



GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS)

KUMBAKONAM – 612 001

Affiliated to Bharathidasan University

DST - CURIE Sponsored Institution

IV Cycle of Accreditation

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CRITERION III – RESEARCH, INNOVATIONS AND EXTENSION

3.3 INNOVATION ECOSYSTEM

3.3.1: Initiatives for the creation and Transfer of Knowledge/Technology

RESEARCH CENTRE



CENTRE FOR NONLINEAR SCIENCE (CeNSc)

PRIMARY

Centre for Nonlinear Science (CeNSc) – Two Decades of Excellence in Research

Centre for Nonlinear Science (CeNSc) was established in the year 2005 under the auspices of the Department of Science and Technology with a seed grant of Rs.8 Lakhs. The focus of the CeNSc is to investigate the impact of nonlinearity in different branches of physics like hydrodynamics, optics, condensed matter physics etc. Situated in a semi urban area which stands isolated from hardcore research activities, CeNSc has grown into a full fledged premier research institute with special emphasis on “Theoretical Physics/ Nonlinear Dynamics” on the lines of Institute of Mathematical Sciences , (IMSc), Chennai in a span of two decades. CeNSc has so far completed ten major sponsored research projects funded by DST, UGC, DAE-NBHM and CSIR worth to the tune of around 2 crores and has entered into thriving collaboration with leading institutes in India and abroad.

**SPONSORED PROJECTS HISTORY**

S.No.	Funding Agencies	Title of the Project	Duration	Amount
1.	DST- CURIE	DST Consolidation of University Research for Innovation and Excellence in Women Universities (CURIE)	(2022- 2025). (Ongoing)	Rs. 40,95,360/-
2.	DAE-NBHM	Investigation of PT-Symmetric and non PT-Symmetric variable coefficient Nonlinear Schrodinger type equations	2021-2024 (Ongoing)	Rs. 15,87,400/-
3.	CSIR	Exploring the Ultracold Atom Dynamics Through PT Symmetry	2019-2022. (Completed)	Rs. 35,68,910/-
4.	DAE-NBHM	A New Algorithm to study the variable coefficient Gross-Pitaevskii (GP) Type equations	2015-2018 (Completed)	Rs. 13,72,000/-
5.	CSIR	“Ultra cold atoms dynamics through a versatile analytical and Numerical approach	2015-2018 (Completed)	Rs. 11,50,000/-
6.	DST	Dynamics of Bose Einstein condensates with both short range and Long range interactions	2013-2015 (Completed)	Rs.12,44,400/-
7.	UGC	Penetrating into the domain of the Bose Einstein Condensates	2011-2014 (Completed)	Rs. 9,36,800/-
8.	DAE – NBHM	Exploring the dynamics of Bose- Einstein Condensates through a new analytical approach	2011-2014 (Completed)	Rs. 11,68,180 /-
9.	DST	Identification of Localized Excitations in Bose-Einstein condensates and their Interaction	2008-2011 (Completed)	Rs. 10,16,148/-
10.	UGC	Minor Research Project	2008-2010 (Completed)	Rs. 80,000/-
11.	DST	Localized Coherent Excitations in (2+1) Dimensional Nonlinear Systems	2005-2008 (Completed)	Rs. 8,10,600/-

**IT INFRASTRUCTURE AT CeNSe**

S.No	Workstations with details	Configurations	NUMBER	Rate
1.	I9 Workstation	Intel Core i9 @9980x Processor, LGA 2066 X299 Series Motherboard, 64GB DDR 3000 RAM (4*16GB), 1 TB SSD Hard drive, 2 TB SATA Harddisk@7200RPM, Liquid Cooler(H100i), Nvidia Geforce GTX-1660 6G Graphics, Corsair 175R Cabinet, USB Keyboard & Optical Mouse, 27" 4k LED Monitor	1	3,05,500/-
2.	Z600 Workstation	Intel XEON E5607 2.26 SMB / 10664C CPU-1 Intel XEON E5607 2.26 SMB / 10664C CPU-2	1	1,97,000/-
3.	Z620 Workstation	HP Z640 Country Kit, HP Z 620 800W 90 Percent Efficient Chanis, HP Single Unit Packaging, 16GB DDR3 RAM, 1TB, 7200 RAM SATA HDD, HP USB Keyboard and Optical Mouse, Nivida QUADRO 410 512MB Graphics Card, HP 20" LED Monitor	1	3,56,400/-
4.	Z640 Workstation	HP Z640 Country Kit, HP Z640 9254 90 Percent Efficient Chanis, HP Linux Installer Kit, HP Single Unit Packaging 2k intel Xeon E5-2620V96 Core Processor @ 2.4GHz 1TB 7200 RPM SATA 1 st HDD 32GB DDR-2139(2*16GB) 2CPU registered RAM Nvidia 1 GB Graphics Card HP USB Keyboard, HB USB 1000DDPI Laser mouse 9.5 MMSLIM DVD-ROM 1 st ODD HP	1	3,49,000/-
5.	Book - Pro	Apple Mac	1	1,00,000/-
6.	Scanner	Cannon Scanner	1	3,900/-
7.	Laptop	HP Pavilion Laptop	1	53,499/-
8.	I Pad	Apple I pad	1	90,800/-
9.	Printers	<ul style="list-style-type: none"> ➤ CANON LBP3300 DUPLEX PRINTER ➤ EPSON L3150 All in one Ink Tank Printer ➤ CANON IMAGE CLASS MF 4890 dw 	3	11,000/- 13,800/- 42,000/-
10	Xerox Machine	SHARP AR 5516 Digital MFD	1	37,856/-
11	Fax Machine	BROTHER Fax Cum Telephone Sno C8K 446002	1	6,200/-
12	Air Conditioner	LG Air Condition (Model: LSB24K1RAB1)	1	35,500/-
13	UPS	Microtek on-line UPS Max + 3KVA/72VDC ISO TX (Serial Nos: 23B20C4B34D00711)	1	1,12,000/-



PUBLICATIONS

International		National		Others
Journals	Conferences	Journals	Conferences	Books / Chapters / Monographs / Manuals
77	5	1	2	-

LIST OF PUBLICATIONS

(a) Journals

- R. Radha** and M. Lakshmanan, "Multisoliton generation in inhomogeneous nonlinear Schrödinger and Heisenberg Spin Systems", *Chaos, Solitons and Fractals* **4**, 181 (1994).
- R. Radha** and M. Lakshmanan, "Singularity analysis and bilinear form of a (2+1) dimensional nonlinear Schrödinger (NLS) equation", *Inverse Prob.* **10**, L29 (1994).
- R. Radha** and M. Lakshmanan, Singularity analysis and localized coherent structures in (2+1) dimensional generalized Korteweg-de Vries equations, *J.Math.Phys.* **35**, 4746 (1994).
- R. Radha** and M. Lakshmanan, "Dromion like structures in the (2+1) dimensional breaking soliton equation", *Phys. Lett. A* **197**, 7 (1995).
- R. Radha** and M. Lakshmanan, "On the integrability and singularity structure aspects of deformed nonlinear evolution equations of AKNS type", *J.Phys. A* **28**, 6977 (1995).
- R. Radha** and M.Lakshmanan, "The (2+1) dimensional Sine-Gordon equation: integrability and localized solutions", *J. Phys. A* **29**, 151 (1996).
- R. Radha** and M. Lakshmanan, "Localized coherent structures and integrability in a generalized (2+1) dimensional nonlinear Schrodinger (NLS) equation", *Chaos, Solitons and Fractals* **8**, 17 (1997).
- R. Radha** and M. Lakshmanan, "Exotic coherent structures in the (2+1) dimensional long dispersive wave (2LDW) equation", *J.Math. Phys.* **38**, 292 (1997).
- R. Radha** and M. Lakshmanan, "A new class of induced localized coherent structures in the (2+1) dimensional nonlinear Schrödinger equation", *J. Phys. A* **30**, 3229 (1997).
- M. Lakshmanan and **R. Radha**, "Localized coherent structures of (2+1) dimensional generalization of soliton systems", *Pramana* **48**, 163 (1997).
- R. Radha** and M. Lakshmanan, "Generalized dromions in the (2+1) dimensional Long dispersive wave (2LDW) and scalar nonlinear Schrödinger (NLS) equations", *Chaos,Solitons and Fractals* **10**, 1821 (1999).
- R. Radha**, S. Vijayalakshmi and M. Lakshmanan, "Explode-Decay Dromions in the non- isospectral Davey-Stewartson I (DSI) Equation", *J. Nonlinear Mathematical Physics* **6**, 120 (1999).
- R. Radha**, C. Senthilkumar and M. Lakshmanan, "Exponentially Localized Solutions inthe Melnikov Equation", *Chaos, Solitons and Fractals* **22**, 705 (2004).
- R. Radha**, C. Senthilkumar, M. Lakshmanan, X.Y. Tang and S.Y. Lou, " Periodic and Localized solutiions of the Long Wave-Short Wave Resonance interaction equation", *J. Phys. A: Math. Gen.* **38**, 9649 (2005).
- R. Radha**, and S.Y. Lou, "Integrability and Novel Localized Solutions in the (2+1) dimensional generalized sasa-satsuma equation", *Physica Scripta* **72**, 432 (2005).
- R. Radha**, X.Y. Tang and S.Y. Lou, "Painleve Truncation Method - A unified approach to exact solutions and Dromion Interactions of (2+1) Dimensional Nonlinear Systems", *Z. Naturforsch* **62**, 107 (2007).
- R. Radha** and V. Ramesh Kumar, "Explode-Decay Solitons in the Generalized



- Inhomogeneous Higher order Nonlinear Schrodinger equations”, *Z. Naturforsch* **62**, 381 (2007).
18. **R. Radha** and V. Ramesh Kumar, “Bright Matter wave solitons and their collision in Bose-Einstein condensates”, *Phys. Lett. A* **370**, 46 (2007).
 19. **R. Radha** and V. Ramesh Kumar, “Gauge equivalence of Gross-Pitaevskii equation and the Equivalent Heisenberg Spin Chain”, *Physica Scripta* **76**, 431 (2007).
 20. **R. Radha**, “Induced explode –Decay Dromions in the nonisospectral (2+1) Nonlinear Schrodinger Equation”, *European Physical Journal D* **45**, 317 (2007).
 21. V. RameshKumar, **R. Radha** and Prasanta K. Panigrahi, “Dynamics of Bose-Einstein condensates in a time dependent trap”, *Phys. Rev. A* **77**, 023611 (2008).
 22. **R. Radha**, V. Ramesh Kumar and K. Porsezian, “Remote Controlling the dynamics of Bose Einstein condensates under time dependent trap”, *Journal of Physics A* **41**, 315209 (2008).
 23. V. RameshKumar, **R. Radha**, M. Wadati, “Collisions of soliton in the Electromagnetically induced Transparency”, *Phys. Rev. A (Rapid Commun)* **78**, 041803R, (2008).
 24. C. Senthilkumar, **R. Radha** and M. Lakshmanan, “Trilinearization and Localized solutions of (2+1) dimensional K-dV and NNV equations”, *Chaos, Solitons and Fractals* **39**, 942 (2009).
 25. **R. Radha**, C. Senthil Kumar, M. Lakshmanan and C. R. Gilson, “The Collision of multimode dromions and a firewall in the two component long wave short wave resonance interaction Equation”, *Fast Track Communications, J. Phys. A* **42**, 102002 (2009).
 26. V. Ramesh Kumar, **R. Radha** and Prasanta K. Panigrahi, “Matter wave interference pattern in the collision of bright solitons”, *Phys. Lett. A* **373**, 4381 (2009).
 27. **R. Radha** and V. Ramesh Kumar, “Interplay between Nonlinearity and Dispersion in the Femtosecond NLS equation”, *Z. Naturforsch A* **65a**, 1 (2010).
 28. **R. Radha**, V. Ramesh Kumar and Miki Wadati, “Line Soliton Dynamics and Stability Bose- Einstein Condensates in (2+1) GP equation”, *J. Math., Phys* **51**, 043507 (2010).
 29. V.Ramesh kumar, **R. Radha**, and Miki Wadati, “Phase Engineering and Solitons of Bose Einstein Condensates with Two and Three Body Interaction”, *J. Phys. Soc. Jpn* **79**, 074005 (2010).
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 31. **R. Radha**, V.Ramesh Kumar, Miki Wadati, “Collision of Bright Vector Solitons in Two component Bose Einstein Condensates”, *Phys. Lett. A* **374**, 3865 (2010).
 32. H. J. Shin, **R. Radha**, V. Ramesh Kumar, “Bose-Einstein Condensates with spatially inhomogeneous interaction and bright solitons”, *Phys. Lett. A* **375**, 2519 (2011).
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 34. J.B. Sudharsan, **R. Radha** and P.Muruganandam, “Collisionally inhomogeneous Bose Einstein Condensates with both binary and three body interactions in a bichromatic optical lattice” . *J. Phys. B:At. Mol. Opt. Phys.* **46**, 015302 (2013).
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 36. J.B. Sudharsan, **R. Radha** and A.Nicolin, “Faraday waves in Cigar shaped BEC with radially inhomogeneous scattering lengths”, *Rom. Rep. Phys* **65**, 820 (2013).
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41. A. Balaz, R. Paun, A.I. Nicolin, J. B. Sudharsan, R. Radha, “ Faraday waves in collisionally inhomogeneous Bose-Einstein condensates”, *Phys. Rev. A*, **89**, 023609 (2014).
42. V. Ramesh Kumar, Lin Wen, **R. Radha** and W. M. Liu, “Splitting and recombination of 2d matter-wave solitons in a transient trap”, *Rom. Rep. Phys.* **66**, 443 (2014).
43. **R. Radha**, P.S.Vinayagam, “An analytical window into the world of Ultracold atoms”, *Rom. Rep. Phys.* **67**, 89 (2015).
44. P. S. Vinayagam, **R. Radha**, Vivek M. Vyas and K.Porsezian, “Generalized gauge transformation approach to construct dark solitons of coupled Nonlinear Schrodinger type equations”, *Rom.Rep. Phys.* **67**, 3 (2015).
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51. P. S. Vinayagam, **R. Radha**, S. Bhuvaneshwawri, R. Ravishankar and P. Muruganandam, “Bright soliton dynamics in Spin Orbit-Rabi coupled Bose-Einstein Condensates”, *Communications in Nonlinear Science and Simulations* **50**, 68, (2017).
52. P. S. Vinayagam, **R. Radha**, A. K. Usama and L. Ling, “Collisional dynamics of solitons in the coupled PT symmetric nonlocal nonlinear Schrödinger equations”, *Communications in Nonlinear Science and Simulations* **52**, 1, (2017).
53. H. Frabrelli, J. B. Sudharsan, **R. Radha**, A. Gammal, and Boris A. Malomed, “Solitons under spatially localized cubic-quintic-septimal nonlinearities”, *J. Optics* **19**, 7, (2017).
54. P. Albares, P. G. Estevez, **R. Radha** and R. Saranya, “Lumps and Rogue waves of Generalized Nizhnik Novikov Veselov Equation”, *Nonlinear Dynamics* **90**, 2305, (2017).
55. P. S. Vinayagam, **R. Radha**, U. Al Khawaja, Liming Ling, “New classes of solutions in the Coupled PT Symmetric Nonlocal Nonlinear Schrodinger Equations with Four Wave Mixing”, *Communication in Nonlinear Science and Numerical Simulation* **59**,



- 387 (2018).
56. **R. Radha**, C. SenthilKumar, R. Saranya, “Inelastic Dromions, Rogue Waves and Lumps of (2+1) dimensional Long Dispersive Wave Equation”, *Wave Motion* **85**, 114 (2019).
 57. **R Radha** , C. Senthil Kumar, K. Subramanian, T. Alagesan, “Drone like Dynamics of Dromion Pairs in the (2+1) AKNS equation”, *Computers and Mathematics with Applications* **75**, 2356 (2018).
 58. **R. Radha**, C. SenthilKumar, “Digging into the Elusive Localized solutions of (2+1) dimensional sine-Gordon equation” , *Z. Naturforschung A* **73**, 415, (2018).
 59. T. A. Gadzhimuradov, A. M. Agalarov, **R. Radha**, B. Tamil Arasan, “Dynamics of solitons in the fourth-order nonlocal nonlinear Schrödinger equation”, *Nonlinear Dynamics* **99**, 1295 (2019).
 60. V. Rajadurai, V. Rameshkumar, **R. Radha**, “Multiple bright and dark solitons in three component spinor Bose-Einstein condensates”, *Phys. Lett. A* **384**, 126163 (2019).
 61. S. Sabari, O.T. Lekeufack, **R. Radha**, T.C. Kofane, “Interplay of three-body and higher- order interactions on the modulational Instability of Bose-Einstein Condensate” *JOSA B* **37**, A54 (2020).
 62. Tamil Arasan Bakthavatchalam, Suriyadeepan Ramamoorthy, Malaikannan Sankarasubbu, **R.Radha**, VijayalakshmiSethuraman, “Bayesian Optimization of Bose-Einstein Condensates”, **Scientific Reports (Nature)** **11**, 5054 (2021).
 63. S. Bhuvaneswari, R. Muthuganesan and **R. Radha**, “Robustness of measurement-induced correlations under decoherence effect”, *Int. J Theor. Phys.* **60**, 2145 (2021).
 64. S. Bhuvaneswari, R. Muthuganesan and **R. Radha**, “Spotlighting Quantum Phase Transition in Spin -1/2 Ising-Heisenberg Diamond Chain Employing Measurement-Induced Nonlocality”, *Physica A* **573** , 125932 (2021).
 65. S. Sabari, R. Tamil Thiruvalluvar, **R. Radha**, “Modulation instability of spin-orbit-coupled Bose-Einstein condensates in discrete media”, *Phys. Lett. A* **418**, 127696 (2021).S. Bhuvaneswari, R. Muthuganesan and **R. Radha**, “Signatures of intrinsic decoherence and weak measurements on quantum correlations”, *Laser Phys. Lett.* **19**, 015204 (2022).
 66. Sabari Subramaniyan, Kishor Kumar Ramavarmaraja, **R. Radha**, and Boris A Malomed “Interplay between binary and three-body interactions and enhancement of stability in trapless dipolar Bose-Einstein condensates”, *Applied Sciences* **12**, 1135 (2022).
 67. **R. Radha**, C. SenthilKumar, “Localized excitations and their collisional dynamics in (2+1) dimensional Broer-Kaup-Kupershmidt equation” , *Romanian Reports in Physics* **74**, 104 (2022).
 68. Tamil Arasan Bakthavatchalam, Selvakumar Murugan, Suriyadeepan Ramamoorthy,Malaikannan Sankarasubbu, **R. Radha**, Boris A. Malomed and Vijayalakshmi Sethuraman, “Primer on solving differential equations using Machine learning techniques”, *Romanian Report in Physics* **74**, 113 (2022).
 69. S. Sabari, R. KishorKumar, **R. Radha**, P. Muruganandam, “Stability of Polariton-ExcitonBose-Einstein Condensate”, *Phy. Rev. B* 105, 224315 (2022).
 70. S. Bhuvaneswari, R. Muthuganesan and **R. Radha**, “Quantum correlations and coherencein Unruh-deWitt detector”, *Physica A* **604**, 127934 (2022)
 71. P. Naveena, S. Bhuvaneswari, R. Muthuganesan and **R. Radha**, “Quantum correlations in mixed spin-(1/2,1) Heisenberg dimer”, *Journal of Magnetism and Magnetic Materials* **563**,169863 (2022).
 72. **R. Radha**, Sudhir Singh, C. Senthil Kumar and Sen Yue Lou, “Elusive Exotic



- Structures and their Collisional Dynamics in (2+1)-Dimensional Boiti-Leon-Pempinelli Equation”, *Physica Scripta* **97**, 125211 (2022).
73. R. Muthuganesan, S. Bhuvaneshwari, and **R. Radha**, “Characterizing nonclassical correlations of tensorizing states in a bilocal scenario”, *Quantum Inf. Process* **22**, 44 (2023).
74. S. Bhuvaneshwari, R. Muthuganesan and **R. Radha**, “Thermal quantum correlations and Teleportation in a Graphene Sheet”, *Applied Physics B* **129**, 73 (2023).
75. B. Tamizharasan, S. Meiyazhagan, **R. Radha**, S. Vijayalakshmi and B. A. Malomed, “Data-driven Multi-valley Dark Solitons of Multi-component Manakov Model using Physics-Informed Neural Networks”, (*Chaos, Solitons and Fractals*, 172, 113509, 2023).
76. K. Rajaswathi, S. Bhuvaneshwari, **R. Radha** and P. Muruganandam, “Dispersion engineering in spin-orbit coupled spinor condensates driven by negative masses” (*Phys.Rev.A*.108,033317, 2023).

(b) Conference Proceedings:

- 1) **R. Radha** and B. Tamilarasan, Analytical signature of ultra cold atoms, at “Recent Trends in Material Sciences” Annamalai University, Chidambaram, on 30th Oct 2018.
- 2) V. Ramesh Kumar, **R. Radha** and Miki Wadati, Collision of solitons in the Electromagnetically Induced Transparency, International Conference on Cold Atoms (ICCA), pp. 21, Dec.12-16 (2008), Kolkatta, India.
- 3) **R. Radha**, V. Ramesh Kumar and K. Porzejian, Remote controlling the dynamics of Bose- Einstein condensates through time dependent atomic feeding and trap, International Conference on Cold Atoms (ICCA),pp.(38-39) Dec.12-16 (2008), Kolkatta, India.
- 4) V. Rameshkumar, **R. Radha** and Prasant K. Panigrahi, Dynamics of Bose-Einstein Condensates in a Time-dependent trap, *Nonlinear Dynamics: Concepts and Applications*, Ed.M. Daniel and S. Rajasekar, (pp.129-132), 2009.
- 5) C. Senthil Kumar, **R. Radha** and M. Lakshmanan, New Localized Coherent Structures and Periodic Solutions of the (2+1) -dimensional KdV equation, *Proceedings of the National Conference on Nonlinear System and Dynamics*, RIASM, University of Madras, Chennai, India (2006) pp 7-10.
- 6) C. Senthil Kumar, **R. Radha** and M. Lakshmanan, Singularity structure Analysis and Exponentially Localized Solutions of a (2 + 1) dimensional Non-linear Evolution equation, *Proceedings of the First National Conference on “Nonlinear Systems and Dynamics”*, Center for Theoretical Studies, Indian Institute of Technology, Kharagpur, India (2003) pp 29-32.
- 7) M. Lakshmanan and **R. Radha**, Solitons and Inverse Scattering in (2 + 1) dimensions, *Proceedings of the Symposium on plasma science and Technology*, K. P. Maheswari (Ed.) (Wiley – Eastern, New Delhi, 1992).



BOOK PUBLISHED:

- P. Muruganandam and **R. Radha**, "An Introduction to Ultracold Atoms with Analytical and Numerical Methods" UK, 2023 (Under Preparation).

ACTIVITIES RELATING TO PROMOTION OF SCIENCE IN TAMIL NADU

Centre for Nonlinear Science (CeNSc), a premier research institute established by **Dr. R. Radha** came into being in 2005 under the patronage of Department of Science and Technology (DST). In a span of over a decade and a half, it has now grown into a full fledged, internationally reputed research institute with infrastructural facilities on a par with Institute of Mathematical Sciences (IMSc), Chennai. In a semi urban town like Kumbakonam which is far away from the core research activities, CeNSc is offering a huge platform for young motivated researchers to explore their potential in nonlinear science. CeNSc has so far completed eight major research projects sponsored by DST, DAE-NBHM, CSIR and UGC and there are two ongoing major research projects funded by CSIR and DAE-NBHM. **Dr. R. Radha** has so far mobilized resources to the tune of more than 1.5 crores through these projects for carrying out research in nonlinear science. CeNSc under the stewardship of **Dr. R. Radha** has entered into thriving collaborations with reputed research institutes in India and abroad (Japan, China, South Korea, New Zealand, UK, Israel, UAE, Romania, Spain, Serbia etc).

On the teaching front, **Dr. R. Radha** had recently organized a webinar on "Virtual Physics Laboratory" as a lockdown initiative and the virtual contents were uploaded in (<https://youtu.be/LYiVTFQb4Uc>) for the benefit of Physics teachers and Undergraduate/Postgraduate students.

This will certainly help Physics teachers across the country to take laboratory experiments to the doorstep of the students virtually.

**DETAILS OF BENEFICIARIES**

Name of the Student	Area of Research	Name of the University/ Institute	Present Status
V.RAMESH KUMAR	Scalar Bose - Einstein Condensates & their Dynamics	Bharathidasan University, Tiruchirappalli .	Asst.Professor, Velammal Engineering College, Chennai.
P.S.VINAYAGAM	Vector Bose -Einstein Condensates & their stability	Bharathidasan University Tiruchirappalli.	Asst.Professor, PSG College of Arts and Science, Coimbatore.
J.B.SUDHARSAN	Collisionally Inhomogenous Bose-Einstein Condensates	Bharathidasan University Tiruchirappalli.	Asst.Professor, Chennai Institute of Technology(CIT), Chennai.
Mr.V. RAJADURAI	Spinor Bose Einstein Condensates	Bharathidasan University Tiruchirappalli.	
Dr.R.TAMIL THIRUVALLUVAR	BECs in Discrete Media (Post Doctoral Fellowship)	Bharathidasan University Tiruchirappalli.	
Dr.S.BHUVANESWARI	Quantum Information Science	Bharathidasan University Tiruchirappalli.	
Dr.S. SABARI	Bose Einstein Condensates with Long range interactions (Post Doctoral Fellowship)	Bharathidasan University Tiruchirappalli.	Post Doctoral Fellow, University of Sao Paulo, Brazil.
Mr.B. TAMILARASAN	Machine Learning	Bharathidasan University Tiruchirappalli.	Software Engineer, SAAMA AI Lab, Chennai
Mr.K. SUBRAMANIAN	Truncated Painleve Approach	Bharathidasan University Tiruchirappalli.	Assistant Professor, S.R.M Institute, Chennai
MS.R. SARANYA	(2+1) Nonlinear pdes	Bharathidasan University Tiruchirappalli.	
MS.G. PONMALAR	BECs in Discrete Media	Bharathidasan University Tiruchirappalli.	
MR.C. SENTHIL KUMAR	(2+1) Dimensional Soliton	Bharathidasan University Tiruchirappalli.	Professor & Head Vinayaka Mission's Deemed University, Salem.



TIE - UPS AND COLLABORATIONS:

(a). International Collaboration

- 1) Shanghai Jiao Tong University Shanghai, China
- 2) University of Tokyo, Tokyo, Japan
- 3) University of Glasgow, UK
- 4) Univerdity of Kung Kee, Seoul, South Korea
- 5) Univerdity of Bucharest, Romania
- 6) University of Serbia, Serbia
- 7) University of Beijing, Chinese Academy of Sciences, Beijing, China
- 8) University of Sau Paulo, Brazil
- 9) University of Tel Aviv. Israel
- 10) University of Salamanca, Spain
- 11) University of AL Ain, UAE
- 12) Institute of Physics, Russian Academy of Science, Makhachkala 367 003, Russia
- 13) University of Cameroon, Cameroon, South Africa
- 14) University of Dunedin, New Zealand

(b). National Collaboration

- 1) IMSc, Chennai.
- 2) IISER, Kolkata.
- 3) Central University of Pondicherry, Pondicherry.
- 4) Bharathidasan University, Tiruchirappalli.
- 5) SASTRA, Thanjavur
- 6) Presidency College, Chennai
- 7) VMKVEC, Salem
- 8) SAMA Artificial intelligence Lab, Chennai
- 9) Velammal Engineering College, Chennai.



GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS)

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(c). Distinguished Visitors

S.No	Name	Country
1	Dr.Alexandru I Nicolin	University of Buharest, Romania.
2	Dr. Mihelea Carina Raportaru	University of Buharest, Romania.
3.	Prof. Yvehe Kosman Swarchbach	Ecole polytechnique, Paris.
4	Prof. M Lakshamanan	Bhatnagar Laureate 1992, Bharathidasan University, India.
5	Prof. K Prochezhian	Pondicherry University, India.
6	Dr. P Muruganandam	Bharathidasan University, India.
7	Dr .M Senthilvelan	Bharathidasan University, India.
8.	Dr. S. Lakshmi Bala	IIT, Madras
9.	Dr. Prof. R.Sriram	University of Madras
10.	Prof. V.Balakrishnan	IIT, Chennai
11.	Prof.R.Simon	IMSc, Chennai (Bhatnagar Laureate 2001)
12.	Prof. K.P.N. Murthy	IGCAR, Kalpakkam
13.	Prof. Dr. N.Bhaskaran	NIT, Tiruchirappalli



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