

# Dr Kamal Shah

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## Experience as teacher/researcher more than 18 years

Supervised PhD students= 13, Supervised Master (MPhil students)=23

Listed in World Ranking Top 2% Scientists' of 2021, 2022, 2023, 2024,2025 for single year as well for career long in 2025.

[https://topscinet.com/scientist\\_profile/Shah,%20Kamal/2007/?stype=single\\_year](https://topscinet.com/scientist_profile/Shah,%20Kamal/2007/?stype=single_year)

<https://www.scopus.com/authid/detail.uri?authorId=56708052700>

<http://www.researcherid.com/rid/S-8662-2016>

<https://www.webofscience.com/wos/author/record/S-8662-2016>

<https://orcid.org/0000-0002-8851-4844>

Google Scholar : [https://scholar.google.com/citations?hl=en&user=nBRI\\_mQAAAAJ](https://scholar.google.com/citations?hl=en&user=nBRI_mQAAAAJ)

<https://www.researchgate.net/profile/Kamal-Shah>

H-index at Google Scholar= 55, i10-index=309 , Total citations: 12764.

H-index at Web of Science= 44, Total citations=8313, Total Publications=437

H-index at Scopus= 46, Total citations= 9,366, Total publications=453

**AWARD:** Secured Second Position in M. Sc Mathematics from University of Malakand (2005).

Top 3 Research Award Prince Sultan University for year 2024.

## EDUCATION QUALIFICATIONS

- Postdoctoral senior research fellow Prince Sultan University Riyadh Saudi Arabia (2022-23)
- Post doctorate Lebanese American University (LAU) Beirut, Lebanon (2023-24)
- PhD - Applied Mathematics - University Of Malakand (2016)
- M.Sc - Mathematics First Division –University Of Malakand (2005)
- BED-Education First Division University Of Peshawar (2006)
- B.Sc -(Mathematics) First Division -University Of Peshawar (2003)
- F.Sc -(Pre-Engineering) First Division -BISE (2001)
- S.Sc- (Science ) First Division -BISE (1999)

## Experience - Teaching and Research

- Postdoctoral Senior Research Fellow, Prince Sultan University since 2022-2023.

- Senior Researcher in Mathematics, Prince Sultan University since 2023 till date.
- Remote Post doctorate Lebanese American University (LAU) Beirut, Lebanon (2023-24)
- Associate Professor in Mathematics in Department of Mathematics University of Malakand (10-01-2020 to date)
- Senior Researcher at Department of Mathematics and Sciences, Prince Sultan University Riyadh Saudi Arabia 2022-2023
- Assistant Professor in Mathematics in Department of Mathematics University of Malakand (12-2-2018 to 10-01-2020)
- Lecturer in Mathematics in Department of Mathematics University of Malakand (1-9-2007 to 11-2-2018)
- Lecturer in Mathematics 04 Months (01-08-2006 to 26-11-2006) in Government Degree College Mingora Swat
- Lecturer in Mathematics 09 Months (27-11-2006 to 31-08-2007) in Dr.Khan Shaheed Government Degree College Kabal Swat.

### **Member of Departments Thesis and Curriculum Committee**

- Member of the Graduate Studies Committee, Department of Mathematics University of Malakand
- Coordinator of BS/MSc, Department of Mathematics University of Malakand w.e.f (01-04-2018 to 31-08-2019).
- Member of Board of Studies, Department of Mathematics University of Malakand
- Member of Board of Studies, Department of Mathematics University of Science and Technology, Bannu, KPK Pakistan

### **Subjects Taught to Master and BS Level**

Calculus	Complex Analysis
Algebra	Topology
Abstract Algebra	Number Theory
Linear Algebra	Ordinary differential Equations
Functional Analysis	Partial Differential equations
Real Analysis	Numeric & Symbolic Computing
Integral Equations	
Measure Theory	
Affine and Euclidean Geometry	
Calculus of Variation	

### **Subjects Taught to MPhil and PhD Level**

At Post graduate level I have taught the following subjects

Fractional Calculus	Fractional Differential Equations
Numerical Methods for arbitrary order differential equations	
Nonlinear Integral equations	Advanced Functional Analysis
Mathematical Methods in Physics	Convex Analysis

### **Experience - Reviewer**

- Journal of Computational and applied Mathematics (Elsevier)
- Boundary Value Problems(Springer)
- Advances in Differences Equations (Springer)
- Neurocomputing (Elsevier)
- Neural Computing and Applications (Elsevier)
- Sindh University Research Journal (Science Series)
- Applied Mathematics and Computation(Elsevier)
- Chaos, Solitons and Fractals (Elsevier)
- Journal of Applied Mathematics and Computing(Springer)
- Complexity (Hindawi publishers)
- Fractional Calculus and Applications (FCA)
- Discrete Dynamics in Nature and Society (Hindawi publishers)
- Journal of Nonlinear Sciences and Applications
- Computational & Mathematical Methods in Medicine
- Scientific Report
- Plos One

### **Member Journal Editorial Boards**

I am member of academic editorial boards in the following international journals.

- Mathematical Problems in Engineering
- Discrete Dynamics in Nature and Society
- Computational and Mathematical Methods in Medicine
- Journal of Fractional Calculus and Nonlinear Systems (JFCNS)
- Journal of Mathematical Analysis and Modeling

### **Research Interests**

Fractional Calculus, Applied and Computational Analysis, Mathematical Modeling and their numerical Simulations, Fixed Point Theory and Applications, Fluid Mechanics, Fuzzy integral and differential equations with fractional order

### **HEC Approved PhD Supervisor**

I have been awarded the status of HEC approved PHD Supervisor in the discipline of Physical Sciences since **25/4/2019** and onward.

### **Supervision of PhD Scholars**

1. Gouhar Ali, PhD, University of Malakand, (Degree Awarded May 2021)
2. Israr Ahmad PhD, University of Malakand, (Degree Awarded May 2021)
3. Arshad Ali PhD, University of Malakand, (Degree Awarded Jun 2021)
4. Muhammad Irfan, PhD: University of Malakand, (Degree Awarded August 2022)
5. Muhammad Sher, PhD: University of Malakand, (Degree Awarded 2024)
6. Muhammad Riaz, PhD: University of Malakand, (Degree Awarded 2024)
7. Shafiullah PhD: University of Malakand, (Degree Awarded 2024)
8. Shahid Khan, PhD: University of Malakand, (Degree Awarded 2024)
9. Eiman, PhD: University of Malakand, (Degree Awarded 2025)

### **Supervision of International PhD Students**

1. Atta Ullah, PhD Mathematical and Statistical Sciences, Institute of Autonomous System,

Department of Fundamental & Applied Sciences, Universiti Teknologi PETRONAS, Seri Iskandar 32610, Perak, Malaysia (Degree Awarded 2025)

2. Rashid Nawaz, Department of Mathematics and Statistics, Faculty of Science, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia (Degree Awarded 2025)

### **Co-Supervision of PhD Scholars**

1. Sajjad Ali, PhD : Abdul Wali Khan University Mardan , (Degree Awarded 2019)
2. Samina PhD: University of Malakand, (Degree Awarded May 2020)
3. Haji Gul PhD: Abdul Wali Khan University Mardan , (Degree Awarded 2022)

### **Supervision Of MPhil Scholars**

1. Arshad Ali , M.Phil University of Malakand (Degree Awarded)
2. Inamullah, MPhil: (University of Malakand: (Degree Awarded)
3. Fazal Haq , MPhill University of Malakand , (Degree Awarded)
4. Adnan Khan, MPhill University of Malakand , (Degree Awarded)
5. Liala, MPhill University of Malakand, (Degree Awarded)
6. Abid Hussain, MPhill University of Malakand, (Degree Awarded)
7. Ibrarul Haq, MPhill University of Malakand, (Degree Awarded)
8. Muhammad Shere, MPhill University of Malakand , (Degree Awarded)
9. Neelma, MPhill, University of Malakand , (Degree Awarded)
10. Rozi Gul MPhill, University of Malakand , (Degree Awarded)
11. Mis. Eiman, MPhill, University of Malakand , (Degree Awarded)
12. Atta Ullah, MPhill, University of Malakand , (Degree Awarded)
13. Rahim Uddin, MPhill, University of Malakand , (Degree Awarded)
14. Hafsa Naz MPhill, University of Malakand , (Degree Awarded)
15. Sana Tahir MPhill, University of Malakand , (Degree Awarded)
16. Sajjad Ahmad MPhill, University of Malakand , (Degree Awarded)
17. Amjad Ali MPhill, University of Malakand , (Degree Awarded)
18. Sana Ullah MPhil, University of Malakand , (Degree Awarded)

### **Co-Supervision of MPhil Scholars**

1. Zeeshan Ali, MPhil: University of Peshawar (Degree Awarded)
2. Wajid Husain, M.Phil. Qurtuba University Peshawar (Degree Awarded)
3. Liaqat Shah: MPhill: University of Malakand, (Degree Awarded)
4. Sana Ullah, MPhil: Abdul Wali Khan University Mardan, (Degree Awarded)
5. Abdul Ghaffar, MPhil: UET, Peshawar, (Degree Awarded)
6. Shahid Ali, MPhil: UET, Peshawar, (Degree Awarded)
7. Rafiullah, MPhil: University of Malakand, (Degree Awarded)
8. Zailuah, MPhil: University of Malakand, (Degree Awarded)
9. Saleem Ullah MPhil: University of Malakand, (Degree Awarded)
10. Shabana Naz MPhil: University of Malakand, (Degree Awarded )

### **In Progress Research Students**

1. Muhammad Sohail PhD In Progress
2. Muhammad Bahar Ali Khan, PhD: In progress (Co-Sup)
3. Ubaid Salim, PhD: In Progress. (Co-Sup)

### **RESEARCH GRANTS (PROJECTS)**

I have received the following two research grants from HEC and HED as co-principle

investigator:

1. Qualitative theory and stability analysis for nonlinear fractional hybrid differential equations under the grant **No: 10039/KPK/NRPU/R&D/HEC/ 2017** w.e.f from 20 March 2019 with approved amount is **Rs. 1.2 Millions**
2. Investigation of solutions to impulsive fractional order differential equations, under the grant **No. HEREF-46** w.e.f 15 April 2019 with approved amount Rs. 0. **693,53 Millions.**
3. Mathematical Models Of Viral Infections and Their Numerical Simulation, This research project was funded by the Deanship of Scientific Research and Libraries, Princess Nourah bint Abdulrahman University, through the Program of Research Project Funding After Publication, grant No (RPFAP-86- 1445). Net worth (**50,000 SAR**)

### **Talk in International Conference**

1. “Analytical Study of HIV-Fractional Order Model” International Conference on HIV/AIDS Awareness in Society Held in University of Malakand, 2018
2. Theoretical and Computational Analysis of a Dynamical System of Fractional Order Differential Equations, International Conference on Mathematical Sciences, Islamia University of Bahawalpur, Punjab Pakistan, 2022
3. Qualitative Theory of Fractional Order Differential Equations in Recent Times a hot Area of Research, One Day Research Forum held in Prince Sultan University Riyadh Saudi Arabia, 24 April , 2022.
4. Existence Criteria for Approximate Solutions to a Class of Caputo-Fabrizio Fractional Differential Equations, One Day Seminar on Mathematical Modeling, Prince Sultan University Riyadh Saudi Arabia, 29 March, 2022
5. Numerical Solutions To Some Families Of Fractional Order Differential Equations By Laguerre Polynomials, One Day Seminar on Mathematical Modeling, Prince Sultan University Riyadh Saudi Arabia, 29 September , 2022.
6. Bernstein Type Spectral Method for Numerical Solution Of Fractional Order Differential Equation, International Conference on Fractional Calculus: Theory, Applications and Numerics 27 –29 January, 2023 Organized by Department of Mathematics National Institute of Technology Puducherry, Karaikal, India.
7. An Efficient Matrix Method For Coupled Systems of Variable Fractional Order Differential Equations, International Conference on Mathematical Analysis and Applications in Science and Engineering, June 27-29, 2022, ISEP.Porto Portugal.
8. Study of a class of fractional order hybrid differential equations using modified type mittag-leffler derivative, 7<sup>th</sup> International Conference on Mathematical Modeling, Applied Analysis and Computation (ICMMAAC-24), Held April 18-20, 2024, Lebanese American University (LAU), Beirut, Lebanon.
9. Study of a Class of Fractional Order Evolution Hybrid Differential Equations Using Topological Degree Theory, African Conference Of Industrial And Applied Mathematics (Aciam-2024) Scheduled To Take Place From September 30 to October 05, 2024 In Cape Town, South Africa.
10. On using modified Attangana-Baleanu fractional order derivative to investigate a class of nonlinear evolution hybrid differential equations, 3<sup>rd</sup> International Scientific Research and Inovative Congress held 13-15 September 2025, Izmir Turkey.

### **LINKAGES/RESEARCH COLLABORATIONS**

- **Prof. Thabet Abdeljawad**  
Department of Mathematics and Sciences, Prince Sultan University, Riyadh, Saudi Arabia  
Email: [tabdeljawad@psu.edu.sa](mailto:tabdeljawad@psu.edu.sa)
- **Prof. Wasfi Shatanawi**, Department of Mathematics and Sciences, Prince Sultan University, Riyadh, Saudi Arabia Email: [wshatanawi@psu.edu.sa](mailto:wshatanawi@psu.edu.sa)
- **Prof. Jing Rhong Wang**, Department of Mathematics, Guizhou University, Guiyang, Guizhou 550025, China. School of Mathematics and Computer Science, Guizhou Normal College, Guiyang, Guizhou 550018, China, **Email:** [sci.jrwang@gzu.edu.cn](mailto:sci.jrwang@gzu.edu.cn)
- **Prof. Poom Kumam**, KMUTT Fixed Point Research Laboratory, Department of Mathematics, Room SCL 802 Fixed Point Laboratory, Science Laboratory Building, Faculty of Science, King Mongkuts University of Technology Thonburi (KMUTT), 126 PrachaUthit Road, Bang Mod, Thrung Khru, Bangkok 10140, Thailand. Email: [poom.kum@kmutt.ac.th](mailto:poom.kum@kmutt.ac.th)
- **Prof. Yongjin Li** : Sun Yat-sen University, Department Of Mathematics, Guangzhou, China Email: [stslyj@mail.sysu.edu.cn](mailto:stslyj@mail.sysu.edu.cn)
- **Prof. Fahad Jarad**  
Department Of Mathematics, Dean Faculty of Sciences, Cankaya University, Turkey Email: [fahd@cankaya.edu.tr](mailto:fahd@cankaya.edu.tr)

## References

1. Prof. Rahmat Ali Khan  
Ex.Vice Chancellor and Professor, Department of Mathematics University of Malakand, Pakistan  
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2. Dr. Zafar Hayyat Khan  
Professor, College of Hydraulic and Hydra-electric Engineering, SichuanUniversity, Chengdu, China, Email: [zhkhan@scu.edu.cn](mailto:zhkhan@scu.edu.cn)
3. Prof. Rashid Ahmad, Vice Chancellor and Dean of Physical Sciences, University of Malakand, Chakdara, Dir(Lower), KPK, Pakistan, Email: [rahmad@uom.edu.pk](mailto:rahmad@uom.edu.pk)
4. Professor **Ravi P Agarwal** Emeritus Research Professor Department of Mathematics and Systems Engineering Florida Institute of Technology Melbourne, FL 32901 USA.  
Email: [agarwalr@fit.edu](mailto:agarwalr@fit.edu)
5. **Prof. Thabet Abdeljawad**  
Department of Mathematics and Sciences, Prince Sultan University, Riyadh, Saudi Arabia  
Email: [tabdeljawad@psu.edu.sa](mailto:tabdeljawad@psu.edu.sa)

## Book Edited

1. Kamal Shah and *Baver Okutmuştur*, Functional Calculus, Published in London, United Kingdom, 2020, <http://dx.doi.org/10.5772/intechopen.77599>.
2. Kamal Shah and Min Lei, Structure Topology and Symplectic Geometry, Published in London, United Kingdom, 2021, DOI: 10.5772/intechopen.80177
3. Kamal Shah, Recent Advances in Polynomials” IntechOpen’s Publisher, UK, 2022, <https://www.intechopen.com/books/10853>
4. Kamal Shah, Eiman and Arshad Ali, Qualitative and Computational Aspects of Dynamical System, Intech Open’s, Publisher, U K, 2023

## Research Publications List

## Publications in 2025

- Jahan, S., Yadav, P., Kamal Shah, & Abdeljawad, T. (2025). An efficient wavelet technique for solving variable-order fractional equations arising in contaminant transport through porous media. *Fractals*, 2540238, 13.
- Alqudah, M., Kamal Shah, Mofarreh, F., & Abdeljawad, T. (2025). Mathematical Modeling of Psychological Disease by Using Artificial Intelligence Tools. *Fractals* (2025) 2550101 (21 pages)
- Shah, S. K., Sarwar, M., Kamal Shah, Hleili, M., & Abdeljawad, T. (2025). Solving age-dependent infectious diseases and tumor growth models using the contraction approach. *MethodsX*, 103505.
- Kamal Shah, Abdeljawad, T., & Ali, Z. (2025). Mathematical model and simulations of fractional order for an infectious disease involving social media. *Modeling Earth Systems and Environment*, 11(6), 1-16.
- Ahmad, S., Kamal Shah, Debbouche, A. (2025), Structural equation modeling for causal effect estimation with machine learning, *Journal of Computational and Applied Mathematics*, 475, 111720.
- Pandiselvi, M., Jeyaraman, M., Abdalla, B., Shah, K., & Abdeljawad, T. (2025). Neutrosophic Controlled Metric-Like Spaces With Application On Nonlinear Fractional Differential Equation. *Nonlinear Functional Analysis and Applications*, 961-989.
- Dhandapani, S., Kantheeban, A., Umapathi, K. R., Shah, K., Abdalla, B., & Abdeljawad, T. (2025). New Existence Result On Fractional Impulsive Differential Equations Involves Non-Local Conditions Via Topological Sequences. *Nonlinear Functional Analysis and Applications*, 897-913.
- Ur Rahman, L., Zakir, U., Bacha, B. A., Shah, K., Abdeljawad, T., & Naseralla, K. (2025). Coherent control of optical lattices and optical unit cells in atomic medium by counter propagation of Laguerre Gaussian beams. *Scientific Reports*, 15(1), 1-10.
- Eiman, Shah, K., Sarwar, M., & Abdeljawad, T. (2025). Study of Fractional Order Epidemic Compartmental Model by Using Artificial Deep Neural Networks. *Neural Networks*, 107944.
- Ullah, A., Sakidin, H., Gul, S., Alharthi, T. N., Metwally, D. S., Hamed, Y Kamal Shah, Sambas, A. (2025). Exploring the Effectiveness of an Optimal Control Model for Marijuana Consumption. *European Journal of Pure and Applied Mathematics*, 18(3), 6451-6451.
- Eiman, Kamal Shah, Sarwar, M., Hleili, M., Abdeljawad, T., & Abdalla, B. (2025). Applicability Of Fractals-Fractional Analysis To Investigate Rotaviruses Disease Model With Nonlinear Incidence Rate. *Fractals*, 2540237.
- Abdeljawad, T., Din, R. U., Fatima, N., Kamal Shah, Ansari, K. J., & Alrabaiah, H. (2025). Mathematical modeling of breast cancer with four stages. *International Journal of Biomathematics*, 2550036.
- Sher, M., Kamal Shah, Ali, Z., Abdeljawad, T., & Alqudah, M. (2025). Using deep neural network in computational analysis of coupled systems of fractional integro-differential equations. *Journal of Computational and Applied Mathematics*, 116912.
- Kamal Shah, Abdeljawad, T., Abdalla, B., & Ali, Z. (2025). Analyzing a coupled dynamical system of materials recycling in chemostat systems with artificial deep neural network. *Modeling Earth Systems and Environment*, 11(5), 1-14.
- Li, L., Kamal Shah, Abdalla, B., & Abdeljawad, T. (2025). Using treatment and vaccination strategies to investigate transmission dynamics of influenza mathematical model. *Ain Shams Engineering Journal*, 16(9), 103519.
- Dhandapani, S., Umapathi, K. R., Mathuraiveeran, J., Kamal Shah, Abdeljawad, T., & Jarad, F. (2025). STUDY OF IMPULSIVE PROBLEM WITH CAPUTO FRACTIONAL DERIVATIVE INVOLVING NONLOCAL CONDITIONS USING FIXED POINT THEORY. *Nonlinear Functional Analysis and Applications*, 315-329.
- Begum, R., Ali, S., Kamal Shah, & Abdeljawad, T. (2025). Fractional modeling of a communicable through air droplets based disease in Mittag-Leffler kernel sense and its numerical simulation. *Modeling Earth Systems and Environment*, 11(4), 289.
- Kamal Shah, Ali, A., Amin, R., Ali, Z., Abdalla, B., Abdeljawad, T., & Alqudah, M. (2025). Investigating Jerk Phenomenon by Using Fractal-Fractional Analysis. *Fractals*, 2540207.

- Kamal Shah, UR REHMAN, K. H. A. L. I. L., Abdalla, B., Abdeljawad, T., & Shatanawi, W. (2025). Using Neural Network and Fractals Fractional Analysis to Predict the Eye Disease Infection Caused By Conjunctivitis Virus. *Fractals*, 2540204.
- Rahman, Gauhar, Muhammad Samraiz, Kamal Shah, Thabet Abdeljawad, and Yasser Elmasry. "Advancements in integral inequalities of Ostrowski type via modified Atangana-Baleanu fractional integral operator." *Heliyon* 11, no. 1 (2025). **I.F=4.1**
- Khan, Alamgir, Ikram Ullah, Javed Iqbal, **Kamal Shah**, and Muhammad Bilal. "An innovative method for solving the nonlinear fractional diffusion reaction equation with quadratic nonlinearity analysis." *Physica Scripta* 100, no. 1 (2024): 015209. **If.F=2.1**
- Khan, Hira, Gauhar Rahman, Muhammad Samraiz, **Kamal Shah**, and Thabet Abdeljawad. "On Generalized Fractal-Fractional Derivative and Integral Operators Associated with Generalized Mittag-Leffler Function." *Heliyon* (2025). **I.F=4.1**
- Ahmad, Israr, Zeeshan Ali, Babar Khan, **Kamal Shah**, and Thabet Abdeljawad. "Exploring the dynamics of Gumboro-Salmonella co-infection with fractal fractional analysis." *Alexandria Engineering Journal* 117 (2025): 472-489. **I.F=6.1**
- Shah, Farman Ali, **Kamal Shah**, and Thabet Abdeljawad. "Numerical solution of two dimensional time-fractional telegraph equation using Chebyshev spectral collocation method." *Partial Differential Equations in Applied Mathematics* (2025): 101129.
- Asalam Khan, Abdul Ghaffor, Emel Khan, Kamal Shah Thabet Abdeljawad, Manar Alqudah, Solving one- and two-dimensional advection-diffusion type initial boundary value problems with a wavelet hybrid scheme, *Boundary Value Problems* (2025) 2025:37, **I.F=2.1**,
- Aourir, E., H. Laeli Dastjerdi, M. Oudani, **Kamal Shah**, and Thabet Abdeljawad. "Numerical technique based on Bernstein polynomials approach for solving auto-convolution VIEs and the initial value problem of auto-convolution VIDEs." *Journal of Applied Mathematics and Computing* (2025): 1-31. **I.F=1.5**
- Bouchelaghem, Faycal, Hamid Boulares, Abdelouaheb Ardjouni, Fahd Jarad, Thabet Abdeljawad, Bahaaeldin Abdalla, and **Kamal Shah**. "Existence of solutions of multi-order fractional differential equations." *Partial Differential Equations in Applied Mathematics* (2025): 101104. **Q1**.
- Khan, M., Khan, N., Ullah, I., **Kamal Shah**, Abdeljawad, T., & Abdalla, B. A novel fractal fractional mathematical model for HIV/AIDS transmission stability and sensitivity with numerical analysis. *Scientific Reports*, 15(1) (2025). 9291. **I.F=4.5**
- Alqudah, M. A., **Kamal Shah**, Abdeljawad, T., & Mofarreh, F. (2025). Study on nonlinear fractional order conformable model of infectious disease using updated analytical techniques. *Fractals*, 2540080 (2025). 13. **I.F=4.47**
- Razia Begum, Sajjad Ali, Thabet Abdeljawad and **Kamal Shah**, The self-protection behavior changes effect in SEIR-DM of COVID-19 pandemic model with numerical simulation and controlling strategies presentation, *Fractals*, (2025). 2540140, 28 pages **I.F=4.47**
- Lu, C., Li, L., **Kamal Shah**, Abdalla, B., Abdeljawad, T. (2025). Mathematical insights into chaos in fractional-order fishery model. *Modeling Earth Systems and Environment*, 11(3), 1-17. Q1 Scopus.
- R. Nawaz, **Kamal Shah**, Thabet Abdeljawad, Fractional Epidemic Model of Tuberculosis Disease with Media Impact on the Migrants and Seasonal Farm Workers, *Malaysian Journal of Mathematical Science*, 2025, Scopus **Q3**.
- Bilal, M., Ghafoor, A., Hussain, M., **Kamal Shah**, Abdeljawad, T Numerical Scheme for the Computational Study of Two Dimensional Diffusion and Burgers' Systems with Stability and Error Estimate. *Journal of Nonlinear Mathematical Physics*, 32(1) (2025) 1-23. **I.F= 0.986, Q2**.
- Abdeljawad, T., Khan, N., Abdalla, B., Al-Jaser, A., Alqudah, M., **Kamal Shah**, A mathematical analysis of human papilloma virus (HPV) disease with new perspectives of fractional calculus. *Alexandria Engineering Journal*, 125 (2025). 575-599. **I.F=6.1**
- Zeb, H., **Kamal Shah**, Alqudah, M., & Abdeljawad, T. Variable thermal conductivity effects on MHD flow of non-Newtonian ternary hybrid nanofluid between rotating disks, A Cattaneo–Christov heat transfer analysis. *Case Studies in Thermal Engineering*, 71 (2025). 106119. **I.F=6.4**

- Amin, R., Nawaz, M., **Kamal Shah**, Abdeljawad, T. (2025). Haar wavelet collocation method for existence and numerical solutions of fourth-order integro-differential equations with bounded coefficients. *Nonlinear Engineering*, 14(1), 20250125. **Q2**.
- E. Aourir, H. Laeli Dastjerdi, **Kamal Shah**, Thabet Abdeljawad, *Computational scheme for the numerical solution of fractional order pantograph delay-integro-differential equations via the Bernstein approach*, *Partial Differential Equations in Applied Mathematics* 14 (2025) 101194, **Scopus Q1**.
- Eiman, **Kamal Shah**, Sarwar, M., & Abdeljawad, T. Modeling Virus Mutation Dynamics Using Piecewise Fractional Derivatives. *European Journal of Pure and Applied Mathematics*, 18(2) (2025). 6053-6053. **I.F=1**
- Ali, A., Bibi, F., Ali, Z., **Kamal Shah**, Abdalla, B., & Abdeljawad, T. Investigation of Existence and Ulam's type Stability for Coupled Fractal Fractional Differential Equations. *European Journal of Pure and Applied Mathematics*, 18(2) (2025). 5963-5963. **I.F=1**
- **Kamal Shah**, Ali, A., Boukhobza, M., Debbouche, A., & Abdeljawad, T. Hyers-Ulam stability analysis for piecewise variable order fractional impulsive evolution systems. *Journal of Applied Analysis & Computation*, 15(5) (2025). 3159-3184. **I.F=1**
- Rahim, M., **Kamal Shah**, Alqahtani, H., Alhabeeb, S. A., & Khalifa, H. A. E. W. Adaptive Multi-Criteria group Decision-Making for optimized crop selection using the p, q-quasirung orthopair fuzzy hybrid aggregation operator. *Expert Systems with Applications*, 286 (2025). 128126 **I.F=7**
- Naz, S., Sarwar, M., **Kamal Shah**, Fatima, N., & Abdeljawad, T. (2025). A Mathematical Model of COVID-19 Using Piecewise Derivative of Fractional Order. *European Journal of Pure and Applied Mathematics*, 18(2), 5861-5861. **I.F=1**
- Yousaf, M., Ullah, A., Zeb, S., Farooq, U., **Kamal Shah**, Numerical solution of fractional order Bagley-Torvik equation via Hermite wavelet method. *Journal of Computational and Nonlinear Dynamics*, 2025 (2025). 1-17. **I.F=1**

## Publications in 2024

- Ullah, I., **Shah, K.**, Abdeljawad, T., Alam, M. M., Hendy, A. S., & Barak, S. (2024). Dynamics Behaviours of Kink Solitons in Conformable Kolmogorov–Petrovskii–Piskunov Equation. *Qualitative Theory of Dynamical Systems*, 23(1), 268. **I.F=2.6**
- Tahir, H., Din, A., Shah, K., Abdalla, B., & Abdeljawad, T. (2024). Advances in stochastic epidemic modeling: tackling worm transmission in wireless sensor networks. *Mathematical and Computer Modelling of Dynamical Systems*, 30(1), 658-682. **I.F=1.8**
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