



Dr. Swathy P S

Assistant Professor

Department of Physics

Christ Nagar College, Maranalloor

Mobile: +91-9487505167

E-mail id: swathinair555@gmail.com

Academic Qualifications:

| Sl.No | Degree | University/Institute | Year of Passing | % of Marks & Class |
|-------|------------------|---|-----------------|--------------------------|
| 1 | Ph.D., (Physics) | Bharathidasan University, Tiruchirappalli | 2016 | Completed (August 2016) |
| 2 | M.Sc., (Physics) | J.A. College for Women, Periyakulam | 2008 | I class with Distinction |
| 3 | B.Sc., (Physics) | St. Jude's College, Thoothoor | 2006 | I class with Distinction |

Research Details:

Broad area of Research : ***Nonlinear Dynamics***

Ph.D. Thesis title : ***Chaos, Hyperchaos and Synchronization of Chaos in SC- CNN Based Nonlinear Oscillators***

Ph.D. Research Supervisor : **Prof. K. Thami Maran**
Head of Department
Centre for Nonlinear Dynamics (CNLD)
School of Physics
Bharathidasan University
Tiruchirappalli – 620 024

Research Institute : Centre for Nonlinear Dynamics (CNLD)
School of Physics
Bharathidasan University
Tiruchirappalli – 620 024

Research Fellowship : Worked as **JRF** and **SRF** under the scheme of **UGC- Research Fellowships in Sciences for Meritorious Students** (RF-SMS) during March 2011-2016

Area of Interest : Synchronization, Cellular Neural Networks, Electronic Circuits, Secure Communication, Circuit Simulations,

Nonlinear Dynamics, Coupled Oscillators, Chaos and
Hyperchaos, Artificial Neural Networks, Optics,
Mechanics, Astrophysics

Research Publications:

1. **P.S. Swathy** and K. Thamilmaran, “*An experimental study on SC-CNN based canonical Chua’s circuit*”, **Nonlinear Dyn.**, vol. **71**, p. 505 (2013). **Citations: 19** (Til Jan, 2023).
2. **P.S. Swathy** and K. Thamilmaran, “*Dynamics of SC-CNN Based Variant of MLC Circuit: An Experimental Study*”, **Int. J. Bifurcation and Chaos**, vol. **24**, p. 1430008 (2014). **Citations: 12** (Til Jan, 2023).
3. **P.S. Swathy**, S. Sabarathinam, K. Suresh and K. Thamilmaran, “*Chaos synchronization and transmission of information in coupled SC-CNN based canonical Chua’s circuit*”, **Nonlinear Dyn.**, vol. **78**, p. 1033 (2014). **Citations: 11** (Til Jan, 2023).
4. **P.S. Swathy** and K. Thamilmaran, “*Hyperchaos in SC-CNN based modified canonical Chua’s circuit*”, **Nonlinear Dyn.**, vol. **78**, p. 2639 (2014). **Citations: 33** (Til Jan, 2023).
5. **P.S. Swathy** and K. Thamilmaran, “*Synchronization in coupled simplified SC-CNN based Chua’s circuit and canonical Chua’s circuit*”, **Nonlinear Dyn.** (Submitted).

Selective Research Papers Presented in the International and National Conferences

1. Presented a paper entitled “**Synchronization in Coupled SC-CNN based Chua’s circuit and Canonical Chua’s Circuit**” in the *2nd International Symposium on Complex Dynamical System and Applications (CDSA II)* held at *Presidency University, Kolkata – 700 073* during 9-12 January 2012.
2. Presented a poster entitled “**Synchronization in SC-CNN based Canonical Chua’s Circuit**” in the *19th IEEE Workshop on Nonlinear Dynamics of Electronic Systems (NDES-2011)* held at *Indian Institute of Chemical Biology and Saha Institute of Nuclear Physics, Kolkata – 700 032* during 8-11, March 2011.
3. Presented a paper entitled “**SC-CNN based Canonical Chua’s Circuit**” in the *6th National Conference on Nonlinear Systems and Dynamics (NCNSD-2011)* held at *Centre for Nonlinear Dynamics, School of Physics, Bharathidasan University, Tiruchirappalli - 620 024* during 27-30, January 2011
4. Presented a paper on UGC sponsored *National Conference on Recent and Emerging Developments in Physics* entitled “**Dynamics on Driven Chua’s circuit**” held at *Women’s Christian College, Nagercoil – 629 001* during 7-9, January 2010.

Partial list of Conference/Seminars/Workshops attended

1. Participated in *NMI workshop on Nonlinear Integrable Systems and their Applications* held at School of Physics, *Bharathidasan University*, Tiruchirappalli – 620 024 during 24 February- 1 March , 2014
2. Participated in the *7th National Conference on Nonlinear Systems and Dynamics (NCNSD-2012)* held at *Indian Institute of Science Education and Research (IISER)*, Pune - 411 008 during July 12-15, 2012.
3. Participated in the *6th National conference on Nonlinear Systems and Dynamics (NCNSD-2011)* held at School of Physics, *Bharathidasan University*, Tiruchirappalli – 620 024 during January 27-30, 2011.
4. Participated in the *DST-SERC School on Nonlinear Dynamics* held at School of Physics, *Bharathidasan University*, Tiruchirappalli - 620 024 during 4-26, January 2011.
5. Participated in the *National workshop and conference on Computational methods for Nonlinear Dynamics* held at School of Physics, *Bharathidasan University*, Tiruchirappalli - 620 024 during 22-25, September 2010.
6. Participated in the *workshop on High Performance Computing* held at School of Physics, *Bharathidasan University*, Tiruchirappalli - 620 024 during 23-27, August 2010.
7. Participated in *Awareness Programme on Nanotechnology* held at *Bharathidasan University*, Tiruchirappalli – 620 024 during on 27 - 28 February, 2010.
8. Participated in the *National seminar on Frontier Topics in Theoretical Physics* held at School of Physics, *Bharathidasan University*, Tiruchirappalli - 620 024 during 30-31, March 2009.
9. Participated in the *National seminar on Nonlinear Electronics and Spintronics* held at School of Physics, *Bharathidasan University*, Tiruchirappalli - 620 024 during 20-21, March 2009.
10. Participated in the *International Conference on Recent Developments in Nonlinear Dynamics* conducted by Centre for Nonlinear Dynamics, School of Physics, *Bharathidasan University*, Tiruchirappalli – 620 024 during 13-16, February 2008.

Work Experience: 1. Worked as Govt. guest lecturer in **S.P.B.N.S.S College for Women, Thiruvananthapuram** for seven months (2018-2019).

2. Worked as Govt. guest lecturer in **Mar Ivanios College, Thiruvananthapuram** (2019-2020)

3. Worked as Assistant professor in **SNS Arts and Science college, Coimbatore** (2017-2018)

4. Currently working as Assistant professor in **Christ Nagar College, Maranalloor** since December 2019 to till now

Co-curricular activities for students

Industrial Visit - Kudankulam nuclear power plant on 2nd November 2022

Industry - implant training/Project work

Guided Mini Project for S4 PCA students

Observatory Visit Astronomical Observatory Trivandrum on 7th February 2023.

| Serial No. | Name of the programme | Webinars/FDP /Workshops/ Conferences/ Seminars/etc... | Coordinator /Assistant coordinator |
|------------|--|---|------------------------------------|
| 1 | International conference on Recent Trends and Hurdles in Physical Sciences | International Conference | Assistant Coordinator |
| 2 | Stephen Hawking's Lecture Series IV | Seminar | Assistant Coordinator |
| 3 | Entrepreneurship Development program | Workshop | Assistant Coordinator |
| 4 | PHYTECH Physics exhibition | Exhibition | Coordinator |
| 5 | ExMo 2022 | Seminar | Coordinator |
| 6 | Luna 2023 | Poster Presentation | Coordinator |

| Name of the Course | Place/Online Platform | Duration | Institution |
|--|-----------------------|------------------------------------|--|
| Accreditation Framework (FDP) | ONLINE | 8 days 31-08-2021 to 07-09-2021 | Christ Nagar College |
| 7 Day International Professional Development Programme on SPSS (FDP) | ONLINE | 7 days 21-06-2021 to 27-06-2021 | Patrician College of Arts and Science |
| Effective and Quality Research Writing - Phase III | Online | 7 Days 13th – 19th June, 2022 | Patrician College of Arts and Science, Chennai |

Extra-Curricular Activities: NSS

Research Labs Visited:

CSIR-Indian Institute of Chemical Biology (IICB), Kolkata.

M.Sc. Project:

Presented a paper on *National Level Seminar* entitled “**State of the art Solar air heater for rural small scale industries**” held at *V. V. Vanniaperumal College for Women, Virudhunagar – 626 001* on 1, February 2008. **Also selected this work in Tamilnadu science and Technology**

Technical Skills:

Computer : Fortran, C++, Microsoft Office

Circuit Simulations : Matlab, Pspice, Multisim

Reference:

Prof. K. Thamilmaran

Head, Centre for Nonlinear Dynamics
School of Physics
Bharathidasan University
Tiruchirappalli – 620 024
India
E-mail: maran.cnld@gmail.com

Prof. M. Daniel

SNS College of Technology
SNS Kalvi Nagar, Sathy Main Road, NH-209
Vazhiyambalam
Saravanampatti post
Coimbatore – 641 049
India
E-mail: danielcnld@gmail.com

Prof. Syamal K. Dana

Scientist
CSIR- Indian Institute of Chemical Biology
4, Raja S.C. Mullick Road
Kolkata
West Bengal – 700 032
India
E-mail: syamaldana@gmail.com