



# Kirori Mal College

(University of Delhi)

University of Delhi, Delhi-110007

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## 1. Personal Profile

Title: **Prof.** First Name: **DINESH** Last Name: **KHATTAR**

Designation: **PRINCIPAL** Mobile No. -----

Phone No. (Office) ----- Phone No. (Residence): -----

Email: **dkhattar@kmc.du.ac.in** Webpage: -----



Facebook: ----- Twitter: -----

LinkedIn: ----- Instagram: -----

Youtube: ----- Research Gate Link: -----

Google Scholar Link: -----

Address: -----

## 2. Educational Qualifications

Degree/ Certification	Institution	Year
Ph. D. (Mathematics)	University of Delhi	2000
M.Phil. (Mathematics)	University of Delhi	1990
M.Sc. Mathematics	Hindu College, University of Delhi	1988
B.Sc.( Hons.) Mathematics	Hindu College, University of Delhi	1984

## 3. Career Profile & Administrative Assignments

Category	Role/ Designation	Department/ Committee	Date From - To	Remarks
ADMINISTRATIVE ASSIGNMENTS	PRINCIPAL	KIRORI MAL COLLEGE KIRORI MAL COLLEGE, DELHI	30.Dec.2022 - Till date	
ADMINISTRATIVE ASSIGNMENTS	MEMBER	ACADEMIC COUNCIL UNIVERSITY OF DELHI, DELHI	01.Mar.2023 - Till date	

## 4. Other Profiles

Other Profile Name/ Description
<p><b>OTHERS</b></p> <p>Leading the Research Group on Ancient Indian Mathematics under the guidance of Adarniye Dr. Krishan Gopal Ji at Bhartiya Vidhya Adhyayana Santhana, South Avenue</p>
<p><b>AWARDS AND DISTINCTIONS</b></p> <p>Received Dr. APJ Abdul Kalam National Dedication Award for contribution in the field of Higher Education.</p>
<p><b>OTHERS</b></p> <p>Member of many prestigious Committees of University Grant Commission, for educational reforms.</p>
<p><b>SUBJECTS TAUGHT</b></p> <p>UG: Analysis, Algebra, Differential Equations, Calculus, Mechanics, Numerical Methods. PG: Differential Equations, Fluid Dynamics</p>
<p><b>AWARDS AND DISTINCTIONS</b></p> <p>Received Dr. S. Radha Krishnan Memorial National Teacher Award-2015 for the contribution in the field of Education.</p>
<p><b>AWARDS AND DISTINCTIONS</b></p> <p>Awarded prestigious Commonwealth Scholarship of Government of India for pursuing Research in UK.</p>
<p><b>AWARDS AND DISTINCTIONS</b></p> <p>J.N. Mitra Memorial Gold Medal for being the best candidate in M.Sc. Examination in Mathematics, Mathematical Statistics and M.Sc. in Physics (taken together)</p>
<p><b>AWARDS AND DISTINCTIONS</b></p> <p>Prof. Ram Bihari Gold Medal for being the best candidate in M.A. and M.Sc. Examination in Mathematics .</p>
<p><b>AWARDS AND DISTINCTIONS</b></p> <p>Shri Ram Chandra Singhal Memorial Gold Medal for being the best candidate in M.A. and M.Sc. Examination.</p>
<p><b>AWARDS AND DISTINCTIONS</b></p> <p>Lala Banarsi Das Trust Prize for being the best candidate in the M.Sc. Examination.</p>
<p><b>AWARDS AND DISTINCTIONS</b></p> <p>Kumari Rajeshwari Razdan Memorial Prize for being the best candidate in the M.Sc. Examination.</p>
<p><b>SUBJECTS TAUGHT</b></p> <p>PG: Differential Equations, Fluid Dynamics</p>
<p><b>OTHERS</b></p> <p>Twice member of Academic Council, University of Delhi, the highest academic body of the University.</p>

5. Research Guidance				
Year	Guide For	Title of the Dissertation/ Thesis	Scholar Name	Status
2027	Ph. D.	Non Linear Dynamical Systems and Chaos Theory	Govind Singh	Pursuing
2027	Ph. D.	Chaos Theory	Mukul Sirohi	Pursuing
2026	Ph. D.	Non Linear Dynamical Systems and Chaos Theory	Manoj Rawal	Pursuing
2027	Ph. D.	Broad Area: Differential Equations	Agam Dwivedi	Pursuing
2026	Ph. D.	Non Linear Dynamical Systems and Chaos Theory	Rohit Bansal	Pursuing
2023	Ph. D.	Convective heat and mass transfer through porous media saturated by nanofluid	Mridu Sharma	Complete
2020	Ph. D.	Synchronization of Integer and Fractional Order Chaotic Systems	Neha Agrawal	Complete
2019	Ph. D.	Multi Switching Synchronization of Chaotic Multiple Drive-Response Systems	Nitish Prajapati	Complete
2017	Ph. D.	Chaotic Dynamics and Induced maps on Hyperspaces	Praveen Kumar	Complete
2014	Ph. D.	Modelling of Bubble Motion in an Incompressible Fluid	Seema Bansal	Complete
2014	Ph. D.	Some Problems in Bubble Dynamics and Stability Problems in Fluid Dynamics	Arti Kaushik	Complete
2013	M. Phil	Study of some problems on the motion of a Gas Bubble in an Incompressible Fluid	Brahma Prakash	Complete
2013	M. Phil	The study of some problems on the motion of a Gas Bubble in a Viscous Liquid	Krishan Pal	Complete

6. Research Projects					
Year	Title of Project	Sponsorship Agency	Duration	Amount Sanctioned	Date of Sanction
2012	Study on Quark-Gluon Plasma and Neutrino Physics	University Of Delhi	1 Year	10,00,000	01.Jul.2012
2013	Study on Quark-Gluon Plasma and Neutrino Physics (Extension)	University of Delhi	2 Years	6,00,000	01.Jul.2013
2015	KMC Mars Rover, helping Astronauts in exploration of the Red Planet Mars	University of Delhi	1 Year	5,50,000	01.Jul.2015

7. Publications					
Category	Publication Name	Title	Name of Author	Reference Link/ DOI Link	Publication (Month-Year)

JOURNAL PAPER (International)	HYBRID PROJECTIVE SYNCHRONIZATION BETWEEN DIFFERENT DIMENSIONAL HYPERCHAOTIC SYSTEMS USING NONLINEAR APPROACH	Communications of the Korean Mathematical Society	Neha Agrawal, Renu Gupta, Dinesh Khattar, Govind Singh (Joint Author)	<a href="https://doi.org/10.4134/CKMS.c240166">https://doi.org/10.4134/CKMS.c240166</a>	July 2025
JOURNAL PAPER (International)	A simple 5D autonomous hyperchaotic system: dynamical analysis, synchronization via adaptive integral sliding mode control, and circuit realization	Boletín de la Sociedad Matemática Mexicana	Dinesh Khattar, Neokant Deo, Mukul Sirohi (First Author)	<a href="https://doi.org/10.1007/s40590-025-00777-x">https://doi.org/10.1007/s40590-025-00777-x</a>	June 2025
JOURNAL PAPER (International)	Chaotic Analysis of a New 3D System with Exponential Nonlinearity and its Dual Compound Combination Multiswitching Synchronization using Nonlinear Control	International Journal of Applied and Computational Mathematics	Dinesh Khattar, Neha Agrawal, Govind Singh (First Author)	<a href="https://doi.org/10.1007/s40819-025-01901-1">https://doi.org/10.1007/s40819-025-01901-1</a>	May 2025
JOURNAL PAPER (International)	Qualitative analysis of a new 6D hyperchaotic system via bifurcation, the Poincare notion, and its circuit implementation	Indian Journal of Physics. SCIE, Springer, SCOPUS	Dinesh Khattar, Neha Agrawal, Mukul Sirohi (First Author)	10.1007/s12648-023-02796-8	June 2023
JOURNAL PAPER (International)	Dual quadratic compound multiswitching anti-synchronization of Lorenz, Rössler, Lü and Chen chaotic systems	The European Physical Journal B	Govind Singh, Dinesh Khattar, Neha Agrawal (Joint Author)	<a href="https://doi.org/10.1140/epjb/s10051-024-00855-5">https://doi.org/10.1140/epjb/s10051-024-00855-5</a>	January 2025
JOURNAL PAPER (International)	Dynamical Analysis of a 5D novel system based on Lorenz system and its hybrid projective synchronization using adaptive control	Pramana. SCIE, Springer, SCOPUS	Dinesh Khattar, Neha Agrawal, Mukul Sirohi (First Author)	10.1007/s12043-023-02544-x	May 2023

JOURNAL PAPER (International)	On novel Hexa-compound combination synchronisation over nineteen n-dimensional category-B chaotic systems and electronic circuit schematic	Physica Scripta	Dinesh Khattar, Naokant Deo, Mukul Sirohi (First Author, Joint Author)	10.1088/1402-4896/ad9e3c	December 2024
JOURNAL PAPER (International)	Chaos synchronization of a new chaotic system having exponential term via adaptive and sliding mode control	Differential Equations and Dynamical Systems. ESCI, Springer, SCOPUS	Dinesh Khattar, Neha Agrawal, Govind Singh (First Author)	10.1007/s12591-023-00635-0	April 2023
JOURNAL PAPER (International)	Comparative analysis of two novel chaotic systems, and validation of hybrid function projective and complete synchronization using active-adaptive control	Physica Scripta	Dinesh Khattar, Mukul Sirohi, Rohit Bansal (First Author, Joint Author)	<a href="https://doi.org/10.1088/1402-4896/ad8e9a">https://doi.org/10.1088/1402-4896/ad8e9a</a>	November 2024
JOURNAL PAPER (International)	Anti Difference Quadratic Compound Synchronization of Lorenz, Rossler, Modified Finance and Shimizu- Morioka Chaotic Systems	Indian Journal of Physics. SCIE, Springer, SCOPUS	Dinesh Khattar, Neha Agrawal, Govind Singh (First Author)	10.1007/s12648-023-02893-8	September 2023
JOURNAL PAPER (International)	Triple compound combination synchronization of eleven n-dimensional chaotic systems	International Journal of Dynamics and Control. Springer, SCOPUS	Dinesh Khattar, Neha Agrawal, Govind Singh (First Author)	10.1007/s40435-023-01140-6	March 2023
JOURNAL PAPER (International)	Dual combination-combination anti synchronization of eight fractional order chaotic systems	International Journal of Applied and Computational Mathematics. Springer, SCOPUS	Ayub Khan, Dinesh Khattar, Neha Agrawal (Joint Author)	10.1007/s40819-021-01237-6	January 2022

JOURNAL PAPER (International)	Anti difference Multiswitching compound-compound combination synchronization of seven chaotic systems	Differential Equations and Dynamical Systems. ESCI, Springer, SCOPUS	Ayub Khan, Dinesh Khattar, Neha Agrawal (Joint Author)	10.1007/s12591-021-00583-7	September 2021
JOURNAL PAPER (International)	Dual combination - combination Multiswitching synchronization of eight fractional order hyperchaotic nonlinear dynamical systems	International Journal of Applied and Computational Mathematics. Springer, SCOPUS	Ayub Khan, Dinesh Khattar, Neha Agrawal (Joint Author)	10.1007/s40819-019-0722-z	September 2019
JOURNAL PAPER (International)	Synchronization between two non - identical fractional order hyperchaotic systems	Journal of Mathematical and Computational Science.	Ayub Khan, Dinesh Khattar, Neha Agrawal (Joint Author)	10.28919/jmcs/3601	March 2018
JOURNAL PAPER (International)	Hybrid Projective Synchronization between the fractional order systems	Journal of Mathematical and Computational Science	Ayub Khan, Dinesh Khattar, Neha Agrawal (Joint Author)	10.28919/jmcs/3591	February 2018
JOURNAL PAPER (International)	Synchronization of a new fractional order chaotic system	International Journal of Dynamics and Control. Springer, SCOPUS	Ayub Khan, Dinesh Khattar, Neha Agrawal (Joint Author)	10.1007/s40435-017-0389-4	December 2017
JOURNAL PAPER (International)	Synchronization of Genesio and Lu chaotic dynamical systems via active control	International Journal of Applied Mathematics	Ayub Khan, Dinesh Khattar, Neha Agrawal (Joint Author)	10.12732/ijam.v29i2.1	April 2016
JOURNAL PAPER (International)	On Multiswitching Compound synchronization of non-identical chaotic systems	Chinese Journal of Physics. Elsevier, SCIE, SCOPUS	Nitish Prajapati, Ayub Khan, Dinesh Khattar (Joint Author)	10.1016/j.cjph.2018.06.015	July 2018

JOURNAL PAPER (International)	Adaptive Multiswitching combination synchronization of chaotic systems with unknown parameters	International Journal of Dynamics and Control. Springer, SCOPUS	Ayub Khan, Dinesh Khattar, Nitish Prajapati (Joint Author)	10.1007/s40435-017-0320-z	March 2017
JOURNAL PAPER (International)	Multiswitching compound anti synchronization of four chaotic systems	Pramana. SCIE, Springer, SCOPUS	Ayub Khan, Dinesh Khattar, Nitish Prajapati (Joint Author)	10.1007/s12043-017-1488-7	July 2017
JOURNAL PAPER (International)	Reduced order Multiswitching hybrid synchronization of chaotic systems	Journal of Mathematical and Computational Science	Ayub Khan, Dinesh Khattar, Nitish Prajapati (Joint Author)	10.48550/arXiv.1804.03028	April 2017
JOURNAL PAPER (International)	Dual combination combination Multiswitching synchronization of eight chaotic systems	Chinese Journal of Physics. Elsevier, SCIE, SCOPUS	Ayub Khan, Dinesh Khattar, Nitish Prajapati (Joint Author)	10.1016/j.cjph.2017.06.002	August 2017
JOURNAL PAPER (International)	Dual combination-combination multi switching anti synchronization of chaotic systems	Journal of Mathematical and Computational Science	Ayub Khan, Dinesh Khattar, Nitish Prajapati (Joint Author)	10.28919/jmcs/3410	May 2017
JOURNAL PAPER (International)	Multiswitching combination-combination synchronization of chaotic systems	Pramana. SCIE, Springer, SCOPUS	Ayub Khan, Dinesh Khattar, Nitish Prajapati (Joint Author)	10.1007/s12043-016-1356-x	February 2017
JOURNAL PAPER (International)	Predictive Control of Rabinovich System	Journal of Nonlinear Systems and Applications	Ayub Khan, Dinesh Khattar, Nitish Prajapati (Joint Author)	10.48550/arXiv.1702.06246	July 2016

JOURNAL PAPER (International)	Modeling of Bubble Motion in Two Dimensional Space	Journal of Energy and Power Engineering	D. Khattar, B.B. Chakraborty, Seema Bansal (First Author)		June 2012
JOURNAL PAPER (International)	Integrals and invariants for inviscid, incompressible, two-dimensional irrotational, hydromagnetic flows under gravity	International Journal of Pure and Applied Mathematics. SCOPUS	Dinesh Khattar, P.R. Sharma, Ashok Kumar Gupta (First Author)		January 2012
JOURNAL PAPER (International)	Bifurcation in a Bubble translating and expanding in a sound field	Journal of Physics: Conference Series. SCOPUS	Dinesh Khattar (Sole Author, First Author)	10.1088/1742-6596/216/1/012009	July 2010
JOURNAL PAPER (International)	Study of an expanding, spherical gas bubble in a liquid under gravity when the centre moves in a vertical plane	International Journal of Contemporary Mathematical Sciences	G.S. Tuteja, Dinesh Khattar, B.B. Chakraborty, Seema Bansal (Joint Author)		January 2010
JOURNAL PAPER (International)	A New Derivation of Taylor's Results in the Motion of Solids in a Fluid which Rotates Uniformly	International Journal of Contemporary Mathematical Sciences	Dinesh Khattar, B.B. Chakraborty, Vinod Chauhan (First Author)		January 2010
JOURNAL PAPER (International)	A new coupled approach high accuracy numerical method for the solution of 3D non-linear Biharmonic equations	Applied Mathematics and Computation. Elsevier, SCIE, SCOPUS	Dinesh Khattar, Swarn Singh, R.K. Mohanty (First Author)	10.1016/j.amc.2009.09.052	December 2009
JOURNAL PAPER (International)	A new coupled approach high accuracy numerical method for the solution of 2D non-linear Biharmonic equations	Neural, Parallel, and Scientific Computations. SCOPUS	Swarn Singh, Dinesh Khattar, R.K.Mohanty (Joint Author)		January 2009



JOURNAL PAPER (International)	Asymptotic Stability of An Expanding Bubble in the Rayleigh-Plesset Model	International Journal of Applied Mathematics. SCOPUS	Dinesh Khattar, R.K. Mohanty (First Author)		June 2009
JOURNAL PAPER (International)	Chaos in a class of nonlinear differential systems	International Journal of Contemporary Mathematical Sciences	Dinesh Khattar, R.K. Mohanty, Seema Bansal (First Author)		January 2009
JOURNAL PAPER (International)	Possibility of chaos development in a bubble expanding and translating in a sound field through break up of homoclinic orbits	International Journal of Applied Mathematics. SCOPUS	D. Khattar, B.B. Chakraborty, Arti Kaushik (First Author)		March 2008
JOURNAL PAPER (International)	Chaos in a Bubble expanding in a sound field	International Journal of Pure and Applied Mathematics. SCOPUS	Dinesh Khattar, Poornima Mittal, Arti Kaushik (First Author)		January 2008
JOURNAL PAPER (International)	Motion of an expanding and translating nearly spherical gas bubble in an inviscid fluid under microgravity	International Journal of Pure and Applied Mathematics. SCOPUS	D. Khattar, B.B. Chakraborty, Arti Kaushik (First Author)		January 2008
JOURNAL PAPER (International)	On integrals and invariants for inviscid, compressible and three-dimensional flows under gravity	International Journal of Pure and Applied Mathematics. SCOPUS	D. Khattar, B.B. Chakraborty, Poornima Mittal, Arti Kaushik (First Author)		January 2008
JOURNAL PAPER (International)	Stability of a bubble expanding and translating through an inviscid fluid	Proceedings of the Indian Academy of Sciences- Mathematical Sciences. SCIE, Springer, SCOPUS	B.B. Chakraborty, D. Khattar (Joint Author)	10.1007/BF02829760	May 2002

JOURNAL PAPER (International)	Effect of rotation on stability of suspended sediments	Physics of Fluids. SCOPUS	B.B. Chakraborty, D. Khattar, A. Khalili (Joint Author)	10.1063/1.1285732	November 2000
JOURNAL PAPER (International)	On integrals and invariants for inviscid, compressible, two-dimensional flows under gravity	Fluid Dynamics Research. SCIE, SCOPUS	B.B. Chakraborty, D. Khattar, Suman Verma (Joint Author)	10.1016/S0169-5983(99)00019-2	March 2000
JOURNAL PAPER (International)	Stability of an imploding Plasma shell	Indian Journal of Pure and Applied Mathematics. SCIE, Springer, SCOPUS	B.B. Chakraborty, D. Khattar (Joint Author)		January 2000
JOURNAL PAPER (International)	Stability of an expanding bubble in the Rayleigh model	Proceedings- Mathematical Sciences. SCIE, Springer, SCOPUS	B.B. Chakraborty, Dinesh Khattar (Joint Author)		November 1999
CONFERENCE PAPER/ PROCEEDINGS (International)	Multiswitching combination-combination anti synchronization of non- identical chaotic systems	International Conference on Mathematics and Applications	Ayub Khan, Dinesh Khattar, Nitish Prajapati (Joint Author)		April 2017

## 8. Books

Category	Book Name	Title	Name of Author	ISSN/ ISBN Number
BOOK (National)	Group Theory	Dinesh Khattar, Neha Agrawal (First Author)	Ane Books Pvt. Ltd.	978-93-90658-94-7
BOOK (National)	Ring Theory	Dinesh Khattar, Neha Agrawal (First Author)	Ane Books Pvt. Ltd.	978-93-90658-48-0
BOOK (National)	Linear Algebra	Dinesh Khattar, Abhishek Tandon, Neha Agrawal (First Author)	Ane Books Pvt. Ltd.	978-93-94883-35-2
BOOK (National)	Elementary Linear Algebra	Dinesh Khattar, Neha Agrawal, Prempal Singh (First Author)	Ane Books Pvt. Ltd.	978-81-19160-65-5

BOOK (International)	Group Theory	Dinesh Khattar, Neha Agrawal (First Author)	Springer Nature	978-3-031-21306-9
BOOK (International)	Ring Theory	Dinesh Khattar, Neha Agrawal (First Author)	Springer Nature	978-3-031-29439-6
BOOK (National)	Business Mathematics with Applications	S.R. Arora, Dinesh Khattar (Joint Author)	Sultan Chand & Company	81-219-2049-3
BOOK (National)	Business Mathematics	Dinesh Khattar, Anuradha Gupta (First Author)	Pearson Education	978-81-317-6152-6
BOOK (National)	Calculus	Dinesh Khattar, Kavita Gupta (First Author)	Prentice Hall of India	978-81-203-560-2
BOOK (National)	Calculus and Geometry	Dinesh Khattar, Raj Kumar, Pratima Negi (First Author)	Jeevansons Publications	978-93-86376-07-7
BOOK (National)	Objective Mathematics	Dinesh Khattar (Sole Author)	Pearson Education India	978-93-325-0813-2
BOOK (National)	Quantitative Aptitude	Dinesh Khattar (Sole Author)	Pearson Education India	978-93-534-3955-2
BOOK (National)	Mathematics for NDA	Dinesh Khattar (Sole Author)	Pearson Education India	978-81-317-8896-7
BOOK (National)	Mathematics for IIT- JEE (Advanced)	Dinesh Khattar (Sole Author)	Pearson Education India	978-81-317-3407-0
BOOK (National)	Objective Arithmetic	Dinesh Khattar (Sole Author)	Pearson Education India	81-317-1682-1
BOOK (National)	Vaastunisht Ankganita	Dinesh Khattar (Sole Author)	Pearson Education India	81-317-0220-0
BOOK (National)	CBSE Mathematics for Class XI	Dinesh Khattar, Anita Khattar (First Author)	Prentice Hall of India	978-81-203-3507-3
BOOK (National)	CBSE Mathematics for Class XII (Part I)	Dinesh Khattar, Anita Khattar (First Author)	Prentice Hall of India	978-81-203-3464-9
BOOK (National)	CBSE Mathematics for Class XII (Part II)	Dinesh Khattar, Anita Khattar (First Author)	Prentice Hall of India	978-81-203-3506-6
BOOK (National)	Turning Point Mathematics	Dinesh Khattar, Anita Khattar (First Author)	Macmillan India Ltd.	1403-92881-9
BOOK (National)	Mathematics for JEE Mains 2020 (Volume 1)	Dinesh Khattar, Rohan Sinha (First Author)	Pearson Education India	978-93-534-3509-7
BOOK (National)	Mathematics for JEE Main 2020	Dinesh Khattar, Rohan Sinha (First Author)	Pearson Education India	978-93-534-3510-3

## 9. Faculty Achievements

Year	Category of Achievement	Role	National/ International etc.	Name	Date From- To
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2013	INVITED LECTURES/ RESOURCE PERSON/ PAPER PRESENTATIONS ATTENDED	PARTICIPANT	International	International Conference on Applied Mathematics, Modeling and Computational Science, Waterloo, Ontario, Canada	26.Aug.2013 - 30.Aug.2013
2012	INVITED LECTURES/ RESOURCE PERSON/ PAPER PRESENTATIONS ATTENDED	PARTICIPANT	International	International Conference on Computational Methods in Applied Mathematics, Berlin, Germany	30.Jul.2012 - 03.Aug.2012
2011	INVITED LECTURES/ RESOURCE PERSON/ PAPER PRESENTATIONS ATTENDED	PARTICIPANT	International	4th International Symposium on Bifurcations and Instabilities in Fluid Dynamics, Barcelona, Spain	18.Jul.2011 - 21.Jul.2011
2009	INVITED LECTURES/ RESOURCE PERSON/ PAPER PRESENTATIONS ATTENDED	PARTICIPANT	International	3rd International Symposium on Bifurcations and Instabilities in Fluid Dynamics, Nottingham U.K.	10.Aug.2009 - 13.Aug.2009
2008	INVITED LECTURES/ RESOURCE PERSON/ PAPER PRESENTATIONS ATTENDED	PARTICIPANT	International	Fifth International Conference of Applied Mathematics and Computing, Bulgaria	12.Aug.2008 - 18.Aug.2008

**Prof. DINESH KHATTAR**