

Faculty Profile

1. **Name:** Manotosh Mandal
2. **Designation:** Assistant Professor
4. **Year of Joining:** 2015



5. **Name of the Department:** Mathematics

6. **Address**

- **Permanent Address:** Vill+PO – Taladiha, PS – Pataspur, Dist – Purba Medinipur, PIN - 721144
- **Corresponding Address:** Vill+PO – Taladiha, PS – Pataspur, Dist – Purba Medinipur, PIN -721144

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WEB Page, if any:

7. **Educational Qualifications (Graduation onwards):**

Examination	Name of the University/Institution	Year of Passing	Subject
B.Sc. (Hons)	Ramakrishna Mission Residential College, Narendrapur, CU	2010	Mathematics(Hons), Physics, Chemistry, Eng, Beng, ENVS
M. Sc.	IIT Kharagpur	2012	Mathematics

8. **Research Degree(s):**

Degree	Name of the Degree Awarding Institution	Date of Award	Title
Ph.D.	IEST, Shibpur	20/05/2021	Model based studies on some epidemiological problems: Special emphasis on control strategies

9. **Teaching Experience (in Years):** 9

10. **Specialization/Expertise/Teaching Area:** Geometry, Real Analysis, Metric Spaces, Group Theory, Ring Theory, Linear Algebra, Bio Mathematics, MATLAB

11. **Courses Taught:** Paper I,II,V,VI,VII,VIII; CC1,3,5,7,10,12,13,14; DSE4; MJ-1, MI-1, MDC -1

12. **Present Research Activities, if any:** Mathematical Epidemiology, Mathematical Ecology, Dynamical System

13. **Major/Minor Research Project(s) Undertaken/Completed (during last 5 years):** NIL

14. **Publications and Others:**

A] **Books Published:**

B] Research Papers in International/National Journals:

Google Scholar: <https://scholar.google.co.in/citations?user=FDstyeqAAAAJ&hl=en>

Vidwan: <https://vidwan.inflibnet.ac.in/profile/217528>

1. M. Mandal, Some new Travelling Wave Solutions for the Dissipative Compound Korteweg-de Vries Burgers Equation, Tamralipta Mahavidyalaya Research Review 2, (2017) 116-124.
2. S.K. Nandi, S. Jana, M. Mandal, T. K. Kar, Mathematical Analysis of an Epidemic System in the Presence of Optimal Control and Population Dispersal, Biophysical Reviews and Letters, 13 (1) (2018) 1-17.
3. S.K. Nandi, S. Jana, M. Mandal, T. K. Kar, Analysis of a fuzzy epidemic model with saturated treatment and disease transmission, International Journal of Biomathematics, 11(1) (2018) 1850002 .
4. T. K. Kar, S.K. Nandi, S. Jana, M. Mandal, Stability and bifurcation analysis of an epidemic model with the effect of media, Chaos, Solitons and Fractals, 120, (2019) 188-199.
5. S.K. Nandi, S. Jana, M. Mandal, T. K. Kar, Complex Dynamics and Optimal Treatment of an Epidemic Model with Two Infectious Diseases, Int. J. Appl. Comput. Math 5 (2019) 29.
6. M. Mandal, S Jana, SK Nandi, A Khatua, S Adak and TK Kar, A model based study on the dynamics of COVID-19: Prediction and control, Chaos Solitons and Fractals (Elsevier), 136 (2020) 109889.
7. S. Jana, M. Mandal and T. K. Kar, Population dispersal and optimal control of an SEIR epidemic model, *International Journal of Modelling, Identification and Control*, 34 (4), (2020) 379-395.
8. M. Mandal, S. Jana, S. K. Nandi and T. K. Kar, Analysis of a Fractional-order epidemic model with fear effect and treatment control, Energy, Ecology and Environment 5 (6), (2020) 421-432.
9. M. Mandal, S. Jana, S. Adak, A. Khatua, T. K. Kar, A model-based analysis to predict and control the dynamics of COVID-19, Studies in Systems, Decision and Control, Springer-Verlag, Germany (2020).
10. S. Jana, M. Mandal, S. K. Nandi and T. K. Kar, Analysis of a Fractional-order epidemic model with saturated treatment and disease transmission, International Journal of Modeling, Simulation, and Scientific Computing, 12(01) (2021) 2150004.
11. M. Mandal, S. Jana, S. K. Nandi and T. K. Kar, Complex dynamics of an epidemic system with optimal vaccination and treatment in presence of population dispersal, Discontinuity, Nonlinearity, and Complexity, 10 (3) (2021) 471-497.
12. M. Mandal, S. Jana, S. K. Nandi and T. K. Kar, Effects of biotic Resources on a Predator-Prey Population, Discontinuity, Nonlinearity, and Complexity, 10 (3) (2021) 499-522.
13. M. Mandal, S. Jana, U. K. Pahari and T. K. Kar, Optimal Control and Stability Analysis of Malaria disease: A model Based Approach Journal of Applied Nonlinear Dynamics, Journal of Applied Nonlinear Dynamics, 10 (4), (2021) 791-806.
14. M. Mandal, S. Jana, S. K. Nandi and T. K. Kar, Modeling and analysis of a fractional-order prey-predator system incorporating harvesting, Modeling Earth Systems and Environment 7 (2), (2021) 1159-1176.
15. M. Mandal, S Jana, A Khatua and TK Kar, Modelling and control of COVID-19: A short term forecasting in the context of India, Chaos: An Interdisciplinary Journal of Nonlinear Science 30 (11), (2021) 113119.
16. M. Mandal, S. Jana, S. Majee, T. K. Kar, Forecasting the Pandemic COVID-19 in India: A Mathematical Approach, Journal of Applied Nonlinear Dynamics, 11(3), (2022) 549-571.
17. S Jana, A Khatua, **M Mandal**, TK Kar, Dynamics of a prey-predator type ecological model in relevance to pest control, International Journal of Modelling and Simulation 42 (6), (2022), 1049-1062.
18. S Jana, A Khatua, TK Kar, **M Mandal**, Time optimal control for an epidemic system with isolation and quadratic treatment, International Journal of Dynamical Systems and Differential Equations, 12 (4) (2022) 361-370.

C] Conference Papers:

a) International Conference:

- 1.

2.

b) National Conference

- 1.
- 2.
- 3.

D] Conference / Symposium/Seminar Attended (during last 5 years)

• **International Level**

Name of The Conference	Organizer, Date, Venue	Financially Supported by

• **National Level**

Name of The Conference	Organizer, Date, Venue	Financially Supported by

E] Invited Lectures Delivered/Paper presentation in Seminars/Webinars: (Title, Name of Seminar, Organizer Date and Venue):

1. *Weierstrass Travelling Wave Solutions for dissipative compound KdV Burgers Equation*. Indian Workshop and Symposium on Modelling Experimentation and Simulation on Complex systems (MESCoS 2015), Aug 05-07, 2015. Haldia Institute of Technology, Haldia, WB , India.
2. *A SEIR epidemic model in optimal vaccination and treatment with Cost-effectiveness Analysis in the presence of population dispersal*. 1st Regional Science & Technology Congress-2016(Presidency Division, WB), Nov 13-14,2016. Dept. of Science and Technology, Govt. of WB in collaboration with National Institute of Technical Teachers' Training and Research, Kolkata.
3. *Complex dynamics of an epidemic model with optimal vaccination and treatment in the presence of population dispersal*. UGC Sponsored 2 day National Seminar on "Advanced level of Mathematical Science", Dept. of Mathematics, Raja N L Khan Womens' College and Chandrakona Vidyasagar Mahavidyalaya, Feb 09-10, 2017, Raja N L Khan Womens' College, Paschim Medinipur- 721101, WB, India.
4. *Effects of Biotic Resources on a Predator-Prey populations*. 2nd Regional Science & Technology Congress-2017 (Southern region), Nov 14-15, 2017. University of Kalyani & Dept. of Higher Education, Science and Technology and Biotechnology, Govt. of WB, University of Kalyani, Kalyani, Nadia- 741235, WB, India.
5. *Impact of Climate change on the Indian Sundarbans Two-Day International Conference on Sundarbans Past, Present, and Future Possibilities (4-5 January 2020)* Dept. of English, Sundarban Hazi Desarat College, Gosaba, WB.
6. *Complex dynamics of an epidemic model with optimal vaccination and treatment in the presence of population dispersal* 2nd InternationalConference on Mathematical Modeling and Computational Methods in Science and Engineering (22-24 January 2020) Ramanujan Centre for Higher Mathematics, Alagappa University, Karaikudi Tamilnadu.
7. *Dynamical Behaviour of a Fractional-order Prey-Predator Model incorporating Harvesting*, 3rd International conference on Engineering Mathematics and computing (5-7 February 2020) Haldia Institute of Technology, Haldia-721657, India.
8. *Stability analysis and optimal control of an epidemic model with population dispersal Two-day international seminar on Mathematics and Computing: Present Perspective (21 February 2020)* Departments of Mathematics and Computer Science, Mahisadal Raj College, Mahishadal, Purba Medinipur India.

9. 5-Day Certificate Program in MATLAB (Scilab) Programming of Numerical Methods, (26 - 30 April, 2022) Pingla Thana Mahavidyalaya. Maligram, Paschim Medinipur.
10. Modelling and optimal control of COVID 19 incorporating population dispersal, International conference on Sustainable Development Goals: Post pandemic challenges before India, Dept of Commerce & Dept of Economics, Tamralipta Mahavidyalaya in Collaboration with the Indian Accounting Association (IAASBB) IQAC, (02 April 2023) Tamluk-721657, India.
11. Mathematical Modelling and Control Strategies for COVID-19 in the Context of Population Dispersal, International Conference on Recent Development on Research (28 June 2023), Department of Mathematics, Tamralipta Mahavidyalaya, Tamluk: Purba Medinipur: West Bengal-721636.

F] Orientation Programme/Refresher Course/Short Term Course Completed:

1. Orientation Programme, Ranchi University, 04.06.2018 - 01.07.2018, UGC – HRDC
2. Refresher Course in Women studies and gender sensitization, Ranchi University, 02.07.2019 - 15.07.2019, UGC – HRDC.
3. Refresher Course in Disaster, Sustainability and SDGs (Subject area: All disciplines), University of North Bengal, 06.06.2024 - 01.07.2024, UGC – HRDC (Malaviya Mission Teacher Training Centre).

G] Articles Published in Magazines:

- 1.
- 2.
- 3.

15. Awards and Recognitions, if any: Ph.D. (20/05/2021)

16. Membership of Reputed Bodies/Organizations including Professional Associations:

17. Significant Information, if any: