

Faculty Details proforma for DU Web-site

Title ^{Dr.}	First Name Shiv	Last Name	Kaushik	Photograph
Designation	Associate Professor			
Address	Department of Mathematics Kirori Mal College University of Delhi Delhi-110007.			
Phone No Office	27667861			
Residence	27862608			
Mobile	9810821498			
Email	Shikk2003@yahoo.co.in			
Web-Page	No			
Educational Qualifications				
Degree	Institution			Year
Ph.D	Department of Mathematics	s, University of D	elhi	1991
M.A. (Mathematics)	Ramjas College, University o	of Delhi		1985
B.A. (Hons) Mathematics	Sri Venketeswara College, L	Iniversity of Delh	ni	1983
Career Profile				
Administrative Assignments				
Appointed Associated NCC Officer in 1994 after commissioning on 24-10-1994 and serving till today. Completed all refresher				
courses and got the rank of Major in 2009.				
Areas of Interest / Specialization				
FUNCTIONAL ANALYSIS (Wavelets, Frames and Bases in Banach Spaces)				
Subjects Taught				
Analysis, Differential Equations, Calculus, to <u>under graduate level</u> Measure and Integration and General Measure Theory at <u>post graduate level</u>				
Research Guidance				
Ph.D. Awarded : 10 Submitted : 01 Pursuing: 02				
M. Phil. Awarded : 02 Submitted : 00 Pursuing: 01				
Publications Profile				
1. Wavelet Packet	Approximations, Integral	Transforms an	nd Special Fund	ctions, to appear (2016),
(with Nikhil Khanna and Varinder Kumar)				

2. Computable Frames in Computable Banach Spaces, **International Journal of Analysis and Applications**, ISSN 2291-8639, Volume 11, Number 2 (2016), 93-100. (with Poonam Mantry)

- 3. Approximations using Hilbert transform of wavelets, **Journal of Classical Analysis**, Vol. 7, No. 2 (2015), 83–91. (with Nikhil Khanna and Varinder Kumar)
- 4. Vanishing moments of Hilbert transform of wavelets, *Poincare J. Anal. Appl.,* Special Issue, Vol. 2015(2), 115-127. (with Nikhil Khanna and Varinder Kumar)
- 5. Retro Banach frames, almost exact retro Banach frames in Banach spaces, *Bull. Math. Anal. Appl.* Volume 7 Issue 1(2015), Pages 38-48. (with K.T.Poumai)
- 6. FRAMES OF EIGENFUNCTIONS ASSOCIATED WITH A BOUNDARY VALUE PROBLEM, International Journal of Analysis, Volume 2014 (2014), Article ID 590324, 6 pages (with Shalu Sharma)
- 7. GENERALIZED SCHAUDER FRAMES, **ARCHIVUM MATHEMATICUM (BRNO)**, Vol. 50 (2014), 39-49. (with Shalu Sharma)
- On Approximative Frames in Hilbert Spaces, Palestine Journal of Mathematics, Vol. 3(2) (2014),148-159. (With S.K.Sharma and A. Zothansanga).
- 9. Reconstruction Property and Frames in Banach Spaces, Palestine Journal of Mathematics, Vol. 3(1) (2014), 11-26. (With L.K. Vashisht and Gitika Khattar).
- 10. A note on Gabor frames, Mathematical Communications, Vol.19(2014),75-89. (With Suman Panwar).
- 11. An Interplay Between Gabor and Wilson Frames, Journal of Function Spaces and Applications, Volume2013(2013), Article ID 610917, 6pages. (With Suman Panwar).
- 12. Some Results Concerning Frames Associated with Measurable Spaces, TWMS J. Pure Appl. Math., VOl.4, No.1, 2013, 52-60. (With L.K. Vashisht and S.K.Sharma).
- 13. Dual of a Wilson Frame, European Journal of Mathematical Sciences, Vol. 1, No. 1, 2012, 17-26. (With Suman Panwar)
- 14. On Schauder Frames in Conjugate Banach Spaces, Journal of Mathematics, Volume 2013: <u>http://dx.doi.org/10.1155/2013/318659</u> (to appear) (With S.K.Sharma and Khole Timothy Poumai)
- 15. AD-Frames satisfying Property B, Communications in Mathematics and Applications (Special Issue), Vol. 3, No. 3, 2012, 303-312. (With Varinder Kumar).

- 16. On WH Packets in L²(R), Communications in Mathematics and Applications (Special Issue), Vol. 3, No. 3,2012, 333-344. (With Ghanshyam Singh and Virender).
- 17. On Almost Orthogonal Frames, International Journal of Mathematics and Mathematical Sciences, vol. 2012, Article ID 920607, 6 pages, 2012. doi:10.1155/2012/920607(With Virender and A. Zothansanga
- 18. On Approximative Atomic Decompositions in Banach spaces, Communications in Mathematics and Applications (Special Issue) Vol. 3, No. 3,2012, 293-301. (With S. K. Sharma).
- 19. On A Generalization of Atomic Decompositions, Albanian Journal of Mathematics, Vol. 5, No. 1 (2011), 21-29

(With S. K. Sharma).

- 20. Atomic Decompositions satisfying Certain Properties, Jour. Adv. Res. Pure Math., Vol.3 (2011), 40-48 (With S. K. Sharma).
- 21. On Fusion Frames in Banach Spaces, *Georgian Mathematical Journal*, Vol. 18, No. 1, (2011), 121-130 (With Varinder Kumar).
- 22. On unconditional atomic decompositions in Banach spaces, Journal of Applied Functional Analysis, Vol. 6, No. 4 (2011), 343-345) (With S. K. Sharma).
- 23. A Note on Fusion Banach Frames, Archivum Mathematicum (Brno), Vol. 46 (2010), 145-151) (With Varinder Kumar).
- 24. Frame of subspaces for Banach Spaces, International Journal of Wavelets, Multiresolution and Image Processing (World Scientific), Vol. 8 (2) (2010), 243-252. (With Varinder Kumar).
- 25. A Note on AD-Frames in Banach Spaces. Proceedings of Third National Conference on Mathematical techniques: Emerging Paradigms for Electronics and IT Industries, 2010, pp TS 3.5.1--3.5.6. (With Varinder Kumar)
- 26. On Similar Atomic Decomposition. Proceedings of Third National Conference on Mathematical techniques: Emerging Paradigms for Electronics and IT Industries, 2010, pp TS 3.6.1--3.6.4. (With S. K. Sharma)

- 27. On k-deficit Banach frames, Armenian Journal of Mathematics, Vol. 2 (4) (2009), 146-154. (With Raj Kumar)
- 28. On Stability of Frames in Conjugate Banach Spaces, Journal of The Indian Mathematical society Vol. 75 (1-4) (2008), 125-136. (With Ghanshyam Singh and Virender).
- 29. Frames in subspaces of Banach Spaces, Bull. Calcutta Mathematical Society, Vol. 101 (3) (2009), 229- 234. (With P.K. Jain and Nisha Gupta).
- 30. A Generalization of Frames in Banach spaces, Journal of contemporary Mathematical Analysis (Springer), 2009, Vol.44 no.4, 173-179.
- 31. On Frame Systems in Banach Spaces, International Journal of Wavelet Analysis, Multiresolution and Image Processing (World Scientific), Vol. 7, No. 1 (2009) 1-7. (With P.K. Jain and Nisha Gupta).
- 32. A Note on Block Sequences in Hilbert Spaces, Glasnik Matematicki, vol. 43(63) (2008). (With Ghanshyam Singh and Virender).
- 33. On Near Exact Banach Frames in Banach Spaces, Bull. Aust. Math. Soc., 78(2008), 335-342. (With P.K. Jain and Nisha Gupta).
- 34. On Frames in Conjugate Banach Spaces, International Jour. of pure and applied Math., Vol. 45, No. 2, 2008, 321-327. (With Raj Kumar).
- 35. A Note on convexity in Metric Linear Spaces, Int. Jour. Of Math. Analysis, Vol. 2, 2008, No. 11, 513-516. (With S. Arora).
- 36. A Note on Frame Sequences in Hilbert Spaces, Int. J. Contemp. Math. Sciences, Vol. 3, No. 16 (2008), 791-799. (With Ghanshyam Singh and Virender).
- 37. Some results concerning frames in Banach spaces, Tamkang Journal of Mathematics. Vol.38, No. 3, (2007), 267-276.

- 38. Recent Developments in the Theory of Frames in Banach Spaces, International Jour. of pure and applied Math., Vol.41, No.2, 2007, 275-282.
- 39. On Stability of Banach Frames, Bull. Kor. Math. Soc., Vol. 44(2007), 73-81. (With P.K. Jain and L.K. Vashisht).
- 40. On perturbation of frames in Hilbert Spaces, *International Jour. of pure and applied Math.*, Vol.37, No. 1 (2007), 65-72. (With Ghanshyam Singh and Virender).
- 41. On Block Sequences of Banach Frames, International Jour. of Mathematical Analysis, Vol. 1,2007,No. 28,1397-1404. (With P.K. Jain and Raj Kumar).
- 42. A Note on Bounded Banach Frames, International Jour. of pure and applied math., Vol. 41, No. 2, 2007, 257-266 (With P.K. Jain and Nisha Gupta).
- 43. A Note on Exact Banach Frames, International Jour. of pure and applied math., Vol.31,No. 2 (2006), 279-286. MR 2007h: 46015.
- Bessel sequences and Banach frames in Banach Spaces, Bull.
 Calcutta Mathematical Society, Vol. No. (2006). (With P.K. Jain and L.K. Vashisht) MR 2006k:42063
- 45. On Banach Frames, Indian Journal Of Pure and Applied Math.,
 37(5) (2006), 265 272. (With P.K. Jain and L.K. Vashisht).
- 46. On perturbation of Banach frames, International Journal of Wavelet Analysis, Multiresolution and Image Processing (Hongkong), Vol. 4, No. 3(2006), 559-565. (With P.K. Jain and L.K. Vashisht) MR 2007f:42032.
- Banach Frames for Conjugate Banach Spaces, Zeitschrift fur Analysis und ihre Anwendungen, Vol. 23 (2004) No. 4, 713-720. (With P.K. Jain and L.K. Vashisht).

- 48. Some Results in the Theory of Frames in Banach Spaces, Jour. of Analysis & Applications, Vol. 2 No. 1(2004), 39-50. (With P.K. Jain and L.K. Vashisht).
- 49. On K-Shrinking and K-boundedly Complete M- Bases In Subspaces and Superspaces of Banach Spaces, Bull. Calcutta Mathematical Society, Vol. No.85, 167-170 (1993). (With P.K. Jain).
- 50. On Boundedly Complete Transfinite Bases in Banach Spaces, Tamkang Journal of Mathematics. Vol.21, No. 1, (1990), 7-12. (With P.K. Jain).
- 51. On K-Shrinking and K-boundedly Complete M- Bases in Banach Spaces, Journal of Indian Mathematical society Vol. No.54, 147-154 (1989). (With P.K. Jain).
- 52. On linear Independence of Sequences in conjugate Banach spaces, Indian Journal of pure and applied mathematics Vol.20, No. 11, (1989), 1083-1095. (With P.K. Jain and D.P. Sinha).

Conference Organization/ Presentations (in the last three years)

- National Workshop on Analysis, Differential Equations and Applications, 25-27 February, 2016, M.L.S.University, Udaipur, Rajasthan. (*Title of Talk:* Non linear Approximations using Frames)
- International Conference on Wavelets and Applications, 16-22 June, 2015,
 St. Petersburg, Russia.(*Title of Talk: Non Linear approximations and Frames in Banach Spaces*)
- 3. International Conference on Approximation and optimization, **13-18 October**, **2013** at Puebla, **Mexico.**(*Title of Talk: On Feichtinger Conjecture*)
- International Colloquium on History of Mathematical Sciences & Symposium on Non-Linear Analysis, 21-24 November, 2012, M.D.University, Rohtak, India. (*Title of Talk: Recent Developments in Frames in Banach Spaces*)

Research Projects (Major Grants/Research Collaboration)

I have Completed **03** Minor research projects.

Awards and Distinctions

I have been awarded DELHI GAURAV AWARD on 12 December, 2015 by Dr. Harsh Vardhan,

Minister of Science and Technology (India) at Vigyan Bhawan, Delhi

Organized by Indian Brave Hearts Delhi

Supported by the **Department of Disability Affairs, Govt. of India** and **Ministry of Social Justice and Empowerment**

For my contribution towards the society of Delhi.

Association With Professional Bodies

- 1. Life member of the INDIAN MATHEMATICAL SOCIETY.
- 2. Member of the AMERICAN MATHEMATICAL SOCIETY (for the last five years).
- **3.** Life Member of the SOCIETY FOR HISTORY OF MATHEMATICS.
- 4. Life Member of the RAMANUJAN MATHEMATICAL SOCIETY.

Other Activities

- > I have worked as **NODAL OFFICER** for smoke free zone in the college.
- I initiated and organized a rally on AIDS awareness in 2003 with the help of international Rotary Club and NCC unit of Kirori Mal College
- I as a convener successfully organised two international conferences on Wavelets, Frames, and Application in 2011 and 2014.
- Editorial Responsibilities:
 - Served as Managing editor of the journal Communications in Mathematics and Applications from January 2010 to December 2012.
 - Serving as **Managing editor** of **the Poincare Journal of Analysis and Applications** from January 2014 to till date.
 - One of the editors of the Proceedings of the First International Conference on Algebra, Topology and Topological Algebras held at Veracruz, Mexico; 5th to 7th January, 2011.
 - One of the editors of the Proceedings of the International Workshop on Wavelets, Frames and Applications held at Delhi, India; 15th to 21st December,

2011.

 One of the editors of the Proceedings of the International Workshop on Wavelets, Frames and Applications-II held at Delhi, India; 24th to 30th December, 2014.