

# Curriculum vitae



## A. GENERAL INFORMATION

- (a) Name : Dr. A. VENKATESAN
- (b) Designation : Associate Professor
- (c) Department : Post-Graduate and Research  
Department of Physics
- (d) Date of appointment : 09.08.2000
- (e) Date of Birth : 15.04.1969
- (f) Residential Address : 5/1428, Parasakthi Nagar  
BikshandarKoil – P.O Tiruchirappalli  
– 621 216  
Mobile: 094430 08804
- (g) Area of Specialization : Nonlinear Dynamics

## B. EDUCATIONAL QUALIFICATIONS

S. No.	Degree	Name of the Institution/University	Year of Passing	Class	Specialization
1.	B. Sc., (Physics)	St. Joseph's College, Tiruchirappalli	1986	First	Electronics
2.	M. Sc., Physics	A. V. V. M Sri PushpamCollge, Poondi	1991	First	Instrumentation
3.	M. Phil. (Physics)	Bharathidasan University Tiruchirappalli	1994	First	Nonlinear Dynamics
4.	Ph. D (Physics)	Bharathidasan University Tiruchirappalli	Sep. 2000	Highly Commended	Nonlinear Dynamics

## **C. TEACHING**

UG Teaching – 21 years

PG Teaching - 21 years

## **D. IMPROVEMENT OF PROFESSIONAL COMPETENCE**

### **(a) Orientation and refresher course attended**

1. Participated in the Refresher Course in Physics conducted by UGC – Academic Staff College, Bharathidasan University, Tiruchirappalli during 08 –28 August 2009.
2. Participated in the Refresher Course in Theoretical Physics conducted by Indian National Science Academy, Bangalore at Bishop Moore College, Mavelikara– 690 110, Kerala during 7 – 19 December 2009.
3. Participated in the Refresher Course in Physics conducted by UGC-Academic Staff College, Jawaharlal Nehru University, New Delhi during January 31 – 25, February, 2011.
4. Participated in the Tamil Nadu State Council for Science and Technology sponsored Orientation Programme on Research Activities in Science for College Teachers, Bharathidasan University, Tiruchirappalli during March 24-25, 2012.

### **(b) Seminar/Conference/Workshop Organized**

1. DST – TPSC Sponsored National Workshop on Nonlinear Physics: Thoery, Experiments and Applications, Nehru Memorial College, Puthanampatti, during 29 – 31 March 2010.
2. State level UGC Sponsored Seminar on Embedded Systems and its applications in Nehru Memorial College, Puthanampatti on 13<sup>th</sup> March 2012.

### **(c) Conference/Seminar/Workshop attended**

1. Seminar on Recent Developments in Physics conducted by School of Physics, Bharathidasan University, Tiruchirappalli during 21-22 November, 2005.
2. Two-day theme meeting on *Bifurcation, Chaos, Synchronization and its Applications* at Department of Physics, Bharathidasan University, Tiruchirappalli during December 3-9, 2005.

3. Workshop on *High Performance Computing* at the Department of Physics, Bharathidasan University, Tiruchirappalli during August 6- 9,2007.
4. International Conference on *Recent Developments in Nonlinear Dynamics* at the School of Physics, Bharathidasan University during 13-16, February, 2008.
5. National Seminar on *Nonlinear Electronics and Spintronics* at School of Physics, Bharathidasan University, Tiruchirappalli during 20-21, March, 2009.
6. Workshop on *Current trends in Test and Measurement MPLS Solutions* at the Department of Electronics and Communications, PSG College of Engineering, Coimbatore during 26-27, March, 2009.
7. Seminar on *Frontier Topics in Fundamental Physics* at School of Physics, Bharathidasan University, Tiruchirappalli during March 30- 31, 2009.
8. Participated the UGC sponsored Seminar on “ Faculty Development on Higher Education” organized by IQAC, Nehru Memorial College, Puthanampatti, on 21<sup>st</sup> January 2012.
9. International Workshop on The Art of Journal and Thesis writing, PRIST University, Thanjavur on 5<sup>th</sup> January, 2012.
10. Participated the UGC sponsored Seminar on “ Examination Reforms” organized by IQAC, Nehru Memorial College, Puthanampatti, on 15<sup>th</sup> March 2012.
11. Participated and presented paper in the conference on **Dynamics Days Asia Pacific**08 conference, organized by Indian Institute of Technology, Chennai Madras on July 18-22, 2014.
12. Participated and presented paper in the Conference on Nonlinear Systems and Dynamics (**CNSD-2018**), organized by Jawaharlal Nehru University, New Delhi on October 11-14, 2018.
13. Participated and presented paper in the Conference on Nonlinear Systems and Dynamics (CNSD-2019), organized by IIT, Kanpur on December 12-15<sup>th</sup>, 2019.

## **E. RESEARCH CONTRIBUTIONS**

### **(a) Number of Students (Ph.D)**

Completed : 03  
Registered : 05

### **(b) Number of students (M. Phil.)**

Completed : 60

### **Acted as member in doctoral committees of**

- Department of Physics, Bharathidasan University, Tiruchirappalli,
- Bishop Heber College, Tiruchirappalli
- A.V.V.M. Sri Pushpam College, Poondi
- Jamal Mohammed College, Tiruchirappalli
- Anna University, Chennai
- H.H Raja,s College, Puthukottai

### **(c) Research Papers published**

<b>S.No</b>	<b>Author(s)</b>	<b>Title</b>	<b>Name of Journal</b>	<b>Volume</b>	<b>Page</b>	<b>Year</b>
1.	S Sudharsan, A Venkatesan, M Senthilvelan	Symmetrical emergence of extreme events at multiple regions in a damped and driven velocity-dependent mechanical system	Physica Scripta	96	095216	2021
2.	S Sudharsan, A Venkatesan, M Senthilvelan	Constant bias and weak second periodic forcing: tools to mitigate extreme events	The European Physical Journal Plus	136	817	2021
3.	P Ashokkumar, M Sathish Aravindh, A Venkatesan, M Lakshmanan	Realization of all logic gates and memory latch in the SC-CNN cell of the simple nonlinear MLC circuit	Chaos	31	063119	2021

4.	S. Sudharsan, A. Venkatesan, P. Muruganandam, M. Senthilvelan	Emergence and mitigation of extreme events in a parametrically driven system with velocity-dependent potential	The European Physical Journal Plus	136	1-19	2021
5.	M. Sathish Aravindh, A. Venkatesan, and M. Lakshmanan	Route to logical strange nonchaotic attractors with single periodic force and noise	Chaos	30	093137	2020
6.	M. Sathish Aravindh, R.Gopal, A. Venkatesan, and M. Lakshmanan	Realisation of parallel logic elements and memory latch in a quasiperiodically-driven simple nonlinear circuit	Pramana – J. Phys.	94	1-14	2020
7.	A. Venkatesan, M. Sathish Aravindh and M. Lakshmanan	Implementation of parallel logic elements in a quasiperiodically driven Murali–Lakshmanan–Chua circuit system	Indian Academy of Sciences Conference Series	2	0018	2019
8.	R Gopal, VK Chandrasekar, DV Senthilkumar, A Venkatesan M Lakshmanan	Chimera at the phase-flip transition of an ensemble of identical nonlinear oscillators	Communications in Nonlinear Science and Numerical Simulation	59	30-46	2018
9.	M Sathish Aravindh, A Venkatesan, M Lakshmanan	Strange nonchaotic attractors for computation	Physical Review E	97	052212	2018
10.	M Inbavalli, K Srinivasan, RG Pradeep, A Venkatesan, K Murali	Dynamics of Periodically Pulsed Driven Chua's Circuit	Journal of Computational and Theoretical Nanoscience	15	854-858	2018
11.	PR Venkatesh, A Venkatesan, M Lakshmanan	Implementation of dynamic dual input multiple output logic gate via resonance in globally coupled Duffing oscillators	Chaos: An Interdisciplinary Journal of Nonlinear Science	27	083106	2017
12.	P R Venkatesh, A Venkatesan,	Design and implementation of dynamic logic gates and	Chaos: An Interdisciplinary Journal of	27	033105	2017

	M Lakshmanan	R-S flip-flop using quasiperiodically driven Murali-Lakshmanan-Chua circuit	Nonlinear Science			
13.	PR Venkatesh, <b>A Venkatesan</b>	Vibrational resonance and implementation of dynamic logic gate in a piecewise-linear Murali–Lakshmanan–Chua circuit	Communications in Nonlinear Science and Numerical Simulation	39	271-282	2016
14.	PR Venkatesh, <b>A Venkatesan</b>	Significance of power average of sinusoidal and non-sinusoidal periodic excitations in nonlinear non-autonomous system	Pramana	87 (1)	1-11	2016
15.	PR Venkatesh, <b>A Venkatesan</b> , M Lakshmanan	Analytical treatment for synchronizing chaos through unidirectional coupling and implementation of logic gates	Pramana	86 (6)	1195-1207	2016
16.	K Srinivasan, VK Chandrasekar, <b>A Venkatesan</b> , IR Mohamed	Duffing–van der Pol oscillator type dynamics in Murali–Lakshmanan–Chua (MLC) circuit	Chaos, Solitons & Fractals	82	60-71	2016
17.	R Gopal, VK Chandrasekar, DV Senthilkumar, <b>A Venkatesan</b> ,	Effect of asymmetry parameter on the dynamical states of nonlocally coupled nonlinear oscillators	Physical Review E	91 (6)	062916	2015
18.	VK Chandrasekar, R Gopal, <b>A Venkatesan</b> , M Lakshmanan	Mechanism for intensity-induced chimera states in globally coupled oscillators	Physical Review E	90 (6)	062913	2014
19.	R Gopal, VK Chandrasekar, <b>A Venkatesan</b> , M Lakshmanan	Observation and characterization of chimera states in coupled dynamical systems with nonlocal coupling	Physical Review E	89 (5)	052914	2014
20.	R Gopal, <b>A Venkatesan</b> , M Lakshmanan	Applicability of 0-1 test for strange nonchaotic attractors	Chaos: An Interdisciplinary Journal of Nonlinear Science	23 (2)	023123	2013
21.	K Srinivasan, K Thamilmaran, <b>A Venkatesan</b>	Classification of Bifurcations and Chaos in Chua's Circuit with Effect of Different Periodic	International Journal of Bifurcation and Chaos	19 (06)	1951-1973	2009

		Forces				
22.	K Srinivasan, K Thamilmaran, <b>A Venkatesan</b>	Effect of nonsinusoidal periodic forces in Duffing oscillator: Numerical and analog simulation studies	Chaos, Solitons & Fractals	40 (1)	319-330	2009
23.	K Thamilmaran, DV Senthilkumar, <b>A Venkatesan</b> , M Lakshmanan	Experimental realization of strange nonchaotic attractors in a quasiperiodically forced electronic circuit	Physical Review E	74 (3)	036205	2006
24.	K Thamilmaran, M Lakshmanan, <b>A Venkatesan</b>	Hyperchaos in a modified canonical Chua's circuit	International Journal of Bifurcation and Chaos	14 (01)	221-243	2004
25.	<b>A Venkatesan</b> , S Parthasarathy, M Lakshmanan	Occurrence of multiple period-doubling bifurcation route to chaos in periodically pulsed chaotic dynamical systems	Chaos, Solitons & Fractals	18 (4)	891-898	2003
26.	<b>A Venkatesan</b> , M Lakshmanan	Interruption of torus doubling bifurcation and genesis of strange nonchaotic attractors in a quasiperiodically forced map: Mechanisms and their characterizations	Physical Review E	63 (2)	026219	2001
27.	<b>A Venkatesan</b> , M Lakshmanan, A Prasad, R Ramaswamy	Intermittency transitions to strange nonchaotic attractors in a quasiperiodically driven Duffing oscillator	Physical Review E	61 (4)	3641	2000
28.	<b>A Venkatesan</b> , K Murali, M Lakshmanan	Birth of strange nonchaotic attractors through type III intermittency	Physics Letters A	259 (3)	246-253	1999
29.	<b>A Venkatesan</b> , M Lakshmanan	Different routes to chaos via strange nonchaotic attractors in a quasiperiodically forced system	Physical Review E	58 (3)	3008	1998
30.	<b>A Venkatesan</b> , M Lakshmanan	Bifurcation and chaos in the double-well Duffing–Van der Pol oscillator: numerical and analytical studies	Physical Review E	56 (6)	6321	1997

31.	<b>A Venkatesan,</b> M Lakshmanan	Nonlinear dynamics of damped and driven velocity-dependent systems	Physical Review E	55 (5)	5134	1997
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**(d) Research Projects**

<b>S. No</b>	<b>Title of the Project</b>	<b>Name of the funding agency</b>	<b>Duration</b>	<b>Budget of the Project (in Lakhs)</b>
1	Strange nonchaotic attractors in Nonlinear Circuit Systems	UGC	2010 -2012	0.97
2	Design and implementation of fundamental logic elements and memory device using nonlinear dynamical systems	DST-SERB	2018-2021	18.8

**F. EXTENSION WORK**

- Served as N.S.S Programme Officer of our College for the period 2003 – 2006.
- Served as caretaker of N.C.C of our College wing for the period 2004-2006.
- Participated General Orientation course conducted by the Madras School of Social Work from 15.06.2005 to 24.06.2005.
- Participated Indian Academy of Science Meeting at Bharathidasan University, Tiruchirappalli during November 11-13,2005 in order o promote science among the Youth
- Participated Indian Academy of Science Meeting Bangalore during July14-15,2006 in order to promote science among the Youth.
- Participated a conference on “Bridging the Gap” An interaction between Industry and Institute organized by CII, Tiruchi Chapter on 1 September 2006.
- AIR Talk on Ariviyal Palakani – Talk on Production, Distribution and Conservation of Electricity during 6,13,20 and 27<sup>th</sup> August 2009.

- Served as External Member of Mock Visit of Arumugam Pillai Seethai Ammal College, Tiruppattur, Sivagangai on 21<sup>st</sup> January 2019.
- Served as NAAC coordinator of our College for the period 2013 -2021.

### **G.RESOURCE PERSON**

- Guest Lecture given on Classical Dynamics and Relativity for Physics Students at Dhanalakshmi Srinivasan College for Women, Perambalur on 09 October 2004.
- Chief Guest speaker for Inauguration of Physics Association at HHRajah's College, Pudukottai on 09.03.2005.
- Guest Lecture given on Chaos and its application at Department of Physics, Periyar University, Salem on 16<sup>th</sup> August 2007.
- Guest Lecture given on Nonlinear Dynamics at Department of Physics, Srinivasan College of Arts and Science, Perambalur on 2<sup>nd</sup> February 2012.
- Guest Lecture given on Nonlinear Dynamics at Department of Physics, Bishop Heber College, Tiruchirappalli on 25<sup>th</sup> May 2014.
- Guest Lecture given on Nonlinear Dynamics at Department of Physics, ADM College for women, Nagappattinam on 5<sup>th</sup> February 2015.
- Lectures given the SERC School in Nonlinear Dynamics-2016 at PSG college, Coimbatore on 4<sup>th</sup>,5<sup>th</sup> December 2016.
- Guest lecture given on Vector calculus in the Training Programme on Mathematical Physics held at Bishop Heber College, Tiruchirapalli on 27<sup>th</sup> March 2017.

## **G. PARTICIPATION OF CORPORATE LIFE**

- Coordinator, Internal Quality Assurance cell (IQAC) for the period 2013 - 2021
- Participate and actively involved in assisting all the functions like department association function, college day function, convocation etc. organized by the department and College.
- Assist the Head of the Department for purchasing equipment's, Hardware accessories.
- Assist the HOD for modification of UG, PG and Research Labs.
- Assist the HOD for preparing DST-FIST Proposal.
- Assist the Head of Institution for preparing Time-table for the College since 2002
- Assist the Head of Institution for preparing Proposals, Utilization Certificate, and Clearance certificate for UGC IX, X, XI Plan development grants for UG and PG departments.
- Assist the Head of Institutions for preparing the Autonomous proposal, Mid-term review proposals.

## **H. Member of Academic bodies**

- Member of Academic council of Nehru Memorial College from 2005 – 2008, 2009- till date.
- Member of Board of studies in UG and PG (Physics) in Nehru Memorial College.
- Member of Board of studies in H.H. Rajah's College, Pudukkottai during 2005-2010.
- Member of Board of studies in Government arts College, Karur.
- Member of Board of studies in Alagappa University, Karaikudi.
- Member of Board of Studies in Bharathidasan University, Tiruchirappalli.