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Area of work: Fuzzy, Intuitionistic Fuzzy, Neutrosophic and Soft Set Theory; Fuzzy and Intuitionistic Fuzzy Linear and Non-Linear Equations, Fuzzy Differential Equations and Integral Equations; Fuzzy, Intuitionistic Fuzzy and Neutrosophic Optimization; Single and Multi-objective Linear and Non-Linear Programming, Geometric Programming, Goal Programming, Stochastic Programming, Entropy Optimization; Production and Inventory Systems, Transportation, Reliability and Structural Optimization.

**Publication in national/international journal:**

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### **Details of Ph.D. students Guided**

1. **Sanhita Banerjee**, A Study on Algebraic Equations and Linear Systems in Imprecise Environment, 2016.
2. **Md. Jalilul Islam Mondal**, Studies on fuzzy, intuitionistic fuzzy and neutrosophic soft matrix theories and their applications in decision making problems, 2016.
3. **Samir Dey**, Studies on Mathematical Programming Methods For Structure with Imprecise Parameters, 2016.
4. **Ashok Kumar Shaw**, Reliability and Maintenance System in Fuzzy Environment, 2015.
5. **Payel Ghosh**, Goal Geometric Programming Problem ( $G^2P^2$ ) in imprecise environment, 2015.
6. **Dipak Kumar Jana**, On some inventory problems through different soft computing technique, 2014.
7. **Sankar Prasad Mondal**, First and Second Order Differential Equations with application in Imprecise Environments, 2014.
8. **Soumen Banerjee**, Some Stochastic Inventory Models in Fuzzy Environment, 2012.
9. **Surapati Pramanik**, Fuzzy and Intuitionistic Fuzzy Goal Programming, 2010.
10. **Bablu Jana**, Fuzzy and Intuitionistic Fuzzy Linear Programming with Application in Some Transportation Models, 2010.
11. **Ghanshaym Singha Mahapatra**, Reliability Optimization in Fuzzy and Intuitionistic Fuzzy Environment, 2009.
12. **Bablu Samanta**, Studies on Optimization Methods in Fuzzy Environments, 2009.
13. **Puspen Jana**, Applications of Optimization Techniques in Information and Fuzzy System, 2009.
14. **Nirmal Kumar Mandal**, Some Inventory models in Different Environments: via Geometric Programming Approach, 2008.
15. **Sahidul Islam**, Some Transportation and Inventory Problems in Information and Fuzzy Systems, 2008.

## **Book/Book Chapters:**

1. D. K. Jana, T. K. Roy: A Textbook of Engineering Operations Research, By Chhaya Prakashani Pvt. Ltd, ISBN : 13.978-81-906486-6-0 Publication Year : 2009.
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## **Book Chapters**

- 3a) T.K. Roy: Multi-Objective Geometric Programming and its Application in an Inventory Model in Fuzzy Multi-Criteria Decision Making; edited by Cengiz Kahraman; Springer; 2008; pp:539-566.
- 3b) T. K. Roy: Fuzzy Geometric Programming with Numerical Examples in Fuzzy Multi-Criteria Decision Making; edited by Cengiz Kahraman; Springer; 2008; pp.567-587.

## **Research Projects:**

1. *CSIR project*: Reliability Optimization in Fuzzy and Information System, vide Ref. No. 25(151)/06 /EMR-II, dated 11.09.2006.
2. *UGC project*: Application of Optimization Techniques in Information and Fuzzy Systems, vide Ref. No. F. 8-2/2002(SR-1), dated 01.03.2002

## List of ongoing students for Ph.D. degree:

1. Totan Garai (RGNF)
2. Subhankar Biswas
3. Dipankar Chakraborty
4. Asim Kumar Das
5. Chaitali Kar
6. Rumi Roy
7. Sriparna Choudhuri (RGNF)
8. Sovan Bera
9. Prokash Mondal

### **Details of Master students Guided and Ongoing**

1. Kazi Abdul Halim, The single and multi-objective fuzzy nonlinear programming and its applications in inventory models, 2003.

2. AnindyaSundar Mukherjee, The single and multi objective fuzzy linear programming and its applications in transportation models, 2003.
3. PranabeshDebnath, Single and multi-objective geometric programming and their application in deterministic inventory model, 2004.
4. KanadpriyaBasu, Fuzzy optimization using t-norms and its application in entropy optimization models, 2004.
5. IpsitaDauttaMajumder, Fuzzy linear equations and fuzzy linear ordinary differential equations with applications, 2004.
6. Md. Abdul Hakim Mondal, Linear goal programming and linear fuzzy goal programming with application on nutrition problem, 2005.
7. Tapas Kumar Manna, Fuzzy uncertainty and its application on old age people 's problem, 2005.
8. Saktipada Pal, Inventory models of defective items with discounts, 2005.
9. Md. Ruhul Amin, Fuzzy equations and their applications, 2006.
10. MrityunjoyBetal, Stochastic and fuzzy stochastic inventory models, 2006.
11. AmitavaKundu, Fuzzy quadratic programming and its application in portfolio analysis, 2007.
12. PayelGhosh, Intuitionistic fuzzy goal programming and bilevel programming problem, 2009.
13. MousumiSantra, Congruence and its application on test of Divisibility, 2011.
14. Arijita Das, Interval analysis and interval geometric programming with application, 2011.
15. RahimaKhatun, Some elementary and partition based works of Ramanujan, 2012.
16. RachitaDhara, Some elementary works, Bernoulli numbers and continued fraction of SrinivasaRamanujan, 2012.
17. SuparnaRoychowdhury, Some arithmetical calculations by mental method based on Vedic Mathematics, 2013.
18. Sangita Das, Intuitionistic fuzzy Laplace transform and Intuitionistic fuzzy differential equation with application on electric circuit theory, 2014.
19. BappaMondal, Some fuzzy and intuitionistic fuzzy classical inventory models based on geometric programming technique, 2014.
20. SuklalTudu, System of fuzzy differential equations with applications, 2014.
21. Sujata Bhattacharya, Fuzzy geometric programming technique and its application on gravel box design problem, 2015.
22. ChandrimaKayal, Fuzzy difference equations with several applications, 2015.
23. Bhagyashree Chandra, Behavior of Some Ecological Models in Fuzzy Environment, 2016.
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