Dr. ABUZAR GHAFFARI

Associate Professor University of Education, Lahore, Pakistan
Mob: +923325505532
Email: abuzar.ghaffari@ue.edu.pk / abuzar.iiui@gmail.com

Education

PhD in Computational Mathematics, International Islamic University, Islamabad, Pakistan, Cumulative GPA 4.00 out of 4.00 2012-2016
MS/M.Phil in Applied Mathematics, International Islamic University, Islamabad, Pakistan, Cumulative GPA 3.65 out of 4.00 2009-2011
Master in Mathematics, International Islamic University, Islamabad, Pakistan, Cumulative GPA 3.97 out of 4.00 2006-2008
Undergratuation Mathematics, University of Punjab,Lahore, Pakistan, Grade A

Computer Skills

Scientific Applications:- MATLAB, Mathematica, COMSOL,Phython, Freefem++, FORTRAN, Design Expert, Latex

Work Experience

Worked as Lecturer at Post graduate college Attock (2015-2016)
Taught as Lecturer at University of Education, Lahore, Attock campus (2016-2017)
Taught as Assistant Professor at University of Education Attock Campus. (2017- 2024)
Teaching as Associate Professor at University of Education Attock Campus. (2024 till today)

Research Interests

- In my previous research work, I have been actively involved in computational work by developing codes of some efficient and latest numerical techniques in MATLAB. I have experience of using built in MATLAB techniques for numerical computing (bvp4c, bvp5c, ode45, ode23, pdetool, nftool etc.) and statistical computing using different built in statistical tools for image processing and large data computing.
- Using MATLAB coding I have developed the solution codes for the following analytical and numerical techniques for solving highly nonlinear ordinary and partial differential equations:

    1. Finite Element Method
    2. Finite Difference Method
    3. Keller Box Scheme
    4. Spectral Collocation Method
        a. Spectral Successive Linearization Method for nonlinear differential equations
        b. Chebyshev Spectral Newton Iterative Scheme for nonlinear differential equations
        c. Spectral Quasi-linearization Method for nonlinear differential equations
    5. Shooting Method

Besides my computational work I also have working experience in applied mathematics and interested in the following areas;

- Boundary layer flows
- Stability Analysis
- Sensitivity analysis
- Polymer Processing
- Blade coating

- Wire coating
- Machine learning for the solution of generalized partial differential equations
- Optimization Analysis
- Blade coating

Book Editor

Markov Model - Theory and Applications

Book Chapter

Unsteady Heat and Mass transfer near a stagnation point flow towards a stretching sheet in a porous medium with the external magnetic field and variable fluid properties, *CRC Press Taylor and Francis Group* **(Accepted)**

Publications in 2026

1. Deep Learning Approach for Power Law Fluid Flow and Heat Transfer Over a Nonlinear Moving Porous Wedge in a Darcy–Forchheimer Medium, ***Advanced Theory and Simulations*** 9 (1), e01811.
2. A Hybrid Numerical Approach for Convective Heat Transfer and Nonlinear Slip Analysis in the Blade Coating Process, A Hybrid Numerical Approach for Convective Heat Transfer and Nonlinear Slip Analysis in the Blade Coating Process, ***Macromolecular Theory and Simulations*** 35 (1), e00112

Publications in 2025

3. Effect of amplitude and wavelength on heat transfer in a non-uniformly heated wavy channel with parabolic inlet flow of a micropolar fluid, ***International Communications in Heat and Mass Transfer*** 169, 109879
4. Application of artificial neural networks in the blade coating process using viscoelastic nanofluid model with magnetohydrodynamics and slip effects, ***Physics of Fluids*** 37 (3)
5. Enhancing Blade Coating Performance through Oldroyd 8-Constant Fluid Modeling and Slip Analysis, ***Journal of Engineering Research***, 2025
6. Numerical analysis of non-newtonian nanofluid flow induced by beating cilia in a complex wavy channel under the influence of an inclined magnetic field and slip effects, ***Multiscale and Multidisciplinary Modeling, Experiments and Design*** 8 (9), 404.
7. Thermal analysis of Cross fluid blade coating influenced by magnetohydrodynamics and non-linear slip, ***Journal of Plastic Film & Sheeting,*** 87560879251369894
8. MHD natural convection in a differentially heated cavity filled with a Cu-water nanofluid using FVM, ***Case Studies in Thermal Engineering*** 72
9. Non-Isothermal Analysis of the Blade Coating Using Bingham Plastic Fluid with Slip Effects, ***Macromolecular Theory and Simulations*** 34 (3), 2500012
10. Study of blade coating using hyperbolic tangent nanofluid model with slip effects on the coating thickness and blade load, ***Journal of Plastic Film & Sheeting***, 87560879251334813
11. Numerical and analytical study of heat transfer in the wire coating process using Carreau–Yasuda fluid model, ***Numerical Heat Transfer, Part A: Applications*** 86 (8), 2468-2487

12. Exploration of nonlinear radiative heat energy on Buongiorno modeled nano liquid toward an inclined porous plate with heat source and variable chemical reaction, ***Numerical Heat Transfer, Part A: Applications*** 86 (8), 2308-2327

13. A Hybrid Numerical Approach for Convective Heat Transfer and Nonlinear Slip Analysis in the Blade Coating Process, ***Macromolecular Theory and Simulations***, e00112

14. Magnetohydrodynamic flow of Carreau Yasuda fluid inside a complex wavy passage formed by beating cilia: A finite-difference analysis.***Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering***,*239*(1), 87-98.

15. Effects of non-linear slip and magnetohydrodynamics (MHD) on the coating thickness of web using viscoplastic nanofluid model in the blade coating process. ***Journal of Plastic Film & Sheeting*****,** 87560879251320072.

16. Exploring MHD-Generated Flow in a Triangular Cavity having an elliptic obstruction: Implications for Industrial Applications. ***Scientia Iranica***.

17. Heat Transfer Analysis of the Blade Coating Process Using Oldroyd 4-Constant Nanofluid Model With Non-Linear Slip and Magnetohydrodynamics (MHD) Effects. ***Macromolecular Theory and Simulations***, *34*(1), 2400067.

Publications in 2024

18. Effects of electroosmosis and entropy generation on a particulate-fluid suspension through peristaltic motion of Prandtl fluid: a numerical investigation**.** ***International Journal of Ambient Energy*****,** *45*(1), 2416037.

19. Nonlinear sensitivity and optimization of heat transfer and drag in power law fluid flow over a permeable wedge with variable magnetic field and thermal radiation effects. ***Chaos, Solitons & Fractals***, *189*, 115717.

20. Thermal transportation of radiative cathode nanotube-based nanofluid on a stretching/shrinking wedge with varying magnetism and heat source. ***ZAMM-Journal of Applied Mathematics and Mechanics/Zeitschrift für Angewandte Mathematik und Mechanik***, *104*(12), e202301083.

21. Numerical study of entropy production and electroosmotic effects in a particulate-fluid suspension under peristaltic motion of Prandtl fluid. ***Materials Today Communications***, *41*, 110647.

22. Exploring the thermal behavior of Cu-water and CuO-water power-law nanofluids on a rotating circular disc: A computational analysis. ***Case Studies in Thermal Engineering*****,** *63*, 105227.

23. Machine learning non-isothermal study of the blade coating process (NIS-BCP) using non-Newtonian nanofluid with magnetohydrodynamic (MHD) and slip effects. ***Polymers and Polymer Composites***, *32*, 09673911241282424.

24. Numerical simulation of the blade coating processes using viscoelastic fluid with heat transfer analysis. ***Polymer Engineering & Science***, *64*(7), 3088-3100.

25. Local non-similar solution for MHD mixed convection flow of a power law fluid along a permeable wedge with non-linear radiation. ***Chaos, Solitons & Fractals***, *184*, 115029.

26. Induced magnetic transportation of Soret and dissipative effects on Casson fluid flow towards a vertical plate with thermal and species flux conditions. ***International Journal of Modern Physics B***, *38*(11), 2450157.

27. MHD nanofluid flow between porous convergent-divergent channel with velocity slip and nanoparticle aggregation. ***Engineering Science and Technology, an International Journal***, *52*, 101679.

28. Heat transfer analysis of the non-Newtonian polymer in the calendering process with slip effects. ***International Journal of Modern Physics B***, *38*(07), 2450105.

29. Numerical analysis of the blade coating process using non-Newtonian nanofluid with magnetohydrodynamic (MHD) and slip effects. ***Macromolecular Theory and Simulations***, *33*(4), 2400017.

30. Unsteady heat and mass transfer in a stagnant flow towards a stretching porous sheet with variable fluid properties. In ***Mathematical Modelling of Fluid Dynamics and Nanofluids*** (pp. 117-137). CRC Press.

Publications in 2023

31. Javed, M. A., Al-Khaled, K., Ghaffari, A., & Khan, K. A. (2023). Numerical and analytical study of heat transfer in the wire coating process using Carreau–Yasuda fluid model. *Numerical Heat Transfer, Part A: Applications*, 1-20.
32. Li, Y., Usman, Shamshuddin, M. D., Rajput, G. R., Ghaffari, A., & Muhammad, T. (2023). Exploration of nonlinear radiative heat energy on Buongiorno modeled nano liquid toward an inclined porous plate with heat source and variable chemical reaction. *Numerical Heat Transfer, Part A: Applications*, 1-20.
33. Mustafa, I., Shahbaz, S., Ghaffari, A., & Muhammad, T. (2023). Non-similar solution for a power-law fluid flow over a moving wedge. *Alexandria Engineering Journal*, *75*, 287-296.
34. Asghar, Z., Khan, M. W. S., Shatanawi, W., Gondal, M. A., & Ghaffari, A. (2023). An IFDM analysis of low Reynolds number flow generated in a complex wavy curved passage formed by artificial beating cilia. *International Journal of Modern Physics B*, *37*(19), 2350187. . **(Impact factor 1.7)**
35. Asghar, Z., Khan, M. W. S., Gondal, M. A., & Ghaffari, A. (2023). Magnetohydrodynamic flow of Carreau Yasuda fluid inside a complex wavy passage formed by beating cilia: A finite-difference analysis. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*, 09544089231171037.

36. Asghar, Z., Saif, R. S., & Ghaffari, A. Z. (2023). Numerical study of boundary stresses on Jeffery-Hamel flow subject to Soret/Dufour effects. *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*, *237*(5), 1088-1105. **(Impact factor 1.758)**

37. Javed, M. A., Ali, N., Arshad, S., Nawaz, S., & Ghaffari, A. (2023). Theoretical investigation of a fluid model in calendering process involving slip at the upper roll surface. *ZAMM-Journal of Applied Mathematics and Mechanics/Zeitschrift für Angewandte Mathematik und Mechanik*, e202100406. **(Impact factor 1.759)**

Publications in 2022

38. Shamshuddin, M. D., Ghaffari, A., & Usman. (2022). Radiative heat energy exploration on Casson-type nanoliquid induced by a convectively heated porous plate in conjunction with thermophoresis and Brownian movements. *International Journal of Ambient Energy*, 43(1), 6329-6340.

39. Asghar, Z., Khan, M. W. S., Shatanawi, W., Gondal, M. A., & Ghaffari, A. (2022). An IFDM analysis of low Reynolds number flow generated in a complex wavy curved passage formed

by artificial beating cilia. *International Journal of Modern Physics B*, 2350187. **(Impact factor 1.7)**

40. Asghar, Z., Saeed Khan, M. W., Gondal, M. A., & Ghaffari, A. (2022). Channel flow of non-Newtonian fluid due to peristalsis under external electric and magnetic field. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*, *236*(6), 2670-2678. **(Impact factor 1.822)**

41. Shahzad, H., Ain, Q. U., Pasha, A. A., Irshad, K., Shah, I. A., Ghaffari, A., ... & Krawczuk, M. (2022). Double-diffusive natural convection energy transfer in magnetically influenced Casson fluid flow in trapezoidal enclosure with fillets. *International Communications in Heat and Mass Transfer*, *137*, 106236. **(Impact factor 6.782)**

42. Shahzad, H., Wang, X., Ghaffari, A., Iqbal, K., Hafeez, M. B., Krawczuk, M., & Wojnicz, W. (2022). Fluid structure interaction study of non-Newtonian Casson fluid in a bifurcated channel having stenosis with elastic walls. *Scientific Reports*, *12*(1), 12219. **(Impact factor 4.996)**

43. Khan, M. I., Shah, F., Khan, S. U., Ghaffari, A., & Chu, Y. M. (2022). Heat and mass transfer analysis for bioconvective flow of Eyring Powell nanofluid over a Riga surface with nonlinear thermal features. *Numerical Methods for Partial Differential Equations*, *38*(4), 777-793. **(Impact factor 3.568)**

44. Ahmed, B., Akbar, F., Ghaffari, A., Ullah Khan, S., Khan, M. I., & Dharmendar Reddy, Y. (2022). Soret and Dufour aspects of the third-grade fluid due to the stretching cylinder with the Keller box approach. *Waves in Random and Complex Media*, 1-13. **(Impact factor 4.051)**

45. Khan, S. U., Al-Khaled, K., Hussain, S. M., Ghaffari, A., Khan, M. I., & Ahmed, M. W. (2022). Implication of Arrhenius activation energy and temperature-dependent viscosity on non-Newtonian nanomaterial bio-convective flow with partial slip. *Arabian Journal for Science and Engineering*, 1-12. **(Impact factor 2.807)**

46. Alsallami, S. A., Khan, S. U., Ghaffari, A., Khan, M. I., El-Shorbagy, M. A., & Khan, M. R. (2022). Numerical simulations for optimised flow of second-grade nanofluid due to rotating disk with nonlinear thermal radiation: Chebyshev spectral collocation method analysis. *Pramana*, *96*(2), 98. **(Impact factor 2.699)**

47. Lin, P., Ghaffari, A., & Mustafa, I. (2022). Similarity solution of the partial differential equations that model water/magnetite nanofluid flow and heat transfer on a stretchable rotating disk subject to thermal radiation and Lorentz force. *Numerical Methods for Partial Differential Equations*, *38*(3), 693-718. **(Impact factor 3.568)**

48. Ghaffari, A., Muhammad, T., & Mustafa, I. (2022). Heat transfer enhancement in a power-law nanofluid flow between two rotating stretchable disks. *Pramana*, *96*(1), 40. **(Impact factor 2.699)**

49. Iqbal, M. S., Ghaffari, A., Riaz, A., Mustafa, I., & Raza, M. (2022). Nanofluid transport through a complex wavy geometry with magnetic and permeability effects. *Inventions*, *7*(1), 7.

50. Raza, A., Ghaffari, A., Khan, S. U., Haq, A. U., Khan, M. I., & Khan, M. R. (2022). Non-singular fractional computations for the radiative heat and mass transfer phenomenon subject to mixed convection and slip boundary effects. *Chaos, Solitons & Fractals*, *155*, 111708. **(Impact factor 9.922)**

51. Bhatti, M. M., Ghaffari, A., & Doranehgard, M. H. (2022). The role of radiation and bioconvection as an external agent to control the temperature and motion of fluid over the

radially spinning circular surface: A theoretical analysis via Chebyshev spectral approach. *Mathematical Methods in the Applied Sciences*. **(Impact factor 3.007)**

Publications in 2021

52. Ghaffari, A., Mustafa, I., Muhammad, T., & Altaf, Y. (2021). Analysis of entropy generation in a power-law nanofluid flow over a stretchable rotatory porous disk. Case Studies in Thermal Engineering, 28, 101370. **(Impact factor 6.268)**

53. Iqbal, M. S., Mustafa, I., & Ghaffari, A. (2021). A computational analysis of dissipation effects on the hydromagnetic convective flow of hybrid nanofluids along a vertical wavy surface. Heat Transfer, 50(8), 8035-8051.

54. Lin, P., & Ghaffari, A. (2021). Steady flow and heat transfer of the power-law fluid between two stretchable rotating disks with non-uniform heat source/sink. Journal of Thermal Analysis and Calorimetry, 146, 1735-1749. **(Impact factor 4.755)**

55. Iqbal, M. S., Ghaffari, A., Mustafa, I., & Ali, H. M. (2021). Impact Of Wavy Texture And Hybridity Of Nanofluid On Heat Transfer Augmentation Over The Frustum Of Cone Geometry. Thermal Science, 25. **(Impact factor 1.971)**

56. Khalil, H., Hashim, I., Khan, W. A., & Ghaffari, A. (2021). A Novel Method for Solution of Fractional Order Two-Dimensional Nonlocal Heat Conduction Phenomena. Mathematical Problems in Engineering, 2021, 1-17. . **(Impact factor 1.430)**

57. Khan, W., Badruddin, I. A., Ghaffari, A., & Ali, H. M. (2021). Heat transfer in steady slip flow of tangent hyperbolic fluid over the lubricated surface of a stretchable rotatory disk. *Case Studies in Thermal Engineering*, *24*, 100825. **(Impact factor 6.268)**

58. Lin, P., & Ghaffari, A. (2021). Heat and mass transfer in a steady flow of Sutterby nanofluid over the surface of a stretching wedge. *Physica Scripta*, *96*(6), 065003. **(Impact factor 3.081)**

59. Usman, Ijaz Khan, M., Ullah Khan, S., Ghaffari, A., Chu, Y. M., & Farooq, S. (2021). A higher order slip flow of generalized Micropolar nanofluid with applications of motile microorganisms, nonlinear thermal radiation and activation energy. *International Journal of Modern Physics B*, *35*(07), 2150095. . **(Impact factor 1.7)**

60. Ijaz Khan, M., Usman, Ghaffari, A., Ullah Khan, S., Chu, Y. M., & Qayyum, S. (2021). Optimized frame work for Reiner–Philippoff nanofluid with improved thermal sources and Cattaneo–Christov modifications: a numerical thermal analysis. *International Journal of Modern Physics B*, *35*(06), 2150083. . **(Impact factor 1.7)**

61. Iqbal, M. S., Mustafa, I., Riaz, I., Ghaffari, A., & Khan, W. A. (2021). Influence of carbon nanotubes on heat transfer in MHD nanofluid flow over a stretchable rotating disk: a numerical study. *Heat Transfer*, *50*(1), 619-637.

Publications in 2020

62. Iqbal, M. S., Malik, F., Mustafa, I., Ghaffari, A., Riaz, A., & Nisar, K. S. (2020). Impact of induced magnetic field on thermal enhancement in gravity driven Fe3O4 ferrofluid flow through vertical non-isothermal surface. *Results in Physics*, 19, 103472. **(Impact factor 4.565)**

63. Ghaffari, A., & Kausar, S. (2020). Numerical solution of the partial differential equations that model the steady three-dimensional flow and heat transfer of Carreau fluid between two stretchable rotatory disks. *Numerical Methods for Partial Differential Equations*. **(Impact factor 3.568)**

64. Lin, P., Ghaffari, A., & Mustafa, I. (2020). A theoretical analysis of steady three-dimensional flow and heat transfer of Power-Law nanofluid over a stretchable rotating disk filled with gyrotactic microorganisms. *Physica Scripta*, *96*(1), 015008. **(Impact factor 3.081)**

65. Abbas, Z., Hasnain, J., Aqeel, M., Mustafa, I., & Ghaffari, A. (2020). Series solution of slip ow of Al2O3 and Fe3O4 nanoparticles in a horizontal channel with a porous medium by using least square and Galerkin methods. *Scientia Iranica*, *27*(5), 2465-2477. **(Impact factor 1.416)**

66. Javid, K., Waqas, M., Asghar, Z., & Ghaffari, A. (2020). A theoretical analysis of Biorheological fluid flowing through a complex wavy convergent channel under porosity and electro-magneto-hydrodynamics effects. *Computer Methods and Programs in Biomedicine*, *191*, 105413. **(Impact factor 7.027)**

67. Mustafa, I., Ghaffari, A., Javed, T., & Abbasi, J. N. (2020). Numerical examination of thermophysical properties of cobalt ferroparticles over a wavy surface saturated in non-Darcian porous medium. *Journal of Non-Equilibrium Thermodynamics*, *45*(2), 109-120. **(Impact factor 4.290)**

68. Asghar, Z., Javid, K., Waqas, M., Ghaffari, A., & Khan, W. A. (2020). Cilia-driven fluid flow in a curved channel: effects of complex wave and porous medium. *Fluid Dynamics Research*, *52*(1), 015514. **(Impact factor 1.5)**

69. Mustafa, I., Abbas, Z., Arif, A., Javed, T., & Ghaffari, A. (2020). Stability analysis for multiple solutions of boundary layer flow towards a shrinking sheet: Analytical solution by using least square method. *Physica A: Statistical Mechanics and its Applications*, *540*, 123028. **(Impact factor 3.778)**

70. Ghaffari, A., Khan, W. A., & Mustafa, I. (2020). Effects of gaseous slip flow and temperature jump on entropy generation rate in rectangular microducts. *Thermal Science*, *24*(5 Part A), 3001-3011. **(Impact factor 1.971)**

Publications in 2019

71. Iqbal, M. S., Ghaffari, A., & Mustafa, I. (2019). Investigation into thermophoresis and Brownian motion effects of nanoparticles on radiative heat transfer in Hiemenz flow using spectral method. Scientia Iranica, 26(6), 3905-3916. **(Impact factor 1.416)**

72. Iqbal, M. S., Khan, W., Mustafa, I., & Ghaffari, A. (2019). Numerical study of natural convection flow of nanofluid past a circular cone with Cattaneo–Christov heat and mass flux models. *Symmetry*, *11*(11), 1363. **(Impact factor 2.940)**

73. Mustafa, I., Javed, T., Ghaffari, A., & Khalil, H. (2019). Enhancement in heat and mass transfer over a permeable sheet with Newtonian heating effects on nanofluid: Multiple solutions using spectral method and stability analysis. *Pramana*, *93*, 1-13. **(Impact factor 2.699)**

74. Ghaffari, A., Mustafa, I., & Javed, T. (2019). Influence of nonlinear radiation on natural convection flow of carbon nanotubes suspended in water-based fluid along a vertical wavy surface. *Physica Scripta*, *94*(11), 115214. **(Impact factor 3.081)**

75. Iqbal, M. S., Mustafa, I., & Ghaffari, A. (2019). Analysis of heat transfer enrichment in hydromagnetic flow of hybrid nanofluid along vertical wavy surface. *Journal of Magnetics*, *24*(2), 271-280. **(Impact factor 0.551)**

76. Ghaffari, A., Javed, T., Mustafa, I., & Labropulu, F. (2019). Modeling and simulation of natural convection flow along a rough surface of sinusoidal nature with variable heat flux: using Keller box scheme. *Thermal Science*, *23*(6 Part A), 3391-3400. **(Impact factor 1.971)**

Publications in 2018

77. Ghaffari, A., Mustafa, I., & Javed, T. (2018). Time Dependent Convective Non-Orthogonal Hiemenz Flow of Viscoelastic Walter's B Fluid towards a Non-Uniformly Heated Vertical Surface: Using Spectral Method. Nihon Reoroji Gakkaishi, 46(4), 155-164. **(Impact factor 0.852)**

78. Ghaffari, A., Javed, T., & Mustafa, I. (2018). Non-linear radiation influence on oblique stagnation point flow of Maxwell fluid. *Revista mexicana de física*, *64*(4), 420-428. **(Impact factor 1.702)**

79. Javed, T., Ahmad, H., & Ghaffari, A. (2018). Mixed convection boundary-layer flow of a viscoelastic fluid due to horizontal elliptic cylinder with constant heat flux. *Thermal Science*, *22*(1 Part B), 519-531. **(Impact factor 1.971)**

Publications in 2017

80. Mustafa, I., Javed, T., & Ghaffari, A. (2017). Hydromagnetic natural convection flow of water-based nanofluid along a vertical wavy surface with heat generation. *Journal of Molecular Liquids*, *229*, 246-254. **(Impact factor 6.633)**

81. Ghaffari, A., Javed, T., & Labropulu, F. (2017). Oblique stagnation point flow of a non-Newtonian nanofluid over stretching surface with radiation: a numerical study. *Thermal Science*, *21*(5), 2139-2153. **(Impact factor 1.971)**

82. Majeed, A., Javed, T., & Ghaffari, A. (2017). A computational study of Brownian and thermophoresis effects on nonlinear radiation in boundary-layer flow of Maxwell nanofluid initiated due to elongating cylinder. *Canadian Journal of Physics*, *95*(10), 969-975. **(Impact factor 1.358)**

83. Ahmad, H., Javed, T., & Ghaffari, A. (2017). The influence of heat radiation on mixed convection boundary layer flow of a viscoelastic fluid over a circular cylinder with constant surface temperature. *Thermophysics and Aeromechanics*, *24*, 115-124. **(Impact factor 0.824)**

Publications in 2016

84. Mahmood, A., Chen, B., & Ghaffari, A. (2016). Hydromagnetic Hiemenz flow of micropolar fluid over a nonlinearly stretching/shrinking sheet: Dual solutions by using Chebyshev Spectral Newton Iterative Scheme. *Journal of Magnetism and Magnetic Materials*, 416, 329-334. **(Impact factor 3.097)**

85. Javed, T., Ahmad, H., & Ghaffari, A. (2016). Influence of radiation on vertical wavy surface with constant heat flux: Using Keller box scheme. *Alexandria Engineering Journal*, *55*(3), 2221-2228. **(Impact factor 6.626)**

86. Majeed, A., Javed, T., & Ghaffari, A. (2016). Numerical investigation on flow of second grade fluid due to stretching cylinder with Soret and Dufour effects. *Journal of Molecular Liquids*, *221*, 878-884. **(Impact factor 6.633)**

87. Majeed, A., Javed, T., Ghaffari, A., & Pop, I. (2016). Numerical study of unsteady mixed convection stagnation point flow over a stretching cylinder with sinusoidal surface temperature. *Revista mexicana de física*, *62*(4), 290-298. **(Impact factor 1.971)**

88. Majeed, A., Javed, T., Mustafa, I., & Ghaffari, A. (2016). Heat transfer over a stretching cylinder due to variable prandtl number influenced by internal heat generation/absorption: a numerical study. *Revista mexicana de física*, *62*(4), 317-324. **(Impact factor 1.971)**

89. Mustafa, I., Javed, T., & Ghaffari, A. (2016). Heat transfer in MHD stagnation point flow of a ferrofluid over a stretchable rotating disk. *Journal of Molecular Liquids*, *219*, 526-532. **(Impact factor 6.633)**

90. Ghaffari, A., Javed, T., & Hsiao, K. L. (2016). Heat transfer analysis of unsteady oblique stagnation point flow of elastico-viscous fluid due to sinusoidal wall temperature over an oscillating-stretching surface: a numerical approach. *Journal of Molecular Liquids*, *219*, 748-755. **(Impact factor 6.633)**

91. Ghaffari, A., Javed, T., & Majeed, A. (2016). Influence of radiation on non-Newtonian fluid in the region of oblique stagnation point flow in a porous medium: a numerical study. *Transport in Porous Media*, *113*, 245-266. **(Impact factor 3.610)**

92. Javed, T., Ghaffari, A., & Ahmad, H. (2016). Numerical study of unsteady MHD oblique stagnation point flow and heat transfer due to an oscillating stream. *Thermophysics and Aeromechanics*, *23*, 383-391. **(Impact factor 0.824)**

93. Ahmad, H., Javed, T., & Ghaffari, A. (2016). Radiation effect on mixed convection boundary layer flow of a viscoelastic fluid over a horizontal circular cylinder with constant heat flux. *Journal of Applied Fluid Mechanics*, *9*(3), 1167-1174. **(Impact factor 1.152)**

94. Javed, T., & Ghaffari, A. (2016). Numerical study of non-Newtonian Maxwell fluid in the region of oblique stagnation point flow over a stretching sheet. *Journal of Mechanics*, *32*(2), 175-184. **(Impact factor 1.455)**

95. Javed, T., Ghaffari, A., & Hayat, T. (2016). Enhancement of heat transfer in elastico-viscous fluid due to nanoparticles, where the fluid is impinging obliquely to the stretchable surface: A numerical study. *Applications and Applied Mathematics: An International Journal (AAM)*, *11*(1), 16.

Publications in 2015

96. Majeed, A., Javed, T., Ghaffari, A., & Rashidi, M. M. (2015). Analysis of heat transfer due to stretching cylinder with partial slip and prescribed heat flux: A Chebyshev Spectral Newton Iterative Scheme. Alexandria Engineering Journal, 54(4), 1029-1036. **(Impact factor 6.626)**

97. Javed, T., Ahmad, H., & Ghaffari, A. (2015). Mixed convection boundary layer flow over a horizontal elliptic cylinder with constant heat flux. *Zeitschrift für angewandte Mathematik und Physik*, 66, 3393-3403. **(Impact factor 2.221)**

98. Javed, T., Ghaffari, A., & Ahmad, H. (2015). Numerical study of unsteady MHD oblique stagnation point flow with heat transfer over an oscillating flat plate. Canadian Journal of Physics, 93(10), 1138-1143. **(Impact factor 1.358)**

Conferences and Workshops

1. Organized an **International Conference on Recent Advances in Mathematics**, at university of Education Lahore, Pakistan
2. Presented a paper in the **Seventh International Conference on Recent developments in Fluid Mechanics & Environmental Sciences**
3. Attended three days' workshop on **Testing & Evaluation** organized by HEC.
4. Attended three days' training on **Andragogical/Pedagogical skills** organized by PHEC.

Seminar organized

1. Seminar on "**Numerical simulation of similar and non-similar fluid flow problems**"

Member Editorial Board

1. PLOS ONE

2. Contemporary Mathematics || Special issue || Machine learning approaches for numerical solution of generalized partial differential equations

International Journal's Reviewer (ISI Recognized)

1. Abstract and Applied Analysis
2. Advances in Mechanical Engineering
3. Applied Ocean Research
4. Arabian Journal for Science and Engineering
5. Canadian Journal of Physics
6. Engineering Journal
7. Heat Transfer
8. IEEE Access
9. International Journal Modern Physics B
10. International Journal of Applied and Computational Mathematics
11. International Journal of Applied and Computational Mathematics (IACM)
12. International Journal of Mechanical Sciences
13. Journal of Mathematics
14. Journal of Nanofluids
15. Journal of Plastic Film and Sheeting
16. Journal of the Brazilian Society of Mechanical Sciences and Engineering (BMSE)
17. Journal of the Taiwan Institute of Chemical Engineers
18. Mathematical Problems in Engineering
19. Nanotechnology Reviews
20. Nonlinear Engineering. Modelling and Application
21. Numerical Methods for Partial Differential Equations
22. Open Physics
23. Propulsion and Power Research
24. Results in Physics
25. Scientia Iranica
26. Waves in Random and Complex Media

Thesis/Project supervision

Thesis/Project supervision of MS

1. **Komal Naz** (MS 2023-2025) Thermal Analysis of Magneto-Hydrodynamic Flow Generated via Complex Metachronal Waves of Cilia in a Channel
2. **Muhammad Ahsan Ishtiaq** (MS 2023-2025) The Impact of Nonlinear Slip on Coating Thickness in Non-Isothermal Blade Coating Process.

3. **Abdul Wahab** (MS 2023-2025) Finite Element Simulation for Micro-rotation on a Double-Diffusive Radiative Flow between Corrugated Walls with Parabolic Inlet Velocity
4. **Muhammad Ashraf (**MS 2023-2025) Calculating Existing Sheet Thickness in Calendering Process using Shooting Technique
5. **Komal Majeed** (MS 2023-2025) Effects of Non-linear Slip and Magnetohydrodynamics (MHD) on the Coating Thickness of Web using Viscoplastic Nanofluid Model in the Blade Coating Process
6. **Izza Shafique** (MS 2022-2024) Study of Blade Coating Process using Spectral Collocation Method
7. **Adnan Rafique** (MS 2021-2023) Finite Element Simulation for the Heat Transfer Analysis in Various Shape of Containers with Variable Thermal Effects on the Wall
8. **Areeba Batool** (MS 2021-2023) Local Non-similarity Solutions of a Magnetized / Non-magnetized Fluid Flowing over the Wedge
9. **Rafia Iqbal** (MS 2021-2023) Artificial Neural Network Modeling of Oblique Stagnation Point Flow Over the Stretching Surface
10. **Abdul Basit** (MS 2021-2023) A Numerical Study of Physical and Non-physical Nature of Solutions of Self-Similar Flow over the Shirking Sheet.
11. **Sumbel Mehmood** (MS 2019-21), A numerical study of rheological fluid flow generated via metachronal waves of beating cilia in a curved channel
12. **Asad Rasheed** (MS 2019-21), Finite Element solution of two- dimensional Laplace's and Poisson's equations
13. **Tahira Nasim,** (MS 2015-2017), Effect of Thermal Radiations on Ferrofluid Over a Stretchable Rotating Disk

Thesis/Project supervision of BS (completed)

14. Zeeshan Ahmed **(BS 2021-2025)** Application of Physics Informed Neural Network (PINN) for the solution of Non-linear Boundary Value Problems
15. Talib Mahmood **(BS 2021-2025)** Solution Linear Higher Order Boundary Values Problems
16. Rabbia Sana **(BS 2021-2025)** Comparative Study of classical Numerical Scheme with Machine Learning Tools
17. **Muhammad Jawad Ahmed** (BS 2020-2024) Utilization of Differential Matrices for the Solution of Initial and Boundary Value Problems
18. **Seema Gull** (BS 2020-2024) Numerical Analysis of Blade Coating Process
19. **Muhammad Mustaqeem** (BS 2019-2023) Solution of initial and boundar value problems: A numerical approach
20. **Muhammad Raiees** (BS 2019-2023) Finite Element solution of boundary and partial differential equation
21. **Iqra Abid** (BS 2017-2021) Numerical solution of boundary value problems with Adams–Bashforth (Predictor- corrector) method
22. **Qudsia Andleeb** (BS 2017-2021) Stability analysis of Runge-Kutta method of order four
23. **Adeeba Haider** (BS 2016-20), Numerical solution of Blasius flow problem using shooting method
24. **Iqra Aslam** (BS 2016-20), Comparative study of some numerical techniques for initial value problems
25. **Ifra Irshad** (BS 2016-2020), Solution of second and third order boundary value problems using method of superposition

Thesis/Project with co-supervision

26. **Fozia Noreen**, Mixed convection oblique stagnation point flow over a vertical wall with variable surface temperature. (MS-AIOU)

27. **Sobia Sadaf**, Effect of heat generation \ absorption in a natural convection flow in a porous medium using a local thermal non-equilibrium model (MS- AIOU)
28. **Sajida Sarfraz**, Brownian and thermophoresis effects on Maxwell Nano-fluid flow over a stretchable cylinder with Cattaneo-Christov Hhat flux model. (MS- AIOU)