CURRICULUM VITAE

Name : **Dr. Manoj Kumar**

Designation : Associate Professor & Head

Department : Mathematics and Statistics

University : Gurukula Kangri (Deemed to be University)
Haridwar-249404 (UK)

Contact Nos. : +918755386009, +917300761304

E-mail ID : manoj.kumar@gkv.ac.in , sdmkg1@gmail.com

❖ Present Status:

I am working as an Associate Professor & Head in the department of Mathematics and Statistics, Gurukul Kangri Vishwavidyalaya, Haridwar.

❖ Teaching Experience: 20 Years

S. No.	Name of University/Institution	Designation	Period/Duration	Pay Scale
1	GKV, Haridwar	**Professor (stage-5)**	**Going due since 24-04-2018**	
2	GKV, Haridwar	Associate Professor (stage-4)	24-04-2015 to till date	37400-**9000**-67000
3	GKV, Haridwar	Assistant Professor (stage-3)	24-04-2012 to 23-04-2015	15600-**8000**-39100
4	GKV, Haridwar	Assistant Professor (stage-2)	03-04-2007 to 23-04-2012	15600-**7000**-39100
5	GKV, Haridwar	Assistant Professor (stage-1)	03-04-2003 to 02-04-2007	8000-**275**-13500

❖ **Professional Qualifications:**

Name of Degree	University / Board	Passing Year	Subjects
Ph. D. *	C.C.S. University, Meerut	2007	MATHEMATICS
M. Phil. **	C.C.S. University, Meerut	2002	MATHEMATICS
NET Certificate	CSIR, HRDG, New Delhi	2002	MATHEMATICS
Certificate of Proficiency in Russian Language	C.C.S. University, Meerut	2003	RUSSIAN LANGUAGE

*** Topic of Ph. D. Thesis:** Some Linear Positive Operators in Approximation Theory

*** * Topic of M. Phil. Dissertation:** Some Linear Positive Operators in Approximation Theory

❖ **Academic Qualifications:**

Name of Degree	University / Board	Passing Year	Division	Subjects
M. Sc.	C.C.S. University, Meerut	2000	I	MATHEMATICS
B.Sc.	C.C.S. University, Meerut	1998	I	PHYSICS, CHEMISTRY, MATHEMATICS
Class XII	UP Board	1995	I	PHYSICS, CHEMISTRY, MATHEMATICS, ENGLISH, HINDI
Class X	UP Board	1993	II	Physics, Chemistry, Mathematics, Biology, English, Hindi

❖ **Research Fields:**

- Isogeny Based Cryptography
- Elliptic Curve Cryptography
- Quantum Cryptography
- Vedic and Ancient Indian Mathematics
- Applications of Finite Field Theory and Linear Algebra
- Linear Positive Operators in Approximation Theory

❖ **Research Guidance (Ph. D.)**

(a). Degree Awarded: 04

S. No.	Name of Research Scholar	Topic of Ph. D. Thesis	Date of Admission	Date of Registration	Date of Submission	Date of Viva-Voce
1	Mr. Pratik Gupta	Some Problems on Authentication Protocol Based on Elliptic Curve Cryptography	19-01-2015	31-08-2015	July 2018	20-12-2018
2	Mr. Sudhanshu Shekhar Dubey	Some Security Problems in Quantum Cryptography	01-09-2015	30-03-2016	24-07-2020	13-02-2021
3	Mr. Ankur Kumar	Some Efficient Computing Techniques of Ancient Indian Vedic Mathematics for Elliptic Curve Cryptography	01-09-2015	30-03-2016	24-08-2020	23-03-2021
4	Ms. Suryya Farhat	Some Lightweight Cryptographic Schemes based on Elliptic Curve Cryptography	01-09-2016	31-03-2017	07-09-2021	24-02-2022

(b). Thesis Submitted: 00

S. No.	Name of Research Scholar	Topic of Ph. D. Thesis	Date of Registration/ Admission	Date of Submission
1				

(c). Research Scholars Enrolled at Present: 04

S. No.	Name of Research Scholar	Topic of Ph. D. Thesis	Date of Admission	Date of Registration
1	Mr. Hardeep	Some Secret Sharing Problems in Quantum Cryptography	30-08-2018	29-03-2019
2	Mr. Akash Rathor	Some Isogeny Based Problems for Post Quantum Cryptography	02-12-2020	30-09-2021
3	Mr. Shivender Goswami	Some Error Correction and Mitigation Techniques for Near-Term Quantum Computers	02-12-2020	30-09-2021
4	Mr. Ankit Kumar	A Study of Computing Isogenies Over Super-Singular Elliptic Curve for Near-Term Quantum Cryptosystem	15-12-2021	10-10-2022

❖ **Refresher/Orientation Course Attended:**

1. Participated UGC sponsored Refresher Course in Physical Scince from 08 December 2014 to 27 December 2014 at Academic Staff College, Punjabi University, Patiala and obtained grade ‘ A ’.
2. Participated UGC sponsored Refresher Course in Information Technology from 11 November 2013 to 30 November 2013 at Academic Staff College, University of Rajasthan, Jaipur and obtained grade ‘A’.
3. Participated in UGC sponsored Orientation Programme from 01 March 2005 to 28 March 2005 at Academic Staff College, Panjab University, Chandigarh and obtained grade ‘ A ’.

❖ **Delivered Talk:**

Topic: Elliptic Curve Cryptography
Programme: Cryptology and Information Security (CIS 2016)
Held during: 29 August 2016 to 09 September 2016
Place: Scientific Analysis Group, DRDO, Delhi
Date: 31 August 2016

❖ **Research Papers Published in Journals :**

(2021)

1. Hardeep, Manoj Kumar and R. K. Mishra, Sharing of information using bi-qutrit quantum states based on bivariate quantum gates, Journal of Xi'an Shiyou University, Natural Sciences Edition, September, Vol. 64, No.12, 91-101, 2021.
   ISSN:1673-064X (https://DOI: 10.17605/OSF.IO/ Z2HXV)
2. Suryya Farhat, Manoj Kumar and R. K. Mishra, Lightweight Secret Sharing Cryptographic Scheme for Decentralized Distributed Wanet using tri-variate Polynomials over ECC, Journal of Xi'an Shiyou University, Natural Sciences Edition, December, Vol. 64, No. 9, 324-339, 2021.
   ISSN:1673-064X (https://DOI: 10.17605/OSF.IO/ Z2HXV)
3. Pratik Gupta and Manoj Kumar, A Verifiable Ring Signature Scheme of Anonymous Signcryption Using ECC, International Journal of Mathematical Sciences and Computing, Vol. 2, 24-30, 2021.
   ISSN: 2310-9025 (P), 2310-9033 (E), (https://DOI: 10.5815/ijmsc.2021.02.03)

4. Manoj Kumar, Suryya Farhat, Lightweight Cryptography Algorithms for Points Addition and Point Doubling on Jacobi Elliptic Curves Using Ancient Mathematical Techniques, Advances in Mathematics: Scientific Journal, Vol. 10, No.1, 353-366, 2021. **(SCOPUS)**
   ISSN: 1857-8365 (printed), 1857-8438 (electronic), (https://doi.org/10.37418/amsj.10.1.35)

(2020)

1. Manoj Kumar, Suryya Farhat and Anuj Kumar , Lightweight and authenticated key exchange based on self linear Pairings, Materials Today : Proceedings, Article in Press (Available online from 25 Dec. 2020) (ISSN: 2214-7853) (Impact Factor : **1.24**) **(ELSEVIER-SCOPUS)**
   (https://doi.org/10.1016/j.matpr.2020.10.917)
2. Manoj Kumar and Ankur Kumar, Improved Cryptographic Schemes Based on Hessian and Twisted Hessian Elliptic Curves Using Some Techniques of AIVM, International Journal of Advanced Science and Technology Vol. 29, No. 4, 10190-10202, 2020. (ISSN: 2005 - 4238) **(SCOPUS)**
3. Manoj Kumar and Ankur Kumar, Improved Performance of Cr ypto System based on Edwards and Twisted Edwards Elliptic Curves using Some Techniques of AIVM, Journal of Critical reviews, Vol. 7, Issue-19, 5787- 5799, 2020. (ISSN: 2394 - 5125) **(SCOPUS)**
4. Kumar M., Gupta M.K., Mishra R.K., Dubey S.S., Kumar A., Hardeep, Security Analysis of a Threshold Quantum State Sharing Scheme of an Arbitrary Single-Qutrit Based on Lagrange Interpolation Method, Evolving Technologies for Computing, Communication and Smart World, Lecture Notes in Electrical Engineering, Vol. 694, 373-389, 2020, Springer, Singapore. (https://doi.org/10.1007/978-981-15-7804-5_28).
5. Manoj Kumar and Ankur Kumar, Performance Analysis of Huff and Twisted Huff Elliptic Curves Using Urdhva Tiryagbhayam and Dvandva Yoga Techniques of Ancient Mathematics, Advances in Mathematics: Scientific Journal Vol. 9, No.9, 7191-7199, 2020. **(SCOPUS)**
   ISSN: 1857-8365 (printed), 1857-8438 (electronic), https://doi.org/10.37418/amsj.9.9.68.
6. Manoj Kumar, Sudhanshu Shekhar Dubey, Pratik Gupta and Yogesh Khandelwal, Improve security of quantum proxy signature scheme using quantum one-way function and Bell states, Advances in Mathematics: Scientific Journal Vol. 9, No.4, 1803–1810, 2020. **(SCOPUS)**
   ISSN: 1857-8365 (printed), 1857-8438 (electronic), https://doi.org/10.37418/amsj.9.4.36.

(2019)

1. Manoj Kumar and Pratik Gupta, An efficient and authentication sign-cryption scheme based on elliptic curves, Mathematika, Vol. 35, No. 1, 1-11, Apr. 2019.
2. Manoj Kumar and Ankur Kumar, Some algorithms of various projective coordinate systems for ECC using ancient Indian Vedic Mathematics, International Journal of Scientific and Technology Research, Vol. 8, No. 8, 611-621, 2019. **(SCOPUS)**
3. Manoj Kumar, M. K. Gupta, Sudhanshu Shekhar Dubey and Ajay Kumar, (t, n)-threshold quantum state sharing scheme of an arbitrary one-qutrit based on linear equation, International Journal of Scientific and Technology Research, Vol. 8, No. 10, 334-340, 2019. **(SCOPUS)**
4. Manoj Kumar, Ankur Kumar and Pratik Gupta, The tri-linear pairing map scheme for elliptic curve cryptography using Vedic Mathematics, International Journal of Information Technology and Electrical Engineering, Vol. 8, No. 3, 83-89, June 2019**. (UGC approved)**

(2018)

1. Manoj Kumar and Pratik Gupta, A Novel and Secure Multiparty Key Exchange Scheme Using Trilinear Pairing Map Based on Elliptic Curve Cryptography, Soft Computing: Theories and Applications, Advances in Intelligent Systems and Computing, Vol 583, 37-50, Springer, Singapore, 2018.
2. Manoj Kumar, Ankur Kumar and Sudhanshu Shekhar Dubey, Order of convergence by summation integral type operators in Lp approximation, International Journal of Computer & Mathematical Sciences, Vol. 7, No. 1, 66-79, Jan. 2018.
3. Manoj Kumar, Sudhanshu Shekhar Dubey and Ankur Kumar, On simultaneous approximation by mixed summation integral type operators, International Journal of Innovations & Advancement in Computer Science, Vol. 7, No. 3, 71-79, Mar. 2018.

(2017)

1. Manoj Kumar, Local approximation by a certain family of linear positive operators, International Journal of Current Engineering and Scientific Research, Vol. 4, No. 12, 16-23, Dec. 2017.
2. Manoj Kumar, Pratik Gupta and Ajay Kumar, A Novel and Secure Multi-party Key Exchange Scheme Using Trilinear Pairing Map Based on Elliptic Curve Cryptography, International Journal of Pure and Applied Mathematics, Vol. 116, No. 1, 1-14, Aug. 2017. (ISSN: 1311-8080(P), 1314-3395(O)) doi:10.12732/ijpam.v116i1.1, url: http://www.ijpam.eu

3. Manoj Kumar, Error estimation formula for modified beta operators, International Journal of Engineering, Science and Mathematics, Vol. 6, No. 3, 97-105, Jul. 2017.
4. Manoj Kumar, Attacks on pairing based schemes in elliptic curve cryptography, International Journal of Academic Research and Development, Vol. 2, No. 4, 201-205, Jul. 2017.
5. Manoj Kumar, Global approximation by a new family of beta operators, International Journal of Current Engineering and Scientific Research, Vol. 4, No. 6, 60-64, Jun. 2017.
6. Manoj Kumar, An efficient authentication protocol using zero knowledge property and pairing on elliptic curves, International Journal of Advanced Research in Computer Science, Vol. 8, No. 5, 2155-2159, May. 2017.
7. Manoj Kumar, Convergence rate of beta baskakov operators, International Journal of Statistics and Applied Mathematics, Vol. 2, No. 3, 14-19, Apr. 2017.

(2016)

1. Manoj Kumar, On simultaneous approximation of functions by a certain family of linear positive operators, International Journal of Advance Research in Computer Science and Software Engineering, Vol. 6, Issue-9, 452-456, Sep. 2016. (ISSN No.: 2277-128X(O), 2277-6451(P)).
2. Manoj Kumar and Pratik Gupta, Cryptographic schemes based on elliptic curves over the ring $Z_p[i]$, Applied Mathematics, Vol. 7, No. 3, 304-312, Feb. 2016. (ISSN No. 2152-7385-(P), 2152-7393-(O)).

(2015)

1. Manoj Kumar, An efficient secret sharing scheme for quantum key distribution, International Journal of Advance Research in Science and Engineering, Vol. 4, No. 3, 318-324, March 2015. (ISSN : 2319-8354).
2. Manoj Kumar, Estimation of error for beta operators, International Journal of Applied Research, Vol. 1, No. 4, 371-378, March 2015. (ISSN : 2394-5869).
3. Manoj Kumar, Linear combination of beta operators in Lp- approximation, International Journal of Engineering Technology Science and Research, Vol. 2, No. 1, 100-109, Jan. 2015. (ISSN : 2394-3386).

4. Manoj Kumar, Direct results for a new family of summation-integral type operators, International Journal of Innovative Research in Science and Engineering, Vol. 1, No. 2, 26-34, Feb. 2015. (ISSN : 2454-9665).
5. Manoj Kumar, Attacks in cryptography due to pairing based schemes, International Journal of Multidisciplinary Research and Development, Vol. 2, No. 2, 704-708, Feb. 2015. (ISSN : 2349-4182)

(2014)

1. Manoj Kumar, On simultaneous approximation by beta operators , International Journal of Advance Research in Science and Engineering, Vol. 3, No. 2, 193-202, Feb. 2014. (ISSN : 2319-8354).
2. Manoj Kumar, An efficient mutual authentication scheme based on zero knowledge property , International Journal of Electronics, Electrical and Computational System, Vol. 3, No. 3, 139-146, May 2014. (ISSN : 2348-117X).
3. Manoj Kumar, Inverse approximation properties for a certain mixed summation-integral type operators, International Journal of Multidisciplinary Research and Development, Vol. 1, No. 2, 181-187, June 2014. (ISSN : 2349-4182).
4. Manoj Kumar, A novel and efficient authentication protocol based on bilinear pairing maps , International Journal of Innovations and Advancement in Computer Science, Vol. 3, No. 5, 65-71, May 2014.(ISSN : 2347-8616).
5. Manoj Kumar, On the convergence rate for a new family of linear positive operators, International Journal of Applied Research, Vol. 1, No. 1, 155-162, Nov. 2014. (ISSN : 2394-5869).
6. Manoj Kumar, Some approximation properties of a new family of linear positive operators , International Journal of Computer and Mathematical Sciences, Vol. 3, No. 8, 61-69, Oct. 2014. (ISSN : 2347-8527).

(2013)

1. Manoj Kumar, An authentication scheme based on trilinear self-pairing map , International Journal of Advance Research in Science and Engineering, Vol. 2, No. 8, 176-184, Aug. 2013. (ISSN : 2319-8354).

2. Manoj Kumar, A secure and efficient authentication protocol based on elliptic curve Deffie-Hellman algorithm and zero knowledge property, International Journal of Soft Computing and Engineering, vol. 3, Issue-5, 137-142, 2013. (ISSN: 2231-2307).
3. Manoj Kumar, The role of bilinear pairing maps in elliptic curve cryptography, International Journal of Science, Technology and Management, Vol. 2, No. 10, 43-51, Oct. 2013. (ISSN: 2394-1537).

(2007)

1. M. K. Gupta, Manoj Kumar and R. P. Singh, A note on mixed summation-integral-type operators, Ukrainian Mathematical Journal, Vol. 59, No. 8, 1258-1263, Aug. 2007. **(SCOPUS)** (Impact Facor-0.154, ISSN: 0041-5995 (P), 1573-9376 (O)).
2. M.K. Gupta, V. Gupta and Manoj Kumar, Direct and inverse estimates for a new family of linear positive operators in simultaneous approximation, J. Math. Anal. Appl., Vol. 330, Issue-2, 799-816, June, 2007. **(SCOPUS) (**Impact Factor: 1.220, ISSN: 0022-247X).

(2005)

1. M. K. Gupta and Manoj Kumar, An error estimate for certain Durrmeyer type summation-integral operators, Ganita, Vol. 56, No. 2, 145-152, 2005. **(UGC-Care List)(**ISSN: 0046-5402)
2. M. K. Gupta and Manoj Kumar, Linear combinations of certain family of linear positive operators, Indian Journal of Pure and Applied Mathematics, Vol. 36, No. 9, 479-492, 2005. **(SCOPUS)** (Impact Factor: 0.274, ISSN: 0019-5588 (P), 0975-7465(O)).

❖ **Research Papers Published in Conference Proceedings:**

1. Manoj Kumar, An efficient zero knowledge identification protocol based on weil pairing elliptic curves, Proceedings of the International Conference on Emerging Trends in Computational and Applied Mathematics, 2-4 June, 300-304, 2014.
2. Sandeep Kumar, Manoj Kumar and Girish Sharma, A novel zero knowledge authentication protocol based on elliptic curve cryptography, Proceedings of the International Conference on Issues and Challenges in Networking, Intelligence and Computing Technologies, 2-3 September, 546-550, 2011.

❖ **Research Papers Presented in Conferences:**

1. Participated in **International Conference on Evolving Technologies for Computing, Communication and Smart World,** sponsored by Ministry of Electronics and Information

Technology, Government of India, at CDAC Noida, from **31 January to 1 February 2020** and presented a research paper entitled **" Security Analysis of a Threshold Quantum State Sharing Scheme of an Arbitrary Single Qutrit based on Lagrange interpolation method ".**

2. Participated in **International Conference on Vedic Mathematics 2019-Emerging Dimensions and Applications in Science, Technology and Social Sciences Research,** organized by Department of Mathematics, Chaudhary Bansi Lal University, Bhiwani, Haryana and Shiksha Sanskriti Utthan Nyas, New Delhi, during **December 22-24, 2019** and presented a research paper entitled **"Some Ancient Indian Vedic Mathematics Techniques for projective coordinate systems based on elliptic curve".**
3. Participated in **24TH International Conference of International Academy of Physical Sciences on Innovations in Physical Sciences,** organized by Faculty of Science, Chaudhary Charan Singh University, Meerut, during **August 09-11, 2019** and presented a research paper entitled **"Various projective coordinate systems for elliptic curve cryptography using Ancient Indian Vedic Mathematics".**
4. Participated in **2nd International Conference on Modern Mathematical Methods and High Performance Computing in Science and Technology,** organized by Inderprastha Engineering College, Ghaziabad, during **January 4 - 6, 2018** and presented a research paper entitled **"An efficient signcryption scheme based on elliptic curves".**
5. Participated in **International Conference on Soft Computing & Mathematical Modelling,** Organized by Department of Applied Sciences, KIET Group of Institutions, Ghaziabad, during **December 22 - 23, 2017** and presented a research paper entitled **"Quantum Secret Sharing Scheme based on Lagrange Interpolation Method".**
6. Participated in **5th International Conference on Recent Innovations in Science, Engineering & Management,** Organized by Venkateshwara Institute of Technology, Meerut, on **June 05, 2016** and presented a research paper entitled **"A Key Generation Authentication Protocol using Pairing map based on Elliptic Curve Cryptography".**
7. Participated in **International Conference on Emerging Technologies in Science, Engineering & Management,** Organized by Dr. K. N. Modi Institute of Engineering & Technology, Modinagar, Ghaziabad, during **23 April 2016 to 24 April 2016**, and presented a research paper entitled **"The World of Quantum Computers".**
8. Participated in **National Conference on Science & Technology for Indigenous Development in India,** Organized by the Indian Science Congress Association (Haridwar Chapter) and Faculty of Engineering & Technology, Gurukul Kangri Vishwavidyalaya, Haridwar, during **28 September 2015 to 30 September 2015**, and presented a research paper entitled **"An Elliptic Curve Based Lightweight Identification Scheme for Embedded Systems".**

9. Participated in **International Conference on Emerging Areas of Mathematics for Science & Technology,** Organized by Department of Mathematics, Punjabi University, Patiala, during **30 January 2015 to 01 February 2015**, and presented a research paper entitled **"An improved elliptic curve based authentication protocol using weil-pairing and zero knowledge property".**
10. Participated in **International Conference on Advance Techniques & Devices in Mathematics & Physical Science,** Organized by Department of Mathematics and Physics, SRM University, Ghaziabad, Uttar Pradesh, during **January, 23 - 25, 2015**, and presented a research paper entitled **"A Novel Lightweight Authentication Protocol for RFID tags ".**
11. Participated in **International Conference on Emerging Trends in Computational and Applied Mathematics,** Organized by Department of Applied Science, ITM University, Gurgaon, during **June 02 - 04, 2014**, and presented a research paper entitled **"An efficient zero knowledge identification protocol based on weil pairing elliptic curves ".**
12. Participated in **International Conference on Issues and Challenges in Networking, Intelligence and Computing Technologies,** Organized by Department of Computer Science and Engineering, Krishna Institute of Engineering and Technology (KIET), Ghaziabad during **September 02- 03, 2011**, and presented a research paper entitled **"A novel zero knowledge authentication protocol based on elliptic curve cryptography"**.
13. Participated in **National Conference on Recent Drifts, Breaks in Applied Sciences and its Technology for Innovation Management,** Organized by Technology Business Incubator, Krishna Institute of Engineering and Technology(KIET), Ghaziabad in association with Department of Applied Sciences and Humanities, KIET, Ghaziabad, during **August 07 - 09, 2009**, and presented a research paper entitled " **On the order of simultaneous approximation of functions by linear combinations of a certain family of linear positive operators** ".
14. Participated in **International Conference on Analysis and its Application**s organized by Department of Mathematics, Aligarh Muslim University, Aligarh, during **November 3 - 5, 2008**, and presented a research paper entitled "On **the order of simultaneous approximation of functions by a certain family of linear positive operators**".
15. Participated in the **1st National Conference on Computer Science and Information Technology,** Organized by Krishna Institute of Engineering and Technology, Ghaziabad, **during November 11 - 12, 2006**, and presented a research paper entitled " **Local and global approximation estimates for a certain family of linear positive operators** ".
16. Participated in the **8th Conference of the International Academy of Physical Sciences**, jointly organized by C.C.S. University, Meerut, and NICE Society Institute, Meerut, **during December 29 -31, 2005**, and presented a research paper entitled " **Direct and inverse estimates for a new family of linear positive operators in simultaneous approximation** ".

❖ **Workshop Attended:**

1. Participated in 2nd One day workshop on Patent and Intellectual Property Rights, jointly organized by Uttarakhand State Council of Science & Technology (UCOST) and IPR Cell, Gurukul Kangri Vishwavidyalaya, Haridwar on **07 February 2015**, at FMS, Gurukul Kangri Vishwavidyalaya, Haridwar.
2. Participated in One day workshop on Harnessing Intellectual Property & Its Management for Growth and Prosperity, jointly organized by Uttarakhand State Council of Science & Technology (UCOST), Gurukul Kangri Vishwavidyalaya, Haridwar, and National Research Development Corporation, New Delhi on **17 May 2014**, at FMS, Gurukul Kangri Vishwavidyalaya, Haridwar .

❖ **Special Training / Staff Development Programmes :**

1. Participated in seven days National Workshop on Cryptography, jointly sponsored by NBHM and LNMIIT, held at LNMIIT, Jaipur (Rajsthan), India, during **December 14 - 20, 2015**.
2. **AICTE** sponsored staff development programme on **Soft Computing using MATLAB and LaTeX at a Glance**, organized by Department of Applied Mathematics, Delhi Technological University, Delhi, during **December 07 - 18, 2009**.
3. **AICTE** sponsored short term programme on **Intellectual Property Rights and Patent System in India**, conducted by the Applied Science department, National Institute of Technical Teacher's Training and Research, Chandigarh, during **July 20 - 24, 2009**.

(Dr. Manoj Kumar)