Bio-Data

EDUCATION

Ph.D :	Studies on PC Based Instrumentation with some applications to Superconductivity Madurai Kamaraj University 1998.
M.Tech.:	Instrumentation Technology Indian Institute of Science, Bangalore 1995.
M.Sc.	Applied Physics – Electronics National Institute of Technology, Trichy 1977.

PROFESSIONAL EXPERIENCE:

Visiting Faculty:	Department of Instrumentation & Control Engineering, NIT, Trichy (Since Jan 2016)
Professor & Director:	University Science Instrumentation Centre, (USIC) Madurai Kamaraj University, Madurai. (Dec 2006 – Jun2015)
Reader & Director:	USIC, Madurai Kamaraj University, Madurai, (May 1998 – Dec 2006)
Lecturer (Sl. Gr.):	USIC , Madurai Kamaraj University, Madurai, (Aug 1995 – May 1998)
Lecturer (Sr. Scale):	USIC, Madurai Kamaraj University, Madurai, (Aug 1987 – Aug 1995)
Lecturer:	USIC, Madurai Kamaraj University, Madurai, (Dec 1982 – Aug 1987)
Instrumentation Engineer	Central Instrumentation Lab, Annamalai University (Aug 1979 – Dec 1987)

AREAS OF SPECIALIZATION:

- Microprocessors & Microcontrollers
- Computer Aided Instrumentation
- Embedded Systems

RESEARCH INTERESTS

1. Design of Embedded Systems for Automobile Automation, Building Automation, Environmental Parameters monitoring.
2. Design of Computer based Instrumentation for Lab applications.
3. Design of data acquisition systems compatible to several standard interfaces

COURSES TAUGHT

1. Microprocessors, Advanced Microcontrollers
2. Computer Aided Instrumentation
3. Embedded Systems Design
4. Industrial Networks
5. Analytical Instrumentation
6. Digital Image Processing

AWARDS

1. Received Shri P. K. Das memorial 'Life-Time Achievement Award – 2012'. The award is given away to eminent teachers in Universities and Colleges every year at National Level.
2. Received the Award – Scored 'UNIVERSITY FIRS RANK', M.Sc. (Applied Physics - Electronics), 1977, from Regional Engineering College, Trichy

RESEARCH PROJECTS

1. DST Sponsored – "PC Based Measurement and Control for Laser Raman Spectral studies of Organic Molecules" (Co-Investigator), Cost: Rs. 10.42 Lakhs, (1998 – 2001).
2. DST Sponsored – "Modular EPR Spectrometer / Imager for *in-vivo* Applications" (Co-Investigator), Cost: Rs. 62.00 Lakhs, (2004 – 2007).

PATENTS/COPYRIGHTS:

1. Copyrights of software "PC Based Dual Trace Oscilloscope", Directorate of Copyrights, New Delhi.

   Reg. No. L-16035/96, (1996).

RESEARCH SCHOLARS

1. No. of Ph.D. awarded : 3
2. No. of Ph.D. thesis submitted : 1

3. No. of Ph.D. thesis to be submitted : 2
4. No. of M.Sc. projects supervised (Annexure-II) : 31
5. No. of M.Phil./MCA projects supervised : 3

PUBLICATIONS

Books:

1. "Microprocessors, PC Hardware and Interfacing", N. Mathivanan, PHI Learning (2003), ISBN: 978-81-203-2317-9, No. of Pages: 519, (XI Print – 2015).
2. "PC Based Instrumentation: Concepts and Practice", N . Mathivanan, PHI Learning (2007), ISBN: 978-81-203-3076-4, No. of Pages: 683, (V Print – 2015).

Research Papers (Annexure-I):

1. International Journals (Published : 8
2. National Journals (Published) : 10
3. International Journal (accepted) : 2
4. National Journal (accepted) : 1
5. International Journal (under review) : 2
6. International Conferences : 4
7. National Conferences : 5
8. Popular Articles : 5

CONTACTS:

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ANNEXURE-I

List of Journal Publications

International Journal Papers: (published)

1. Design of a Differential Drive Mobile robot and Remote Tracking of Robot using Odometry and WSN Nodes, U. Dineshkumar, M. Nisha and N. Mathivanan, *International Journal of Mechatronics, Electrical and Computer Technology*, Vol. 4(11), 384-399, (2014), IF: 2.84 (Science).

2. Environmental Parameter Monitoring using Wireless Sensor Network, K. Vairamani, **N. Mathivanan**, K. Arun Venkatesh, and U. Dinesh Kumar, *Instruments and Experimental Techniques*, Vol. 56(4), 468-471, (2013), IF: 0.349.

3. CAN Network Based Longitudinal Velocity Measurement using Accelerometer and GPS Receiver for Automobiles, K. Arun Venkatesh and **N. Mathivanan**, *Measurement Science Review*, Vol. 13(3), 115-121, (2013), IF: 1.162.

4. Design of MEMS Accelerometer based Acceleration Measurement System for Automobiles, K. Arun Venkatesh and **N. Mathivanan**, *Measurement Science Review*, Vol. 12(5), 189-194, (2012), IF: 1.162.

5. Deployment of Wireless Sensor Network for the Measurement of Exhaled Nitric Oxide in in-Home Healthcare Application, Elango, S., **Mathivanan, N**., Arun Venkatesh, K., Vairamani K., Karunakaran, C., Madasamy, T., Pandiaraj, M., *Sensors & Transducers Journal,* Vol. 142(7), 87-94, (2012), IF: 0.705 (Global).

6. RSSI based indoor position monitoring using WSN in a home automation application, S. Elango, **N. Mathivanan** and Pankaj Kumar Gupta, *Acta Electrotechnica et Informatica*, Vol. 11(4), 14-19, (2011).

7. Design and Development of ZigBee Based Instantaneous Flat-plate Collector Efficiency Measurement System, K. Vairamani, K. Arun Venkatesh and **N. Mathivanan**, *Measurement Science Review*, Vol. 11(2), 57-60 (2011), IF: 1.162.

8. A Modern Raman spectrometer – interfacing with a computer, **N. Mathivanan** and V. Ramakrishnan, *Asian journal of Physics,* Vol. 9(2), 324-326, (2000).

National Journal Papers (Published):

9. Design and Development of Zigbee based Data Acquisition System for Air-Temperature and Relative Humidity Monitoring, K. Vairamani, **N. Mathivanan**, K. Arun Venkatesh, , *Jl. of the Instrum. Soc. of India*, Vol. 44(1), 20-22, (2014).

10. Design of Low Cost GSM based Air Temperature and Relative Humidity Monitoring System, K. Vairamani, and **N. Mathivanan**, *Jl. of the Instrum. Soc. of India*, Vol. 42(3), 179-181, (2012).

11. Design and Deployment of Wireless Sensor Network for In-Home Healthcare Application Using LabVIEW, S. Elango, **N. Mathivanan**, K. Arun Venkatesh, *Jl. of the Instrum.Soc. of India*, Vol. 41(4), 233-236, (2011).

12. Design and Deployment of a Low Cost Wireless Sensor Network for Environmental Monitoring in Home Automation Application, S. Elango, **N. Mathivanan** and Pankaj Kumar Gupta, *Jl. of the Instrum. Soc. of India*, Vol. 41(2), 115-117, (2011).

13. Standalone Data Logger with USB Host capability, A. Robson Benjamin and **N. Mathivanan**, *Jl. of the Instrum. Soc. of India*, Vol. 40(3), 239-240, (2010).

14. Study of Middleware Usage in USB based Home Network Automation under JAVA Enabled Environment, S. Elango,and **N. Mathivanan,** *Jl. of the Instrum. Soc. of India*, Vol. 40(2), 131-132, (2010).

15. Design of USB based Data Acquisition System, Manu Mohan, A. Robson Benjamin and **N. Mathivanan**, *Jl.of the Instrum. Soc.of India,* Vol. 36(4), 257-266, (2006).

16. Design of FFT Spectrum Analyzer, K. Arun Venkatesh, Shikha Chauhan, S. G. Hiranya Bhatta and **N. Mathivanan,** *Jl. of the Instrum. Soc.of India,* Vol. 36(1), 1-7 (2006).

17. Molecular Inclusion Studies of Substituted Naphthoquinone Molecules – Laser Fluorescence and Optical Absorption Techniques, V. Ramakrishnan, V. Geetha, M. Umadevi, A. Ramasubbu and **N. Mathivanan**, *Bulletin of Electrochemistry,* Vol. 17(8), 337-340*,* (2001), IF: 0.24.

18. PC Based X-Y-T Plotter, **N. Mathivanan**, S. Ramgopal & V. Nataraj, *Jl. of the Instrum. Soc. of India,* Vol. (2), 94-103*,* (1996).

International / National Journal Papers: (under review / accepted)

1. Design of Ethernet based Data Acquisition System for Yaw Rate and Longitudinal Velocity Measurement in Automobiles, K. Arun Venkatesh, and **N. Mathivanan,** *International Journal of Automation and Computing* (accepted).

2. Ethernet based Networked Data Acquisition System using Diskless Computer for IC Engine Testing, K. Arun Venkatesh and **N. Mathivanan**, *Measurement* (revised version submitted).

3. Design, construction and evaluation of a 300 MHz continuous wave electron magnetic resonance spectrometer for *in-vivo* imaging applications, Venkatesan Kathiresan, Arun Venkatesh Krishna, Gandhidasan Rathinasamy, **Mathivanan Natarajan**, Ichikawa Kazuhiro, Utsumi Hideo, Murugesan Ramachandran, *Journal of Magnetic Resonance*, (under review).

4. GPRS based Environmental Parameter Monitoring System for Animal Behavior Studies, K. Vairamani, K. Arun Venkatesh and N. Mathivanan, Instruments and Experimental Techniques, (under Review).

5. GPRS and WEB Based Weather Monitoring System, K. Vairamani and N. Mathivanan, Journal of Instrum. Soc. of India (submitted).

List of Conference Papers / Presentations

International

1. Design & Development of ZigBee based data acquisition system for real-time microclimate environmental parameter monitoring, K. Vairamani, K. Arunvenkatesh, and **N. Mathivanan**, International workshop and conference on renewable energy and climate change, IWCRECC-2012, held at Madurai Kamaraj University, Madurai, 5^{th} – 7^{th} April 2012.

2. A Modular Radio Frequency Continuous Wave Electron Paramagnetic Resonance (EPR) Spectrometer/Imager for *in-vivo* Applications, K. Venkatesan, K. A. Venkatesh, **N. Mathivanan**, R. Gandhidasan, R. Murugesan, *International Conference on "Free Radicals & Natural Products in Health" & 7^{th} Annual Meeting of the Society for Free Radical Research,* held at Centre for Advanced Studies, University of Rajasthan, Jaipur, 14-16 Feb 2008.

3. Design of PC Based Dual Trace Oscilloscope, **N.Mathivanan**, *Proceedings of International Conference on Instrumentation, (ICI-96)* - Advances in Instrumentation – Page (177-182) (1996).

4. Design of PC Based Dual Channel Strip Chart Recorder, **N. Mathivanan**, *Proceedings of International Conference on Instrumentation, (ICI-96)* - Advances in Instrumentation – Page (383-387) (1996).

National

5. USB To RS485 Data Acquisition System, Robson Benjamin, A. and **Mathivanan, N.**, Proceedings of the 3^{rd} National Conference on "Recent Trends in Instrumentation Applications", RETINA'09, held at National Engineering College, Kovilpatti, Tamilnadu, 19, 20-03-2009, pp. 100-105, (2009).

6. Design of USB Based Microbalance, A. Robson Benjamin and **N. Mathivanan**, *Proceedings of National Symposium on Instrumentation (NSI-31)* held at Gwalior, (2006).

7. Design of PC Based Phonocardigraph, M. Rameshkannan, K. Arun Venkatesh and **N. Mathivanan**, *Proceedings of National Symposium on Instrumentation (NSI-30)* held at Cochin, (2005).

8. Molecular Inclusion of 2-chloro 3N acetyl 1,4-naphthoqmnonb in calyx (8) arene, V. Ramakrishnan, V. Geetha, M. Umadevi and **N. Mathivanan**, *National Laser Symposium* held at Hyderabad on Dec 15-17, (1999).

9. PC interface for Josephson Junctions and SQUIDs Characterization, **N.Mathivanan**, C.Srinivasan, K.Gireesan and M.P.Janawadkar, *Proceedings of ANACON '98 Conference,* Mumbai, (1998).

Popular Articles:

1. Virtual Trainer Kit for 8085 Microprocessor Programming, D. Premanand and **N. Mathivanan**, *Electronics for You*, 69-72, (2004).

2. PC based Digital Frequency Counter, **N.Mathivanan**, G.Sivakumar and V. K. Gnaneswaran, *Science & Technology section of THE HINDU, 18-12-1997,* (Page 26).

3. PC based Digital Voltmeter, **N.Mathivanan**, G.Palaniappan and N.Venkateswaran, *Science & Technology section of THE HINDU, 2-5-1996* (Page 26).

4. PC Based Dual Channel Strip Chart Recorder, **N. Mathivanan**, *Science & Technology Section of THE HINDU, 11-1-96* (Page 26).

5. PC based Dual Trace Oscilloscope, **N. Mathivanan**, *Science & Technology Section of THE HINDU, 3-8-95* (Page 25).

ANNEXURE-II

List of M.Sc. (Electronics & Instrumentation) Projects Supervised

Sl. No.	Title of the Project	Name of the students	Year
1.	Design & Development of PC Based Data Logger for the Measurement of Speed and Level	Jessy Owan	2004
2.	Cyclic Voltammetry for Electrochemical Studies using PC	Uthirapathy, B.	2004
3.	Remote Data Acquisition Module for Level Measurement	Dinesh Kumar, B. K. D.	2004
4.	Design and Development of Virtual Electronics Lab	Premanand, D.	2004
5.	Design and Development of DAQ and Virtual Instruments for Electronics Lab	Shilpa, S.	2004
6.	Studies on Various Digital Image Processing Techniques using Speckle Pattern	Nisha	2004
7.	Design and Development of Digital Speckle Photographic System for NDE using Digital Image Processing	Divyasree, S. J.	2004
8.	Design and Development of PC Based Data Logger for Measurement of Temperature and Pressure	Akilan, T.	2004
9.	Automation of Auger Filling Machine for Packing of Dry Powder	Naveena, T.	2005
10.	Vibration Analysis System	Karthikeyan, J.	2005
11.	Automatic Backlash Measurement and Static Torsion Strength Testing System	Atheesh, C.	2005
12.	Automation System for Candy Wrapping Machine	Sathishkumar, S.	2005
13.	PC Serial Compatible BIS	Shikha Chauhan	2005
14.	PC Parallel Port Compatible Microcontroller based Analog Data Acquisition and Signal Processing System	Arun Venkatesh, K.	2005
15.	Remote Embedded Microcontroller based Stepper Motor Controller	Nageswari, N.	2005
16.	USB based Data Acquisition System	Manu Mohan	2006
17.	Digital Image Processing Technique for object Identification and Finger Print Verification	Rameshkannan,	2006
18.	Wave Basin	Balaji, P. K.	2007
19.	Studies on Wavelet Transform Techniques for Denoising and Compression	Saraswathi, A.	2007
20.	X-Ray Generator and DC-DC converter Board Functional Test using LabVIEW	Ganesan, K.	2007
21.	4-Channel Vibration Analyzer	Senthil Prakash, S.	2007

22.	Design and Development of RS-485 Network for Remote Measurement of Process Variables	Ramachandran, P.	2008
23.	Studies on Text Tile Compression by Huffman Coding using C++, MATLAB and JAVA Algorithms.	Muthumari, P.	2008
24.	Ethernet based Data Acquisition System	Arunkumar, M.	2008
25.	Life Test of High Speed Rail Bearings	Perumal Vignesh, G. Vinoth Kumar, S.	2009
26.	X-Ray Generator Controller using LabVIEW	Rajmohan, S. Shanmuga Rajan, T.	2009
27.	Data Acquisition and Monitoring using ZigBee Wireless Sensor Networks.	Pankaj Kumar Gupta	2010
28.	RF based Wireless Communication	Joesamuel, S.	2010
29.	GSM/GPRS Based Environmental Monitoring using Microcontroller and LabVIEW	Jegatheesan, N. Balamurugan, B	2011
30.	Automated Visual Inspection System using LabVIEW	Prasannakumar, V.	2013
31.	Design of Cloud based Environmental Parameter Monitoring System	Santhosh, B, R.	2015

List of M.Phil & M.C.A. Projects Supervised

Sl. No.	**Title of the Project**	**Name of the Students**	**Course**	**Year**
1.	Device Driver Development for General Purpose Data Acquisition System	Sivashankari, C.	M.C.A.	2002
2.	Device Driver for DAC Interface Card	Nagajothi, T.	M.C.A.	2002
3.	Universal Noise Removal Algorithm with Impulse Detector	Revathi, P.	M.Phil.	2008