Prof. Dr. Ghazala Akram

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Biography

Dr. Ghazala Akram is working as Professor in Department of Mathematics University of the Punjab, Lahore. She did her Ph.D. from University of the Punjab, Lahore in 2007. She did her M. Sc. Mathematics, from Department of Mathematics, University of the Punjab, Lahore during the session 1996-1998. She stood first throughout the University in M. Sc. and was awarded **gold medal**. She started her career by joining the University of the Punjab, Lahore as a Lecturer in 2000.

She completed her Ph. D. thesis titled "**Use of *Spline Functions in Solving Boundary-Value Problems"*** under the supervision of Prof. Dr. Shahid S. Siddiqi, Ex-Chairman Department of Mathematics University of the Punjab, Lahore. She is an active researcher in the field of Computational Mathematics. Her fields of interest are exact and approximate solutions of ordinary and partial differential equations, fractional calculus, solitons and computer aided geometric designing. She has published **200** papers in international journals. It is to be noted that during the Ph. D. research work, she published 12 papers in impact factor journals. During her professional career, she always proved herself a competent teacher and a dedicated researcher. Till now, **10** Ph.D. and **40** M.Phil scholars have successfully completed their research projects under her supervision. Currently, one Ph.D. and three MPhil students are actively engaged in carrying their research work under her supervision. Based on her academic and research achievements, she has been awarded "**Best Teacher Award**" from the Department of Mathematics, for the year 2014. The h-index of her scientific research papers according to Google Scholar is **30,** the i10-index is **110** and citations are **3423**. Recognized for her exceptional expertise, Stanford University reports position Dr. Ghazala Akram within the **top 2% of scientists** globally for the year 2024. She is reviewer of many international journals.

She is Associate Editor of Punjab University Journal of Mathematics. She was Managerial Secretary of Punjab University Journal of Mathematics. Cash prize of Rs. 10,000/- was awarded to her by the worthy Vice Chancellor, University of the Punjab in recognition of her contribution for online launching of **Punjab University Journal of Mathematics**.

Qualification

May 2012-January 2013	**Postdoc** School of Mathematical Sciences, Queen Mary College, University of London,UK Advisor: Prof. Dr. Christian Beck
2001-2007	**Ph.D. (Computational Mathematics)** University of the Punjab, Lahore, Pakistan. **Thesis: Use of *Spline Functions in Solving Boundary-Value Problems*** Advisor: Prof. Dr. Shahid S. Siddiqi

Present Status

25 August 2020-present	Professor
30 April, 2012-24 August 2020	Associate Professor (BPS)
16 June, 2008-29 April, 2012	Assistant Professor (TTS)
21 November, 2000-15 June, 2008	Lecturer

Fields of Interest

Computational Mathematics

1. Theory of Spline Functions
2. Numerical Solutions of Differential Equations
3. Computer Aided Geometric Design
4. Soliton Solutions of Partial Differential Equations
5. Analytical Solutions of Ordinary and Partial Differential Equations

Academic Awards

1. Ranked among the **top 2% of scientists** worldwide according to science-wide author databases of standardized citation indicators based on the dataset released by Scopus and Mendeley
2. **Guest Editor** special issue in journal Fractal and Fractional (impact factor: 5.4)
3. Successfully completed Post Doctoral Fellowship at Queen Mary College, University of London under Post Doctoral Fellowship Programme Phase-II (Batch-V)
4. ***Gold Medal in M.Sc. Mathematics,*** University of the Punjab.
5. **Best Departmental Teacher Award** (Department of Mathematics), for the year 2014.
6. A shield along with a prize of Rs. 5000/- was awarded by the worthy Vice Chancellor, University of the Punjab in recognition of the second position obtained in ***International Conference on Mathematics and its Applications in Information Technology*** held at LUMS in the category of young Ph. D. scholars.

7. Second prize certificate was awarded among the young Ph. D. scholars category in the competition organized by the ***LUMS International Conference on Mathematics and its Applications in Information Technology*** at LUMS in collaboration with School of Mathematical Sciences, GC University Lahore, Nov. 27th to 30th November 2005, which was evaluated by the panel of foreign experts and ranked among the top three positions.
8. Third prize certificate along with a cash price of Rs. 3000 was awarded among the young Ph.D. scholars category in the competition organized by the ***Second World Conference on 21st Century Mathematics,*** 2005 at School of Mathematical Sciences, GC University, Lahore, Mar 4-6, 2005 which was evaluated by the panel of foreign experts and ranked among the top three positions.
9. Cash prize of Rs. 10,000/- was awarded by the worthy Vice Chancellor, University of the Punjab in recognition of the online launching of ***Punjab University Journal of Mathematics***.

Professional Services/Activities

1. Managerial Secretary of Punjab University Journal of Mathematics (From November, 2000 to January, 2009)
2. Associate Editor of Punjab University Journal of Mathematics
3. Member of Senate, University of the Punjab, Lahore
4. Member of Academic Council, University of the Punjab
5. Member of Academic Council, University of Education, Lahore
6. Member of Board of Studies of Lahore College for Women University, Lahore
7. Member of Board of Faculty of Science, University of the Punjab, Lahore
8. Member of Board of Faculty of Science, University of Central Punjab, Lahore
9. Member of Departmental Doctoral Programme Committee of Mathematics Department
10. Coordinator of Departmental Library Committee
11. Member of Departmental Examination Committee
12. Member of Departmental Scholarship Committee
13. Member of Departmental Tenure Track Review Committee
14. Member of Departmental Disciplinary Committee
15. Member of Departmental Development Committee
16. Incharge of M.Sc. Morning and Evening Admission, 2013
17. Member of Board of Studies in Mathematics
18. Admission of M. Phil. and Ph.D. Programmes
19. Admission of M.Sc. programme.
20. Advisor Students (From Nov. 2000 to 2006).
21. Member of Departmental Purchase Committee
22. Coordinator of B.S. Programme(From Oct. 2015to Aug. 2016)
23. Coordinator of M.Phil/Ph.D. Programme (From Sep. 2016 to June 2018)
24. Coordinator of B.S. Programme (From July 2019)
25. Member of Departmental Doctoral Programme Committee of PUCIT
26. Coordinator of M.Phil/Ph.D. Programme (From 2019)

Editorial Experience

Guest Editor for the special issue of a W-category HEC recognized international journal of mathematical research.

Journal: Fractal and Fractional
Impact factor: 5.4
Special issue: Numerical Simulations and Advanced Techniques for Nonlinear Fractional Evolution Models

List of Publications

Published

1). ***End Conditions for Interpolatory Septic Spline***
Ghazala Akram and Shahid S. Siddiqi,
International Journal of Computer Mathematics, 82 (12): 1525 - 1540, **2005**

2). ***Solutions of Fifth Order Boundary-Value Problems Using Non-Polynomial Spline Technique***
Shahid S. Siddiqi and Ghazala Akram,
Applied Mathematics and Computation, 175 (2): 1574-1581, **2006**

3). ***Solutions of Sixth Order Boundary-Value Problems Using Non-Polynomial Spline Technique***
Ghazala Akram and Shahid S. Siddiqi,
Applied Mathematics and Computation, 181(1): 708-720, **2006**

4). ***End Conditions for Interpolatory Sextic Spline***
Shahid S. Siddiqi and Ghazala Akram
International Journal of Computer Mathematics, 83 (5-6): 473-485, **2006**

5). ***Nonic Spline Solutions of Eighth Order Boundary Value Problems***
Ghazala Akram and Shahid S. Siddiqi,
Applied Mathematics and Computation, 182 (1): 829-845, **2006**

6). ***Solutions of Twelfth Order Boundary Value Problems using Thirteen Degree Spline***
Shahid S. Siddiqi and Ghazala Akram,
Applied Mathematics and Computation, 182 (2): 1443-1453, **2006**

7). ***Sextic Spline Solutions of Fifth Order Boundary Value Problems***
Shahid S. Siddiqi and Ghazala Akram
Applied Mathematics Letters, 20(5): 591-597, **2007**

8). ***Solution of the System of Fourth Order Boundary Value Problems using Non-Polynomial Spline Technique***
Shahid S. Siddiqi and Ghazala Akram,
Applied Mathematics and Computation, 185(1): 128-135, **2007**

9). ***Solution of Tenth-Order Boundary Value Problems using Eleventh Degree Spline***
Shahid S. Siddiqi and Ghazala Akram,
Applied Mathematics and Computation, 185(1): 115-127, **2007**

10). ***Solution of the system of fourth order boundary value problems using cubic spline***
Shahid S. Siddiqi and Ghazala Akram
Applied Mathematics and Computation, 187(2): 1219-1227, **2007**

11). ***Quintic Spline Solutions of Linear Sixth-Order Boundary Value Problems***
Shahid S. Siddiqi, Ghazala Akram and Saima Nazeer
Applied Mathematics and Computation, 189(1): 887-892, **2007**

12). ***Nonpolynomial Sextic Spline Method for the Solution along with Convergence of Linear Special Case Fifth-Order Two-Point Boundary Value Problems***
Shahid S. Siddiqi, Ghazala Akram and Salman Amin Malik
Applied Mathematics and Computation, 190(1): 532-541, **2007**

13). ***Solution of 10th-Order Boundary Value Problems using Non-Polynomial spline Technique***
Shahid S. Siddiqi and Ghazala Akram
Applied Mathematics and Computation, 190(1): 641-651, **2007**

14). ***Numerical Solution of a System of Fourth Order Boundary Value Problems using Cubic Non-Polynomial Spline Method***
Shahid S. Siddiqi and Ghazala Akram
Applied Mathematics and Computation, 190(1): 652-661, **2007**

15). ***Solution of Eighth Order Boundary Value Problems using Non-Polynomial spline Technique***
Shahid S. Siddiqi and Ghazala Akram
International Journal of Computer Mathematics, 84 (3): 347-368, **2007**

16). ***Quintic Spline Solutions of Fourth Order Boundary-Value Problems***
Shahid S. Siddiqi and Ghazala Akram
International Journal of Numerical Analysis and Modeling, Canada, 5 (1): 101-111, **2008**

17). ***Quartic Spline Solution of Linear Fifth Order Boundary Value Problems***
Shahid S. Siddiqi, Ghazala Akram and Arfa Elahi
Applied Mathematics and Computation, 196(1): 214-220, **2008**

18). ***Septic Spline Solutions of Sixth Order Boundary-Value Problems***
Shahid S. Siddiqi and Ghazala Akram,
Journal of Computational and Applied Mathematics, (215): 288-301, **2008**

19). **S*olution of Twelfth Order Boundary Value Problems using Non Polynomial spline Technique***
Shahid S. Siddiqi and Ghazala Akram
Applied Mathematics and Computation, 199, 2 (1): 559-571, **2008.**

20). ***Solution of Eighth Order Boundary Value Problems using Variational Iteration Technique***
Shahid S. Siddiqi, Ghazala Akram and Sabahat Zaheer
European Journal of Scientific Research, 30 (3): 361-379, **2009**

21). ***Solution of Tenth Order Boundary Value Problems using Variational Iteration Technique***
Shahid S. Siddiqi, Ghazala Akram and Sabahat Zaheer
European Journal of Scientific Research, 30 (3): 326-347, **2009**

22). ***Solution of Eleventh Order Boundary Value Problems using Variational Iteration Technique***
Shahid S. Siddiqi, Ghazala Akram and Imran Zulfiqar Cheema
European Journal of Scientific Research, 30 (4): 505-525, **2009**

23). ***Variational Iteration Method for the Solution of Twelfth Order Boundary Value Problems***
Shahid S. Siddiqi, Ghazala Akram and Imran Zulfiqar Cheema
European Journal of Scientific Research, 33 (1): 96-114, **2009**

24). ***End Conditions for Interpolatory Nonic Splines***
Shahid S. Siddiqi and Ghazala Akram
South East Asian Bulletin of Mathematics, (34): 469-488, **2010**

25). ***Solution of First Order Singularly Perturbed Initial Value Problem in Reproducing Kernel Hilbert Space***
Ghazala Akram and Hamood Ur Rehman
European Journal of Scientific Research, 53 (4): 516-523, **2011**

26). ***Solutions of Fifth Order Singularly Perturbed Boundary Value Problems Using Non- Polynomial Spline Technique***
Shahid S. Siddiqi, Ghazala Akram and Ammara Kanwal,
European Journal of Scientific Research, 56 (3): 415-425, **2011**

27). ***Solution of Fifth Order Boundary Value Problems in Reproducing Kernel Space***
Ghazala Akram and Hamood Ur Rehman,
Middle East Journal of Scientific Research, 10 (2): 191-195, **2011**

28). ***Quartic Spline Solution of a Third Order Singularly Perturbed Boundary Value Problem***
Ghazala Akram
ANZIAM Journal, (53), E44-E58, **2012**

29). ***Solution of Seventh Order Boundary Value Problem by Differential Transformation Method***
Shahid S. Siddiqi, Ghazala Akram and Muzammal Iftikhar
World Applied Sciences Journal, 16 (11): 1521-1526, **2012**

30). ***Solution of a Fourth Order Singularly Perturbed Boundary Value Problem Using Quintic Spline***
Ghazala Akram and Nadia Amin
International Mathematical Forum, 7 (44): 2179 - 2190, **2012**

31). ***Solution of Seventh Order Boundary Value Problems by Variational Iteration Technique***
Shahid S. Siddiqi, Ghazala Akram and Muzammil Iftikhar,
Applied Mathematical Science, 6 (94): 4663-4672, **2012**

32). ***Solution of Fourth Order Obstacle Problems Using Quintic B-Splines***
Shahid S. Siddiqi, Ghazala Akram and Kalsoom Arshad
Applied Mathematical Sciences, 6 (94): 4651-4662, **2012**

33). ***Solution of Delay Differential Equations using Nonic Spline Collocation Methods***
Shahid S. Siddiqi, Ghazala Akram and Huzaima Baig
International Mathematical Forum, 7 (45-48): 2279-2292, **2012**

34). ***Reproducing Kernel Method for Fourth Order Singularly Perturbed Boundary Value Problem***
Ghazala Akram and Hamood ur Rehman
World Applied Sciences Journal 16 (12): 1799-1802, **2012**

35). ***Solution of the System of Fourth Order BoundaryValue Problem using Reproducing kernel Space***
Ghazala Akram and Hamood Ur Rehman,
Journal of Applied Mathematics and Informatics, 31 (1-2): 55-69, **2013**

36). ***Numerical solution of eighth order boundary value problems in reproducing Kernel space***
Ghazala Akram and Hamood Ur Rehman
Numerical Algorithms, 62(3): 527-540, **2013**

37). ***A Numerical Solution of a Convection-Dominated Equation Arising in Biology***
Ghazala Akram and Hamood ur Rehman
Research Journal of Applied Sciences, Engineering and Technology, 5(2): 507-509, **2013**

38). ***Solution of Linear Third Order Multi-point Boundary Value Problem Using RKM***
Ghazala Akram, Mohammad Tehseen, Shahid S. Siddiqi and Hamood Ur Rehman
British Journal of Mathematics and Computer Science, 3(2): 180-194, **2013**

39). ***Solution of Fourth Order Singularly Perturbed Boundary Value Problem Using Septic Spline***
Ghazala Akram and Afia Naheed
Middle-East Journal of Scientific Research, 15(2): 302-311, **2013**

40). ***A Numerical Solution to the Nonlinear Fifth Order Boundary Value Problems***
Ghazala Akram and Hamood ur Rehman
International Journal of Applied Science and Engineering, 11 (4): 415-422, **2013**

41). ***Solutions of a Class of Sixth Order Boundary Value Problems using the Reproducing Kernel Space***
Ghazala Akram and Hamood Ur Rehman
Abstract and Applied Analysis, Volume **2013**, Article ID 560590, 8 pages

42). ***Homotopy Perturbation Method with Reproducing Kernel Method for Third Order Nonlinear Boundary Value Problems***
Ghazala Akram and Hamood ur Rehman
Journal of Basic and Applied Scientific Research, 4 (1): 60-67, **2014**

43). ***Numerical Solution of Seventh Order Boundary Value Problems Using the Reproducing Kernel Space***
Ghazala Akram and Hamood ur Rehman
Research Journal of Applied Sciences, Engineering and Technology, 7(4): 892-896, **2014**

44). ***Solution of the System of Fifth Order Boundary Value Problem using Quartic Spline***
Ghazala Akram and Shahid S. Siddiqi
Research Journal of Applied Sciences, Engineering and Technology, 7(22): 4696-4701, **2014**

45). ***Quartic Non-Polynomial Spline Solution of a Third Order Singularly Perturbed Boundary Value Problem***
Ghazala Akram and Imran Talib
Research Journal of Applied Sciences, Engineering and Technology, 7(23): 4859-4863, **2014**

46). ***Solution of Seventh Order Boundary Value Problems using Adomian Decomposition Method***
Shahid S. Siddiqi, Muzammil Iftikhar and Ghazala Akram
Journal of Advanced Physics, 3(1), 92-96, **2014**

47). ***Hierarchical Cascade Model Leading to 7-th Order Initial Value Problem***
Ghazala Akram and Christian Beck
Applied Numerical Mathematics, 91: 89-97, **2015**

48). ***Solution of the System of Fifth Order Boundary Value Problem using Sextic Spline***
Ghazala Akram
Journal of the Egyptian Mathematical Society, 23(2): 406-409, **2015**

49). ***Solution of Fourth order Three-point Boundary Value Problem using ADM and RKM***
Ghazala Akram and Irfan Ahmad Aslam
Journal of the Association of Arab Universities for Basic and Applied Sciences, 20:61-67, **2016**

50). ***An Exponential Spline Technique for Solving Fractional Boundary Value Problem***
Ghazala Akram and Hira Tariq
Calcolo, 53(4), 545–558, **2016**

51). ***Numerical solution for solving special eighth-order linear boundary value Problems using Legendre Galerkin method***
Zaffer Elahi, Ghazala Akram and Shahid S. Siddiqi
Mathematical Sciences, 10(4), 201–209, **2016**

52). ***Solitary wave solutions of the Schäfer–Wayne short-pulse equation using two reliable methods***
Ghazala Akram and Fiza Batool
Optical and Quantum Electron (2017) 49: 14 **2017**.

53). ***Quintic Spline Technique for Time Fractional Fourth-Order Partial Differential Equation***
Hira Tariq and Ghazala Akram
Numerical Methods for Partial Differential Equations, 33(2), 445–466, **2017**

54). ***Nonpolynomial spline technique for the solution of ninth order boundary Value problems***
Ghazala Akram and Zara Nadeem
Turkish Journal of Mathematics, 41, 312-325, **2017**
DOI: 10.3906/mat-1507-112.

55). ***Solution of Ninth Order Boundary Value Problem using Tenth Degree Spline***
Ghazala Akram, Shahid S. Siddiqi and Muhammad Sufyan
Mathematical Sciences Letters, 6(2), 1–5, **2017**

56). ***Shape preservation of 4-point interpolating non-stationary subdivision scheme***
Ghazala Akram, Khalida Bibi, Kashif Rehan and Shahid S. Siddiqi
Journal of Computational and Applied Mathematics, 319, 480-492, **2017**

57). ***An improved adaptation of homotopy analysis method***
Maasoomah Sadaf and Ghazala Akram
Mathematical Sciences, 11, 55-62, **2017**

58). ***On the solitary wave dynamics of complex Ginzburg–Landau equation with cubic nonlinearity***
Fiza Batool and Ghazala Akram
Optical and Quantum Electron 49: 129, 1-9, **2017**.

59). ***New approach for exact solutions of time fractional Cahn–Allen equation and time fractional Phi-4 equation***
Hira Tariq and Ghazala Akram
Physica A: Statistical Mechanics and Its Applications, 473, 352-362 **2017**.

60). ***Cubic Polynomial Spline Scheme for Fractional Boundary Value Problems with Left and Right Fractional Operators***
Ghazala Akram and Hira Tariq
International Journal of Applied and Computational Mathematics, 3, 937-946, **2017**

61). ***Quintic spline collocation method for fractional boundary value problems***
Ghazala Akram and Hira Tariq
Journal of the Association of Arab Universities for Basic and Applied Sciences, 23, 57-65, **2017**

62). Residual power series method for solving time-space-fractional Benney-Lin equation arising in falling film problems
Hira Tariq and Ghazala Akram
Journal of Applied Mathematics and Computing, 55, 683-708, **2017**

63). A Class of Travelling Wave Solutions for Space-Time Fractional Biological Population Model in Mathematical Physics
Ghazala Akram and Fiza Batool
Indian journal of Physics, 91(10), 1145-1148, **2017**

64). New Traveling Wave Exact and Approximate Solutions For the Nonlinear Cahn-Allen Equation: Evolution of a Nonconserved Quantity
Hira Tariq and Ghazala Akram
Nonlinear Dynamics, 88(1),581-594, **2017**

65). ***Solitary wave solutions of (2 + 1)-dimensional soliton equation arising in Mathematical Physics***
Fiza Batool and Ghazala Akram
Optik - International Journal for Light and Electron Optics, 144, 152-162, **2017**

66). ***Existence and Uniqueness of Nonlinear Multi-Order Fractional Differential Equations via Green Functions***
Ghazala Akram and Rida Rasheed
International Journal of Applied and Computational Mathematics, 3 (4), 3831-3856, **2017**

67). ***Application of homotopy analysis method to the solution of ninth order boundary value problems in AFTI-F16 fighters***
Ghazala Akram and Maasoomah Sadaf
Journal of the Association of Arab Universities for Basic and Applied Sciences, 24: 149–155, **2017**

68). ***Application of extended Fan sub-equation method to (1+1)-dimensional nonlinear dispersive modified Benjamin-Bona-Mahony equation with fractional evolution***
Fiza Batool and Ghazala Akram
Optical and Quantum Electronics, 49: 375, 1-9, **2017**

69). ***Solutions of time-fractional Kudryashov–Sinelshchikov equation arising in the pressure waves in the liquid with gas bubbles***
Ghazala Akram, Maasoomah Sadaf and Nageela Anum
Optical and Quantum Electronics, 49: 373, 1-16, **2017**

70). ***Two reliable techniques for the analytical study of conformable time-fractional Phi-4 equation***
Ghazala Akram, Fiza Batool and Ayesha Riaz
Optical and Quantum Electronics, 50:22, 1-12, **2018**

71). ***Solution of damped generalized regularized long-wave equation using a modified homotopy analysis method***
Ghazala Akram and Maasoomah Sadaf
Indian Journal of Physics, 92(2): 191–196, **2018**

72). ***Study of Fractional Boundary Value Problem using Mittag-Leffler Function with Two Point Periodic Boundary Conditions***
Ghazala Akram and Fareeha Anjum
International Journal of Applied and Computational Mathematics, 4:27, 1-13
2018

73). ***Analytical solution of the Korteweg–de Vries equation and microtubule equation using the first integral method***
Ghazala Akram and Nadia Mahak
Optical and Quantum Electronics, 50:145, 1-13, **2018**

74). ***Numerical solutions for solving special tenth order linear boundary value Problems using Legendre Galerkin method***
Zaffer Elahi, Ghazala Akram and Shahid S. Siddiqi
Mathematical Sciences Letters, 7(1), 27–35, **2018**

75). ***A novel approach for solitary wave solutions of the generalized fractional Zakharov-Kuznetsov equation***
Fiza Batool and Ghazala Akram
Indian Journal of Physics, 92(1), 111-119, **2018**.

76). ***Application of the First Integral Method for Solving (1 + 1) Dimensional Cubic-Quintic Complex Ginzburg-Landau Equation***
Ghazala Akram and Nadia Mahak
Optik - International Journal for Light and Electron Optics, 164, 210-217, **2018**

77). ***New Solitary wave solutions of the time-fractional Cahn Allen equation via the improved (G'/G)-expansion method***
Fiza Batool and Ghazala Akram

European Physical Journal Plus, 133:171, 1-11,**2018**

78). ***Traveling wave and exact solutions for the perturbed nonlinear Schr¨odinger equation with Kerr law nonlinearity***
Ghazala Akram and Nadia Mahak
European Physical Journal Plus, 133, 212, 1-9,**2018**

79). ***Laguerre approach for solving system of linear Fredholm integro-differential equations***
Zaffer Elahi, Ghazala Akram and Shahid S. Siddiqi
Mathematical Sciences, 12(3), 185-195, **2018**

80). ***Existence and Uniqueness of Solution for Differential Equation of Fractional Order $2 < \alpha < 3$ with Nonlocal Multi-Point Integral Boundary Conditions***
Ghazala Akram and Fareeha Anjum
Turkish Journal of Mathematics, 42(5), 2304-2324, **2018**

81). ***The application of the $\exp(-\Phi(\xi))$-expansion method for finding the exact solutions of two integrable equations***
Naila Sajid and Ghazala Akram
Mathematical Problems in Engineering, 5191736, 1-10, **2018**

82). ***Spline solutions of Linear Fractional BVPs with Two Caputos Approaches***
Hira Tariq and Ghazala Akram
TWMS Journal of Applied and Engineering Mathematics, 8(2), 399-410, **2018**

83). Use of Bessel Polynomials for Solving Differential Difference Equations
Zaffer Elahi, Ghazala Akram and Shahid S. Siddiqi
Arab Journal of Basic and Applied Sciences, 26(1), 23-29, **2019**

84). *Extension of rational sine-cosine and rational sinh-cosh techniques to extract solutions for the perturbed NLSE with Kerr law nonlinearity*
Nadia Mahak and Ghazala Akram
European Physical Journal Plus, 134, 159, **2019**

85). *Exact solitary wave solutions by extended rational sine-cosine and extended rational sinh-cosh techniques*
Ghazala Akram and Nadia Mahak
Physica Scripta, 94, 115212, **2019**

86). Novel approaches to extract soliton solutions of the $(1+1)$ dimensional Fokas-Lenells equation by means of the complex transformation
Nadia Mahak and Ghazala Akram
Optik - International Journal for Light and Electron Optics, 192, 1-8, Sep. **2019**

87). Optical Solitons with full Nonlinearity for the Conformable Space-Time Fractional Fokas-Lenells Equation
Naila Sajid and Ghazala Akram
Optik - International Journal for Light and Electron Optics, 196, 1-13, Nov. **2019**

88). ***Level Set Shape Analysis of Binary 4-Point Non-stationary Interpolating Subdivision Scheme***
Khalida Bibi, Ghazala Akram and Kashif Rehan
International Journal of Applied and Computational Mathematics 146(5), 1-15, **2019**.

89). ***Shape Preservation of Ternary 4-point Non-Stationary Interpolating SubdivisionScheme***
Khalida Bibi, Ghazala Akram and Kashif Rehan
Punjab University Journal of Mathematics, 52(1), 77-97, **2020**.

90). ***A Legendre-homotopy method for the solutions of higher order boundary value problems***
Ghazala Akram and Maasoomah Sadaf
Journal of King Saud University – Science 32(1), 537-543, **2020**.

91). ***Shape Preserving Properties with Constraints on the Tension Parameter of Binary 3-Point Approximating Subdivision Scheme***
Khalida Bibi, Ghazala Akram and Kashif Rehan
International Journal of Image and Graphics 20(1), 1-21, 2050005, **2020.**

92). ***The modified auxiliary equation method to investigate solutions of the perturbed nonlinear Schrödinger equation with Kerr law nonlinearity***
Nadia Mahak and Ghazala Akram
Optik - International Journal for Light and Electron Optics, 207, 164467, Apr. **2020.**

93). ***Dark Peakon, Kink and periodic solutions of the nonlinear Biswas–Milovic equation with Kerr law nonlinearity***
Ghazala Akram and Iqra Zainab
Optik - International Journal for Light and Electron Optics, 208, 164420, Apr. **2020.**

94). ***Analytical solutions to the nonlinear space–time fractional models via the extended G'/G2-expansion method***
Nadia Mahak and Ghazala Akram
Indian Jouranal of Physics (August 2020) 94(8):1237–1247

95). ***Exact solitary wave solutions of the (1+1)-dimensional Fokas-Lenells equation***
Nadia Mahak and Ghazala Akram
Optik - International Journal for Light and Electron Optics, 196, 1-13, Nov. **2020**

96). ***Novel solutions of Biswas-Arshed equation by newly Phi^6-model expansion method***
Naila Sajid and Ghazala Akram
Optik - International Journal for Light and Electron Optics, 211, 1-22, 164564
2020

97). ***Analytical approximate solutions of time-fractional Integro- differential equations using a new iterative technique***
Maasoomah Sadaf, Ghazala Akram
TWMS Journal of Applied and Engineering Mathematics January 2021
11(2):605-615

98). ***Laguerre method for solving linear system of Fredholm integral equations***
Zaffer Elahi , Shahid S. Siddiqi , and Ghazala Akram
International Journal of Computer Mathematics, February 2021, Vol. 98, No. 11, 2175-2185.

99). ***Dark, singular, bright, rational and periodic solutions of the space–time fractional Fokas–Lenells equation by the Φ 6 -model expansion method***
Naila Sajid , Ghazala Akram
Optik-International Journal for Light and Electron Optics, Vol. 228, Feb. 2021, 165843.

100). ***Sub pico-second Soliton with Triki–Biswas equation by the extended (G'G2)-expansion method and the modified auxiliary equation method***
Ghazala Akram, Syeda Rijaa Gillani
Optik - International Journal for Light and Electron Optics, Vol. 229, March 2021, 166227.

101). ***Effects of fractional order derivative on the solution of time-fractional Cahn–Hilliard equation arising in digital image inpainting***
Maasoomah Sadaf and Ghazala Akram
Indian Journal of Physics ,95(5), May 2021, 891–899.

102). ***Soliton solutions for fractional DNA Peyrard-Bishop equation via the extended*** $\left(\frac{G'}{G^2}\right)$***-expansion method***
Ghazala Akram, Saima Arshed and Zainab Imran
Physica Scripta, Volume 96, Number 9 June 2021.

103). ***Effects of fractional order time derivative on the solitary wave dynamics of the generalized ZK–Burgers equation***
Naeem Faraz, Maasoomah Sadaf, Ghazala Akram, Iqra Zainab and Yasir Khan
Results in Physics Volume 25, June 2021, 104217.

104). ***Application of extended rational trigonometric techniques to investigate solitary wave solutions***
Nadia Mahak and Ghazala Akram
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Supervision of Ph.D./ M. Phil. Theses

Ph. D. Produced

1. Hamood ur Rehman ***Use of Reproducing Kernel Hilbert Space Functions to Solve Boundary Value Problems***, **2014**.

2. *Hira Tariq****, Efficacious Algorithms for the Solutions of Fractional Differential Equations,*** 2017**.**

3. *Fiza Batool****, A Study of Nonlinear Partial Differential Equations for Exact Solutions,*** 8.11.2018**.**

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5. Ms. Massomah Sadaf, ***Analytical Approximate Solutions of Differential Equations using Some Effective Techniques***, 25.1.19.

6. Ms. Khalida Bibi, ***Construction and Analysis of Subdivision Algorithms for Shape Modeling***, 2020.

7. Ms. Nadia Mahak, ***Exact Solutions of Nonlinear Partial Differential Equations Via Efficacious Techniques****,*2021.

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9. Muhammad Atta Ullah Khan, ***Extraction Of Traveling Wave Solutions Of Nonlinear Partial Differential Equations Using Effective Techniques****, 2024.*

10. Iqra Zainab, ***A Variety Of Structures Of Traveling Wave Solutions For Nonlinear Evolution Equations, 2024.***

Ph. D. Students In progress

1. Miss. Maria Sarfraz

M. Phil. Theses Supervised

1.	Rabia Siddique	Quartic Spline Solution of Third Order Singularly Perturbed Boundary Value Problem	2009
2.	Nadia Amin	Quintic Spline Solutions of Fourth Order Singularly Perturbed Boundary Value Problems	2009
3.	Hamood ur Rehman	Solution of First Order Singularly Perturbed Initial Value Problem in Reproducing Kernel Hilbert Space	2010
4.	Afia Naheed	Septic Spline Solution of Two-Point Fourth Order Singularly Perturbed Boundary Value Problem	2010
5.	Imran Talib	Quartic Non Polynomial Spline Solution of Third Order Singularly Perturbed Boundary Value Problem	2010
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27.	Fizza Sameen	Traveling Wave Solutions of Lakshmanan-Porsezian-Daniel Equation and Time-Fractional Klien-Fock-Gordon Equation Using Two Effective Techniques	2021
28.	Habiba Sabir	Exact Solutions of Kudryashovs's Equation Using Two Effective Techniques	2022
29.	Maham Maqbool	Solutions of Nonlinear Partial Differential Equations Using Extended Sinh-Gordon Expansion Method	2022
30.	Qurrat-ul-Ain	Solutions of Fractional Estevez-Mansfield-Clarkson Equation with M-Truncated and New Local Fractional Derivatives	2022
31.	Usama Ejaz	Traveling Wave Solutions Of Two Nonlinear Evolution Equations Using Extended (G'/G^2)-Expansion Method and Exp(-Φ(ξ))-Expansion Method	2022
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35.	Rimsha Latif	Traveling Wave Solutions of (2+1)-Dimensional Extended	2023

		Calogero-Bogoyavlenskii-Schiff Equation	
36.	Mavra Farrukh	Solitons and other Solutions of Integrable Manakov System	2023
37.	Muhammad Irfan	Exact Wave Solutions of Thin-Film Ferroelectric Material Equation	2023
38.	Pakeeza Bakhtawer	Formation of optical solitons to the nonlinear Perturbed Gerdjikov-Ivanov Equation with constant and variable coefficients	2024
39.	Ayesha Idrees	Optical soliton wave solutions of nonlinear Kariat-X equation via two analytical techniques	2024
40.	Mr. Muhammad Sheraz	Novel soliton solutions of (2 + 1)-Dimensional Sakovich equation using different analytical methods	2024
41.	Mr. Muhammad Ahmad	Exact soliton solutions of Caudrey-Dodd-Gibbon equation using unified method	2024

Refereeing

- Acta Mathematica Scientia
- Applied Mathematics and Computation
- Ain Shams Engineering Journal
- Applied Mathematical Letters
- The European Physical Journal Plus
- International Journal of Applied and Computational Mathematics
- International Journal of Applied Science and Engineering
- British Journal of Mathematics & Computer Science
- Mathematical Sciences
- International Journal of the Physical Sciences
- Applied Mathematical Modeling
- Numerical Algorithms
- International Journal of Computational Methods
- Applied Numerical Mathematics
- Journal of the Association of Arab Universities for Basic and Applied Sciences
- Indian Journal of Physics
- Chaos Solitons and Fractals
- Mathematics
- Symmetry
- Optical and Quantum Electronics
- Helyon
- Optik
- Physica Scripta
- Partial Differential Equations in Applied Mathematics
- Fractal and Fractional Calculus
- Alexandria Engineering Journal
- Axioms
- AIMS Mathematics
- Modern Physics Letters B

Workshops and Seminars (Presented/Attended)

1. **IEEE-INMIC 2001** held at Lahore University of Management Sciences, Lahore. Dec. 28-30, 2001
2. **Workshop and Colloquium on Mathematics** held at Government College, Lahore. June 24-28,2002
3. **Seminar on Computational Mathematics** held at Institute of Leadership and Management, Lahore. Aug. 5, 2002
4. **LUMS Mathematics Day** held at Lahore University of Management Sciences, Lahore. 3rd July, 2003
5. **World Conference on 21st Century Mathematics – 2004** at School of Mathematical Sciences, Govt. College University Lahore. Mar. 18–20, 2004.
6. **One Day Symposium on Mathematics** at National Centre for Mathematics, GC University, Lahore Nov. 27, 2004
7. **Winter Conference in Mathematics-2004** at Centre for Advanced Studies in Mathematics, LUMS, Lahore. Dec. 3-4, 2004
8. **One Day Seminar on Mathematics** at COMSATS, Lahore. December 6, 2004.
9. **Second World Conference on 21st Century Mathematics, 2005** at School of Mathematical Sciences, GC University, Lahore, Mar. 4-6, 2005
10. **LUMS International Conference on Mathematics and its Applications in Information Technology** at LUMS, Lahore Nov 27-30, 2005
11. **International Conference on Mathematics and its Applications,** at COMSATS, Lahore, Jan. 20-22, 2006
12. **Summer Conference in Mathematics** at Lahore University of Management Sciences, Lahore, July 29-30, 2006
13. **3rd International Conference on 21st Century Mathematics, 2007** at School of Mathematical Sciences, GC University, Lahore, Mar 4-7, 2007
14. **Dr. Ghazala Akram** attended **Winter Conference in Mathematics-2008** held at Lahore University of Management Sciences Lahore, Dec. 20-21, 2008
15. **Dr. Ghazala Akram** attended **Summer Conference in Mathematics-2008** organized by Centre for Advanced Studies in Mathematics, Lahore University of Management Sciences Lahore, July 28-29, 2008
16. **Dr. Ghazala Akram** attended **Lecture Series on Black Holes** held at Department of Mathematics, University of the Punjab on Oct 10-11, 2008
17. **Dr. Ghazala Akram** attended **Summer Conference in Mathematics-2009** held at Lahore University of Management Sciences, Lahore, July 27-28, 2009
18. **Dr. Ghazala Akram** attended **Winter Conference in Mathematics-2010** held at Lahore University of Management Sciences Lahore, Jan.11-12, 2010
19. **Dr. Ghazala Akram** attended **Conference on General Relativity and Gravitation** held at Department of Mathematics, **University of the Punjab Lahore** on 11-13 Feb. 2010
20. **Dr. Ghazala Akram** attended **Summer Conference in Mathematics-2010** organized by Centre for Advanced Studies in Mathematics, **Lahore University of Management Sciences Lahore**, July 26-27, 2010
21. **Dr. Ghazala Akram** attended **5th World Conference on 21st Century Mathematics 2011** held at Abdus Salam School of Mathematical Sciences, **GC University, Lahore**, Feb. 9-13, 2011
22. **Dr. Ghazala Akram** attended **One Day Conference on Gravitation** held at Department of Mathematics, **University of the Punjab Lahore** on Dec. 17, 2011

23. **Dr. Ghazala Akram** attended seminar titled **A Large Deviation Approach to Computing Rara Transitions in Multistable Stochastic Turbulence Flows** of Alexander Balanov at School of Mathematical Sciences Queen Mary, University of London, England on Oct. 16, 2012
24. **Dr. Ghazala Akram** attended seminar titled **Annihilating Brownian Motions in One Dimension and Ginibre Ensemble of Random Matrices** of Oleg Zaboronski at School of Mathematical Sciences Queen Mary, University of London, England on Oct. 23, 2012
25. **Dr. Ghazala Akram** attended **Lecture Series on Cosmology** at Department of Mathematics on Nov. 8-9, 2013
26. **Dr. Ghazala Akram** attended **International Conferecne on Relativistic Astrophysics** at Department of Mathematics on Feb. 10-14, 2015
27. **Dr. Ghazala Akram** delivered a talk in International Conference on Recent Advances in Applied Mathematics, held at COMSATS Institute of Information technology, Department of Mathematics, Lahore Campus. Dec. 17-18, 2015
28. **Dr. Ghazala Akram** presented a paper in 1st UMT International Conference in Pure and Applied Science 2016(1st UICPAS 2016) held on March 5-7, 2016
29. **Dr. Ghazala Akram** attended One Day conference on Gravitation and Cosmology in the honour of Prof. Dr. Asgher Qadir held at Department of Mathematics University of the Punjab, Lahore on Nov. 26, 2016.
30. **Dr. Ghazala Akram** presented a paper as an invited speaker in 5th "Umt International Conference On Pure And Applied Mathematics" arranged by University of Management and Technology" held from March 29th to 31st, 2019.
31. **Dr. Ghazala Akram** Organized and participated in PU-NMS International Schools Series for Students and Faculty at the Department of Mathematics, University of the Punjab, Lahore, from 14-02-2022 t0 18-02-2022.
32. **Dr. Ghazala Akram** attended Lecture Series by Prof. Dr. Kai Hormann at the Department of Mathematics, University of the Punjab, Lahore, from 21-03-2022 to 26-03-2022.
33. **Dr. Ghazala Akram** organized National Undergraduate Mathematics Contest at the Department of Mathematics, University of the Punjab, Lahore, on 01-10-2022.
34. **Dr. Ghazala Akram p**articipated in Lecture Series by Dr. Eric Dolores Cuenca at the Department of Mathematics, University of the Punjab, Lahore (15-10-2022 to 27-10-2022).
35. **Dr. Ghazala Akram** presented a paper as an invited speaker in 1st National Conference on Emerging Horizons in Science and Technology (NCEHST-2022) at University of Central Punjab, Lahore. (26-12-2022 to 27-12-2022).
36. **Dr. Ghazala Akram** presented a paper as an invited speaker in 7h UMT International Conference on Pure and Applied Mathematics (7th UICPAM-2023) at University University of Management and Technology , Lahore(01-12-2023 to 03-12-2023).
37. **Dr. Ghazala Akram** Presented a paper as an invited speaker in 6th International Conference on Pure and Applied Mathematics (ICPAM-2023) at University of Sargodha, Sargodha (06-12-2023 to 07-12-2023).