Faculty Profile

1. **Name:**   Manotosh Mandal

2. **Designation:**   Assistant Professor

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

4. **E-mail ID:** manotosh@tmv.ac.in

5. **WEB Page**, if any:

6. **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

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

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

8. **Teaching Experience (in Years):** 6

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

10. **Courses Taught:** Paper I,II,V,VI,VII,VIII; CC1,3,5,7,10,12,13,14; DSE4

11. **Present Research Activities, if any:** Mathematical epidemiology, Mathematical Ecology, Dynamical system

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

13. **Publications and Others:**
    A]   Books Published:
    B] Research Papers in International/National Journals:

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

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. S. Jana, A Khatua, M. Mandal and and TK Kar, Time optimal control for an epidemic system with isolation and quadratic treatment, International Journal of Dynamical Systems and Differential Equations, (2021).
17. M. Mandal, S. Jana, S. Majee, T. K. Kar, Forecasting the Pandemic COVID-19 in India: A Mathematical Approach, Journal of Applied Nonlinear Dynamics, (2021).

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
Recent developments in mathematics and its applications	Sep 26-27,2016, Ramakrishna mission Vidyamandira	UGC
Role of public library in archiving the cultural heritage of bengal	Jan 09-10, 2018, Tamralipta Mahavidyalaya	RRRIF
The recent advances in mathematics	Feb 09,2018, Pingla Thana Mahavidyalaya	Pingla Thana Mahavidyalaya
Object oriented programming in c++ and matlab	Aug 01-05,2018, Raja N L Khan Womens' college	UGC (CPE)
One day state level workshop on cas for college and university teachers by wbcuta	July 07,2018, Nimtouri ABTA hall	WBCUTA
One day symposium on cbcs ug syllabus of mathematics	Aug 30,2018, Vidyasagar University	VU
□□□□□□□□□□□ □□□□□□□□□□□□ □□□□□□□ □□□□□□□□□□□ (the current relevance of vidyasagar's educational thought)	Aug 31,2019, Tamluk	WBCUTA
National education policy-2019	Nov 23,2109, Jadavpur University	JU,WBCUTA

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   Departments of Mathematics and Computer Science, Mahisadal Raj College, Mahishadal, Purba Medinipur India.

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.

G] Articles Published in Magazines:

1.
2.
3.

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

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

16. Significant Information, if any: