+92 0300 450 4737
e-mail: azharalizafar@gcu.edu.pk
www. http://gcu.edu.pk/BioMath_Azhar.htm

Azhar Ali Zafar

Personal Detail

Title, Name	Dr. A. A. Zafar
ORCID ID	http://orcid.org/0000-0003-3825-0446
SCOPUS ID	37011891900
Gender	Male
Birth	26 Oct. 1977, Lahore, Pakistan
Nationality	Pakistani
CNICN	35201-1363045-3
Languages	English (Fluent), Deutsch (Moderate), Polish (Basic), Urdu (Native)
Cell No.	03004504737
e-mail:	azharalizafar@gcu.edu.pk
Postal Address	Department of Mathematics, GC University Lahore, Pakistan, 54000

Education

2009-2014	PhD. Abdus Salam School of Mathematical Sciences, GC University Lahore, Pakistan
Title	Exact solutions for different motions of non-Newtonian fluids with/without fractional derivatives
Date	5 May 2014
Advisor	Constantin Fetecau (Academy of Romanian Scientists, 050094 Bucuresti, Romania)
2008-2009	Diploma for Academic Excellence in Mathematics, Abdus Salam School of Mathematical Sciences, GC University Lahore, Pakistan
1996-1998	MSc, University of the Punjab, Lahore, Pakistan
1994-1996	BSc, University of the Punjab, Lahore, Pakistan

Appointments

2023-Present	Associate Professor, GC University Lahore, Pakistan

2019	Post Doctorate Fellow, Lodz University of Technology Poland (Mentor: Prof. Jan Awrejcewicz)
2016	Post Doctoral Fellow, Abdus Salam School of Mathematical Sciences, GC University Lahore
2015-2023	Assistant Professor, GC University Lahore, Pakistan
2015	Visiting Professor at Abdus Salam School of Mathematical Sciences, GC University Lahore
2005-2015	Lecturer, GC University Lahore, Pakistan
2001-2005	Lecturer, Government Postgraduate College Jhelum, Pakistan

Honors and Awards

2013	Won the Research performance prize, 2013 during the PhD studies at Abdus Salam School of Mathematical Sciences, GC University Lahore on November 23, 2013
2013	Won second prize in the category of Young speakers at 6^{th} world conference on 21^{st} century Mathematics 2013, Abdus Salam School of Math. Sci. GC University Lahore March 6-9, 2013
2009	Merit Scholarship on Declaration of successful in Diploma for Academic excellence in Mathematics Sponsored by National Centre of Mathematics and Higher Education Commission Government of Pakistan, 2009
2009	Chief Minister Cash prize award for GCUL teachers whose students got positions in SSCE 2009
2008	Chief Minister Cash prize award for GCUL teachers whose students got positions in SSCE 2008
2003	Merit certificate for securing First position in Civil Defence Specialist Instructor's Course at Federal Civil Defence Training School, Lahore, held from 17-03 - 2003 to 19-04-2003

Administrative Duties

- Member Board of Faculty GC University Lahore
- Member Board of Faculty Minhaj University Lahore
- Member MSc and MPhil Admission Committee, Department of Mathematics GCUL
- In charge attendance, Department of Mathematics GCUL (2014-15)
- Member purchase committee, Department of Mathematics GCUL (2014-15)
- Member Board of Studies: Department of Mathematics GC University Lahore from July 2007 to September 27, 2009.
- In charge Quality Enhancement Cell (QEC) affairs: Department of Mathematics GC University Lahore from September 2006 to September 27, 2009.
- Assistant Advisor: Chawala Mathematical Society, Department of Mathematics GC University Lahore from December 2005-September 2006
- In charge Departmental Seminars: Department of Mathematics GC University Lahore from December 2005-September 2006.
- Organizer/Focal person: Unpacking Mathematics Seminar Series at Department of Mathematics GC University Lahore.

Teaching

- Classical Mechanics, Master course
- Vector and Tensor Analysis, Master course
- Fractional Calculus, MS course
- Non-Newtonian Fluid Dynamics, MS course
- Computing Tools for Mathematicians, BS(Hons.) course
- Non-Linear systems, MS course
- Classical Mechanics, BS(Hons.) course
- Real Analysis, Master course
- Measure Theory, Master course
- Fluid Dynamics, BS(Hons.) course
- Chaos Theory MS course
- Functional Analysis, BS(Hons.) course
- Calculus, BS(Hons.) course
- Linear Algebra, BS(Hons.) course

Supervision of Junior Researchers

PhD

. Maryam Asghar (2024) Study of Heat and Mass Transfer Models for non-Newtonian Fluids with Fractional Derivatives

Co Supervisor of Javaid Iqbal (2024) Convergence and Stability Analysis for Fractional Analysis of non-Linear Models

. Co Supervisor of Muhammad Bilal Sehole (2018) Analytical Solutions of Different Motions of Differential and Rate Type Fluids with Fractional Derivatives

MPhil

- Sajjad Hussain (2024) Investigating non-integer order models for non-Newtonian fluids with magnetic and thermal interactions
- Sehrish James (2024) An investigation of nano particle enhanced magneto-hemodynamics cryosurgery using Oldroyd-B fluid model
- Zainab Batool (2024) A study of basic vibration theory using distributed order derivative modeling
- Talha Sajid (2023) Mathematical model of coolant flow in cylindrical tube in automobile radiators
- Muhammad Ahsan (2023) Analysis of chaos in the dynamics of triple pendulum
- Tayyba Bibi (2023) On some rotational flows of non-integer order rate type fluid with shear stress on the boundary using Caputo Fabrizio derivative approach
- Beenish Shehzadi (2023) Theoretical study of blood flows in coronary and femoral arteries using Atangana-Baleanu fractional order derivative approach
- Faiqa Aslam (2023) On the control of non-integer order derivatives on unsteady unidirectional motions of an Oldroyd-B fluid
- Sadia Perveen (2023) Dynamics of fractional oscillators by using fractional order derivatives
- Arfa Aslam (2023) Surface vibrations of drum in the setting of non-integer order modeling
- Ali Akbar (2023) Optical control analysis to reduce spread of HIV/AIDS through changing habits
- Khadeeja Aslam (2022) Exact solutions for Maxwell fluid via a novel approach of

Caputo fractional model

- Maria Batool (2022) Mathematical model for dynamics of blood in arteries
- Osalusi Oluwasoji John (2019) MHD boundary layer flow of a rate type fluid over an oscillating inclined plate with slip and Newtonian heating at the boundary
- Warda Shaukat (2019) Comparison of Analytical solution of a Maxwell fluid with slip effects in view of the Caputo derivative and Atangana Baleanu derivatives
- Sania Nasir (2019) Hydro magnetic free convection flow of second grade fluid over an inclined infinite plate
- Muhammad Waqas Ashraf (2018) MHD Natural Convection Boundary-layer Flow Over a Semi-Infinite Heated Plate with Arbitrary Inclination.
- Mehwish Mubeen (2018) Theoretical study of the blood flow through a circular tube using Caputo Fabrizio derivatives
- Muhammad Afzal (2016) On the flow of Maxwell fluid on an infinite plate
- Saba Iqbal (2016) On the flow of some rate type fluids over an infinite plate
- Sadia Munawar(2015) Study of the dynamics of some rate type fluids
- Co-supervised Muhammad Tanveer (2014) MHD flow of Oldroyd-B fluid with slip effects and fractional derivative
- Co-supervised Mehwish Rana (2008) Some fixed point theorems in fuzzy metric space

BS(Hons)

- Ayesha Abdul Khaliq (2022) Theoretical study of Study of Nano fluids
- Isha Zaka Ullah (2022) On some applications of Nano fluids
- Muhammad Awaisullah (2022) Analysis of chaotic behavior of double pendulum
- Hamna Rouf (2022) A mathematical model of multi-parameter oscillator
- Anayza Aslam (2022) Study of some laws of magnetism and their applications
- Areej Asif (2021) A study of Composite Fractional Relaxation Oscillator
- Naila Nazir (2021) Study of Fraction Bagley-Torvik Equation
- Faiqa Aslam (2021) Analysis of heat mass transfer model
- Ayesha Jamil (2021) Theoretical study of the blood flow in arteries
- Zainab Bajwa (2021) An overview of linear oscillators with fractional derivatives
- Akaash Raza (2019) Technical and fundamental analysis of Crypto market
- Shazeel Shabbir (2019) Rotational flows of non-integer order rate type fluids
- Mubashar Zahid (2019) Dynamics of non-integer order fluids through a channel
- Rashid Fareed (2019) Technical and fundamental analysis of pricing options
- Aisha (2018) Creeping bidirectional flows
- Zain (2018) Laminar boundary layer flows
- Aysha Rafique (2018) On some unidirectional flows
- Muhammad Hamza Sarfraz (2018) On Game Theory
- Sania Nasir(2017) On the study of Affine transforms
- Madiha (2017) Some properties of Moebius Transforms
- Rizwan Kareem (2017) Magnetohydrodynamic
- Najam Ali (2017)Some alternate forms of Navier Stokes' equation
- Tehreen Siraj (2015) Introduction to mathematical Chaos theory
- Anum Saboor (2015)On fractional calculus and its applications
- Sibgha Shaukat (2015) Dynamics of a viscous fluid between two slides walls perpendicular to the infinite plate
- Kibsha Ayyaz (2015) A study of unsteady flow of an Oldroyd-B fluid with fractional derivatives model
- Arooj Fatima (2015) MHD flow of an Oldroyd-B fluid between two slide walls perpendicular to a plate
- Sidra Hassan (2015) On Flow of rate type fluids in a circular duct

Scientific Seminar/Workshops/Conferences Organization

2024 * Organized A symposium on Mathematics without boundaries: Interdisciplinary perspectives at KSK Campus, GC University Lahore on November 12, 2024.

2023 * Organized Super Colossal Mathematics Day at Department of Mathematics KSK Campus, GC University Lahore on February 22, 2023.

2021 * Organized *Unpacking Mathematics-a weekly Seminar Series* at Department of Mathematics, GC University Lahore.

2019 * Organized Pi day at department of mathematics GC University Lahore on on March 14, 2019

* Organized a Workshop on Solitons and its Applications WSA-2019 at GC University on January 07, 2019

2018 * Co organizer of the International Workshop on Non-Linear Analysis and its Applications 2018 at University of Management Sciences Lahore Campus November 16-18, 2018.

* Organized International Conference on Mathematics and its Applications ICMA-2018 at GC University Lahore November 13-15, 2018

* Organized a Workshop on Fluid Dynamics WFD-2018 at GC University on January 15, 2018

2017 * Organized International Conference on Mathematics and its Applications ICMA-2017 at GC University Lahore November 13-15, 2017

2016 * Organized Scientific Seminars on Fluid Dynamics (round-I) 18-02-2016—02-03-2016 at Abdus Salam School of Mathematical Sciences, GC University Lahore, Pakistan

* Organized Scientific Seminars on Fluid Dynamics (round-II) 16-03-2016—20-04-2016 at Abdus Salam School of Mathematical Sciences, GC University Lahore, Pakistan

* Organized Scientific Seminars on Fluid Dynamics (round-III) 04-05-2016—01-06-2016 at Abdus Salam School of Mathematical Sciences, GC University Lahore, Pakistan

Memberships

- Member Chawala Mathematical Society, GC University Lahore, Pakistan

Publications

1. **A. A. Zafar**, Maria Batool, M. Shahzaib, A Non-Integer Order Blood Rheological Model in a Magneto-thermal Environment, Journal of Prime Research in Mathematics, 21(1) (2025), 55–70

2. **A. A. Zafar**, Muhammad Shahzaib, Khurram Shabbir, Advanced Hemodynamic Modeling of Pulsatile Blood Flow with Magnetic Nano-particles: Fractional Analysis for Optimizing Biomedical Applications, Punjab University Journal of Mathematics (2025), 57(01),1-28 https://doi.org/10.52280/pujm.2025.57(01)01

3. **A. A. Zafar**, S. Hussain, K. Shabbir, Analysing MHD Heat-Mass Transfer model for Oldroyd-B Fluid Using Fractional Order Prabhakar Derivative, Journal of Prime Research in Mathematics, 20(2) (2024), 10–29

4. **A. A. Zafar**, M. A. Sadiq, K, Shabbir, L. Guran, A computational study of vibrating system using the constant proportional Caputo derivative operator approach, International Journal of Modern Physics C, 2024, **https://doi.org/10.1142/S0129183124502310**

5. **A.A. Zafar**, S. Hussain. Dynamic Interactions: Non-Integer-Order Heat-Mass Transfer in Magnetohydrodynamic Flow of Non-Newtonian Fluid over Inclined Plates. Symmetry **2024**, 16, 826. https://doi.org/10.3390/ sym16070826

6. M. B. Riaz, A. U. Rehman, C. K. Chan, **A. A. Zafar**, O. Tunç, Thermal and Flow Properties of Jeffrey Fluid Through Prabhakar Fractional Approach: Investigating Heat and Mass Transfer with Emphasis on Special Functions, Int. J. Appl. Comput. Math (2024) 10:111 https://doi.org/10.1007/s40819-024-01747-z

7. K. Aslam, **A. A. Zafar,** N. A. Shah, B. Almutairi, MHD free convection flows for Maxwell fluids over a porous plate via novel approach of Caputo Fractional Model, Symmetry 2023, 15,1731. https://doi.org/10.3390/sym15091731 **(Impact factor 2.94)**

8. J. Iqbal, K. Shabbir, A. Bucur, **A. A. Zafar,** Analyzing the convergence of a semi-numerical-analytical scheme for non-linear fractional PDEs, Alexandria Engineering Journal 2023,78; 26-34. https://doi.org/10.1016/j.aej.2023.06.095 **(Impact factor 6.626)**

9. N. A. Shah, I. Ahmad, K. K. Asogwa, **A. A. Zafar,** W. Weera, A. Akgul**,** Numerical study of a nonlinear fractional chaotic Chua's circuit, AIMS Mathematics, 8(1); 1636-1655. https://doi: 10.3934/math.2023083 **(Impact factor 2.65)**

10. M. Asgir, M. B. Riaz, F. Jarad, **A. A. Zafar,** Heat transfer of MHD Oldroyd-B fluid with ramped wall velocity and temperature in view of local and nonlocal differential operators, Fractals, Vol. 30, No. 5 (2022) 2240172 **(Impact factor 3.154)**

11. **A. A. Zafar**, J. Awrejcewicz, G. Kudra, N. A. Shah, Se-Jin Yook, Magneto-free-convection flow of a rate type fluid over an inclined plate with heat and mass flux, Case Study in Thermal Engineering, 27(2021) 101249. https://doi.org/10.1016/j.csite.2021.101249 **(Impact Factor 4.724)**

12. M. Asgir, **A. A. Zafar**, A. M. Alsharif, M. B. Riaz, M. Abbas, Special function form exact solutions for Jeffery fluid: An application of power law kernel, *Adv Differ Equ* **2021,** 384 (2021). https://doi.org/10.1186/s13662-021-03539-x. **(Impact Factor 0.336)**

13. N. Iftikhar, M. B. Riaz, **A. A. Zafar**, S. M. Husnine, Nano□fluid with nonlinear Rosseland thermal radiation and mixed convection, Advances in the Theory of Nonlinear Analysis and its Applications 5 (2021) No. 3, 412□420. https://doi.org/10.31197/atnaa. 752667

14. M. B. Riaz, M. Asgir, **A. A. Zafar**, S. Yao, Combined Effects of Heat and Mass Transfer on MHD Free Convective Flow of Maxwell Fluid with Variable Temperature and Concentration, Mathematical Problems in Engineering Volume 2021, Article ID 6641835, 36 pages https://doi.org/10.1155/2021/6641835 **(Impact Factor 1.009)**

15. **A. A. Zafar**, J. Awrejcewicz, O. Mazur, M. B. Riaz, Study of composite fractional relaxation differential equation using fractional operators with and without singular kernels and special functions. Adv Differ Equ 2021, 87 (2021). https://doi.org/10.1186/s13662-021-03227-w **(Impact Factor 0.336)**

16. J. Awrejcewicz, **A. A. Zafar**, G. Kudra, M. B. Riaz, Theoretical study of the blood flow in arteries in the presence of magnetic particles and under periodic body acceleration, Chaos Solitons & Fractals 140(50):110204 DOI:10.1016/j.chaos.2020.110204 **(Impact Factor 3.064)**

17. M. M. Ghalib , **A. A. Zafar** , M. Farman , A. Akgul, M. O. Ahmad and A. Ahmad, Unsteady MHD flow of Maxwell fluid with Caputo–Fabrizio non-integer derivative model having slip/non-slip fluid flow and Newtonian heating at the boundary, Indian Journal of Physics, 2020 https://doi.org/10.1007/s12648-020-01937-7 **(Impact Factor 1.407)**

18. **A. A. Zafar**, G.Kudra, J. Awrejcewicz, M. B. Riaz and Thabet Abdeljawad, A comparative study of fractional oscillators, Alexandria Engineering Journal 2020, https://doi.org/10.1016/j.aej.2020.04.029 **(Impact Factor 3.696)**

19. M. M. Ghalib, **A. A. Zafar**, M. B. Riaz, Z. Hammouch and K. Shabbir , Analytical approach for the steady MHD conjugate viscous fluid flow in a porous medium with non singular fractional derivative, Physica A: Statistical Mechanics and its Applications. Volume 554, 15 September 2020, 123941 **(Impact Factor 2.500)**

20. C. Fetecau, **A. A. Zafar**, D. Vieru, J. Awrejcewicz, Hydromagnetic flow over a moving plate of second grade fluids with time fractional derivatives having non-singular kernel, Chaos, Solitons and Fractals, Nonlinear Science , and Non equilibrium and Complex Phenomena, 130 (2020) 109454. doi: 10.1016/j.chaos.2019.109454 **(Impact Factor 3.064)**

21. **A. A. Zafar**, G.Kudra, J. Awrejcewicz, An investigation of Bagley-Torvik equation, Entropy 2019, 22,28. doi: 10.3390/e22010028 **(Impact Factor 2.419)**

22. M. M. Ghalib, **A. A. Zafar**, Z. Hammouch, M. B. Riaz and K. Shabbir , Analytical results on the unsteady rotational flow of fractional-order non-Newtonian fluids with shear stress on the boundary, Discrete and Continuous Dynamical Systems, Series S, 2020, 13(3): 683-693. doi: 10.3934/dcdss.2020037 **(Impact Factor 0.545)**

23. **A. A. Zafar**, K. Shabbir, A. Naseem, W. Ashraf, MHD Natural Convection Boundary-layer Flow Over a Semi-Infinite Heated Plate with Arbitrary Inclination, Discrete and Continuous Dynamical Systems, Series S, 2020, 13(3): 1007-1015, doi: 10.3934/dcdss.2020059 **(Impact Factor 0.545)**

24. N. A. Shah, **A. A. Zafar**, C. Fetecau, A. Naseem, Effects of exponential heating on double-diffuse free convection flows on a moving vertical plate, Mathematical Reports, 2022, 3: 481-503, (**Impact Factor 0.972)**

25. **A. A. Zafar**, N. A. Shah, I. Khan, Two Phase Flow of Blood through a Circular Tube with Magnetic Properties, *Journal of Magnetism and Magnetic Materials* (2018), doi: https://doi.org/10.1016/j.jmmm.2018.08.035 **(Impact Factor 3.046)**

26. **A. A. Zafar,** M.B. Riaz, N.A. Shah, M.A. Imran, Influence of non integer order derivatives on unsteady unidirectional motions of an Oldroyd-B fluid with generalized boundary conditions, Eur. Phys. J. Plus (2018) 133: 127 DOI 10.1140/epjp/i2018-11981-4 **(Impact Factor 2.240)**

27. M.A. Imran, M.B. Riaz, N.A. Shah, **A.A. Zafar**, Boundary layer flow of MHD generalized Maxwell fluid over an exponentially accelerated infinite vertical surface with slip and Newtonian heating at the boundary, Results in Physics 8 (2018) 1061–1067. **(Impact Factor 2.148)** doi: https://doi.org/10.1016/j.rinp.2018.01.036 2211-3797.

28. **A. A. Zafar,** B. Riaz, M. I. Asjad, Unsteady rotational flow of fractional Maxwell fluid in a cylinder subject to shear stress on the boundary, Punjab University Journal of Mathematics Vol. 50(2)(2018) 21-32.

29. B. Riaz, **A. A. Zafar,** Exact solutions for the blood flow through a circular tube under the influence of a magnetic field using fractional Caputo-Fabrizio derivatives, Math. Model. Nat. Phenom. 13 (2018) 8 doi: https://doi.org/10.1051/mmnp/2018005 **(Impact Factor 1.101)**

30. N. A. Shah, **A. A. Zafar**, S. Akhtar, General solution for MHD-free convection flow over a vertical plate with ramped wall temperature and chemical reaction, Arab. J. Math (2018) DOI 10.1007/s40065-017-0187-z

31. N. A. Shah, **A. A. Zafar**, C. Fetecau, Free convection flows over a vertical plate that applies shear stress to a fractional viscous fluid, Alexandria engineering Journal, 2017 https://doi.org/10.1016/j.aej.2017.08.023

32. N. A. Shah, Y. Mashud, **A. A. Zafar**, Unsteady free convection flow of viscous fluids with analytical results by employing time-fractional Caputo-Fabrizio derivative (without singular kernel) Eur. Phys. J. Plus (2017) 132: 411. https://doi.org/10.1140/epjp/i2017-11711-6 **(Impact Factor 2.240)**

33. **A. A. Zafar,** N. A. Shah, N. Nigar, On some rotational flows of non-integer order rate type fluids with shear stress on the boundary, Ain Shams Engineering Journal 9(2018)1865-1876.

34. **A. A. Zafar,** C. Fetecau, Flow over an infinite plate of a viscous fluid with non-integer order derivative without singular kernel, Alexandria Engineering Journal (2016) Volume 55, Issue 3, September 2016, 2789-2796 http://dx.doi.org/10.1016/j.aej.2016.07.002

35. **A. A. Zafar,** C. Fetecau, and I. A. Mirza, On the flow of Oldroyd-B fluids with fractional derivatives over a plate that applies shear stress to the fluid, Mathematical Reports 18(68),1 (2016), 58-108 **(Impact Factor 0.250)**

36. A. Rauf, **A. A. Zafar**, I. A. Mirza, Unsteady rotational flows of an Oldroyd-B fluid due to tension on the boundary, Alexandria Engineering Journal (2015) 54, 973-979.

37. N. A. Shah, **A. A. Zafar**, Some unidirectional flows of Maxwell fluids with time dependent viscosity and fractional calculus modelling, Buletinul Institutului Politehnic Din IASI. Tomul LXI (LXV) Fasc. 4 (2015) 55-71.

38. M. B. Riaz, **A. A. Zafar**, D. Vieru, On flows of generalized second grade fluids generated by an oscillating flat plate, Buletinul Institutului Politehnic Din IASI. Tomul LXI (LXV) Fasc. 1 (2015) 99-113.

39. **A. A. Zafar**, D. Vieru, S. Akhtar, Magnetohydrodynamics of rotating fractional second grade fluid in porous medium, Journal of Prime Research in Mathematics vol. **10**(2015), 45-58.

40. M. Rana, N. Shahid and **A. A. Zafar**, Effects of side walls on the motion induced by an infinite plate that applies shear stresses to an Oldroyd-B fluid, *Z. Naturforsch.* **68a** (2013) 725-734. doi:10.5560/ZNA.2013-0052. **(Impact Factor 1.414)**

41. D. Vieru and **A. A. Zafar**, Some Couette Flows of a Maxwell Fluid with slip condition, Appl. Math. Inf. Sci. **7**, No. 1, 209-219 (2013). **(Impact Factor 1.232)**

42. M. Imran, M. Kamran, M. Athar, **A. A. Zafar**, Taylor–Couette flow of a fractional second grade fluid In an annulus due to a time-dependent couple, Nonlinear Analysis: Modelling and Control, 2011, Vol. 16, No. 1, 47–58. **(Impact Factor 0.896)**

43. M. Jamil, **A. A. Zafar**, N. A. Khan, Translational Flows of an Oldroyd-B Fluid with Fractional Derivatives, Computers and Mathematics with Applications 62 (2011) 1540–1553. **(Impact Factor 1.860)**

44. M. Jamil, A. Rauf, **A. A. Zafar**, N. A. Khan, Some New Exact Analytical Solutions for Helical Flows of Second Grade Fluids Commun. Nonlinear Sci. Numer. Simulat. 17 (2012) 141–153. **(Impact Factor 3.181)**

45. M. Jamil, A. Rauf, N. A. Khan, **A. A. Zafar,** New Exact Analytical Solutions for Stokes' First Problem of Maxwell Fluid with Fractional Derivative Approach, Computers and Mathematics with Applications 62 (2011) 1013–1023. **(Impact Factor 1.860)**
46. **A. A. Zafar**, A. Rauf, D. Vieru, On exact solution for flow of a fractional Oldroyd-B fluid between two side walls perpendicular to a plate, Buletinul Institutului Politechnic Din Iasi, (2012) 17-29.
47. M. Kamran, M. Athar, **A. A. Zafar,** D. Vieru, Axial Couette Flow Of A Generalized Second Grade Fluid Due To A Longitudinal Time-Dependent Shear Stress, Buletinul Institutului Politehnic Din Iasi Publicat De Universitatea Tehnica "GHEORGHE ASACHI" DIN IASI TOMUL LVII (LXI), FASC. 1, 2011SECμIA MATEMATICA. MECANICA TEORETICA. FIZICA (2011) 149-157
48. I. Siddique, A. Mahmood, **A. A. Zafar**, On the rotational flow of a Newtonian fluid between two circular cylinders, Buletinul Institutului Politehnic Din IASI. Tomul LVI (LX), Fasc. 4 (2010) 33-38.
49. **A. A. Zafar**, Liaqat Ali, Generalization of Reich's fixed point theorem, Int. Journal of Math. Analysis, Vol. 3, No. 25 (2009) 1239 - 1243
50. M. Akram, **A. A. Zafar**, A. A. Siddique, General Class of Contractions: A-contractions. Novi Sad J. Math. Vol. 38, No. 1 (2008) 25-33.
51. M. Akram, A. A. Siddique**, A. A. Zafar**, Some fixed point theorems for a general class of contraction maps. JPAS. Vol. 22 No. 2 (2004).
52. M. Akram, A. A. Siddique**, A. A. Zafar**, Some fixed point theorems for multi-valued A*- Mappings. Korean J. Math. Sciences Vol. 10, No.2 (2003) 7-12.

Book Chapters

1. **A. A. Zafar**, & Jan Awrejcewicz, (2024). Influence of Fractional Order Parameter on the Dynamics of Different Vibrating Systems. In book: Perspectives in Dynamical Systems II — Numerical and Analytical Approaches (pp.747-775) 10.1007/978-3-031-56496-3_48. Conference Proceedings DSTA, Lodz, Poland December 6-9, 2021 Publisher: Springer Nature Germany.
2. **A. A. Zafar**, M. B. Riaz, Z. Hammouch, A class of exact solutions for unsteady MHD natural convection flow of a viscous fluid over a moving inclined plate with exponential heating, constant concentration and chemical reaction, In book: 4th International conference on computational mathematics and engineering sciences (CMES-2019). Publisher: Springer Nature Switzerland AG.
3. O. J. Osalusi, **A. A. Zafar**, M. Asgir, D. Baleanu, D, M. B. Riaz, (2023). Case Study of Non-singular Kernel Model for MHD Boundary Layer Flow of a Rate Type Fluid over an Oscillating Plate. In: Singh, J., Anastassiou, G.A., Baleanu, D., Cattani, C., Kumar, D. (eds) Advances in Mathematical Modelling, Applied Analysis and Computation. Lecture Notes in Networks and Systems, vol 415. Springer, Singapore. https://doi.org/10.1007/978-981-19-0179-9_4

Selected Short Articles

1. **A. A. Zafar,** With Mathematics in Mind" The Scientific Ravi 2017"
2. **A. Zafar,** Shockwave Supernova-Pure versus Applied Mathematics "The Scientific Ravi 2016"
3. **A. A. Zafar,** Super Colossal Mathematics "The Scientific Ravi 2015" pp 78-80

4. **A. A. Zafar,** A Brief Introduction to Fluid Mechanics “The Scientific Ravi 2014” pp 94-96
5. **A. A. Zafar**, Strange Beautiful Mathematics and Mysterious Music “The Scientific Ravi 2009” pp 73-78
6. **A. A. Zafar**, On Baire’s Theory of Category “The Scientific Ravi 2007” pp 94-96
7. **A. A. Zafar**, Fixed Point Theory “The Scientific Ravi 2006” pp 101-104
8. **A. A. Zafar**, Special Theory of Relativity http://www.toequest.com/forum/physics-articles/1980-special-theory-relativity.html

Selected Invited Lectures

1) Deliver a talk on “Financial Intelligence: A journey through mathematical concepts in finance” January 24, 2025 Organized by Department of economics and Quantitative Methods, University of Management and Technology, Lahore.
2) Deliver a talk on “Dynamic interactions: Non integer order heat transfer model for non-Newtonian fluids” at 1st International Conference on Mathematics and Mathematics Education 2024, December 5-6, 2024 Hosted by Indonesian Mathematical Society DIY-Central Java Region, UIN Walisongo, Universitas Diponegoro, Universitas PGRI Semarang.
3) Deliver a talk on “Exploring Heat-Mass Transfer in Non-Newtonian Fluids: Fractional Derivative Perspective and Moving Magnetic Fields” at Two days international conference on Recent trends in Mathematics June 01-02, 2024 at Abdus Salam School of Mathematical Sciences, GC University Lahore, Pakistan
4) Deliver a talk on “A theoretical analysis of blood rheology through arteries: A non-integer order derivative approach” at First Workshop on Advancements in Mathematics and its Applications WAMA-2023 Organized by Department of Mathematics Riphah International University Raiwind Road Lahore, Pakistan June 03-04, 2023
5) Deliver a talk on “Shock Wave Supernova; Understanding music with mathematics” at Super Colossal Mathematics Day February 22, 2023 at Department of Mathematics, GC University Lahore, Pakistan.
6) Deliver a talk on “Strange beautiful mathematics and mysterious music” on January 05, 2023 at Abdus Salam School of Mathematical Sciences, GC University Lahore, Pakistan
7) Deliver a talk on “Analysis of vibrating systems in the regime of fractional order modeling” at Two days international conference on Mathematical modeling and scientific computing for industrial research November 07-08, 2022 at Abdus Salam School of Mathematical Sciences, GC University Lahore, Pakistan
8) Deliver a talk on “Mathematical model of blood in the setting of fractional order derivative approach” at Workshop on Mathematical biology and its applications March 24-25, 2022 at Abdus Salam School of Mathematical Sciences, GC University Lahore, Pakistan
9) Deliver a talk on “A mathematical model of magneto free convective flow of rate type fluid” at Two days National conference on latest trends in mathematical modeling and simulations

December 14-15, 2021 at Abdus Salam School of Mathematical Sciences, GC University Lahore, Pakistan

10) Deliver a talk on "Influence of fractional order parameter on the dynamics of different vibrating systems" at 16th International conference Dynamical systems Theory and Applications December 6-9, 2021 at Lodz, Poland
11) Deliver a talk on "Vibrating systems involving fractional derivative modeling" at *Unpacking Mathematics-a Seminar Series* on November 25, 2021 at Department of Mathematics, GC University Lahore.
12) Deliver a talk on "Double-diffusive free convection flow of a rate type fluid" at the International Conference on Mathematical and Related Sciences held as online meeting, October 22-24, 2021.
13) Deliver a talk on "On dynamics of blood through the circular tube along with magnetic properties" at 15th International conference Dynamical systems Theory and Applications (DSTA-2019) December 2-5, 2019 at Lodz, Poland
14) Deliver a talk on "New trends in the study of magneto hydrodynamics" at Garrison International Conference on Pure and Applied Mathematics (GICPAM-2019) April 1-3, 2019
15) Deliver a talk on "New trends in fluid dynamics and use of magnetism" at 1st UMT international symposium on fluid dynamics on March 15, 2019 at UMT.
16) Deliver a talk on "Theory of magnetism and its applications in fluid mechanics" at *Unpacking Mathematics-a Seminar Series* on February 12, 2019 at Department of Mathematics, GC University Lahore.
17) Deliver a talk on "non dimensionalizations; its advantages and applications at" at *Unpacking Mathematics-a Seminar Series* on January 15, 2019 at Department of Mathematics, GC University Lahore.
18) Deliver a talk on "Fractional Calculus modelling" at 2019 Workshop on Solitons and its Applications, January 07, 2019 at GC University Lahore.
19) Deliver a talk on "Theoretical model of two phase flow of blood through a circular tube with magnetic properties" at International Conference on Mathematics and its Applications (ICMA-2018) GC University Lahore*, November 13-15*, 2018 at GC University Lahore.
20) Deliver a talk on "Introduction to Navier Stokes' equations" at *Unpacking Mathematics-a Seminar Series* on September 18, 2018 at Department of Mathematics, GC University Lahore.
21) Deliver a talk on "Recent trends in Fluid Dynamics and unification of some classical results" at 2018 Workshop on Fluid Dynamics, January 15, 2018 at GC University Lahore.
22) Deliver a talk on "Analytical study of blood flow through a circular tube under the influence of a magnetic field using fractional Caputo-Fabrizio derivatives" at International Conference on Mathematics and its Applications (ICMA-2017) GC University Lahore*, November 13-15*, 2017 at GC University Lahore.
23) Deliver a talk on "Theoretical study of free convection flow of viscous fluids with analytical results by employing time-fractional Caputo-Fabrizio derivative" at *NUST Conference on Recent Trends in Mathematical Sciences, November 7 & 8*, 2017 at NUST Islamabad.
24) Deliver a talk on "Rotational Flows of Rate type fluid with generalized boundary conditions" at 2nd UIPAS UMT International Conference on Pure and Applied Mathematics on October 5-7, 2017 at UMT Lahore.

25) Deliver a talk on “Fractional Calculus Modeling in Fluid Dynamics” at Department of mathematics, GC University Lahore on September 19, 2017.
26) Deliver a talk on “Fractional Calculus and its Applications in Fluid Dynamics” at Department of mathematics, GC University Lahore on August 8, 2017.
27) Deliver a talk on “Hydromagnetic natural convection flow over a moving vertical plate with exponential heating, constant concentration and chemical reaction” at 1st – LGU National Conference on pure & applied mathematics 17-18 May, 2017.
28) Deliver a talk on “Flow over an infinite plate of a viscous fluid with non-integer order derivative without singular kernel” at 3rd UMT International Conference on Pure and Applied Mathematics on March 5-7, 2017 at Fletty hotel Lahore.
29) Deliver a talk on “MHD free convection flow on the vertical wall with ramped wall Temperature and Chemical Reaction” at CASM conference on Differential Equations and Application on May 26-28, 2016 at LUMS.
30) Deliver a talk on “Role of Mittag Leffler function in Fractional modeling” at Abdus Salam School of Mathematical Sciences, GC University Lahore on May 18, 2016.
31) Deliver a talk on “Unsteady MHD conjugate flow in a medium with ramped wall temperature” at Abdus Salam School of Mathematical Sciences, GC University Lahore on April 20, 2016.
32) Deliver a talk on “Fractional Calculus and its applications in Fluid Dynamics” at RAMMMA April 9-10, 2016.
33) Deliver a talk on “On unsteady rotational flows of an Oldroyd-B fluid due to a time dependent tension on the boundary” at Abdus Salam School of Mathematical Sciences, GC University Lahore on March 30, 2016.
34) Deliver a talk on “On the Couette flows of an Oldroyd-B fluid with generalized boundary conditions” at 1st UMT International Conference on Pure and Applied Mathematics on March 5-7, 2016.
35) Deliver a talk on “On Couette flows with slip effects” at Abdus Salam School of Mathematical Sciences, GC University Lahore on February 29, 2016.
36) Deliver a talk on “On rotational flows of rate type fluids” at Abdus Salam School of Mathematical Sciences, GC University Lahore on February 08, 2016.
37) Deliver a talk on “Unsteady flows of an Oldroyd-B fluid due to tension on the boundary” at University of Management Sciences and Technology on November 4, 2015.
38) Deliver a talk on “Influence of Side walls on the flow of Oldroyd-B fluid over a plate that applies Shear stress to the fluid” at Sixth International Conference on Recent Developments in Fluid Mechanics, 2015, School of Natural Sciences, National University of Science and Technology March 17-19, 2015.
39) Deliver a talk on “On the flow of Oldroyd-B Fluids with fractional derivatives over a plate that applies shear stress to the fluid” at 1st UMT National Conference on Pure and Applied Mathematics, March 7-8, 2015.
40) Deliver a talk on “Some new results for different motions of non-Newtonian fluids” at Young researchers Seminar Series, Abdus Salam School of Mathematical Sciences March 5, 2014.

41) Deliver a talk on “Exact solutions for different motions of non-Newtonian fluids with/without fractional derivatives” at Young researchers Seminar Series, Abdus Salam School of Mathematical Sciences February 2, 2014.
42) Deliver a talk on “Some Couette Flows of a Maxwell Fluid with slip condition” at the 6th World Conference on 21st century Mathematics 2013, Abdus Salam School of Math. Sci. March 6-9, 2013.
43) Deliver a talk “On exact solution for flow of a fractional Oldroyd-B fluid between two side walls perpendicular to a plate” at the 13th International Pure Mathematics conference held in Hotel Margala, Islamabad, Pakistan during September 01-03, 2012 under the auspices of Pakistan Mathematical Society, Quaid-e-Azam University, and Preston University.
44) Deliver a talk on “Similarity Analysis Techniques to solve the fluid flow problems” at Young researchers Seminar Series, Abdus Salam School of Mathematical Sciences November 7, 2012.
45) Deliver a talk on “Similarity Analysis Techniques to solve the fluid flow problems” at Young researchers Seminar Series, Abdus Salam School of Mathematical Sciences October 17, 2012.
46) Deliver a talk on “Exact Analytic solutions for the flow of a Generalized Burger’s fluid induced by an Accelerated shear stress” at Young researchers Seminar Series, Abdus Salam School of Mathematical Sciences October 26, 2011.
47) Deliver a talk on “A note on certain generalized metric spaces” at the 9th International Pure Mathematics conference held in Hotel Margala, Islamabad, Pakistan during August 22-24, 2008 under the auspices of Pakistan Mathematical Society, Quaid-e-Azam University, and Preston University.
48) Deliver a talk on “Fixed point theorems on a class of contraction maps” at Department of Mathematics GC University Lahore on April 3, 2003.

References

- **Prof. Dr. Constantin Fetecau**
  Department of Mathematics,
  Gh. Asachi Technical University of Iasi, Romania.
  Academy of Romanian Scientists, 050094 Bucuresti, Romania.
  E-mail:c_fetecau@yahoo.com

- **Prof. Dr. Jan Awrejcewicz**
  Department of Automation, Biomechanics and Mechatronics,
  Lodz University of Technology, Lodz, Poland
  E-Mail: jan.awrejcewicz@p.lodz.pl