

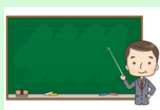
DR. A. MUNIYAPPAN

ASSISTANT PROFESSOR & HEAD DEPARTMENT OF PHYSICS



About Me

A. Muniyappan was born on 18 April 1986 in Chokkanatha Puram Village, Attur Taluk, Salem District. He is an Indian theoretical physicist currently he is working as an Assistant Professor of Physics in Theivanai Ammal College for Women, Villupuram, Tamil Nadu, India. His research focuses on the effects of mathematical approaches on solitons in biological and optical systems.



Work Experience



01.06.2018 -
Till Date

Head & Assistant Professor, Physics
Theivanai Ammal College for Women,
Villupuram, Tamil Nadu, India

01.04.2017 -
31.05.2018

Assistant Professor, Physics
Theivanai Ammal College for Women,
Villupuram, Tamil Nadu, India

01.07.2016 -
31.03.2017

Assistant Professor, Physics
Annai Teresa College of Engineering,
Thirunavalur, Tamilnadu, India

10.08.2015 -
31.06.2016

Assistant Professor, Physics
Gnanamani College of Technology,
Namakkal, Tamilnadu, India

25.02.2015 -
03.07.2015

Assistant Professor, Physics
QIS College of Engineering and
Technology, Ongole, Andhra Pradesh,
India

CITATIONS



196; h-index - 9; i10 index - 9;

<https://scholar.google.com/citations?user=2dqBPAGAAAAJ&hl=en&authuser=6>



160; h-index - 9;

<https://www.scopus.com/authid/detail.uri?authorId=57266043400>



155; h-index - 9;

<https://www.webofscience.com/wos/author/record/764353>



<https://orcid.org/0000-0003-1891-011X>



Contact



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Chennai-Trichy Trunk Road,
Salamedu, Villupuram - 605 401



Education

Doctor of Philosophy, 2014

Periyar University, Salem, Tamil Nadu

Master of Philosophy, 2009

Periyar University, Salem, Tamil Nadu

Master of Science, 2008

AVVM SPC, Poondi, Tanjore, Tamil Nadu

Bachelor of Science, 2006

AA Govt. AC, Attur, Salem, Tamil Nadu

PROJECTS

Under my Guidance Ms. A. Thirumagal, II M.Sc., Physics received Rs. 7500/- from TNSCST student project on the title of "Theory of Bioenergy Transport in Protein Molecules", 2019-2020.

SKILLS KNOWN

- Linux, Latex, FORTRAN
- Windows, MAPLE, MATHEMATICA, MATLAB and
- Origin.



Publications

2023 (2)

1. **A. Muniyappan**, E. Parasuraman, L. Kavitha, Stability analysis and discrete breather dynamics in the microtubulin lattices, *Chaos, Solitons & Fractals*, 168 (2023) 113210.

Publisher: Elsevier & IF: 9.922

2. **A. Muniyappan**, M. Sharmila, E. Kaviya Priya, S. Sumithra, Anjan Biswas, Yakup Yildirim, Maggie Aphane, Seithuti P. Moshokoa & Hashim M. Alshehri, W-shaped chirp free and chirped bright, dark solitons for perturbed nonlinear Schrodinger's equation in nonlinear optical fibers. *Proceedings of the Estonian Academy of Sciences* 72 (2023) 128-144.

Publisher: Estonian Academy Publishers & IF: 1.024

2022 (4)

1. **A. Muniyappan**, Localization of energy in tubulin system using numerical analysis, *The European Physics Journal Plus*, 137 (2022) 756.

Publisher: Springer & IF: 3.758

2. **A. Muniyappan**, D. Hemamalini, E. Akila, V. Elakkiya, S. Anitha, S. Devadharshini, A. Biswas, and Y. Yildirim, Bright solitons with anti-cubic and generalized anti-cubic nonlinearity in an optical fiber. *Optik* 254 (2022) 168612.

Publisher: Elsevier & IF: 2.840

3. **A. Muniyappan**, S. Amirthani, P. Chandrika, A. Biswas, Y. Yildirim, Hashim M. Alshehri, Dalal A. A. Maturi, and Dalal H. Al-Bogami, Dark solitons with anti-cubic and generalized anti-cubic nonlinearity in an optical fiber. *Optik* 255 (2022) 168641.

Publisher: Elsevier & IF: 2.840

4. **A. Muniyappan**, L. Sahasraari, S. Anitha, S. Ilakiya, Anjan Biswas, Yakup Yildirim, Houria Triki, Hashim M. Alshehri, and Milivoj R. Belic, Family of Optical Solitons for Perturbed Fokas-Lenells Equation, *Optik* 249 (2022) 168224.

Publisher: Elsevier & IF: 2.840

2021 (5)

1. **A. Muniyappan**, N. Sharon Leela and A. Suruthi, Evolution of Periodic Kink Breathers and Dark/Bright Breathers in a Microtubulin Protofilament Lattices, *Nonlinear Dynamics*. 106 (2021) 3495–3506.

Publisher: Springer Nature & IF: 5.741

2. **A. Muniyappan**, V. Nivetha, L. Sahasraari, S. Anitha, A. Biswas, Z. Qin, M. Ekici, H.M. Alshehri and M.R. Belic, Algorithm for dark solitons with Radhakrishnan–Kundu–Lakshmanan model in an optical fiber, *Results in Physics* 30 (2021) 104806.

Publisher: Elsevier & IF: 4.565



3. A. Muniyappan, O Athira Priya, S Amirthani, K Brintha, Anjan Biswas, Mehmet Ekici, Anelia Dakova, Hashim M Alshehri, Milivoj R Belic, Peakon and cuspon excitations in optical fibers for eighth order nonlinear Schrödinger's model, *Optik*, 243 (2021) 167509.

Publisher: Elsevier & IF: 2.840

4. A. Muniyappan, A. Suruthi, B. Monisha, N. Sharon Leela, J. Vijaycharles, Dromion-Like Structures in a Cubic-Quintic Nonlinear Schrodinger Equation using Analytical Methods, *Nonlinear Dynamics*, 104 (2021) 1533-1544.

Publisher: Springer Nature & IF: 5.741

5. A. Muniyappan, P. Monisha, E. Kaviya Priya and V. Nivetha, Generation of Wing- Shaped Dark Soliton for Perturbed Gerdjikov – Ivanov Equation in Optical Fibre, *Optik*, 230 (2021), 166328. **Publisher:** Elsevier & IF: 2.840

2017 (1)

1. L. Kavitha, E. Parasuraman, A. Muniyappan, D. Gopi and S. Zdravković, Localized Discrete Breather Modes in Neuronal Microtubules, *Nonlinear Dynamics*, 88, (2017) 2013–2033.

Publisher: Springer Nature & IF: 5.741

2014 (2)

1. L. Kavitha, A. Muniyappan, S. Zdravković, M.V. Satrić, A. Marlewski, S. Dhamayanthi and D. Gopi, Propagation of Kink-Antikink Pair along Microtubules as a Control Mechanism for Polymerization and Depolymerization Processes, *Chinese Physics B*, 23 (2014) 098703.

Publisher: IOP Publishing & IF: 1.652

2. S. Zeković, A. Muniyappan, S. Zdravković and L. Kavitha, Employment of Jacobian Elliptic Functions for Solving Problems in Nonlinear Dynamics of Microtubules, *Chinese Physics B*, 23 (2014) 020504.

Publisher: IOP Publishing & IF: 1.652

2013 (1)

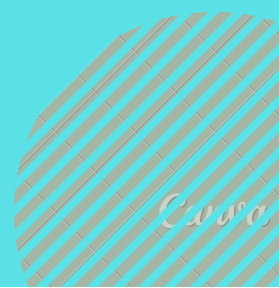
1. L. Kavitha, A. Muniyappan, A. Prabhu, S. Zdravkovic, S. Jayanthi and D. Gopi, Nano Breathers and Molecular Dynamics Simulations in Hydrogen-Bonded Chains, *Journal of Biological Physics*, 39 (2013) 15–35.

Publisher: Springer Nature & IF: 1.560

2011 (1)

1. L. Kavitha, S. Jayanthi, A. Muniyappan and D. Gopi, Protonic Transport through Solitons in Hydrogen-Bonded Systems, *Physica Scripta*, 84 (2011) 035803.

Publisher: IOP Publishing & IF: 3.081



REVIEWER(S)

- Wave Motion, **Elsevier**.
- Nonlinear Dynamics, **Springer Nature**.
- Waves in Random and Complex Media, **Taylor & Francis**.
- Optical and Quantum Electronics, **Springer Nature**.



ACADEMIC RECOGNITIONS & AWARDS

- Received **Young Scientist Award** on July 20, 2021 by Institute of Researchers, Kerala.
- Awarded **RGNF - SRF** for a period of three years from 04th January 2011 to 03rd September 2013 by the University Grants Commission (UGC), India, 2011.
- Awarded **RGNF - JRF** for a period of two years from 04th September 2008 to 03rd January 2011 by the University Grants Commission (UGC), India, 2008.
- **Topper** in the **Under Graduate Physics** – 2006, Arignar Anna Govt. Arts College, Attur, Salem.

RESEARCH REGARDING

Presentation/Participation in the Conference/Seminars/Symposia/Webinars/ Workshop : **46**

Proceedings : **8**

Post Graduate Supervision (M.Sc., PHYSICS)

• Ongoing – **5**, Completed – **18**

Under Graduate Supervision (B.SC PHYSICS)

Completed – **55**, Ongoing – **8**

Event(s) Organized : **12** (Convenor – **8**, Coordinator – **1**, Member - **3**)

Attended Orientation / Refresher Course / FDP / Short Term Course / Online Course MOOC

Online Courses : **11**

ACADEMIC RESPONSIBILITIES HELD

- Head of the Department from 2018 to Till date
- R&D Member
- IQAC Member
- Member of the NAAC Committee and worked in the entire Criteria's
- Member of the NIRF Organizing Committee
- College Development Council (CDC) Coordinator (2018-2021)
- Vocational Course Coordinator (Certificate & Diploma Courses) – (2018 to Till date)
- Internal Member of the Board of Studies (BoS)
- Exam Committee Member from 2017 to 2021
- Youth Red Cross Member from 2017 to 2018



EVENT(S) ORGANIZED

1. **Convener** in National Conference on “Fabrication and Characterization of Nanomaterials”, Organized by Department of Physics, Theivanai Ammal College for Women (Autonomous), Villupuram, Tamilnadu, 10th December, 2021.
2. **Convener** in National Webinar on “Atomic Energy”, Organized by Department of Physics and Research & Development Cell, Theivanai Ammal College for Women (Autonomous), Villupuram, Tamilnadu, 10th August, 2021.
3. **Organizing Committee Member** in National Webinar on “Science and Society”, Organized by Research & Development Cell and Science Departments, Theivanai Ammal College for Women (Autonomous), Villupuram, Tamilnadu, 27th July, 2021.
4. **Convener** in National Conference on “Nonlinear Dynamical Systems and its Application”, Organized by Department of Physics, Theivanai Ammal College for Women (Autonomous), Villupuram, Tamilnadu, 17th May, 2021.
5. **Organizing Member** in “Characterization of Materials: Theory and Hands on Training” Organized by Research and Development Cell in DST-FIST Lab, Theivanai Ammal College for Women (Autonomous), Villupuram, Tamilnadu, 15.02.2021 to 19.02.2021.
6. **Convener** in National Conference on “Modeling Extreme Events in Natural and Engineering Systems”, Organized by Department of Physics, Theivanai Ammal College for Women (Autonomous), Villupuram, Tamilnadu, 27th January, 2021.
7. **Convener**, International webinar on “Chaos Communication via simple Cellular Neural Network (CNN) Nodes” Organized by Department of Physics, Theivanai Ammal College for Women (Autonomous), Villupuram, 21st August, 2020.
8. **Convener**, National Conference on “Hybrid Materials and Medical Applications” (NCHMMA – 2019)” Organized by Department of Physics, Theivanai Ammal College for Women (Autonomous), Villupuram, 26th September, 2019.
9. **Convener**, National Seminar on “Recent Advanced Materials and Applications (RAMA – 2019)” Organized by Department of Physics, Theivanai Ammal College for Women (Autonomous), Villupuram, 06th February, 2019.
10. **Member**, National Seminar on “Recent Trends in Materials Science (RTMS – 2018)” organized by Department of Physics, Theivanai Ammal College for Women (Autonomous), Villupuram, 02nd February, 2018.
11. **Coordinator**, Theivanai Ammal College for Women (Autonomous), Villupuram and Rajiv Gandhi National Institute for Intellectual Property Management (RGNIPM), Government of India, Nagpur under National Intellectual Property Awareness Mission (NIPAM) are jointly organized an Online Workshop in the title of Intellectual Property Rights (IPR)” Patents and Design Filing on 20th June 2022.
12. **Convener**, International Conference on Smart and Sustainable Development in Multidisciplinary Research (SCI-VISION 2050), 9-10 March 2023, Organized by PG & Research Departments of Physics, Chemistry, Biochemistry & Mathematics, Theivanai Ammal College for Women (Autonomous), Villupuram-605602, Tamil Nadu, India.

1. **A. Muniyappan**, L. Kavitha, and S. Jayanthi, Proton Dynamics in Polypeptide Chains Governed by Higher Order Nonlinear Schrodinger Equation, Second National Conference on Advances in Differential Equations and Applications (NCADEA-2012), Periyar University, Salem, March 29-30 (2012).
2. **A. Muniyappan**, S.S. Raveenadevi, S. Srimathi, Cusp-Like Excitations in Microtubules under the Influence of Inhomogeneity, National seminar on Recent trends in Materials Science (RTMS), Theivanai Ammal College for Women (Autonomous), Villupuram, February 02 (2018). ISBN: 978-81-936601-2-6.
3. **A. Muniyappan** and R. Pooja, Excitations of Solitons in Tubulin Dimer Under the Influence of Various Inhomogeneities, International Conference on Molecular Structure of Nano and Bio materials (ICMSNBM-2018), Arignar Anna Government Arts College, Cheyyar, 27 & 28 September 2018. ISBN: 978-93-86590-72-5.
4. S.S. Raveenadevi, R. Pooja, S. Srimathi and **A. Muniyappan**, Nonlinear Excitations in Microtubulin Protofilament using Mathematical Techniques, International Conference on Molecular Structure of Nano and Bio materials (ICMSNBM-2018), Arignar Anna Government Arts college, Cheyyar, 27 & 28 September 2018. ISBN: 978-93-86590-72-5.
5. **A. Muniyappan**, R. Pooja, S.S. Raveenadevi and S. Srimathi, Charge Transport Mechanism in Conducting Polymer Chain through Solitons, A National level conference on Adroit conference on Emerging Trends in Chemistry (ACETIC-2K18), Jeppiaar SRR Engineering College, Padur, Chennai, 02 August 2018. ISBN: 978-93-86590-65-7.
6. S. Srimathi and **A. Muniyappan**, Nonlinear Excitations in Biological Systems using Nonlinear Equations, International Conference on Emerging Materials and Modeling (ICEMM - 2019), Department of Physics, KSRCAS (Autonomous), Tiruchengode, 7-9th January 2019. ISBN: 978-81-926279-7-7.
7. **A. Muniyappan**, Travelling of Soliton along the Protofilament under Various Inhomogenities, International Conference on Recent Applications in Advanced Materials (ICRAAM - 2019), Department of Physics & Chemistry, ERK Arts and Science College, Dharmapuri, 11th&12th July 2019. ISBN:9789388413626.



RESOURCE PERSONS

- Acted as a resource person on Dual Nature of Light and Matter in Phase I & II of **“Inservice Training Programme for Science Teachers”** catalyzed and supported by TNSCST and Organized by Theivanai Ammal College for Women (Autonomous) held during 25th & 26th July 2022 and 23rd & 24th August 2022.



- Delivered a Special lecture on **“Welcome to the Imagination World”** in the Science day held at Theivanai Ammal College for Women (Autonomous) – (On Campus), Villupuram on 29-02-2020.
- Act as JUDGE for **District Level Science Exhibition** Conducted by Government Girls Higher Secondary School, Villupuram on 04-02-2019.
- Delivered a Special lecture on **“Brief Introduction to Solitons and its Application”** in the Science day held at Theivanai Ammal College for Women (Autonomous) – (On Campus), Villupuram on 07-03-2018.
- Act as JUDGE for **District Level Science Exhibition** Conducted by Government Girls Higher Secondary School, Villupuram on 07-02-2018.

RESEARCH COLLOBORATORS

- **PROF. ANJAN BISWAS** – Endowed Chair of Mathematics, Grambling State University, USA.
- **PROF. SLOBODAN ZDRAVKOVIĆ** - Faculty of Technical Sciences, University of Pristina, Kosovska Mitrovica, SERBIA.
- **PROF. PRASANTA K. PANIGRAHI**, Professor, Department of Physical Sciences, Indian Institute of Science Education and Research Kolkata, Mohanpur, Nadia - 741 246, West Bengal, INDIA.
- **PROF.L. KAVITHA**, Professor of Physics, School of Basic and Applied Sciences, Central University of Tamilnadu, Thiruvarur - 610 005, INDIA.
- **DR.E. PARASURAMAN**, Assistant Professor, Department of Physics, Indian Academy Degree College, Hennur Cross, Bangalore, Karanataka- 560 043, INDIA.
- **Dr.M. SARAVANAN**, Assistant Professor, Department of Physics, Rajalakshmi Institute of Technology, Chennai, Tamil Nadu, INDIA.

