



## Prof. Dr. Mubashir Qayyum

[https://www.researchgate.net/profile/Mubashir\\_Qayyum](https://www.researchgate.net/profile/Mubashir_Qayyum)  
<https://scholar.google.com/citations?hl=en&user=zCCOZqIAAAAJ>

### OBJECTIVE

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Secure a challenging career position to fully utilize my abilities, while making significant contribution to the success of the organization.

### CAREER SUMMARY

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I am highly motivated Mathematician with more than 20 years of teaching, research and administrative experience. Currently, I am working as a Professor at National University of Computer & Emerging Sciences - FAST Lahore Campus. During my career, I served in different faculties such as Mathematical Sciences, Engineering and Computer Sciences, Management Sciences and Life Sciences. Besides teaching, I have a number of publications in well reputed national and international Journals and conferences. In addition, I am academic editor and technical reviewer of different international journals and conferences.

### EDUCATION

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**PostDoc.**

From: Jan 01; 2019  
To: May 08; 2021

Project: “*Analysis, Design, and Implementation of a 400-km end-to-end QKD Link*” under NATO Science for Peace Program at National University of Computer & Emerging Sciences, Pakistan.

**Ph. D. (Applied Mathematics)**

CGPA: **3.95/4.00**  
2017

Department of Sciences and Humanities,  
National University of Computer & Emerging Sciences - FAST Peshawar Campus, Pakistan.

**MS (Mathematics)**

CGPA: **3.50/4.00**  
2009

Department of Sciences and Humanities,  
National University of Computer & Emerging Sciences – FAST Peshawar Campus, Pakistan.

**M. Sc. (Mathematics)**

Grade: **A**  
2003

Department of Mathematics,  
University of Peshawar, Pakistan.

### RESEARCH INTERESTS

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Numerical and Homotopy based Techniques for Differential Equations, Modeling and Simulation, Fluid Dynamics, Fuzzy-Fractional Differential Equations, Probability Theory and Numerical Analysis.

1. [Series-Form Solutions of Generalized Fractional-Fisher Models with Uncertainties using Hybrid Approach in Caputo Sense](#)  
M Qayyum, A Tahir, ST Saeed, A Akgul – *Chaos, Solitons & Fractals*, 2023. (IF = 9.922)
2. [Fractional Modeling and Analysis of Unsteady Squeezing Flow of Casson Nanofluid via Extended He-Laplace Algorithm in Liouville-Caputo Sense](#)  
M Qayyum, S Afzal, E Ahmad, MB Riaz – *Alexandria Engineering Journal*, 2023. (IF = 6.626)
3. [Heat and Mass Transfer with Entropy Optimization in Hybrid Nanofluid using Heat Source and Velocity Slip: A Hamilton-Crosser Approach](#)  
S Afzal, M Qayyum, G Chambashi – *Scientific Reports*, 2023. (IF = 4.6)
4. [Unsteady Hybrid Nanofluid \(Cu-UO<sub>2</sub>/Blood\) with Chemical Reaction and Non-Linear Thermal Radiation Through Convective Boundaries: An Application to Bio-Medicine](#)  
M Qayyum, S Afzal, ST Saeed, A Akgul, MB Riaz, Heliyon, 2023. (IF = 3.776)
5. [Modeling and Simulation of Blood Flow under the Influence of Radioactive Materials having Slip with MHD and Nonlinear Mixed Convection](#)  
S Afzal, M Qayyum, MB Riaz, A Wojciechowski – *Alexandria Engineering Journal*, 2023. (IF = 6.626)
6. [Homotopy Based Soliton Solutions of Time-Fractional \(2+ 1\)-Dimensional Wu-Zhang System Describing Long Dispersive Gravity Water Waves in Ocean](#)  
M Qayyum, E Ahmad, ST Saeed, H Ahmad – *Frontiers in Physics*, 11: 352, 2023. (IF = 3.718)
7. [New Solutions of Fuzzy-Fractional Fisher Models via Optimal He-Laplace Algorithm](#)  
M Qayyum, A Tahir, S Acharya– *International Journal of Intelligent Systems*, 2023. (IF = 8.993)
8. [Traveling Wave Solutions of Generalized Seventh-Order Time-Fractional KdV Models Through He-Laplace Algorithm](#)  
M Qayyum, E Ahmad, ST Saeed, A Akgul, MB Riaz – *Alexandria Engineering Journal*, 2023. (IF = 6.626)
9. [Unsteady Hybrid Nanofluid \(UO<sub>2</sub>, MWCNTs/Blood\) Flow Between Two Rotating Stretchable Disks with Chemical Reaction and Activation Energy under the Influence of Convective Boundaries](#)  
M Qayyum, S Afzal, MR. Ali, M Sohail, N Imran, G Chambashi – *Scientific Reports*, 2023. (IF = 4.996)
10. [Analysis of Blood Flow of Unsteady Carreau-Yasuda Nanofluid with Viscous Dissipation and Chemical Reaction under Variable Magnetic Field](#)  
M Qayyum, S Afzal, MB Riaz – *Heliyon*, 2023. (IF = 3.776)
11. [Closed-Form Solutions of Higher Order Parabolic Equations in Multiple Dimensions: A Reliable Computational Algorithm](#)  
M Qayyum, Amna Khan, ST Saeed, A Akgul, MB Riaz – *Alexandria Engineering Journal*, 2023. (IF = 6.626)
12. [Multi-objective study using Entropy generation for Ellis fluid with slip conditions in a flexible channel](#)  
N Imran, M Javed, M Sohail, M Qayyum, RM Khan – *International Journal of Modern Physics B*, 2023. DOI: <https://doi.org/10.1142/S0217979223503162> (IF = 1.7)
13. [A Reliable Algorithm for Higher Order Boundary Value Problems](#)  
M Qayyum, Q Fatima, ST Saeed, A Akgul, WWeerad, WR Alharbie – *Alexandria Engineering Journal*, 2023. (IF = 6.626)

14. [Modeling and Analysis of Thin Film Flow of Fuzzified Johnson Segalman Nanofluid Using Fuzzy Extension of He-Laplace scheme](#)  
**M Qayyum**, A Tahir, ST Saeed, A Akgul, *Mathematical and Computer Modelling of Dynamical Systems*, 2023. **(IF = 1.9)**
15. [Fractional Modeling of Non-Newtonian Casson Fluid between Two Parallel Plates](#)  
**M Qayyum**, S Afzal, E Ahmad – *Journal of Mathematics*, 2023. **(IF = 1.555)**
16. [New Solutions of Time-Space Fractional Coupled Schrödinger Systems](#)  
**M Qayyum**, E Ahmad, H Ahmad, B Almohsen, AH Ali, *AIMS Mathematics*, 2023. **(IF = 2.2)**
17. [New Solutions of Fractional 4D Chaotic Financial Model with Optimal Control via He-Laplace Algorithm](#)  
**M Qayyum**, E Ahmad, ST Saeed, A Akgul, SM El Din, *Ain Shams Engineering Journal*, 2023. **(IF = 6.00)**
18. [Modification of Homotopy Perturbation Algorithm Through Least Square Optimizer for Higher Order Integro-Differential Equations](#)  
**M Qayyum**, I Oscar – *Punjab University Journal of Mathematics*, 2023. **(IF = 1.00)**

## 2022

19. [Fractional Analysis of Unsteady Squeezing Flow of Casson Fluid Via Homotopy Perturbation Method](#)  
**M Qayyum**, E Ahmad, S Afzal, T Sajid, W Jamshed, ESM Tag El Din, Awad Musa, Amjad– *Scientific Reports*. 2022 **(IF = 4.996)**
20. [Soliton Solutions of Generalized Third Order Time-Fractional KdV Models using Extended He-Laplace Algorithm](#)  
**M Qayyum**, E Ahmad, S Afzal, S Acharya – *Complexity*, 2022. **(IF = 2.121)**
21. [Fractional analysis of thin-film flow in the presence of thermal conductivity and variable viscosity](#)  
F Ismail, **M Qayyum**, I Ullah, SIA Shah, MM Alam, A Aziz – *Waves in Random and Complex Media*, 2022 **(IF = 4.051)**
22. [Heat Transfer Analysis of Unsteady MHD Carreau Fluid Flow over a Stretching Sheet with Heat Transfer](#)  
**M Qayyum**, T Abbas, S Afzal, ST Saeed, A Akgül, M Inc, KH Mahmoud, A Alsubai – *Coatings*, 2022. **(IF = 3.236)**
23. [An Application of Homotopy Perturbation Method to Fractional-Order Thin Film Flow of Johnson Segalman Fluid Model](#)  
**M Qayyum**, F Ismail, SIA Shah, M Sohail, ER El-Zahar, KC Gokul– *Mathematical Problems in Engineering*, Volume 2022, Article ID 1019810, **(IF = 1.430)**
24. [Solutions of Stiff Systems of Ordinary Differential Equations using Residual Power Series Method](#)  
**M Qayyum**, Q Fatima - *Journal of Mathematics*, Volume 2022, Article ID 7887136, **(IF = 1.555)**
25. [New Soliton Solutions of Time-Fractional Korteweg-de Vries Systems](#)  
**M Qayyum**, E Ahmad, MB Riaz, J Awrejcewicz, ST Saeed – *Universe*, 8, 444. **(IF = 2.813)**
26. [Analysis of Fractional Thin Film Flow of Third Grade Fluid in Lifting and Drainage via Homotopy Perturbation Procedure](#)  
**M Qayyum**, F Ismail, SIA Shah, M Sohail, KK Asogwa, FT Zohra– *Advances in Mathematical Physics*, volume 2022, **(IF = 1.364)**
27. [Extended Residual Power Series Algorithm for Boundary Value Problems](#)  
**M Qayyum**, Q Fatima, M Sohail, ER. El-Zahar, Gokul K.C.– *Mathematical Problems in Engineering*, Volume 2022, Article ID 1019810, **(IF = 1.430)**

28. [Analysis of Thin Film Flows of Pseudo-Plastic and Oldroyd 6-Constant Fluids Using Modified Residual Power Series Algorithm](#)  
**M Qayyum**, Q Fatima – *Journal of the Indian Chemical Society*, 99(11), 100755, 2022. (IF = 0.243)
29. [Modeling and Analysis of MHD Oscillatory Flows of Generalized Burgers' Fluid in a Porous Medium Using Fourier Transform](#)  
M Hussain, **M Qayyum**, S Afzal – *Journal of Mathematics*, 2022. (IF = 1.555)
30. [Improved Soliton Solutions of Generalized Fifth Order Time-Fractional KdV Models: Laplace Transform with Homotopy Perturbation Algorithm](#)  
**M Qayyum**, E Ahmad, MB Riaz, J Awrejcewicz – *Universe*, 8, 563. (IF = 2.813)
31. [Constructing and Predicting Solutions for Different Families of Partial Differential Equations: A Reliable Algorithm](#)  
**M Qayyum**, A Khan - *Journal of Mathematics*, Volume 2022, Volume 2022 | Article ID 8431229 | <https://doi.org/10.1155/2022/8431229> (IF = 1.555)
32. [Homotopic Fractional Analysis of Thin Film Flow of Oldroyd 6-Constant Fluid](#)  
Farnaz, **M Qayyum**, SIA Shah, SW Yao, N Imran, M Sohail - *Alexandria Engineering Journal*, Volume 60, Issue 6, 2021, Pages 5311-5322 (IF = 6.626)
33. [Exploration of Unsteady Squeezing Flow through Least Square Homotopy Perturbation Method](#)  
**M Qayyum**, I Oscar, *Journal of Mathematics*, Volume 2021 |Article ID 2977026 | <https://doi.org/10.1155/2021/2977026> (IF = 1.55)
34. [Least Square Homotopy Perturbation Method for Ordinary Differential Equations](#)  
**M Qayyum**, I Oscar, *Journal of Mathematics*, Volume 2021, Article ID 7059194, (IF = 1.55)
35. [Numerical Exploration of Thin Film Flow of MHD Pseudo-Plastic Fluid in Fractional Space: Utilization of Fractional Calculus Approach](#)  
**M Qayyum**, F Ismail, M Sohail, SS Askar, C Park – *Open Physics*, 2021 (IF = 1.361)
36. [Heat transfer analysis for particle–fluid suspension thermos magneto hydrodynamic peristaltic flow with Darcy Forchheimer Medium](#)  
N Imran, M Javed, **M Qayyum**, M Sohail, M Kashif - *Heat Transfer*, 2021; 50: 3547-3563. DOI: 10.1002/htj.22040. (IF = 3.2)

2021

2020

37. [Analysis of MHD Carreau Fluid Flow over a Stretching Permeable Sheet with Variable Viscosity and Thermal Conductivity](#)  
T Abbas, RA Shah, M Idrees, S Rehman, **M Qayyum** – *Physica A: Statistical Mechanics and its Applications*, Volume 551, 2020, 124225, ISSN 0378-4371, <https://doi.org/10.1016/j.physa.2020.124225>. (IF = 3.778)
38. [On Behavioral Response of 3D Squeezing Flow of Nanofluids in a Rotating Channel](#)  
**M Qayyum**, O Khan, T Abdeljawad, N Imran, M Sohail, Wael Al-Kouz - *Complexity*, Volume 2020, Article ID 8680916, 16 pages, (IF = 2.121)
39. [Fractional Analysis of Thin Film Flow of Non-Newtonian Fluid](#)  
F Ismail, **M Qayyum**, SIA Shah, – *Computer Modeling in Engineering & Sciences*, Vol.124, No.3, 2020, pp.825-845, doi:10.32604/cmescs.2020.011073 (IF = 2.027)
40. [Outcome of slip features on the peristaltic flow of a Rabinowitsch Nano-fluid in a Asymmetric flexible Channel](#)  
N Imran, M Javed, M Sohail, **M Qayyum**, S Farooq – *Multidiscipline Modeling in Materials and Structures*, Publication date: June 2020. DOI: <https://doi.org/10.1108/MMMS-02-2020-0039>. (IF = 2.0)

2019

41. [Analysis of various Semi-Numerical Schemes for MHD Squeezing Fluid Flow in Porous Medium](#)  
I Ullah, MT Rahim, HKhan, **M Qayyum** – *Propulsion and Power Research*, 8(1): 69–78, 2019 (**IF=4.563**)

2017

42. [Slip Analysis at Fluid-Solid Interface in MHD Squeezing Flow of Casson Fluid through Porous Medium](#)  
**M Qayyum**, H Khan, O Khan – *Results in Physics*, 7, Pp:732-750, 2017 (**IF = 4.565**)

43. [Improved Analysis for Squeezing of Newtonian Material Between Two Circular Plates](#)  
Omar Khan, **M Qayyum**, H Khan, M Ali – *Advances in Materials Science and Engineering*, 2017 (**IF = 2.098**)

2016

44. [Behavioral Study of Unsteady Squeezing Flow through Porous Medium](#)  
**M Qayyum**, H Khan - *Journal of Porous Media*, 19 (1), Pp: 83-94, 2016 (**IF = 1.782**)

45. [Unsteady Squeezing Flow of Casson Fluid with Magneto Hydro Dynamic Effect and Passing through Porous Medium](#)  
H Khan, **M Qayyum**, O Khan, M Ali – *Mathematical Problems in Engineering*, 2016 (**IF = 1.430**)

46. [Analytical Analysis of Axisymmetric Squeezing Fluid Flow in a Porous Medium Channel with MHD Effect](#)  
I Ullah, MT Rahim, H Khan, **M Qayyum** – *University Politehnica of Bucharest Scientific Bulletin-Series A-Applied Mathematics and Physics*, 78 (2), Pp: 281-292, 2016 (**IF = 0.903**)

47. [Homotopy Analysis Solution for Magneto Hydro Dynamic Squeezing Flow in Porous Medium](#)  
I Ullah, MT Rahim, H Khan, **M Qayyum** – *Advances in Mathematical Physics*, 2016 (**IF = 1.364**)

48. [A New and Reliable Modification of Homotopy Perturbation Method](#)  
**M Qayyum**, H Khan, O Khan – *Punjab University Journal of Mathematics*, 48 (2) 80-89, 2016 (**IF = 1.00**)

49. [A Novel Approach to Approximate Unsteady Squeezing Flow through Porous Medium](#)  
**M Qayyum**, H Khan, MT Rahim – *Journal of Prime Research in Mathematics*, Vol.12 (1), Pp: 91-109, 2016 [**HEC Recognized Category X Journal, Scopus Indexed**]

50. [Analytic Comparison of MHD Squeezing Flow in Porous Medium with Slip Condition](#)  
I Ullah, MT Rahim, HKhan, **M Qayyum** – *Physics Research International*, 2016

51. [Study of Squeezing Flow through Porous Medium Using Homotopy Perturbation Method](#)  
H Khan, **M Qayyum** - *FAST-NU Research Journal*, 1 (2) 101-108, 2015

52. [Modified Optimal Homotopy Asymptotic Method for Squeezing Flow](#)  
H Khan, **M Qayyum** – *FAST-NU Research Journal*, 2 (1) 1-5, 2016

2015

53. [Modeling and Analysis of Unsteady Axisymmetric Squeezing Fluid Flow through Porous Medium Channel with Slip Boundary](#)  
**M Qayyum**, H Khan, MT Rahim, I Ullah - *PloS One* 10 (3), 2015 (**IF = 3.752**)

54. [Analysis of Unsteady Axisymmetric Squeezing Fluid Flow with Slip and No-Slip Boundaries Using OHAM](#)  
**M Qayyum**, H Khan, MT Rahim, I Ullah - *Mathematical Problems in Engineering*, 2015 (**IF = 1.430**)

2012

55. [On Metric Dimension of Two Different Families of Graph](#)  
M Ali, S Nasir, G Ali, **M Qayyum** - *International Journal of Mathematics and Computational Methods in Science & Technology*, 2 (1) 2012

## 2011

56. [Optimized Selection Sort Algorithm is faster than Insertion Sort Algorithm: A Comparative Study](#)  
S Jadoon, SF Solehria, **M Qayyum** - *International Journal of Electrical & Computer Sciences*, 11 (2) 18-23, 2011 [**Scopus Indexed**]
57. [A Proposed Least Cost Framework of Irrigation Control System Based on Sensor Network for Efficient Water Management in Pakistan](#)  
S Jadoon, SF Solehria, **M Qayyum** - *International Journal of Basic & Applied Sciences*, 11 (2) 82-86, 2011 [**Scopus Indexed**]

## CONFERENCE PUBLICATIONS

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### 2021

58. [Modified Residual Power Series Method for Boundary Value Problems](#)  
**M Qayyum**, Q Fatima - *3rd International Conference on Applied and Engineering Mathematics* - ICAEM 2021
59. [Residual Power Series Method for Wave Type Equations](#)  
**M Qayyum**, A Khan - *3rd International Conference on Applied and Engineering Mathematics* - ICAEM 2021

### 2007

60. [Reliability Analysis of Energy Savor Lamps](#)  
**M Qayyum**, S Rehman - *International Conference on Statistical Sciences with Special Reference to Survival Data Analysis*, 2007

## LIST OF ACCEPTED JOURNAL ARTICLES

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61. [A New Modification of Homotopy Perturbation Method for Multi-point Boundary Value Problems](#)  
**M Qayyum**, I Oscar, N Imran, *International Journal of Emerging Multidisciplinaries Mathematics* (Accepted), 2023.
62. [Homotopy Analysis Method using Jumarie's Approach for Nonlinear Wave-like Equations of Fractional-Order](#)  
N Imran, RM Khan, **M Qayyum**, *International Journal of Emerging Multidisciplinaries Mathematics* (Accepted), 2023.
63. [Modified Optimal Homotopy Asymptotic Method for KdV Family of Equations](#)  
**M Qayyum**, M Faisal, N Imran, *International Journal of Emerging Multidisciplinaries Mathematics* (Accepted), 2023.

## LIST OF SUBMITTED JOURNAL ARTICLES

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64. [New Homotopic Solutions of Time-Fractional Cancer Tumor Model with Different Killing Rates](#)  
**M Qayyum**, E Ahmad, R Ali Heliyon (Revision submitted)
65. [Mathematical Modelling of Cancer Tumor Dynamics with Multiple Fuzzification Approaches in Fractional Environment](#)  
**M Qayyum**, A Tahir, *Interdisciplinary Cancer Research Book Series*, Springer. (Book chapter-under review)
66. [Novel Fuzzy-Fractional Modelling of Engine Oil-Based Hybrid Nanofluid: Enhanced Heat Transfer with Entropy Optimization for Industrial Applications](#)  
S Afzal, **M Qayyum**, E Ahmad, *Case Studies in Thermal Engineering*. (Submitted)
67. [Fuzzy-Fractional Modelling and Simulation of Korteweg-De Vries Models: A Novel Approach for Complex Dynamics](#)  
**M Qayyum**, E Ahmad (*Ain Shams Engineering Journal*- Under review)
68. [Generalized Residual Power Series Algorithm for Boundary Value Problems: An Enhanced Approach](#)

**M Qayyum**, Q Fatima, ST Saeed, Ali Akgul, (under review)

69. [Hybrid of Least Square and Glirken Optimizers with Homotopy Perturbation Algorithm for Partial Differential Equations](#)

**M Qayyum**, H Yaseen, ST Saeed, Hijaz Khan, Scientific Reports (under review)

70. [Soliton Solutions of Time-Fractional \(3+1\)-Dimensional Sixth Order Schrodinger Model with Multiple Non-Linearities Using Optimal He-Laplace Algorithm](#)

**M Qayyum**, E Ahmad, ST Saeed, M Inc (under review)

71. [New Solutions of Space-Time Fractional Black-Scholes European Option Pricing Model with Optimal He-Abodh Algorithm](#)

**M Qayyum**, E Ahmad, Journal of Mathematics (under review)

72. [Design and Implementation of Fractional Wu-Zhang System with Uncertainties using Generalized He-Mohand Algorithm in Fuzzy-Caputo Sense](#)

**M Qayyum**, E Ahmad, M Sohail, Fractals (under review)

73. [Modeling and Uncertainty Analysis of Fuzzy-Fractional Oldroyd 6-Constant Nanofluid](#)

**M Qayyum**, A Tahir, H Ahmad, AIMS Mathematics (under review)

74. [Modelling of Uncertain Fractional Chaotic Financial System in Fuzzy-Caputo Sense: New solutions via Hybrid Algorithm](#)

**M Qayyum**, E Ahmad, International Journal of Intelligent Systems (under review)

## **EDITORIAL ACTIVITIES**

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- Journal of Mathematics (IF = 1.555)
- International Journal of Emerging Multidisciplinaries: Mathematics (Scopus)

## **PEER-REVIEW ACTIVITIES**

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- Journal of Fluid Mechanics (Cambridge University Press – ISI, IF)
- Canadian Journal of Physics (Canadian Science Publishing – ISI, IF)
- Journal of Physics and Chemistry of Solids (Elsevier - ISI, IF)
- AIP Advances (AIP Publishing – ISI, IF)
- IEEE Access (ISI, IF)
- Complexity (ISI, IF)
- Mathematical Problems in Engineering (Hindawi - ISI, IF)
- Advances in Mechanical Engineering (Sage – IS, IF)
- Propulsion and Power Research (Elsevier - ISI)
- Alexandria Engineering Journal (Elsevier – ISI, IF)
- Plos One (Public Library of Science – ISI)
- Heat Transfer - Asian Research (Wiley – ISI, IF)
- Heat Transfer (Wiley – ISI)
- Indian Journal of Science and Technology (ISI)
- Microvascular Research (Elsevier- ISI, IF)
- International Journal of Emerging Multidisciplinaries: Mathematics (Scopus)

## **MathX RESEARCH LAB**

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I am a founder and head of MathX Research Lab. MathX starts in 2021 and delves into various domains of applied and computational mathematics. Their primary areas of focus involve modeling and simulations, with special reference to fractional and fuzzy modeling of diverse phenomena as differential systems. Additionally, MathX is actively involved in the development and enhancement of pure numerical and Homotopy based algorithms.

Presently, MathX scholars are working on fuzzy-fractional modeling in fluid dynamics and mathematical physics. Furthermore, they are exploring the application of these approaches to biological models and epidemic modeling. These projects showcase MathX commitment to pushing

the boundaries of mathematical research and applying in innovative approaches to solve real-world problems in different scientific fields.

**Lab Link:** <https://www.researchgate.net/lab/MathX-Research-Lab-Mubashir-Qayyum>

## RESEARCH SUPERVISION

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### MS Level Supervision

1. Qursam Fatima      Residual Power Series Method for Ordinary Differential Equations, NUCES-FAST 2021.
2. Amna Khan          Residual Power Series Method for Partial Differential Equations, NUCES-FAST 2021.
3. Imbsat Oscar        Least Square Homotopy Perturbation Method for Ordinary Differential Equations, NUCES-FAST 2021.
4. Muhammad Faisal   Optimal Homotopy Asymptotic Method and its Modifications for Differential Equations, NUCES-FAST 2021.
5. Khadim Hussain     Analysis and Application of Homotopy Perturbation Laplace Method for Differential Equations, NUCES-FAST 2021.
6. Sayiqa Jabeen       Residual Power Series Method for Obstacle Boundary Value Problems, NUCES-FAST 2022.
7. Hina Yaseen        Homotopy Based Solutions of Partial Differential Equations, NUCES-FAST 2022.
8. Efaza Ahmad        Extension of He-Laplace Algorithm for Fractional Kortewag-de Vries Models, NUCES-FAST 2023.
9. M Shoaib Khalid    Fractional analysis of rate type fluid through non-singular kernel, NUCES-FAST 2023.
10. Aneeza Tahir       Analysis of fuzzy differential models, NUCES-FAST 2023.

### PhD Level Supervision

1. Farnaz Ismail       Fractional Analysis of Thin Film Flows, Islamia College Peshawar, October 2022.
2. Sidra Afzal          Heat and Mass Transfer Analysis of Non-Newtonian Nano fluids, NUCES-FAST, (In Progress)
3. Qursam Fatima       Fuzz-Fractional Modeling and Analysis of Infectious Diseases, NUCES-FAST, (In Progress)
4. Efaza Ahmad        Modeling and Simulation of Generalized Fuzzy-Fractional Lorenz Chaotic Attractors, NUCES-FAST, (In Progress)

## FUNDED PROJECT

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- Currently, working on the project “Modeling and Analysis of Nano-fluids with special reference to Blood Flows” under faculty research support program at NUCES – FAST.

Title of the Research Proposal	Modeling and Analysis of Nano-fluids with special reference to Blood Flows
Research Area	Applied Mathematics
Planned Duration	12 months
Proposed Start Date	Feb 01; 2023.
Principal Investigator	Prof. Dr. Mubashir Qayyum

## EXTERNAL EXAMINER

- External Examiner, PhD Thesis titled “Effect of Nonlinear Thermal Radiation and Variable Thermal Conductivity on Heat and Mass Transfer with Different Types of Non-Newtonian Fluids” by Tanveer Sajid Mian, Department of Mathematics, Capital University Science and Technology (CUST), Islamabad, 2021.
- External Examiner, PhD Thesis titled “Comprehensive Analysis of Unsteady Flows” by Abdul Shakeel, Department of Sciences and Humanities, National University of Computer and Emerging Sciences FAST, Peshawar, 2021.
- External Examiner, MS Thesis titled “Analysis and Application of Homotopy Perturbation Method (HPM) and Optimal Homotopy Asymptotic Method (OHAM) to Fractional Order Boundary Value Problems” by Muhammad Gul, Department of Mathematics, Islamia College Peshawar, 2021.
- External Examiner, MS Thesis titled “Using Porous Medium to investigate the First Grade MHD Squeezing Fluid Flow by OHAM and OHAM-DJ” by Mehak Inam, Department of Mathematics, Islamia College Peshawar, 2021.
- External Examiner, MS Thesis titled “Using Porous Medium to investigate the First Grade MHD Squeezing Fluid Flow by OHAM and OHAM-DJ Modeling and Analysis of Unsteady Squeezing flow of non-Newtonian Nano fluids” by Shahaz Ahmad Khan, Department of Mathematics, Islamia College Peshawar, 2021.
- External Examiner, MS Thesis titled “Numerical Solution of Partial and Fractional Differential Equation Using Mesh Free Method” by Danyal Ahmad, Faculty of Engineering Sciences, Ghulam Ishaq Khan (GIK) Institute of Engineering Sciences and Technology, Topi, Swabi, 2019.

## COMMITTEE AND BOARD SERVICES

- Member, Board of Studies - Sciences, FAST NU Pakistan (July 2018-Till date)
- Member, Board of Studies - Humanities, FAST NU Pakistan (July 2018-Till date)
- Member, Board of Faculties - Sciences and Humanities, FAST NU Pakistan (July 2018-Till date)
- Member, Academic Council, FAST NU Pakistan (July 2018-Till date)
- Convener, Departmental Hiring Committee, NUCES Lahore (January 2022 – Till date)
- Member, Graduate Studies Committee (GSC), FAST NU Lahore Campus, Pakistan (Nov 2017 - Till date)
- Member, Campus Selection Board (CSB), FAST NU Peshawar, Pakistan (July 2018 - Dec 2019)
- Member, Campus Management Committee (CMC), FAST NU Peshawar, Pakistan (July 2018 - Dec 2019)
- Member, Campus Grievance Redressal Committee (CGRC), FAST NU Peshawar, Pakistan (July 2018 - Dec 2019)
- Member, Campus Academic Committee (CAC), FAST NU Peshawar, Pakistan (July 2018 - Dec 2019)
- Member, Campus Financial Aid Committee (CFAC), FAST NU Peshawar, Pakistan (July 2018 - Dec 2019)
- Member, Campus Purchase Committee (CPC), FAST NU Peshawar, Pakistan (Jan 2017 - Dec 2019)

- Member, Campus Library Committee (CLC), FAST NU Peshawar, Pakistan (Jan 2017 - Dec 2019)
- Member, Campus Disciplinary Committee (CDC), FAST NU Peshawar, Pakistan (Jan 2017 - Dec 2019)
- Convener of Departmental Selection Committee (Faculty - Mathematics and Statistics), FAST NUCES Lahore, Pakistan.

## SEMINARS AND WORKSHOPS

- Delivered a seminar on “*Mathematical Aspects of Mathematica*” at Kinnaird College for Women University Lahore on September 30; 2022.
- Delivered a seminar on “*Advance Numerical Methods for Differential Equations*” at NUCES – FAST Lahore Campus on October 12; 2022.
- Delivered a seminar on “*Homotopy Based Schemes for Differential Equations*” at NUCES – FAST Peshawar Campus on November; 2022.

## CONFERENCE ORGANIZATION

- Program Co-Chair of International Conference on Emerging Technologies (ICET23). The 18th edition of ICET will be held on 6-7 November 2023 at the [FAST National University of Computer and Engineering Sciences \(NUCES\), Peshawar](#), under the technical umbrella of IEEE.
- Member of organizing committee of “*7th UMT International Conference on Pure and Applied Mathematics (7th UICPAM 2023)*” to be held on 1-3 December 2023 at UMT Lahore.

## TECHNICAL SKILLS

- MS office (Word, Excel, Power point)
- Mathematica
- MatLab
- LaTeX (TeX, Beamer)

## COURSES TAUGHT

### At **FAST – National University of Computer & Emerging Sciences**

- Adv. Numerical Solutions of Ordinary Differential Equations
- Adv. Numerical Solutions of Partial Differential Equations
- Adv. Mathematical Statistics
- Adv. Homotopy based schemes for Differential Equations
- Fuzzy-Fractional Modeling and Simulation
- Probability and Random Processes
- Numerical Computing
- Probability and Stats
- Business Mathematics
- Applied Calculus
- Applied Linear Algebra

### At **Sarhad University of Science & Technology**

- Calculus and Analytic Geometry
- Numerical Analysis
- Applied Linear Algebra
- Business Math and Stats
- Pharmaceutical Mathematics

### At **Preston University, Kohat Campus**

- Mathematics – II for Electrical Engineering

At **G.I.S.T – PGS Degree & Engineering College, Peshawar**

- Calculus
- Numerical Analysis
- Complex Variables
- Linear Algebra

## WORK EXPERIENCE

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<b>Professor</b> (Regular) July 2022 - till date	FAST – National University of Computer and Emerging Sciences Lahore Campus, Lahore, Pakistan.
<b>Associate Professor</b> (Regular) Jan 2020 – June 2022	FAST – National University of Computer and Emerging Sciences Lahore Campus, Lahore, Pakistan.
<b>Associate Professor</b> (Regular) July 2018 – Dec 2019	FAST – National University of Computer and Emerging Sciences Peshawar Campus, Peshawar, Pakistan.
<b>Assistant Professor</b> (Regular) June 2009 – June 2018	FAST – National University of Computer and Emerging Sciences Peshawar Campus, Peshawar, Pakistan.
<b>Lecturer</b> (Regular) Jan 2009 – June 2009	FAST – National University of Computer and Emerging Sciences Peshawar Campus, Peshawar, Pakistan.
<b>Lecturer</b> (Regular) Mar 2005 - Jan 2009	Sarhad University of Science and Information Technology Peshawar, Pakistan
<b>Lecturer</b> (Visiting) Sep 2004 - Dec 2004	Preston University Kohat Campus KDA, Kohat, Pakistan.
<b>Lecturer</b> (Regular) Sep 2003 - Mar 2005	Gandhara Institute of Science and Information Technology (PGS Degree & Engineering College), Peshawar, Pakistan.

## ADMINISTRATIVE EXPERIENCE

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<b>Head of Department</b> Sep 2023 – Till date	Department of Sciences and Humanities, National University of Computer and Emerging Sciences - FAST Lahore Campus, Lahore, Pakistan.
<b>Cluster Coordinator (Mathematics &amp; Statistics)</b> June 2020 – Till date	Department of Sciences and Humanities, National University of Computer and Emerging Sciences - FAST Lahore Campus, Lahore, Pakistan.
<b>Head of Department</b> July 2018 – Dec 2019	Department of Sciences and Humanities, National University of Computer and Emerging Sciences - FAST Peshawar, Pakistan.
<b>Department Coordinator</b> June 2009 – June 2015	Department of Sciences and Humanities, National University of Computer and Emerging Sciences - FAST Peshawar, Pakistan.