

Curriculum Vitae

Dr. Roohi Jan
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Scholastic Record

- **Ph.D Mathematics** from *University of Kashmir, Srinagar*
Awarded on: **31st of March 2023.**
- Topic of Ph.D. Thesis “**Mathematical Analysis of Enzyme-Substrate Complex and its Binding Properties**”.
- Advisors: **Professor M. A. Khanday** and **Dr. Fouzia Rashid.**
- **M.Sc. (Mathematics)** from University of Kashmir, Srinagar, in the year 2016 with 1st division.
- **B.Sc.(Mathematics, Physics, Chemistry & English)** from Sri Pratap College, M. A. Road, Srinagar, J & K in the year 2014 with 1st division.

Field of Specialization/Interest

Mathematical Biology, Mathematical Chemistry, Enzyme Kinetics and Computational Biology.

Research Publications

1. **Roohi Bhat** and M.A. Khanday (2024). Mathematical analysis and empirical validation of thermal denaturation of Glucokinase, *Journal of Mechanics in Medicine and Biology*, (Accepted). A referred journal of international repute, index in SCI, Scopus.
2. **Roohi Bhat**, M. A. Khanday, (2024). Traveling Wave Solution and the Stability of Critical Points of an Enzyme-Inhibitor System under Diffusion Effects: With Special Reference to Dimer Molecule, *Computer methods in Biomechanics and Biomedical Engineering*. A referred journal of international repute, index in SCI, Scopus.
3. F.A. Zargar, M.A.Khanday, Mudasir Ashraf and **Roohi Bhat***, (2024). Impact of radiation therapy on healthy and cancerous cell dynamics: a Mathematical analysis, *Computer Methods in Biomechanics and Biomedical Engineering*. A referred journal of international repute, index in SCI, Scopus.

4. **Roohi Bhat**, M. A. Khanday and F. A. Zargar, (2023). Mathematical modeling of biomolecular interaction of enzyme-substrate-inhibitor system, Journal of Mechanics in Medicine and Biology, . A referred journal of international repute, index in SCI, Scopus.
5. **Bhat Roohi** and Khanday, M. A. (2022). A mathematical analysis of cooperativity and fractional saturation of oxygen in hemoglobin, Communications Faculty of Sciences University of Ankara Series A1: Mathematics and Statistics, 72(2023), 118 - 128. A referred journal of international repute, index in ESCI.
6. **Bhat Roohi** and Khanday, M. A. (2022). An algebraic mathematical model for non-competitive enzyme inhibitors with slow and fast subsystems. Applied Mathematics E-Notes, 22, 362-370. A referred journal of international repute, index in ESCI, Scopus.
7. Khanday, M. A. and **Bhat Roohi** (2021). Transformation of Glucokinase under variable rate constants and thermal conditions: A Mathematical Model. Applications and Applied Mathematics: An International Journal (AAM), Vol. 16, Iss. 2, Art. 10, 953 - 964. A referred journal of international repute, index in ESCI.
8. Nazir, K., Sakib, M., **Bhat Roohi**, F. A. Zargar, Khanday, M. A.(2021). Compartment modelling and eigenvalue expansion to study the drug concentration in capillary and tissue regions surrounding the malignant tumour, Network Modeling Analysis in Health Informatics and Bioinformatics, 1 – 7. A referred journal of international repute, index in ESCI, Scopus.

Conferences

1. December 23, 2022, Presented a Paper titled "**Mathematical Analysis of Transformation of Glucokinase under Variable Rate Constants**" in Three day **National Conference** organized by Central University of Kashmir in collaboration with the Jammu and Kashmir State Science, Technology and Innovation Council, Department of Science and Technology.
2. December 21, 2022, Presented a Paper titled "**An Algebraic Mathematical Model for Non-Competitive Enzyme Inhibitors**" in One-day seminar on **National Mathematics Day** at Department of Mathematics, University of Kashmir.
3. October 18, 2022, Presented a Paper titled "**Transformation of Glucokinase under Variable Rate Constants and Thermal Conditions: A Mathematical Model**" in two day **National Level conference on "Analysis and Discrete Mathematics"** held at JKIMS, Srinagar.
4. December 22, 2020, Presented a Paper titled "**Life History and Contributions of Srinivasa Ramanujan**" " in online International Conference" on "**History and Development of Mathematics**", organized by Department of Mathematics, Maharashtra Dayanand University, Rohtak.
5. December 16, 2020, Participated in a **Two-Day National Conference on Emerging Trends in Mathematics - Its Applications** and Celebration of Mathematics Day organised by Department of Mathematics, University of Kashmir.

6. June 19, 2019, Presented a Paper titled ” **Mathematical Modeling in Enzyme - Kinetics**” in the One Day National Conference on “**Mathematics and its Applications**” at Department of Mathematics organized by Central University of Kashmir.

Workshops

1. June 22-23, 2023, Participated in 2-day Regional Workshop on **Research and Opportunities** organised by Indian Women and Mathematics (IWM) and Department of Mathematical Sciences, IUST, Kashmir.
2. May 01-13, 2023, Participated in 13-day Advanced Training in Mathematics on **AIS-Combinatorics and Graph Theory** organized by Department of Mathematics, University of Kashmir and a Joint centre of TIFR and IIT Bombay at University of Kashmir.
3. September 16-22, 2022, Participated in one week workshop on **Mathematics and its Applications** organized by the Department of Mathematics, University of Kashmir, South Campus, Anantnag in collaboration with the Mathematics Consortium-TMS, Pune and Kashmir Mathematical Society-KMS, Srinagar.
4. December 17, 2021, Participated one-day webinar on **Mathematical Modeling and Analysis**, organised by Department of Computer Science and Engineering in Association with Institution’s Innovation Council, JIS University.
5. May 15, 2021, Participated in the National Webinar on the **Use of Finite Element Method in Computational Fluid Dynamics** organized by Department of Mathematics, School of Technology, Pandit Deendayal Energy University, Gandhinagar, Gujarat, India.
6. March, 05-06, 2021, Participated in Seminar on **Applications of Statistics and Engineering ASSE-2021**, organized by Department of Mathematics, Birla Institute of Technology, Mesra, Ranchi.
7. December 15-16, 2020, Participated in a Two-Day National Conference on **Emerging Trends in Mathematics - Its Applications and Celebration of Mathematics Day** organised by Department of Mathematics, University of Kashmir.
8. October 10, 2020, Participated in National e-seminar on **Advances in Physical and Mathematical Science** organized by Manoharnhai Shikshan Prasarak Mandal Aemori’s Mahatma Gandhi Arts, Science and Late N.P. Commerce College Armori, Dist-Gadchiroli, Maharashtra, India.
9. September 23, 2020, Participated in the one-day National Level Webinar on **Recent Trends in Mathematics and its Applications** organized by the Department of Mathematics, Maharajadhiraj Uday Chand Women’s College.
10. September 16, 2020, Participated in the webinar on **Mathematics Phobia and its Remedial Measures** organized by Department of Mathematics and Department of Statistics, Govt. College for Women, Nawakadal, Srinagar.

11. August 08-11, 2020, Participated in the webinar on **Mathematical Modeling of Communicable and Non-Communicable Diseases** organized by Department of Mathematics, Mahatma Gandhi Central University, Motihari, Bihar, India.
12. March 02-06, 2020, Participated in a Five-day **Bioinformatics Workshop on Introduction to Computational Biology and Bioinformatics**, organized by Bioinformatics Centre, University of Kashmir.
13. June 18-20, 2019, Participated in a Three-day National Level workshop on **Algebra and Analysis** organized by Department of Mathematics, Central University of Kashmir.
14. May 18-20, 2015, Participated in Research Promotion workshop on **Introduction To Graph And Geometric Algorithms**, sponsored by NBHM GoI at Department of Mathematics, University of Kashmir.

Teaching Experience

- Working as an Assistant Professor at "*Institute of Technology, University of Kashmir, Srinagar*".
- Worked as an Assistant Professor at "*Lovely Professional University, Phagwara, Punjab*".
- Worked as Guest Lecturer at "*Srinagar Women's College, Srinagar*" for 2 years.
- Worked as resource person on lecture basis in the "*Department of Distance Education, University of Kashmir, Srinagar*" for Two years.
- Worked as resource person on lecture basis in the "*Department of Nano-Technology, University of Kashmir, Srinagar*" for Two years.

Topics Taught

Mathematical Analysis, Modern Algebra, Complex Analysis, Differential Equations, Theory of Matrices, Numerical Analysis, Laplace transformation, Fourier Series, Differential and Integral Calculus, Mathematical Biology.

Miscellaneous Qualification:

Computer Literacy: Symbolic Programming (Mathematica, Matlab), Typesetting Programming (MikTex, Latex), Presentation Program (MS Power Point, Corel Presentation, Latex Presentation), MS Word, Adobe Photoshop.

Languages known

- *English, Urdu, Kashmiri*

(Roohi Jan)