

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

## Curriculum Vitae



### Brief Profile:

My doctoral work at MIT Anna University was in the area of PID control. In May 2007, I joined National Institute of Technology at Tiruchirappalli as a lecturer in the department of Instrumentation and Control Engineering. All along, in the 14+years of my service, I have taught to the students, both undergraduate and postgraduate.

1. Name S.Narayanan
2. Designation: Assistant professor
3. Office Address: Department of Instrumentation and Control Engineering
4. Telephone (Direct) (Optional):  
Telephone : 043123050 Extn(Optional):3364  
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5. Email (Primary): narayanan@nitt.edu Email (Secondary) :nil
6. Field(s) of Specialization: Process Control
7. Employment Profile

Job Title	Employer	From	To
Assistant Professor 8000	National Institute of Technology, Trichy.	Dec.2011	Till date
Assistant Professor 7000	National Institute of Technology, Trichy.	Dec.2008	Dec.2011
Lecturer- Assistant Professor 6000	Department of Instrumentation & Control Engineering, National Institute of Technology, Trichy.	4 <sup>th</sup> May 2007	Dec.2008
Lecturer(self-supporting)	Department of Electrical and Electronics Engineering, Thiagarajar College of Engineering, Madurai.	04 <sup>th</sup> Aug 2005	3 <sup>rd</sup> May2007
Teaching Research Associate	Department of Instrumentation Engineering, Madras	July 2001	July 2005

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	Institute of Technology Campus Anna University, Chennai.		
Systems group- Trainee Engineer	Yokogawa Blue Star Limited, Bangalore	April 09,2001	June 11,2001

### 8. Academic Qualifications

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D.	MIT, Anna University	2008	----	Process Control
M.E	MIT, Anna University	2001	First	Instrumentation
B.E	Annamalai University	1996	First	Electronics & Instrumentation

### 9. Academic/Administrative Responsibilities within the University

Academic responsibilities:

- Electronics Lab in charge, PAC Chairman, Staff advisor for department student symposium, Project Review coordinator for UG, project review member for PG, doctoral committee member for PhD scholars.
- One of the purchase member in the FIST Program DST, Government of India, has sanctioned Rs. 90 Lacs to provide center of excellence in the area of MEMS and Mechatronics.

Administrative Responsibilities:

- One of the stock verification officers at NITT- Institute level.
- Department level NBA preparation committee member.
- Water doctor maintenance committee (Institute level) member.
- MS/PhD admission committee member (department level).
- One of the committee member in prizes, electrical works and decoration committee in connection with Festember-09 held on 17<sup>th</sup> -21<sup>st</sup> September 2009.
- One of the committee member in reception committee in connection with NITT Director's meet held on 22<sup>nd</sup> -24<sup>th</sup> September 2009.

### 10. Academic/Administrative Responsibilities outside the University

Position	Institution
Doctoral committee member for PhD scholar	Anna university.
Anna university representative(AUR) for TamilNadu	Year-2004- Government arts college, Namakkal.

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engineering entrance examination	
Anna university representative(AUR) for TamilNadu engineering entrance examination	Year-2003- PGP arts college, Namakkal.

### 11. Awards, Associateships etc.

- Paper titled, “Robust PI stabilization of Rosenbrock system”, has been selected as best paper among the papers presented in the field of control engineering during the TIMA international conference, 2008.

### 12. Fellowships : NIL

### 13. Details of Academic Work

#### (i) Curriculum Development

- New elective course has been introduced for B. Tech ICE students.-Advanced process control.
- New core course has been introduced for B. Tech ICE students.-Analog signal processing and analog signal processing lab.
- New directed study course has been introduced for research scholars-multivariable control.

#### (ii) Courses taught at Postgraduate and Undergraduate levels

Postgraduate	Undergraduate
Control subjects: <ul style="list-style-type: none"> <li>• System theory</li> <li>• Modern control engineering</li> <li>• Optimal control</li> <li>• Computer control of process</li> </ul>	Electronics subjects: <ul style="list-style-type: none"> <li>• Linear Integrated Circuits</li> <li>• Linear Integrated Circuits Lab</li> <li>• Electron devices</li> <li>• Analog electronics</li> <li>• Analog Electronics Lab</li> </ul> Control subjects: <ul style="list-style-type: none"> <li>• Control systems</li> <li>• Digital control system</li> <li>• Process control</li> <li>• Advanced process control</li> <li>• Additional topics in control engineering</li> <li>• Logic and Distributed Control Systems</li> <li>• Optimization techniques</li> </ul>

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(iii) Projects guided at Postgraduate level

No.	Name	Year of completion	Title of Thesis
1.	Boban vargese (210115016)	2016	Multivariable control system design
2.	Jyothis sebastian (210114023)	2015	Optimal control system design
3.	Marrtin Luthur S.K (202208021)	2010	Investigation on fractional order controllers
4.	Vagya.B (202208007)	2010	Computation of stabilizing PI, PID controllers for SISO system
5.	Jeya Senthil (CLD0618)	2008	Control system design

(iv) Other contribution(s)

- Collaborative research work with Dr.J. Prakash in the area of fractional order control system at MIT, Chennai.

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
Modeling and Control of Processes with Large Process and Random Disturbances	CDAC	2009	2011	Completed Amount: 10 lakhs  One of the project co-investigator

15. Number of PhDs guided: Nil

Number of MS guided: One

Name of the MS Scholar	Title of MS Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award
Devi C. Arati	A study of decoupling control schemers for a class of multivariable systems	Supervisor	2016

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc.

Participation:

- Two day programme on “conclave on academic reforms “on 28th &29th April 2015 held at NIT, Trichy.

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- One day the tutorial workshop on “data based analysis & synthesis of linear systems”, 31 December 2013.
- Two day faculty orientation programme on "class room management & communication held on 5th&6<sup>th</sup>, October 2012, Tanjore.
- Two days seminar on current trends in industrial Automation, NITT.  
Sponsoring agency: NITT  
Duration: 18<sup>th</sup>-19<sup>th</sup> February, 2010.
- One day seminar on Automation system technology, MIT, Chennai.  
Sponsoring agency: CDAC, PROJECT  
Duration: 19<sup>th</sup> December, 2009
- One day tutorial on Advanced Automation, MIT, Chennai.  
Sponsoring agency: CDAC, PROJECT  
Duration: 18<sup>th</sup> December, 2009
- One day workshop on polynomial global optimization and constraint propagation techniques, NITT.  
Sponsoring agency: NITT.  
Duration: 17<sup>th</sup> December, 2009.
- One week Tutorial workshop on “Advanced Optimal Control and Estimation“, IISc.  
Sponsoring agency: TEQIP  
Duration: 28<sup>th</sup>-01<sup>st</sup> August, 2008.
- One week induction Training programme on “Industrial Design and Delivery“, NITTR.  
Sponsoring agency: TEQIP  
Duration: 07<sup>th</sup>-12<sup>th</sup> July, 2008.
- One day workshop on Multi variable control system, NITT.  
Sponsoring agency: TEQIP  
Duration: 29<sup>th</sup> February, 2008.
- Two days UGC sponsored short term course on “advanced process control”, Annamalai University, Chidambaram. 28<sup>th</sup>February, 2003- 01<sup>st</sup> March 2003.

Participated in conference and presented a paper in

- RTIC2016 held at MIT Anna University.
- ICC2016 held at Hyderabad.
- RTIC2015 held at MIT Anna University.
- TIMA2011, Chennai.
- The international conference on modeling and simulation (MS’09, India) held at Thiruvananthapuram.
- The National conference on electrical engineering and embedded systems, Anna University, Chennai.

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- NCPICD-2005 held at MIT, Chennai. 16<sup>th</sup> -17<sup>th</sup> December2005.
- IEEE INDICON, 2005, held at IIT Madras. 11-13 December 2005.
- ICECON2005 held at NIT, Tiruchirappalli.
- NSC2004 held at Vellore.
- TIMA2004 held at CSIR Complex, Chennai, and 18th December2004.

### 17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convener / Co-Convener)

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue
AICTE-MHRD sponsored course on computer control of process	National	4 <sup>th</sup> Jan.2010 -9 <sup>th</sup> Jan. 2010.	Coordinator	NIT, Trichy

### 18. Invited Talks delivered

Topic	Date	Inviting Organization
Certificate course on advanced control engineering for young scientists i)Computer control of systems ii) PID controllers	21th January 2013 and 2nd March 2013 during weekends	DRDL, Hyderabad.
Fractional order control	4 <sup>th</sup> -9 <sup>th</sup> January, 2010.	AICTE- MHRD sponsored short term course on “Computer Control of Processes”, NITT.
Model reference adaptive control	----	MIT, Chennai
Robust control	28 <sup>th</sup> February, 2003- 01 <sup>st</sup> March 2003.	Annamalai University.

### 19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member )	Organization	Membership No. with date
Life Member	System Society Of India	LM24004
Life Member	Indian Society For Technical Education	LM81794

20. Academic Foreign Visits Nil

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21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal (Optional)
T. Vinopraba, et.al.N.Sivakumaran, S.Narayanan	Design of internal model control based fractional order PID controller	J Control Theory Appl.	vol.10 no.3	297-302	2012	
Narayanan S., KanagasabapathyP.and Prakash J.	Constant Gain Stabilization with Desired Damping	Computers and Chemical Engineering Journal	Vol.30, No.6-7	1072-1075	2006	SCI

(B) Conferences/Workshops/Symposia Proceedings

International Conference:

<b>Papers presented in International Conferences</b>	
1.	Ramanuja Vinayak J, S.Narayanan, “a study on centralized control scheme for a class of process applications”, ETAE2016, 27-30 December, IIT, Kharakgpur.
2.	Devi C. Arati, S.Narayanan,” centralized controller design using state space concept”, 6th IFAC symposium on structure and control, Istanbul, turkey, 2016.
3.	Devi C. Arati, S.Narayanan and N Sivakumaran,” Decoupling of linear multivariable system using PD output feedback,” Indian control Conference (ICC2016),4-6 Jan. 2016.
4.	Devi Arati, S Narayanan and N Sivakumaran, “Complete decoupling of multivariable systems by means of dynamic state feedback”, ICSTM, 06-08, May2015.
5.	Devi C. Arati, S.Narayanan,” Dynamic decoupling design for a class of linear multivariable system,” IEEE International Conference on Computer Communication and Control (IC4-2015), 10-12 Sep. 2015.
6.	T.Vinopraba, N.Sivakumaran, S.Narayanan, T.K. Radhakrishnan, Design of fractional order controller for Biochemical reactor”, 12th IFAC Symposium on computer applications in bio technology, IFAC, 16-18, 2013, December, Mumbai, India.
7.	T.Vinopraba N.Sivakumaran, S.Narayanan, T.K. Radhakrishnan, “Design of fractional order controller for Biochemical reactor’, International conference on water desalination, treatment and management, 21-22, February, MNIT, Jaipur.

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8. T. Vinopraba, N. Sivakumaran, S. Narayanan, "IMC Based Fractional order PID Controller", Proceedings of IEEE International Conference on Industrial Technology, Auburn University, Alabama, 14-16 March 2011.
9. S. Narayanan, N. Sivakumaran, T. Vinopraba, "Stabilization of commensurate fractional order system with desired damping", Proceedings of International conference on Trends in Industrial Measurements and Automation, (TIMA2011)CSIR, Chennai, January 6-8, 2011, pp.393-396.
10. Martin Luthur S.K, Raja Singh B., Rominus Valsalam S., Narayanan S., Radhakrishnan T K., "Intelligent parameter and state estimation for coal mill in a thermal power plant", International conference on system modeling, optimization and advanced process automation(SYMOPA-2010) Dec.,18-19 2010.
11. S. Narayanan, N. Sivakumaran, T. Vinopraba and N. Selvagesan, "IMC based PID controller design for gas turbine plant", Int. conf. on MS '09.Trivandrum.
12. T. Vinopraba, N.Sivakumaran, N. Selvagesan and S.Narayanan, "Stabilization Using Fractional-Order PID alpha Controllers for First Order Time Delay System", IEEE-ACT2009.
13. Vijayan V., Narayanan S., Kanagasabapathy P.and Prakash J. (2005), 'Stability Analysis of First Order Plus Time Delay System under PI & PID Control for Simultaneous Parameter Variation', IEEE INDICON, 2005, 11-13 December 2005, Pages: 73-77.
14. Narayanan S. and Kanagasabapathy P. (2004), 'Robust PI Control Design for Non Linear systems', International Conference on Instrumentation (INCON 2004), Pune.
15. Narayanan S., Kanagasabapathy P.and Prakash J. (2004), 'Robust PI Stabilization of Rosenbrock system', 4<sup>th</sup> International Conference on Trends in Measurement and Automation (TIMA 2004), Chennai.

**Papers presented in National Conferences**

1. Devi C. Arati, S.Narayanan "Row by row decoupling problem", conference CD proceedings RTIC-16, March 2016, MIT, Chennai.
2. Devi C. Arati, S.Narayanan, N.Sivakumaran, "A study on MIMO control systems", conference CD proceedings RTIC-15, March 13-14, 2015, MIT, Chennai.
3. T. Vinopraba, N.Sivakumaran, and S. Narayanan "PI stabilization for Inverse response Processes", Proceedings of CHEMCON 2010, December 27-29, 2010, pp. 278, Chidambaram.
4. S.Narayanan, "Stabilization using fractional order PID controllers for unstable first



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order plus time delay system”, chemcon, 2009, Vizag.

5. Narayanan S., “A tutorial on fractional order controller”, National conference on Electrical Engineering and Embedded system (NCEEE08), Chennai, India.
6. Narayanan S., Kanagasabapathy P.and Prakash J. (2005), ‘Relative Stability Analysis of First Order Plus Time Delay System under PI Control for Simultaneous Parameter Variation’, National Conference on Process Identification, Control and Diagnosis (NCPICD2005), Chennai, India.
7. Narayanan S., Kanagasabapathy P.and Prakash J. (2005), ‘Novel Formulation in Computation of Stabilizing PI Controllers of open loop unstable system with RHP Complex zeros’, 2<sup>nd</sup> National Conference on Instrumentation and Control (ICECON2005), Tiruchirapalli, India.
8. Narayanan S., Kanagasabapathy P.and Prakash J. (2004), ‘PI Stabilization of Time Delay System with Desired Stability Margin’, National System Conference (NSC2004), Vellore.

**(C) Books & Monographs:**

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