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Academic Qualification:

PhD Mathematics	COMSATS University Islamabad, Lahore Campus	2016
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Distinctions and Awards:

- HEC approved supervisor for PhD-level students in the field of Mathematics under the letter no.8-Phys0-March-2017-17581/HEC/HRD/ASA/2017/17581
- **Best Researcher Award 2017** in Department of Mathematics, COMSATS University Islamabad, Lahore Campus.
- “Outstanding Reviewer Award 2019” for journal *Physica Scripta* under IOP publishing.
- *H-index: 40 (Web of Science), Citation:5594*
- *Among 2% Worldwide Scientists by Stanford-Elsevier, 2022*
- *Among 2% Worldwide Scientists by Stanford-Elsevier, 2023*
- *Among 2% Worldwide Scientists by Stanford-Elsevier, 2024*

Academic Experience:

1. Associate Professor (Mathematics) at COMSATS University Islamabad, Lahore Campus since July 01, 2023 to date.
2. Assistant Professor (Mathematics) at COMSATS University Islamabad, Lahore Campus since September 26, 2016 June 30, 2023.
3. Lecturer (Mathematics) at COMSATS University Islamabad, Lahore Campus since September 15, 2008 to September, 25, 2016.

4. Tutor (Mathematics) at Virtual University of Pakistan, Lahore since November 01, 2007 to September 14, 2008.
5. Lecturer (Mathematics) at IET(Institute of Engineering and Technology), a study center of Allama Iqbal Open University, Lahore since January 01, 2006 to August 2007.

Professional Development:

I have participated and oral presented research paper at the following conferences:

- *Presented in 3rd Monthly Seminar for **Spring-2016** Semester of the Centre for Mathematics and its Applications (CMAP), University of Management and Technology (UMT), Lahore-54770, Pakistan.*
- *Presented in Seminar Series for **Spring-2016** Semester of the CIIT Lahore.*
- *Presented in “First Workshop on Advancements in Mathematics and its Applications” (**WAMA-2023**), Department of Mathematics, Riphah International University.*
- *Presented in “Workshop on Modern Approaches to Teaching Mathematics”, **October 21, 2024**. CUI Abbottabad*
- *Presented in Workshop on Soliton Theory and Dynamical Systems, UMT Lahore, **January 17, 2025**.*

Research Thesis PhD Supervision:

#	Student Name	Thesis Title	MS/ PhD	Supervisor / Co-Supervisor	Status: Registered / Completed
1	Ijaz Ali	Exact and Multiple Solitons with Conservation Laws for Nonlinear Schrodinger Equations (Published=12 IF)	PhD	Supervisor	Completed
2	Urooj Akram	Soliton Propagation for Various Dynamical Models (Published=08 IF)	PhD	Supervisor	Completed
3	Badar Nawaz	Analytical and Soliton Solutions of Nonlinear Schrödinger Equations	PhD	Co-Supervisor	Completed

		(Published=05 IF)			
4	Sarfaraz Ahmad	Generalized Breathers and Rogue Wave Solutions for Various Nonlinear Problems (Published=25 IF)	PhD	Supervisor	Completed
5	Nighat Farah	Interaction Properties of Solitons and Painleve Analysis for Nonlinear Evolution Equations (Published=05 IF)	PhD	Co-Supervisor	Completed
6	Azhar Bashir	Solitonic Properties of Nonlinear Evolution Equations (Published=08 IF)	PhD	Supervisor	Completed
7	Tahira Batool	Study of Multiple Lump Solitons and Their Interactions for Nonlinear Models (Published=08 IF)	PhD	Supervisor	Completed
8	Noor Aziz	Lie Symmetries, Self Adjointies, Conservation Laws and Dromions for Nonlinear Models (Published=10 IF)	PhD	Co-Supervisor	Completed
9	Farukh Shehzad	Geometric Numerical Integrators for Conservative System (Published=03 IF)	PhD	Supervisor	Completed
10	Syed Oan Abbas Bukhari	Variational Integrators and Solitons Solutions for Conservative System (Published=10 IF)	PhD	Supervisor	Completed
11	Syed Kamran Naqvi	Mathematical Study of Electromagnetic Heat Transfer in Biological System	PhD	Supervisor	Registered

Research Thesis MS Supervision:

#	Student Name	Thesis Title	MS/	Supervisor /	Status:
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			PhD	Co-Supervisor	Registered / Completed
1	Muhammad Khalid Zubair	Study of Optical Soliton for Microtubules Nonlinear Models	MS	Supervisor	Completed
2	Urooj Akram	New Solitary Wave Solution for Nonlinear Schrödinger Equation (Published=01 IF)	MS	Supervisor	Completed
3	Marwa Ahmad	Jacobi Elliptic and Soliton Solutions for Nonlinear Schrödinger Equations (Published=01 IF)	MS	Supervisor	Completed
4	Iqra Shahid	Dark-in-the-bright and Combined-bright-dark Soliton Solutions for Nonlinear Schrödinger Equation (Submitted=01 IF)	MS	Supervisor	Completed
5	Muhammad Ahmed Shah	Optical Solitons for Non-linear Schrodinger Equations with Two Integration Schemes.	MS	Supervisor	Completed
6	Insibat Afzal	Stationary Solutions and Optical Solitons for Nonlinear Schrodinger Equations (Published=03 IF)	MS	Supervisor	Completed
7	Ishrat Fatima	Periodic Oscillation Between Soliton Interaction for Nonlinear Schrodinger Equation (Published=01 IF)	MS	Supervisor	Completed
8	Ujala Safdar	PT-Symmetric and W-Shaped Solitons for Nonlinear Schrödinger Equations (Published=01 IF)	MS	Supervisor	Completed
9	Iram Javed	Lump and Interaction Solution for the Nonlinear Schrödinger	MS	Supervisor	Completed

		Equation (Published =01 IF)			
10	Azeem Sakhwat	Painleve Analysis and Soliton Solutions for Nonlinear Evolution Equations	MS	Supervisor	Completed
11	Amir Ashraf	Multiple Lump and Rogue Wave Solutions for Nonlinear Evolution Equations (Published =08 IF)	MS	Supervisor	Completed
12	Saira Iqbal	Various Optical Solitons for Nonlinear Schrödinger Equations (Published =01 IF)	MS	Supervisor	Completed
13	Ishrat Bibi	Soliton Solutions and Interactions for Various Nonlinear Equations (Published =03 IF)	MS	Supervisor	Completed
14	Maria Hanif	Lax pair and Darboux Transformation for Nonlinear Evolution Equations (Published =01 IF)	MS	Supervisor	Completed
15	Syed Oan Abbas Bukhari	Numerical and Exact Solutions for Various Nonlinear Evolution Equations (Published=01 IF)	MS	Supervisor	Completed
16	Komal Naz	Study of Chirp and Chirp –free Solitons for Distinct Nonlinear Phenomena (Published=01 IF)	MS	Supervisor	Completed
17	Ahtasham Ahmad	Multiwave, Breather, Rogue Wave and Lump Solutions for Higher Order NLSE (Published=02 IF)	MS	Supervisor	Completed
18	Umar Raza	Chirped Optical and Solitary Waves for Different Forms of	MS	Supervisor	Completed

		NLSEs (Published=04 IF)			
19	Rimsha Shareef	Localized Pulses for Various Nonlinear Schrodinger Equations	MS	Supervisor	Registered
20	Nimra	Applications of Lump, Rogue wave and their Interactions for Nonlinear Equations (Published=03 IF)	MS	Supervisor	Completed
21	Samia Ahmed	Study of Breathers and M-shaped Solutions to Nonlinear Models (Published=02 IF)	MS	Supervisor	Completed
22	Muhammad Gulshan	Bright, Dark, Optical Pulses and Moving Fronts for Various Nonlinear Model (Published=01 IF)	MS	Supervisor	Completed
23	Hasnain Abbas	Breathers, Rogue Wave and Lump Solutions for Nonlinear Partial Evolution Equation (Published=01 IF)	MS	Supervisor	Completed
24	Ramisa Zia	Multiple Soliton Solutions for Various Nonlinear Evolution Equations by Hirota Method	MS	Supervisor	Completed
25	Bazgha Mustafa	Discussion on Soliton Solution via Complete Discriminant System Approach with Bifurcation Analysis (Published=04 IF)	MS	Supervisor	Completed
26	Muhammad Sohail	Study of Chirp Solitons and Rogue Wave Solutions (Published=02 IF)	MS	Supervisor	Completed
27	Saria Khizar	Study of Multiple Solitons and Nonlinear Waves (Published=02 IF)	MS	Supervisor	Completed
28	Sana Ghafoor	Applications Of	MS	Supervisor	Completed

		Variational Integrators and Solitons Solutions for Evolution Equations (Published=03 IF)			
29	Sana Shabbir	Application of CDSPM and Qualitative Analysis for Dynamical Models. (Published=03 IF)	MS	Supervisor	Completed
30	Asmavia Shahid	Solitary Wave Solutions and Stability Analysis for Nonlinear Evolution Equation.	MS	Supervisor	Completed
31	Ismail	Study of XPINN method for soliton solution	MS	Supervisor	Registered
32	Iqra Anjum	Optical Solitons under various nonlinearities	MS	Supervisor	Registered
33	Syed Shan e Ahmad	Mathematical Modeling and Qualitative Analysis for Dynamical Systems	MS	Supervisor	Registered
34	Nauman	Application of the Bilinear Neural Network Approach to Kadomtsev-Petviashvili Model for Nonlinear Waves	MS	Supervisor	Registered

Research Thesis BS Supervision:

#	Student Name	Thesis Title	BS	Supervisor / Co-Supervisor	Status: Registered / Completed
1	Adnan Khalil	Chirped and dipole soliton in nonlinear negative index materials (Published=01 IF)	BS	Supervisor	Completed
2	Ishrat Bibi	Interaction Properties of Solitons for Cahn-Allen and Bretherton Models (Published =01 IF)	BS	Supervisor	Completed
3	Syed Oan Abbas	Optical Solitons for	BS	Supervisor	Completed

		Various Nonlinear Schrodinger Equations (Published=04 IF)			
4	Hadiqa	Lump and rogue wave solutions to (2+1) dimensional Broer Kaup Kupershmidt system (Published=04 IF)	BS	Supervisor	Completed
5	Nauman + Sher Zaman	Optical Dromions to Chen-Lee-Liu Model and Fractional NLSE (Published=01 IF)	BS	Supervisor	Completed
6	Nimra + Samia	Application of Sub-ODE Scheme to Nonlinear Evolution Equation (Submitted=02 IF)	BS	Supervisor	Completed
7	Mubashara	One, Two and Three Soliton Interaction for Modulated Compressional Dispersive Alfven Waves	BS	Supervisor	Completed
8	Bazgha + Sohail	Chirped Periodic Waves for Various Nonlinear Schrodinger Equations (Published=04 IF)	BS	Supervisor	Completed
9	Sana + Saria	Study of Localized Waves for Various Nonlinear Schrödinger Equations (Published=01 IF)	BS	Supervisor	Completed
10	Muhammad Ismail	Bifurcation Analysis to Nonlinear Schrödinger Equations	BS	Supervisor	Completed
11	Shaista + Shaiza	Application of Auxiliary Equation Mapping Method for Soliton Solutions	BS	Supervisor	Completed
12	Azrarul Ul Hassan	Optical Pulses for Stochastic Fractional NLSEs	BS	Supervisor	Completed

13	Zunaira	Soliton Solutions and Qualitative analysis for NLEEs	BS	Supervisor	Completed
14	Ryan	Mathematical Modelling for Various Disease Models	BS	Supervisor	Completed
15	Aiman	Soliton Solutions and Qualitative analysis for NLEEs	BS	Supervisor	Completed
16	Maryam	Study of Hirota Bilinear Method and Neural Network	BS	Supervisor	Completed
17	Hasnain Abbas	Soliton Solutions to various nonlinear stochastic differential equations	BS	Supervisor	Registered
18	Areej Fatima	Applications of Kudryashov method to NLEEs	BS	Supervisor	Registered

Research Publications

Papers, 2025

1. **S. T. R. Rizvi**, M. G. Iqbal, S. Ahmed, A. Althobaiti, A. R. Seadawy, Moving front and dark solitary wave for couple of generalized nonlinear Schrödinger dynamical equations, Indian Journal of Physics, (2025) <https://doi.org/10.1007/s12648-025-03599-9>. IF=1.6, **SCIE=W**
2. S. O. Abbas, S. Shabbir, **S. T. R. Rizvi**, A. R. Seadawy, Optical dromions for M-fractional Kuralay equation via complete discrimination system approach along with sensitivity analysis and quasi-periodic behavior, Modern Physics Letters B, 39 (19) (2025) 2550048. IF=1.8, <https://doi.org/10.1142/S0217984925500484>.
3. **S. T. R. Rizvi**, S. O. Abbas, S. Ghafoor, A. Althobaiti, A. R. Seadawy, Soliton solutions with generalized Kudryashov method and study of variational integrator with Lagrangian to shallow water wave equation, Modern Physic Letters A, 40 (15) (2025) 2550043. <https://doi.org/10.1142/S0217732325500439>. IF=1.8, **SCIE=W**

4. **S. T. R. Rizvi**, A. R. Seadawy, B. Mustafa, Discussion on chirped periodic and optical soliton solutions for Chiral Nonlinear Schrodinger dynamical equation with Bohm Potential, International Journal of Geometric Methods in Modern Physics, (2025), <https://doi.org/10.1142/S0219887825501907>. **IF=1.8, SCIE=W**
5. F. Shehzad, H. Zahed, **S. T. R. Rizvi**, S. Ahmed, A. Khalek, A. R. Seadawy, Generalized breathers, solitons, rogue waves, and lump for superconductivity and drift cyclotron waves in plasma, Brazilian Journal of Physics, 55 (2025) 118. <https://doi.org/10.1007/s13538-025-01738-5>. **IF=1.5, SCIE=W**
6. S. O. Abbas, A. R. Seadawy, S. Ghafoor, **S. T. R. Rizvi**, Applications of variational integrators to couple of linear dynamical models discussing temperature distribution and wave phenomena, Modern Physics Letters B, 39 (7) (2025) 2450435. <https://doi.org/10.1142/S0217984924504359> **IF=1.8, SCIE=W**
7. **S. T. R. Rizvi**, A. R. Seadawy, A. Althobaiti, K. Ali, S. Ahmed, Study of Fifth-Order Nonlinear Caudrey–Dodd–Gibbon Model for Multiwave, MM-Shaped Solitons, Lumps, Generalized Breathers, Manifold Periodic, Rogue Wave and Kink Wave Interactions, International Journal of Computational Methods, 22 (02) (2025) 2450053. <https://doi.org/10.1142/S0219876224500531>. **IF=1.4, SCIE=W**
8. A. Raza, K. Ali, **S. T. R. Rizvi**, S. Sattar, A. R. Seadawy, Discussion on Vector Control Dengue Epidemic Model for Stability Analysis and Numerical Simulations, Brazilian Journal of Physics, 55 (2025) 21. <https://doi.org/10.1007/s13538-024-01656-y>. **IF=1.5, SCIE=W**
9. **S. T. R. Rizvi**, K. Ali, U. Akram, S. O. Abbas, A. Bekir, A. R. Seadawy, Stability analysis and solitary wave solutions for Yu Toda Sasa Fukuyama equation, Nonlinear Dynamics, 113 (2025) 2611-2623. **IF=5.2, https://doi.org/10.1007/s11071-024-10320-8, SCIE=W**

10. F. Shehzad, **S. T. R. Rizvi**, Y. Habib, A. R. Seadawy, Dynamical behaviour and structure of the optical variational integrators towards degenerate Lagrangian systems, Indian Journal of Physics, (2025).
<https://doi.org/10.1007/s12648-024-03497-6>. IF=1.6, SCIE=W

Papers, 2024

11. S. Ahmed, A. R. Seadawy, **S. T. R. Rizvi**, Optical solitons, multiwave, breather and M-shaped solitons for an nonlinear Schrödinger equation in (2+1)(2+1)-dimensions with cubic–quintic–septic law, Journal of Nonlinear Optical Physics & Materials, 33 (03) (2024) 2350029.
<https://doi.org/10.1142/S0218863523500297>. IF=2.4
12. **S. T. R. Rizvi**, A. R. Seadawy, M. Sohail, K. Ali, M. Khalid, Applications of nonlinear waves; lump wave, rogue wave, periodic wave, breather wave for a nonlinear model, International Journal of Geometric Methods in Modern Physics, 21 (12) (2024) 2450207.
<https://doi.org/10.1142/S0219887824502074>. IF=2.1
13. N. Aziz, **S. T. R. Rizvi**, K. Ali, A. R. Seadawy, Bifurcation and sensitivity analysis along with the numerical simulations of susceptible breaking-out quarantine treatment recovered computer model, International Journal of Modeling, Simulation, and Scientific Computing, 15 (6) (2024) 2550017.
<https://doi.org/10.1142/S1793962325500175>. IF=0.9
14. **S. T. R. Rizvi**, A. R. Seadawy, S. Khizar, A. Ahmad, Study of lump and periodic waves along with rogue waves and breathers for mathematical modeling of biological dynamical system, Modern Physics Letters B, 38 (35) (2024) 2450351.
. IF=1.8, DOI: 10.1142/S0217984924503512.
15. S. A. Baloch, M. Abbas, F. A. Abdullah, **S. T. R. Rizvi**, A. Althobaiti, A. R. Seadawy, Multiple Soliton Solutions of Generalized Reaction Duffing Model Arising in Various Mechanical Systems, International Journal of

- Theoretical Physics, 63 (2024) 234. **IF=1.3** <https://doi.org/10.1007/s10773-024-05768-8>.
16. M. Aldandani, S. T. R. Rizvi, A. Alruwaili, A. R. Seadawy, Discussion on optical solitons, sensitivity and qualitative analysis to a fractional model of ion sound and Langmuir waves with Atangana Baleanu derivatives, Open Physics, 22 (2024) 20240080. **IF=1.8**, <https://doi.org/10.1515/phys-2024-0080>
 17. S. Ahmed, A. R. Seadawy, S. T. R. Rizvi, H. Abbas, Dynamical study and diverse soliton collisions for the Kraenkel–Manna–Merle system in ferrites, Modern Physics Letters, B, 38 (27) (2024) 2450261. **IF=1.8** DOI: [10.1142/S0217984924502610](https://doi.org/10.1142/S0217984924502610)
 18. S. T. R. Rizvi, B. Mustafa, S. O. Abbas, Generation of optical dromions to generalized stochastic nonlinear Schrödinger equation with Kerr effect and higher order nonlinearity, Chinese Journal of Physics, 91 (2024) 183-198. <https://doi.org/10.1016/j.cjph.2024.07.003>. **IF=4.6**
 19. M. A. Ashraf, A. R. Seadawy, S. T. R. Rizvi, A. Althobaiti, Dynamical optical soliton solutions and behavior for the nonlinear Schrödinger equation with Kudryashov's quintuple power law of refractive index together with the dual-form of nonlocal nonlinearity, Optical and Quantum Electronics, 56 (2024) 1243. <https://doi.org/10.1007/s11082-024-07096-x>. **IF=3.3**
 20. A. R. Seadawy, **S. T. R. Rizvi**, Nimra, A study of breather lump wave, rogue wave, periodic cross kink wave, multi wave, M-shaped rational and their interactions for generalized nonlinear Schrodinger equation, Journal of Nonlinear Optical Physics & Materials, 33 (4) (2024) 2350059. <https://doi.org/10.1142/S0218863523500595> **IF=2.9**
 21. **S. T. R. Rizvi**, A. R. Seadawy, N. Farah, S. Ahmad, A. Althobaiti, The interactions of dark, bright, parabolic optical solitons with solitary wave

- solutions for nonlinear Schrödinger–Poisson equation by Hirota method, *Optical and Quantum Electronics*, 56 (2024) 1162. <https://doi.org/10.1007/s11082-024-07008-z>. IF=3.3
22. S. T. R. Rizvi, S. Ghafoor, A. R. Seadawy, A. H. Arnous, H. A. Garalleh, N. A. Shah, Exploration of solitons and analytical solutions by sub-ODE and variational integrators to Klein Gordon model, *AIMS Mathematics*, 9(8) (2024) 21144–21176. DOI: 10.3934/math.20241027, IF=1.8
23. K. Ali, A. R. Seadawy, S. T. R. Rizvi, N. Aziz, A. Althobaiti, Dynamical properties and travelling wave analysis of Rangwala–Rao equation by complete discrimination system for polynomials, *Optical and Quantum Electronics*, 56 (2024) 1081. HJRS=X <https://doi.org/10.1007/s11082-024-06894-7>. IF=3.3
24. S. O. Abbas, S. T. R. Rizvi, B. Mustafa, Analysis of the stochastic perturbed Schrodinger-Hirota equation with Kerr law in the presence of spatio-temporal dispersion with bifurcation and chaotic phenomena along with soliton solutions, *Optik*, 306 (2024) 171815. <https://doi.org/10.1016/j.ijleo.2024.171815>
25. F. Shehzad, A. R. Seadawy, S. Ahmed, S. T. R. Rizvi, Mathematical modeling and component generalization of (2+1)-dimensional Schwarz-Kortweg-de Vries model in shallow water waves, *Modern Physics Letters B*, 38 (26) (2024) 2450255. IF=1.8, HJRS=X, <https://doi.org/10.1142/S0217984924502555>.
26. S. T. R. Rizvi, A. R. Seadawy, B. Mustafa, Discussion on chirped periodic and optical soliton solutions for chiral nonlinear Schrödinger dynamical equation with Bohm potential, *Optical and Quantum Electronics*, 56 (2024) 768. IF=3.0, HJRS=X <https://doi.org/10.1007/s11082-024-06658-3>.
27. M. Z. Babar, A. R. Seadawy, M. Qasim, M. S. Iqbal, S. T. R. Rizvi, On the spatiotemporal structures of ratio-dependent prey-predator model of

- ecological system, International Journal of Geometric Methods in Modern Physics, 21 (4) (2024) 2450079. IF=1.8, HJRS=X. DOI: [10.1142/S0219887824500798](https://doi.org/10.1142/S0219887824500798)
28. A. H. Tedjani, A. R. Seadawy, S. T. R. Rizvi, E. Solouma, Dynamical structure and soliton solutions galore: investigating the range of forms in the perturbed nonlinear Schrödinger dynamical equation, Optical and Quantum Electronics, 56 (2024) 764. IF=3.0, HJRS=X. <https://doi.org/10.1007/s11082-024-06498-1>.
29. S. T. R. Rizvi, K. Ali, N. Aziz, A. R. Seadawy, Lie symmetry analysis, conservation laws and soliton solutions by complete discrimination system for polynomial approach of Landau Ginzburg Higgs equation along with its stability analysis, Optik, 300 (2024) 171675. IF=3.1, HJRS=W, <https://doi.org/10.1016/j.ijleo.2024.171675>.
30. M. Z. Baber, A. R. Seadawy, M. S. Iqbal, S. T. R. Rizvi, Optimization and exact solutions for biofilm model of bacterial communities, Alexandria Engineering Journal, 90 (2024) 89-97. IF=6.8, HJRS=W. <https://doi.org/10.1016/j.aej.2024.01.037>.
31. S. T. R. Rizvi, A. R. Seadawy, S. Ahmed, Bell and kink type, Weierstrass and Jacobi elliptic, multiwave, kinky breather, M-shaped and periodic-kink-cross rational solutions for Einstein's vacuum field model, Optical and Quantum Electronics, 56 (2024) 456. IF=3.0, HJRS=X. <https://doi.org/10.1007/s11082-023-06037-4>
32. S. T. R. Rizvi, A. R. Seadawy, S. K. Naqvi, M. Ismail, Bifurcation analysis for mixed derivative nonlinear Schrödinger equation, alpha -helix nonlinear Schrodinger equation and Zoomeron model, Optical and Quantum Electronics, 56 (2024) 452. IF=3.0, HJRS=X. <https://doi.org/10.1007/s11082-023-06100-0>
33. K. Ali, A. R. Seadawy, N. Aziz, S. T. R. Rizvi, Soliton solutions to generalized (2+1)-dimensional Hietarinta-type equation and resonant NLSE

- along with stability analysis, *Int. J. Mod. Phys. B*, 38 (1) (2024) 2450009.
<https://doi.org/10.1142/S0217979224500097>
34. S. T. R. Rizvi, M. Bazgha, Optical solitons and bifurcation phenomena in CNLSE-BP through the CDSPM with sensitivity analysis, *Optical and Quantum Electronics*, 56 (2024) 393. <https://doi.org/10.1007/s11082-023-05754-0>, IF=3.0, HJRS=X.
35. A. R. Seadawy, A. Ahmad, S. T. R. Rizvi, S. Ahmed, Bifurcation solitons, Y-type, distinct lumps and generalized breather in the thermophoretic equation motion via graphene sheets, *Alexandria Engineering Journal*, 87 (2024) 374-388. IF=6.8, HJRS=W.
<https://doi.org/10.1016/j.aej.2023.12.023>
36. A. R. Seadawy, **S. T. R. Rizvi**, B. Mustafa, K. Ali, Applications of complete discriminant system approach to analyze the dynamic characteristics of the cubic-quintic nonlinear Schrodinger equation with optical soliton and bifurcation analysis, *Results in Physics*, 56 (2024) 107187. **IF=5.3, HJRS=W**, <https://doi.org/10.1016/j.rinp.2023.107187>.
37. K. Ali, A. R. Seadawy, **S. T. R. Rizvi**, N. Aziz, Conservation laws, lie symmetries, self adjointness and soliton solutions for the Selkov-Schnakenberg system, *Communications in Theoretical Physics*, 76 (2024) 025003. **IF=3.1, HJRS=X, DOI 10.1088/1572-9494/ad0540**.

Papers, 2023

38. A. R. Seadawy, **S. T. R. Rizvi**, S. Ahmed, Multiwaves, homoclinic breathers, interaction solutions along with black-grey solitons for propagation in absence of self-phase modulation with higher order dispersions, *International Journal of Geometric Methods in Modern Physics*, 20 (12) (2023) 2350203 (33 pages). DOI: 10.1142/S0219887823502031.

39. A. H. Tedjani, A. R. Seadawy, **S. T. R. Rizvi**, E. Solouma, Construction of chirped propagation with Jacobi elliptic functions for the nonlinear Schrodinger equations with quadratic nonlinearity with inter-modal and spatio-temporal dispersions, European Physical Journal Plus, 138 (2023) 973 **IF=3.75, HJRS=W**, <https://doi.org/10.1140/epjp/s13360-023-04626-6>
40. N. Aziz, A. R. Seadawy, **S. T. R. Rizvi**, K. Ali, The Dynamical study and analysis of diverse optical soliton solutions to Chen-Lee-Liu equation by implementing complete discrimination system for polynomial method, Optik, 294 (2023) 171457. **IF=3.0, HJRS=W**, <https://doi.org/10.1016/j.ijleo.2023.171457>
41. **S. T. R. Rizvi**, A. R. Seadawy, S. Ahmed, F. Ashraf, Novel rational solitons and generalized breathers for (1+1)-dimensional longitudinal wave equation, Int. J. Mod. Phys. B, 37 (30) (2023) 2350269. **IF=1.7, HJRS=X**, DOI: [10.1142/S0217979223502697](https://doi.org/10.1142/S0217979223502697)
42. **S. T. R. Rizvi**, S. Shabbir, Optical soliton solution via complete discrimination system approach along with bifurcation and sensitivity analyses for the Gerjikov-Ivanov equation, Optik, 294 (2023) 171456, **IF=3.0, HJRS=W**, <https://doi.org/10.1016/j.ijleo.2023.171456>
43. A. H. Tedjani, A. R. Seadawy, **S. T. R. Rizvi**, E. Solouma, Construction of Hamiltonian and optical solitons along with bifurcation analysis for the perturbed Chen-Lee-Liu equation, Optical and Quantum Electronics, 55 (2023) 1151. **IF=3.0, HJRS=X**, <https://doi.org/10.1007/s11082-023-05403-6>
44. **S. T. R. Rizvi**, S. Ahmed, Resonant collisions among X-type, multi-lump, generalized breathers, N-solitons and rogue waves in plasma, Optik, 292 (2023) 171390. **IF=3.0, HJRS=W**, <https://doi.org/10.1016/j.ijleo.2023.171390>
45. **S. T. R. Rizvi**, A. R. Seadawy, B. Mustafa, Dynamical Discussion and Diverse Soliton Solutions via Complete Discrimination System Approach

- Along with Bifurcation Analysis for the Third Order NLSE, Malaysian Journal of Mathematical Sciences, 17 (3) (2023) 379-412.
<https://doi.org/10.47836/mjms.17.3.09> **IF=0.5, HJRS=Y**
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2. Syed Tahir Raza Rizvi, Ali Sardar, Symbolic and Abundant Wave Solutions, Lambert Academic Publishing, (2017)

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1. A. R. Seadawy, **S. T. R. Rizvi**, S. Ahmed, M. Younis, Application of lump and interaction soliton solutions to the model of liquid crystals nerve fibers, Encyclopedia of Complexity and System Science, (2022). **Book: Solitons (pp. 399-417). DOI: https://doi.org/10.1007/978-3-642-27737-5_769-1**
2. **S. T. R. Rizvi**, A. R. Seadawy, S. K. Naqvi, Periodic Cross-Kink, Rogue-Waves, and Lump Interaction Soliton Solutions with Kink and Periodic Waves for Fractional Bogoyavlenskii Equation, Encyclopedia of Complexity and Systems Science, (2022). **Book: Solitons (pp. 419-450) DOI: https://doi.org/10.1007/978-3-642-27737-5_770-1**

Research Projects

Project Title	PI/Co-PI	Amount	Agency	Duration	Status with date:Submitted / Approved / Completed
Analytical study of optical solitons with fractional nonlinear Schrodinger equation	Co-PI	1.463607 M	Higher Education Commission, Paksitan	02 years 2017-2019	Completed
Analytical and computational wave solutions for some problems of distinct physical phenomena	Co-PI	72800Rs	Higher Education Ministry, Saudia Arabia	2022-2023	Approved

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2.	Member of Organizing Committee for IMO, CUI Lahore, 2018
3.	Coordinator of MS Mathematics Program, Department of Mathematics, CUI Lahore.
4.	External Examiner: MS Theses (University of Lahore, NCBA& E, Riphah University, Minjah University, UET Lahore, UMT Lahore)
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8.	Course Co-Coordinator; Exploring Quantitative Skills, Spring 2024, Fall 2024, Spring 2025
9.	PhD Coordination Committee/Secretary, Fall 2024, Spring 2025
10.	Member of PhD Alumni Committee, Fall 2024, Spring 2025
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