Dr. Nabendu Sen

Present Designation: **Professor**
Department of Mathematics

Assam University, Silchar (A Central University)

Phone: 6003499227/9435473200
E-mail: nsen08@yahoo.com,nabendu.sen@aus.ac.in

Research Interest: Operations Research, Mathematical Modelling, Multi-objective Optimization (precise and imprecise), Fuzzy Optimization and Inventory control, Integral Equations

List of Publications in Peer-Reviewed/Scopus-indexed/Web of Science Journal

1. **Nabendu Sen** and Tanmoy Som, Mathematical Modeling of Transportation Related Problem of South Assam with an Approach to its Optimal Solution, *Assam Statistical Review*, Vol- 22(1),59-67,2008.

2. **Nabendu Sen** and Tanmoy Som, Mathematical Modeling of Transportation Related Fare Minimization Problem of South Assam and an Approach to its Optimal Solution, *Indian Journal of Transportation Management,* Vol. 32(3),201-208,2008.

3. **Nabendu Sen** and Tanmoy Som, Mathematical Modeling of Transportation Related Problem of Southern Assam and its Optimal Solution, *Assam University Journal of Science and Technology*, Vol-3(1),22-27,2008.

4. **Nabendu Sen** and Tanmoy Som, An Optimal Model for Daily Profit of Transporting Agency in South Assam, *Journal of Tripura Mathematical Society*, Vol, 11,42-48,2009.

5. **Nabendu Sen**, Banashri Sinha and Tanmoy Som, A Study of Transportation Problem for Essential Item of Southern Part of North-Eastern Region of India as an OR Model and Use of Object Oriented Programming, *International Journal of Computer science and Network Security*, Vol- 10(4),78-86,2010.

6. Banashri Sinha and **Nabendu Sen**, Goal Programming Approach to Tea Industry of Barak Valley of Assam, *Applied Mathematical Sciences*, Vol- 5(29),1409-1419,2011.

7. **Nabendu Sen**, Banashri Sinha and Tanmoy Som, A Mathematical Approach to Transportation Related Data of South Assam for the Optimal Age of Replacement of Vehicle and Expenditure Minimization, *African Journal of Mathematics and Computer Science Research*, Vol- 4(1),6-17,2011.

8. **Nabendu Sen**, A Note on Goal Programming Approach to Tea Industry of Barak Valley of Assam.*American Journal of Mathematics and Statistics***,** Vol- 2(5),108-113,2012.

9. **Nabendu Sen** and Manish Nandi, A Goal Programming Approach to Rubber –Tea Intercropping Management in Tripura, *Asian Journal of Management Science Research*, Vol- 3(1),178-183,2012.

10. **Nabendu Sen** and Manish Nandi, Goal Programming, its Application in Management Sectors-Special Attention into Plantation Management: A Review, *International Journal of Scientific and Research Publication*,Vol-2(9),1-6,2012.

11. **Nabendu Sen** and Manish Nandi, A Goal Programming Formulation in Nutrient Management of Fertilizer used for Rubber Plantation in Tripura, *International Journal of Research in Commerce, IT and Management,* Vol- 2(9),142-1144,2012.

12. **Nabendu Sen** and Manish Nandi, An Optimal Model Using Goal Programming for Rubber Wood Door Manufacturing Factory in Tripura, *Mathematical Theory and Modeling*, Vol- 2(8),31-36,2012.

13. **Nabendu Sen** and Manish Nandi,A Goal Programming Approach to Rubber Plantation Planning in Tripura, *Applied Mathematical Sciences*, Vol- 6(124)6171-6179,2012.

14. **Nabendu Sen** and Manish Nandi, A Study on Transhipment Model for Export of Rubber from Tripura to Bangladesh, *International Organisation of Scientific Researchs- Journal of Mathematics,* Vol- 6(1),31-34,2013.

15. **Nabendu Sen**, Goal Programming Model for Personnel Management in Tea Industry**,** *American Journal of Mathematics and Statistics,* Vol- 3(6),312-314,2013.

16. **Nabendu Sen** and Manish Nandi, An Application of Goal Programming Techniques in Rubber Plantation Planning: A Comparative Study, *American Journal of Mathematics and Statistics*, Vol-3(6),394-399,2013.

17. **Nabendu Sen**, Laxminayaran Sahoo and Asoke Bhunai, An Application of Integer Linear Programming in Tea Industry of Barak Valley of Assam,India under Crips and Fuzzy environments, *Journal of Information and Computing Science,* Vol-9(2),132-140,2014.

18. Asoke Kumar Bhunia, Amiya Biswas and **Nabendu Sen,** An application of extended elitist non-dominated sorting Genetic Algorithm in multi-objective linear programming problem of tea industry with interval objectives, *Uncertain Supply Chain Management*, Vol- 2(5),245-256,2014.

19. **Nabendu Sen** and Sanjukta Malakar, A Fuzzy Inventory Model with Shortages Using Different Fuzzy Numbers, *American Journal of Mathematics and Statistics*, Vol-5(5),238- 248,2015

20. **Nabendu Sen**., Biman Kanti Nath, and Sumit Saha, A Fuzzy Inventory Model for Deteriorating Items Based on Different Defuzzification Techniques, *American Journal of Mathematics and Statistics*, Vol-6(3),128-137,2016

21. **Nabendu Sen** and Biman Kanti Nath, A NOTE ON ECONOMIC LOT-SIZE MODEL WITH REPLENISHMENT WITHOUT SHORTAGE WITH FUZZY PARAMETERS, Asian Journal of Mathematics and Computer Research, Vol-11(1),1-13,2016

22. Sumit Saha and **Nabendu Sen**, A Study on Inventory Model with Negative Exponential Demand and Probabilistic Deterioration, *Uncertain Supply Chain Management*,Vol-5(),77- 88,2017.

23. **Nabendu Sen**, Sumit Saha and Biman Kanti Nath, Inventory Model with Price Dependent Demand Under Permissible Delay in Payment, Asian Journal of Mathematics and Computer Research, Vol-20(1),1-12,2017.

24. **Nabendu Sen** and Sumit Saha, An inventory model for deteriorating items with time-dependent holding cost and shortages under permissible delay in payment, *Int. J. Procurement Management,Vol-11(4),518-531,2018*

25. Sumit Saha**, Nabendu Sen** and Biman Kanti Nath, Inventory Model with Ramp-type Demand and Price Discount on Back Order for Deteriorating Items under Partial Backlogging*,* ***Applications and Applied Mathematics****, Vol-13(1),472-483,2018.*

26. Sumit Saha and **Nabendu Sen,** An inventory model for deteriorating items with time and price-dependent demand and shortages under the effect of inflation, *Int. J Mathematics in Operations*

Research, Vol-14(3),377-388,2019.

27. **Nabendu Sen** and Sumit Saha, Inventory Model for Deteriorating Items with Negative Exponential Demand, Probabilistic Deterioration and Fuzzy Lead Time under Partial Back Logging, *Operations Research and Decisions, Vol . 30(3),97-112,2020.*

28. Biman Kanti Nath and **Nabendu Sen,** A completely backlogged two-warehouse inventory model for non-instantaneous deteriorating items with time and selling price dependent demand,*International Journal of Applied and Computational Mathematics, Vol.7,2021*

29. Nabajyoti Bhattacharjee and **Nabendu Sen,** Non-Separable Raw Material Inventory Model with Time Dependent Deterioration: Hybrid Algorithm,International Journal of Applied Mathematics and Statistics,Vol. 60(1),68-80,2021.

30. Biman Kanti Nath and **Nabendu Sen,** A partially backlogged two-warehouse EOQ model with non-instantaneous deteriorating items, price and time dependent demand and preservation technology using interval number, **IJMOR**,Vol. 20(2),149-181,2021.

31. Nabajyoti Bhattacharjee and **Nabendu Sen**, A Multi-Stage Model to Study Inventory Management of Raw Materials with Shortages**, IJMOR,** Vol.20(2),207-238,2021**.**

32. Biman Kanti Nath and **Nabendu Sen**, An inventory model for deteriorating items with imperfect quality under advance payment policy, **Operations research and Decisions,Vol.31(3),109-135,2021.**

33. Nabajyoti Bhattacharjee and **Nabendu Sen,** An Inventory Model to Study the Effect of the Probabilistic Rate of Carbon Emission on the Profit Earned by a Supplier, **Operations research and Decisions,Vol.31(4),5-33,2021.**

34. Biman Kanti Nath and **Nabendu Sen,** A partially backlogged inventory model for time deteriorating items using penalty cost and time dependent holding cost, **Operations Research Forum**, Vol.3(62),2022.

35. Nabajyoti Bhattacharjee and **Nabendu Sen,** A Multi-Item Sustainable Production Inventory Constrained Model to Study and Analyze the Effective Green Investment and Replenishment Quantity , **IJMOR,Vol.22(4),528-554,2022.**

36. Nabajyoti Bhattacharjee and **Nabendu Sen,** A sustainable production inventory model for profit maximization under optimum raw material input rate during production, **Opsearch, Vol.59(2),667-693,2022.**

37. Biman Kanti Nath and **Nabendu Sen,** A fuzzy decision making inventory model for deteriorating items under discounted partial advance-partial delayed payment strategy, **"Real Life Applications of Multiple Criteria Decision-Making Techniques in Fuzzy Domain"** published by Springer Nature Singapore Pte Ltd,2022.

38. Nabajyoti Bhattacharjee, Nabendu Sen, Dinesh K Sharma, Decarbonisation Through Production of Rhino Bricks From the Waste Plastics: EPQ Model, "**Data Analytics and Artificial Intelligence for Inventory and Supply Chain Management"** published by Springer Nature Singapore Pte Ltd,2022.

39. Nabajyoti Bhattacharjee, Biman Kanti Nath, **Nabendu Sen**, Sanjukta Malakar and Chandra K Jaggi, A production inventory model to study the supply chain of agri-product for a time reliant population,**IJACM,Vol.8(3),2022.**

40. Nabajyoti Bhattacharjee, **Nabendu Sen** and Sanjukta Malakar, A Sustainable Retailer's Inventory Model to Study the Partial Replacement for Deteriorating Items with Variable Shelf-life ,**Opsearch** ,Vol.59(4),1502-1521,2022.

41. Sanjukta Malakar and **Nabendu Sen,** An Inventory Model to Study Partial Replacement Policy and Finite Shelf Life for Deteriorating Items with Carbon Tax, **IJMOR,Vol.24(2),286-299,2023.**

42. Nabajyoti Bhattacharjee and **Nabendu Sen,** A Sustainable Inventory Model to Study the Mixing and Bottling Plant of Single Item for Cost Minimization ,**Operations Research Forum,Vol.4(77),2023.**

43. Nabajyoti Bhattacharjee and **Nabendu Sen,** A Demand and Supply Chain Inventory Management with Probabilistic and Time Dependent Price , **IJOR,Vol.47(1),33-50,2023.**

44. Biman Kanti Nath , **Nabendu Sen** and Nabajyoti Bhattacharjee, A Three-Warehouse Inventory Model for Deteriorating Items to Study the Effective Preservation Cost and Green Investment Under Partial Substitution,**IJACM,Vol.10(4),2024.**

45. Nabajyoti Bhattacharjee,Biman Kanti Nath,Sanjukta Malakar,**Nabendu Sen,**Nita H. Shah and Mandeep Mittal, An EPQ model to study the parallel production of two items in multistage production system,**Int J System Assur Eng Manag, Vol.15(),2024.**

46**.Nabendu Sen,** Nabajyoti Bhattacharjee, Chandra K Jaggi and P.K Nath, Botlling Scheduling and Inventory Control to Study the Effective Green Investment and Preservation Cost Under Single Filling Station (Under Review in IJSAE)

47.Nabendu Sen and Prabal Das , A multi-phase sustainable production inventory model for seasonal products with green investment and eco-friendly packaging, **Process Integration and Optimization for Sustainability, 9**, 537–552 ,2025

48.Nabendu Sen and Prabal Das ,A Sustainable Production Inventory Model for Pottery Production: Reducing Plastic Usage in Tea Stalls, ***Int. J. Appl. Comput. Math*** **11**, 81 (2025)

49.Nabendu Sen and Prabal Das, A Multi-Objective EPQ Model for PET Bottle-to-Bottle Recycling: Balancing Demand Responsiveness, Green Investment, and NSGA-II Optimization (Under Review)

50.Nabendu Sen and Prabal Das, A Sustainable Production Inventory Model for Profit Maximization in Tea Estates With Green Investment (Under Review)

51.Nabendu Sen and Prabal Das, A Multi-Stage Energy and Emission Model for Sustainable Electric Vehicle Battery Production with Green Investment and Cap-and-Trade.(Under Review)

52.Nabendu Sen and Prabal Das, Stock-Based Inventory Model: A Novel Approach to Pricing and Profit Optimization.(Under Review)

53.Nabendu Sen and Nabajyoti Bhattacharjee, An Inventory Model to Study the Effect of Carbon Emission and Shelf-life for Perishable Product with Price-, Stock-, Emission Dependent Demand(Under Review-OPSEARCH)

54. **Nabendu Sen**, Archita Mahanta, Prabal Das and P.K Nath, A Comparative Analysis of Soham and Laplace Transforms in Solving Volterra Integral Equations, **int. j. of mathematical modelling and numerical optimisation ,Vol.15(1).64-88,2025**

55. Nabajyoti Bhattacharjee, **Nabendu Sen** and Laxminarayan Sahoo, Root Hair Algorithm: A Swarm Intelligence Algorithm, Decision Making Under Uncertainty Via Optimization, "**Modelling, and Analysis ,2025**

56. Sanjukta Malakar and **Nabendu Sen,** Inventory Model with Negative Exponential Demand and Instantaneous Replenishment Under Preservation Technology, Decision Making Under Uncertainty Via Optimization, Modelling, and Analysis ,2025

57. Nabajyoti Bhattacharjee, **Nabendu Sen**, Prodosh Kiran Nath and Laxminarayan Sahoo, Imperfect

Production Inventory Under a Multi-Production Cycle for Non-deteriorating Items with Carbon Tax and Green Investment, Decision Making Under Uncertainty Via Optimization, Modelling, and Analysis ,2025

58. **Nabendu Sen**,Lisa Bora and Prabal Das, A Sustainable Production-Inventory Model for the Fashion Industry: Integrating Advance Payment, Green Investment, and Emission Reduction Strategies(under review).

59. **Nabendu Sen**, Sanjukta Malakar and Nabajyoti Bhattacharjee, Inventory Model with Price-, Stock- and Emission Dependent Demand under the Controllable Carbon Emission and Trade Credit Period.(Under Review).

60. Biman Kanti Nath, Nabajyoti Bhattacharjee, **Nabendu Sen** and Pradosh Kiran Nath, Inventory model for deteriorating items with ramp-type demand under advance payment policy.(Under Review)

61. Prabal Das and **Nabendu Sen**, Toward Net-Zero Manufacturing: A Dynamic Production Inventory Model Integrating Renewable Energy and Green Investment.(Under Review)

62. Lisa Bora and Nabendu Sen, A Sustainable Inventory Model with Advance Payment, Learning Curve, and Performance-Based Carbon Refunds (Under Review)

63. Prabal Das and Nabendu Sen, A Recession-Integrated Production-Inventory Model with Advance Payment, Discount, and Cashback Strategies: A Differential Evolution Approach (Under Review)

64. Prabal Das and Nabendu Sen, A Circular Inventory Model for Perishable E-Commerce Goods with Resale-Triggered Refunds and Carbon Credit Incentives (Under Review)

65. Prabal Das and Nabendu Sen, A Digital Twin-Enabled Lot-Based EPQ Model with Emission Refund Incentives for Sustainable Smart Manufacturing(Under Review)

66. Prabal Das and Nabendu Sen, A Multi-Objective Optimization Framework for Sustainable Wastewater Resource Recovery: Cost, Emission, and Profit Trade-offs using NSGA-II (Under Review)

67. Prabal Das and Nabendu Sen, Zone-Wise Adaptive Multi-Resource Optimization for Heatwave Resilience: A Public Health Planning Framework for Indian Cities (Under Review)

68. Lisa Bora, Nabendu Sen and Prabal Das, Trust-Based Dynamic Payment Contracts in Supply Chains: A Multi-Phase Inventory Optimization Approach (Under Review)

69. Prabal Das, **Nabendu Sen,** and Ali Akbar Shaikh, A Sustainable Green Production-Inventory Model with Dual-Channel Demand, Warranty-Driven Remanufacturing and AI-Based Investment under Blockchain-Enabled Carbon Credit Trading(Under Review)

70. Biman Kanti Nath, Nabajyoti Bhattacharjee_, **Nabendu Sen** and Pradosh Kiran Nath, An EOQ Model with Ramp-Type Demand and Probabilistic Deterioration under a Price Discount Policy on Back orders (Under Review)

71. Prabal Das and Nabendu Sen, From Waste to Wealth: Fuzzy Optimization and Zero-Waste Resource Allocation under Uncertainty for Sustainable Bagasse-Based Tableware Manufacturing(Under Review)

Book Authored /Edited

Type	Title of the book	Publisher	Authored/Edited
Conference Proceeding	Trends in Mathematical Science Research	Department of Mathematics, AUS	One of the editors
Edited Book	Uncertainty, Optimization, and Machine Learning with Applications	Springer	One of the editors

Invited Lecture:

1. Delivered an invited lecture on "Sustainable Inventory Optimization: A Green Approach for Cost and Emission Reduction" in the International Conference on Mathematics and Application-2025(ICMA-2025), March 06-07, 2025, organized by the Department of Mathematics, The University of Burdwan.
2. Delivered an invited lecture on "Introduction & Application of MATLAB/OCTAVE in Research" in the two-day State Level workshop on Application of MATLAB/OCTAVE and SPSS/PSPP, organized by Research and Development Cell, IQAC, Lanka Mahavidyalaya,24th-25th June,2019.
3.

Number of PhD Supervised: **03(awarded) +03(registered) on going**
Number of M.Phil Supervised: 01
Number of M.Sc. Projects Supervised=20(+)

Field of Specialization: Operations Research, Mathematical Modelling, Multi-Objective Optimization, Fuzzy Optimization.

Member of Academic Bodies:

1. Member of BPGS(Mathematics), Assam University, Silchar
2. Member of the School Board (Physical Sciences), Assam University, Silchar
3. Member of BRS (Science) Assam University
4. Member of Academic Council, Assam University
5. Life Member of Allahabad Mathematical Society.
6. Editorial Board Member of the American Journal of Mathematics and Statistics.
7. IAENG Society of Operations Research
8. Life Member of Operations Research Society of India (ORSI) &National Council member of ORSI .
9. Member of Editorial Review Board on Engineering and Applied Sciences, World Academy of Science, Engineering and Technology
10. Member of G.B, Lala Rural College.
11. Members of Selection Committees in different institutes.

Biography:

M.Sc. and Ph.D. from Assam University, Silchar under the supervision of Prof Tanmoy Som, who is a (Retired) Professor in the Dept. of Applied Mathematics, IIT(BHU), Varanasi-221005. Prior to joining the Department of Mathematics, AUS, I served as a lecturer of Mathematics in S.D. Jain Girls' College, Dimapur, Nagaland, and also taught Mathematics in the School of Technology, Assam University, Silchar, and in the Dept. of Computer Science, Assam University, Silchar.

Additional Information

- Reviewer of national and international Journals.
- Conversant with different software like MATLAB, MAPLE, MATHEMATICA, and LINGO.

Scopus ID: 42161953200

Orcid ID: https://orcid.org/0000-0001-7900-161X

Vidwan-ID: 107939

Google Scholar ID: http://scholar.google.co.in/citations?user=r8115b0AAAAJ

Researcher ID: Nabendu.sen