

CURRICULUM-VITAE

Name : **DR. ARVIND KUMAR MISRA**
(M.N.A. Sc.)

Date of Birth : July 01, 1972

Sex : Male

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EDUCATIONAL QUALIFICATIONS:

Examination	Year	Board/Univ.	Division	%	Subjects
High School	1986	U.P. Board Allahabad	First	63.2	Science-2, Biology, Hindi, English, Social Science
Intermediate	1988	U.P. Board Allahabad	First	70.2	Mathematics-2 Physics, Chemistry, Hindi, English, Mathematics
B. Sc.	1991	Lucknow University	First	69.44	Physics, Chemistry, Mathematics
M. Sc.	1994	I.I.T., Kanpur	-	CPI 9.0/10	Mathematics
Ph. D.	2004	I.I.T., Kanpur	-	CPI 8.29/10	Math. Modelling-Water Pollution and Eutrophication

TOPIC OF THE Ph.D. THESIS : Mathematical modeling of the depletion of dissolved oxygen caused by water pollution and eutrophication: Effects on survival of aquatic populations

THESIS SUPERVISORS : Prof. J.B. Shukla and Prof. P. Chandra, IIT Kanpur

TEACHING EXPERIENCE : Lecturer, May 05, 1998- May 04, 2007
(Brahmanand P.G. College, Kanpur)
Reader w.e.f. May 05, 2007 – Nov. 16, 2007.
(Brahmanand P.G. College, Kanpur)
Reader Nov. 17, 2007 – May 04, 2010, BHU Varanasi
Asso. Professor, May 05, 2010 – May 04, 2013, BHU Varanasi
Professor w.e.f. May 04, 2013- May 04, 2023, BHU Varanasi.
Senior Professor w.e.f. May 05, 2023, BHU Varanasi.

COURSES TAUGHT

- (i) B.Sc. – Calculus, Numerical Analysis & Computer Programming, Real and Complex Analysis, Differential Equations, Integral Transforms, Linear Algebra, Matrices.
- (ii) M. Sc. – Differential Equations, Partial Differential Equations, Complex Analysis, Mathematical Methods, Mathematical Modeling, Computational Bioinformatics, Fluid Dynamics.

RESEARCH INTEREST

- (i) Mathematical Modeling of environmental & ecological systems.
- (ii) Mathematical Modeling of Epidemics.
- (iii) Mathematical Modeling of Social Dynamics.
- (iv) Delay Mathematical Modeling
- (v) Spatio-Temporal Modeling

Ph.D. THESIS SUPERVISED

- (i) Anupama Sharma: Mathematical modeling and analysis of the impact of media awareness on epidemic outbreaks. **(Awarded on 19th April, 2014)**
- (ii) Kusum Lata: Mathematical modeling and analysis for the conservation of forestry resources by applying technological and economic efforts **(Awarded on 08th August, 2014)**
- (iii) Vishal Singh: Mathematical modeling and analysis of the spread of carrier dependent infectious diseases **(Awarded on 05th February, 2015)**
- (iv) Maitri Verma: Mathematical modeling and analysis of global warming gases and their control **(Awarded on September, 2015)**
- (v) Pankaj K. Tiwari: Mathematical modeling and analysis of water pollution and the control of algal bloom in water bodies **(Awarded on November, 2015)**
- (vi) Rajanish K. Rai: Dynamics of infectious diseases: Effect of awareness through budget allocation and advertisements **(Awarded on 07th February, 2020)**
- (vii) Alok Gupta: Mathematical modeling and analysis of communicable diseases and their control **(Awarded on 20th October, 2020)**
- (viii) Amita Tripathi: Modeling the dynamics of cloud seeding: Effects of aerosols and agriculture crops **(Awarded on 26th August, 2022)**
- (ix) Rabindra K. Gupta (International)
- (x) Jyoti Maurya: Modeling and analysis of the impact of control measures on some prevalent diseases **(Awarded on 09th December, 2022).** Mathematical modeling of managing healthcare facilities to control infectious diseases **(Awarded on 07th December, 2023)**
- (xi) Anjali Jha: Mathematical modeling and analysis of atmospheric carbon dioxide and its control strategies **(Awarded on 23rd February, 2024)**
- (xii) Soumitra Pal: Mathematical modeling and analysis of predator-prey system **(Awarded on 23rd February, 2024).**
- (xiii) Akash Yadav: Mathematical modeling and analysis of chemical and biological control of insects to increase crop yield **(Awarded on 29th April, 2025).**
- (xiv) Mamta Kumari: Modeling the dynamics of unemployment and its impact on Society **(Submitted on 07th July, 2025).**
- (xv) Prinsi Shukla: Mathematical modeling and analysis of algal bloom in water bodies and its control strategies **(ongoing)**

- (xvi) Anoop K. Mishra: Modeling the impact of awareness and health care facilities on the dynamics of infectious diseases (**ongoing**)
- (xvii) Subrat Barik: Mathematical modeling and analysis of ecological systems using artificial neural networks (**ongoing**)
- (xviii) Bittu Tiwari: Mathematical modeling and analysis of socio-ecological problems (**ongoing**)

MENTORSHIP TO POST DOCTORATE FELLOW

- (i) Dr. A. Sharma: From 1st March 2014 to 24th August 2015 (NBHM PDF)
- (ii) Dr. K. Lata: From 1st September 2014 to 31st August 2017 (NBHM PDF)
- (iii) Dr. M. Verma: From 24th April 2015 to 19th November 2017 (NBHM PDF)

ACADEMIC DISTINCTIONS/ACHIEVEMENTS

- (i) In the list of World's top 2 % scientists produced by Stanford University, USA.
- (ii) Executive council member – Dr. R M L Avadh University, Ayodhya.
- (iii) JBS gold medal 2018 awarded by IAMMAS for best mathematical modeler in India.
- (iv) Member, Board of studies, HBTU Kanpur, Banasthali Vidyapeeth, Jiwaji University Gwalior.
- (v) Editor – Modeling Earth Systems and Environment, published by Springer.
- (vi) Editor in Journal of Applied Mathematics, published by Wiley.
- (vii) Editor in Journal of Innovation Sciences and Sustainable Technologies (JISST).
- (viii) Editor – Journal of Indian Mathematical Society (JIMS).
- (ix) Qualified **CSIR JRF** examination December 1993.
- (x) Qualified **GATE** examination 1994 (with percentile 96.26).
- (xi) Aailed **CSIR JRF and SRF** during the Ph.D. program, 1994-1998, IIT Kanpur.
- (xii) Received “**General Proficiency Medal**”, for **Best Academic Performance** during M.Sc. program, 1994, IIT Kanpur.
- (xiii) Aailed **MCM scholarship** during M.Sc. program, IIT Kanpur.

WORKSHOP/ CONFERENCE ORGANISED

- (i) **Convener:** Workshop on Dynamical Systems: Analysis and Applications at BHU from 22nd to 31st October 2009 as (Sponsored by **DST-CIMS**, BHU Varanasi).
- (ii) **Convener:** National Meet of Research Scholars in Mathematical Sciences (**NMRSMS-12**) at BHU from 18th Nov. to 22nd Nov. 2012 as (Sponsored by **DST-New Delhi**).
- (iii) **Convener:** Symposium on Biomathematics in IMS Conference at BHU on 23rd Jan. 2013.
- (iv) **Coordinator:** Advanced workshop on Partial Differential Equations: Analysis and Applications (**PDEAA-2013**) at BHU from 22nd July to 31st July 2013. (Sponsored by **DST-CIMS**, BHU Varanasi).
- (v) **Convener:** 29th Annual National Conference Mathematical Society Banaras Hindu University, Varanasi on February 03 – 04, 2014.
- (vi) **Convener:** A Mini-Workshop on Biomathematics, at BHU from 28th March 2015 to 30th March 2015 (Sponsored by NPDE – DST, New Delhi).
- (vii) **Convener:** Advanced level research workshop on Mathematical Modeling of Environmental, Ecological and Epidemiological systems, August 24 - 29, 2016 (Sponsored by NPDE – DST, New Delhi).
- (viii) **Convener:** International Conference on Mathematical Modeling and Simulation, August 29 - 31, 2016 (Partially supported by NBHM, Mumbai).

- (ix) **Coordinator:** Summer/Winter School (Multidisciplinary) through virtual mode UGC-Human Resource Development Centre, BHU Varanasi from January 16 – 29, 2021.

PROJECTS

- (i) Completed one minor research project titled “Mathematical Modeling and Analysis of Eutrophication: Effects of Nutrients Supplied by Water Run-Off” approved by University Grant Commission, New Delhi, March 2004.
- (ii) Completed one major research project entitled “Mathematical Modeling of Emission and Control of Greenhouse Gases” approved by University Grant Commission, New Delhi, India.
- (iii) Completed Major research project entitled “Modeling the role of health care facilities to control the spread of infectious diseases” approved by SERB (Science and Engineering Research Board), New Delhi, India.

RESEARCH PUBLICATIONS

1. J.B. Shukla, **A.K. Misra** and P. Chandra, Modeling the depletion of dissolved oxygen in a water body due to organic pollutants and their effect survival of species, Edited Volume on Mathematical Biology (eds. P. Chandra & B.V. Rathish Kumar) Anamaya Publishers, New Delhi, (2005) 266-273.
2. **A.K. Misra**, P. Chandra and J.B. Shukla: Mathematical modeling and analysis of the depletion of dissolved oxygen in water bodies, Nonlinear Analysis: Real World Applications, 7(5) (2006) 980 – 996, **DOI 10.1016/j.nonrwa.2005.09.002** (Elsevier, I.F. = 1.8, No. of citations = 50, Quartile Factor = Q1).
3. J.B. Shukla, **A.K. Misra** and P. Chandra: Mathematical modeling of the survival of biological species in polluted water bodies, Differential Equations and Dynamical Systems, 15(3 & 4) (2007) 209-230, (Springer, I.F. = 0.8, No. of citations = 24, Quartile Factor = Q3).
4. **A.K. Misra**, Mathematical Modeling and Analysis of Eutrophication of Water Bodies Caused by Nutrients, Nonlinear Analysis: Modelling and Control, 12 (4) (2007) 511–524 **DOI: 10.15388/NA.2007.12.4.14683** (Vilnius University Institute of Mathematics and Informatics, I.F. = 2.6, No. of citations = 36, Quartile Factor = Q2).
5. R. Naresh, S. Pandey and **A.K. Misra**: Analysis of a vaccination model for carrier dependent infectious diseases with environmental effects, Nonlinear Analysis: Modelling and Control, 13(3) (2008) 331–350, **DOI: 10.15388/NA.2008.13.3.14561** (Vilnius University Institute of Mathematics and Informatics, I.F. = 2.6, No. of citations = 52, Quartile Factor = Q2).
6. J.B. Shukla, **A.K. Misra**, S. Sundar and R. Naresh, Effect of rain on the removal of a gaseous pollutant and two different particulate matters from the atmosphere of a city, Mathematical and Computer Modelling, 48(5-6) (2008) 832–844, **DOI 10.1016/j.mcm.2007.10.016** (Elsevier, I.F. = NA, No. of citations = 104, Quartile Factor = NA).
7. J.B. Shukla, **A.K. Misra** and P. Chandra: Mathematical modeling and analysis of the depletion of dissolved oxygen in eutrophied water bodies affected by organic pollutants, Nonlinear Analysis: Real World Applications, 9(5) (2008) 1851–1865, **DOI 10.1016/j.nonrwa.2007.05.016** (Elsevier, I.F. = 1.8, No. of citations = 78, Quartile Factor = Q1).

8. **A.K. Misra**: Mathematical modeling of the survival of biological species in eutrophied water bodies, *Proc. Nat. Acad. Sci. India Sect A*, 78(IV) (2008) 331 - 340. (Springer, I.F. =1.544, No. of citations = 4, Quartile Factor = Q3).
9. J.B. Shukla, **A.K. Misra** and P. Chandra, Modeling and analysis of the algal bloom in a lake caused by the discharge of nutrients, *Applied Mathematics and Computation*, 196(2) (2008) 782 – 790, **DOI 10.1016/j.amc.2007.07.010** (Elsevier, I.F. = 3.5, No. of citations = 76, Quartile Factor = Q1).
10. J.B. Shukla, S. Sundar, **A.K. Misra** and R. Naresh, Modelling the removal of gaseous pollutants and particulate matters from the atmosphere of a city by rain: effect of cloud density, *Environmental Modeling & Assessment*. 13 (2008) 255 – 263, **DOI 10.1007/s10666-007-9085-7** (Springer, I.F. = 2.7, No. of citations = 34, Quartile Factor = Q2).
11. S. Sundar, R. Naresh, **A.K. Misra** and J. B. Shukla, A nonlinear mathematical model to study the interactions of hot gases with cloud droplets and raindrops, *Applied Mathematical Modelling*, 33(7) (2009) 3015 – 3024, **DOI 10.1016/j.apm.2008.10.032** (Elsevier, I.F. = 4.4, No. of citations = 20, Quartile Factor = Q1).
12. **A.K. Misra** and B. Dubey: A ratio-dependent predator-prey model with delay and harvesting, *Journal of Biological Systems*, 18(2) (2010) 437–453, **DOI 10.1142/S021833901000341X** (World Scientific, I.F. = 1.3, No. of citations = 34, Quartile Factor = Q2).
13. J.B. Shukla, **A.K. Misra**, R. Naresh and P. Chandra, How artificial rain can be produced? A mathematical model, *Nonlinear Analysis: Real World Applications*, 11(4) (2010) 2659 – 2668, **DOI 10.1016/j.nonrwa.2009.09.013** (Elsevier, I.F. = 1.8, No. of citations = 22, Quartile Factor = Q1).
14. **A.K. Misra**, Modeling the depletion of dissolved oxygen in a lake due to submerged macrophytes, *Nonlinear Analysis: Modelling and Control*, 15(2) (2010) 185 – 198, **DOI 10.15388/NA.2010.15.2.14353** (Vilnius University Institute of Mathematics and Informatics, I.F. = 2.6, No. of citations = 55, Quartile Factor = Q2).
15. **A.K. Misra**, A. Sharma and J.B. Shukla, Modeling and analysis of effects of awareness programs by media on the spread of infectious diseases, *Mathematical and Computer Modelling*, 53 (5-6) (2011) 1221–1228, **DOI 10.1016/j.mcm.2010.12.005** (Elsevier, I.F. = NA, No. of citations = 343, Quartile Factor = NA).
16. **A.K. Misra** and A.K. Singh: A mathematical model for unemployment, *Nonlinear Analysis: Real World Applications*, 12(1) (2011) 128–136, **DOI 10.1016/j.nonrwa.2010.06.002** (Elsevier, I.F. = 1.8, No. of citations = 64, Quartile Factor = Q1).
17. **A.K. Misra**, A. Sharma and V. Singh: Effect of awareness programs in controlling the prevalence of an epidemic with time delay, *Journal of Biological Systems*, 19(2) (2011) 389–402, **DOI 10.1142/S0218339011004020** (World Scientific, I.F. = 1.3, No. of citations = 105, Quartile Factor = Q2).
18. J.B. Shukla, V. Singh and **A.K. Misra**: Modeling the spread of an infectious disease with bacteria and carriers in the environment, *Nonlinear Analysis: Real World Applications*, 12(5) (2011) 2541–2551, **DOI 10.1016/j.nonrwa.2011.03.003** (Elsevier, I.F. = 1.8, No. of citations = 32, Quartile Factor = Q1).

19. **A.K. Misra**, P. Chandra and V. Raghavendra: Modeling the depletion of dissolved oxygen in a lake due to algal bloom: effect of time delay, *Advances in Water Resources*, 34(10) (2011) 1232–1238, **DOI 10.1016/j.advwatres.2011.05.010** (Elsevier, I.F. = 4.0, No. of citations = 34, Quartile Factor = Q1).
20. J.B. Shukla, K. Lata and **A.K. Misra**: Modeling the depletion of a renewable resource by population and industrialization: effect of technology on its conservation, *Natural Resource Modeling*, 24(2) (2011) 242–267, **DOI 10.1111/j.1939-7445.2011.00090.x** (Wiley, I.F. = 1.8, No. of citations = 69, Quartile Factor = Q2).
21. J.B. Shukla, R. Sanghi, A. Goyal and **A.K. Misra**: Modeling the desalination of saline water by using bacteria and marsh plants, *Desalination* 277 (2011) 113–120, **DOI 10.1016/j.desal.2011.04.012** (Elsevier, I.F. = 8.3, No. of citations = 13, Quartile Factor = Q1).
22. **A.K. Misra**, Modeling the depletion of dissolved oxygen due to algal bloom in a lake by taking Holling type - III interaction, *Applied Mathematics, and Computation*, 217(21) (2011) 8367–8376, **DOI 10.1016/j.amc.2011.03.034** (Elsevier, I.F. = 3.5, No. of citations = 31, Quartile Factor = Q1).
23. **A.K. Misra**, A simple mathematical model for the spread of two political parties, *Nonlinear Analysis: Modelling and Control*, 17(3) (2012) 343–354, **DOI 10.15388/NA.17.3.14060** (Vilnius University Institute of Mathematics and Informatics, I.F. = 2.6, No. of citations = 48, Quartile Factor = Q2).
24. **A.K. Misra**, S.N. Mishra, A.L. Pathak, P. Misra and R. Naresh, Modeling the effect of time delay in controlling the carrier-dependent infectious disease - Cholera, *Applied Mathematics, and Computation*, 218 (23) (2012) 11547–11557, **DOI 10.1016/j.amc.2012.04.085** (Elsevier, I.F. = 3.5, No. of Citations = 37, Quartile Factor = Q1).
25. **A.K. Misra** and V. Singh: A delay mathematical model for the spread and control of water-borne diseases, *Journal of Theoretical Biology*, 301 (2012) 49–56, **DOI 10.1016/j.jtbi.2012.02.006** (Elsevier, I.F. = 1.9, No. of citations = 79, Quartile Factor = Q2).
26. **A.K. Misra** and A.K. Singh, A delay mathematical model for the control of unemployment, *Differential Equations and Dynamical Systems*, 21(3) (2013) 291–307, **DOI 10.1007/s12591-012-0153-3** (Springer, I.F. = 0.8, No. of citations = 52, Quartile Factor = Q3).
27. **A.K. Misra** and M. Verma, A mathematical model to study the dynamics of carbon dioxide gas in the atmosphere, *Applied Mathematics and Computation*, 219(16) (2013) 8595–8609, **DOI 10.1016/j.amc.2013.02.058** (Elsevier, I.F. = 3.5, No. of citations = 64, Quartile Factor = Q1).
28. **A.K. Misra** and K. Lata, Modeling the effect of time delay on the conservation of forestry biomass, *Chaos, Solitons and Fractals*, 46 (2013) 1–11, **DOI 10.1016/j.chaos.2012.10.002**. (Elsevier, I.F. = 5.3, No. of citations = 38, Quartile Factor = Q1).
29. J.B. Shukla, S. Sundar, **A.K. Misra** and R. Naresh, Modeling the effects of aerosols to increase rainfall in regions with shortage, *Meteorology and Atmospheric Physics*, 120(3–4) (2013) 157–163, **DOI 10.1007/s00703-013-0249-5** (Springer, I.F. = 1.9, No. of citations = 11, Quartile Factor = Q3).

30. A. Goyal, R. Sanghi, **A.K. Misra** and J.B. Shukla, A modeling study on the role of fungi in removing inorganic pollutants, *Mathematical Biosciences*, 244 (2013), 116-124, **DOI 10.1016/j.mbs.2013.04.014** (Elsevier, I.F. = 1.9, No. of citations = 6, Quartile Factor = Q1).
31. S. Samanta, S. Rana, A. Sharma, **A.K. Misra** and J. Chattopadhyay, Effect of awareness programs by media on the epidemic outbreaks: a mathematical model, *Applied Mathematics and Computation*, 219(12) (2013) 6965–6977, **DOI 10.1016/j.amc.2013.01.009**. (Elsevier, I.F. = 3.5, No. of citations = 169, Quartile Factor = Q1).
32. **A.K. Misra**, S.N. Mishra, A.L. Pathak, P.K. Srivastava and P. Chandra, A mathematical model for the control of carrier-dependent infectious diseases with direct transmission and time delay, *Chaos, Solitons and Fractals*, 57 (2013) 41–53, **DOI 10.1016/j.chaos.2013.08.002** (Elsevier, I.F. = 5.3, No. of citations = 22, Quartile Factor = Q1).
33. **A.K. Misra**, A. Sharma and J. Li, A mathematical model for control of vector-borne diseases through media campaigns, *Discrete and Continuous Dynamical Systems Series- B*, 18(7) (2013) 1909 – 1927, **DOI 10.3934/dcdsb.2013.18.1909** (AIMS, I.F. = 1.3, No. of citations = 39, Quartile Factor = Q2).
34. A. Sharma and **A. K. Misra**, Modeling the impact of awareness created by media campaigns on vaccination coverage in a variable population, *Journal of Biological Systems*, 22(2) (2014) 249-270, **DOI 10.1142/S0218339014400051** (World Scientific, I.F. = 1.3, No. of citations = 50, Quartile Factor = Q2).
35. **A.K. Misra**, K. Lata and J.B. Shukla, Effects of population and population pressure on forest resources and their conservation: A modeling study, *Environment, Development and Sustainability*, 16(2) (2014) 361–374, **DOI 10.1007/s10668-013-9481-x** (Springer, I.F. = 4.7, No. of citations = 53, Quartile Factor = Q1).
36. **A.K. Misra**, K. Lata and J.B. Shukla, A mathematical model for the depletion of forestry resources due to population and population pressure augmented industrialization, *International Journal of Modeling, Simulation, and Scientific Computing*, 5(1) (2014) 1350022 (16 pages), **DOI 10.1142/S1793962313500220** (World Scientific, I.F. = 0.9, No. of citations = 35, Quartile Factor = Q4).
37. **A.K. Misra** and M. Verma, Modeling the impact of mitigation options on methane abatement from rice fields, *Mitigation and Adaptation Strategies for Global Change*, 19 (2014) 927–945, **DOI 10.1007/s11027-013-9451-5** (Springer, I.F. = 2.5, No. of citations = 28, Quartile Factor = Q1).
38. A. Goyal, R. Sanghi, **A.K. Misra** and J.B. Shukla, Modeling and analysis of the removal of an organic pollutant from a water body using fungi, *Applied Mathematical Modelling*, 38 (2014) 4863–4871, **DOI 10.1016/j.apm.2014.03.050** (Elsevier, I.F. = 4.4, No. of citations = 9, Quartile Factor = Q1).
39. P. K. Tiwari, S. Rana, **A. K. Misra** and J. Chattopadhyay, Effect of cross-diffusion on the patterns of algal bloom in a lake: A nonlinear analysis, *Nonlinear Studies*, 21 (3) (2014) 443-462 (Elsevier, I.F. = NA, No. of citations = 2, Quartile Factor = Q4).
40. **A.K. Misra**, P.K. Tiwari, A. Goyal and J.B. Shukla, Modeling and analysis of the depletion of organic pollutants by bacteria with explicit dependence on dissolved oxygen, *Natural*

Resource Modeling, 27(2) (2014), 258–273, **DOI 10.1111/nrm.12033** (Wiley, I.F. = 1.8, No. of citations = 8, Quartile Factor = Q2).

41. J.B. Shukla, A. Goyal, P.K. Tiwari and **A.K. Misra**, Modeling the role of dissolved oxygen-dependent bacteria on biodegradation of organic pollutants, *International Journal of Biomathematics*, 7(1) (2014) 1450008(16pages), **DOI 10.1142/S1793524514500089** (World Scientific, I.F. = 2.4, No. of citations = 3, Quartile Factor = Q2).
42. **A.K. Misra**, Modeling the effect of police deterrence on the prevalence of crime in the society, *Applied Mathematics and Computation*, 237 (2014) 531–545, **DOI 10.1016/j.amc.2014.03.136** (Elsevier, I.F. = 3.5, No. of citations = 30, Quartile Factor = Q1).
43. **A.K. Misra**, M. Verma and A. Sharma Capturing the interplay between malware and anti-malware in a computer network, *Applied Mathematics, and Computation*, 229 (2014) 340–349, **DOI 10.1016/j.amc.2013.12.059** (Elsevier, I.F. = 3.5, No. of citations = 36, Quartile Factor = Q1).
44. **A.K. Misra**, A. Sharma and J.B. Shukla, Stability analysis and optimal control of an epidemic model with awareness programs by media, *BioSystems*, 138 (2015) 53–62, **DOI 10.1016/j.biosystems.2015.11.002** (Elsevier, I.F. = 2, No. of citations = 102, Quartile Factor = Q3).
45. **A.K. Misra**, M. Tiwari and A. Sharma, Spatio-temporal patterns in a cholera transmission model, *Journal of Biological Systems*, 23(3) (2015) 471–484, **DOI 10.1142/S0218339015500242** (World Scientific, I.F. = 1.3, No. of citations = 4, Quartile Factor = Q2).
46. **A.K. Misra** and M. Verma, Impact of environmental education on mitigation of carbon dioxide emissions: A modeling study, *International Journal of Global Warming*, 7(4) (2015) 466 – 486, **DOI 10.1504/IJGW.2015.070046** (Inderscience, I.F. = 1, No. of citations = 41, Quartile Factor = Q3).
47. **A.K. Misra**, M. Verma and E. Venturino, Modeling the control of atmospheric carbon dioxide through reforestation: effect of time delay, *Modeling Earth Systems, and Environment*, 1(24) (2015), **DOI 10.1007/s40808-015-0028-z** (Springer, I.F. = 2.7, No. of citations = 50, Quartile Factor = Q1).
48. S. Chakraborty, P. K. Tiwari, **A.K. Misra** and J. Chattopadhyay, Spatial dynamics of a nutrient-phytoplankton system with a toxic effect on phytoplankton, *Mathematical Biosciences*, 264 (2015) 94–100, **DOI 10.1016/j.mbs.2015.03.010** (Elsevier, I.F. = 1.9, No. of citations = 58, Quartile Factor = Q1).
49. **A.K. Misra** and P.K. Tiwari, A model for the effect of density of human population on the depletion of dissolved oxygen in a water body, *Environment, Development and Sustainability*, 17(2015) 623–640, **DOI 10.1007/s10668-014-9565-2** (Springer, I.F. = 4.7, No. of citations = 10, Quartile Factor = Q1).
50. **A.K. Misra** and K. Lata, A mathematical model to achieve sustainable forest management, *International Journal of Modeling, Simulation, and Scientific Computing*, 6(4) (2015) 1550040 (18 pages), **DOI 10.1142/S1793962315500403**. (World Scientific, I.F. = 0.9, No. of citations = 23, Quartile Factor = Q4)

51. A. Goyal, **A.K. Misra**, J.B. Shukla and A. Shukla, Modeling the role of government efforts in controlling extremism in society, *Mathematical Methods in the Applied Sciences*, 38(17) (2015) 4300–4316, **DOI: 10.1002/mma.3368** (Wiley, I.F. = 2.1, No. of citations = 10, Quartile Factor = Q2).
52. A. Sharma and **A.K. Misra**, Backward bifurcation in smoking cessation model with media campaigns, *Applied Mathematical Modelling*, 39(3-4) (2015) 1087–1098, **DOI 10.1016/j.apm.2014.07.022** (Elsevier, I.F. = 4.4, No. of citations = 39, Quartile Factor = Q1).
53. **A.K. Misra** and K. Lata, Depletion and conservation of forestry resources: A mathematical model, *Differential Equations and Dynamical Systems*, 23(1) (2015) 25–41, **DOI 10.1007/s12591-013-0177-3**. (Springer, I.F. = 0.8, No. of citations = 26, Quartile Factor = Q3).
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147. N. Jha, A. Yadav, R. Pandey and **A.K. Misra**, Analyzing Crop Production: Unraveling the Impact of Pests and Pesticides Through a Fractional Model, *Nonlinear Analysis: Modelling and Control* (2024), **DOI: 10.15388/namec.2024.29.35448** (Vilnius University Institute of Mathematics and Informatics, I.F.= 2.6, No. of citations = 0, Quartile Factor = Q2).

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194. M. Verma, K. K. Tripathi, **A. K. Misra**, Modeling the dynamics of an infectious disease with delays in fear response and media advertisement growth, *The European Physical Journal Plus*, (2026) **DOI: 10.1140/epjp/s13360-026-07838-8**. (Springer, I.F.= 2.8, No. of citations = 0, Quartile Factor = Q2).
195. S. Mandal, P. K. Tiwari, R. K. Upadhyay, **A. K. Misra**, Impacts of cooperative hunting and Allee effect on the dynamics of a three-species system with sexually reproducing top predators, *Mathematical Biosciences* (2026). Accepted. (Elsevier, I.F. = 1.8, No. of citations = 0, Quartile Factor = Q1).

Papers Under Preparation/nearly ready for Communication/ Communicated

1. Modeling the role of conferences and journals on academic growth (**Single Author**)
2. Modeling the emergence of a third political party and its effects on the political system (**Single Author**).
3. Modeling the interplay between fish and algae population and its impact on water resources (with Jyoti Mourya).
4. Modeling the impact of temperature rise due to greenhouse gases on crop production (with Anjali Jha).
5. Modeling the impact of infrastructure and economic effort on tourism industries (with Anjali Jha).
6. Modeling the impact of insecticides on crop production and human population in presence of insect population (with Akash Yadav).
7. Modeling the management of rainfall using aerosols and its impact on crop production (with Gauri Agrawal).

PAPERS PRESENTED/ INVITED TALKS IN CONFERENCES

1. Delivered invited lecture in 3rd International Conference on Nonlinear Dynamics and Applications organized by Sikkim Manipal Institute of Technology, Sikkim. (April 08 – 10, 2026).

2. Delivered invited lecture in 9th India Biodiversity Meet 2025, International Conference organized by the Agricultural and Ecological Research Unit & Biological Anthropology Unit, Indian Statistical Institute, Kolkata (February 02 – 04, 2026).
3. Delivered invited lecture in 8th India Biodiversity Meet 2025, International Conference organized by the Agricultural and Ecological Research Unit & Biological Anthropology Unit, Indian Statistical Institute, Kolkata (March 24 – 26, 2025).
4. Delivered invited lecture in Annual Conference of ISMMACS and International Conference on Differential Equations: Theory, Computation and Applications, organized by South Asian University, New Delhi (November 29 – Dec 01, 2024).
5. Delivered invited lecture at 2nd International Conference on Recent Advances in Applied Mathematics organized by IIT BHU Varanasi (July 03-05, 2024).
6. Delivered invited lecture at National Conference on Modeling, Analysis, and Simulation 2024 organized by the Indian School of Mines (IIT) Dhanbad (June 28-30, 2024).
7. Delivered invited lecture at Advanced Forecasting Techniques in Agriculture Science Research organized by Indian Agricultural Research Institute, New Delhi (January 24-February 13, 2024).
8. Delivered invited lecture at 2nd International Conference on Mathematical Analysis and Applications in Modeling organized by Jadavpur University, Jadavpur, West Bengal (October 09-11, 2023).
9. Delivered invited lecture in National Conference on Differential Equations 2023 organized by IIT Patna (March 17-19, 2023).
10. Delivered invited lecture at 2nd International Conference on Advances in Biomathematics organized by Amity University, Lucknow Campus, Lucknow (July 21-23, 2022).
11. Delivered two lectures in a Refresher course organized by Academic Staff College, Lucknow (February 25-26, 2020).
12. Delivered invited lecture in a National Conference on Modeling, Analysis, and Simulation 2019 organized by the Indian School of Mines (IIT) Dhanbad (December 16-18, 2019).
13. Delivered invited lecture in an international conference on 85th Annual conference on Indian Mathematical Society 2019 organized by the Indian Institute of Technology Kharagpur (November 22-25, 2019).
14. Delivered invited lecture at an international conference on 7th India Biodiversity Meet 2019 organized by Agricultural and Ecological Research Unit, Indian Statistical Institute, Kolkata (November 19 – 21, 2019).
15. Delivered invited lecture in TQIP program at KNIT Sultanpur (July 18-19, 2019).
16. Delivered invited lectures in the 6th International conference on recent advances in pure and applied mathematics (ICRAPAM) 2019.
17. Delivered invited lectures in National Conference on Recent Advances in Mathematics and Scientific Computing (RAMSC - 19) (April 5-6, 2019).
18. Chaired the session at the 34th annual national conference of the mathematical society, Banaras Hindu University on Emerging trends in combinatorics and its applications (February, 22-23, 2019).
19. Delivered invited lectures in a National Conference on Mathematical and theoretical biology (NCMTB 2018) at the Department of Mathematics, Jadavpur University, Kolkata (March 22-23, 2018).
20. Delivered invited lectures in an international conference on Mathematical analysis and application in modeling (ICMAAM 2018) (10th Jan 2018).
21. Delivered invited lectures in a National conference on Mathematical science and development at the Department of Mathematics, Dr. Bhimrao Ambedkar University, Agra (December 22-24, 2018).

22. Delivered invited lectures in a National workshop on Mathematical modeling and numerical computation, LNMIIT at Jaipur (December 08-10, 2018).
23. Delivered invited lectures in a National conference on Fractional conference, special function, and their application in computer science at the Department of Mathematics, TDPG College (November 10-12, 2018).
24. Delivered invited lectures in a National workshop on Science fare creating awareness, interest, motivation in science and mathematics for school students and teachers at the Department of Mathematics, TDPG College (November 10-13, 2018).
25. Delivered invited lectures in the 84th annual conference of the Indian Mathematical Society at SMVDU (November 27-30, 2018).
26. Delivered invited lectures in a National workshop on Analysis and its Applications at IEST, Shibpur, Kolkata (November 18-23, 2017).
27. Delivered invited lectures in Inspire program organized at Prayag Institute of Technology and Management Allahabad (November 01-05, 2017).
28. Delivered an invited talk in China-India-Japan-Korea (CIJK) Colloquium cum Conference at Indian Institute of Technology Kanpur (August 23-26, 2017).
29. Delivered lectures in a workshop on Analysis and its Applications for Engineers and scientists organized by Department of Mathematical Sciences, IIT(BHU), Varanasi (July 03-08, 2017).
30. Delivered lectures in Advanced Numerical and Analytical Methods for Engineers and Scientists (NAMES) organized by the Department of Mathematical Sciences, IIT(BHU), Varanasi (January 12-18, 2017).
31. Delivered an invited talk in the National Conference at Agricultural & Ecological Research Unit, ISI, Kolkata and Government College of Engineering and Textile Technology, Berhampore (October 24-27, 2016).
32. Delivered an invited talk in National Conference on Recent Advances in Mathematics for Engineers held at Amity University Lucknow (September 29-30, 2016).
33. Delivered an invited lecture in International Conference on Mathematical Modelling, Differential Equations, Scientific Computing & Applications held at IIT Kanpur (March 27-30, 2016).
34. Delivered a lecture in the International conference 3rd India Biodiversity Meet 2015 organized by Agricultural and Ecological Research Unit, Indian Statistical Institute, Kolkata (November 16 – 18, 2015).
35. Delivered an invited lecture in a one-day National Seminar on Mathematical Modelling and its Applications organized by Department of Mathematics, Amity School of Applied Sciences (ASAS), Amity University Uttar Pradesh, Lucknow campus (September 22, 2015).
36. Delivered an invited lecture in an International Conference on Delivered an invited lecture in a one-day workshop organized by the Department of Mathematics, BITS Pilani, Pilani Campus (April 4, 2015).
37. Delivered an invited lecture in an International Conference on Mathematical and Computational Biology will be held at IIT Kanpur under the National Network for Mathematical and Computational Biology (February 28- March 3, 2015).
38. Delivered an invited lecture in the workshop organized by Raj Kumar Goel Institute of Technology, Ghaziabad under the NNMCB Programme (February 21, 2015).
39. Delivered a lecture at International conference India Biodiversity Meet 2014 organized by Agricultural and Ecological Research Unit, Indian Statistical Institute, Kolkata (November 21-23, 2014)
40. Delivered an invited talk at National Conference on Mathematical and Theoretical Biology at Jadavpur University, Kolkata (February 20- 21, 2014).
41. Delivered an invited talk in International Conference on Mathematical Modeling & Computer Simulation with Applications at IIT Kanpur (December 31, 2013 – January 02, 2014).

42. Delivered a lecture in National Conference on Mathematics- 2013 at University of Lucknow, Lucknow (November 29-December 1, 2013)
43. Delivered a lecture in Advanced Workshop on mathematical Epidemiology and Differential Equations at IIT Patna (July 8-13, 2013).
44. Delivered invited talk in International Conference on Mathematical Modelling and Numerical Simulations at BBU, Lucknow (July 1-3, 2013)
45. Delivered lectures on MATLAB in a training program at Chitrakoot.
46. Delivered a lecture in International Biodiversity Meet-2013 held at ISI Kolkata (March 14-16, 2013)
47. Delivered an invited talk in Biomathematics Symposia at the IMS conference organized by Banaras Hindu University (January 23, 2013).
48. Delivered an invited talk on P-use in agriculture in a workshop organized SCON in IARI Delhi (January 17-18, 2013).
49. Delivered an invited talk on Algal bloom in the National Conference organized by Lucknow University (February 2-4, 2012).
50. Delivered an invited talk on Ecological Modeling in the National Conference organized by ISMMACS at BGI Kanpur (July 7-9, 2011).
51. Delivered an invited talk on Mathematical Modeling of Unemployment in 11-the international conference (CONIAPS-XI) organized at the Institute of Interdisciplinary Studies, University of Allahabad, Allahabad (February 20 – 22, 2010).
52. Delivered invited lectures in National workshop on Mathematical Modeling organized by Centre for Mathematical Sciences, Banasthali University, Rajasthan (15-19, December 2009).
53. Delivered many invited lectures in basic and advanced training programs conducted by the Department of Science and Technology for graduate students in Kanpur and BHU.
54. Delivered an invited talk on Artificial rain: Role of aerosols in National Conference on Mathematical Modelling and Simulation, jointly organized by ABV, IIITM, and Jiwaji University, Gwalior (January 9-11, 2009).
55. Delivered an invited talk on Eutrophication and its effects in National conference on scientific and legal challenges of global warming, BND College, Kanpur, U.P. (February 25-26, 2008).
56. Delivered a lecture on Mathematical modeling and analysis of the depletion of dissolved oxygen in eutrophied water bodies affected by organic pollutants in Symposium on Recent Advances in Mathematical Sciences, IIT Kanpur, U.P. (February 16 – 18, 2007).
57. Delivered a lecture on Mathematical modeling and analysis of eutrophication of water bodies caused by nutrients and its control in International Conference on Mathematical Modeling and Computer Simulation, LNMIIT Jaipur (December 12 – 15, 2006).
58. Delivered a lecture on Modeling the combined effect of water pollution and eutrophication on dissolved oxygen in a water body in Symposium on Recent Developments in Biomathematics, IIT Roorkee (March 14, 2005).
59. Delivered a lecture on Modeling the depletion of dissolved oxygen in a water body due to organic pollutants and their effect on survival of species in International Conference on Mathematical Biology, IIT Kanpur (February 19-21, 2004).
60. Delivered a lecture on Nonlinear modeling of Eutrophication of a water body in International Symposium on Nonlinear Analysis and Applications, Science City, Kolkata (January 2-4, 2003).
61. Delivered a lecture on Modelling the depletion of dissolved oxygen in a water body due to discharge of organic pollutants in Mathematical Modelling and Computer Simulation, NAL, Bangalore (November 14-15, 2002).

Reviewer in national/International Journals

- (i) J. Math. Analysis and Application, Elsevier.

- (ii) Ecological Modeling, Elsevier
- (iii) Bulletin of Mathematical Biology, Springer.
- (iv) Modelling Earth Systems and Environment, Springer
- (v) International Journal of Biomathematics, World Scientific.
- (vi) J. Biological Systems, World Scientific.
- (vii) Nonlinear Analysis: Real World Applications, Elsevier.
- (viii) Physica-A, Elsevier.
- (ix) Ecological Complexity, Elsevier.
- (x) Journal of Applied Mathematics and Computing, Springer.
- (xi) Applied Mathematics and Computation, Elsevier.
- (xii) Chaos, Solitons and Fractals, Elsevier.
- (xiii) Mitigation and adaptation strategy for global change, Springer.
- (xiv) Theory in Bioscience, Springer.
- (xv) Water Resources Management, Springer.
- (xvi) Differential Equations and Dynamical Systems, Springer.
- (xvii) Nonlinear Dynamics, Springer.
- (xviii) Mitigation and adaptation strategy for global change, Springer
- (xix) RACSAM - Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales. Serie A. Matemáticas, Springer.
- (xx) Hydrobiologia, Springer
- (xxi) Proc. National Academy of Sciences, India, Springer.
- (xxii) Desalination and Water Treatment, Taylor & Francis.
- (xxiii) Natural Resource Modeling, Willey Blackwell.
- (xxiv) Abstracts and Applied Analysis, Hindawi.
- (xxv) Discrete Dynamics in Nature and Society, Hindawi.
- (xxvi) Nonlinear Analysis: Modelling and Control.
- (xxvii) Journal of Medical Research and Development.
- (xxviii) Journal of Banaras Mathematical Society, BHU, India.
- (xxix) Journal of International Academy of Physical Sciences.
- (xxx) Ganita, Lucknow University.
- (xxxi) Environment Development and Sustainability, Springer..
- (xxxii) The European Physical Journal Plus
- (xxxiii) Scientific Reports

MEMBERSHIP OF PROFESSIONAL SOCIETIES

- (i) Member, Indian Society of Nonlinear Analysts, 2002-03
- (ii) Life Member, Indian Society of Mathematical Modeling and Computer Simulations (ISMMACS)
- (iii) Executive Council Member IAMMS.
- (iv) Life Member, Banaras Mathematical Society, BHU, Varanasi, INDIA.
- (v) Life Member, National Academy of Sciences, Allahabad, INDIA.
- (vi) Life Member, International Academy of Physical Sciences, Allahabad.
- (vii) Adjunct Scientist in Bhabha International Institute of Fundamental Research and Development.
- (viii) Life Member, Bulletin of Calcutta Mathematical Society.
- (ix) Life Member, Indian Mathematical Society.
- (x) Life Member, Biomathematical Society of India.
- (xi) Life Member, Ganita, Lucknow University.
- (xii) Life Member, Indian Science Congress Association.

SUMMER/WINTER SCHOOLS ATTENDED

- (i) Orientation Program Nov. 12 – Dec 08, 2003, Allahabad University Allahabad.
- (ii) Refresher Course on “Linear Algebra and its Applications” Jan. 20 – Feb. 09, 2005, Allahabad University Allahabad.
- (iii) Refresher Course on “Women Studies” Nov. 08 – Nov 28, 2006, Lucknow University Lucknow.
- (iv) Refresher Course on “Analysis and its Applications” Feb. 15 – March 07, 2007, Allahabad University Allahabad.
- (v) UNESCO Regional Training Programme on “Mathematical Modelling of Fluid Flows, Diffusion and Environmental Pollution” March 12 – 24, 2001, IIT Kanpur.

EXTRA-CURRICULAR / CO-CURRICULAR ACTIVITIES

- (i) Student Representative, Department Post Graduate Committee (DPGC), 1993 – 94, Department of Mathematics, IIT Kanpur.
- (ii) U.G. Secretary STAMATICS, 1993 – 94, IIT Kanpur.
- (iii) President, STAMATICS, 1995 – 1996, IIT Kanpur.
- (iv) Held various posts in Academics, Administration, Cultural, and Research activities in Brahmanand College Kanpur.
- (v) Warden, Bhabha Hostel, BHU, Varanasi, 2011 – 12.
- (vi) Administrative warden, Bhabha Hostel, BHU Varanasi, 2012 – 20.
- (vii) Participated in various capacities in Departmental Activities at BHU.
- (viii) Involved as a subject expert in universities, colleges, PGT, TGT, etc.
- (ix) Administrative warden, Bhabha Hostel, BHU Varanasi.
- (x) General Secretary, ISMMACS, IIT Kanpur, 2023 – Till date.


 (A. K. Misra)