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, Topological Space

Research and Project Guidance

- Ph. D Candidates: Awarded = 10, Submitted = 01 and Ongoing = 05
- 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: 128
- Books: 2
- Book Chapters: 17
- International Conference: 58
- National Conference: 13

List of Publications

➢ International Journals

1. S. Chakraborty, **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,* (2023). https://doi.org/10.1016/j.asoc.2023.111102. **IF: 8.700.**

2. 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* (2023). In Press. **IF: 6.000**.

3. 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.**

4. 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.

5. 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* (2023). https://doi.org/10.1016/j.eswa.2023.120367. **IF: 8.500**.

6. 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,* (2023). https://doi.org/10.1016/j.jobe.2023.106787. **IF: 6.400**.

7. 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.**

8. P. Chakraborty, S, Sharma, **A. K. Saha**, "Convergence Analysis of Butterfly Optimization Algorithm", *Soft Computing* (2023). https://doi.org/10.1007/s00500-023-07920-8. **IF: 4.100**.

9. S. K. Sahoo, S, Sharma, **A. K. Saha**, "A Novel Variant of Moth Flame Optimizer for Higher Dimensional Optimization Problems", *Journal of Bionic Engineering* (2023). https://doi.org/10.1007/s42235-023-00357-7. **IF: 4.000**.

10. 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,* (2023). https://doi.org/10.1016/j.engappai.2022.105752. **IF: 8.000.**

11. 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 (2023). https://doi.org/10.1007/s12559-022-10099-z. **IF: 5.400.**

12. 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,*(2022). https://doi.org/10.1007/s11831-022-09825-5. **IF: 8.171.**

13. 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.

14. 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* (2022). https://doi.org/10.1371/journal.pone.0275346. **IF: 3.752.**

15. 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* (2022). https://doi.org/10.1007/s42235-022-00288-9. **IF: 2.995**.

16. 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.**

17. P. Chakraborty, S, Nama, **A. K. Saha**, "A Hybrid Slime Mould Algorithm for Global Optimization", *Multimedia Tools and Applications,* (2022). *https://doi.org/10.1007/s11042-022-14077-3.* **IF: 2.577**.

18. 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**.

19. 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**.

20. 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,*(2022). *https://doi.org/10.1007/s11831-022-09801-z.* **IF: 8.171.**

21. 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**.

22. 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**

23. 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**

24. 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 (2022). *https://doi.org/10.1007/s10462-022-10218-0.* **IF: 9.588**.

25. 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**

26. 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.**

27. 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**.

28. 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**.

29. 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.**

30. 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**.

31. 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**.

32. 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.

33. 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.**

34. 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**.

35. 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**.

36. 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**.

37. 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.**

38. 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**.

39. 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.**

40. 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.**

41. 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.*

42. 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.**

43. 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.**

44. 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**.

45. 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**

46. 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.

47. 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.**

48. 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.**

49. 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.**

50. 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.**

51. 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**.

52. 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**.

53. 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.**

54. 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.**

55. 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.**

56. 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**.

57. 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.**

58. 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

59. 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 & Syste*ms, 15(2), 156-167 (2021). https://doi.org/10.1049/cds2.12015/ **IF: 1.277.**

60. 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.

61. 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.

62. 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.**

63. 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.

64. 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.**

65. 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**.

66. S. Sharma, **A. K. Saha**, "m-MBOA: a novel butterfly optimization algorithm enhanced with mutualism scheme" *Soft Computing*, 24, 4809–4827 (2020) https://doi.org/10.1007/s00500-019-04234-6. **IF: 2.784**.

67. S. Choudhury, **A. K. Saha,** M. Majumder, "Optimal Location Selection for Installation of Surface Water Treatment Plant by Gini Coefficient based Analytical Hierarchy Process", *Environment, Development and Sustainability*, 22, 4073–4099 (2020). https://doi.org/10.1007/s10668-019-00373-w. **IF: 1.379.**

68. P. Majumder, M. Majumder, **A. K. Saha,** "Real Time Monitoring of Power Production in Modular Hydro Power Plant: Most Significant Parameter Approach", *Environment, Development and Sustainability*, 22, 4025–4042 (2020). https://doi.org/10.1007/s10668-019-00369-6. **IF: 1.379.**

69. S. Debnath, **A. K. Saha,** B. S. Mazumder, A. K. Roy, "Transport of a reactive solute in a pulsatile non-Newtonian liquid flowing through an annular pipe", *Journal of Engineering Mathematics*, 116 (1), 1-22 (2019). https://doi.org/10.1007/s10665-019-09999-1. **IF: 1.099.**

70. A. K. Roy, **A. K. Saha,** S. Debnath, "Hydrodynamic dispersion of solute under homogeneous and heterogeneous reactions", *International Journal of Heat and Technology*, 37(2), 387 – 397 (2019). https://doi.org/10.18280/ijht.370203.

71. J. L. Sarkar, C. R. Panigrahi, B. Pati, **A. K. Saha,** A. Majumder, "MAAS: A mobile cloud assisted architecture for handling emergency situations", *International Journal of Communication Systems*, 33 (13), e3950 (2020). https://doi.org/10.1002/dac.3950. **IF: 1.717.**

72. S. Debnath, **A. K. Saha,** P. G. Siddheshwar, A. K. Roy, "On dispersion of a reactive solute in a pulsatile flow of a two-fluid model", *Journal of Applied Fluid Mechanics*, 12(3), 987-1000 (2019). https://doi.org/10.29252/JAFM.12.03.29101. **IF: 1.09.**

73. S. Choudhury, **A. K. Saha,** "Location selection for Installation of Surface Water Treatment Plant by Applying a New Sinusoidal Analytical Hierarchy Process: Application of new MCDM in Location Detection", *International Journal of Energy Optimization and Engineering*, 8(3), 20-42 (2019). https://doi.org/10.4018/IJEOE.2019070102.

74. P. Majumder, **A. K. Saha,** "Ranking of indicators for estimation of Plant Efficiency in Hydropower plants by A bootstrap MCDM approach", *International Journal of Energy Optimization and Engineering*, 8(3), 69-92 (2019). https://doi.org/10.4018/IJEOE.2019070104.

75. P. Majumder, **A. K. Saha,** "Identification of Most Significant Parameter of Impact of Climate Change and Urbanization on Operational Efficiency of Hydropower Plant", *International Journal of Energy Optimization and Engineering*, 8(3), 43-68 (2019). https://doi.org/10.4018/IJEOE.2019070103.

76. P. Majumder, M. Majumder, **A. K. Saha,** S. Koushani, S. Nath, "Real time reliability monitoring of hydro-power plant by combined cognitive decision-making technique", *International Journal of Energy Research*, 43 (9), 4912-4939 (2019). https://doi.org/10.1002/er.4530. **IF: 3.009.**

77. P. Majumder, M. Majumder, **A. K. Saha,** S. Nath, "Selection of features for analysis of reliability of performance in hydropower plants: a multi-criteria decision making approach", *Environment, Development and Sustainability*, 22, 3239–3265 (2020). https://doi.org/10.1007/s10668-019-00343-2. **IF: 1.379.**

78. S. Nama, A. K. Saha, "A novel hybrid backtracking search optimization algorithm for continuous function optimization", Decision Science Letters 8(2), 163-174 (2019)/ https://doi.org/10.5267/j.dsl.2018.7.002.

79. S. Debnath, A. Banik, T. K. Bandyopadhyay, and A. K. Saha, "CFD and Optimization Study of Frictional Pressure Drop through Bends", *Recent Patents on Biotechnology* 12, 1-13 (2018)/ https://doi.org/10.2174/1872208312666180820153706.

80. P. Majumder, **A. K. Saha,** M. Majumder, "A Mathematical Approach of Exploration Towards Extreme Risk Factor in Cancer of Optimal Condition", *International Journal of Pharmaceutical Sciences and Research* 9(9), 1000-11 (2018)/ https://doi.org/10.13040/IJPSR.0975-8232.9(9).3732-42.

81. S. P. Mondal, N. A. Khan, D. Vishwakarma, **A. K. Saha,** "Existence and Stability of Difference Equation in Imprecise Environment", *non Linear Engineering, Modelling and Application*, 7(4), 263-271 (2018)/https://doi.org/10.1515/nleng-2016-0085.

82. P. Majumder, M. Majumder, **A. K. Saha**, "Climate Change and Urbanization Impact on Hydropower Plant by Neural Network-Based Decision-Making Methods: Identification of the Most Significant Parameter", *Water Conservation Science and Engineering*, 3, 169–179 (2018). https://doi.org/10.1007/s41101-018-0048-4.

83. A. K. Roy, **A. K. Saha**, S. Debnath, "Unsteady Convective Diffusion with Interphase Mass Transfer in Casson Liquid", *Periodica Polytechnica Chemical Engineering*, 62(2), 215–223 (2018). https://doi.org/10.3311/PPch.10328. **IF: 0.557**.

84. S. Choudhury, **A. K. Saha**, M. Majumder, "Recognising the Risk Factors of Water Treatment Plants Using a Hybrid MCDM Method", *Environmental Policy and Law*, 48(1), 74-79 (2018)/ https://doi.org/10.3233/EPL-180051.

85. S. Nama, **A. K. Saha**, S. Ghosh, "An Ensemble Symbiosis Organisms Search Algorithm and Its Application to Real World Problems", *Decision Science Letters*, 7(2), 103–118 (2018)/ https://doi.org/10.5267/j.dsl.2017.6.006.

86. P. Majumder, **A. K. Saha**, "Efficiency Assignment of Hydropower Plants by DEMATEL-MAPPAC Approach", *Water Conservation Science and Engineering*, 3(2), 91-97 (2018). https://doi.org/10.1007/s41101-018-0041-y.

87. P. Majumder, **A. K. Saha**, M. Majumder, "Application of DEMATEL-TOPSIS Method to Analyze Operational Efficiency of Hydropower Plants", *Journal of Civil and Construction Engineering*, 2(1, 2, 3) (2018).

88. S. Nama, **A. K. Saha**, "A new hybrid differential evolution algorithm with self-adaptation for function optimization", *Applied Intelligence*, 48(7), 1657–1671 (2018). https://doi.org/10.1007/s10489-017-1016-y. **IF: 2.882**.

89. S. Choudhury, **A. K. Saha**, "Prediction of Operation Efficiency of Water Treatment Plant with the Help of Multi-criteria Decision-making", *Water Conservation Science and Engineering*, 3(2), 79-90 (2018). https://doi.org/10.1007/s41101-017-0034-2

90. A. K. Roy, **A. K. Saha**, S. Debnath, "On dispersion in oscillatory annular flow driven jointly by pressure pulsation and wall oscillation", *Journal of Applied Fluid Mechanics*, 10(5), 1487-1500, (2017)/ **IF: 0.888**. https://doi.org/10.18869/acadpub.jafm.73.242.27702.

91. S. Debnath, **A. K. Saha**, B. S. Mazumder, A. K. Roy, "Dispersion phenomena of reactive solute in a pulsatile flow of three-layer liquids", *Physics of Fluids*, 29(9), 097107 (2017). **(IF: 2.232).** https://doi.org/10.1063/1.5001962.

92. S. Debnath, **A. K. Saha**, B. S. Mazumder, A. K. Roy, "Hydrodynamic dispersion of reactive solute in a Hagen-Poiseuille flow of a layered liquid", *Chinese Journal of Chemical Engineering*, 25(7), 862–873 (2017) **(IF: 1.911)**. https://doi.org/10.1016/j.cjche.2017.03.005.

93. S. Debnath, **A. K. Saha**, A. K. Roy, "A study on solute dispersion in a three layer blood-like liquid flowing through a rigid artery", *Periodica Polytechnica Mechanical Engineering*, 61(3), 173-183 (2017). https://doi.org/10.3311/PPme.9378.

94. S. Debnath, T.K. Bandyopadhyay, **A. K. Saha,** "CFD Analysis for Non-Newtonian Pseudo Plastic Liquid Flow Through Small Diameter U-BEND", *Journal of Applied Fluid Mechanics*, 10(3), 971-987 (2017). **(IF: 0.888)**. https://doi.org/10.18869/acadpub.jafm.73.240.26074.

95. S. Debnath, T.K. Bandyopadhyay, **A. K. Saha**, "CFD Analysis of Non-Newtonian Pseudo Plastic Liquid Flow through Bends", *Periodica Polytechnica Mechanical Engineering*, 61(3), 184-203 (2017). https://doi.org/10.3311/PPme.9494.

96. S. Choudhury, **A. K. Saha**, M. Majumder, "A Novel Method for Performance Analysis of Surface Water Treatment Plant: MCDM Approach", *Journal of Global Ecology and Environment*, 6(1), 21 -27 (2017).

97. A. K. Saha, S. Choudhury, M. Majumder, "Performance Efficiency Analysis of Water Treatment Plants By Using MCDM and Neural Network Model", *Matter: International Journal of Science and Technology*, 3(1) (2017). https://doi.org/10.20319/Mijst.2017.31.2735.

98. S. Choudhury, **A. K. Saha**, M. Majumder, "An Optimization Model Using the Standard Deviation Method and Multiple Decision Making Statistics in Water Treatment Plants in North-eastern India", *Asian Journal of Water, Environment and Pollution*, 14(3), 27 -37 (2017)/. https://doi.org/10.3233/AJW-170023.

99. P. Majumder, **A. K. Saha**, M. Majumder, "Efficiency Assignment of Hydropower Plants by a Hybrid MCDM Method", *Journal of Engineering Mathematics & Statistics*, 1(1) (2017).

100. P. Majumder, **A. K. Saha**, M. Majumder, "Identification of Most Important Parameter for Efficiency Performance of Hydro Power Plant by Harmonic Mean Hierarchy Process (HMHP)", *SKIT Research Journal*, 7(1), 60-66 (2017).

101. P. Majumder, **A. K. Saha**, M. Majumder, "Selection of Significant Lifestyle Risk Factor of Cancer by Hybrid X- Bar – DEMATEL-TOPSIS Method", *Journal of Pharmaceutical Sciences and Research*, 9(6), 878-885 (2017).

102. B. Das, **A. K. Saha**, B. Bhattacharya, "On Infi-topological Spaces", *The Journal of Fuzzy Mathematics*, 25(2), 437-448 (2017).

103. S. Sharma, S. Choudhury, **A.K. Saha**, "Selection of Engineering Discipline in an Institute through Analytic Hierarchy Process", *Journal of Statistics and Mathematical Engineering*, 3(1) (2017).

104. P. Majumder, M. Majumder, **A. K. Saha**, "Selection of Important Parameter for Financial Performance of Hydro Power Plant", *Journal of Engineering and Applied Sciences*, 12(10), 8809-8812 (2017).

105. S. Nama, **A. K. Saha**, S. Ghosh, "A Hybrid Symbiosis Organisms Search algorithm and its application to real world problems", *Memetic Computing*, 9(3), 261-280 (2017). https://doi.org/10.1007/s12293-016-0194-1 **(IF: 2.205)**.

106. S. Nama, **A. K. Saha**, S. Ghosh, "Improved backtracking search algorithm for pseudo dynamic active earth pressure on retaining wall supporting c-Φ backfill", *Applied Soft Computing*, 52, 885-897 (2017). **(IF: 4.873)**.

107. S. Chakrabartty, A. Mondal, **A. K. Saha**, "Effect of Annealing on Optical, Electrical and Charge Trapping Properties of TiO2 NPs Arrays", *Journal of nanoscience and nanotechnology*, 17(2), 1300-1306 (2017). **(IF: 1.483)**.

108. S. Choudhury, **A. K. Saha**, M. Majumder, "Identifying the risk factor of water treatment plant: An MCDM approach", *International Journal of Control Theory and Applications*, 10(6), 33-38 (2017).

109. S. Choudhury, **A.K. Saha**, M. Majumder, "Prediction of Performance under uncertainty by Water Treatment Plant: A MCDM-ANN Approach", *Journal of Civil and Construction Engineering*, 2(1, 2, 3) (2016).

110. S. Nama, **A. K. Saha**, S. Ghosh, "A new ensemble algorithm of differential evolution and backtracking search optimization algorithm with adaptive control parameter for function optimization", *International Journal of Industrial Engineering Computations*, 7(2), 323-338 (2016).

111. S. Chakrabartty, A. Mondal, **A. K. Saha**, "Retention of charge in TiO2 Nanoparticles/ SiOx Thin Film system", *Advanced Science Letters*, 22(1), 141-144 (2016)**.**

112. S. Nama**, A. K. Saha**, S. Ghosh, "Improved Symbiotic Organisms Search Algorithm for Solving Unconstrained function Optimization", *Decision Science Letters*, 5(3), 361-380 (2016)**.**

113. P. Majumder, M. Majumder, **A. K. Saha**, "An Optimization-MCDM approach of Multi Criteria Decision Analysis", *International Journal of Control Theory and Applications*, 9(40), 417-423 (2016).

114. P. Majumder, M. Majumder, **A. K. Saha**, "Application of Decision Making for Optimal Condition Method to Analyze Operational Efficiency of Hydropower Plants", *International Journal of Control Theory and Applications*, 9(42), 79-94 (2016).

115. P. Majumder, **A. K. Saha,** M. Majumder, "Evaluation of Hydropower Plants with respect to Cost Incurred by Fuzzy Decision Making", *Journal of Civil and Construction Engineering*, 2(1, 2, 3) (2016).

116. P. Majumder, **A. K. Saha**, M. Majumder, "MACBETH-GMDH Based Efficiency Assessment Indicator Development for Performance Optimization of Hydro Power Plants", *Journal of Basic and Applied Research International*, 21(3), 106-121 (2016).

117. D. Bhowmik, **A. K. Saha,** P. Dutta, "A Novel Design and Implementation of Binary to Gray Code Converters up to 4-Bit by Quantum Dot Cellular Automata", *International Journal of Computer Technology and Applications*, 9(41), 697-707 (2016).

118. S. P. Mondal, D.K. Vishwakarma, **A.K. Saha**, "Solution of second order linear fuzzy difference equation by Lagrange's multiplier method", *Journal of Soft Computing and Applications*, 2016(1), 11-27 (2016).

119. S. Chakrabartty, A. Mondal, P. Chakrabarti, S.K. Singh, **A. K. Saha**, P. Singh, "Synthesis of biocompatible TiO2 nanodots: Glancing angle deposition technique", *Journal of nanoscience and nanotechnology*, 16(8), 8705-8710 (2016)**(IF: 1.483).**

120. A. K. Saha, M. Majumder, "Median based conversion of SGPA into percentage by cognitive methods", *Applied Mathematics and Computation*, 266, 1153–1162 (2015). (**IF: 3.092**).

121. B. Choudhuri, A. Mondal, A. Ganguly, **A. K. Saha**, K.K. Chattopadhyay, "Glancing angle synthesized indium nanoparticles covered TiO2 thin film and its structural, optoelectronic properties", *Applied Physics A Materials Science & Processing*, 118(1), 373-379 (2015). **(IF: 1.455)**.

122. S. Nama, **A. K. Saha**, S. Ghosh, "Parameters Optimization of Geotechnical Problem Using Different Optimization Algorithm", *Geotechnical and Geological Engineering*, 33(5), 1235–1253 (2015).

123. A. K. Saha, D. Bhattacharya, "Countable Fuzzy Topological Space and Countable Fuzzy Topological Vector Space", *Journal of Mathematical and Fundamental Sciences*, 47(2), 154-166 (2015).

124. T. K. Bandyopadhyay, S. Debnath, **A. K. Saha**, M. Majumder, "CFD and ANN analysis of non-Newtonian Pseudo plastic liquid flow through Rough Pipe", *International Journal of Mathematics and Computation*, 26(4), 17-36 (2015).

125. A. K. Saha and D. Bhattacharya, "Normal induced fuzzy topological spaces", Italian journal of pure and applied mathematics, 34, 45–56 (2015).

126. S. Chakrabartty, A. Mondal, M.B. Sarkar, B. Choudhuri, **A. K. Saha**, A. Bhattacharyya, "TiO2 nanoparticles arrays ultraviolet-A detector with Au Schottky contact", *IEEE Photonics Technology Letters*, 26, 1065 (2014).(**IF: 2.735**).

127. A. K. Saha, D. Bhattacharya, "A Note on Strongly Lower Semi-Continuous Functions and the Induced Fuzzy Topological Space Generated by them", *Journal of Mathematical and Fundamental Sciences*, 45(1), 61-82 (2013) https://doi.org/10.5614/j.math.fund.sci.2013.45.1.6.

128. A. K. Saha, D. Bhattacharya, "Compactness in Countable Fuzzy Topological Space", *Current Trends in Technology and Science*, 1(2), 74-78 (2012).

List of Books and Book Chapters

➢ Books

1. M. Majumder, **A. K. Saha**, "Impact of Climate Change on Hydro-Energy Potential A MCDM and Neural network Approach", Springer, (2016).

2. M. Majumder, **A. K. Saha,** "Feasibility Model of Solar Energy Plants by ANN and MCDM Techniques", Springer, (2016).

➢ Book Chapters

1. S. Chakraborty, **A.K. Saha,** S. K. Sahoo, A. Saha, "An improved whale optimization algorithm based on random weights and arbitrary best solution", in: Handbook of Whale Optimization Algorithm Variants, Hybrids, Improvements, and Applications, Elsevier, 2023: pp. 217-234.

2. S. K. Sahoo, S. Reang, **A.K. Saha,** S. Chakraborty, "F-WOA: an improved whale optimization algorithm based on Fibonacci search principle for global optimization", in: Handbook of Whale Optimization Algorithm Variants, Hybrids, Improvements, and Applications, Elsevier, 2023: pp. 235-242.

3. S. Nama, S. Chakraborty, **A.K. Saha,** S. Mirjalili, "Hybrid Moth-Flame Optimization Algorithm with Slime Mold Algorithm for Global Optimization", in: Handbook of Moth-Flame Optimization Algorithm, CRC Press, 2022: pp. 155–176. https://doi.org/10.1201/97810032053326-12.

4. S. Chakraborty, S. Nama, **A.K. Saha,** S. Mirjalili, "A Modified Moth-Flame Optimization Algorithm for Image Segmentation", in: Handbook Moth-Flame Optimization Algorithm, CRC Press, 2022: pp. 111–128. https://doi.org/10.1201/97810032053326-9.

5. S. Choudhury, **A. K. Saha,** "Impact Analysis of Water, Energy, and Climatic Variables on Performance of Surface Water Treatment Plants: Water and Energy Management in India", DOI: Springer, 2021. https://doi.org/10.1007/978-3-030-66683-5_10.

6. M. Majumder, **A. K. Saha,** P. D. Khobragade, D. Deb, K. Tripura, "Climate Change Impact on Virtual Water Availability: A Categorized Polynomial Neural Network Approach: Water and Energy Management in India", Springer, 2021. https://doi.org/10.1007/978-3-030-66683-5_5.

7. A. R. Pal, **A. K. Saha,** "Indicator Based Impact Analysis of Urbanization with Respect to Evapo-Transpiration: Water and Energy Management in India", Springer, 2021. https://doi.org/10.1007/978-3-030-66683-5_3.

8. **A. K. Saha,** D. Deb, P. D. Khobragade, "Power Allocation in an Educational Institute in India: A Fuzzy-GMDH Approach: Water and Energy Management in India", Springer, 2021. https://doi.org/10.1007/978-3-030-66683-5_11.

9. S. Sharma, **A. K. Saha,** "BOSCA—A Hybrid Butterfly Optimization Algorithm Modified with Sine Cosine Algorithm: Progress in Advanced Computing and Intelligent Engineering", Springer, 2021. https://doi.org/10.1007/978-981-15-6584-7_35.

10. G. Lohar, S. Sharma, **A. K. Saha,** S. Ghosh, "Optimization of Geotechnical Parameters Used in Slope Stability Analysis by Metaheuristic Algorithms: Applications of Internet of Things", Springer, 2021. https://doi.org/10.1007/978-981-15-6198-6_21

11. S. Nama, **A. K. Saha,** A. Saha, "The hDEBSA Global Optimization Method: A Comparative Study on CEC2014 Test Function and Application to Geotechnical Problem: Bio Inspired Neurocomputing", Springer, 2020. https://doi.org/10.1007/978-981-15-5495-7_12.

12. P. Majumder, **A. K. Saha**, "A new TOPSIS-based Approach to Evaluate the Economic Indicators in the Healthcare System and the Impact of Biotechnology: Translational Biotechnology: A Journey from Laboratory to Clinics", Elsevier, 2020. https://doi.org/10.1016/B978-0-12-821972-0.00001-0.

13. S. Sharma, **A. K. Saha,** S. Nama, "An Enhanced Butterfly Optimization Algorithm for Function Optimization: Soft Computing: Theories and Applications", Springer, 2020. DOI: 10.1007/978-981-15-4032-5_54.

14. S. Sharma, **A. K. Saha,** V. Ramasamy, J. L. Sarakar, C. R. Panigrahi, "hBOSOS: An Ensemble of Butterfly Optimization Algorithm and Symbiosis Organisms Search for Global Optimization: Advanced Computing and Intelligent Engineering" Springer, 2020. https://doi.org/10.1007/978-981-15-1483-8_48.

15. S. Nama, **A. K. Saha,**S. Sharma, "A Hybrid TLBO Algorithm by Quadratic Approximation for Function Optimization and Its Application: Recent Trends and Advances in Artificial Intelligence and Internet of Things", Springer, 2019. https://doi.org/10.1007/978-3-030-32644-9_30.

16. S. P. Mondal, D. K. Vishwakarma, **A. K. Saha**, "Intuitionistic fuzzy difference equation: Emerging Research on Applied Fuzzy Sets and Intuitionistic Fuzzy Matrices", IGI Global, 2017. https://doi.org/10.4018/978-1-5225-0914-1.ch005

17. P. Majumder, **A. K. Saha**, "Development of Financial Liability Index for Hydropower Plant with MCDM and Neuro-genetic Models: Application of Geographical Information Systems and Soft Computation Techniques in Water and Water Based Renewable Energy Problems", Springer, 2017. https://doi.org/10.1007/978-981-10-6205-6_4.

List of Conferences

➢ International Conferences

1. S. Debbarma, S. Chakraborty and **A. K. Saha**, "Healthcare waste recycling technology selection using Fermatean fuzzy Multi-Criteria Group Decision Making", International Conference on Emerging

Trends in Mathematical Sciences & Computing (IEMSC-23), Institute of Engineering & Management, Kolkata, India, February 3 – 5, 2023.

2. A. Pareek, S. Chakraborty and **A. K. Saha**, "An integrated multi-criteria decision making approach for material selection by waste recycling", International Conference on Emerging Trends in Mathematical Sciences & Computing (IEMSC-23), Institute of Engineering & Management, Kolkata, India, February 3 – 5, 2023.

3. S. K. Sahoo, **A. K. Saha** & M. Irfan "HMFOISCA: a hybrid moth flame optimization algorithm for combined economic emission dispatch problem", Dewantara International Conference on Multidisciplinary (D-ICoM) 2022, Universitas Sarjanawiyata Tamansiswa, Yogyakarta, Indonesia, 3rd December 2022.

4. S. Wanjari, S. K. Sahoo, T. M. Shami, **A. K. Saha**, I. Taufiq "A hybrid single candidate optimizer for engineering design problems", Dewantara International Conference on Multidisciplinary (D-ICOM)2022, Universitas Sarjanawiyata Tamansiswa, Yogyakarta, Indonesia, 3rd December 2022.

5. S. Reang, S. K. Sahoo & **A. K. Saha**, "A mathematical operator based Moth flame optimization algorithm for global optimization", International Conference on Evolution in Pure & Applied Mathematics (ICEPAM- 2022), Akal University, Bathinda, Punjab, India, November 16-18, 2022.

6. S. Debbarma, S. Chakraborty and **A. K. Saha**, "Health care waste recycling technology selection using Fermatean fuzzy MCGDM", International Online Conference on Reuse Recycling Upcycling Sustainable Waste Management and Circular Economy (ICRSC – 2022), Mahatma Gandhi University, Kottayam, Kerala, India, September 9 – 11, 2022.

7. A. Pareek, S. Chakraborty and **A. K. Saha**, "Recycling of waste plastic and agro waste for material selection using an integrated multi-criteria decision making approach", International Online Conference on Reuse Recycling Upcycling Sustainable Waste Management and Circular Economy (ICRSC – 2022), Mahatma Gandhi University, Kottayam, Kerala, India, September 9 – 11, 2022.

8. A. Soni, S. Chakraborty, P. K. Das and **A. K. Saha**, "An Integrated MCDM Approach for Materials Selection of Particulates Reinforced Sustainable Composites", 1st ICMEMS, June 25-26, 2022.

9. S. K. Sahoo & **A. K. Saha**, "A modernized moth flame optimization algorithm for higher dimensional problems", 1St International Conference on Sustainable Engineering and Technology (IC-SET 2022), Universitas Sarjanawiyata Tamansiswa, Yogyakarta, Indonesia, 7th June 2022.

10. N. Nath, **A. K. Saha** & S. K. Sahoo, "A modified sine cosine algorithm for composite benchmark functions", Fourth Two Day International Conference on "New Trends in Mathematical Modeling with Applications (ICNTMMA – 2022), Sri Vidya Mandir Arts and Science College, Katteri, Uthangarai, Tamil Nadu, India, April 7-8, 2022.

11. S. K. Sahoo, **A. K. Saha,** "An amended moth flame optimization algorithm based on Fibonacci search approach for solving engineering problems", Third International Conference on Emerging Trends in Mathematical Sciences & Computing (IEMSC-22). Institute of Engineering & Management, Kolkatta 4-6th February 2022.

12. S. K. Sahoo, **A. K. Saha,** "Price penalty factor-based approach for the solution of combined economic emission dispatch problem by hybrid moth flame optimization algorithm", International Conference on Nonlinear Applied Analysis and Optimization (ICNAAO-2021), IIT (BHU), Varanasi, 21-23rd December, 2021.

13. M. Debnath, S. Chakraborty, **A. K. Saha**, "A modified sine cosine algorithm for global 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.

14. S. Nama, **A. K. Saha**, P. Chakraborty, "A hybrid E-BSADE algorithm for large scale global 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.

15. A. Bhattacharjee, **A. K. Saha**, T. Moyra, M. Bhowmik, "Sidelobe reduction of non-uniform linear antenna array using grey wolf optimization 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.

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 PSOBSA for Function Optimization", 19th International Conference on Researches in Science and Technology (ICRST), Bercelona, 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 (NCRTET), 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/ SiOx 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 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.
2. 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.
3. 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.
4. 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.
5. 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.

6. 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.

7. 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.

8. 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.

9. 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.

10. 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.

11. 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.

12. 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.

13. 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.

14. 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.

15. 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.

16. Session chair in *International Conference on Recent Trends in Mathematical Sciences (ICRTMS),* Maharaja Bir Bikram University, Tripura, India during24-25 March, 2018.

17. 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.

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.

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…