	2015	0.974
A. Rami Reddy, M. Umapathy, D. Ezhilarasi, G. Uma	Cantilever Beam with Trapezoidal Cavity for Improved Energy Harvesting.	International Journal of Precision Engineering and Manufacturing	16	1875-1881	2015	2.54
A. Rami Reddy, M. Umapathy, D. Ezhilarasi, G. Uma	Modelling and Experimental investigations on stepped beam with cavity for energy harvesting	Journal of Smart Structures and Systems	16 (4)	623-640	2015	1.13
A. Rami Reddy, M. Umapathy, D. Ezhilarasi, G. Uma,	Improved energy harvesting from vibration by introducing cavity in a cantilever beam	Journal of Vibration and Control	22 (13)	3057-3066	2015	1.643
J. Sivaraman, G. Uma, S. Venkatesan, M. Umapathy, M. S. Ravi	Unmasking of atrial repolarization waves using modified limb lead system	Anatolian Journal of Cardiology	15 (8)	605-610	2015	0.77
J. Sivaraman, G. Uma, S. Venkatesan, M. Umapathy, V. E.	Normal limits of ECG measurements	Anatolian Journal of Cardiology	15	2-6	2015	0.77

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

Dhandapani	related to atrial activity using a modified limb lead system					
J. Sivaraman, G. Uma , S. Venkatesan, M. Umapathy, N. Keshavkumar	A study on atrial Ta wave morphology: An approach using P wave signal averaging method	Journal of Medical Imaging and Health Informatics	4	675-680	2014	1.70
S. Hariharakrishnan, D. Ezhilarasi, G. Uma , M. Umapathy	Pyroelectric based solar and wind energy harvesting system	IEEE Transactions on Sustainable Energy	5	73-81	2014	3.727
J. Sivaraman, G. Uma , S. Venkatesan, M. Umapathy, V. E. Dhandapani	A novel approach to determine atrial repolarization in electrocardiograms	Journal of Electrocardiology	46 (4)	e1-e37	2013	1.290
K. Suresh, G. Uma , M. Umapathy	New observation on automatic phase adjustment of a smart cantilever resonator	Journal of Vibration and Control	21 (7)	1363-1372	2013	1.643
J. Sivaraman, G. Uma , M. Umapathy	Analysis of human atrial repolarization phase of electrocardiogram in normal subject	Journal of Clinical and Experimental Cardiology DOI: 10.4172/2155-9880.S1.06	3		2012	1.219
K. Suresh, G. Uma , M. Umapathy	A new self sensing electronics for piezoelectric resonance sensors	Journal of intelligent material systems and structures	23	587-593	2012	1.975
K. Suresh, G. Uma , M. Umapathy, ,	Design of resonance based mass sensor using self sensing piezoelectric actuator	Journal of Smart Materials and Structures	21	1-6	2012	2.76
B.V.M.P. Santhosh Kumar, K. Suresh, U. Varun Kumar, G. Uma and M. Umapathy	Resonance based DC current sensor	Measurement	45	369-374	2012	1.742
K. Suresh, G. Uma , M. Umapathy	A new resonance based method for the measurement of non magnetic conducting sheet thickness	IEEE Transactions on Instrumentation and Measurement	60	3892-3897	2011	1.808

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

K. Suresh, G. Uma , B.V.M.P. Santhosh Kumar, U. Varun Kumar, M. Umapathy	Piezoelectric based resonant mass sensor using phase measurement	Measurement	44	320-325	2011	1.742
B.V.M.P. Santhosh Kumar, K. Suresh, U. Varun Kumar, G. Uma and M. Umapathy	Design and simulation of resonance based DC current sensor	International Journal of Interaction and Multiscale Mechanics	3	257-266	2010	
M. Shanmugavalli, M. Umapathy, G. Uma	Smart coriolis mass flowmeter	Measurement	43	549-555	2010	1.742
G. Uma , M. Umapathy, K. Suneel Kumar, K. Suresh, A. Maria Josephine	Microcontroller based split mass resonant sensor for absolute and differential sensing	Journal of Smart Structures and Systems	5	279-290	2009	1.13
M. Shanmugavalli, G. Uma , M. Umapathy	Uncertainty analysis of micro differential pressure sensor using interval analysis	International Journal on Smart Sensing and Intelligent Systems	2	463-476	2009	0.82
M. Shanmugavalli, G. Uma , M. Umapathy,	Modeling and analysis of micro fluidic channels	Sensors & Transducers Journal	106	155-163	2009	0.13
G. Uma , M. Umapathy, A. Maria Josephine, S. Aishwarya, K. Suresh	Design of microcontroller based resonant sensor with piezoelectric excitation and detection	Journal of Instrumentation Science and Technology	36	367-374	2008	0.38
B. Vasuki, M. Umapathy, G. Uma , M. Shanmugavalli	Uncertainty analysis of temperature measurement system using analytical and interval algorithm	Journal of Instrumentation Science & Technology	36	81-87	2008	0.38
G. Uma , Sumy Jose, V. Natarajan, M. Umapathy, M. Kathiresan	Design and simulation of PVDF- MOSFET based MEMS hydrophone	Journal of Instrumentation Science & Technology	35	329-339	2007	0.38
G. Uma , A. Girija, M. Umapathy	Optimized design of micro resonators using genetic algorithm	Sensors and Transducer Journal	72	740-753	2006	0.13
S. A. Anbalagan, G. Uma , M. Umapathy	Modeling and simulation of	Journal of Physics,	34	595-600	2006	0.45

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

	capacitive micro machined ultrasonic transducer (CMUT)	Conference Series				
J. Vijay, Ivan Saha, G.Uma , M. Umapathy	Modeling and simulation of multi-port RF switch	Journal of Physics, Conference Series	34	715-721	2006	0.45
M. Shanmugavalli, G.Uma , B. Vasuki, M. Umapathy	Design and simulation of MEMS device using interval analysis	Journal of Physics, Conference Series	34	601-605	2006	0.45

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year
G. Sruthi, G.Uma , M. Umapathy, ParthaSarathi V	Sliding Mode Control for Piezoelectric Actuated Cantilever based Liquid Pumping System	ISSS National Conference on MEMS, Smart materials, Structures and Systems			IIT Kanpur	2016
G. Sruthi, ParthaSarathi V, G.Uma , M. Umapathy	Design of Closed Loop Micro Accelerometer for Performance Improvement	ISSS National Conference on MEMS, Smart materials, Structures and Systems			IIT Kanpur	2016
Akila R, G.Uma , M. Umapathy	Sensitivity Enhancement of Resonant Sensor using Output Feedback Control	3rd International Conference on Electrical, Electronics, Engineering Trends, Communication, Optimization and Sciences (EEECOS), 2016				2016
Akila R, G.Uma , K. Suresh, S.S.Choi, M. Umapathy	Design of an electronic oscillator for resonant pressure sensor with non-collocated sensor and actuator	SPIE Active and Passive Smart Structures and Integrated Systems Conference			Las Vegas, U.S.A	2016
Pankaj Shivhare,	Sensitivity Improvement of a	International Conference on MEMS and Sensors			IIT Madras	2014

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

G. Uma, Y. Sujan, M. Umapathy	Silicon Nitride Beam Resonant Pressure Sensor	(ICMEMSS 2014)				
Pandiyar. P. G. Uma, M. Umapathy, Y. Sujan	Design and Simulation of Chevron Type MEMS Digital to Analog Converters	International Conference on MEMS and Sensors (ICMEMSS 2014)			IIT Madras	2014
Pandiyar. P. G. Uma, M. Umapathy, K. Suresh	Sensitivity Improvement of Resonant Sensor With PID Controller	Proceedings of the 2014 IEEE Students Technology Symposium (IEEE TechSym 2014)	170-175		IIT Kharagpur	2014
Pankaj Shivhare, G. Uma, M. Umapathy	A Micro Gripper for High Force Application Using In-Plane Chevron Electrothermal Actuator	Proceedings of International Conference on Microelectronics, Circuits & Systems (Micro-2014)				2014
P. Pandiyar, G. Uma, M. Umapathy	Design and simulation of 3-bit MEMS electro thermal compliant actuator based analog to digital converter	Proceedings of 7 th International Conference on smart materials, structures and systems(ISSS-2014),			Bangalore	2014
J.Sivarama n, G.Uma, M. Umapathy	A novel approach to determine atrial repolarization in electrocardiogram s	40 th International Congress on Electrocardiology,			Scotland, UK	2013
S. Harihara krishnan, D Ezhilarasi, G. Uma, M. Umapathy	Experimental investigation of a novel hybrid energy harvesting system using ferroelectric material	Proceedings of Texas Instruments India Educator's Conference			Bangalore	2013
G. Uma, U.VarunK umar, B.V.M.P. Santosh Kumar, K.Suresh	Design and Modelling of Piezoelectric Sifter	Proceedings of IEEE Sensors Applications Symposium (SAS-2013),	205-208		Texas, USA	2013
Y Sujan, B.Vasuki, G. Uma,	Thickness sensor for Ferromagnetic sheets	Proceedings of 6 th IEEE International Conference on Sensing Technology (ICST-	93-96		Kolkata	2012

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

D. Ezhilarasi, K. Suersh		2012)				
Y Sujan, B.Vasuki, G. Uma	T-Shaped Resonating Beam Pressure Sensor	Proceedings of 10 th IEEE International Conference on Semiconductor Electronics (ICSE-2012)	271-275		kualalumpur, Malaysia	2012
P.Pandiyan, G. Uma , M. Umapathy	Design of logic gates using laterally-actuated double-gate NEMS	Proceedings of the 9th International Workshop on Nanomechanical Sensing 2012(NMC-2012)			IIT Bombay, Mumbai,	2012
J.Sivaraman, G.Uma , M. Umapathy	A modified chest leads for minimization of ventricular activity in electrocardiograms	Proceedings of IEEE International conference on Bio-medical Engineering (ICoB E-2012)	79-82		Penang, Malaysia	2012
S. Hariharakrishnan, D.Ezhilarasi, G.Uma , M. Umapathy, Y Sujan	Enhancement of vertical displacement in electro thermal micro actuator	Proceedings of International Conference on Smart Materials Structures and Systems (ISSS-2012)			IISc Bangalore	2012
Y. Sujan B.Vasuki, G.Uma , M. Umapathy, S.Hariharakrishnan	Sensitivity enhancement of surface micromachined resonant pressure sensor	Proceedings of International Conference on Smart Materials Structures and Systems (ISSS-2012)			Bangalore	2012
K. Suresh, G. Uma , M. Umapathy	A Resonant Accelerometer with Piezoelectric self sensing electronics	Proceedings of International Conference on Smart Materials Structures and Systems (ISSS-2012)			Bangalore	2012
J.Sivaraman, G.Uma	A Non-Invasive Detection of Somnolence based on the peripheral physiological parameter	Proceedings of International Conference on Biomedical Engineering and Assistive Technologies (BEATS)			NIT Jalandhar	2010
B.V.M.P Santhosh Kumar, M. Umapathy, U. Varun	Design of piezo laminated cantilever based phase detector	Proceedings of 4 th ISSS National Conference on Microsystems, smart materials and structures			NIT, Nagpur	2010

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

Kumar, K. Suresh, G. Uma						
U. Varun Kumar, M. Umaphathy, ,B.V.M.P. Santhoshk umar, K. Suresh, G. Uma	Smart structure for measuring angular velocity	Proceedings of 4 th National Conference on Microsystems, smart materials and structures			NIT, Nagpur	2010
S.Meenatc hisundara m, S.M. Kulkarni, P.R. Venkatesw aran, G. Uma, M. Umaphathy	Design and Range Analysis of Micro Pressure Sensors	Proceedings of National Conference on ICT: Theory, Applications and Practices			Sir Padampat Singhania University, Udaipur	2010
K. Suresh, B.V.M.P. Santhosh Kumar, U.V. Kumar, M. Umaphathy and G. Uma	Simulation of DC Current Sensor	Proceedings of COMSOL Conference			Bangalore	2010
B.V.M.P Santhosh Kumar, U. Varun Kumar, K. Suresh, G. Uma and M. Umaphathy	Frequency Detector using Piezo laminated cantilever beam	Proceedings of International Conference on Power Electronics and Instrumentation Engineering (PEIE- 2010)	104-107			2010
B.V.M.P Santhosh Kumar, M. Umaphathy, U. Varun Kumar, K. Suresh and G. Uma	Occupancy sensor using piezo laminated cantilever beam	Proceedings of 6 th International conference on Vibration Engineering and Technology of Machinery	451-455		IIT Delhi	2010
M. Shanmuga valli, G. Uma, M.	Experimental evaluation of coriolis mass flowmeter using	Proceedings of 6 th International conference on Vibration Engineering and Technology of	456-462		IIT Delhi	2010

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

Umapathy	piezoelectric sensing and actuation	Machinery				
U.Varun Kumar, M. Umapathy, B.V.M.P.S anthosh kumar, G. Uma and K. Suresh	Smart structure for measuring the time period of a simple pendulum	Proceedings of 6 th International conference on Vibration Engineering and Technology of Machinery	544-549		IIT Delhi	2010
K. Suresh, B.V.M.P.S antosh Kumar, U. Varun Kumar, G. Uma , M.Umapathy	A novel thickness measurement using a piezo laminated cantilever resonator	Proceedings of National Conference ICECON 09	52-55		National Institute of Technology , Trichy	2009
G. Uma , M. Umapathy, L. Baby Vidhya, M. Maya, T. Sophia, K. Tamlarasi	Design and analysis of resonant based gas sensor	Proceedings of IEEE Sensors Applications Symposium (SAS-2008)			Atlanta, GA, USA	2008
G. Uma , M. Umapathy, K. Suresh, M. Shanmugavalli	Design and simulation of meso and micro split beam resonators	Proceedings of International Conference on Smart Materials Structures and Systems(ISSS-2008)			Bangalore	2008
G. Uma , K. Suresh, M. Umapathy, M. Shanmugavalli	Closed loop electronics for resonant sensors	Proceedings of International Conference on Smart Materials Structures and Systems (ISSS-2008)			Bangalore	2008
G. Uma , M. Umapathy, S. Meenatchi sundaram	“ Dynamic simulation of micro resonator based differential pressure sensor	Proceedings of SPIE International conference on smart structures and materials			San Diego, USA	2007
M. Umapathy,	Active vibration control of	Proceedings of SPIE International conference on			San Diego, USA	2007

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

A. Girija, G. Uma , B. Bandopad hyay	piezoactuated structures using fast output sampling based sliding mode control	smart structures and materials				
B. Vasuki, M. Umapathy, G. Uma , M. Shanmuga valli, S. Meenatchi sundaram	Uncertainty analysis of mircoresonator using classical and interval methods	Proceedings of SPIE International conference on smart structures and materials			San Diego, USA	2007
M. Indumathy , G. Uma , M. Umapathy,	Design of fast output sampling feedback controller for ER fluid actuated car suspension system	Proceedings of the International Conference on Trends in Industrial and Automation (TIMA-2007)	251-256		NIT Trichy	2007
S. Meenatchi sundaram, G. Uma , M. Umapathy, B.S. Sathyanara yana and P.R. Venkatesw aran	Displacement analysis of micro- resonators	Proceedings of the International Conference on Trends in Industrial and Automation (TIMA-2007)	83-87		NIT Trichy	2007
A. Girija, M. Umapathy, B. Bandyopa dhyay, G. Uma , K. Dhanalaks hmi	Discrete time sliding mode control for piezoelectric actuated structures	Proceedings of IEEE International Conference on Industrial Technology (ICIT -2006)	1466- 1471		Mumbai	2006
D. Ezhilarasi, M. Umapathy, B. Bandyopa dhyay, G. Uma	Design and experimental evaluation of composite output feedback control for smart structures	Proceedings of IEEE International Conference on Industrial Technology (ICIT- 2006)	692-697		Mumbai,	2006
N. Senthil	Structural	Proceedings of IEEE	1816-		Mumbai	2006

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

Manoharan, G. Uma , M. Umapathy, S. Meenatchisundaram	vibration control using quantitative feedback theory”	International Conference on Industrial Technology (ICIT-2006)	1822			
P.Vetrivel, G.Uma , M.Umapathy	Design & simulation of high Q micromechanical resonator	Proceedings of 11 th National Seminar on Physics and Technology of Sensors			Pune	2006

(C) Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number
M.Umapathy, G. Uma and K. Suresh	Authored a Chapter in the book titled, “Micro and Smart Devices and Systems”	Springer	2014	978-81-322-1912-5