CURRICULUM VITAE

NAME	:	**SAIMA ARSHED**
FATHER'S NAME	:	MUHAMMAD ARSHED KARIM
NATIONALITY	:	PAKISTANI
ADDRESS	:	DEPARTMENT OF MATHEMATICS, UNIVERSITY OF THE PUNJAB, LAHORE-54590, PAKISTAN
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ACADEMIC QUALIFICATIONS

Degree	Date	Institutions	Subject(s)
Ph.D.	2015	University of the Punjab Lahore-Pakistan.	Mathematics .

Dissertation:
"Numerical solution of partial differential equations using B-spline" *supervised by Professor Dr. Shahid S. Siddiqi, Department of Mathematics, University of the Punjab, Lahore-Pakistan.*

M. Phil. (3.60) 2011 University of the Punjab Computational Lahore-Pakistan. Mathematics

Dissertation:
"Sextic spline solution of fifth order singularly perturbed boundary value problems" *supervised by Professor Dr. Shahid S. Siddiqi, Department of Mathematics, University of the Punjab, Lahore-Pakistan.*

M.Sc. (76%)	2003	University of the Punjab Lahore-Pakistan.	Mathematics
B.Sc. (80.20%)	2001	Lahore College for Women University, Lahore-Pakistan.	Math A & B Statistics
F.Sc. (73.20%)	1999	Lahore College for Women University, Lahore-Pakistan.	General Science
Matriculation (79.3%)	1997	Crescent Model Higher Secondary School, Shadman, Lahore- Pakistan	Science

WORK EXPERIENCE

Assistant Professor (on Permanent basis) at Department of Mathematics, University of the Punjab, Lahore-Pakistan since **19-05-2022.**

Assistant Professor (on Adhoc basis) at Department of Mathematics, University of the Punjab, Lahore-Pakistan from **30-03-2015 to 18-05-2022.**

Lecturer (on Permanent basis) at Department of Mathematics, University of the Punjab, Lahore-Pakistan from **16-05-2006 to 29-03-2015.**

E-Tutor at Department of Mathematics, Virtual University of Pakistan, Lahore-Pakistan from **July, 2004 to May, 2006.**

TEACHING EXPERIENCE

Taught the following subjects:

1. Linear Algebra (BS) at Virtual University of Pakistan
2. Discrete Mathematics (BS) at Virtual University of Pakistan
3. Calculus-I (BS) at Virtual University of Pakistan
4. Ordinary Differential Equations (BS) at Virtual University of Pakistan
5. Topology (BS) at University of the Punjab
6. Measure Theory and Lebesgue Integration (BS) at University of the Punjab
7. Vector and Tensor Analysis (MSc) at University of the Punjab
8. Complex Analysis (MSc) at University of the Punjab
9. Ordinary Differential Equations (BS) at University of the Punjab
10. Differential Geometry (MSc) at University of the Punjab
11. Mechanics (MSc) at University of the Punjab
12. Partial Differential Equations (BS) at University of the Punjab
13. Methods of Mathematical Physics (MSc) at University of the Punjab
14. Set Theory (BS) at University of the Punjab
15. Number Theory (BS) at University of the Punjab
16. Linear Algebra (BS) at University of the Punjab
17. Theory of Approximation and Splines (MSc) at University of the Punjab
18. Theory of Approximation and Splines (BS) at University of the Punjab
19. Numerical Solutions of Partial Differential equations (MPhil) at University of the Punjab
20. Plane Curves and Analytical Geometry (BS) at University of the Punjab
21. Complex Analysis-I (BS) at University of the Punjab
22. Complex Analysis-II (BS) at University of the Punjab
23. Mathematics A-I (BS) at University of the Punjab
24. Numerical Analysis-I (BS) at University of the Punjab
25. Numerical Analysis-II (BS) at University of the Punjab
26. Mathematics A-III (MS) at University of the Punjab

RESEARCH INTERESTS

Scientific computing, Theory of Solitons, Nonlinear wave phenomenon, Numerical Simulations, Theory of Spline functions, Bifurcation analysis, Planar Dynamical systems, Sensitivity analysis, Chaotic analysis.

RESEARCH EXPERIENCE

Total Research papers 123

Total Impact Factor 331

Total Citations 2163

h-index 28

i10-index 57

Among **World's Top 2%** researchers in Stanford University's list (2022)

Among **World's Top 2%** researchers in Stanford University's list (2021)

Among **World's Top 2% researchers** in Stanford University's list (2020).

Among **World's Top 2% researchers** in Stanford University's list (2019).

PATENT

Introduced a new model **Biswas-Arshed model (BAM)** in collaboration with **Dr. Anjan Biswas** in 2018. This new model is used for soliton transmission through optical fibers where self-phase modulation is negligibly small and hence removed.

AWARDS AND HONORS

- Among **World's Top 2% researchers** in Stanford University's list (2022).
- Among **World's Top 2% researchers** in Stanford University's list (2021).
- Among **World's Top 2% researchers** in Stanford University's list (2020)
- Among **World's Top 2% researchers** in Stanford University's list (2019)
- Introduced a new model **Biswas-Arshed model (BAM)** in collaboration with **Dr. Anjan Biswas**.
- **HEC** Approved Ph.D supervisor since 2019 to date.
- Awarded incentive award on research publications for the year 2021, University of the Punjab, Lahore
- Awarded incentive award on research publications for the year 2020, University of the Punjab, Lahore
- Awarded incentive award on research publications for the year 2019, University of the Punjab, Lahore.
- Awarded incentive award on research publications for the year 2018, University of the Punjab, Lahore.
- Awarded incentive award on research publications for the year 2017, University of the Punjab,

Lahore.

- Awarded incentive award on research publications for the year 2016, University of the Punjab, Lahore.
- Awarded **Gold Medal and shield** in B.Sc from Lahore College for Women University, Lahore.
- On account of outstanding academic performance, my name has been inscribed in **academic Roll of Honor, 2001**, Lahore College for Women University, Lahore.
- Awarded **merit certificate** for the session 1999-2001, Lahore College for Women University, Lahore.
- Awarded **merit certificate and scholarship** for the session 2002-2003, University of the Punjab, Lahore.

ACEDEMIC AND ADMINISTRATIVE SKILLS

- BS Coordinator, Department of Mathematics, University of the Punjab, Lahore .(October, 2020-Present)
- Staff Secretary, Department of Mathematics, University of the Punjab, Lahore. (2015-2019)
- Member Scholarship Committee, Department of Mathematics, University of the Punjab, Lahore. (2007-2014)
- Member of Board of Faculty of Science (2020-Present)
- Member Departmental Disciplinary committee, Department of Mathematics, University of the Punjab, Lahore. (2019-Present)
- Member of Departmental Admission Committee, Department of Mathematics, University of the Punjab, Lahore. (2007-Present)
- Editor of the Departmental Magazine "*The Infinity*" Department of Mathematics, University of the Punjab, Lahore. (2017 to 2019).

COMPUTER AND SOFTWARE SKILLS

- **Microsoft Office package**: Microsoft Word, Excel, Power Point.
- **Mathematical Software**: FORTRAN 90, MATHEMATICA, MATLAB, MAPLE.
- Latex

RESEARCH SUPERVISION

M.Phil. Theses Supervised

2023-2024 Minal Irshad, *Optical solitons and Modulation Instability for the Generalized (3+1)-Dimensional Sasa-Satsuma Equation*, Department of Mathematics, University of the Punjab, Lahore.

2023-2024 Muhammad Sulaiman Riaz, *Solutions of Nonlinear Evolution Equations using Extended Hyperbolic Function Method*, Department of Mathematics, University of the Punjab, Lahore.

2023-2024 Mr. Muhammad Arslan, *Traveling wave solutions for the Improved Boussinesq Equation and the Doubly Dispersive Equation*, Department of Mathematics, University of the Punjab, Lahore.

2022-2023 Hira Shadah, *Generalized Sasa-Satsuma equation and its solutions by analytical methods*, Department of Mathematics, University of the Punjab, Lahore.

2022-2023 Andleeb-ul-nabi, *Applications of the generalized Kudryashov method for solutions of*

nonlinear evolution equations, Department of Mathematics, University of the Punjab, Lahore.

2022-2023 Adeena Khan, *Construction of solutions of (3+1)-dimensional quantum Zakharov-Kuznetsov equation*, Department of Mathematics, University of the Punjab, Lahore.

2021-2022 Mr. Mohsin Yasin, *Analytical solutions and modulation instability analysis for two nonlinear partial differential equations arising in optics,* Department of Mathematics, University of the Punjab, Lahore.

2021-2022 Kainat Fatima, *Comparison of the solutions of fractional complex Ginzburg-Landau equation for M-truncated, Conformable and Beta derivatives,* Department of Mathematics, University of the Punjab, Lahore.

2021-2022 Iqra, *Exact solutions of nonlinear Schrödinger equations using two reliable techniques,* Department of Mathematics, University of the Punjab, Lahore.

2021-2022 Komal Saeed, *Applications of some novel integration techniques for the solutions of nonlinear evolution equations,* Department of Mathematics, University of the Punjab, Lahore.

2020-2021 Zainab Imran, *Extraction of Solitons for Fractional DNA Peyrard-Bishop Equation using Analytical Methods*, Department of Mathematics, University of the Punjab, Lahore.

2019-2020 Aqsa Arif, *Extraction of Solitons for Higher-Order Nonlinear Schrödinger Equation and Kudryashov's Equation using Analytical Techniques*, Department of Mathematics, University of the Punjab, Lahore.

2017-2018 Lubna Arshad, *Soliton solutions of nonlinear schräodinger equation for kerr law and non-kerr law media*, Department of Mathematics, University of the Punjab, Lahore.

2016-2017 Misbah Sadia, *Analytical Techniques for Solving Nonlinear Fractional Partial Differential Equations*, Department of Mathematics, University of the Punjab, Lahore.

2015-2016 Muhammad Ikram Ullah, *Numerical Solution of Super Diffusion Fourth Order Partial Differential Equations Using B-Spline*, Department of Mathematics, University of the Punjab, Lahore.

Ph.D. Students

- Isma Ghulam Murtaza (Thesis Submitted)

WORKSHOPS, CONFERENCES AND SEMINARS

Seminar delivered on Application of Linear Algebra at Virtual University of Pakistan, Lahore-Pakistan. (05-05-2005).

Seminar delivered on Solution of Linear Diophantine Equations and Fermat Last Theorem at University of the Punjab, Lahore-Pakistan. (08-06-2006).

Seminar delivered on Solution of fifth order singularly perturbed boundary value problems using sextic spline at University of the Punjab, Lahore-Pakistan. (15-05-2010)

Seminar delivered on Solution of fourth order parabolic partial differential equation using quintic B-Spline at University of the Punjab, Lahore-Pakistan. (10-01-2013)

Seminar delivered on Numerical solution of time-fractional convection-diffusion equations at University of the Punjab, Lahore-Pakistan. (27-11-2013).

Seminar delivered on Numerical Study of Time-Fractional Hyperbolic Partial Differential Equations

at University of the Punjab, Lahore-Pakistan. (25-06-2014).

Seminar delivered on Numerical solution of fractional diffusion wave equation at University of the Punjab, Lahore-Pakistan. (02-12-2015).

Paper presented on Numerical solution of fractional diffusion wave equation at 1st UMT International Conference on Pure and Applied Sciences. (March 05-07 2016).

Paper presented on Soliton Solutions of Fractional Complex Ginzburg-Landau Equation with Kerr Law and Power Law Nonlinearity at 4th UMT International Conference on Pure and Applied Mathematics (4th UICPAM-2018) March 31-02 April, 2018

Paper presented on Solutions in Nonlinear Directional Couplers with Optical Metamaterials at 5th UMT INTERNATIONAL CONFERENCE ON Pure and Applied Mathematics (5thUICPAM-2019) March 29-31, 2019.

Attended One Day Conference on Gravitation and Cosmology, the Group of Gravitation and Cosmology, Department of Mathematics, University of the Punjab, Lahore (November 26, 2016).

Attended One-Day Workshop on semester rulers, regulations and their effective implementations in Punjab University, HRDC, IAS PU (March 16, 2019).

Attended Hands on Training of HEC electronic databases especially "Institute of electrical and electronics engineers (IEEE) Xplore Challenge" Nov 01, 2019.

Attended PU-NMS International Schools series for Students and Faculty, February 14-18, 2022 at Department of Mathematics, University of the Punjab, Lahore.

Attended Training on "How to Improve/Implement HEC-QAA parameters", March 03, 2022 at Hall of Dr. Pervaiz Hassan, Environmental Law Centre, University Law College, University of the Punjab, Lahore.

Invited Speaker at 6th International Conference on Pure and Applied Mathematics (ICPAM), December 06-07, 2023 at Department of Mathematics, University of Sargodha, Sargodha.

LIST OF PUBLICATIONS

1. Shahid S. Siddiqi , **Saima Arshed**, Quintic B-spline for the numerical solution of the good Boussinesq equation, Journal of the Egyptian Mathematical Society (2014) 22, 209–213.

2. Shahid S. Siddiqi and **Saima Arshed**,,Quintic B-Spline for the Numerical Solution of Fourth-Order Parabolic Partial Differential Equations, World Applied Sciences Journal 23 (12): 115- 122, 2013.

3. Shahid S. Siddiqi and **Saima Arshed**, Numerical Solution of Convection-Diffusion Integro-Differential Equations with a Weakly Singular Kernel, J. Basic. Appl. Sci. Res., 3(11)106- 120, 2013.

4. Shahid S. Siddiqi and **Saima Arshed**, Cubic B-spline for the Numerical Solution of Parabolic Integro-differential Equation with a Weakly Singular Kernel, Research Journal of Applied Sciences, Engineering and Technology 7(10): 2065-2073, 2014.

5. Shahid S. Siddiqi and **Saima Arshed**, Numerical solution of time-fractional fourth-order partial differential equations, International Journal of Computer Mathematics,92 (7) (2015), 1496- 1518.

6. **Saima Arshed**, Quintic B-spline method for time-fractional superdiffusion fourth-order differential equation, Mathematical Sciences, 11(1) (2017), 17-26.

7. **Saima Arshed**, Numerical study of time-fractional hyperbolic partial differential equations, Journal of Mathematics and Computer Science, 17(1) (2017), 53-65.

8. **Saima Arshed**, B-Spline Solution of Fractional Integro Partial Differential Equation with a Weakly Singular Kernel, Numerical methods for partial differential equations, 33(2017), 1565–1581.

9. **Saima Arshed**, Two reliable techniques for the soliton solutions of perturbed Gerdjikov– Ivanov equation, Optik 164 (2018) 93–99.

10. **Saima Arshed**, Soliton Solutions of Fractional Complex Ginzburg-Landau Equation with Kerr Law and non-kerr law media, Optik 160 (2018) 322–332.

11. **Saima Arshed**, Anjan Biswas,· Qin Zhou, Seithuti P. Moshokoa, Milivoj Belic, Optical solitons with polarization-mode dispersion for coupled Fokas–Lenells equation with two forms of integration architecture, Optical and Quantum Electronics 50(2018) 1-15.

12. **Saima Arshed**, Misbah Sadia, (G ′ G 2 G′G2)-Expansion method: new traveling wave solutions for some nonlinear fractional partial differential equation, Optical and Quantum Electronics, 50 (2018), 1-20.

13. Anjan Biswas, Mehmet Ekici,, Abdullah Sonmezoglu, **Saima Arshed**, Milivoj Belic, Optical soliton perturbation with full nonlinearity by extended trial function method, Optical and Quantum Electronics, 50(2018) 1-58.

14. Anjan Biswas, **Saima Arshed**, Application of semi-inverse variational principle to cubic- quartic optical solitons with kerr and power law nonlinearity, Optik - International Journal for Light and Electron Optics 172 (2018) 847–850.

15. Anjan Biswas, **Saima Arshed**, Optical solitons in presence of higher order dispersions and absence of self-phase modulation, Optik - International Journal for Light and Electron Optics 174 (2018) 452–459.

16. **Saima Arshed**, Anjan Biswas, Mahmoud Abdelaty, Qin Zhou,Seithuti P. Moshokoa, Milivoj Belic, Optical soliton perturbation for Gerdjikov–Ivanov equation via two analytical techniques, Chinese Journal of Physics, 56(6)(2018), 2879-2886.

17. **Saima Arshed**, Anjan Biswas, Qin Zhou, Seithuti P. Moshokoa, Milivoj Belic Optical soliton perturbation with differential group delay and parabolic law nonlinearity using $\exp(-\phi(\xi))$-

expansion method, Optik, 172 (2018) 826-831.

18. **Saima Arshed**, Anjan Biswas, Mahmoud Abdelaty, Qin Zhou,Seithuti P. Moshokoa, Milivoj Belic, Sub pico-second chirp-free optical solitons with Kaup-Newell equation using a couple of strategic algorithms, Optik, 172 (2018), 766-771

19. **Saima Arshed**, Anjan Biswas, Mahmoud Abdelaty, Qin Zhou, Seithuti P. Moshokoa, Milivoj Belic, Optical soliton perturbation with Kundu–Eckhaus equation by $\exp(-\phi(\zeta))$-expansion scheme and G'/G^2-expansion method, Optik, 172(2018), 79-85.

20. **Saima Arshed**, Anjan Biswas, Fayequa B. Majid, Qin Zhou, Seithuti P. Moshokoa, Milivoj Belic, Optical solitons in birefringent fibers for Lakshmanan–Porsezian–Daniel model using $\exp(-\phi(\zeta))$-expansion method, Optik, 170 (2018), 555-560.

21. Anjan Biswas, **Saima Arshed**, Mehmet Ekici, Qin Zhou, Seithuti P. Moshokoa, Mohanad Alfiras, Milivoj Belic, Optical solitons in birefringent fibers with Kundu-Eckhaus equation, Optik - International Journal for Light and Electron Optics 178 (2019) 550–556.

22. **Saima Arshed**, Anjan Biswas, Qin Zhou, Salam Khan, Samuel Adesanya, Seithuti P. Moshokoa, Milivoj Belic, Optical solitons pertutabation with Fokas-Lenells equation by $\exp(-\phi(\xi))$-expansion method, Optik - International Journal for Light and Electron Optics 179 (2019) 341–345.

23. **Saima Arshed**, Anjan Biswas, Mehmet Ekici, Salam Khan, Qin Zhou, Seithuti P. Moshokoa, Mohanad Alfiras, Milivoj Belic, Solitons in nonlinear directional couplers with optical metamaterials by $\exp(-\Phi(\zeta))$-expansion, Optik - International Journal for Light and Electron Optics 179 (2019) 443–462.

24. **Saima Arshed**, Lubna Arshad, Optical soliton solutions for nonlinear Schrödinger equation, Optik - International Journal for Light and Electron Optics 195 (2019) 163077.

25. **Saima Arshed**, Sub-pico second chirped optical pulses with Triki–Biswas equation by $\exp(-\Phi(\xi))$-expansion method and the first integral method, Optik - International Journal for Light and Electron Optics 179 (2019) 518–525.

26. **Saima Arshed**, Anjan Biswas, Fouad Mallawi, Milivoj R.Belic, Optical solitons with complex Ginzburg–Landau equation having three nonlinear forms, Physics Letters A 383 (2019) 126026.

27. Nauman Raza, **Saima Arshed** and Sultan Sial, Optical solitons for coupled Fokas-Lenells equation in birefringence fibers, Modern Physics Letters B Vol. 33, No. 26 (2019) 1950317 (15 pages).

28. **Saima Arshed**, Aqsa Arif, Soliton solutions of higher-order nonlinear schrödinger equation (NLSE) and nonlinear kudryashov's equation, Optik- International Journal for Light and Electron Optics, 209(2020) 164588.

29. **Saima Arshed**, New soliton solutions to the perturbed nonlinear Schrödinger equation by exp(−Φ(ξ))-expansion method, Optik - International Journal for Light and Electron Optics 220(2020) 165123.

30. **Saima Arshed**, Anjan Biswas, Abdullah Kamis Alzahrani, Milivoj R. Belic, Solitons in nonlinear directional couplers with optical metamaterials by first integral method, Optik - International Journal for Light and Electron Optics 218 (2020) 165208.

31. Anupma Bansal, Anjan Biswas, Qin Zhou, **Saima Arshed**, Abdullah Kamis Alzahrani, Milivoj R. Belic, Optical solitons with Chen–Lee–Liu equation by Lie symmetry, Physics Letters A, 384(10), (2020) 126202.

32. Nauman Raza, Aly R. Seadawy, Adil Jhangeer, Asma Rashid Butt, **Saima Arshed**, Dynamical behavior of micro-structured solids with conformable time fractional strain wave equation, Physics Letters A, 384(27) (2020) 126683.

33. **Saima Arshed**, Nauman Raza, Optical solitons perturbation of Fokas-Lenells equation with full nonlinearity and dual dispersion, Chinese Journal of Physics, 63(2020) 314-324.

34. Nauman Raza, **Saima Arshed**, Chiral bright and dark soliton solutions of Schrödinger's equation in (1 + 2)-dimensions, Ain Shams Engineering Journal, 11(4) 2020, 1237-1241.

35. Nauman Raza, Adil Jhangeer, **Saima Arshed** , Asma Rashid Butt , Yu-Ming Chu, Dynamical analysis and phase portraits of two-mode waves in different media, Results in Physics 19 (2020) 103650.

36. H M Srivastava, D Baleanu, J A T Machado , M S Osman ,H Rezazadeh, **S Arshed**, H Günerhan, Traveling wave solutions to nonlinear directional couplers by modified Kudryashov method, Physica Scripta. 95 (2020) 075217 14 pages.

37. Nauman Raza, **Saima Arshed** and Ahmad Javid, Optical solitons and stability analysis for the generalized second-order nonlinear Schrödinger equation in an optical fiber International Journal of Nonlinear Sciences and Numerical Simulation 21 (7-8) (2020) 855-863.

38. **Saima Arshed**, Anjan Biswas, Padmaja Guggilla, Ali Saleh Alshomrani, Optical solitons for Radhakrishnan–Kundu–Lakshmanan equation with full nonlinearity, Physics Letter A 384 (26) (2020) 126191.

39. J. F. Gómez-Aguilar, M. S. Osman, Nauman Raza, Asad Zubair, **Saima Arshed,** Mohamed E. Ghoneim, Emad E. Mahmoud, and Abdel-Haleem Abdel-Aty, Optical solitons in birefringent fibers with quadratic-cubic nonlinearity using three integration architectures, AIP Advances 11, 025121 (2021).

40. **Saima Arshed**, Nauman Raza, Monairah Alansari, Soliton solutions of the generalized Davey-Stewartson equation with full nonlinearities via three integrating schemes, Chinese journal of physics, Ain Shams Engineering Journal 12 (2021) 3091–3098.

41. Wen-Xiu Ma, M.S. Osman, **Saima Arshed** , Nauman Raza, H. M. Srivastava, Practical analytical approaches for finding novel optical solitons in the single-mode fibers, Chinese Journal of Physics 72 (2021) 475–486.

42. Jamilu Sabi'u, Eric Tala-Tebue, Hadi Rezazadeh, **Saima Arshed** and Ahmet Bekir, Optical solitons for the decoupled nonlinear Schrödinger equation using Jacobi elliptic approach Communications in Theoretical Physics. 73 (2021) 075003 (8pp).

43. Nauman Raza, **Saima Arshed**, Asma Rashid Butt and Dumitru Baleanu, New and More Solitary Wave Solutions for the Klein-Gordon-Schrödinger Model Arising in Nucleon-Meson Interaction, Frontiers in Physics. 9:637964. doi: 10.3389/fphy.2021.637964.

44. Ghazala Akram , Maasoomah Sadaf, **Saima Arshed**, Fizza Sameen, Bright, dark, kink, singular and periodic soliton solutions of Lakshmanan–Porsezian–Daniel model by generalized projective Riccati equations method, Optik - International Journal for Light and Electron Optics 241 (2021) 167051.

45. **Saima Arshed** , Nauman Raza, Riaz Ur Rahman, Asma Rashid Butt, Wen-Hua Huang, Sensitive behavior and optical solitons of complex fractional Ginzburg–Landau equation: A comparative paradigm, Results in Physics 28 (2021) 104533.

46. Elsayed M.E. Zayed, Mohamed E.M. Alngar, Anjan Biswas, Mehmet Ekici, **Saima Arshed**, Abdullah K. Alzahrani, Milivoj R. Belic, Solitons in nonlinear directional couplers with optical metamaterials by unified Riccati equation, Optik - International Journal for Light and Electron Optics 241 (2021) 167244.

47. Ghazala Akram, **Saima Arshed** and Zainab Imran, Soliton solutions for fractional DNA Peyrard-Bishop Equation via the extended (G′ /G2)-expansion method, Physica Scripta. 96 (2021) 094009 https://doi.org/10.1088/1402-4896/ac0955.

48. Nauman Raza , **Saima Arshed**, Kashif Ali Khan and Mustafa Inc, Fractional soliton dynamics of electrical microtubule transmission line model with local M-derivative, Communications in

Theoretical Physics, 73 (2021) 095002 (9pp), https://doi.org/10.1088/1572-9494/ac0a67.

49. Nauman Raza, Adil Jhangeer, **Saima Arshed** & Mustafa Inc (2021) The chaotic, supernonlinear, periodic, quasiperiodic wave solutions and solitons with cascaded system, Waves in Random and Complex Media, 1-15, 2021, DOI: 10.1080/17455030.2021.1945164.

50. **Saima Arshed** , Nauman Raza, Asma Rashid Butt and Ali Akgül, Exact solutions for Kraenkel-Manna-Merle model in saturated ferromagnetic materials using β-derivative, Physica Scripta 96 (2021) 124018 https://doi.org/10.1088/1402-4896/ac1cd0.

51. **Saima Arshed**, Seyed mehdi Mirhosseini-Alizamini, Dumitru Baleanu, Hadi Rezazadeh, Mustafa inc and Majid Hussain soliton solutions for non-linear Kudryashov's equation via three integrating schemes, Thermal Science, 2021, 25(2), 157-163.

52. **Saima Arshed**, Nauman Raza, Asma Rashid Butt, Ahmad Javid, J.F. Gómez-Aguilar, Multiple rational rogue waves for higher dimensional nonlinear evolution equations via symbolic computation approach, Journal of Ocean Engineering and Science 8 (2023) 33–41.

53. Nauman Raza, **Saima Arshed**, Kashif Ali Khan, Dumitru Baleanu, New and more fractional soliton solutions related to generalized Davey–Stewartson equation using oblique wave transformation, Modern Physics Letters B Vol. 35, No. 19, 2150317 (2021), https://doi.org/10.1142/S0217984921503176.

54. **Saima Arshed**, Nauman Raza, Asma Butt, Mustafa Inc., New soliton solutions of nonlinear Kudryashov's equation via improved tan (phi/2) -expansion approach in optical fiber, Kuwait Journal of Science, (2021), DOI: 10.48129/kjs.12441.

55. G. Akram, M. Sadaf, **S. Arshed**, F. Sameen, Traveling wave solutions of conformable time-fractional Klien-Fock-Gordon equation by the improved tan(Ψ(ζ)/2)-expansion method, Journal of King Saud University – Science 34 (2022) 101822.

56. Ghazala Akram, **Saima Arshed**, Maasoomah Sadaf, Fizza Sameen, The generalized projective Riccati equations method for solving quadratic-cubic conformable time-fractional Klien-Fock-Gordon equation, Ain Shams Engineering Journal 13 (2022) 101658.

57. Ghazala Akram, **Saima Arshed**, Maasoomah Sadaf, Zainab, Extraction of new exact soliton solutions and Painlevé-test for fractional Cahn–Allen equation, Optical and Quantum Electronics (2022) 54:46 https://doi.org/10.1007/s11082-021-03407-8.

58. Nauman Raza, **Saima Arshed**, H.I. Alrebdi, Abdel-Haleem Abdel-Aty, H. Eleuch, Abundant new optical soliton solutions related to q-deformed Sinh–Gordon model using two innovative integration architectures, Results in Physics 35 (2022) 105358.

59. Nauman Raza, Aly R. Seadawy, **Saima Arshed**, Muhammad H. Rafiq, A variety of soliton solutions for the Mikhailov-Novikov-Wang dynamical equation via three analytical methods, Journal of Geometry and Physics 176 (2022) 104515.

60. Nauman Raza, **Saima Arshed**, Farwa Salman, J. F. G´omez-Aguilar and J. Torres-Jim´enez Phase characterization and new optical solitons of a pulse passing through nonlinear dispersive media. Modern Physics Letters B Vol. 36, No. 19 (2022) 2250098 (12 pages). DOI: 10.1142/S0217984922500981.

61. Nauman Raza, **Saima Arshed**, Melike Kaplan & Asma Rashid Butt. An exploration of novel soliton solutions for propagation of pulses in an optical fiber. Optical and Quantum Electronics 54, 462 (2022). 1-12. https://doi.org/10.1007/s11082-022-03861-y

62. **Saima Arshed**, Nauman Raza, Melike Kaplan, Painlevé analysis, dark and singular structures for pseudo-parabolic type equations. Modern Physics Letters B, 36 (22) (2022) 2250104, (13 pages).

63. Nauman Raza, **Saima Arshed**, Asma Rashid Butt, Mustafa Inc, Shao-Wen Yao, Investigation of new solitons in nematic liquid crystals with Kerr and non-Kerr law nonlinearities, Journal of Nonlinear Optical Physics & Materials, https://doi.org/10.1142/S0218863523500200.

64. **Saima Arshed**, Riaz Ur Rahman, Nauman Raza, Ahmad Kamal Khan, Mustafa Inc, A variety of fractional soliton solutions for three important coupled models arising in mathematical physics, International Journal of Modern Physics B, Vol. 36, No. 01, 2250002 (2022) (25 pages) https://doi.org/10.1142/S0217979222500023.

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