Curriculum Vitae

Dr. Firdous Ahmad Shah

Sr. Assistant Professor

Department of Mathematics, University of Kashmir, South Campus, Anantnag, Jammu and Kashmir – 192101, India.

E-mail: fashah79@gmail.com; fashah79@kashmiruniversity.ac.in

Tel (M): 9858206206, 7006064445. (R): +91-1932227764.

1. Personal Data:

Date of Birth	:	April 01, 1979
Place of Birth	:	Brakpora, Anantnag, (J&K), India
Parentage	:	Hamid-ullah Shah
Marital Status	:	Unmarried
Permanent Address	:	Anantnag, Jammu and Kashmir-192201, India.

2. Academic Record:

- Ph.D. Jamia Millia Islamia (Central University), New Delhi-25, 2007.
- Post Graduation (Mathematics), University of Kashmir, Jammu & Kashmir-190006, 2002.
- B. Sc, University of Kashmir, Jammu & Kashmir-190006, 2000.

3. Books Published:

1. **Lecture Notes on Wavelet Transforms,** (with Lokenath Debnath), **Birkhäuser, Springer,** Boston, USA**, 2017.** ISBN 978-3-319-59432-3, ISBN 978-3-319-59433-0 (eBook).
2. **Wavelet Transforms and Their Applications,** (with Lokenath Debnath), **Birkhäuser, Springer,** New York, USA**, 2015.** ISBN 978-0-8176-8417-4, ISBN 978-0-8176-8418-1 (eBook).
3. **Introduction to Wavelets with Applications,** (with K. Ahmad), **Real World Education Publishers,** New Delhi-110025, India**, 2013.** ISBN No. 978-81-927151-2-4.

4. List of Research Publications:

1. **F. A. Shah**, O. Ahmad and P. E. Jorgensen, Fractional wave packet frames in L^2(R), **Journal of Mathematical Physics, 59 (2018), 073509.**
2. **F. A. Shah**, Inequalities for nonuniform wavelet frames, **Georgian Mathematical Journal, (2018), (accepted). DeGruyter.**
3. **F. A. Shah** and L. Debnath, Fractional wavelet frames in L^2(R), **Fractional Calculus and Applied Analysis, 21(2) (2018), 399-422. DeGruyter.**

4. **F. A. Shah**, O. Ahmad and A. Rahimi, Frames associated with shift invariant spaces on local fields, **Filomat, (2018), (accepted)**
5. M. Rashidi-Kouchi, A. Rahimi and **F. A. Shah,** Duals and multipliers of controlled frames in Hilbert spaces, **International Journal of Wavelets, Multiresolution and Information Processing, (2018), (accepted). World Scientific.**
6. Y. Hamid, M. Sugumaran and **F. A. Shah**, Wavelet neural network model for network intrusion detection system, **International Journal of Information Technology, (2018), (accepted). Springer.**
7. **F. A. Shah** and Azhar Y. Tantary, Polar wavelet transform and the associated uncertainty principles, **International Journal of Theoretical Physics, 57(6) (2018), 1774-1786. Springer.**
8. O. Ahmad, **F. A. Shah** and N. A. Sheikh, Gabor frames on non-Archimedean fields, **International Journal of Geometric Methods in Modern Physics, 15 (2018) (17 pages) 1850079, World Scientific.**
9. **F. A. Shah**, Gabor-type expansions on local fields, **Boletin de la Sociedad Espanola de Mathematica Aplicada (SeMA Journal), (2018), (accepted) Springer.**
10. **F. A. Shah**, S. Sharma and M. Y. Bhat, Wavelet frame characterization of Lebesgue spaces on local fields**, Annals Stiint. Univ. Al. I. Cuza Iasi. Mat. (N.S.) (2018), (accepted).**
11. **F. A. Shah** and O. Ahmad, Wave packet systems on local fields, **Journal of Geometry and Physics, 120 (2017), 5-18. Elsevier. MR3712145.**
12. **F. A. Shah** and R. Abass, An efficient wavelet based collocation method for handling singularly perturbed boundary-value problems in fluid mechanics, **International Journal of Nonlinear Sciences and Numerical Simulations, 18(6) (2017), 7-25. DeGruyter. MR3711846.**
13. **F. A. Shah**, O. Ahmad and N. A. Sheikh, Orthogonal Gabor systems on local fields, **Filomat, 31(16) (2017), 5193-5201.**
14. **F. A. Shah**, O. Ahmad and Huzaifa Jan, Sufficient condition for nonuniform wavelet frames on local fields, **Facta Universitatis: Ser. Math. Inform. 32(4) (2017), 551-564.**
15. **F. A. Shah** and R. Abass, An operational Haar wavelet collocation method for solving singularly perturbed boundary-value problems, **Boletin de la Sociedad Espanola de Mathematica Aplicada (SeMA Journal), 74 (2017), 457-474. Springer.**
16. **F. A. Shah** and L. Debnath, Minimum-energy wavelet frames on local fields, **International Journal of Applied and Computational Mathematics, 3 (2017), 3455-3469. Springer. MR3715998.**
17. **F. A. Shah** and R. Abass, Generalized wavelet collocation method for solving fractional relaxation-oscillation equation arising in fluid mechanics, **International Journal of Computational Materials Science and Engineering, 6(2)(2017), Article ID 1750016 (17 pages). World Scientific.**

18. **F. A. Shah**, R. Abass and L. Debnath, Numerical solution of fractional differential equations using Haar wavelet operational matrix method, **International Journal of Applied and Computational Mathematics, 3 (2017), 2423-2445.Springer. MR3680709.**
19. **F. A. Shah** and M. Y. Bhat, Nonuniform wavelet packets local fields of positive characteristic, **Filomat, 31(6) (2017), 1491-1505. Siberia. MR3635188.**
20. **F. A. Shah** and M. Y. Bhat, Polyphase matrix characterization of framelets local fields of positive characteristic, **Acta Univ. Sapientiae Mathematica, 9 (2017), 248-259. Romania. DeGruyter. MR3688838.**
21. **F. A. Shah**, O. Ahmad and N. A. Sheikh, Some new inequalities for wavelet frames on local fields, **Analysis in Theory and Applications, 33 (2) (2017), 134-148. China. MR36788555.**
22. **F. A. Shah**, Orthogonal wavelet frames generated by the Walsh polynomials, **Acta Universitatis Apulensis, 49 (2017), 47-65. Romania. MR3637719.**
23. **F. A. Shah,** A converse problem related to the *M*-band wavelets, **Southeast Asian Bulletin of Mathematics, 41(4) (2017), 553-558. China.**
24. Y. Hamid, L. Journax, **F. A. Shah** and M. Sugumaran, A coalesce of SNE-Wavelet-SVM technique for network intrusion detection, **International Journal of Security and its Applications 4(5) (2017), 1-14. USA.**
25. M. Y. Pir, **F. A. Shah** and M. Asger, A Comparative study of different wavelet based neural network models for IIP growth forecasting using different yield spreads, **Inter. J. Elect. Electron. Comput. Sci. Engn. 4(6) (2017), 5-13.**
26. **F. A. Shah**, Periodic wavelet frames on local fields of positive characteristic, **Numerical Functional Analysis and Optimization, 37(5) (2016), 603-627. Taylor and Francis. U.K. MR3514520.**
27. **F. A. Shah**, Gabor frames on local fields of positive characteristic, **Tbilisi Mathematical Journal, 9(2) (2016), 129-139. Poland. DeGruyter. MR3583559.**
28. **F. A. Shah** and R. Abass, Numerical solution of singularly perturbed problems using Haar wavelet collocation method, **Cogent Mathematics, 3 (2016), 1202504. Taylor and Francis. U.K. MR3625356.**
29. **F. A. Shah** and S. Goyal, A characterization of MRA based wavelet frames generated by the Walsh polynomials, **Analysis in Theory and Applications, 32(2) (2016), 164-173. MR3529327.**
30. **F. A. Shah** and M. Y. Bhat, Semi-orthogonal wavelet frames on local fields, **Analysis, 36(3) (2016), 173-182. DeGruyter. Germany. MR3530517.**
31. **F. A. Shah** and M. Y. Bhat, Vector-valued wavelet packets on local fields of positive characteristic, **Newzealand Journal of Mathematics, 46 (2016), 9-20. MR3508682.**
32. **F. A. Shah**, Construction of shift invariant *M*-band tight framelet packets, **TWMS Journal of Applied and Engineering Mathematics, 6 (2016), 102-114. Turkey. MR3594859.**

33. **F. A. Shah** and M. Y. Bhat, Construction of biorthogonal wavelet packets on local fields of positive characteristic, **Turkish Journal of Mathematics, 40 (2016), 292-309. Turkey. MR3461485.**
34. **F. A. Shah** and M.Y. Bhat, Vector-valued non-uniform multiresolution analysis on local fields, **International Journal of Wavelets, Multiresolution and Information Processing, 13(4) (2015), Article ID: 1550029. 22 pages. World Scientific, Singapore. MR3373793.**
35. **F. A. Shah** and M.Y. Bhat**,** Tight framelet packets on local fields of positive characteristic, **Journal of Classical Analysis, 6 (2015), 85-101. Croatia. MR3324479.**
36. **F. A. Shah** and R. Abass, Haar wavelet operational matrix method for the numerical solution of fractional order differential equations, **Nonlinear Engineering, 4(4) (2015), 203-213. DeGruyter. Germany.**
37. **F. A. Shah** and R. Abass, A characterization of biorthogonal multiwavelet packets with arbitrary dilation matrix, **International Journal of Analysis and Applications, 9 (2) (2015), 68-82. USA.**
38. **F. A. Shah** and Abdullah, Nonuniform multiresolution analysis on local fields of positive characteristic, **Journal of Complex Analysis and Operator Theory, 9(7) (2015), 1589-1608. Springer. MR3395233.**
39. **F. A. Shah** and Abdullah, Construction of multivariate tight framelet packets associated with dilation matrix, **Analysis in Theory and Applications, 31(2) (2015), 109-122. Springer. MR3357524.**
40. **F. A. Shah** and S. Goyal, Minimum energy wavelet frames generated by the Walsh polynomials, **Cogent Mathematics, 2 (2015). Article ID: 1114830. Taylor and Francis. MR3450011.**
41. **F. A. Shah** and S. Goyal, Construction of periodic wavelet frames generated by the Walsh polynomials, **Mathematics, 3(4) (2015), 1171-1191. MDPI Press, Swaziland.**
42. **F. A. Shah**, On stationary and non-stationary *M*-band framelet packets, **Journal of Mathematical Extension, 9(3) (2015), 25-42. Iran. MR3451650.**
43. **F. A. Shah,** On characterization of multiwavelet packets associated with a dilation matrix, **Journal of Nonlinear Analysis and Optimization, 6 (2015), 11-26. Thailand. MR3396723.**
44. **F. A. Shah,** Frame multiresolution analysis on local fields of positive characteristic, **Journal of Operators, (2015), Article ID:**308567, 12 pages, **Hindawi. MR3317023.**
45. **F. A. Shah** and M.Y. Bhat**,** On framelet kernels of *M*-band wavelet frames, **Gulf Journal of Mathematics, 3(4) (2015), 59-66. MR3411517.**
46. **F. A. Shah** and M.Y. Bhat**,** A new splitting trick for wavelet packets on local fields of positive characteristic, **Poincare Journal of Analysis and Applications, 2 (2015). 93-103. India. MR3439944.**

47. **F. A. Shah**, *p*-Frame multiresolution analysis related to the Walsh functions, **International Journal of Analysis and Applications, 7 (2015), 1-15. USA.**
48. **F. A. Shah,** A characterization of multiwavelet packets on general lattices, **International Journal of Nonlinear Analysis and Applications, 6 (2015), 69-84. Iran.**
49. A. B. Dar and **F. A. Shah**, In search of leading indicator property of yield spread for India: An analysis based on quantile and wavelet regression, **Economics Research International, (2015), Article ID:** 308567, 12 pages, **Hindawi.**
50. **F. A. Shah** and Abdullah, Wave packet frames on local fields of positive characteristic, **Applied Mathematics and Computations, 249 (2014), 133-141. Elsevier. MR3279407.**
51. **F. A. Shah** and Abdullah, A characterization of tight wavelet frames on local fields of positive characteristic, **Journal of Contemporary Mathematical Analysis, 49 (6) (2014), 251-259. Springer. MR3381403.**
52. A. B. Dar and **F. A. Shah**, Are Euro-zone fixed income markets integrated? An analysis based on wavelet multiple correlation and cross-correlations, **Economics Research International, (2014), Article ID 219652, 8 pages, Hindawi.**
53. A. B. Dar, A. Samantaraya and **F. A. Shah**, The predictive power of yield spread: Evidence from wavelet analysis, **Empirical Economics, 46 (2014), 887-901. Springer.**
54. Y. Pir, **F. A. Shah** and M. Asgar, Using wavelet neural networks to forecast IIP growth with yield spreads, **IPASJ International Journal of Computer Sciences, 2(5) (2014), 31-36.**
55. **F. A. Shah,** H. Siddiqui and K. Ahmad, Characterization Sobolev spaces using *M*-band framelet packets, in **"Recent Trends in Mathematics and its Applications" (Hassan et al. Eds.), pp. 119-132, Norasa, Delhi (2014).**
56. **F. A. Shah,** Biorthogonal wavelet packets associated with non-uniform multiresolution analysis, **Journal of Information and Computing Sciences, 9(1) (2014), 11-21. U.K.**
57. **F. A. Shah,** Tight wavelet frames generated by the Walsh polynomials, **International Journal of Wavelets, Multiresolution and Information Processing, 11 (6) (2013), 15 pages. World Scientific, Singapore. MR3163947.**
58. **F. A. Shah** and L. Debnath, Tight wavelet frames on local fields, **Analysis, 33(3) (2013), 293-307. Germany. MR3118429.**
59. **F. A. Shah,** A Remark on Biorthogonality of the Scaling Functions on Vilenkin Groups, **International Journal of Modern Mathematical Sciences, 7(3) (2013), 287-295.**
60. **F. A. Shah** and S. Goyal, Stability of Multiwavelet Frames with Different Matrix Dilations and Matrix Translations, **Applications and Applied Mathematics, 8 (2013), 151-160. USA. MR3077999.**
61. **F. A. Shah** and A. H. Siddiqi, Wavelet frames on direct products of cyclic groups, **Indian Journal of Industrial and Applied Mathematics, 3(1) (2012),** 32-43.

62. **F. A. Shah**, Biorthogonal p-wavelet packets related to the Walsh polynomials, **Journal of Classical Analysis, 1 (2012), 135-146. Croatia. MR3320563.**
63. **F. A. Shah,** Non-orthogonal *p*-wavelet packets on a half-line, **Analysis in Theory and Applications, 28(4) (2012), 385-396. Springer. MR3116144.**
64. **F. A. Shah**, Gabor frames on a half-line, **Journal of Contemporary Mathematical Analysis, 47(5) (2012), 251-260. Springer. MR3057975.**
65. **F. A. Shah** and L. Debnath, Explicit construction of M-band framelet packets, **Analysis, 32(4) (2012), 281-294. Germany. MR2999105.**
66. **F. A. Shah,** On some properties of *p*-wavelet packets via the Walsh Fourier transform, **Journal of Nonlinear Analysis and Optimization, 3(2) (2012), 185-193. Thailand. MR2982405.**
67. **F. A. Shah** and N. A. Sheikh, Construction of vector-valued multivariate wavelet frame packets, **Thai Journal of Mathematics, 10(2) (2012), 401-414.Thailand.MR3001862**
68. **F. A. Shah** and N. A. Sheikh, A-transform of wavelet frames, **Communications in Mathematics and Applications, 3(3) (2012), 273-282.**
69. **F. A. Shah** and Abdullah, Necessary condition for the existence of wave packet frames, **Southeast Asian Bulletin of Mathematics, 36 (2012), 287-292. China. MR2992483**
70. **F. A. Shah** and L. Debnath, p-Wavelet frame packets on a half-line using the Walsh-Fourier transform, **Integral Transforms and Special Functions, 22(12) (2011), 907-917. Taylor and Francis, U.K. MR2855758**
71. **F. A. Shah** and L. Debnath, Dyadic wavelet frames on a half-line using the Walsh-Fourier transform, **Integral Transforms and Special Functions, 22(7) (2011), 477-486. Taylor and Francis, U.K. MR2812531**
72. **F. A. Shah**, K. Ahmad and Abdullah, Behaviour of shrinkage operators on wavelet packet series, **Southeast Asian Bulletin of Mathematics, 35 (2011), 1-12. China. MR2858186**
73. K. Ahmad and **F. A. Shah**, Characterization of multiwavelet packets associated with arbitrary dilation matrices, **in "Recent Trends in Mathematics and its Applications" (M.R. Khan et al. Eds.), pp. 32-47, World Education Publishers, Delhi (2011).**
74. **F. A. Shah** and K. Ahmad, Characterization of multiwavelet packets in $L^2(R^d)$, **Jordan Journal of Mathematics and Statistics, 3 (3), (2010), 159-180.**
75. **F. A. Shah** and Abdul Wahid, Wavelet packets on locally compact Abelian groups, **Analele Stiintifice ale Universitatii Ovidius, Seria Matematica (ASUOC), 18 (2) (2010), 223-240.** Romania. **MR2785808**
76. **F. A. Shah**, Construction of wavelet packets on *p*-adic fields, **International Journal of Wavelets, Multiresolution and Information Processing, 7 (5) (2009), 553-565. World Scientific Singapore. MR2574280.**

77. **F. A. Shah**, A. H. Siddiqi and N. A. Sheikh, Convergence of a Class of non-orthogonal Wavelet Expansions Associated with Dilation Matrix, **Indian Journal of Industrial and Applied Mathematics, 2 (1) (2009), 33-41. Taylor and Francis, U.K.**

78. K. Ahmad, Abdullah and **F. A. Shah**, Sobolev spaces $L^{p,s}$ (R) and wavelet packets, **The Aligarh Bulletin of Mathematics**, **27 (2008), 23-36. MR2555309**.

79. Abdullah and **F. A. Shah**, A note on summability of wavelet packet series**, International Mathematical Forum, 3 (37) (2008), 1823-1830, MR2482729**.

80. M. Asgar and **F. A. Shah**, Pointwise convergence of multiwavelet packet series, **International Journal of Mathematical Analysis, 2(9) (2008), 447-456. MR2482729.**

81. **F. A. Shah** and K. Ahmad, On the partial sums of wavelet packet series, **International Journal of Pure and Applied Mathematics, 36(4) (2007), 461-470. MR2313302.**

5. Conferences \ Seminars:

1. Delivered an invited talk on "Fractional wavelet frames in L2(R)" in an *"International Conference on Applicable Analysis (ICAA-2017)"*, 08-11 February, 2017, organized by Department of Mathematics, Shaheed Bhagat Singh College, University of Delhi, India.
2. Delivered an invited talk on "Gabor frames on local fields of positive characteristic**"** in an "*Recent Advances in Pure and Applied Mathematics",* 13-14 February, 2017, organized by Department of Mathematics, University of Udaipur, India.
3. Presented a paper entitled "Wave packet systems on local fields, in *"International Conference on Differential Geometry, Algebra and Analysis (ICDGAA16)"* held at Department of Mathematics, Jamia Millia Islamia, New Delhi, November 15-17, 2016.
4. Participated in the *"14th Discussion Meeting on Harmonic Analysis"* organized by the Department of Mathematics, University of Delhi, India, December 10-12, 2015.
5. Delivered an invited talk on "Wavelets associated with non-uniform multiresolution analysis on local fields of positive characteristic" in *"International Conference in Harmonic Analysis and Approximations-VI***"** held at Department of Mathematics, September 12, 2015 to September 18, 2015 organized by Yerevan State University, Armenia.
6. Presented a paper entitled "MRA based wavelet frames on local fields of positive characteristic, in *"International Conference on Emerging Areas of Mathematics for Science and Technology"* held at Department of Mathematics, Punjabi University, Patiala, 30th January to Ist February, 2015.
7. Participated in International Conference on *"The Legacy of Srinnivasa Ramanujan"* organized by the University of Delhi, 17-22 December, 2012.
8. Presented a paper entitled "Are Euro-zone fixed income markets integrated? An analysis based on wavelet multiple correlations and cross-correlation, in *"International Conference on Emerging Mathematical Methods, Models and Algorithms for Science and Technology"* held at Department of Mathematics, Gautam Buddha University, 15-16 December, 2012.

9. Presented a paper entitled "Tight wavelet frames on local fields", in *"International Conference on Differential Geometry, Functional Analysis and Applications (ICDGFAA12)"* held at Department of Mathematics, Jamia Millia Islamia, New Delhi, September 08-10, 2012.
10. Presented a paper entitled "Construction of vector-valued multivariate wavelet frame packets", in *"International Conference on Special Functions and their Applications and Symposium on Works of Ramanujan (ICSFA-11)"* held at Department of Mathematics and Statistics, J. N. Vyas University, Jodpur, July 28-30, 2011.
11. Presented a paper entitled "Wavelet packets and wavelet frame packets on *p*-adic field", in *"International Conference on Recent Trends in Mathematics and its Applications (ICRTMA09)"* held at Department of Mathematics, Jamia Millia Islamia, New Delhi, March 30-31, 2009.
12. Presented a paper entitled "Convergence of a Class of Non-orthogonal Wavelet Expansions Associated with Dilation Matrix in *"International Conference on Modeling of Engineering and Technological Problems"* held at Agra, 14-16, Jan., 2009.
13. Presented a paper entitled "Multifactor Authentication System using Mobile Devices" in *"Current Trends in Mobile Computing"* held at Baba Ghulam Shah Badshah University (BGSBU), Rajouri, J & K, Nov., 28-29, 2008.
14. Presented a paper entitled "Pointwise Convergence of Nonuniform Wavelet Packet Series" in *"International Conference on Analysis and its Applications (ISIAM)"* held at Aligarh Muslim University (AMU), Aligarh, Nov., 3- 5, 2008.
15. Presented a paper entitled "On the Partial Sums of Wavelet Packet Series" in *"International Conference on Industrial and Applied Mathematics (ISIAM)"* held at University of Jammu, Jammu, Mar. 31 - Apr. 3, 2007.
16. Participated in *"International Conference on Industrial and Applied Mathematics"* held at India International Centre, New Delhi, Dec. 4-6, 2004.

6. Short Term Courses \ Workshops:

1. Participated and delivered an invited talk on **Numerical Solution of Fractional Differential Equations using Wavelet Methods** in the **International Workshop on Wavelets, Frames and Applications-III, (One week)** 14-20 December, 2017, organized by Kirori Mal College, University of Delhi, India.
2. Participated in an **International Workshop on Operator Spaces"** (**3-days**) from December 07-09, 2015, organized by the Department of Mathematics, University of Delhi, India.
3. Participated in th**e Advanced Instructional School on "Naïve Set Theory and its Applications" (3-weeks**) from April 13-May 2, 2015, organized jointly by Tata Institute of Fundamental Research (TIFR) and IIT Bombay, at the Department of Mathematics, University of Kashmir, Srinagar.

4. Participated in the **Research Promotion Workshop on "Introduction to Graph and Geometric Algorithms"** (**03-days**) from May 18- 20, 2015, organized jointly by Tata Institute of Fundamental Research (TIFR) and Department of Mathematics, at the Department of Mathematics, University of Kashmir, Srinagar.
5. Participated and delivered a talk on **Tight wavelet frames on local fields of positive characteristic** in the **International Workshop on Wavelets, Frames and Applications-II, (One week)** 24-30 December, 2014, organized by Kirori Mal College, University of Delhi, India.
6. Participated in the **Advanced Instructional School on "Analysis and Geometry"** (**3-weeks**) from 8th July 2013 to 27th July, 2013, organized by the Tata Institute of Fundamental Research: Centre for Applicable Mathematics, Bangalore.
7. Participated in the **3-weeks** UGC Sponsored **Refresher Course in Mathematics and Statistics**, from 16.07.2012 to 04.08,2012, organized by the Academic Staff College, Himachal Pradesh University, Shimla.
8. Participated and given a talk on **A-transform of wavelet frames** in the **International Workshop on Wavelets, Frames and Applications, (One week)** 15-21 December, 2011, organized by Kirori Mal College, University of Delhi, India.
9. Participated in the **4-weeks** UGC Sponsored **General Orientation Course**, during March, 2010, organized by the Academic Staff College, University of Kashmir.
10. Participated in two-day Workshop for "**College Principals and Senior Academicians in Educational Administration**" organized by UGC - Academic Staff College, University of Kashmir, from 22nd – 33rd March, 2010.
11. Participated in the **2-weeks** AICTE Sponsored **Staff Development Programme** on **"Soft Computing",** during 11-25, June, 2009, organized by BGSB University, Rajouri, Jammu.

7. Member of Academic Societies:

1. Life time member of Indian Mathematical Society (IMS), India.
2. Life time member of Indian Society of Industrial and Applied Mathematics (ISIAM), India. (Membership no. A-11).
3. Life time member of Society for Special Functions and their Applications (SFA), India. **(**Membership no. 772).
4. Life time member of International Association of Engineers (IAENG), Hong Kong. **(**Membership no. 127899).
5. Member of the NUHAG, Austria.
6. Member of the Georgia National Science Foundation, Georgia.
7. Member of the Asia Council of Science Editors (Membership no. 91-5314).

8. Referring Work for Several Journals, Including:

- Reviewer for research papers/books sent by American Mathematical Society (MathSciNet Reviewer No. 114681) and Zentralblatt fur Matematik, Germany.
- Reviewer for the Journals
  1. Applied Mathematics and Computation, Elsevier Science, Netherlands.
  2. IEEE Signal Processing Letters
  3. International Journal of Wavelets, Multiresolution and Information Processing.
  4. Journal of Nonlinear Science and Applications.
  5. Applicable Analysis, Taylor & Francis, UK.
  6. Linear and Multilinear Algebra, Taylor & Francis, UK.
  7. Integral Transforms and Special Functions, Taylor & Francis, UK.
  8. Cogent Mathematics, Taylor & Francis, UK.
  9. Applied Financial Economics, Taylor & Francis, UK.
  10. Emerging Markets Finance and Trade, Taylor & Francis, UK
  11. International Journal of Mathematics and Mathematical Sciences, Hindwai, USA.
  12. Mathematical Problems in Engineering, Hindwai, USA.
  13. Computational Economics, Springer
  14. Bulletin of Iranian Mathematical Society
  15. Advances in Mechanical Engineering, SAGE, USA.
  16. Journal of the Nigerian Mathematical Society
  17. Proceedings of the Institute of Applied Mathematics
  18. Southeast Asian Bulletin of Mathematics
  19. Thai Journal of Mathematics
  20. Journal of Nonlinear Analysis and Optimization: Theory & Applications
  21. Applications and Applied Mathematics
  22. Sahand Communications in Mathematical Analysis
  23. New Trends in Mathematical Sciences
  24. British Journal of Mathematics and Computer Science
  25. Progress in Applied Mathematics
  26. Global Journal of Science Frontier Research, PDM5V2
  27. Communications in Mathematics and Applications
  28. International Journal of Modern Mathematical Sciences
  29. Poincare Journal of Mathematical Analysis

9. On Editorial Boards

1. Cogent Mathematics and Statistics (Taylor & Francis, U.K)
2. Applications and Applied Mathematics (U.S.A)
3. Advances in Analysis (Turkey)
4. New Trends in Mathematical Sciences (Turkey)
5. Journal of Abstract and Computational Mathematics (Turkey)
6. Mathematical Sciences and Applications E-Notes (U.S.A)

7. American Journal of Applied Mathematics and Statistics (U.S.A)
8. Asian Research Journal of Mathematics
9. Tamap Journal of Mathematics and Statistics (Turkey)
10. International Journal of Computer Applications (U.S.A)
11. International Journal of Modern Computer Science and Engineering
12. International Journal of Scientific and Engineering Research
13. German Journal of Advanced Mathematical Sciences
14. European Journal of Academic Essays
15. Journal of Mathematics
16. Express: an International Journal of Multidisciplinary Research

10. Collaborators Include:

1. Prof. Lokenath Debnath, Department of Mathematics, University of Texas-Pan, American, Edinburg, TX- 78539, USA.
2. Prof. Palle E. Jorgensen, Department of Mathematics, University of Iowa, Iowa City, IA 52242-1419, USA.
3. Prof. Amaresh Samantaraya, Department of Economics, Pondicherry University, Pondicherry 605014, India.
4. Prof. Khalil Ahmad, Department of Mathematics, Jamia Millia Islamia, New Delhi – 110025, India.
5. Dr. Arif Billah Dar, Department of Economic Environment and Strategy, IMT Ghaziabad, 201001, India.
6. Dr. Abdullah, Department of Mathematics, ZHDC, University of Delhi-110002, India.
7. Dr. Rustamm Abass, BGSB University, Rajouri, Jammu & Kashmir, India.
8. Dr. Mohd. Younus Bhat, Central University of Jammu, Jammu & Kashmir, India.
9. Dr. Sunita Goyal,

11. Area of Specialization

Wavelets, Wavelet frames, Wavelet packets, Numerical solution of differential equations using wavelet methods, Application of wavelets in empirical macroeconomics.

12. Research Guidance

1. Sunita Goyal (Ph.D), A Study on MRA Based Wavelet Frames Generated by the Walsh Polynomials, Shri Jaddish Prasad Jhabarmal Tibrewala University, Rajasthan, India (submitted April 2018).
2. Mohd. Younus Bhat (Ph.D), MRA Based Wavelet Frames on Local Fields of Positive Characteristic, Central University of Jammu, India (Co-supervising with Prof. Pavinder), 2017.
3. Mohd. Yasin Pir (Ph.D), Applications of Wavelet Neural Networks in Financial Time Series, BGSB University, Rajouri-185234, India (Co-supervising with Prof. M. Asgar), 2017.

13. Grants and Sponsored Research

1. Seed money (Rs.1,50,000), granted by the University of Kashmir, 2013.
2. DST (SERB) granted (Rs.1,50,000) to attend an International Conference in Harmonic Analysis and Approximations-VI, held at Department of Mathematics, September 12, 2015 to September 18, 2015 organized by Yerevan State University, Armenia.
3. National Board for Higher Mathematics (HBHM), Department of Atomic Energy, Govt: of India Major Research Project (Rs.14, 14, 100), Wavelet Analysis on Local Fields of Positive Characteristic, 2016.
4. SERB (DST) Major Research Project (Rs.15,34,485), Fractional Wavelet Analysis: Theory & Applications, 2017.
5. SERB (DST) Matrix Research Project (Rs.640,000), Numerical Solution of Fractional Differential and Integral Equations using Wavelet Methods, 2017.

14. Research Platforms

- Research Gate ID : **E-5374-2012 (RG Score 21.8)**
- Orcid ID : **0000-0001-8461-869X**
- Scopus ID : **35100992700**
- Math Sci. Net. MR Author ID : **811390**
- Zentralblatt fur Matematik : **14326**
- H-index: **12**
- i10-index:**17**
- Citation: **836**

15. Teaching Experience

- Worked as Assistant **Professor** in the Post Graduate Department of Applied Mathematics, BGSB University from August **2007** to **August 2009.**
- Working as **Assistant Professor,** in the Post Graduate Department of Mathematics, University of Kashmir, South Campus, Anantnag, from August **2009** onwards.

16. Subjects Taught at PG-Level

- Real Analysis, Complex Analysis, Measure Theory, Fourier Analysis, Wavelet Analysis.

17. Computer Skills:

- Programming languages C, C++
- Other software Microsoft office, Maple-14, Win-edit, Matlab 10.6.

18. References:

- **Prof. Pawan Kumar Banerji (Professor Emeritus)**

Department of Mathematics, Jai Narain Vyas University, Jodhpur-342005, Rajasthan, India. E-mail: banerjipk@yahoo.com

- **Prof. Bishwarajan Behera**
  Theoretical Statistics and Mathematics Unit, Indian Statistical Institute, 203 B. T. Road, Kolkata, 700108, India. E-mail: biswa@isical.ac.in

- **Prof. Hasan Shahid**
  Department of Mathematics, Jamia Millia Islamia, New Delhi –110025, India.
  E-mail: hasan_jmi@yahoo.com

- **Prof. Lokenath Debnath**
  Department of Mathematics, University of Texas-Pan, American, Edinburg, TX- 78539, USA. E-mail: debnathl@utpa.edu

- **Prof. Palle E. Jorgensen**
  Department of Mathematics, University of Iowa, Iowa City, IA 52242-1419, USA.
  E-mail: jorgen@math.uiowa.edu