

CURRICULUM VITAE

Dr. L. KAVITHA

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Central University of TamilNadu,
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Academic Qualifications:

2002: Ph.D. (Physics)

School of Physics, Bharathidasan University, Thiruchirappalli, Tamil Nadu, India.
Thesis Title: "Soliton Spin Excitations and Magnetization Reversal in Heisenberg Magnetic Systems"

1997: M.Sc. [Physics]

Percentage of marks: 78.5% (Topper)
School of Physics, Bharathidasan University, Thiruchirappalli, Tamil Nadu, India.
Thesis Title: "Effect of Acetic acid on the growth of KDP crystals"

Positions Held:

Professor and Head: (Dec 2017 – Feb 2023)
Department of Physics, School of Basic and Applied Sciences, Central University of TamilNadu,
Thiruvavur, Tamil Nadu, India
Associate Professor: (Feb 2014 – Dec 2017)
Department of Physics, School of Basic and Applied Sciences, Central University of TamilNadu,
Thiruvavur, Tamil Nadu.
Assistant Professor: (Nov 2004 – Feb 2014)
Department of Physics, Periyar University, Salem, Tamil Nadu, India
Post doctoral Fellow: (2005 – 2006)
Max-Planck Institute for the Physics of Complex systems, Germany.
Junior Associate: (2004 – 2011) and **Regular Associate:** (2014-2019)
Abdus Salam International centre for Theoretical Physics, Italy.

Academic awards / Honors / Fellowships / Achievements:

Young Scientist Awards:

(i) National

1. She is elected as a fellow of the **Academy of Sciences, Chennai** (2018) by the government of Tamil Nadu, India.
2. Awarded the **Raman Post-Doctoral fellowship** in USA (2015-2016) by UGC, India.
3. Awarded the **Tamil Nadu Young Scientist award** (2014) by the government of Tamil Nadu, India.

4. Awarded the **Young Scientist research award** (2014) by the Academy of Sciences, Chennai, India.
5. Awarded the **UGC research award** (2013) by the University Grants Commission (UGC), India.
6. Awarded the **Mileva Mavic Einstein Award** for the year (2013) for the commendable contributions in the field of Computational Physics, Instituted by the Mother Teresa Women's University, Kodaikanal, and Tamilnadu, India.
7. Awarded **Young scientist research award** (2010) by the Board of Nuclear Sciences (BRNS), India.

(ii) International Fellowship/Awards:

1. Awarded **Post doctoral position** for a period of one year and extendable to another year by the **Max-Planck Institute for the Physics of Complex Systems, Dresden, Germany** (2005-2006).
2. Awarded the **Regular Associateship** for the period of five years (2014-2019) by the International Centre for Theoretical Physics, ICTP, Italy (An UNESCO and IAEA Institute).
3. Awarded the prestigious **Landhal award** (2011) by the International Society for Mathematical Biology, USA
4. Awarded the European Science Foundation fellowship to attend ESF-EMS-ERCOM conference on Completely Integrable Systems and Applications held at Erwin Schrödinger Institute, Vienna, Austria during July 03-08, (2011).
5. Awarded the **Junior Associateship** by the Abdus Salam International Centre for Theoretical Physics (**ICTP**) (an UNESCO and International Atomic energy agency Institute), Trieste, Italy for a period of six years from 2004-2009 extended until 2011. This award is entitled to undertake three visits with full financial support each of duration of three months. Also it has the privilege of ordering books, journals, and magazines worth **400euro** for each year of the fellowship period.
6. Awarded the **Young Collaborator** fellowship by the **ICTP**, Italy under associate scheme during 02 May- 29 July, 2002 with full financial support.
7. Invited as a **Guest Scientist** for a period of one month by the Condensed matter division, ICTP, Italy during 2004-2005.
8. Invited as a **Guest Scientist** by the Condensed matter division of ICTP, Italy for one month during May 2003, with full financial support.
9. Member in the International Organization for Women in Science for the Developing World (OWSDW) Italy 2011 onwards.
10. Awarded "**Excellent paper award**" for the paper presented at International Conference on Recent Innovations in Science, Engineering and Technology, held during 21 June 2015 in Paris, France

(iii) Other Academic credentials:

1. **Topper** in the Post graduate Physics, School of Physics, Bharathidasan University, Tiruchirapalli (1997).

2. **University Rank holder** in the Undergraduate Physics, Bharathidasan University, Tiruchirapalli (1995).
3. Qualified in the **State Level Educational Testing (SLET)** accredited by UGC and conducted by the Government of Tamilnadu in March 1998.
4. Passed **Teacher's Recruitment Board (TRB)** examination conducted for the general recruitment of Lecturers for the Tamilnadu Collegiate Educational service in 1999.

Research Interest:

- Computational Physics
- Nano-scale magnetic switching
- Modulational Instability and Discrete breathers in weak ferromagnets
- Charge transport in hydrogen bonded systems and Microtubules
- Dynamics of multidimensional lattices
- Director dynamics in nematic liquid crystal systems
- Soliton excitations in twisted DNA
- Nonlinear Corrosion
- Development and Characterization of nano biomaterials and ferromagnetic materials
- Carbon nanotubes
- Dusty plasma
- Spin ladders.

Personal Profile:

Sex	Female	Date of birth	March 20, 1975
Marital Status/Family	Married /Two Children	Nationality	Indian.

Conferences/Seminars/Workshops organized as:

1. **Member in Organizing committee:** Centenary celebrations of *Einstein's discoveries* held at Department of Physics, Periyar University, Salem on 28 March 2005.
2. **Member in Organizing committee:** Workshop on *recent trends in Physical sciences research* held at Department of Physics, Periyar University, Salem during 29-30 August 2005.
3. **Member in Organizing committee:** National Conference on *recent advances in materials science* held at Periyar University, Salem during 16-17, February 2006.
4. **Member in Organizing committee:** National Conference on *recent advances in Vibrational Spectroscopy* held at Periyar University, Salem during 29-30, January 2007.
5. **Convener:** Organized a one day seminar on *recent trends in superconductivity (RTS-2012)* held at Periyar University, Salem on 22nd March 2012.

6. **Organizing secretary:** Organized a National conference on *Advanced nanomaterials (ANM-2012)* held at Periyar University, Salem on Feb 6-7 2012 sponsored by DST, ICMR, UGC, CSIR and BRNS.
7. **Deputy coordinator:** Organized a National Science Academie's Lecture Workshop on *Modern Trends in Chemistry* during 13-14, Aug 2012, at Centre for Nanoscience and Nanotechnology, Periyar University, Salem.
8. **Co-Convener:** Organized a National Conference on *Current Trends in Soft Matter (NCCTSM-2015)* during 19-20, March 2015 at Department of Physics, School of Basic and Applied Sciences, Central University of Tamil Nadu, Thiruvavur.
9. **Convener:** Organised an Online National Seminar on Recent Trends in Physics at Department of Physics, School of Basic and Applied Sciences, Central University of Tamil Nadu, Thiruvavur.

Journal Publications:

1999

1. M. Daniel, **L. Kavitha** and R. Amuda, "*Soliton spin excitations in an anisotropic Heisenberg ferromagnet with octupole-dipole interaction*", **Phys. Rev. B**, 59, 13774-13781, 1999, **Impact factor: 4.036.**

2000

2. M. Daniel, **L. Kavitha** and R. Amuda, "*Nonlinear spin excitations and singularity structure of a classical continuum spin ladder with ferromagnetic legs*", **Physica A**, 282, 155-175, 2000, **Impact factor: 3.263.**

2001

3. M. Daniel and **L. Kavitha**, "*Localized spin excitations in an anisotropic Heisenberg ferromagnet with Dzyaloshinskii – Moriya interactions*", **Phys. Rev. B**, 63, 172302 (1-4), 2001, **Impact factor: 4.036.**

2002

4. M. Daniel and **L. Kavitha**, "*Soliton in an anisotropic spin ladder with site and spin- dependent Dzyaloshinsky–Moriya interaction*", **Phys. Letts. A**, 295, 121-132, 2002, **Impact factor: 3.596.**
5. M. Daniel and **L. Kavitha**, "*Magnetization reversal through soliton flip in a biquadratic ferromagnet with varying exchange interactions*", **Phys. Rev. B**, 66, 184433 (1-6), 2002, **Impact factor: 4.036.**
6. **L. Kavitha** and M. Daniel, "*Bosonization and soliton in a crystal field anisotropic varying biquadratic ferromagnet*", ICTP Preprint No. IC/IR/2002/22, 2002.

2003

7. M. Daniel and **L. Kavitha**, "*Perturbed soliton excitations by EM- field in ferromagnetic medium*", ICTP Preprint No. IC/2003/38, 2003.
8. **L. Kavitha** and M. Daniel, "*Integrability and soliton in a classical one-dimensional site –dependent biquadratic Heisenberg spin chain and the effect of nonlinear*

inhomogeneity”, **J. Phys. A: Math. Gen.** 36, 10471-10492, 2003, **Impact factor: 2.132.**

2008

9. M. Daniel, K. Gnanasekaran and **L. Kavitha**, “*Nonlinear molecular deformations and solitons in a nematic liquid crystal*”, **Physica D**, 237, 3135-3145, 2008, **Impact factor: 3.08.**
10. D. Gopi, K.M. Govindaraju, Collins Arun Prakash Victor, **L. Kavitha** and N. Rajendran, “*Spectroscopic investigations of nanohydroxyapatite powders synthesized by conventional and ultrasonic coupled sol-gel routes*”, **Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy**, 70, 1243-1245, 2008, **Impact factor: 4.098.**

2009

11. **L. Kavitha**, P. Sathishkumar and D. Gopi, “*Shape changing soliton in a site-dependent ferromagnet using tanh-function method*”, **Physica Scripta**, 79, 015402 (7pp.), 2009, **Impact factor: 3.081.**
12. **L. Kavitha**, P. Sathishkumar, T. Nathiyaa and D. Gopi, “*Cusp-like singular soliton solutions of Jaulent-Miodek equation using symbolic computation*”, **Physica Scripta**, 79, 035403 (5pp.), 2009, **Impact factor: 3.081.**
13. **L. Kavitha**, A. Prabu and D. Gopi, “*New exact shape changing solitary solutions of a generalized Hirota equation with nonlinear inhomogeneity*”, **Chaos, Solitons and Fractals**, 42, 2322-2329, 2009, **Impact factor: 9.922.**
14. D. Gopi, V. Collins Arun Prakash and **L. Kavitha**, “*Evaluation of hydroxyapatite coatings on borate passivated 316LSS in Ringer’s solution*”, **Materials Science and Engineering-C**, 29, 955-958, 2009, **Impact factor: 7.328.**
15. D. Gopi, K. M. Govindaraju, V. Collins Arun Prakash, V. Manivannan and **L. Kavitha**, “*Inhibition of mild steel corrosion in groundwater medium by pyrrole and thienylcarbonylbenzotriazoles*”, **Journal of Applied Electrochemistry**, 39, 269-276, 2009, **Impact factor: 2.398.**
16. K.M. Govindaraju, D. Gopi and **L. Kavitha**, “*Inhibiting effects of 4-amino antipyrine based schiff base derivatives on the corrosion of mild steel in hydrochloric acid*”, **Journal of Applied Electrochemistry**, 39, 2345-2352, 2009, **Impact factor: 2.398.**
17. D. Gopi, J. Indira, V. Collins Arun Prakash and **L. Kavitha**, “*Spectroscopic characterization of porous nanohydroxyapatite synthesized by a novel amino acid soft solution freezing method*”, **Spectrochimica Acta A: Molecular & Biomolecular Spectroscopy**, 74, 282-284, 2009, **Impact factor: 4.098.**
18. D. Gopi, K.M. Govindaraju, V. Collins Arun Prakash, D.M. Angeline Sakila and **L. Kavitha**, “*A study on new benzotriazole derivatives as inhibitors on copper corrosion in ground water*”, **Corrosion Science**, 51, 2259-2265, 2009, **Impact factor: 6.479.**

2010

19. **L. Kavitha**, B. Srividya, N. Akila and D. Gopi, “*Shape changing solitary solutions of a nonlocally damped Nonlinear Schrödinger equation using symbolic computation*”, **Non. Sci. Lett. A**, 1, 95-107, 2010, **Impact factor: 2.323**.
20. **L. Kavitha**, B. Srividya and D. Gopi, “*Effect of nonlinear inhomogeneity on the creation and annihilation of magnetic soliton*”, **J. Magn. Magn. Mater.** 322, 1793–1810, 2010, **Impact factor: 3.097**.
21. **L. Kavitha**, P. Sathishkumar and D. Gopi, “*Soliton based logic gates using spin ladder*”, **Commun. Nonlinear Sci. Numer. Simulat.**15, 3900-3912, 2010, **Impact factor: 4.115**.
22. **L. Kavitha**, P. Sathishkumar and D. Gopi, “*Magnetization reversal through flipping soliton under the localized inhomogeneity*”, **J. Phys. A: Math. Theor.**43,125201 (16pp), 2010, **Impact factor: 2.11**.
23. **L. Kavitha**, P. Sathishkumar and D. Gopi, “*Creation and annihilation of soliton in a ferromagnet with competing nonlinear inhomogeneities*”, **PhysicaScripta**,81, 035404 (11pp), 2010, **Impact factor: 3.081**.
24. F. Khani, M. T. Darvishi, A. Farmany and **L. Kavitha**, “*New exact solutions of coupled (2+1)-dimensional nonlinear system of Schrödinger equations*”, **Anziam J.**52, 110–121, 2010, **Impact factor: 0.800**.
25. D. Gopi, K.M. Govindaraju and **L. Kavitha**, “*Investigation of triazole derived schiff bases as corrosion inhibitors for mild steel in hydrochloric acid medium*”, **Journal of Applied Electrochemistry**, 40, 1349-1355, 2010, **Impact factor: 2.398**.
26. D. Gopi, J. Indira, **L. Kavitha**, S. Kannan and J.M.F. Ferreira, “*Spectroscopic characterization of nanohydroxyapatite synthesized by molten salt method*”, **SpectrochimicaActa Part A: Molecular & Biomolecular Spectroscopy**, 77, 545-547, 2010, **Impact factor: 4.098**.
27. D. Gopi, P.R. Bhalaji, V.C.A. Prakash, A.K. Ramasamy, **L. Kavitha** and J.M.F. Ferreira, “*An effective and facile synthesis of hydroxyapatite powders using oxalic acid-ethylene glycol mixture*”, **Current Applied Physics**, 11, 590-593, 2010, **Impact factor: 2.480**.

2011

28. **L. Kavitha**, P. Sathishkumar and D. Gopi, “*Energy-momentum transport through soliton in a site-dependent ferromagnet*”, **Commun. Nonlinear Sci. Numer. Simulat.**16, 1787-1803, 2011, **Impact factor: 4.12**.
29. **L. Kavitha**, N. Akila, A. Prabhu, O. Kuzmanovska-Barandovska and D. Gopi, “*Exact solitary solutions of an inhomogeneous modified nonlinear Schrödinger equation with competing nonlinearities*”, **Math.Com.Mod.** 53, 1095-1110, 2011, **Impact factor:5.129**.

30. **L. Kavitha**, P. Sathishkumar, M. Saravanan and D. Gopi, “*Soliton switching in an anisotropic Heisenberg ferromagnetic spin chain with octupole-dipole interaction*”, **Physica Scripta**, 83, 055701 (3pp), 2011, **Impact factor: 3.081**.
 31. **L. Kavitha**, S. Jayanthi, A. Muniyappan and D. Gopi, “*Protonic transport through solitons in hydrogen bonded systems*”, **Physica Scripta**, 84, 035803 (8pp), 2011, **Impact factor: 3.081**.
 32. **L. Kavitha**, B. Srividya and D. Gopi, “*Exact propagating dromion-like localized wave solutions of a generalized (2+1)-dimensional Davey Stewartson equations*”, **Computers and Mathematics with Applications**, 62, 4691-4707, 2011, **Impact factor: 3.476**.
 33. **L. Kavitha**, M. Saravanan, B. Srividya and D. Gopi, “*Breather-like electromagnetic wave propagation in an antiferromagnetic medium with Dzyaloshinsky-Moriya interactions*”, **Physical Review E**, 84, 066608, 2011, **Impact factor: 2.707**.
 34. D. Gopi, K.M. Govindaraju, **L. Kavitha** and K. AnverBasha, “*Synthesis, characterization and corrosion protection properties of poly(N-vinyl carbazole-coglycidyl methacrylate) coatings on low nickel stainless steel*”, **Progress in Organic Coatings**, 71, 11-18, 2011, **Impact factor: 5.161**.
 35. D. Gopi, V. Collins Arun Prakash, **L. Kavitha**, S. Kannan, P.R. Bhalaji, E. Shinyjoy and J.M.F. Ferreira, “*A facile electrodeposition of hydroxyapatite on to borate passivated surgical grade stainless steel*”, **Corrosion Science**, 53, 2328-2334, 2011, **Impact factor: 6.479**.
 36. D. Gopi, M. Thameem Ansari, **L. Kavitha**, “*Electrochemical synthesis of magnetite nanoparticle in aqueous ferrous perchlorate medium*”, **Arabian Journal of Chemistry**, Article in press-doi:10.1016/j.arabjc.2011.08.005, 2011, **Impact factor: 4.762**.
- 2012
37. **L. Kavitha**, M. Saravanan, N. Akila, S. Bhuvanewari and D. Gopi, “*Solitonic transport of energy-momentum in a deformed magnetic medium*”, **Physica Scripta**, 85, 035007, 2012, **Impact factor: 3.081**.
 38. **L. Kavitha**, M. Venkatesh, S. Jayanthi and D. Gopi, “*Propagation of proton soliton in hydrogen bonded chains with an asymmetric double well potential*”, **Physica Scripta**, 86, 025403(13pp), 2012, **Impact factor: 3.081**.
 39. Slobodan Zdravkovic, **L. Kavitha**, Miljko V. Sataric, Slobodan Zekovic and Jovana Petrovic, “*Modified extended tanh-fuction method and nonlinear dynamics of microtubules*”, **Chaos, Solitons & Fractals**, 45, 1378-1386, 2012, **Impact factor: 9.922**.
 40. M.T. Darvishi, M. Najafi, **L. Kavitha** and M. Venkatesh, “*Stair and step soliton solutions of the integrable (2+1)-dimensional and (3+1) dimensional Boiti-Leon-Manna-Pempinelli equations*”, **Communications in Theoretical Physics**, 58, 785–794, 2012, **Impact factor: 1.968**.
 41. Saïdou Abdoukary, Tibi Beda, Serge Y. Doka, Fabien II Ndzana, **L. Kavitha** and Alidou Mohamadou, “*Dissipative Discrete System with Nearest-Neighbor Interaction for the Nonlinear Electrical Lattice*”, **Journal of Modern Physics**, 3, 438-446, 2012, **Impact factor: 1.153**.

42. S. Zdravkovic, A. Maluckov, J. Petrovic, S. Zekovic, **L. Kavitha** and V. Sataric, “*Nonlinear dynamics of microtubules*”, **Nonlinear Phenomena in Complex Systems**, 15 339-349, 2012, **Impact factor: 0.72**.
43. D. Gopi, J. Indira, **L. Kavitha**, “*A comparative study on the direct and pulsed current electrodeposition of hydroxyapatite coatings on surgical grade stainless steel*”, **Surface and Coatings Technology**, 206, 2859–2869, 2012, **Impact factor: 4.158**.
44. D. Gopi, S. Nithiya, **L. Kavitha** and J.M.F. Ferreira, “*Amino acid-assisted synthesis of strontium hydroxyapatite bone cement by a soft solution freezing method*”, **Bulletin of Material Science**, 35 (7), 1195-1199, 2012, **Impact factor: 1.392**.
45. D. Gopi, M. Thameem Ansari, E. Shinyjoy, **L. Kavitha**, “*Synthesis and characterization of magnetic hydroxyapatite nanocomposite using ultrasonic irradiation*”, **SpectrochimicaActa Part A: Molecular & Biomolecular Spectroscopy**, 87, 245-250, 2012, **Impact factor: 4.098**.
46. D. Gopi, J. Indira, **L. Kavitha**, M. Sekar and U. KamachiMudali, “*Synthesis of hydroxyapatite nanoparticles by a novel ultrasonic assisted with mixed hollow sphere template method*”, **SpectrochimicaActa Part A: Molecular and Biomolecular Spectroscopy**, 93, 245- 250, 2012, **Impact factor: 4.098**.
47. D. Gopi, S. Nithiya, E. Shinyjoy and **L. Kavitha**, “*Spectroscopic investigation on formation and growth of bioactive porous mineralized nanohydroxyapatite for bone tissue engineering applications*”, **SpectrochimicaActa Part A: Molecular and Biomolecular Spectroscopy**, 92, 194-200, 2012, **Impact factor: 4.098**.
48. D. Gopi, R. Saraswathy, G. Athithya, **L. Kavitha**, Jeong-HeoBae and Dae-kyeongkim, “*Corrosion protection performance of ceria-copolymer bilayer coating on low nickel stainless steel in 0.5M H₂SO₄ medium*”, **Surface and interface analysis**, 44, 1331-1337, 2012, **Impact factor: 1.393**.
49. V. Manivannan, D. Gopi and **L. Kavitha**, “*Electrochemical and surface characterization of new triazole derivatives on mild steel*”, **Asian Journal of Chemistry**, 24, 12, 2012, **Impact Factor: 4.568**.
- 2013
50. **L. Kavitha**, M. Saravanan, P. Sathishkumar and D. Gopi, “*Magnetization reversal through soliton in a site dependent weak ferromagnet*”, **Chinese Journal of Physics**, 51,265, 2013, **Impact factor:3.31**.
51. **L. Kavitha**, M. Saravanan, and D. Gopi, “*Propagation of electromagnetic soliton in an anisotropic biquadratic ferromagnetic medium*”, **Chinese Physics B**, 22 (3), 1-7, 2013, **Impact factor: 1.469**.
52. **L. Kavitha**, E. Parasuraman, M. Venkatesh, A. Mohamadou and D. Gopi, “*Breather-like protonic tunneling in a discrete hydrogen bonded chain with heavy-ionic interactions*”, **Physica Scripta**, 87, 035007, 2013, **Impact factor:3.081**.
53. **L. Kavitha**, A. Muniyappan, A.Prabhu, Slobodan Zdravkovic, S. Jayanthi and D. Gopi, “*Nano breathers and molecular dynamics simulations in hydrogen – bonded chains*”, **Journal of Biological physics**, 39,15–35,2013, **Impact factor:1.422**.

54. **L. Kavitha**, C. Lavanya, S. Dhamayanthi, N. Akila and D.Gopi, “*Propagation of shape changing soliton in an nonuniform nonlocal media*”, **Chinese Physics B**, 22 (8),084209(1-19), 2013, **Impact factor:1.469**.
55. **L. Kavitha**, M. Venkatesh, S. Dhamayanthi and D. Gopi, “*Modulational instability of optically induced nematicon propagation*”, **Chinese Physics B**,22, 129401, 2013, **Impact factor: 1.469**.
56. **L. Kavitha**, S. Bhuvaneshwari, S. Dhamayanthi and D. Gopi, “*Solitary wave transport of energy momentum in homogeneous ferromagnetic media*”, **Nonlinear ScienceLetters A**, Accepted for Publication, 2013, **Impact factor: 2.323**
57. DonatienToko, Rosalie L Woulache, Conrad B Tabi, **Louis Kavitha**, AlidouMohamadou and Timoleon C Kofane, “*Breather-Like Solutions of the Twisted DNA with Solvent Interaction*”, **J. Phys. Chem. Biophys**, 3, 1-10, 2013, **Impact factor: 2.352**.
58. **L. Kavitha**, M.Venkatesh, S. Dhamayanthi, E. Parasuraman and D. Gopi, “*Optically induced switching of nematic deformation*”, **PhysicaScripta**, 88,065015 (9pp), 2013, **Impact factor:3.081**.
59. **L. Kavitha**, M. Saravanan, V. Senthilkumar and D. Gopi, “*Effect of varying Dzyloshinskii-Moriya interaction on the bistablesoliton switching*”, **Communications in theoretical physics**, 60, 658–662, 2013, **Impact factor:1.968**.
60. D. Gopi, J. Indira, S. Nithiya, **L. Kavitha**, U. Kamachimudali and K. Kanimozhi, “*Influence of surfactant concentration on nanohydroxyapatite growth*”, **Bulletin of material science**, 36,799–805, 2013, **Impact factor: 1.392**.
61. D. Gopi, M. Surendiran, N. Sudha, R. Saraswathy, R. Madhammal and **L. Kavitha**, “*Adsorption and inhibition properties of mild steel corrosion in ground water medium by 1-(4-methoxy benzyl)-1H-imidazole: Experimental and theoretical investigations*”, **Surface and interface analysis**, 45, 823–829, 2013, **Impact factor: 1.393**.
62. D. Gopi, J. Indira and **L. Kavitha**, “*Hydroxyapatite coating on selectively passivated and sensitively polymer protected surgical grade stainless steel*”, **Journal of Applied Electrochemistry**, 43, 331-345, 2013, **Impact factor: 2.398**.
63. D. Gopi, N. Bhuvaneshwari, J. Indira, **L. Kavitha**, “*Synthesis and spectroscopicinvestigations of hydroxyapatite using a green chelating agent as template*”, **SpectrochimicaActa part A: Molecular and Biomolecular Spectroscopy**, 104, 292-299, 2013, **Impact factor: 4.098**.
64. D. Gopi, N. Bhuvaneshwari, J. Indira, K. Kanimozhi and **L. Kavitha**, “*A novel green template assisted synthesis of hydroxyapatite nanorods and their spectral characterizations*”. **SpectrochimicaActa part A: Molecular and Biomolecular Spectroscopy**, 107, 196–202, 2013, **Impact factor: 4.098**.
65. D. Gopi, S. Ramya, D. Rajeswari and **L. Kavitha**, “*Corrosion protection performance of porous strontium hydroxyapatite coating on polypyrrole coated 316L stainless steel*”, **Colloids and surfaces B: Biointerfaces**, 107, 130-136, 2013, **Impact factor: 3.997**.
66. D. Gopi, E. Shinyjoy, M. Sekar, M. Surendiran, **L. Kavitha** and T.S. Sampath Kumar, “*Development of carbon nanotubes reinforced hydroxapatite composite*

- coatings on titanium by electrodeposition method*”, **Corrosion Science**, 73, 321-330, 2013, **Impact factor: 6.479**.
67. D. Gopi, A. Karthika, M. Sekar, **L. Kavitha**, R. Pramod, JishnuDwivedi, “*Development of lotus-like hydroxyapatite coating on HELCDEB treated titanium by pulsed electrodeposition*”, **Materials letters**, 105, 216-219, 2013, **Impact factor: 3.019**.
68. D. Gopi, D. Rajeswari, S. Ramya, M. Sekar, R. Pramod, JishnuDwivedi, **L. Kavitha**, R. Ramaseshan, “*Enhanced corrosion resistance of strontium hydroxyapatite coating on electron beam treated surgical grade stainless steel*”, **Applied Surface Sciences**, 286, 83-90, 2013, **Impact factor: 6.707**.
- 2014
69. **L. Kavitha**, M.Venkatesh, M. Saravanan, S. Dhamayanthi and D. Gopi, “*Breather-like director reorientation in a nematic liquid crystal with nonlocal nonlinearity*”, **Wave Motion**, 51, 476-488, 2014, **Impact factor:1.723**. <http://dx.doi.org/10.1016/j.wavemoti.2013.09.005>.
70. S. Zekovic, A. Muniyappan, S. Zdravkovic and **L. Kavitha**, “*Employment of jacobian elliptic functions for solving problems in nonlinear dynamics of microtubules*”, **Chinese Physics B**, 23, 020504, 2014, **Impact factor:1.469**. <http://dx.doi.org/10.1088/1674-1056/23/2/020504>.
71. B.Srividya, **L. Kavitha**, R. Ravichandran and D.Gopi, “*Oscillating multidromion excitations in higher dimensional nonlinear lattice with intersite and external on-site potentials using symbolic computation*”, **Chinese Physics B**, 23, 010307, 2014, **Impact factor:1.469**. <http://dx.doi.org/10.1088/1674-1056/23/1/010307>.
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 77. **L. Kavitha**, E. Parasuraman and D. Gopi, "*Breather like periodic soliton in single wall carbon nanotubes (SWCNT) by using discrete extended tanh function method (DETFM)*", Perspectives in Nonlinear Dynamics (PNLD)-2013, University of Hyderabad, India, July 15-18, 2013.
 78. S. Nithiya, D. Gopi and **L. Kavitha**, "*Synthesis of strontium substituted Hydroxyapatite bone cement by microwave irradiation method for biomedical applications*", National Symposium on nanosciences and technology (NSNN-2013), Karunya University, Coimbatore, Tamil Nadu, India, 30th September and 1st October 2013.
 79. E. Shinyjoy, D. Gopi and **L. Kavitha**, "*Ultrasonic assisted synthesis, characterization and biological performance of silver/strontium substituted hydroxyapatite powder*", A National Symposium on Science of Nano (SciNo'13), Bharathiar University, Coimbatore, Tamil Nadu, India, 6-7 December 2013.

80. A. Karthika, D. Gopi and **L. Kavitha**, "*Synthesis and characterization of strontium/magnesium substituted hydroxyapatite powder for biomedical applications*", A National Symposium on Science of Nano (SciNo'13), Bharathiar University, Coimbatore, Tamil Nadu, India, 6-7 December 2013.
81. A. Muniyappan, **L. Kavitha**, S. Zdravkovic and D. Gopi, "*Nano breathers and modulational instability in tubulin lattices*", 8th conference on Nonlinear Systems and Dynamics (CNSD), IIT, Indore, India, 11-14 December 2013.
82. R. Ravichandran, **L. Kavitha**, A. Muniyappan, S. Zdravkovic and D. Gopi, "*Perturbed soliton excitations and soliton collisions in a DNA molecule*", 8th conference on Nonlinear Systems and Dynamics (CNSD), IIT, Indore, India, 11-14 December 2013.
83. D. Rajeswari, S. Ramya, **L. Kavitha** and D. Gopi, "*Development of poly (etherether ketone)/strontium, cerium co- substituted hydroxyapatite coating on surface treated surgical grade stainless steel for biomedical applications*", National conference on Advancement in Materials Science (AMS 2014), Coimbatore Institute of Technology, Coimbatore, Tamil Nadu, India, 26-27 September, 2014.
84. **L. Kavitha**, C. Lavanya and D. Gopi, "*Exact shock wave solution of the Korteweg-de-Vries-Burgers equation governing the dynamics of four component plasma*", Third National conference on Advances in Differential equations and Applications (NCADEA-2014), Department of Mathematics, Periyar University, Salem-11, Tamil Nadu, India, 4-5 December 2014.
85. **L. Kavitha**, "*Exact hyperbolic, trigonometric and rational soliton solutions in single wall of carbon nanotubes*", Third National conference on Advances in Differential equations and Applications (NCADEA-2014), Department of Mathematics, Periyar University, Salem-11, Tamil Nadu, India, 4-5 December 2014.
86. D. Rajeswari, S. Ramya, **L. Kavitha** and D. Gopi, "*Electrodeposition of strontium and cerium substituted hydroxyapatite coating on acid treated surgical grade stainless steel for orthopedic applications*", National conference on Advances in Tissue Engineering and Regenerative Medical Technology (TERMTech-2014), PSG Institute of Advanced Studies, Coimbatore, Tamil Nadu, India, 12-13, December 2014.
87. **L. Kavitha**, C. Boopathy and D. Gopi, "*Nonlinear excitation of blood flow in arteries*", National seminar on emerging trends in theoretical and experimental physics (ETTEP-2015), Sree Ayyappa College for Women, Tamil Nadu, India, 8-9 January 2015
88. **L. Kavitha**, E. Parasuraman and D. Gopi, "*Chaotic and breather like energy localization in single wall carbon nanotubes(SWCNT)*", National seminar on emerging trends in theoretical and experimental physics (ETTEP-2015), Sree Ayyappa College for Women, Tamil Nadu, India, 8-9 January 2015
89. **L. Kavitha**, R. Priya and D. Gopi, "*Energy transfer mechanism via kink-Antikink soliton excitations in microtubules*", National seminar on emerging trends in theoretical and experimental physics (ETTEP-2015), Sree Ayyappa College for Women, Tamil Nadu, India, 8-9 January 2015

90. **L. Kavitha**, R. Ravichandran and D. Gopi, “*Collision of blood pressure pulse solitary waves in elastic tube of arteries*”, National seminar on emerging trends in theoretical and experimental physics (ETTEP-2015), Sree Ayyappa College for Women, Tamil Nadu, India, 8-9 January 2015
91. **L. Kavitha**, C. Lavanya, V. Senthil Kumar and D. Gopi, “*Perturbed soliton excitations of Rao-Dust Alfvén waves in magnetized dusty plasmas*”, National seminar on emerging trends in theoretical and experimental physics (ETTEP-2015), Sree Ayyappa College for Women, Tamil Nadu, India, 8-9 January 2015
92. **L. Kavitha**, C. Lavanya and D. Gopi, “*Modulational instability analysis of longitudinal particle motion in one dimensional dusty plasma crystals*”, National symposium on X-Ray diffraction and recent advances in crystallography, Department of Physics, School of Sciences, Periyar University, Salem-636011, Tamil Nadu, India, 27-28th February, 2015.
93. **L. Kavitha**, R. Ravichandran and D. Gopi, “*Perturbed soliton excitations in blood flow of large vessels with effect of nonlinear stress-strain condition*”, National symposium on X-Ray diffraction and recent advances in crystallography, Department of Physics, School of Sciences, Periyar University, Salem-636011, Tamil Nadu, India, 27-28th February, 2015.
94. **L. Kavitha**, C. Boopathy and D. Gopi, “*Dynamics of solitary waves in elastic tube of arterial bifurcation, National symposium on X-Ray diffraction and recent advances in crystallography*”, Department of Physics, School of Sciences, Periyar University, Salem-636011, Tamil Nadu, India, 27-28th February, 2015.
95. **L. Kavitha**, R. Priya and D. Gopi, “*Bio energy transport in the form of soliton in microtubules governed by sine-Gordon equation*”, National symposium on X-Ray diffraction and recent advances in crystallography, Department of Physics, School of Sciences, Periyar University, Salem-636011, Tamil Nadu, India, 27-28th February, 2015.
96. D. Rajeswari, S. Ramya, **L. Kavitha** and D. Gopi, “*Structural and corrosion characterization of strontium, cerium co-substituted hydroxyapatite coating on surface treated surgical grade stainless steel for orthopedic applications*”, National symposium on X-Ray diffraction and recent advances in crystallography, Department of Physics, School of Sciences, Periyar University, Salem-636011, Tamil Nadu, India, 27-28th February, 2015.
97. **L. Kavitha**, Adam Marlewski, D. Gopi and S. Zdravković, “*Dynamics of dark solitons and breathers propagation along neuronal microtubulin lattices*”, National conference on current trends in soft matter (NCCTSM-2015), Department of Physics, School of Basic and Applied Sciences, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu, India, 19-20th March 2015.
98. **L. Kavitha**, E. Parasuraman and D. Gopi, “*Kink-anti kink proton transport in hydrogen bonded chain with proton-heavy ionic interactions*”, National conference on current trends in soft matter (NCCTSM-2015), Department of Physics, School of Basic and Applied Sciences, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu, India, 19-20th March 2015.
99. R. Ravichandran and **L. Kavitha**, “*Pressure wave instability in fluid filled elastic tubes of large arteries, National conference on current trends in soft matter*

- (NCCTSM-2015)”, Department of Physics, School of Basic and Applied Sciences, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu, India, 19-20th March 2015.
100. **L. Kavitha** and S. Dhamayanthi, “*Perturbed soliton in saddle splay-bend type of nematic liquid crystals under the influence of magnetic field*”, National conference on current trends in soft matter (NCCTSM-2015), Department of Physics, School of Basic and Applied Sciences, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu, India, 19-20th March 2015.
 101. **L. Kavitha** and C. Boopathy, “*Solitonic decay of blood pressure waves through viscoelastic tube of arterial system*”, National conference on current trends in soft matter (NCCTSM-2015), Department of Physics, School of Basic and Applied Sciences, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu, India, 19-20th March 2015.
 102. Emil Elsa Jose and **L. Kavitha**, “*Collision of nonlinear pulse waves through fluid filled arterial elastic tube*”, National conference on current trends in soft matter (NCCTSM-2015), Department of Physics, School of Basic and Applied Sciences, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu, India, 19-20th March 2015.
 103. **L. Kavitha** and N. Ayyappan, “*Solitary wave excitations in DNA under the influence of Morse potential*”, National conference on current trends in soft matter (NCCTSM-2015), Department of Physics, School of Basic and Applied Sciences, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu, India, 19-20th March 2015.
 104. **L. Kavitha**, R. Priya and D. Gopi, “*Localized soliton excitation as an energy transfer mechanism in microtubules*”, National conference on current trends in soft matter (NCCTSM-2015), Department of Physics, School of Basic and Applied Sciences, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu, India, 19-20th March 2015.
 105. M. Chozhanathmisra, K. Sathesh Kumar, **L. Kavitha** and D. Gopi. “*Sodium alginate/mineral substituted hydroxyapatite composite for bone tissue engineering application*”, National Conference on New horizon of nanotechnology in bioscience-2016 (NHNBS-2016), Department of biochemistry. School of Physical Sciences, Periyar University, Salem-636011, Tamil Nadu, India, 7-8 January 2016.
 106. N. Murugan, E. Shinyjoy, **L. Kavitha** and D. Gopi. “*Development of polyethylene glycol /mineral substituted hydroxyapatite composite coating on magnesium alloy for orthopaedic applications*”. National Conference on New horizon of nanotechnology in bioscience- 2016 (NHNBS-2016), Department of biochemistry. School of Physical Sciences, Periyar University, Salem-636011, Tamil Nadu, India, 7-8 January 2016.
 107. S. Sathishkumar, P. Karthikeyan, **L. Kavitha** and D. Gopi. “*Electrodeposition of Ce/Cu- HAP coating on passivated surgical grade stainless steel for orthopedic application*”, National Conference on New horizon of nanotechnology in bioscience- 2016 (NHNBS-2016), Department of biochemistry. School of Physical Sciences, Periyar University, Salem-636011, Tamil Nadu, India, 7-8 January 2016.

108. M. Saranya, P. Abinaya Aarthi, P. Karthikeyan, **L.Kavitha** and D. Gopi. “*Synthesis and spectral characterization of silver – HAP/PAA composite for biomedical applications*”. National Conference on New horizon of nanotechnology in bioscience-2016 (NHNBS-2016), Department of biochemistry. School of Physical Sciences, Periyar University, Salem-636011, Tamil Nadu, India, 7-8 January 2016.
109. M. Ranjeethkumar, P. Karthikeyan, M.Surendiran, **L.Kavitha** and D. Gopi. “*Fabrication and charecterization of lanthanam substituted hydroxyapatite/hnt nano composite using sol-gel method for orthopedic applications*”. National Conference on New horizon of nanotechnology in bioscience- 2016 (NHNBS-2016), Department of biochemistry. School of Physical Sciences, Periyar University, Salem-636011, Tamil Nadu, India, 7-8 January 2016.
110. M. Arivazhagan, R. Ramachandran, M.Elakkiya **L. Kavitha** and D. Gopi. “*Synthesis and characterization of collagen/zn-substituted hydroxyapatite composite for bone tissue engineering applications*”, National Conference on New horizon of nanotechnology in bioscience- 2016 (NHNBS-2016). Department of biochemistry. School of Physical Sciences, Periyar University, Salem-636011, Tamil Nadu, India, 7-8 January 2016

List of Conferences\Workshops attended in India

1. **L. Kavitha**, International conference on Nonlinear Dynamics: Integrability and Chaos held at Bharathidasan University, Tiruchirapalli, India during 12-16 February 1998.
2. **L. Kavitha**, Seminar on remote sensing and its applications held at Lady Doak College, Madurai, Tamilnadu, India, 7-8 February 2001.
3. **L. Kavitha**, VIII Ramanujan Symposium on Recent developments in Nonlinear systems held at University of Madras, Chennai, Tamilnadu, India, during 14-16 February 2001
4. **L. Kavitha**, Workshop on Curriculum Planning, Teaching and Evaluation held at Lady Doak College, Madurai, Tamilnadu, India, 24-25 August 2001.
5. **L. Kavitha**, Workshop on Quantum computers and quantum information held at American College, Madurai, India, 7-8 December 2001.
6. **L. Kavitha**, International workshop on Optical Solitons: Theory and Experiments held at Cochin University of Science and Technology, Kochi, Kerala, India, 24-29 January 2002
7. **L. Kavitha**, National conference on Thin Film techniques and applications held at PSG College of Arts and Science, Coimbatore, Tamilnadu, India, 1-2 February 2002.
8. **L. Kavitha**, Workshop on Human Rights education held at Lady Doak College, Madurai, Tamilnadu, India, 8-9 August 2002.
9. **L. Kavitha**, Workshop on Teaching women studies held at Lady Doak College, Madurai, Tamilnadu, India, 5-6 December 2002.
10. **L. Kavitha**, Workshop on Opportunities and National facilities in condensed matter physics held at Madurai Kamaraj University, Madurai, Tamilnadu, India, 17-18 January 2003.

11. **L. Kavitha**, Workshop on National Consultation on Institutionalizing service-learning held at Lady Doak College, Madurai, Tamilnadu, India, 23-24 January 2004.
12. **L. Kavitha**, Seminar on Environmental education and action held at Lady Doak College, Madurai, Tamilnadu, India, during 19 February 2004.
13. **L. Kavitha**, Seminar on Thrust areas in Materials science held at Lady Doak College, Madurai, Tamilnadu, India, 15-17 July 2004.
14. **L. Kavitha**, National conference on Challenges of higher education and future direction for autonomous colleges held at Lady Doak College, Madurai, Tamilnadu, India, 23-24 September 2004.
15. **L. Kavitha**, National workshop on geosciences, geo resources and IPR regime: Familiarization and practice (GEO-IPR '2006), held at Periyar University, Salem, Tamilnadu, India, 05-06 October 2006.
16. **L. Kavitha**, National Conference on Recent Advances in materials science organized by the department of physics, Periyar University, Salem, Tamilnadu, India, February 16-17, 2006
17. **L. Kavitha**, National seminar on Engineering Trends in Biochemistry, Health and diseases held at Periyar University, Salem, Tamilnadu, India, 26-27 February 2007.
18. **L. Kavitha**, One day national seminar on current trends and latest updates in bioscience-2008/world diabetes day organize by the department of biochemistry, Periyar University, Salem, Tamilnadu, India, 14th November 2008.
19. **L. Kavitha**, International conference on emerging trends in chemical sciences (IETC 2013) held at Vellore Institute of Technology, Vellore, Tamilnadu, India, 5 - 7th December 2013.
20. **L. Kavitha**, International Conference on Biological Inorganic Chemistry (ICBIC-2013), Periyar University, Salem, , Tamilnadu, India, 20-22 February 2013.
21. **L. Kavitha**, International Conference on Recent Advances in Physics for Interdisciplinary Developments (ICRAPID-2014), Sathyabama University, Chennai, India, January 23-24, 2014
22. **L. Kavitha**, Exact hyperbolic, trigonometric and rational soliton solutions in single wall of carbon nanotubes, Third National conference on Advances in Differential equations and Applications (NCADEA-2014), Department of Mathematics, Periyar University, Salem-11, Tamilnadu, India, 4-5 December 2014.
23. **L. Kavitha**, Participated in one day training workshop Physics Laboratory: Conduct and innovations organized by Department of Physics, Central University of Tamil Nadu, Thiruvarur, India, under the Aegis of Indian Association of Physics Teachers (IAPT) on 7th March 2015.
24. Delivered an invited lecture on “Solitons in Ferromagnetic nanowire” at International workshop-cum-conference on smart material and their Applications in Recent Technologies (SMART 2020) held during 4-5th March 2020, Periyar University, Salem
25. Delivered an invited lecture on “Perspectives of Science” at National Conference On “EMERGING MATERIALS & NANOTECHNOLOGY – 2020” (NCEMN –

- 2020) held during 28-29th February 2020, Thiruvalluvar Government Arts College, Rasipuram, Namakkal, Tamilnadu, India
26. Talk at Muthayammal College of Engineering, Rasipuram, Tamil Nadu on 28th February 2020 as a Chief guest for the Science day Celebration
 27. Delivered an invited Talk on “Propagation of Electromagnetic soliton in a ferromagnetic nanowire” at 28th International conference (virtual) on SYNERGIES IN COMPUTATIONAL, MATHEMATICAL, STATISTICAL AND PHYSICAL SCIENCES (FIM 28: SCMSPS 2020 - VIRTUAL - November 23 - 27, 2020)

List of Conferences attended/delivered in Foreign Countries:

1. **L. Kavitha**, (Delivered a talk) entitled “*Painleve singularity structure analysis on Landau-Lifshitz equation in the vector form*”, International Conference on Nonlinear differential equations, mechanics and bifurcation, Duke University, North Carolina, USA, 20-22, May 2002.
2. **L. Kavitha**, International Conference on Correlation effects in electronic structure, ICTP, Italy, 17-20, June 2002.
3. **L. Kavitha**, (Delivered a talk) entitled “*Magnetic switching through soliton flipping in an inhomogeneous ferromagnetic medium*”, International Conference on Symmetries and integrability of difference equations, Giens, France, 21-26, June 2002.
4. **L. Kavitha**, International School and Conference on Spatio-temporal chaos, ICTP, Italy, 08-19, July 2002.
5. **L. Kavitha**, ICTP-INFM Spring school on magnetic properties of condensed matter investigated by neutron scattering and synchrotron radiation, ICTP, Italy, 19-28, May 2003.
6. **L. Kavitha**, International workshop on Nanoscale fluctuations in magnetic and superconducting systems, The Max-Planck Institute (MPIPKS), Germany, 10-14, May 2005.
7. **L. Kavitha**, International workshop: Towards the future of complex dynamics: From Laser to Brain, The Max-Planck Institute (MPIPKS), Germany, 30 May-01, June, 2005.
8. **L. Kavitha**, International workshop on Quantum Coherence, Noise and Decoherence in nanostructures, The Max-Planck Institute (MPIPKS), Germany, 15-26 May, 2006.
9. **L. Kavitha**, (Delivered a talk) entitled “*Switching of solitons in an inhomogeneous Heisenberg ferromagnet with Gilbert damping*”, XXX. International workshop on condensed matter theories, The Max-Planck Institute (MPIPKS), Germany, 05-10 June, 2006.
10. **L. Kavitha**, (Delivered a talk) entitled “*Controlled nano-scale soliton switching in bosonized anisotropic ferromagnet*”, International Spring College on Computational Nanoscience, ICTP, Italy, 17-28, May 2010.

11. **L. Kavitha**, (Delivered a talk) entitled “*Localization of Wave modes in a Heisenberg Helimagnet through modulational instability*”, International workshop on Localization Phenomena In Novel Phases of Condensed Matter, ICTP, Italy, 17-23, May 2010.
12. **L. Kavitha**, International Workshop on Maths & Air, University of Zaragoza, Spain, 16 – 18 June 2010.
13. **L. Kavitha**, Workshop on Emergence of New States of Matter in Magnetic Systems and Beyond, ICTP, Italy, 05-09 July 2010.
14. **L. Kavitha**, International Conference on Symbolic Computation and its applications, University of Maribor, Slovenia, 30 – 02 July 2010.
15. **L. Kavitha**, (Delivered a talk) entitled “*Soliton like molecular orientation in a nematic liquid crystal with surface anchoring energy under the influence of electric field*”, School and Conference on Mathematics and Physics of Soft and Biological matter, ICTP, Italy, 02 – 13 May, 2011.
16. **L. Kavitha**, (Delivered a talk) entitled “*The integrability and the magnetization dynamics of weak ferro and antiferromagnets*”, Workshop on Integrability and its Breaking in Strongly Correlated and Disordered Systems, ICTP, Italy, 23 – 27 May, 2011.
17. **L. Kavitha**, School and Conference on Computational Methods in Dynamics, ICTP, Italy, 23 – 27 May, 2011.
18. **L. Kavitha**, (Delivered a talk) entitled “*Energy localization in a ferromagnetic media with dipolar interactions*”, Workshop and School on Topological Aspects of Condensed Matter Physics, ICTP, Italy, 27 June – 08 July, 2011.
19. **L. Kavitha**, Fifth Stig Lundqvist Conference on the Advancing Frontiers of Condensed Matter Physics, ICTP, Italy, 11 – 15 July, 2011.
20. **L. Kavitha**, (Delivered a talk) entitled “*Propagation of electromagnetic soliton governed by the coupled Maxwell and the Landau-Lifshitz equations*”, 16th International Conference on Mathematical Modelling and Analysis, University of Latvia, Sigulda, Latvia, 25 – 28 May 2011.
21. **L. Kavitha**, (Delivered a talk) entitled “*Nonlinear excitations in Microtubules*”, The International School and Conference on Network Science, Central European University, the Hungarian Academy of Sciences, Budapest, Hungary, 6 – 10 June 2011.
22. **L. Kavitha**, (Delivered a talk) entitled “*Perturbed soliton like excitations for dipolar interaction in the ferromagnetic spin systems*”, 7th International Conference on Applied Mathematics and Scientific Computing, University of Zagreb, Trogir, Croatia, 13–17 June 2011.
23. **L. Kavitha**, (Delivered a talk) entitled “*Energy localization and shape changing solitons in microtubules*”, 8th European Conference on Mathematical and Theoretical Biology, Institute of Mathematics of the Polish Academy of Sciences, Kraków, Poland, 28 June – 02 July 2011.
24. **L. Kavitha**, ESF-EMS-ERC COM Conference on Completely Integrable Systems and Applications, Erwin Schrödinger Institute, Vienna, Austria, 03-08 July 2011.

25. **L. Kavitha**, Workshop on Materials Science for Energy Storage (smr 2758), ICTP, Italy, 11- 15 May 2015.
26. **L. Kavitha**, (Delivered a talk) entitled “*Electrodeposition of minerals substituted hydroxyapatite coating on high energy electron beam treated surgical grade stainless steel for improved mechanical and biological properties*”, European Conference on Heat Treatment & 22nd IFHTSE Congress, Venice, Italy, 20-22 May 2015.
27. **L. Kavitha**, International Conference on Ultrafast Structural Dynamics, Zurich, Switzerland, 10-12 June 2015.
28. **L. Kavitha**, (Delivered a talk) entitled “*Hydroxyapatite/Pectin nanocomposite as filler material for dental applications: Antibacterial properties and in vitro bioactivity of composites*”, 3rd Euro Congress and Expo on Dental & Oral Health, Alicante, Spain, 16-18 June, 2015.
29. **L. Kavitha**, (Delivered a talk) entitled “*Synthesis, characterization and in vitro studies of magnesium, fluoride co-substituted hydroxyapatite nanoparticles for dental applications*”, 3rd Euro Congress and Expo on Dental & Oral Health entitled, Alicante, Spain, 16-18 June, 2015.
30. **L. Kavitha**, (Delivered a talk) entitled “*A Facile Electrodeposition of Poly (3,4-Ethylenedioxy pyrrole)/Strontium, Magnesium Substituted Hydroxyapatite bilayer Coating on Surgical Grade Stainless Steel For Biomedical Applications*”, 2nd International Conference on Recent Advances in Medical Science (ICRAMS-2015), Paris, France, 21 June 2015.
31. **L. Kavitha**, (Delivered a talk) entitled “*Solitary evolution of blood pressure waves in arteries*”, 2nd International Conference on Recent Advances in Medical Science (ICRAMS-2015), Paris, France, 21 June 2015.
32. **L. Kavitha**, (Delivered a talk) entitled “*A Multifunctional Carbon Nanofiber/Bioceramic Coating for Orthopedic Applications*”, International Conference on Recent Innovations in Science, Engineering and Technology, Paris, France, 21 June 2015.
33. **L. Kavitha**, (Delivered a talk) entitled “*Propagation and collisional dynamics of electromagnetic soliton in an anisotropic ferromagnetic nanowire*”, International Conference on Recent Innovations in Science, Engineering and Technology, Paris, France, 21 June 2015.
34. **L. Kavitha**, (Delivered a talk) entitled “*Propagation and collisional dynamics of electromagnetic soliton in an anisotropic ferromagnetic nanowire*”, International Conference on Recent Innovations in Science, Engineering and Technology, Paris, France, 21 June 2015.

Any other informations:

(I). Details of Patents:

1. D. Gopi, **L. Kavitha**, Green template synthesis of hydroxyapatite using lactic acid as chelating agent, Indian patent-Grant No: 333698, Patent Granted on 02.03.2020

2. D. Gopi, **L. Kavitha**, Green template synthesis of hydroxyapatite using lactic acid as chelating agent, US patent, Case number US2015/0052028IN.
3. D. Gopi, **L. Kavitha**, A. Karthika, Pulsed electrodeposition of minerals substituted hydroxyapatite coating on borate passivated Ti-6Al-4V alloy for implant applications, filed an Indian patent dated on 21-01-2014, Application No. 380/CHE/2014.
4. D. Gopi, S. Ramya, **L. Kavitha** Fabrication of multifunctional biogenic derived neodymium and holmium substituted hydroxyapatite/poly lactic acid /wrtica tinctoria fibre ternary biocomposite for biomedical applications, Application No: 202011056653, Publication Dt: 11.02.2022.
5. D. Gopi, E. Shinyjoy, **L. Kavitha** Biosynthesis of erbium, terbium substituted biogenic hydroxyapatite/natural fiber composite using Moringa oleifera as template by ultrasonic irradiation method for biomedical applications, Application No: 202011056658, Publication Dt: 11.02.2022
6. D. Gopi, S. Sutha, **L. Kavitha**, An Innovative approach of Azadirachta Indica Gum Mediated Synthesis of nanophase Nd, Y-HAP / Tridax procumpens composite for potential biomedical applications, Application No: 202011056650, Publication Dt: 11.02.2022
7. **L. Kavitha**, D. Bhagya Mathi, E. Shinyjoy, S. Ramya and D. Gopi, Preparation of selenium, ytterbium substituted hydroxyapatite and bovine serum albumin composite incorporated with silicon dioxide functionalised halloysite nanotubes for biomedical applications, Application No: 202111013024, Publication Dt: 11.02.2022

(II) Research Projects:

No.of Projects: 7, Total Projects cost: ₹. 9,409,991

Title of the Projects	Amount & Investigator	Minor / Major	Period	Status	Funding Agency
Soliton dynamics in spin ladder systems (F. No.34-26/2008 (SR))	₹ 4, 82, 800 Principal Investigator	Major	3 Years (2009-2012)	Completed	UGC
Soliton dynamics in inhomogeneous magnetic media (No.2009/20/37/7/BRN S/1819)	₹ 11,80,071 Principal Investigator	Major	3 Years 2010-2013	Completed	DAE-BRNS-Young Scientist Research Award
Exact propagating soliton solutions of some nonlinear PDEs governing the director dynamics of nematic liquid crystal medium (Ref.No. 2/48(9)/2011/-R&D II/1223)	₹ 9,66,000 Principal Investigator	Major	3 Years 2012-2015	Completed	DAE-NBHM-Major Research Project

Magnetization reversal and Nanoscale switching of soliton dynamics in magnetic spin ladder system with various magnetic interaction	₹ 30,00,000 Principal Investigator	Major	2 Years 2013-2015	Awarded	UGC Research Award
Investigation on the propagation of Electromagnetic wave (EMW) and EMW induced ultrafast magnetization switching soliton dynamics in ferromagnetic nanowires (Ref.No.03(1418)/17/E MR-II)	₹ 24,41,800 Principal Investigator	Major	3 Years 2017-2020	Completed	CSIR-Major Research Project
Mathematical Modelling and Exact Propagating soliton solutions of few nonlinear partial differential equations governing the nonlinear magnetization dynamics of ordered magnetic systems. (Ref.: MTR/2017/000314)	₹ 6,60,000 Principal Investigator	Major	3 Years 2017-2020	Completed	DST SERB-Matrices-Major Research Project
Effect of spin transfer torque on the switching dynamics of magnetic soliton in a weak ferromagnetic nanowire (Ref.:CSR-KN/CRS-102/2018-19/1041)	₹ 6,79,320 Principal Investigator	Major	3 Years 2018-2022	Completed	UGC-DAE sanctioned Major Research Project

(III). Research Supervisions:

Ph. D. Produced

: Awarded: 20

Thesis Submitted: 1

Presently guiding: 2

S. No.	Name	Thesis Title	Year of Registration	Year of Submission
1.	P. Sathishkumar (University Research Fellowship (2005-2009) & CSIR-Senior Research Fellow (2010-2012)) (Awarded-2011)	Magnetization switching through solitons in Heisenberg magnetic systems with higher order magnetic interactions	2005	2010
2.	N. Akila Jawaharlal Nehru National Memorial Fellow (Awarded-2012)	Self localization and soliton dynamics in ferromagnetic media with dispersive magnetic interactions	2008	2011
3.	S. Jayanthi (Awarded-2012)	Propagation of solitons in hydrogen bonded chains through a mechanism of proton transport	2005	2011
4.	A. Prabhu (BRNS-YSRA Junior Research fellow (2010-2013) (Awarded-2012))	Nano-scale discrete breathers and molecular dynamical simulation studies of ferromagnetic spin lattices	2008	2012
5.	B. Srividya (UGC-Project Fellow (2009-2011) & CSIR-Senior Research Fellow (2011-2013)) (Awarded-2013)	Soliton excitations and Modulational instability in lower and higher dimensional homogeneous and deformed nonlinear ordered spin lattices	2008	2012
6.	M. Saravanan (CSIR-Senior Research Fellow (2012-2014)) (Awarded-2014)	Propagation of electromagnetic soliton and magnetization dynamics of ordered magnetic systems	2009	2012
7.	R. Saraswathy (CSIR-Project fellow & TNSCST fellow) (Awarded-2013)	Electrochemical, mechanical and corrosion protection properties of copolymer-ceria bilayer coatings on LNSS in sulphuric acid medium	2009	2012

8.	S. Bhuvaneshwari (Jawaharlal Nehru National Memorial Fellow (2010-2012)) (Awarded-2013)	Soliton dynamics and modulational instability of spinladder systems and collision of solitons	2009	2012
9.	M. Venkatesh (UGC-BSR Fellow (2011- 2012) & UGC- Non-SAP-BSR Fellow (2012- 2014)) (Awarded-2013)	Director dynamics and soliton excitations in nematic liquid crystal media	2009	2013
10.	A. Muniyappan (Rajiv Gandhi National Fellow (2008-2013)) (Awarded-2013)	Nano-scale localized excitations in microtubulin systems	2010	2013
11.	S. Dhamayanthi (University Research Fellow (2011-2013)) (Awarded-2015)	External field induced nonlinear molecular deformation and switching dynamics of nematic and smectic liquid crystals	2011	2013
12.	D. Rajeswari DST-WOS-A (Awarded-2016)	Development of mineralized hydroxyapatite/conducting polymer composite coatings on electron beam treated surgical grade stainless steel for orthopedic applications	2012	2016
13.	E. Parasuraman University Research Fellow (2012-2015) (Center for Nanoscience and Nanotechnology) (Awarded 2017)	Wave instability and dynamics of nonlinear localized modes in nanotubes with higher order interactions	2012	2015
14.	C. Lavanya NBHM-JRF (2012-2015) (Awarded 2017)	Nonlinear localized excitations in magnetized and unmagnetized multicomponent plasma	2012	2015

15.	V. Senthil Kumar (Awarded 2017)	Propagation of electromagnetic soliton and localized magnetization dynamics in the nanoscale magnetic systems	2012	2016
16.	R. Ravichandran (Awarded 2017)	Nonlinear modeling of pulse solitary wave propagation in Cardiovascular systems	2013	2017
17.	N. Ayyappan (University Research Fellow)	Nonlinear dynamics of twisted DNA	2014	2021
18.	R. Priya (Rajiv Gandhi National Fellow (2016-2017))	Nonlinear dynamics of neuronal microtubules	2013	2021
19.	D. Bhagyamathi (University Research Fellow)	Fabrication of multifunctional bilayer coatings on titanium: halloysite nanotubes reinforced bioceramic composite coatings for orthopedic applications	2015	2022
20	Geo Sunny (DST-INSPIRE fellowship)	The influence of dzyaloshinsky – moriya interaction in the soliton dynamics of heisenberg ferromagnetic and helimagnetic spin systems	2016	2022
21	Christy Maria Joy (University Research Fellow)	Nonlinear dynamics of DNA molecule	2019	2023 (Submitted Thesis Awaiting for final viva)

(IV). Presently guiding: 2 Students under full-time basis

S. No.	Name	Thesis Title	Year of Registration
1.	Raghavi K	Nonlinear dynamics of Plasma	2019

2.	Pavithra T	Nonlinear Dynamics of magnetic materials	2020
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Post-Doctoral fellows: 4 completed

S. No.	Name of the Research fellow	Mentor/supervisor	Duration of fellowship	Type of the fellowship	Granting agency
1.	Dr. S. Ramya DOJ: 17.12.2018 (No.F.4-2/2006 (BSR)/CH/17- 18/0170)	Prof. L. Kavitha	3 Years (2019-2022)	Dr. D.S Kothari post-doctoral fellowship	UGC
2.	Dr. E. Shinyjoy. DOJ: 14.02.2019 (No.F.4-2/2006 (BSR)/CH/18- 19/0078)	Prof. L. Kavitha	3 Years (2019-2022)	Dr. D.S Kothari post-doctoral fellowship	UGC
3.	Dr. K. Saranya DOJ: 22.11.2019 (No.F.4-2/2006 (BSR)/PH/18- 19/0099)	Prof. L. Kavitha	3 Years (2019-2022)	Dr. D.S Kothari post-doctoral fellowship	UGC
4.	Dr. R. Ravichandran DOJ: 13.03.2018 (Ref. No. :03(1418)/17/EMR- II)	Prof. L. Kavitha	2 Years (2018-2019)	Post-Doctoral Research Associate	CSIR

Project Assistant:1 Completed

S. No.	Name of the Research fellow	Mentor/supervisor	Duration of fellowship	Type of the fellowship	Granting agency
1.	T. Pavithra (Proj. Asst) in UGC-DAE CSR MRP DOJ: 20.11.2019	Prof. L. Kavitha	2 Years (2019-2022)	Project Assistant	UGC-DAE

(V). **1. M. Phil. Produced:**36 (Awarded)

S.	Name	Thesis Title	University	Year
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No.				
1.	S. R. Thagiru Nisha	Proton transfer in hydrogen bonded systems	Periyar University	2006
2.	P. Kalaivani	Scattering of transverse electric waves with a nonlinear film	Bharathidan University	2007
3.	C. Thirupathi	Propagation of photons in one dimensional photonic crystals	Bharathidasn University	2007
4.	R. Gayathri	Effect of magnetically induced electrical currents in a tissue-like medium	Bharathidasn University	2007
5.	S. Parveen banu	On the application of spin injection theory to Johnson's spin switch	Bharathidasn University	2007
6.	B. Srividya	Modulational instability of multidimensional lattice waves	Periyar University	2007
7.	N. Akila	Modulational instability in optical fibers with variable dispersion	Periyar University	2007
8.	K. Radhika	Data communication between microcontrollers through IR sensor	Periyar University	2007
9.	T. Elango	Investigation of alternating current induced corrosion on sea water medium	Periyar University	2007
10.	A. Prabhu	Soliton solution of the cubic NLS equation with nonlocal potential using sine-cosine function method	Periyar University	2007
11.	M. Solamon Raj	Spectroscopic investigations of Hydroxyapatite nano crystal for biomedical applications	Periyar University	2007
12.	M. Gomathi	Bidirectional stepper motor speed control using microcontroller	Periyar University	2007
13.	Judith Gnana Merin	Investigation of alternating current induced corrosion on mild steel in alkaline medium	Periyar University	2007
14.	K. Madhubala	Solitary wave solution of an inhomogeneous cubic NLS equation	Periyar University	2007
15.	G. Divya	Nonlinear excitation in microtubular dipolar lattice	Bharathidasan University	2007
16.	P. Shanthi	Nonlinear excitation in ferromagnetic medium under the influence of electromagnetic field	Periyar University	2008
17.	P. Murugan	Creation and annihilation of solitons in magnetic lattices	Bharathidasn University	2009

18.	T. Nathiyaa	Effect of inhomogeneity on energy-momentum transport in an spherically symmetric Heisenberg ferromagnetic spin system	Periyar University	2009
19.	A. Muniyappan	Localization of energy via Modulational instability in conducting polymer chains	Periyar University	2009
20.	R. Vijayan	Localized excitations in multidimensional lattices	Periyar University	2009
21.	B. Dhanaranjani	Construction of logic gates using fluxons in a three inductively coupled Josephson junctions	Periyar University	2009
22.	S. Dhamayanthi	Soliton deformation in a nematic liquid crystal under the influence of magnetic field	Periyar University	2010
23.	R. Nandhini	Electro Chemical Studies of the Bioactive Coating on Phosphoric Acid treated 316L SS	Periyar University	2010
24.	P. Lavanya	Anticorrosive properties of Zn modified PTh coating on LN SS in H ₂ SO ₄ solution	Periyar University	2010
25.	D. Venkatraman	Shape changing soliton dynamics in an oscillating dimer of microtubulin systems	Periyar University	2010
26.	S. Saranya	Synthesis and characterization of strontium substituted porous nano bioceramics for biomedical applications	Periyar University	2011
27.	R. Anupallavi	Electrochemical studies on the inhibition efficiency of indole-2-carboxylic acid for mild steel corrosion in 0.5 M HCl medium	Periyar University	2011
28.	T. Ranjani	Effect of viscosity on DNA and RNA transcription	Periyar University	2011
29.	G. Marimuthu	X-ray crystallography study on 1,7,8,9,10,10-Hexachloro-4-[2-(3,4-Dimethoxyphenyl)ethyl]-4-Azatricyclo [5.2.1.0 ^{2,6}]DEC-8-ENE-3,5-Dione	Periyar University	2012
30.	C. Elavarasi	Coating and characterization of substituted hydroxyapatite/polymer composite on titanium metal for biomedical applications	Periyar University	2012

31.	N. Mohanapriya	Electrochemical synthesis, characterization of polypyrrole and its anticorrosive performance on LN SS IN acidic medium	Periyar University	2012
32.	S. Nithya	Soliton dynamics of DNA with quintic Anharmonicity	Periyar University	2012
33.	T. Kasinathan	Substituted hydroxyapatite coating on phosphoric acid treated surgical grade stainless steel for biomedical application	Periyar University	2013
34.	A. Sudhandiran	Dynamics of nonlinear blood pressure waves in large arteries	Periyar University	2013
35.	S. Bhuvaneshwari	The influence of sodium alginate and microwave irradiation of the synthesis of nano bio ceramics for bio medical applications	Periyar University	2013
36.	Mythili Kailas Thesis	A study on the relation between Sagdeev pseudo potential and electrostatic potential of ion acoustic solitons in four component dusty plasma	Central University of Tamil Nadu	2019

(VI). **M. Sc. Produced:** Awarded: 62

S.No	Name of the candidate	Awarded	Title of the thesis
1.	A. Kumaravel	2006	Superluminal apparent motions in distant Radio sources
2.	B. Kumar	2006	A novel approach to classical electromagnetic Gauge transformation
3.	P. karthikeyan	2006	On the relativistic conservation law for the center of energy
4.	R. Mani	2006	On the analysis of Fermi-Dirac integrating circuit
5.	V.S. Sangeetha	2007	A simple low cost demonstration of wavelength division multiplexing
6.	M. Garthega Janani	2007	Determination of Clausius integrating factor
7.	K. Revathi	2007	On the one dimensional Schrodinger equation with a novel Double well potential
8.	G. Brindha	2007	Determination of power reduction of antenna
9.	K. Saratha devi	2007	Normalization of the amplitude functions of material particles
10.	P. Nithyadharseni	2007	On the numerical simulation of self oscillating vocal folds
11.	B. Manikandan	2008	A study on the shape changing ferromagnetic spin soliton

12.	D. Suganya devi	2008	The modified extended tangent hyperbolic function method for solving coupled Korteweg-de-vries equations
13.	T. Nathiyaa	2008	Soliton solution of the Jaulent-mrodek equation
14.	M. Venkatesh	2008	Generalized multi dimensional soliton through Hirota Bilinearization method
15.	M. Suvitha	2009	Shape changing soliton for Hirota equation
16.	N. Lavanya	2009	Synthesis of and characterization of Nano particles Co_3O_4 using microwen coupled wet chemical method
17.	M. Kanimozhi	2009	Effect of Nonlinear lattice inhomognetic on the energy momentum transport in magnetic lattice
18.	S. Premalatha	2009	Fabrication and characterization of nanoparticles Co_3O_4 using Hydrothermal method
19.	P. Nagaraju	2010	Discrete breather excitations in an Anisotropic Heisenberg ferromagnet
20.	G. Deepa	2010	Nonlinear excitations in ferromagnetic media with nearest and next nearest neighbor exchange interactions
21.	P. Vikram	2010	Modulational Instability of an anisotropic Heisenberg ferromagnet with higher order magnetic interaction
22.	S.Nithya	2011	Propagation of solitons in DNA under the influence of viscosity
23.	P. Anitha	2011	Director Dynamics in nematic liquid crystals with flexo-electro coupling
24.	E.Parasuraman	2011	Intrinsic localized modes in ferromagnetic spin chain with dipole-dipole interaction
25.	K.Umamageshwari	2011	Dynamics of blood pressure waves in tapered Aorta
26.	K. Bhuvaneshwari	2012	Synthesis and characterization on nano Bio ceramic by an ultrasonic assisted template method for biomedical applications
27.	C. Boopathy	2013	Propagation of proton in the form of kink-antikink soliton excitations in one dimensional hydrogen bonded chain
28.	S. Abinaya	2013	Synthesis and characterization of silver substituted hydroxyapatite for improved biomedical applications
29.	K. Prakash	2013	Synthesis and characterization of Bioceramics by sol-gel method for biomedical applications

30.	R. Priya	2013	Synthesis and characterization of strontium nano hydroxyapatite using Ethylene diamine tetra acetic acid as template
31.	R.Sridhar	2014	Propagation of solitons and modulational instability in microtubulin systems
32.	N.Ayyappan	2014	Molecular dynamics simulations and soliton propagation in DNA systems
33.	E.Vasuki	2014	Propagation of nonlinear blood pressure waves in thin elastic tube of arteries
34.	S.Manjula	2014	Nonlinear dynamics of ferromagnetic liquid crystal under the influence of magnetic field
35.	M.Arumugam	2014	Existence of discrete breather modes via modulational instability in one dimensional carbon nanotube system with presence and absence of electron-phonon interaction
36.	Emil Elsa Jose	2015	Collision of blood pressure solitary waves in large arteries
37.	M. Swami	2016	Fabrication of poly acrylic acid/ sodium alginate/ cerium substituted hydroxyapatite coating on 316LSS for orthopedic application
38.	Mohamad Salman	2016	Soliton excitations in microtubules under the influence of higher inhomogeneity
39.	Y. Vansisree	2017	Nonlinear modeling of blood flow patterns in a stenotic artery
40.	A. Mydhili	2017	Fabrication and characterization of tantalum oxide hydroxyapatite/polyvinyl pyrrolidone coating on pure titanium for orthopedic application
41.	S. Mouniya	2017	Molecular dynamics simulations and soliton propagation in DNA systems
42.	R. Karthika	2017	Fabrication and characterization of cerium substituted hydroxyapatite/polyvinyl pyrrolidone coating on Ti-6Al-4V alloys for orthopedic application
43.	A. Bharathi Priya	2017	Development of halloysite nanotube/sodium alginate composite coating on Ti-6Al-4V alloys for implant application
44.	Sharmila C	2018	Soliton dynamics of ferroelectric liquid Crystal with bookshelf layer structure
45.	Aswani	2018	Collision dynamics and implementation of Jacobi elliptic function method to microtubular System
46.	Pavithra T	2018	Solitary wave propagation in DNA under the influence of twisting
47.	Swetha	2018	Improving the performance of ti-6al-4v Alloy by electrophoretic deposition of halloysite Nanotube/pmma composite coating as bone implant

48.	Sree lakshmi	2018	Development of stronsium- hallosite Nano clay coating on ti alloy as a primary layer for ortopedic application
49.	Debidutta Pradhan	2019	Perturbed Solitonic Excitation in DNA Double Helix
50.	Kathiravan G	2019	Development of Sm-HAP/HNTs Composite on Ti-6Al-4V alloy for Orthopaedic Applications
52.	T.Ramya Barathy	2019	Propagation of Periodic and Parabolic soliton in the ferromagnetic nanowire system
53.	Seema S	2019	Propagation of Vector Solitary Wave Excitation in DNA Double Helix Under the Influence of Twisting
54.	R. Suganthi	2019	Fabrication of Strontium Substituted Hydroxyapatite/ Poly-O-anisidine Composite Coating on Titanium for Biomedical Applications
55.	Akshai Kumar	2019	Naturally Produced Hydroxyapatite from country hen eggshells and K ₂ HPO ₄ solution and Zn substituted for biomedical applications
56.	Surya	2019	Kink-Antikink pair collision of Modified Nonlinear Schrodinger Equation for Alfven Wave propagation along magnetized cold plasma
57.	Vaishnavi B	2020	Modulational Instability and exact soliton solution for a twisted Peyrard-Bishop -Dauxois model of Deoxyribonucleic acid (DNA)
58.	Jesmary K J	2020	Soliton propagation in Deoxyribonucleic acid
59.	Amrutha	2020	Electron acoustic solitary waves in unmagnetized plasma with superthermal electrons
60.	Annam S	2022	Soliton dynamics of DNA under the influence of Stacking Interaction
61.	Sahana M	2023	The Dynamics of Stoke viscous interaction on DNA double helix
62.	Kiruthika	2023	The Effect of Hydrodynamics viscous force on the soliton dynamics of the DNA molecules.

(VII). Lectures delivered at other Institutions on invitation.

1. Delivered a Lecture on ‘Nonlinear spin excitations in Heisenberg ferromagnets with higher order interactions’ on 25 April 2005 at the Max-Planck Institute for the Physics of Complex systems (MPIPKS), Germany.
2. Delivered a Lecture on ‘A general perspective of Nonlinear Dynamics’ in the recent trends in Physical Sciences research held at Department of Physics, Periyar University, Salem on 28 March 2005.

3. Delivered Two Lectures on the ‘Introductory aspects of Nonlinear Dynamics and soliton excitations’ on 25 and 27 January 2006 at Idhya College for Women, Kumbakonam.
4. Delivered a Lecture on ‘Switching of solitons in an inhomogeneous Heisenberg ferromagnet with Gilbert damping’ in the workshop on discrete breathers held at MPIPKS, Germany on 10 June 2006.
5. Delivered a Lecture on ‘Soliton spin excitations in nonlinear systems’ on 12 February 2007 at Trinity College for women, Namakkal.
6. Delivered a Lecture on the ‘Present and Future perspectives of Nonlinear Dynamics’ as part of the science Day Celebrations on 28 Feb 2007 at PKR College of Arts and Science, Gobichettypalayam.
7. Delivered a Lecture on the ‘Nonlinear Dynamics- The present scenario’ at the national conference on recent developments in Physics held at the Sacred Heart College, Triupattur on 13 September 2007.
8. Delivered a talk on ‘Nonlinear Spin Dynamics’ in a refresher course held at the UGC-academic staff college, Bharathidasan University, Trichy on 11 March 2008.
9. Delivered a talk on ‘Evolution of Magnetism and Birth of Solitons’ at the meeting held by Association for Physical Sciences, Sri Saradha College for Women, Salem on 11 February 2010.
10. Delivered a talk on ‘Ultra fast switching using flipping solitons’ at a national conference held at the Government College for Men, Krishnagiri on 09 April 2010.
11. Invited as a Speaker in the International Workshop on Maths & Air held at University of Zaragoza, Spain during 16-18 June 2010.
12. Invited Speaker and Research Collaboration on the development of Nano biomaterials held at University of Aveiro, Portugal during 19-23 June, 2010.
13. Invited as a Speaker in the International Conference on Symbolic Computation and its applications held at University of Maribor, Slovenia during 30-02 July 2010.
14. Invited as a speaker in the 3rd International Symposium on Nonlinear Dynamics held at Shanghai, China during 25-28 September 2010.
15. Invited as a speaker in the 16th International Conference on Mathematical Modelling and Analysis held at University of Latvia, Sigulda, Latvia during 25–28 May 2011.
16. Invited as a speaker in the 7th International Conference on Applied Mathematics and Scientific Computing held at University of Zagreb, Trogir, Croatia during 13–17 June 2011.
17. Delivered an invited lecture on “Nonlinear Spin Dynamics in Ferromagnets” organized by Centre for Nonlinear Dynamics, School of Physics, Bharathidasan University, Tiruchirappalli on 14th August 2014.
18. Delivered an invited lecture on “Localized discrete breather modes in neuronal microtubules” in the International Conference on Physiology and Medicine organized by Department of Zoology, Periyar University, Salem during 15th-17th October 2014.
19. Delivered two lectures on “Nonlinear bio energy transport in biological systems (i) Microtubules (ii) Hydrogen bonded systems”, in the Refresher Course on “Current

Trends in Physics (CTP-2015)” organized by School of Physics and Academic Staff College, Madurai Kamaraj University, Madurai, on 16th February 2015.

20. Delivered an invited lecture on “Collisional dynamics of electromagnetic soliton in ferromagnetic nanowire” in the International Conference on advanced materials science and technology (ICAMST-2017) organized by Department of Physics, Bannari Amman Institute of Technology, Sathiyamangalam, Erode, Tamil Nadu during 17th-19th August 2017.
21. Delivered an invited lecture on “Electromagnetic solitons in ferromagnetic nanowires” in Half a day FDP organized by Academic Staff College, Vellore Institute of Technology (VIT), Vellore, Tamil Nadu on 16th August 2018.
22. Delivered an invited lecture on “Investigate the propagation of pulse solitary wave in fluid filled elastic tube with a cosine shaped stenosis using nonlinear dynamical equations ” in the International Conference on Recent Trends in Applied Science and Technology (ICRTAST-2018) organized by Department of Chemistry, Periyar University, Salem, Tamil Nadu during 23rd -25th August 2018.
23. Delivered keynote talk on International women’s day Celebration-8 th March 2023 at Swami Dayananda College of Arts and Science, Thiruvavur, Tamil Nadu.

(VIII). Academic visit to foreign countries.

Countries Visited: Germany, France, Italy, Spain, Switzerland, United States of America, Portugal, Slovenia, Croatia, Latvia, Austria, Poland and Hungary.

Countries visited	Duration	Fellowship	Purpose of Visit
The Abdus Salam International Centre for Theoretical Physics, Italy	11 May -03 July 2015	Regular Associate	Research
Paris, France	21 June 2015	----	Participated and Presented papers in 2 nd International Conference on Recent Advances in Medical Science (ICRAMS-2015),
Paris, France	21 June 2015	---	Participated and Presented papers in International Conference on Recent Innovations

			in Science, Engineering and Technology (ICRISET-2015)
Alicante, Spain	16-18 June 2015	---	Participated and Presented papers in 3 rd Euro Congress and Expo on Dental & Oral Health
Zurich, Switzerland	10-12 June 2015	---	Participated in International Conference on Ultrafast Structural Dynamics (ICUSD-2015)
Venice, Italy	20-22 May 2015	---	Participated and presented paper in European Conference on Heat Treatment & 22 nd IFHTSE Congress
The Abdus Salam International Centre for Theoretical Physics, Italy	11-15 May 2015	---	Participated in Workshop on Materials Science for Energy Storage (smr 2758)
The Abdus Salam International Centre for Theoretical Physics, Italy	03 May -15 July 2011	Junior Associate	Research
University of Latvia, Sigulda, Latvia	25 – 28 May 2011	---	Invited Speaker for the 16 th International Conference on Mathematical Modelling and Analysis

Central European University, the Hungarian Academy of Sciences, Budapest, Hungary	6 – 10 June 2011	---	Presented a talk in the International School and Conference on Network Science
University of Zagreb, Trogir, Croatia	13 – 17 June 2011	---	Invited Speaker for the 7 th International Conference on Applied Mathematics and Scientific Computing
Institute of Mathematics of the Polish Academy of Sciences, Poland	28 June – 02 July 2011	---	Presented a poster in the 8 th European Conference on Mathematical and Theoretical Biology
Erwin Schrödinger Institute, Vienna, Austria	03-08 July 2011	---	ESF-EMS-ERCOM Conference on Completely Integrable Systems and Applications
The Abdus Salam International Centre for Theoretical Physics, Italy	02 May -27 July 2010	Junior Associate	Research
University of Zaragoza, Spain	16 – 18 June 2010	---	Invited Speaker for the International Workshop on Maths & Air
University of Aveiro, Portugal	19 – 23 June 2010	---	Invited Speaker and Research Collaboration on the development of Nano biomaterials

University of Maribor, Slovenia	30 – 02 July 2010	---	Invited Speaker for the International Conference on Symbolic Computation and its applications
University of Ljubljana, Slovenia	02 – 03 July 2010	---	Informal Discussion for research collaboration
The Max-Planck Institute for the Physics of Complex Systems, Germany	20 April 2005- 18 Aug 2005 and 03 May 2006 to 30 June 2006	Postdoctoral Position	Collaborative research
The Abdus Salam International Centre for Theoretical Physics, Italy	01-31 May 2003	Guest Scientist	Research
The Abdus Salam International Centre for Theoretical Physics, Italy	02 May -29 July 2002	Young Collaborator	Research
The Cergy-Pontoise University, France	27-30 June 2002	Visiting Scientist	Research and Interaction
SIDE IV, France	21-26 June 2002	---	Conference and Paper Presentation
The Duke University, Durham, USA	20-22 May 2002	---	Conference and Paper Presentation

(IX). Faculty Improvement training undertaken:

Name of the Course	Place	Period	Sponsor	Field of Specialization
Refresher Course	Gandhigram rural Institute, Dindigul	21 days 27 November-17 December 2003	UGC	Physics
Geographical Information Systems (GIS)	NRSA (ISRO) Hyderabad	26 days 01-26 Sep 2003	NRSA (ISRO)	GIS
Intel teach to the Future	Lady Doak College	3 months July – September 2002	Microsoft	Teaching using computers
ERDAS software	Lady Doak College	10 days 12-22 March 2003	ERDAS India Ltd.	Remote sensing And Digital Image processing
FLASH Software	Lady Doak College	7 days 04-11 August 2004	LDC	Effective teaching
Orientation course	Pondicherry University	28 days January 09 – February 05 2009	UGC	---
Refresher Course in Material Sciences	Pondicherry University	21days 03-23, March 2010	UGC	---
Faculty Development Programme Globalisation, Communication and Life Skills: Problems, Perspectives and Future Directions	Department of English, Periyar University Salem	8 days 14– 21 December 2016	Department of English, Periyar University	Effective teaching

(X). Research Collaborators:

S. No	Name	Institute
1.	J.H. He	Donghua University, Shanghai, China.
2.	Prof.A. Farmany	Islamic Azad University, Ilam Branch, Iran
3.	Prof.Dr.C.B. Tabi	University of Yaoundé, Cameroon.
4.	Prof.Dr.Miljko V. Sataric	Faculty of Technical Sciences, Serbia.
5.	Prof.Dr.Slobodan Zdravkovic	Faculty of Technical Sciences, University of Pritina, Kosovska Mitrovica, Serbia.

6.	ICTP	The Abdus Salam International Centre for Theoretical Physics, Italy.
7.	Prof. M. Daniel	Centre for Nonlinear Dynamics, School of Physics, Bharathidasan University, Tiruchirappalli, Tamil Nadu, India.
8.	Prof.Dr.Adam Marlewski	Institute of Mathematics, Poznan University of Technology, Poznan, Poland
9.	Prof.Dr.Mohamadou Alidou	University of Douala, Cameroon
10.	Woo-Pyo Hong	Catholic University of Daegu, Gyunbuk, South Korea.
11.	Prof.Dr.Marcello Acquarone	University of Parma, Parma, Italy.
12.	Antonio Moro	SISSA, Trieste, Italy.
13.	Prof.Dr.Rodrigo A. Vicencio	University of Chile, Santiago, Chile.
14.	Prof.Dr.Ceicilia Ventura	University Nacional de Rio Negra, Centro Atomico Bariloche, Argentina.
15.	Prof. Dr.M.T. Darvishi	Razi University, Kermanshah, Iran.
16.	Prof.Dr.O.Kuzmanovska-Barandovska	Department of Physics, Faculty of Natural Sciences and Mathematics, Skopje, Macedonia
17.	Runliang Lin	Department of Mathematics, Tsinghua University, Beijing, P.R.China
18.	Dr. F. Khani	Young Researchers Club, Islamic Azad University, Ilam Branch, Iran.
19.	Prof. Dr.Donatien Toko	Laboratory of Mechanics, Department of Physics, Faculty of Science, University of Yaounde I, Yaounde, Cameroon
20.	Dr. Rosalie L Woulache	The Abdus Salam International Centre for Theoretical Physics, Strada Costiera 11, I-34014, Trieste, Italy
21.	Timoleon C Kofane	Laboratory of Mechanics, Department of Physics, Faculty of Science, University of Yaounde I, Yaounde, Cameroon
22.	M. Najafi	Department of Physiology, Faculty of Medicine, Kermanshah University of Medical Sciences, Kermanshah, Iran.
23.	Saïdou Abdoukary	Département des Sciences Physiques, Ecole Normale Supérieure, Université de Maroua, Maroua, Cameroon
24.	Tibi Beda	Ecole Nationale Supérieure Polytechnique, Université de Yaounde I, Yaoundé, Cameroon
25.	Prof. Dr.Serge Y. Doka	Département des Sciences Physiques, Ecole Normale Supérieure, Université de Maroua, Maroua, Cameroon
26.	Dr. Fabien II Ndzana	Laboratory of Mechanics, Department of Physics, Faculty of Science, University of Yaounde I, Yaounde, Cameroon
27.	Prof. Dr.Jovana Petrovic	Institut za nuklearne nauke Vinc̃a, Univerzitet u Beogradu, Poštanski fah 522, 11001 Beograd, Serbia
28.	Prof.Dr.Marie Danielle Fendji	Faculty of Science, Department of Physics, University of Ngaoundere, Ngaoundere, Cameroon
29.	Prof. Dr.J. Yves. Effa	Faculty of Science, Department of Physics, University of Ngaoundere, Ngaoundere, Cameroon

30.	Prof. Dr.C. G. L. Tiofack	Faculty of Science, Department of Physics, University of Yaounde I, Yaounde, Cameroon
31.	Prof. Dr.B. Z. Essimbi	Faculty of Science, Department of Physics, University of Yaounde I, Yaounde, Cameroon
32.	Prof. Dr. J.M.F. Ferreira	Centre for research in ceramic and composite materials (CICECO), University of Aveiro, Portugal
33.	Prof. Dr.El-Sayed M. Sherif	Center of Excellence for Research in Engineering Materials (CEREM), Advanced manufacturing Institute, King Saud University, Saudi Arabia
34.	Prof. Dr. D. Gopi	Department of Chemistry, Periyar University, Salem, India.
35.	Dr. Jishnu Dwivedi and Dr. Pramod R	Raja Ramana Centre for Advanced Technology, Indore, India.
36.	Prof. Dr. T.S. Sampath Kumar	Department of Metallurgical and Materials Engineering, Indian Institute of Technology, Chennai, India.
37.	Prof. Dr. U. Kamachi Mudali	Corrosion Science and Technology Division, Indira Gandhi Centre for Atomic Research, Kalpakkam, India.
38.	Dr. Ramaseshan	Thin film and Coatings Section, Surface and Nanoscience Division, Indira Gandhi Centre for Atomic Research, Kalpakkam, India.
39.	Dr. Alain LARGETEAU	Institut de chimie de la matiere condensee de Bordeaux (I.C.M.C.B.-C.N.R.S.), France.
40.	Dr. N. Rajendiran	Department of Polymer Science, University of Madras, Chennai, Tamilnadu, India
41.	Dr. S. Kannan	Centre for Nano Sciences & Technology Madanjeet School of Green Energy Technologies, Pondicherry University, Pudhucherry.
42.	Prof. Dr. Awadesh Mani	Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam-Tamil Nadu, India

(XI). Member in the Board of examiners

- Academic Council member in Periyar University, Salem
- Mother Teresa Women's University, Kodaikanal
- Bharathidasan University, Tiruchirapalli
- Periyar University, Salem
- Madurai Kamaraj University, Madurai
- Madras University, Chennai
- Pondicherry University, Pondicherry
- Manonmanium Sundaranar University, Tirunelveli
- Annamalai University, Annamalainagar
- Central University of Tamil Nadu, Thiruvarur

(XII). Active Reviewer for the following journals

- Physica Scripta
- Journal of Cell Biochemistry and Biophysics
- Physica B
- British Journal of Mathematics and Computer Science

- Mathematical Problems in Engineering
- Mathematical Biosciences
- Ain Shams Engineering Journal
- Journal of the Association of Arab Universities for Basic and Applied Sciences
- European Physical Journal: D
- Wave Motion
- Journal of Magnetism and Magnetic Materials
- European Physical Letters
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