

Dr. Apu Kumar Saha

Associate Professor
Department of Mathematics
National Institute of Technology Agartala
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Education

- PhD in Science from Department of Mathematics, National Institute of Technology Agartala, 2012
- M.Sc. in Mathematics, Tripura University, Gold Medalist, 1998

Research Area

- Optimization Techniques, Multi Criteria Decision Making, Computational Fluid Dynamics, Fuzzy Topological Space

Research and Project Guidance

- Ph. D Candidates: Awarded = 11, Submitted = 01 and Ongoing = 04
- PG Candidates: Completed = 17, Ongoing = 2
- UG Candidates: Completed = 12, Ongoing = 2

Details of Ph. D. Students

1. Shubhro Chakraborty

Title of the Thesis: *Application of TiO₂ Nanoparticles in Optoelectronics and Bio-Medical field*

Awarded on 2017 (Joint Supervisor: Dr. Aniruddha Mondal)

2. Sukanta Nama

Title of the Thesis: *Some Modified and Hybrid Global Optimization Techniques with Applications*

Awarded on 2018 (Joint Supervisor: Dr. Sima Ghosh)

3. Sudip Debnath

Title of the Thesis: *On Transport Phenomena in Casson Fluid*

Awarded on 2018

4. Ashis Kumar Roy

Title of the Thesis: *Transport of Reactive Solute in Newtonian and non-Newtonian Fluids*

Awarded on 2019

5. Priyanka Majumder

Title of the Thesis: *Impact of Climate Change on Techno-Economical Performance of Small-Scale Hydro Power Plant with the help of New Multilevel Cognitive Decision Framework*

Awarded on 2020 (Joint Supervisor: Dr. Mrinmoy Majumder)

6. Suman Debnath

Title of the Thesis: *CFD Analysis of Fluid Flow through Different types of Pipe and Piping Components*

Awarded on 2020 (Joint Supervisor: Dr. Tarun K Bandyopadhyay)

7. Sudipa Choudhury

Title of the Thesis: *Development of New MCDM-PNN Methods for Location Selection and Socio-Economic Performance of Surface Water Treatment Plants*

Awarded on 2021 (Joint Supervisor: Dr. Mrinmoy Majumder)

8. Jayanta Pal

Title of the Thesis: *Cost Efficient Logic Synthesis in QCA Embedding Underlying Clocking Scheme*

Awarded on 2022 (Joint Supervisor: Dr. M. K. Debbarma)

9. Sushmita Sharma

Title of the Thesis: *An Extensive Study on Butterfly Optimization Algorithm with Applications*

Awarded on 2022 (Joint Supervisor: Dr. Susmita Roy))

10. Dhrubajyoti Bhowmik

Title of the Thesis: *A Study on Efficient Cell Layout in QCA under Regular Clocking*

Awarded on 2022 (Joint Supervisor: Dr. Munesh Chanda)

11. Sanjoy Chakraborty

Title of the Thesis: *An Extensive Investigation on Whale Optimization Algorithm for Global Optimization Problems*

Awarded on 2023 (Joint Supervisor: Dr. Ashim Saha)

12. Saroj Kumar Sahoo

Title of the Thesis: *An Extensive Study on Single and Multi-Objective Moth-Flame Optimization Algorithm*

Submitted on 2023.

Details of Ongoing Ph. D. Students

- | | |
|------------------------------|-------------|
| 1. Subhrajyoti Bhattacharyya | (Full Time) |
| 2. Jyotisman Bhagwati | (Full Time) |
| 3. Raili Basu | (Full Time) |
| 4. Sudipta Biswas | (Part Time) |

Publication Details

- | | |
|-----------------------------|-----|
| ▪ International Journals: | 136 |
| ▪ Books: | 02 |
| ▪ Book Chapters: | 18 |
| ▪ International Conference: | 58 |
| ▪ National Conference: | 13 |

List of Publications

➤ International Journals

1. O. J. Agushaka, A. E. Ezugwu, **A. K. Saha**, J. Pal, L. Abualigah, S. Mirjalili “Greater cane rat algorithm (GCRA): A nature-inspired metaheuristic for optimization problems”, *Heliyon*, (2024). <https://doi.org/10.1016/j.heliyon.2024.e31629>. **IF: 4.000.**
2. S. Sharma, **A. K. Saha**, S. Chakraborty, S. Deb, S. K. Sahoo “Quadratic and Lagrange interpolation-based butterfly optimization algorithm for numerical optimization and engineering design problem”, *Soft Computing*, (2024). Accepted. **IF: 4.100.**
3. S. Debbarma, S. Chakraborty, **A. K. Saha**, “Information Aggregation Based Group Decision Making under Fermatean Fuzzy Environment for Spent Lithium-ion Battery Recycling Techniques Evaluation”, *International Journal of Hydrogen Energy*, 65, 891-904 (2024). <https://doi.org/10.1016/j.ijhydene.2024.03.350>. **IF: 7.200.**
4. M. K. Sharma, S. Chaudhary, A. K. Malik, S. Kumar, **A. K. Saha**, “A Three-dimensional Probabilistic Fermatean Neutrosophic Hesitant Green Transportation System for the Sustainable Management of

- Biomedical Waste”, *Engineering Applications of Artificial Intelligence*, 133, 108383 (2024). <https://doi.org/10.1016/j.engappai.2024.108383> IF: 8.000.
5. J. Goswami, K. K. Prajapati, A. Saha, **A. K. Saha**, “Parameter-efficient fine-tuning large language model approach for hospital discharge paper summarization”, *Applied Soft Computing*, 157, 111531 (2024). <https://doi.org/10.1016/j.asoc.2024.111531> IF: 8.700.
 6. R. Mahajan, S. Choudhury, P. Wang, **A. K. Saha**, “A novel integrated LOPCOW and AHP under spherical fuzzy environment with application to landfill site selection”, *Soft Computing*, (2024). In Press. IF: 4.100.
 7. S. K. Sahoo, **A. K. Saha**, E. H. Houssein, M. Premkumar, S. Reang, M. M. Emam, “An arithmetic and geometric mean-based multi-objective moth-flame optimization algorithm”, *Cluster Computing* (2024). <https://doi.org/10.1007/s10586-024-04301-0> IF: 4.400.
 8. S. Debbarma, S. Chakraborty, **A. K. Saha**, “Health Care Waste Recycling Concerning Circular Economy- A Fermatean Fuzzy Aggregation Operator Based SWARA-MABAC Approach”, *Environment, Development and Sustainability*, (2024). In Press. IF: 4.900.
 9. M. K. Sharma, S. Chaudhary, A. K. Malik, **A. K. Saha**, “A Green 4-Dimensional Multi Objective Transportation System for Disaster Relief Operations under Time-Sequential Complex Fermatean Framework with Safety Measure”, *Applied Soft Computing*, 151, 111102 (2024). <https://doi.org/10.1016/j.asoc.2023.111102> IF: 8.700.
 10. S. K. Sahoo, M. Premkumar, **A. K. Saha**, E. H. Houssein, S. Wanjari, M. M. Emam, “Multi-objective quasi reflection learning and weight strategy-based moth flame optimization algorithm”, *Neural Computing and Applications*, 36, 4229–4261 (2024). <https://doi.org/10.1007/s00521-023-09234-0> IF: 6.000.
 11. S. Chakraborty, **A. K. Saha**, A. E. Ezugwu, R. Chakraborty, A. Saha, “Horizontal crossover and co-operative hunting-based whale optimization algorithm for feature selection”, *Knowledge-Based Systems*, 282, 111108 (2023). <https://doi.org/10.1016/j.knosys.2023.111108> IF: 8.800.
 12. S. Bhattacharyya, R. Barman, A Singh, **A. K. Saha**, “Parity distribution and divisibility of Mex-related partition functions”, *Research in Number Theory*, 10, 1 (2023). <https://doi.org/10.1007/s40993-023-00487-1>.
 13. S. K. Sahoo, E. H. Houssein, M. Premkumar, **A. K. Saha**, M. M. Emam, “Self-adaptive moth flame optimizer combined with crossover operator and Fibonacci search strategy for COVID-19 CT image segmentation”, *Expert Systems with Applications*, 227, 120367 (2023). <https://doi.org/10.1016/j.eswa.2023.120367> IF: 8.500.
 14. A. Soni, S. Chakraborty, P. K. Das, **A. K. Saha**, “Material selection of sustainable composites by recycling of Waste Plastics and agro-industrial waste for structural applications: A fuzzy group

- decision-making approach”, *Journal of Building Engineering*, 73, 106787 (2023). <https://doi.org/10.1016/j.jobe.2023.106787>. IF: 6.400.
15. S. Nama, A. K. Saha, S. Chakraborty, A. H. Gandomi, L. Abualigah, “Boosting Particle Swarm Optimization by Backtracking Search Algorithm for Optimization Problems”, *Swarm and Evolutionary Computation*, 79, 101304 (2023), <https://doi.org/10.1016/j.swevo.2023.101304>. IF: 10.000.
16. P. Chakraborty, S. Sharma, A. K. Saha, “Convergence Analysis of Butterfly Optimization Algorithm”, *Soft Computing* 27(11), 7245-7257 (2023). <https://doi.org/10.1007/s00500-023-07920-8>. IF: 4.100.
17. S. K. Sahoo, S. Sharma, A. K. Saha, “A Novel Variant of Moth Flame Optimizer for Higher Dimensional Optimization Problems”, *Journal of Bionic Engineering*, 20(5), 2389-2415 (2023). <https://doi.org/10.1007/s42235-023-00357-7>. IF: 4.000.
18. S. Chakraborty, A. K. Saha, “Novel Fermatean Fuzzy Bonferroni Mean aggregation operators for selecting optimal health care waste treatment technology”, *Engineering Applications of Artificial Intelligence*, 119, 105752 (2023). <https://doi.org/10.1016/j.engappai.2022.105752>. IF: 8.000.
19. S. Chakraborty, A. K. Saha, A. Chhabra, “Improving whale optimization algorithm with elite strategy and its application to engineering-design and cloud task scheduling problems”, *Cognitive Computation*, 15, 1497–1525, (2023). <https://doi.org/10.1007/s12559-022-10099-z>. IF: 5.400.
20. S. Chakraborty, A. K. Saha, A. E. Ezugwu, J. O. Agushaka, R. A. Zitar, L. Abualigah, "Differential Evolution and its Applications in Image Processing Problems: A Comprehensive Review" *Archives of Computational Methods in Engineering*, 30, 985–1040 (2023). <https://doi.org/10.1007/s11831-022-09825-5>. IF: 9.700.
21. K. Debnath, P. Debnath, S. Choudhury, A. K. Saha, A. Majumdar, “A framework of Trapezoidal Fuzzy Best-Worst Method in Location Selection for Surface Water Treatment Plant”, *Pollution*, 9(3), 839-853 (2023). <https://doi.org/10.22059/POLL.2023.349799.1656>.
22. O. N. Oyelade, J. O. Agushaka, A. E. Ezugwu, O. Akinola, A. K. Saha, “Advanced dwarf mongoose optimization for solving CEC 2011 and CEC 2017 benchmark problems”, *Plos One*, 17, e0275346, (2022). <https://doi.org/10.1371/journal.pone.0275346>. IF: 3.752.
23. S. Sharma, N. Khodadadi, A. K. Saha, F. S. Gharehchopogh, S. Mirjalili, “Non-dominated Sorting Advanced Butterfly Optimization Algorithm for Multi-objective Problems”, *Journal of Bionic Engineering*, 20(2), 819-843, (2023). <https://doi.org/10.1007/s42235-022-00288-9>. IF: 4.000.
24. S. Choudhury, P. Howladar, M. Majumder, & A. K. Saha, “Application of novel MCDM for location selection of surface water treatment plant”. *IEEE Transactions on Engineering Management*, 69 (5), 1865-1877 (2022). <https://doi.org/10.1109/TEM.2019.2938907/> IF: 8.702.

25. P. Chakraborty, S. Nama, **A. K. Saha**, "A Hybrid Slime Mould Algorithm for Global Optimization", *Multimedia Tools and Applications*, 82(15), 22441-22467 (2023). <https://doi.org/10.1007/s11042-022-14077-3>. **IF: 3.600.**
26. S. Chakraborty, **A. K. Saha**, "Selection of Forklift Unit for Transport Handling Using Integrated MCDM Under Neutrosophic Environment", *Facta Universitatis, Series: Mechanical Engineering*, (2022). <https://doi.org/10.22190/FUME220620039C>. **IF: 4.622.**
27. S. Chakraborty, **A. K. Saha**, "Selection of Optimal Lithium Ion Battery Recycling Process: A Multi-Criteria Group Decision Making Approach", *Journal of Energy Storage*, 55, 105557 (2022). <https://doi.org/10.1016/j.est.2022.105557>. **IF: 8.907.**
28. S. K. Sahoo, **A. K. Saha**, A. E. Ezugwu, J. O. Agushaka, B. Abuhaija, A. R. Alsoud, L. Abualigah, "Moth Flame Optimization: Theory, Modifications, Hybridizations, and Applications" *Archives of Computational Methods in Engineering*, 30(1), 391-426 (2023). <https://doi.org/10.1007/s11831-022-09801-z>. **IF: 9.700.**
29. A. Soni, S. Chakraborty, P. K. Das, **A. K. Saha**, "Materials selection of reinforced sustainable composites by recycling waste plastics and agro-waste: An integrated multi-criteria decision making approach", *Construction and Building Materials*, 348, 128608 (2022). <https://doi.org/10.1016/j.conbuildmat.2022.128608>. **IF: 7.693.**
30. S. Chakraborty, **A. K. Saha**, "A framework of LR fuzzy AHP and fuzzy WASPAS for health care waste recycling technology", *Applied Soft Computing*, 127, 109288 (2022). <https://doi.org/10.1016/j.asoc.2022.109388>. **IF: 8.263**
31. **A. K. Saha**, "Multi-population-based adaptive sine cosine algorithm with modified mutualism strategy for global optimization", *Knowledge-Based Systems*, 251, 109326 (2022). <https://doi.org/10.1016/j.knosys.2022.109326>. **IF: 8.139**
32. S. K. Sahoo, **A. K. Saha**, S. Nama, M. Masdari, "An Improved Moth Flame Optimization Algorithm Based on Modified Dynamic Opposite Learning Strategy", *Artificial Intelligence Review*, 56(4), 2811-2869 (2023). <https://doi.org/10.1007/s10462-022-10218-0>. **IF: 12.000.**
33. S. Sharma, **A. K. Saha**, S. Roy, S. Mirjalili, S. Nama, "A mixed sine cosine butterfly optimization algorithm for global optimization and its application", *Cluster Computing*, 25, 4573-4600 (2022). <https://doi.org/10.1007/s10586-022-03649-5>. **IF: 2.303**
34. S. Sharma, **A. K. Saha**, G. Lohar, "Optimization of weight and cost of cantilever retaining wall by a hybrid metaheuristic algorithm", *Engineering With Computers*, 38, 2897-2923 (2022). <https://doi.org/10.1007/s00366-021-01294-x>. **IF: 8.083.**
35. S. Nama, **A. K. Saha**, S. Sharma, "A novel improved symbiotic organisms search algorithm. *Computational Intelligence*", 38: 947- 977 (2022). <https://doi.org/10.1111/coin.12290> /**IF: 2.330.**

36. S. K. Sahoo, **A. K. Saha**, “A Hybrid Moth Flame Optimization Algorithm for Global Optimization”, *Journal of Bionic Engineering*, 19, 1522–1543 (2022). <https://doi.org/10.1007/s42235-022-00207-y>. IF: 2.995.
37. S. Nama, S. Sharma, **A. K. Saha**, & A. Gandomi, “A quantum mutation-based backtracking search algorithm”, *Artificial Intelligence Review*, 55, 3019–3073 (2022), <https://doi.org/10.1007/s10462-021-10078-0>. IF: 9.588.
38. S. Chakraborty, **A. K. Saha**, S. Sharma, S. Sahoo, G. Pal “Comparative Performance Analysis of Differential Evolution Variants on Engineering Design Problems”, *Journal of Bionic Engineering*, 19, 1140–1160 (2022). <https://doi.org/10.1007/s42235-022-00190-4>. IF: 2.995.
39. M. Kumar, R. S. Kumar, **A. K. Saha**, “Continuous review inventory system for intuitionistic fuzzy random demand under service level constraint”, *Sadhana*, 47, 103 (2022). <https://doi.org/10.1007/s12046-022-01869-4>. IF: 1.188.
40. S. Choudhury, D. C. Bhowmik, K. Debnath, **A. K. Saha**, H. Garg, “Interval type 2 fuzzy based AHP approach: A case study”, *International Journal of Fuzzy System Applications*, 11(1), 1–16 (2022). <https://doi.org/10.4018/IJFSA.312244>.
41. O. N. Oyelade, A. E. Ezugwu, M. S. Almutairi, **A. K. Saha**, L. Abualigah, H. Chiroma, “A generative adversarial network for synthetization of regions of interest based on digital mammograms”, *Scientific Reports*, 12(1), 6166 (2022). <https://doi.org/10.1038/s41598-022-09929-9>. IF: 4.996.
42. S. Sharma, S. Chakraborty, **A. K. Saha**, S. Nama, S. Sahoo “mLBOA: A Modified Butterfly Optimization Algorithm with Lagrange Interpolation for Global Optimization”, *Journal of Bionic Engineering*, 19, 1161–1176 (2022). <https://doi.org/10.1007/s42235-022-00175-3>. IF: 2.995.
43. S. Nama, **A. K. Saha**, “A bio-inspired multi-population based adaptive backtracking search algorithm”, *Cognitive Computation* (2021), 14, 900–925 (2022). <https://doi.org/10.1007/s12559-021-09984-w>. IF: 5.418.
44. D. Bhowmik, A. K. Pramanik, J. Pal, P. Sen, A. R. Singh, **A. K. Saha** and B. Sen, “Regular Clocking-based Automated Cell Placement Technique in QCA Targeting Sequential Circuit”, *Computers and Electrical Engineering*, 98, 107668 (2022). <https://doi.org/10.1016/j.compeleceng.2021.107668>. IF: 4.152.
45. S. Chakraborty, S. Sharma, **A. K. Saha**, A. Saha, “A novel improved whale optimization algorithm to solve numerical optimization and real-world applications”, *Artificial Intelligence Review*, 55, 4605–4716 (2022). <https://doi.org/10.1007/s10462-021-10114-z>. IF: 9.588.
46. S. Chakraborty, S. Nama, **A. K. Saha**, “An improved symbiotic organisms search algorithm for higher dimensional optimization problems”, *Knowledge-Based Systems*, 236, 107779 (2022). <https://doi.org/10.1016/j.knosys.2021.107779>. IF: 8.038.

47. A. K. Pramanik, D. Bhowmik, J. Pal, P. Sen, A. K. Saha and B. Sen, "Towards the Realization of Regular Clocking Based QCA Circuits Using Genetic Algorithm", *Computers and Electrical Engineering*, 97, 107640 (2022). <https://doi.org/10.1016/j.compeleceng.2021.107640>. IF: 4.152.
48. S. K. Sahoo, A. K. Saha, S. Sharma, S. Mirjalili, S. Chakraborty, "An enhanced moth flame optimization with mutualism scheme for function optimization", *Soft Computing*, 26, 2855–2882 (2022). <https://doi.org/10.1007/s00500-021-06560-0>. IF: 3.643.
49. J. L. Sarkar, V. Ramasamy, A. Majumder, C. R. Panigrahi, B. Gomathy, B. Pati, A. K. Saha, "SensMask: An Intelligent Mask for Assisting Patients during COVID-19 Emergencies", *Computación y Sistemas*, 25(3): 483–492 (2021) <https://doi.org/10.13053/CyS-25-3-3924>.
50. S. Chakraborty, A. K. Saha, S. Nama, S. Debnath, "COVID-19 X-ray image segmentation by modified whale optimization algorithm with population reduction", *Computers in Biology and Medicine*, 139, 104984 (2021). <https://doi.org/10.1016/j.compbiomed.2021.104984>. IF: 6.698.
51. S. Chakraborty, A. K. Saha, R. Chakraborty, M. Saha, "An enhanced whale optimization algorithm for large scale optimization problems", *Knowledge-Based Systems*, 233, 107543 (2021). <https://doi.org/10.1016/j.knosys.2021.107543>. IF: 8.038.
52. S. Chakraborty, A. K. Saha, R. Chakraborty, M. Saha, S. Nama, "HSWOA: An ensemble of hunger games search and whale optimization algorithm for global optimization", *International Journal of Intelligent Systems*, 37, 52-104 (2021). <https://doi.org/10.1002/int.22617>. IF: 8.709.
53. S. Chakraborty, S. Sharma, A. K. Saha, S. Chakraborty, "SHADE-WOA: A metaheuristic algorithm for global optimization", *Applied Soft Computing*, 113, 107866 (2021), <https://doi.org/10.1016/j.asoc.2021.107866>. IF: 6.725
54. Bhowmik, J. Pal, M. Chandra, A. K. Saha and N. Kumar, "QCA based design of cost-efficient code converter with temperature stability and energy efficiency analysis", *Materials Today: Proceedings*, 49 (8), 3585-3594 (2022). <https://doi.org/10.1016/j.matpr.2021.08.119>.
55. S. Choudhury, A. Majumdar A. K. Saha, P. Majumdar, "Evaluating the Preparedness of Indian States against COVID-19 Pandemic Risk: A Fuzzy Multi-criteria Decision-Making Approach", *Risk Analysis*, 42(1), 85-96 (2022). <https://doi.org/10.1111/risa.13808>. IF: 4.000.
56. J. Pal, A. K. Pramanik, M. Goswami, A. K. Saha and B. Sen, "Regular Clocking based Emerging Technique in QCA Targeting Low Power Nano Circuit", *International Journal of Electronics*, 109(9), 1550-1572 (2022). <https://doi.org/10.1080/00207217.2021.1972473>. IF: 1.457.
57. S. Chakraborty, A. K. Saha, S. Sharma, R. Chakraborty, S. Debnath, "A hybrid whale optimization algorithm for global optimization", *Journal of Ambient Intelligence and Humanized Computing* 14, 431–467 (2023). <https://doi.org/10.1007/s12652-021-03304-8>. IF: 7.104.

58. S. Nama, A. K. Saha, & S. Sharma, "Performance up-gradation of Symbiotic Organisms Search by Backtracking Search Algorithm", *Journal of Ambient Intelligence Humanized Computing*, 13, 5505-5546 (2022). <https://doi.org/10.1007/s12652-021-03183-z>. IF: 7.104.
59. A. K. Roy, O.A. Beg, A. K. Saha, JVR Murthy, "Taylor Dispersion in Non-Darcy Porous Media with Bulk Chemical Reaction: A Model for Drug Transport in Impeded Blood Vessels", *Journal of Engineering Mathematics*, 127, 24. (2021). <https://doi.org/10.1007/s10665-021-10120-8>. IF: 1.434.
60. S. Chakraborty, A. K. Saha, S. Sharma, S. Mirjalili, R. Chakraborty, "A novel enhanced whale optimization algorithm for global optimization", *Computers & Industrial Engineering*, 153(5): 107086 (2021). <https://doi.org/10.1016/j.cie.2020.107086>. IF: 7.18.
61. S. Debnath, A. K. Saha, B. S. Mazumder, A. K. Roy, "Dispersion of Reactive Species in Casson Fluid Flow", *Indian Journal of Pure and Applied Mathematics*, 51(4): 1451-1469 (2021) <https://doi.org/10.1007/s13226-020-0476-7>. IF: 0.516.
62. J. Pal, M. Goswami, A. K. Saha and B. Sen, "CFA: Toward the Realization of Conservative Full Adder in QCA with Enhanced Reliability", *Journal of Circuits, Systems and Computers*, 30 (10), 2150172 (2021) <https://doi.org/10.1142/S0218126621501723>. IF: 1.333.
63. J. Pal, A. K. Pramanik, J. S. Sharma, A. K. Saha and B. Sen, "An efficient, scalable, regular clocking scheme based on quantum dot cellular automata", *Analog Integrated Circuits and Signal Processing*, 107(3), 659-670 (2021). <https://doi.org/10.1007/s10470-020-01760-4>. IF: 1.337.
64. S. Sharma, A. K. Saha, A. Majumder and S. Nama, "MPBOA - A novel hybrid butterfly optimization algorithm with symbiosis organisms search for global optimization and image segmentation", *Multimedia Tools and Applications*, 80, 12035-12076 (2021). <https://doi.org/10.1007/s11042-020-10053-x>. IF: 2.313.
65. A. K. Roy, A. K. Saha, R. Ponalagusamy, S. Debnath, "Mathematical model on magneto-hydrodynamic dispersion in a porous medium under the influence of bulk chemical reaction" *Korea-Australia Rheology Journal*, 32, 287-299 (2020). <https://doi.org/10.1007/s13367-020-0027-0>. IF: 1.446.
66. J. Pal, D Bhowmik, A. R. Singh, A. K. Saha and B. Sen, "Synthesis of Composite Logic Gate in QCA Embedding Regular Clocking", *FactaUniversitatis, Series: Electronics and Energetics*, 34(1), 115-131 (2021). <https://doi.org/10.2298/FUEE2101115P>
67. D. Bhowmik, J. Pal, P. Sen, M. Goswami, A. K. Saha and B. Sen, "Systematic Cell placement in Quantum-dot Cellular Automata Embedding Underlying Regular Clocking Circuit", *IET Circuits, Devices & Systems*, 15(2), 156-167 (2021). <https://doi.org/10.1049/cds2.12015/> IF: 1.277.
68. J. Pal, D. Bhowmik, M. Noorallahzadeh, J. S. Sharma, A. K. Saha, B. Sen, "Regular Clocking Scheme Based Design of Cost-efficient Comparator in QCA", *Indonesian Journal of Electric Engineering and Computer Science*, 21(1), 44-55 (2021)/ <http://doi.org/10.11591/ijeecs>.

69. S. Nama, A. K. Saha, "A new parameter setting-based modified differential evolution for function optimization", *International Journal of Modeling, Simulation, and Scientific Computing*, 11(4), 2050029 (2020). <https://doi.org/10.1142/S1793962320500294>.
70. N. Ghorui, A. Ghosh, E. A. Algehyne, S. P. Mondal, A. K. Saha, "AHP-TOPSIS Inspired Shopping Mall Site Selection Problem with Fuzzy Data", *Mathematics*, 8, 1380 (2020). <https://doi.org/10.3390/math8081380>. IF: 1.747.
71. B. Das, B. Bhattacharya, A. K. Saha, "Some Remarks on Fuzzy Infi Topological Spaces", *Revista Proyecciones Journal of Mathematics*, 40(2), 399-415 (2021)/[doi: 10.22199/issn.0717-6279-2021-02-0024](https://doi.org/10.22199/issn.0717-6279-2021-02-0024).
72. S. Debnath, A. K. Saha, B. S. Mazumder, A. K. Roy, "On transport of reactive solute in a pulsatile Casson fluid flow through an annulus", *International Journal of Computer Mathematics*, 97(11), 2303-2319 (2020). <https://doi.org/10.1080/00207160.2019.1695047>. IF: 1.6.
73. A. K. Roy, A. K. Saha, S. Debnath, "Effect of multiple reactions on the transport coefficients in pulsatile flow through an annulus", *International Communications in Heat and Mass Transfer*, 110, 104369 (2020).<https://doi.org/10.1016/j.icheatmasstransfer.2019.104369>. IF: 4.127.
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16. M. Bhowmik, A. Bhattacharjee, **A. K. Saha**, T. Moyra, “Optimization of circular antenna array using slime mould algorithm”, International Conference of International Academy of Physical Sciences on Fuzzy & Computational Mathematics (CONIAPS-2021), National Institute of Technology Agartala, Tripura, 26-28th October, 2021.
17. R. Mahajan, S. Choudhury, **A. K. Saha** “Landfill site selection by using spherical fuzzy AHP”, International Conference of International Academy of Physical Sciences on Fuzzy & Computational Mathematics (CONIAPS-2021), National Institute of Technology Agartala, Tripura, 26-28th October, 2021.
18. P. Chakraborty, S. Sharma, **A. K. Saha** “An improved slime mould optimization algorithm (ISMA) for function optimization”, International Conference of International Academy of Physical Sciences on Fuzzy & Computational Mathematics (CONIAPS-2021), National Institute of Technology Agartala, Tripura, 26-28th October, 2021.
19. S. Chakraborty, A. Saha, **A. K. Saha**, “An elite based whale optimization algorithm for global optimization”, 4th International Conference on Mathematical Modelling, Applied Analysis and Computation (ICMMAAC- - 2021), JECRC University, Jaipur, Rajasthan, 5-7th August, 2021.

20. S. K. Sahoo & **A. K. Saha**, "A hybrid moth flame optimization algorithm for global optimization", 4th International Conference on Mathematical Modelling, Applied Analysis and Computation (ICMMAAC – 2021), JECRC University, Jaipur, India, 5-7th August, 2021.
21. S. Nama, **A. K. Saha**, S. Sharma, "A Hybrid SOSBSA for Unconstrained Function Optimization", International Conference on Applied Mathematics & Computational Intelligence (ICAMCI-2020), National Institute of Technology Agartala, Tripura, 23-24th December, 2020.
22. S. Debnath, **A. K. Saha**, T.K. Bandyopadhyay, "Rheological behavior of fluid flow through rough geometries", International Conference on Applied Mathematics & Computational Intelligence (ICAMCI-2020), National Institute of Technology Agartala, Tripura, 23-24th December, 2020.
23. S. Sharma, S. Roy, **A. K. Saha**, S. Nama, "A novel hybrid Sine Cosine Optimization Algorithm for global optimization", International Conference on Applied Mathematics & Computational Intelligence (ICAMCI-2020), National Institute of Technology Agartala, Tripura, 23-24th December, 2020.
24. S. Sahoo, S. Sharma, S. Roy, **A. K. Saha**, "A modified moth flame optimization algorithm for Function Optimization", International Conference on Applied Mathematics & Computational Intelligence (ICAMCI-2020), National Institute of Technology Agartala, Tripura, 23-24th December, 2020.
25. G. Lohar, S. Sharma, **A. K. Saha**, S. Ghosh, "Optimization of Primary Wave Propagation Time by m-MBOA Algorithm", International Conference on Applied Mathematics & Computational Intelligence (ICAMCI-2020), National Institute of Technology Agartala, Tripura, 23-24th December, 2020.
26. S. Chakraborty, **A. K. Saha**, A. Saha, "An Improved Whale Optimization Algorithm for Global Optimization", International Web Conference on Advance Research in Science, Humanities and Social Science (IWCARSHSS 2020), Maharaja Bir Bikram University, Tripura, India, 9-10th July, 2020.
27. G. Lohar, S. Sharma, **A. K. Saha**, S. Ghosh, "Optimization of Geotechnical Parameters Used in Slope Stability Analysis by Metaheuristic Algorithms", *International Conference on Computer Communication and Internet of Things (ICCCIOT 2020)* at Tripura University (a central University), Agartala Tripura, 03-04 February, 2020.
28. S. Sharma, **A. K. Saha**, S. Nama, "An Enhanced Butterfly Optimization Algorithm for Function Optimization", 4th International Conference on Soft Computing: Theories and Applications (SoCTA-2019), National Institute of Technology (NIT) Patna, Bihar, 27-29th December, 2019.
29. S. Sharma, **A. K. Saha**, S. Nama, "BOSCA– A novel hybrid Butterfly optimization algorithm enhanced with Sine Cosine algorithm", 4th International Conference on Advanced Computing and Intelligent Engineering (ICACIE-2019), Rama Devi Women's University, Bhubaneswar, Odisha, 21-23rd December, 2019.
30. J. Pal, S. Bhattacharjee, **A. K. Saha** and P. Dutta, "Study on Temperature Stability and Fault Tolerance of Adder in Quantum-dot Cellular Automata", 5th International Conference on Signal Processing,

Computing and Control (ISPCC), Solan, India, 10-12 October, 2019, pp. 69-74, IEEE, doi: 10.1109/ISPCC48220.2019.8988491.

31. Abhay S., **A. K. Saha**, R. S. Kumar, "A Hybrid TOPSIS-AHP in Multi-Criteria Decision Making Using Interval Type-2 Fuzzy Sets", International Conference on Emergent Research in Mathematics and Engineering (ICERME-2019), National Institute of Technology Agartala, 17-18th May, 2019.
32. S. Sharma, **A. K. Saha**, P. Chauhan, "BOSCA – A Novel Hybrid Butterfly Optimization Algorithm Enhanced with Sine Cosine Algorithm", International Conference on Emergent Research in Mathematics and Engineering (ICERME-2019), National Institute of Technology Agartala, 17-18th May, 2019.
33. S. Sharma, **A. K. Saha**, J. L. Sarkar, C. R. Panigrahi, "hBOSOS: An ensemble of Butterfly Optimization Algorithm and Symbiosis Organisms Search for global optimization", 3rd International Conference on Advanced Computing and Intelligent Engineering (ICACIE-2018), Siksha 'O' Anusandhan (Deemed to be University), 22-24th December, 2018.
34. Abhay S., R. S. Kumar, **A. K. Saha**, "Integrated TOPSIS-AHP MCDM using possibility mean and variance in type-2 fuzzy environment", International Conference on Applied and Computational Mathematics (ICACM-2018), IIT-KGP, 23-25th November, 2018.
35. S. Debnath, **A. K. Saha**, B. S. Mazumder, A.K. Roy, "Dispersion of reactive species in a three-layer fluid flow through an annulus", International Conference on Applied and Computational Mathematics (ICACM-2018), IIT-KGP, 23-25th November, 2018.
36. A. K. Roy, **A. K. Saha**, S. Debnath, "A note on hydrodynamic dispersion of reactive solute in Casson liquid flow with reaction", International Conference on Recent Trends in Mathematical Sciences (ICRTMS), Maharaja Bir Bikram University, Tripura, India, 24-25th March, 2018.
37. **A. K. Saha**, S. Nama, "Performance of Improved symbiosis organisms search on CEC 2015 continuous benchmark functions", International Conference on Recent Trends in Mathematical Sciences (ICRTMS), Maharaja Bir Bikram University, Tripura, India, 24-25th March, 2018.
38. S. Sharma, **A. K. Saha**, S. Nama, S. Roy, "JAYASQI–A new hybrid Metaheuristic for global optimization problem", International Conference on Recent Trends in Mathematical Sciences (ICRTMS), Maharaja Bir Bikram University, Tripura, India, 24-25th March, 2018.
39. S. Choudhury, **A. K. Saha**, M. Majumder, "Socio-Economic Perspective in the performance efficiency of water Treatment Plant: An MCDM approach", International Conference on Recent Trends in Mathematical Sciences (ICRTMS), Maharaja Bir Bikram University, Tripura, India, 24-25th March, 2018.
40. J. Pal, **A. K. Saha**, P. Dutta, "Quantum-dot Cellular Automata Based 2-to-4 Decoder using Layered T-Gate", International Conference on Recent Trends in Mathematical Sciences (ICRTMS), Maharaja Bir Bikram University, Tripura, India, 24-25th March, 2018.

41. D. Bhowmik, P. Dutta, **A. K. Saha**, "Implementation and Optimization of design for Three-Input Complex Gate fabricated with majority gates and Inverter using QCA", International Conference on Recent Trends in Mathematical Sciences (ICRTMS), Maharaja Bir Bikram University, Tripura, India, 24-25th March, 2018.
42. K. Debnath, P. Baidya, **A. K. Saha**, "A new approach on graph theory: component union of two graphs", International Conference on Recent Trends in Mathematical Sciences (ICRTMS), Maharaja Bir Bikram University, Tripura, India, 24-25th March, 2018.
43. S. Debnath, **A. K. Saha**, A.K. Roy, "A theoretical study on dispersion in a three-layer fluid flow", International Conference on Recent Trends in Mathematical Sciences (ICRTMS), Maharaja Bir Bikram University, Tripura, India, 24-25th March, 2018.
44. M. Kumar, R.S. Kumar, **A. K. Saha**, "An EOQ model with service level constraint in intuitionistic fuzzy random environment", International Conference on Recent Trends in Mathematical Sciences (ICRTMS), Maharaja Bir Bikram University, Tripura, India, 24-25th March, 2018.
45. J. Pal, S. Paul, **A. K. Saha**, P. Dutta, "Design and Realization of Full Adder Using Quantum-dot Cellular Automata", International Conference on Electrical, Electronics, Computers, Communications, Mechanical & Computing (EECCMC), Priyadarshani Engineering College, Tamil Nadu, January 28-29, 2018. IEEE.
46. **A. K. Saha**, S. Nama, "A New Hybrid PSOBFA for Function Optimization", 19th International Conference on Researches in Science and Technology (ICRST), Barcelona, Spain, 27-28th July, 2017.
47. J. Pal, S. Nandi, **A. K. Saha**, P. Dutta, "Implementation of Composite Basic Gates using Quantum-dot Cellular Automata", National Conference on Recent Trends in Engineering and Technology (NCRTEET), TIT Agartala, March 17-18, 2017.
48. P. Majumder, **A. K. Saha**, M. Majumder, "An Optimization-MCDM approach of Multi Criteria Decision Analysis", 2nd International Conference on Sustainable Computing Techniques in Engineering, Science and Management (SCESM), Jain College of Engineering, Belagavi, 27-28th January, 2017.
49. J. Pal, P. Dutta, **A. K. Saha**, "Realization of Basic Gates using Universal Gates Using Quantum-dot Cellular Automata", Second International Conference on Computing and Communication Systems, Springer, Shillong, India, 11-13th November, 2016. (ISSN: 2367-3370).
50. **A. K. Saha**, S. Choudhury, M. Majumder, "Performance Efficiency Analysis of Water Treatment Plants by Using MCDM and Neural Network Model", 9th International Conference on Researches in Science and Technology (ICRST), Bangkok, Thailand, 29-30th December, 2016.
51. D. Bhowmik, P. Dutta, **A. K. Saha**, S. Dhar, "A Novel Design to Obtain Fault Tolerant Majority Gate for Five Input Majority Gate by Quantum Cellular Automata", International Conference on Micro-Electronics and Telecommunication Engineering (IEEE), Ghaziabad, Uttar Pradesh, India, 22-23th September, 2016.

52. S. Debnath, T.K. Bandyopadhyay, **A. K. Saha**, “CFD Analysis of non-Newtonian liquid flow through Curved Geometry”, International Conference on Recent Developments in Chemical and Biochemical Engineering (2015), Dept. of Chemical Engg. NIT Durgapur, 2-4th October, 2015.
53. **A. K. Saha**, M. Majumder, “Climate Variability on Hydro-Energy Potential: An MCDM and Neural Network Approach”, International Conference on Energy, Environment and Sustainable Development (ICEESD-2015) Paris, France, 23-24th January, 2015.
54. T. K. Bandyopadhyay, S. Debnath, **A. K. Saha**, M. Majumder, “CFD and ANN analysis of non-Newtonian pseudo plastic liquid flow through rough pipe”, The 3rd Abu Dhabi University Annual International Conference: Mathematical Science and It's Applications, Abu Dhabi, UAE, 27-30th December, 2014.
55. **A. K. Saha**, M. Majumder, “Determination of the Priority Values of Parameters for Maximization of Plant Efficiency of Small Scale Hydropower Plant”, The 3rd Abu Dhabi University Annual International Conference: Mathematical Science and its Applications, Abu Dhabi, UAE, 27-30th December, 2014.
56. M. Majumder, **A. K. Saha**, “A Fuzzy AHP and Fuzzy ANP approach for minimization of climatic vulnerability”, The 3rd Abu Dhabi University Annual International Conference: Mathematical Science and It's Applications, Abu Dhabi, UAE, 27-30th December, 2014.
57. S. Chakrabartty, A. Mondal, **A. K. Saha**, B. Choudhuri, M. B. Sarkar, P. Singh, and K. Goswami, “Retention of charge in TiO₂ NPs/ SiO_x TF system”, The First International Conference on Emerging Materials: Characterization & Application EMCA-2014, Kolkata, INDIA, 4-6th December, 2014.
58. **A. K. Saha**, D. Bhattacharya, “A Study on Induced Fuzzy Topological Space generated by m-RLSC functions”, International Conference on Rough Sets, Fuzzy Sets and Soft Computing, Agartala, Tripura, 5-7 November, 2009.

➤ National Conferences

1. S. Reang, **A. K. Saha**, S. K. Sahoo & S. Wanjari, “Whale optimization algorithm by quadratic interpolation and the Fibonacci search principle for function optimization”, One Day National Seminar on Mathematics and Its Applications (NSMA- 2023), Maharaja Bir Bikram University, Tripura, India, 7th January 2023.
2. M. Das, S. Choudhury, **A. K. Saha**, “A Risk Factor Analysis of Surface Water Treatment Plant by Using Multi Criteria Decision Making Method”, *National Conference on Ancient and Modern Mathematics*, MBB University, 23-24 February, 2019.
3. **A. K. Saha**, “On Hybrid Metaheuristics”, *National Conference on Ancient and Modern Mathematics*, MBB University, 23-24 February, 2019.

4. S. Biswas, **A. K. Saha**, G. Saha, "Analysis of Spatial Variation of Rainfall in North East India", *National Seminar on Engineering Problems and Application of Mathematics*, 11-12 June, 2016.
5. S. Sharma, **A. K. Saha**, M. Majumder and S. Choudhury, "Choice of financial Institute with the assist of MCDM methods: DEMATEL and ANP", *National Seminar on Engineering Problems and Application of Mathematics*, 11-12 June, 2016.
6. S. Nama, **A. K. Saha**, S. Ghosh, "Comparative Study of Quasi-opposition Based Symbiosis Organisms search algorithm for Function Optimization", *National Seminar on Engineering Problems and Application of Mathematics*, 11-12 June, 2016.
7. B. Das, **A. K. Saha**, "A Note on Co-Induced Fuzzy Topological Space", *National Seminar on Engineering Problems and Application of Mathematics*, 11-12th June, 2016.
8. D.K. Biswakarma, S. P. Mondal, **A. K. Saha**, "Solution of Second Order Linear Difference Equation with Intuitionistic Fuzzy Initial Value", *National Seminar on Engineering Problems and Application of Mathematics*, 11-12 June, 2016.
9. S. Debnath, T. K. Bandyopadhyay, **A. K. Saha**, "Non-Newtonian liquid flow through rough U-bends", *68th Annual Session of Indian Institute of Chemical Engineers, National Conference, Chemcon-2015, IIT, Guwahati*, 27-30 December, 2015.
10. **A. K. Saha**, S. Choudhury, M. Majumder, P. Majumder, "Selection of financial Institute with the help of MCDM technique", *National seminar on Advances in Mathematical Science*, Gauhati University, 22 December, 2015.
11. **A. K. Saha**, A. K. Roy, "On Solving Differential Equation by Vedic Mathematical Techniques", *Proceedings of National Conference on Ancient Indian Mathematics*, 8-9th February, 2014. (pp 57-62).
12. D. Bhattacharya, **A. K. Saha**, "A Note on r-countably Induced Fuzzy Topological Space", *Proceedings of National Seminar on Recent Development in Mathematics and its Applications*, 14-15th November, 2008.
13. D. Bhattacharya, **A. K. Saha**, "Fuzzy Topological Space induced by regular lower semi-continuous functions", *Proceedings of national Seminar on Fuzzy Mathematics and its Applications*, 25-26th November, 2006.

Seminar/Conference/Workshop Organized

1. As an organizing secretary in the "3rd International Conference on Intelligent Vision and Computing (ICIVC- 2023)" at Department of Mathematics, National Institute of Technology Agartala during 25 – 26 November, 2023.

2. As an organizing secretary in the “*International Conference on Intelligent Vision and Computing (ICIVC- 2022)*” at Department of Mathematics, National Institute of Technology Agartala during 26 – 27 November, 2022.
3. As an organizing secretary in the “*International Conference of International Academy of Physical Sciences on Fuzzy & Computational Mathematics (CONIAPS-2021)*” at Department of Mathematics, National Institute of Technology Agartala during 26-28th October, 2021.
4. As an organizing committee member in the “*International Workshop on Advanced Seismology, Seismic Hazard and Earthquake Engineering: Theory, Simulation and Observations (ASSHEE 2019)*” at Civil Engineering Department, National Institute of Technology Agartala during 25–29 November, 2019.
5. As an organizing committee member in the “*International Conference on Emergent Research in Mathematics and Engineering (ICERME-2019)*” at Department of Mathematics, National Institute of Technology Agartala during 17-18 May, 2019.
6. As an organizing committee member in the National Conference on “*Engineering Problems and Application of Mathematics-2016 (EPAM-2016)*” at Department of Mathematics, National Institute of Technology Agartala during 11–12 June, 2016.
7. As organizing secretary in the 3 Days National Workshop on “*Computational Study On Fluid Transport Phenomena*” at Department of Mathematics, National Institute of Technology Agartala during 05–07 February, 2016.
8. As an organizing committee member in the 3 Days National Workshop on “*Recent Advances In Soft Computing*” at Department of Mathematics, National Institute of Technology Agartala during 29–31 January, 2016.
9. As an organizing committee member in the National Workshop on “*Workshop Technique in Bioinformatics*” at Department of Mathematics, National Institute of Technology Agartala, during 07–08 August, 2015.
10. As an organizing committee member at the National Workshop on “*Recent Advances In Applied Mathematics*” at Department of Mathematics, National Institute of Technology Agartala, during 20–21 September, 2014.

Invited Lecture/Keynote Speaker/ Session Chair

1. Delivered online invited lecture in One-week National Workshop on Aspects of E-Content Development organized by Ambedkar College under the aegis of Electronics and ICT Academy, IIT Roorkee during 16 - 21 March, 2024.
2. Delivered invited lecture in 6th One-week National Workshop on Emerging Tools and Technologies in Research (ETTR 2023) at Tripura University, Agartala during 20 - 24 November, 2021.

3. Delivered invited lecture in Faculty Development programme on "*Opti-PDE: Optimization and Partial Differential Equation - An Avenue to a New Dimension*" at VIT University, Vellore, Tamilnadu, during 18-20 January, 2023.
4. Delivered invited lecture in 5th One-week National Workshop on Emerging Tools and Technologies in Research (ETTR 2022) at Tripura University, Agartala during 28 Nov. – 02 December, 2022.
5. Delivered invited lecture in *National Seminar on Optimization: Fuzzy Logic and MATLAB* at Chaudhary Charan Singh University, Meerut, Uttar Pradesh, India during 25-26 March, 2022.
6. Delivered invited lecture in one-week National Workshop on Fuzzy Logic, Optimization and Soft Computing in Context of Artificial Intelligence at Chaudhary Charan Singh University, Meerut, Uttar Pradesh, India during 12 - 18 February, 2022.
7. Session Chair in 3rd *International Virtual Workshop on Advanced Seismology, Seismic Hazard and Earthquake Engineering (ASSHEE): Theory, Simulation and Observations* at Techno College of Engineering, Agartala during 13- 17 December, 2021.
8. Delivered invited lecture in 4th One-week National Workshop on Emerging Tools and Technologies in Research (ETTR 2021) at Tripura University, Agartala during 14 - 18 December, 2021.
9. Delivered invited lecture in International Web Conference on *Advance Research in Science, Humanities in Social Science (IWCARSHSS 2020)* at Maharaja Bir Bikram University, Agartala during 09 – 10 July, 2020.
10. Delivered Keynote speech in *International Conference on Computer Communication and Internet of Things (ICCCIoT 2020)* at Tripura University (a central University), Agartala Tripura (W) during 03-04 February, 2020.
11. Delivered invited lecture in TEQIP-III Sponsored Faculty Development programme (FDP) on *Machine Learning and Internet of Things* at Tripura Institute of Technology, Narsingarh, Tripura, on 15th June, 2019.
12. Delivered invited lecture in one week National Workshop on *Computational Mathematics and Application (NWCMA 2019)* at Maharaja Bir Bikram University, Agartala during 13-14 September, 2019.
13. Delivered invited lecture in TEQIP-III Sponsored Five Days Workshop on Optimization Techniques in Multidisciplinary Research at Mechanical Engineering Department, National Institute of Technology Agartala during 25–29 November, 2019.
14. Delivered invited lecture in *International Workshop on Advanced Seismology, Seismic Hazard and Earthquake Engineering: Theory, Simulation and Observations (ASSHEE 2019)* at Civil Engineering Department, National Institute of Technology Agartala during 25– 29 November, 2019.

15. Delivered Keynote speech in 4th *International Conference on Advanced Computing and Intelligent Engineering (ICACIE 2019)* at Rama Devi Women's University, Vidya Vihar, Bhubaneswar, India during 21-23 December, 2019.
16. Session chair in 3rd *International Conference on Advanced Computing and Intelligent Engineering ICACIE 2018* at Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar, India during 22-24 December, 2018.
17. Session chair in *International Conference on Recent Trends in Mathematical Sciences (ICRTMS)*, Maharaja Bir Bikram University, Tripura, India during 24-25 March, 2018.
18. Session chair in 4th *International Conference on Advanced Computing and Intelligent Engineering (ICACIE 2019)* at Rama Devi Women's University, Vidya Vihar, Bhubaneswar, India during 21-23 December, 2019.
19. Session chair in 4th *International Conference on Advanced Computing and Intelligent Engineering (ICACIE 2019)* at Rama Devi Women's University, Vidya Vihar, Bhubaneswar, India during 21-23 December, 2019.

Editor and Reviewer

❖ **Associate Editor**

Results in Control and Optimization, Elsevier

❖ **Reviewer**

- *AIMS Mathematics, AIMS Press.*
- *Alexandria Engineering Journal, Elsevier.*
- *Annals of Operations Research, Springer*
- *Applied Bionics and Biomechanics, Hindawi.*
- *Applied Mathematics and Computation, Elsevier.*
- *Applied Sciences, MDPI.*
- *Applied Soft Computing, Elsevier*
- *Arabian Journal of Science and Engineering, Springer.*
- *Artificial Intelligence Review, Springer.*
- *Biomass Conversion and Biorefinery, Springer.*
- *Complexity, Hindawi.*
- *Computational Intelligence and Neuroscience, Hindawi.*
- *Computers Materials and Continua, Tech Science Press.*
- *Computer Modeling in Engineering & Sciences, Tech Science.*
- *Cybernetics and Systems, Taylor and Francis.*
- *Discrete Dynamics in Nature and Society, Hindawi.*
- *Electronics, MDPI.*
- *Engineering Applications of Artificial Intelligence, Elsevier.*

- *Engineering and Applied Science Research*, Khon Kaen University, Thailand
- *Engineering with Computers*, Springer.
- *Environmental Engineering and Management*, Gh. Asachi Technical University of Iasi
- *Environmental Research and Technology*, Yildiz Technical University.
- *Environmental Science and Pollution Research*, Springer.
- *Evolving Systems*, Springer.
- *Expert Systems with Applications*, Elsevier.
- *Financial Innovation*, Springer.
- *Frontiers in Computational Neuroscience*, Frontiers Media.
- *Heliyon*, Elsevier.
- *Information Sciences*, Elsevier.
- *Innovative Infrastructure Solutions*, Springer.
- *International Journal of Applied and Computational Mathematics*, Springer.
- *International Journal of Fuzzy Logic and Intelligent Systems*, Korean Institute of Intelligent Systems.
- *International Journal of Hydrogen Energy*, Elsevier.
- *International Journal of Wireless Information Networks*, Springer.
- *Journal of Advanced Research in Applied Sciences and Engineering Technology*, Semarak Ilmu Publishing.
- *Journal of Bionic Engineering*, Springer.
- *Journal of the Cleaner Production*, Elsevier.
- *Journal of Electrical and Computer Engineering*, Hindawi.
- *Journal of Engineering Mathematics*, Springer.
- *Journal of Fuzzy Logic and Intelligent Systems*, IOS Press
- *Journal of the Franklin Institute*, Elsevier.
- *Journal of Industrial and Management Optimization*, AIMSciences.
- *Journal of Supercomputing*, Springer.
- *Knowledge-Based Systems*, Elsevier
- *Mathematics*, MDPI.
- *Mobile Information Systems*, Hindawi.
- *New Generation Computing*, Springer.
- *OPTIK*, Elsevier
- *Physics of Fluid*, AIP.
- *Plos One*, Plos.
- *Results in Control and Optimization*, Elsevier
- *Scientific Reports*, Nature.
- *Sensors*, MDPI.
- *Socio-Economic Planning Sciences*, Elsevier.
- *Soft Computing*, Springer.
- *Sustainability*, MDPI.
- *Symmetry*, MDPI.
- *TELKOMNIKA*, Universitas Ahmad Dahlan, Indonesia.

Subject Teaching

- Graduate Level: Partial Differential Equation, Abstract Algebra, Soft Computing, Statistics, Engineering Mathematics
- Post Graduate Level: Complex Analysis, Soft Computing, Statistical Inference, Abstract Algebra

Awards and Honours

- Gold Medal in M.Sc.
- CSIR-NET Qualified (2004).

Institutional Responsibilities

- Head of the Department: 26/09/2007 to 02/01/2011, from 11/07/2016 to 18/09/2017 & from 01/07/2023 to till date
 - Faculty- in-charge (sports): From 23/06/2014 to 05/05/2015
 - Associate Dean (S/W): From 06/05/2015 to 17/11/2016
 - Chairman, DPC (Mathematics Dept.): 06/09/2018 to 19/10/2022
 - Faculty-in-charge (IGH): From 18/11/2019 to 05/09/2022
 - Faculty-in-charge (Campus Amenities): From 29/04/2023 to 08/11/2023
 - Associate Dean (P&D): From 29/04/2023 to till date.
- And many more...