

Jamal Mohamed College (Autonomous), Tiruchirappalli-20  
Staff Details for up gradation in the Web Site

**RESUME (as on 31.07.2013)**

**Department of Mathematics (Aided)**

- 1. Name** : Dr.A.NAGOOR GANI
- 2. Designation:** Associate Professor of Mathematics
- 3. Date of birth:** 10-06-1962
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**5. Educational Qualifications:**

S.No.	Examination Passed	University / College	Year of Passing
1.	B.Sc Mathematics	St. Joseph's College, Trichy	1983
2.	M.Sc Mathematics	Annamalai University, Chidambaram	1985
3.	M.Phil Mathematics	Alagappa University, Karaikudi	1991
4.	M.S(Software Systems)	BITS, Pilani	1998
5.	Ph.D Mathematics	Alagappa University, Karaikudi	1999

- 6. Experience:**
- |                |          |
|----------------|----------|
| Undergraduate: | 28 Years |
| Postgraduate:  | 22 Years |
| M.Phil.:       | 11 Years |

**7. Areas of Specialization:** Fuzzy Mathematics

**8. Languages known** : Tamil & English

## 9. Subjects Taught:

- Undergraduate** : 1. C Programming  
2. Discrete Mathematics  
3. Numerical Methods  
4. Basic Mathematics
- Postgraduate** : 1. Object Oriented Programming – C++  
2. Fuzzy Analysis  
3. Topology  
4. Complex Analysis
- M.Phil** : Fuzzy Analysis and applications

## 10. Research Supervision:

- M.Phil. Degree – Completed - 30  
Pursuing - 5  
Ph.D. Degree – Completed - 18  
Pursuing - 8

## 11. Details of Publications: (International & National Journal)

1. On Generalizing Semi-Open sets and Proper sets, Pure and Applied Mathematika Sciences, Vol.XLIX, No. 1-2, March 1999.
2. On fuzzy m-Normed Matrices, Bulletin of Pure and Applied Sciences, 1-11, Vol. 22E (1), 2003.
3. Order and size in fuzzy Graph, Bulletin of Pure and Applied Sciences, 145-148, Vol. 22E (1), 2003.
4. Solving linear Programming with Piecewise Quadratic Fuzzy numbers, Bulletin of Pure and Applied Sciences, 189-202, Vol. 22E(1), 2003.
5. Pairwise preconnected spaces, Bulletin of Pure and Applied Sciences, 159-163, Vol. 22E (1), 2003.
6. Second  $\mathfrak{S}_1\mathfrak{S}_2$  – Semi Open sets, Bulletin of Pure and Applied Sciences, 245-250, Vol. 22E (1), 2003.
7. An algorithmic approach to aggregate the opinions in terms of Fuzzy numbers for system selection, Bulletin of Pure and Applied Sciences, 265-283, Vol. 22E (2), 2003.
8. Binormed sequences in Fuzzy Matrices, Bulletin of Pure and Applied Sciences, 445-451, Vol. 22E (2), 2003.
9. Fuzzy Techniques and Business Decision Making, ACCST Research Journal, 22-28, Vol. II, No.1, January 2004.
10. Fuzzy matrix m-ordering, National Academy Science Letters, 129-132, Vol. 27, No 3 & 4, 2004.
11. On  $\mathfrak{S}_1\mathfrak{S}_2$  – Semi Pre open sets and  $\mathfrak{S}_1\mathfrak{S}_2$  – Quasi open sets, National Academy Science Letters, 279 – 283, Vol. 27, No. 7 & 8, 2004.

12. A Comparison between the Defuzzification methods of piecewise quadratic fuzzy numbers in LPP, 93-98, JARJ: Int., Vol.1, No.1, 2004.
13. On the equivalence classes of fuzzy m-Normed matrices, 99-101, JARJ: Int., Vol.1, No.1, 2004.
14. Shortest Path on a network using fuzzy number, Bulletin of Pure and Applied Sciences, 27-34, Vol. 23E(1), 2004.
15. Solving Transportation Problem Using Fuzzy Number, Bulletin of Pure and Applied Sciences, 281-289, Vol. 23E (2), 2004.
16. Status in Fuzzy Graphs, Bulletin of Pure and Applied Sciences, 361-365, Vol. 23E (2), 2004.
17. A New Representation of Piecewise Quadratic Fuzzy Number Using Closed Interval Approximations, Bulletin of Pure and Applied, 225-233, Vol. 23E(2), 2004.
18. Optimum Order Quantity using Fuzzy number, 63-75, JARJ: Int., Vol.1, No.2, 2004.
19. Analysis of Fuzzy queues using parametric programming, Bulletin of Pure and Applied Sciences, 17-23, Vol. 24E, No. 1, 2005.
20. Fuzzy Multi-Objective Path-DP Approach, 52-53, JARJ: Int., Vol.2, No.1, 2005.
21. Simulation of Turbulent Pre-mixed Charge Combustion in SI Engine, Technical Report of the Modelling and Simulation Research, Australia, Vol. 2: Issue 1 April 2005.
22. Fuzzy shortest path network with uncertain edge, 28-33, JARJ: Int., Vol.2, No.2, 2005, 23-31.
23. Fuzzy Buffer stock, JARJ: Int., Vol.2, No.2, 53 – 55, 2005.
24. Fuzzy Non-Cooperative Games using Fuzzy logic, JARJ: Int., Vol.2, No.2, 64 – 66, 2005.
25. Algorithm for Fuzzy Multi-objective Shortest path problem, Bulletin of Pure and Applied Sciences, Vol.24E, No.2, 325-329, 2005.
26. Identification of Fuzzy bridges and Fuzzy Cut nodes using Fuzzy Graph, Pure and Applied Matematika Sciences, Vol. LXII, No. 1-2, September 2005, 33-38.
27. Fuzzy Tandem Queues, Acta Ciencia Indica, Vol. XXXII M, No.1, (2006) 257-262.
28. Multi Objective Fuzzy Transportation Problem, Acta Ciencia Indica, Vol. XXXII M, No.1, (2006) 395-400.
29. Domination in fuzzy graph, Adv. in Fuzzy sets & Systems 1(1) (2006), 17-26.
30. On shortest path fuzzy network, Adv. in Fuzzy sets & Systems 1(3) (2006), 219-230.
31. Economic Production Quantity in Fuzzy sense, Bulletin of Pure and Applied Sciences, Vol. 25E (No.2) 2006, 295-301.
32. Transportation Problem in Fuzzy Environment, Bulletin of Pure and Applied Sciences, Vol. 25E (No.2) 2006, 415-420.
33. On Piecewise Quadratic fuzzy numbers in Linear Programming Problems, 62– 68, JARJ: Int., Vol.3, No.1, 2006.
34. Solving Linear Programming Problems using fuzzy numbers, 69 – 73, JARJ: Int., Vol.3, No.1, 2006.
35. Some inventory problems with fuzzy back ordering, Pure and Applied Matematika Sciences, Vol. LXIV, No. 1-2, September 2006, 49-57.

36. Free Nodes and Busy Nodes of a Fuzzy Graph, East Asian Mathematical Journal, Korea, 22 (2006), No.2, pp. 163-170.
37. Two Stage Fuzzy Transportation Problem, Journal of Physical Sciences, Vol.10, 2006, 63-69.
38. Fuzzy Bipartite Graphs, Journal of Quantitative Methods, Vol.2, No.2, December 2006, pp 54-60.
39. Linear Programming Problems using close interval approximation of Piecewise Quadratic Fuzzy numbers, Applied Science Periodical Vol. VIII, No. 4, November 2006.
40. Strong and Weak Domination in Fuzzy Graphs, East Asian Mathematical Journal, Vol.23, No.1, June 30, (2007) pp 1-8.
41. Fuzzy independent dominating set, Adv. in Fuzzy sets & Systems 2(1) (2007), 99-108.
42. An algorithm on Domination Number of a Graph, International Journal of Mathematics and Computer Science, 2(2007), no.3, 231-235,
43. Optimal Purchasing Policy in Fuzzy Environment, Adv. in Fuzzy sets & Systems 2(2) (2007), 109-129.
44. A New Algorithm for Solving a Fuzzy Transportation Problem, Adv. in Fuzzy sets & Systems 2(3) (2007), 301-310.
45. Solving Fuzzy Integer Transportation Problems, Pure Applied Matematika Sciences, vol. LXVI, No.1-2, September 2007, 27-35.
46. Basic Solution in Fuzzy Environment, Acta Ciencia Indica, Vol. XXXIII M, No.2, (2007), 329-334.
47. Parametric Study on Fuzzy queuing model, Bulletin of Pure and Applied Sciences Vol. 26E (No.1) 2007: 89-99.
48. Solving Multiobjective Fuzzy linear Programming problems using superiority and inferiority measures, JARJ:Int., 2007, Vol.4, No.1, 69-73.
49. On composition of two fuzzy graphs, JARJ:Int., 2007, Vol.4, No.1, 74-80.
50. Study of brick makers as bonded labourers using CETD matrix techniques, JARJ:Int., 2007, Vol.4, No.1, 81-87.
51. Use of CETD matrix techniques to analyse the forest workers as bonded labourers, JARJ:Int., 2007, Vol.4, No.1, 88-96.
52. Optimal Strategies of Two Person Fuzzy Game, Bulletin of Pure and Applied Sciences Vol. 26E (No.2) 2007: P. 257-262.
53. Multi-Objective Fuzzy Linear Programming Problems with Interval Numbers, Bulletin of Pure and Applied Sciences Vol. 26E (No.2) 2007: P. 191-196.
54. A Parametric Non Linear Programming Approach to Fuzzy Decision Problem of a Queuing System with Finite Capacity, Journal of Physical Sciences, Vol. 11, 2007, 17-28.
55. On fuzzy variable linear programming in duality, J. Curr. Sci. 10 (2) : 523-530 (2007).
56. A Non-Linear Parametric Programming approach for Fuzzy retrial queues, Jamal Academic Research Journal: an Interdisciplinary, Volume 4, No.2, pp. 59-68 (2007).
57. Some sequences in fuzzy graph, Far East Journal of Applied Mathematics, Volume 31, Issue 3, Pages 321 – 335 (June 2008)

58. Optimal Fuzzy Production Inventory Model over Time, *Advances in Fuzzy Sets and Systems*, Volume 3, Issue 2, Pages 157 - 173 (June 2008).
59. Conjunction of two Fuzzy Graphs, *International Review of Fuzzy Mathematics*, Volume 3 No.1 (June 2008) pp 95-105.
60. Parametric non-linear programming for analyzing fuzzy queues with finite capacity, *International Review of Fuzzy Mathematics*, Volume 3 No.1 (June 2008) pp 81-93.
61. Effective Fuzzy Euler and Fuzzy Hamiltonian Graph, *International Review of Fuzzy Mathematics*, Volume 3 No.1 (June 2008) pp 55-68.
62. Fuzzy Decision Making, *J. Sci. Trans. Environ. Technov.* 2008, 2(1): 4-8.
63. Isomorphism on Fuzzy Graphs, *International Journal of Computational and Mathematical Sciences*, volume 2 Number 4 Fall 2008 pp 200-206.
64. On Regular Fuzzy Graphs, *Journal of Physical Sciences*, vol. 12, 2008, 33-40.
65. Parametric Programming to the Analysis of Bulk Arrival Queuing Model, *International Journal of Combinatorial Mathematics and Combinatorial Computation*, 67 (2008), pp. 131-140, Canada.
66. An Algorithmic Approach to Fuzzy Quadratic Programming Problem, *International Journal of Algorithms, Computing and Mathematics*, volume 1, No.2, 2008, 47-52.
67. Regular Properties of Fuzzy Graphs, *Bulletin of Pure and Applied Sciences*. Vol.27E (No.2)2008: P.411-419.
68. Connected and Global Domination of Fuzzy Graph, *Bulletin of Pure and Applied Sciences*. Vol. 27E (No.2)2008:P. 255-265.
69. New approach to solve fuzzy linear system, *International Review of Fuzzy Mathematics*, volume 3, No. 2, (June 2008) pp. 135-146.
70. Solving Two Person Fuzzy Games by TOPSIS Method Using Multi Criteria Decision Making, *International Review of Fuzzy Mathematics*, volume 3, No. 2, (June 2008) pp. 179-190.
71. On Domination, Independence and Irredundance in Fuzzy Graph, *International Review of Fuzzy Mathematics*, volume 3, No. 2, (June 2008) pp. 191-198.
72. Bulk Arrival Fuzzy queues with fuzzy batch size, *Reflections des ERA- Journal of Mathematical Sciences*, Vol. 3 Issue 3 (2008) pp 179-194.
73. A fuzzy Production model with probabilistic resalable returns, *Iranian Journal of Mathematical Sciences and Informatics*, Vol. 3, No. 1, 77-86, 2008.
74. Solving Fuzzy Games by Multicriteria Decision Making Method, *Far East Journal of Applied Mathematics*, Volume 34 Issue 3 (2009) 293-302.
75. A Note on Linear Programming in Fuzzy Environment, *Proc. Nat. Acad. Sci. India Sect A*, Vol. 79. Pt. 1, 2009, pp 91-98.
76. Multi-objective Fuzzy Quadratic Programming Problem using Taylor Series Approach, *Advances in Fuzzy Sets and Systems*, Volume 4, Issue 1, 23–32 (February 2009).
77. On the Sum of the Cardinalities of Independent and Independent Dominating Sets in Fuzzy Graph, *Advances in Fuzzy Sets and Systems*, Vol. 4, No. 2, 157-165, 2009.

78. Some Properties of Truncations of Fuzzy Graphs, *Advances in Fuzzy Sets and Systems*, Vol. 4, No. 2, 215-227, 2009.
79. Perfect Fuzzy Graphs, *Bulletin of Pure and Applied Sciences*. Vol.28E (No.1)2009: P.83-90.
80. Relations between the parameters of independent domination and irredundance in fuzzy graph, *International Journal of Algorithms, Computing and Mathematics*, Vol. 2, No. 1 February 2009, pp 15-19.
81. Isomorphism properties on strong fuzzy graphs, *International Journal of Algorithms, Computing and Mathematics*, Vol. 2, No. 1 February 2009, pp 39-47.
82. A Bulk Arrival Queuing Model with Fuzzy Parameters and Fuzzy varying Batch Sizes, *International Journal of Algorithms, Computing and Mathematics*, Vol. 2, No. 3, August 2009, pp 1-8.
83. Equilibrium Analysis in Prisoner's Dilemma Using Fuzzy Numbers, *International Journal of Algorithms, Computing and Mathematics*, Vol. 2, No. 3, August 2009, pp 9-13.
84. Fuzzy Effective Distance  $K$  – Dominating Sets and Their Applications, *International Journal of Algorithms, Computing and Mathematics*, Vol. 2, No. 3, August 2009, pp 25-36.
85. Properties of  $\mu$ - Complement of a Fuzzy Graph, *International Journal of Algorithms, Computing and Mathematics*, Vol. 2, No. 3, August 2009, pp 73-83.
86. (Q,r) Inventory Model with Fuzzy Lead Time, *International Journal of Algorithms, Computing and Mathematics*, Vol. 2, No. 3, August 2009, pp 85-92.
87. A Note on Fuzzy Linear Programming Problem Using L-R Fuzzy Number, *International Journal of Algorithms, Computing and Mathematics*, Vol. 2, No. 3, August 2009, pp 93-106.
88. The Degree of a Vertex In Some Fuzzy Graphs, *International Journal of Algorithms, Computing and Mathematics*, Vol. 2, No. 3, August 2009, pp 107-116.
89. A Fuzzy Tool to Study Bonded Labourer Problem, *International Journal of Algorithms, Computing and Mathematics*, Vol. 2, No. 3, August 2009, pp 123-128.
90. C-R Representation for Fuzzy Linear Programming Problem, *Far East Journal of Mathematical Sciences (FJMS)*, Volume 35, Issue 3, Pages 341 - 353 (December 2009).
91. Supply chain model for the retailer's ordering policy under two levels of delay payments in fuzzy environment, *Applied Mathematical Sciences, Bulgaria*, Vol. 4, 2010, no. 24, 1155 – 1164.
92. A Batch Arrival Queue with Multiple Servers and Fuzzy Parameters: Parametric Programming Approach, *International Journal of Algorithms, Computing and Mathematics*, Vol. 2, No. 4, November 2009.
93. EOQ Model for the Deteriorating Items with Fuzzy Parameters, *Bulletin of Pure and Applied Sciences*, Vol.28E(N0.2) 2009: p.237-244
94. Parametric Nonlinear Programming approach to Fuzzy Retrieval queues with batch arrival, *Bulletin of Pure and Applied Sciences*, Vol.28E (N0.2) 2009: p.255-266.
95. Contributions to the Theory of Domination, Independence and Irredundance in Fuzzy Graph, *Bulletin of Pure and Applied Sciences*, Vol.28E(N0.2) 2009: p.179 -187.

96. Batch Arrival queue with setup, uncertain parameters and Fuzzy varying Batch sizes, Bulletin of Pure and Applied Sciences, Vol.28 E(N0.2) 2009: p.313-331.
97. On Antipodal Fuzzy Graph, Applied Mathematical Sciences, Vol. 4, 2010, no. 43, 2145 - 2155, Bulgaria.
98. Economic Order Quantity for items with imperfect quality where shortages are backordered in fuzzy environment, Advanced in Fuzzy Mathematics, Volume 5, Number 2 (2010), pp. 91–100.
99. Closed neighborhood degree and its extension in fuzzy graphs, Far East Journal of Applied Mathematics, Volume 40, Issue 1, Pages 65 - 72 (March 2010).
100. An Algorithm for Solving Fuzzy Quadratic Programming Problem, Far East Journal of Applied Mathematics, Volume 40, Issue 2, Pages 165 - 175 (March 2010)
101. EOQ with finite rate of replenishment under supplier credits with fuzzy parameters, Advances in Fuzzy Sets and Systems, Volume 5, Issue 2, Pages 127 - 136 (April 2010)
102. Fuzzy detour  $\mu$ -centre in fuzzy graphs, International Journal of Algorithms, Computing and Mathematics, Volume 3, Number 2, May 2010, pp. 57-63.
103. A New Algorithm of Shortest Path Fuzzy Network, Bulletin of Pure and Applied Sciences. Vol. 29E (No.1) 2010:P.41-47.
104. TOPSIS Method for Solving Interval Valued Intuitionistic Fuzzy Decision Making Problem, Bulletin of Pure and Applied Sciences. Vol. 29E (No.1) 2010:P.125-133.
105. Truncations on Special Fuzzy Graphs, International Journal of Advanced in Fuzzy Mathematics, Vol. 5, No. 2 (2010), pp. 135–145.
106. Optimization of Air Lift Operation under Fuzzy Environment, Applied Mathematical Sciences, Vol. 4, 2010, no. 55, 2723 – 2732, Bulgaria.
107. Fuzzy Similarity Measure on Shortest Path, International Journal of Advanced in Fuzzy Mathematics, Volume 5, Number 3 (2010), pp. 279–284.
108. Degree, Order and Size in Intuitionistic Fuzzy Graphs, International journal of Algorithms, Computing and Mathematics, Volume 3, Number 3, August 2010, pp 11-16.
109. An intuitionistic fuzzy multiobjective shortest path, Advances in Fuzzy Sets and Systems, Vol. 7, No. 1, 2010, pp. 17-26.
110. A New Approach on Shortest Path in Fuzzy Environment, ICTACT Journal on Soft Computing, volume 1, Issue 2, October 2010, pp 102-104.
111. An Algorithmic Approach to Multi Objective Fuzzy Linear Programming Problem, International journal of Algorithms, Computing and Mathematics, Vol. 3, No. 4, November 2010, pp. 61-66.
112. On Searching Intuitionistic Fuzzy shortest path in network, International Journal of Applied Mathematical Sciences, Vol. 4, 2010, No. 69, 3447 – 3454, Bulgaria.
113. A Fuzzy Production Inventory System with Deterioration, International Journal of Applied Mathematical Sciences, Vol. 5, 2011, No. 5, 233 – 241, Bulgaria.
114. Fuzzy compromise ratio method for decision making problem, International J. of Math. Sci. & Engg. Appls. (IJMSEA), Vol. 5 No. I (January, 2011), pp. 39-52.

115. Domination Critical Nodes in Fuzzy Graph, International J. of Math. Sci. & Engg. Appls. (IJMSEA), Vol. 5 No. I (January, 2011), pp. 295-301.
116. Fuzzy Detour as a Hamiltonian Path in Fuzzy Graphs, International J. of Math. Sci. & Engg. Appls. (IJMSEA), Vol. 5 No. II (March, 2011), pp. 161-166.
117. Some aspects of neighbourhood fuzzy graph, Bulletin of Pure and Applied Sciences. Vol. 29E (No.2) 2010 P.319-324.
118. A Hybrid Approach on Shortest Path in Fuzzy Network – Accepted International Journal of Information Sciences and Application (IJISA)
119. Intuitionistic Fuzzy Credibility Relation Method for Multi – Criteria Group Decision Making Problem, International J. of Math. Sci. & Engg. Appls. (IJMSEA), Vol. 5 No. III (May, 2011), pp. 11-25.
120. Transshipment Problem in Fuzzy Environment, International J. of Math. Sci. & Engg. Appls. (IJMSEA), Vol. 5 No. III (May, 2011), pp. 57-74.
121. Fuzzy Approach In Determination of EOQ in a Two Level Supply Chain with Transportation Cost and Comparison of Total Cost in Centralized and Decentralized Decisions using Fuzzy Ranking Method, International J. of Math. Sci. & Engg. Appls. (IJMSEA), Vol. 5 No. III (May, 2011), pp. 175-187.
122. On Complete Double Irredundant Sets In Fuzzy Graph, International J. of Math. Sci. & Engg. Appls. (IJMSEA), Vol. 5 No. III (May, 2011), pp. 429-435.
123. An Optimal Policy for Recovery and Procurement with Imperfect Quality under Multiple Setups, International Journal of Mathematical Sciences and Applications, Vol. 1 No. 2 (May, 2011), pp. 473-489.
124. A Study on Domination, Independent Domination and Irredundance in Fuzzy Graph, International Journal of Applied Mathematical Sciences, Vol. 5, 2011, no. 47, 2317-2325, Bulgaria.
125. Insensitive Arc in Domination of Fuzzy Graph, International Journal of Contemporary Mathematical Sciences, Vol. 6, 2011, no. 26, 1303 – 1309, Bulgaria.
126. Simplex Type Algorithm for Solving Fuzzy Transportation Problem, Tamsui Oxford Journal of Information and Mathematical Sciences, 27(1) (2011) 89-98, Taiwan.
127. Some Topics on Critical Arc and Insensitive Node Domination in a Fuzzy Graph, CiiT International Journal of Fuzzy Systems, Vol.3, No. 3, April 2011, pp. 93-96.
128. Busy Nodes and Free Nodes in Intuitionistic Fuzzy Graphs, CiiT International Journal of Fuzzy Systems, Vol.3, No. 3, April 2011, pp. 97-102.
129. An Intuitionistic Fuzzy Shortest Path Problem Using Similarity Measure, CiiT International Journal of Fuzzy Systems, Vol.3, No. 3, April 2011, pp. 103-109.
130. Fuzzy Shortest Path for Steiner Tree Problem, International Journal on Computer Science and Engineering, Vol. 3 No. 4 Apr 2011, 1615-1621.
131. Fuzzy Detour Boundary Vertices in Fuzzy Graphs, Int. J. Contemp. Math. Sciences, Vol. 6, 2011, no. 35, 1725 – 1731. Bulgaria.



132. A Fuzzy Approach on Vendor Managed Inventory Policy, *Int. J. Contemp. Math. Sciences*, Vol. 6, 2011, no. 35, 1733 – 1747. Bulgaria.
133. Vendor-Buyer Fuzzy Inventory System with Transportation Cost, *Far East Journal of Applied Mathematics*, Volume 54, Number 1, 2011, pp. 65-79.
134. Solving Fuzzy Multi-objective Linear Programming problems with Linear membership Functions, *Australian Journal of Basic and Applied Sciences*, 5(8): 1163-1171, 2011, Australia.
135. Isomorphism Properties on Strong Intuitionistic Fuzzy Graphs, *Ultra Scientist Vol. 23(3) A*, 629-638(2011).
136. Compromise Ratio Method for Multi-Person Multi-Attribute Decision Making Under Intuitionistic Fuzzy Environment, *Ultra Scientist Vol. 23(3) A*, 675-686 (2011).
137. Weighted Average Rating (WAR) Method for Solving Group Decision Making Problem using an Intuitionistic Trapezoidal Fuzzy Hybrid Aggregation (ITFHA) Operator, *Int. J. Pure Appl. Sci. Technol.*, 6(1) (2011), pp. 54-61.
138. Weighted Average Rating (WAR) Method for Solving Multi – Criteria Group Decision Making Problem Using Fuzzy Hybrid Aggregation (FHA) Operator, *Bulletin of Pure and Applied Sciences*. Volume 30 E, No.2, 2011: P. 257-265
139. Perfect Intuitionistic Fuzzy Graphs, *Bulletin of Pure and Applied Sciences*. Volume 30 E, No.2, 2011: P. 145-152
140. A New Operation On Triangular Fuzzy Number For Solving Fuzzy Linear Programming Problem, *International Journal of Applied Mathematical Sciences*, Vol. 6, 2012, no. 11, 525 – 532, Bulgaria.
141. On Irregular Fuzzy Graphs, *International Journal of Applied Mathematical Sciences*, Vol. 6, 2012, no. 11, 517 – 523, Bulgaria.
142. An Index Method for Solving the Linear Complementarity Problem Under Fuzzy Environment, *International Journal of Applied Mathematical Sciences*, Vol. 6, 2012, no. 42, 2081 – 2089, Bulgaria.
143. An Algorithmic Approach of Solving Fuzzy Linear System Using Fourier Motzkin Elimination Method, *Journal of Advances in Fuzzy Sets and Systems*, Volume 10, Issue 2, Pages 95 – 109, (December 2011).
144. Mixed Constraint Fuzzy Transshipment Problem, *International Journal of Applied Mathematical Sciences*, Vol. 6, No. 48, 2385 - 2394, 2012, Bulgaria.
145. Solving Intuitionistic Fuzzy Transportation Problem using Zero Suffix Algorithm, *International J. of Math. Sci. & Engg. Appls. (IJMSEA)*, Vol. 6 No. III (May 2012), pp. 73-82.
146. Isomorphism On Irregular Fuzzy Graphs, *International J. of Math. Sci. & Engg. Appls. (IJMSEA)*, Vol. 6 No. III (May 2012), pp. 193-208.
147. A New Method for Solving Two Stage Supply Chain Fuzzy Inventory Problem, *International Journal of Applied Mathematical Sciences*, Vol. 6, 2012, no. 60, 2963 – 2978, Bulgaria.
148. A New Approach on Solving Intuitionistic Fuzzy Linear Programming Problem, *International Journal of Applied Mathematical Sciences*, Vol. 6, 2012, no. 70, 3467 – 3474, Bulgaria.

149. Properties of Fuzzy Labeling Graph, International Journal of Applied Mathematical Sciences, Vol. 6, 2012, no. 70, 3461 – 3466, Bulgaria.
150. A note on Economic Order Quantity using Fuzzy Optimization Technique, Applied mathematics, Elixir Appl. Math. 46(2012) 8304-8309.
151. A New Algorithmic Approach on Multi-Objective Fuzzy Transshipment Problem, Ultra Scientist Vol. 24(3) A, (2012) 469-478.
152. A New Method for Solving Fully Fuzzy LPP using LCP Approach with the Special Type of Trapezoidal Fuzzy Numbers, International Journal of Mathematical Sciences and Engineering Applications. Vol. 7 No. I (January, 2013), pp. 153-166
153. A New Method for Solving Bimatrix Game Using LCP Under Fuzzy Environment, J. Math. Comput. Sci. 3 (2013), No. 1, 135-149, UK.
154. A Novel Approach to Find the Entire Feasible Solutions on Fuzzy Linear Programming Problem, J. Math. Comput. Sci. 3 (2013), No. 1, 124-134, UK.
155. Vague Hypergraphs - Accepted in the Journal of Intelligent and Fuzzy Systems.
156. Multiple Labeling Approach for Finding Shortest Path with Intuitionistic Fuzzy Arc Length, International Journal of Scientific & Engineering Research, Volume 3, Issue 11, pp. 101-106, November-2012.
157. Split Domination on Intuitionistic Fuzzy Graph, Advances in Computational Mathematics and its Applications (ACMA), Vol. 2, No. 2, pp. 278-284, 2012. – USA.
158. Fuzzy Graphs With Equal Fuzzy Domination And Independent Domination Numbers, International Journal of Engineering Science and Technology Development Vol. 1, No. 2 ( 2012), 66-68.
159. Fuzzy Approach on a Near Optimal Solution for Production Integrated Model Under JIT Delivery with Deteriorating Items, International J. of Math. Sci. Engg. Appls, (IJMSEA), Vol. 7, No. II (March, 2013), pp. 99-116.
160. A New Method for Solving Intuitionistic Fuzzy Transportation Problem, International Journal of Applied Mathematical Sciences, Vol. 7, 2013, no. 28, 1357 - 1365, Bulgaria.
161. On Fuzzy Det - Norm Matrix, J. Math. Comput. Sci. 3 (2013), No. 1, 233-241, UK.
162. Inspection Cost and Imperfect Quality Items with Multiple Imprecise Goals in Supply Chains in an Uncertain Environment, Intern. J. Fuzzy Mathematical Archive, Vol. 1, 2013, 23-36.
163. Isomorphic Properties of Highly Irregular Fuzzy Graph and Its Complement, International journal of Theoretical Mathematics and Applications, vol.3, no.1, 2013, 161-181.
164. Optimizing Advertising, Pricing and Inventory Policies in VMI Production Supply Chains with Compensating Cost in Fuzzy Environment, Journal of Applied Mathematics and Fluid Mechanics, Volume 5, Number 1 (2013), pp. 1-21.
165. Integrated Profit Oriented Supply Chain of Perfect Quality Items with Multiple Imprecise Goals in an Uncertain Environment, International Journal of Mathematical and Computational Science, 3(2013), No.2, 482-504, UK.

166. An Approximate Optimal solution for the fuzzy variable linear programming problem using interior point technique, International Journal of Pure and Applied Mathematics, Volume 85 No. 2 2013, 395-404.
167. The Principal Pivoting Method for Solving the Fuzzy Quadratic Programming Problem, International Journal of Pure and Applied Mathematics, Volume 85 No. 2 2013, 405-414.
168. Solution of a Fuzzy Assignment Problem by Using a New Ranking Method, Intern. J. Fuzzy Mathematical Archive, Vol. 2, 2013, 8 – 16.
169. An Approach to Solve Intuitionistic Fuzzy Linear Programming Problem Using Single Step Algorithm, Accepted in International Journal of Pure and Applied Mathematics.
170. Two Stage Supply Chain Fuzzy Inventory and Pricing Model with Separate Total Inventory Cost, Multiple Retail Prices using Cobb - Douglas Demand Function – Accepted in the Advances in Computational Mathematics and its Applications.
171. Fuzzy approach on optimal ordering strategy in inventory and pricing model with deteriorating items - Accepted in International Journal of Pure and Applied Mathematics.
172. Optimal Policy for Vendor-Buyer Integrated Inventory Model within Just In Time in Fuzzy Environment – Accepted in the International Journal of Fuzzy Mathematical Archive.

## **12. Research Paper Publications in National & International Conference Proceedings:**

1. Pythagorean Fuzzy Matrices, Proceedings of the National Conference on Recent Trends in Discrete and Fuzzy Mathematics, Bharata Mata College, Thrikkakara, Kochi-21, Kerala; Nov.10-12, 2005, Pages 74-76.
2. Fuzzy Multi Objective Shortest Path, Proceedings of the National Conference on Recent Trends in Discrete and Fuzzy Mathematics, Bharata Mata College, Thrikkakara, Kochi-21, Kerala; Nov.10-12, 2005, Pages 68-70.
3. An Analytical Study of Degree of Nodes of a Fuzzy Graph, Proceedings of the National Conference on Recent Trends in Discrete and Fuzzy Mathematics, Bharata Mata College, Thrikkakara, Kochi-21, Kerala; Nov.10-12, 2005, Pages 71-73.
4. Fuzzy Decision Making Method Using Piecewise Quadratic Fuzzy Numbers, Proceedings of the National Conference on Recent Trends in Discrete and Fuzzy Mathematics, Bharata Mata College, Thrikkakara, Kochi-21, Kerala; Nov.10-12, 2005, Pages 77-83.
5. A Fuzzy approach to Non-Cooperative Games, Proceedings of the National Conference on Mathematical Techniques and Applications, Jan 5 & 6, 2007, S.R.M. University, Chennai, pp.31-38.
6. An algorithm on Domination Number of a Graph, Proceedings of the International Conference on Mathematics and Computer Science, Loyola College, Chennai, India, 01-03, March 2007, page 171-172.
7. Degree of Fuzzy graphs, Proceedings of the International Conference on Mathematics and Computer Science, Loyola College, Chennai, India, 01-03, March 2007, page 178-182.

8. Minimal paths in Fuzzy graph, Proceedings of the International Conference on Mathematics and Computer Science, Loyola College, Chennai, India, 01-03, March 2007, page 183-185.
9. Analysis of Fuzzy games using Piecewise Quadratic number, Proceedings of the International Conference on "Mathematics and Computer Science", Loyola College, Chennai, India, 01-03, March 2007, page 283-289.
10. Parametric Programming to the analysis of Bulk Arrival Queuing Model, Proceedings of the International Conference on Mathematics and Computer Science, Loyola College, Chennai, India, 01-03, March 2007, page 488-491.
11. Optimal Consensus of Opinions using Piecewise-Quadratic Fuzzy numbers, Proceedings of the International Conference on "Mathematics and Computer Science", Loyola College, Chennai, India, 01-03, March 2007, page 495-498.
12. Inventory Model with Two Warehouses, Proceedings of the International Conference on "Mathematics and Computer Science", Loyola College, Chennai, India, 01-03, March 2007, page 520-521.
13. An Algorithmic Approach to Fuzzy Transportation Problem, Proceedings of the International Conference on Modeling and Simulation, Coimbatore Institute Technology, Coimbatore, India, 27-29, August 2007, Volume I, pp. 678-683.
14. A Note on Fuzzy Linear Programming Problem, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 7-14, GIGO Publications.
15. A Note on Bell Shaped Fuzzy Numbers, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 15-19, GIGO Publications.
16. Split and Non-Split Domination in Fuzzy Graphs, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 20-23, GIGO Publications.
17. Linear Complementary Problems with Fuzzy Numbers, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 24-28, GIGO Publications.
18. On Close Interval Approximation of Fuzzy Numbers, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 29-33, GIGO Publications.
19. On Irredundance in Fuzzy Graphs, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 40-43, GIGO Publications.
20. Estimation of Maximum Age Group of Rice Mill Workers as Bonded Labourers with their Sociological Attributes, Using Fuzzy Matrix, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 49-52, GIGO Publications.

21. Identification of the Maximum Age Group of Silk Weavers who become Bonded Labourers using Matrices, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 53-57,GIGO Publications.
22. A Non-Linear Parametric Programming Approach for Fuzzy Retrial Queues, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 84-90,GIGO Publications.
23. Fuzzy Cost Deviation Vector Method for Solving Fuzzy Transportation Problems, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 101-105,GIGO Publications.
24. Next To Next Minimum Penalty Method for Solving Transportation Problem, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 106-110,GIGO Publications.
25. Inventory Model without Shortages with Finite Rate of Replenishment under Fuzzy Environment, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 115-119,GIGO Publications.
26. Regular Property of the Join of Two Fuzzy Graphs, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 142-146,GIGO Publications.
27. Paretominimum Paths of a Fuzzy Network with Interval Numbers, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 182 - 186,GIGO Publications.
28. Parametric Programming to the Analysis of Fuzzy Retrial Queues, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 187-191,GIGO Publications.
29. Multi Criteria Decision Making in Two Person Fuzzy Games Using TOPSIS, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 218-222,GIGO Publications.
30. Fuzzy Queues with Priority Discipline, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 223-229, GIGO Publications.
31. Some Aspects of Fuzzy Line Graphs and Isomorphism, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 230-236,GIGO Publications.
32. Solving Time Series Forecasting Method in Fuzzy Number, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 262-267, GIGO Publications.
33. A Fuzzy Production Model for Non-Perishable Items with Defectives, Proceedings of the National Conference on Fuzzy Mathematics and Graph Theory, 27 & 28, March 2008, Tiruchirappalli, pp 268-277,GIGO Publications.

34. More Adjacency Graph of a Fuzzy Graph, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 158-161, Allied Publishers Pvt. Ltd.
35. Complement and Conjunction of Truncations of Fuzzy Graphs, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 162-167, Allied Publishers Pvt. Ltd.
36. Some Aspects of Total Fuzzy Graph, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 168-179, Allied Publishers Pvt. Ltd.
37. On the Sum and Product of Upper Irredundance Number of a Fuzzy Graph and its Complement, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 180-183, Allied Publishers Pvt. Ltd.
38. Fuzzy Detour  $\mu$ -Distance in Fuzzy Graph, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 184-187, Allied Publishers Pvt. Ltd.
39. The Membership Function approach for Measuring Performances of Multi-Channel Queuing systems with indefinite data, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 305-313, Allied Publishers Pvt. Ltd.
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41. Ranking L-R Fuzzy Numbers based on Expected Value Method, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 393-402, Allied Publishers Pvt. Ltd.
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43. Modified Interval Arithmetic Fuzzy Quadratic Programming Problem, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 472-477, Allied Publishers Pvt. Ltd.
44. On solving a socially relevant Fuzzy Goal Programming Model using Taylor Series Approach, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 478-482, Allied Publishers Pvt. Ltd.
45. A new approach for solving Generalized Fuzzy Transportation Problem, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 489-492, Allied Publishers Pvt. Ltd.

46. Transportation Problem with shuffled Fuzzy Numerates, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 493-496, Allied Publishers Pvt. Ltd.
47. Shortest Path Fuzzy Network, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 497-501, Allied Publishers Pvt. Ltd.
48. An ordering policy with allowable shortage and permissible delay in payments in Fuzzy Environment. Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 515-521, Allied Publishers Pvt. Ltd.
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51. Fuzzy Logic Based Data Retrieval, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 548-551, Allied Publishers Pvt. Ltd.
52. A New Vertex Method in Fuzzy Environment, Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, 24<sup>th</sup> & 25<sup>th</sup> July, 2009, Tiruchirappalli, pp 559-566, Allied Publishers Pvt. Ltd.
53. Fuzzy Transportation Problem using Ranking Principle, Proceedings of International Conference on Emerging Trends in Mathematics and Computer Applications, December 16<sup>th</sup> to 18<sup>th</sup>, 2010, Sivakasi, pp 144-148, Allied Publishers Pvt. Ltd.
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57. Solving Fuzzy Linear Programming Problem using Interval Number, Proceedings of International Conference on Emerging Trends in Mathematics and Computer Applications, December 16<sup>th</sup> to 18<sup>th</sup>, 2010, Sivakasi, pp 162-165, Allied Publishers Pvt. Ltd.
58. Fuzzy Approach in Determination of EOQ in a Two Level Supply Chain with Transportation Cost and Comparison of Total cost in centralized and Decentralized Decisions, Proceedings of

International Conference on Emerging Trends in Mathematics and Computer Applications, December 16<sup>th</sup> to 18<sup>th</sup> , 2010, Sivakasi, pp 166-170, Allied Publishers Pvt. Ltd.

59. Busy Nodes and Free Nodes in Intuitionistic Fuzzy Graphs, Proceedings of National Conference on Recent Development in Mathematics and Its Applications, January 31<sup>st</sup> and February 1<sup>st</sup> 2011, Chennai, pp 331-337, Excel India Publishers New Delhi.
60. Critical Arc and Insensitive Node Domination in a Fuzzy Graph, Proceedings of National Conference on Recent Development in Mathematics and Its Applications, January 31<sup>st</sup> and February 1<sup>st</sup> 2011, Chennai, pp 321-326, Excel India Publishers New Delhi.
61. An Intuitionistic Fuzzy Shortest Path Problem Using Trapezoidal Intuitionistic Fuzzy Number, Proceedings of National Conference on Recent Development in Mathematics and Its Applications, January 31<sup>st</sup> and February 1<sup>st</sup> 2011, Chennai, pp 88-93, Excel India Publishers New Delhi.
62. Fuzzy Multiobjective Nonlinear Programming Problem, Proceedings of the International Conference on Stochastic Modeling and Simulation (ICSMS 2011) Vel Tech Dr.RR & Dr.SR Technical University, Chennai, TN, India, 15-17 December 2011, pp. 142-146, Allied Publishers PVT. LTD., Chennai.
63. A New Operation on Trapezoidal Fuzzy Number for Solving Fuzzy Linear Programming Problem, Proceedings of the Heber International Conference on Applications of Mathematics and Statistics (HICAMS-2012 ), 5<sup>th</sup> to 7<sup>th</sup> January 2012, Tiruchirappalli, pp 289-296 , Excel India Publishers New Delhi.
64. Solving Linear Programming Problem in Intuitionistic Fuzzy Environment, Proceedings of the Heber International Conference on Applications of Mathematics and Statistics (HICAMS-2012 ), 5<sup>th</sup> to 7<sup>th</sup> January 2012, Tiruchirappalli, pp 297-304, Excel India Publishers New Delhi.
65. An Algorithmic Approach to Find Neighbourly Irregular and Highly Irregular Fuzzy Graph of a Fuzzy Graph, Proceedings of the Heber International Conference on Applications of Mathematics and Statistics (HICAMS-2012 ), 5<sup>th</sup> to 7<sup>th</sup> January 2012, Tiruchirappalli, pp 305-311, Excel India Publishers New Delhi.
66. On Antipodal Intuitionistic Fuzzy Graphs, Proceedings of the Heber International Conference on Applications of Mathematics and Statistics (HICAMS-2012 ), 5<sup>th</sup> to 7<sup>th</sup> January 2012, Tiruchirappalli, pp 382-388, Excel India Publishers New Delhi.
67. Supplier selection using combined MCDM approach- A case study for a general library, Proceedings of the Heber International Conference on Applications of Mathematics and Statistics (HICAMS-2012 ), 5<sup>th</sup> to 7<sup>th</sup> January 2012, Tiruchirappalli, pp 389-394, Excel India Publishers New Delhi.
68. Domination in Intuitionistic Fuzzy Graphs, Proceedings of the Heber International Conference on Applications of Mathematics and Statistics (HICAMS-2012 ), 5<sup>th</sup> to 7<sup>th</sup> January 2012, Tiruchirappalli, pp 434-439, Excel India Publishers New Delhi.
69. On Fuzzy Detour and Cut Nodes in Fuzzy Graphs, Proceedings of the Heber International Conference on Applications of Mathematics and Statistics (HICAMS-2012 ), 5<sup>th</sup> to 7<sup>th</sup> January 2012, Tiruchirappalli, pp 477-480, Excel India Publishers New Delhi.



70. The Maximum Index Method for Solving the Fuzzy Quadratic Programming Problem, Proceedings of the Heber International Conference on Applications of Mathematics and Statistics (HICAMS-2012 ), 5<sup>th</sup> to 7<sup>th</sup> January 2012, Tiruchirappalli, pp 519-523, Excel India Publishers New Delhi.
71. Intuitionistic Fuzzy Transportation Problem, Proceedings of the Heber International Conference on Applications of Mathematics and Statistics (HICAMS-2012 ), 5<sup>th</sup> to 7<sup>th</sup> January 2012, Tiruchirappalli, pp 528-535, Excel India Publishers New Delhi.
72. Isomorphism on the Complement of Neighbourly Irregular Fuzzy Graph, Proceedings of the International Conference on Mathematical Modeling and Applied Soft Computing (MMASC-2012), 11<sup>th</sup> to 13<sup>th</sup> July 2012, Coimbatore Institute of Technology, Coimbatore, Volume-I, pp 39-47, Shanga Verlag Publishers, Coimbatore (ISBN No.: 978-81-923752-1-2).
73. A Linear Complementarity Approach to Solve the Fully Fuzzy Quadratic Programming Problems, Proceedings of the International Conference on Mathematical Modeling and Applied Soft Computing (MMASC-2012), 11<sup>th</sup> to 13<sup>th</sup> July 2012, Coimbatore Institute of Technology, Coimbatore, Volume-I, pp 48-58, Shanga Verlag Publishers, Coimbatore (ISBN No.: 978-81-923752-1-2).
74. A New Operation on Special Triangular Intuitionistic Fuzzy Numbers for Solving Intuitionistic Fuzzy Linear Programming Problem, Proceedings of the International Conference on Mathematical Modeling and Applied Soft Computing (MMASC-2012), 11<sup>th</sup> to 13<sup>th</sup> July 2012, Coimbatore Institute of Technology, Coimbatore, Volume-I, pp 202-211, Shanga Verlag Publishers, Coimbatore (ISBN No.: 978-81-923752-1-2).
75. A New Method for Solving Two Stage Supply Chain Fuzzy Inventory and Pricing Model Using Cobb - Douglas Demand, Proceedings of the International Conference on Mathematical Modeling and Applied Soft Computing (MMASC-2012), 11<sup>th</sup> to 13<sup>th</sup> July 2012, Coimbatore Institute of Technology, Coimbatore, Volume-I, pp 239-249, Shanga Verlag Publishers, Coimbatore (ISBN No.: 978-81-923752-1-2).
76. Mixed Constraint Intuitionistic Fuzzy Transportation Problem, Proceedings of the International Conference on Mathematical Modeling and Applied Soft Computing (MMASC-2012), 11<sup>th</sup> to 13<sup>th</sup> July 2012, Coimbatore Institute of Technology, Coimbatore, Volume-I, pp 832-843, Shanga Verlag Publishers, Coimbatore (ISBN No.: 978-81-923752-1-2).

### **13. Details of Papers Presented:**

1. UGC Sponsored National Seminar on Applications of Mathematics, St. Joseph's College, Tiruchirappalli, Tamil Nadu, 17-19, Feb. 2000.
2. UGC Sponsored National Seminar on Recent Developments in Mathematical Applications, Sri Visalakshi college, Udumalpet, Tamil Nadu, 1&2, February 2002.
3. National Symposium on Mathematical Methods & Application., I.I.T, Madras, Tamil Nadu, 21, December 2002.
4. National Symposium on Mathematical Methods & Application., I.I.T, Madras, Tamil Nadu, 22, December 2003.

5. UGC Sponsored State Level Seminar on Mathematical Methods in Social Sciences, Jamal Mohamed College, Tiruchirappalli, Tamil Nadu, 08 & 09, September, 2004.
6. National Symposium on Mathematical Methods & Application., I.I.T, Madras, Tamil Nadu, 22, December 2004.
7. UGC sponsored National seminar on “Development in Mathematical Applications”, K.N. Govt. Arts College for Women, Thanjavur, Tamil Nadu, 08 & 09, April 2005.
8. National Conference on Recent trends in Discrete and Fuzzy Mathematics, Kerala Mathematical Association & Bharata Mata College, Thikkakara, Kochi, Kerala, 10-12, November 2005.
9. International Conference on “Number Theory and Mathematical Physics”, SASTRA, Kumbakonam, Tamil Nadu, India, 20 & 21 December 2005.
10. International Conference on “Mathematical Modelling and Computation”, Universiti of Brunei Darrussalam, Brunei, 05 – 08, June 2006.
11. National Conference on “Mathematical Techniques and Applications”, SRM University, Chennai, Tamil Nadu, 05&06, January 2007.
12. National Level seminar on “Emerging trends of Mathematical Techniques and their applications in Computer Science”, Tiruchirappalli, Tamil Nadu, 23 & 24, February 2007.
13. International Conference on “Mathematics and Computer Science” Loyola College, Chennai, Tamil Nadu, India, 01-03, March 2007.
14. International Conference on Modelling and Simulation, Coimbatore Institute of Technology, Coimbatore, Tamil Nadu, India, 27-29, August 2007.
15. International Conference on “Mathematics and Computer Science” Loyola College, Chennai, Tamil Nadu, India, 25-26, July 2008.
16. National Seminar on “Novel Approach in Graph Theory, Fuzzy Mathematics and Stochastic Models”, Holy Cross College, Tiruchirappalli, Tamilnadu, 02-03, December 2008.
17. UGC Sponsored International Conference on “Mathematical Methods and Computation”, Jamal Mohamed College, Tiruchirappalli, Tamilnadu, 24<sup>th</sup> & 25<sup>th</sup> July 2009.
18. UGC Sponsored International Conference on “Recent Trends in Fuzzy and Discrete Mathematics”, Union Christian College, Aluva, Kerala, 19<sup>th</sup> & 21<sup>th</sup> November 2009.
19. National Seminar on Graph Theory, Algorithms and Modeling, Jamal Mohamed College (Autonomous), Tiruchirappalli, Tamilnadu, India, 19<sup>th</sup> March 2010.
20. International Conference on Emerging Trends in Mathematics and Computer Applications, Dept of Mathematics and Computer Applications, Mepco Schlenk Engg College, Sivakasi, December 16-18, 2010
21. National Conference on Recent Developments in Mathematics and its applications, SRM University, Chennai, 31<sup>st</sup> Jan – 1<sup>st</sup> Feb, 2011.
22. The Heber International Conference on Applications of Mathematics and Statistics (HICAMS-2012 ), 5<sup>th</sup> to 7<sup>th</sup> January 2012, Tiruchirappalli,

#### **14. Resource Person in State Level / Symposium/ National / International Conference:**

1. State Level Seminar on Recent Trends of Research in Mathematics and its Applications- A.V.V.M. Sri Pushpam College, Poondi, Thanjavur, Tamilnadu, 01, February 2004.
2. State Level Seminar on Applications of Mathematics, Dhanalakshmi Srinivasan College of Arts and Science for Women, Perambalur, Tamilnadu, 03, March 2004.
3. State Level Seminar on Current Trends & Dotnet, Chidambaram Pillai College for Women, Tiruchirappalli, Tamilnadu, 17, August, 2004.
4. UGC Sponsored State Level Seminar on Decision Making Techniques, A.V.V.M. Sri Pushpam College, Poondi, Thanjavur, Tamilnadu, 04& 05 September, 2004.
5. UGC Sponsored National Seminar on Mathematical Modelling to Social and Managerial Problems, A.D.M. College for Women, Nagapattinam, Tamilnadu, 24 & 25, September 2004.
6. Refresher Course in Mathematics Sponsored by Director of Collegiate Education Government of Tamilnadu, Chennai at J.J.College of Arts and Science, Pudukkottai, Tamil nadu, 21-02.2005 to 25.02.2005
7. State Level Seminar on Emerging Trends in Mathematical Methods Dhanalakshmi Srinivasan College of Arts and Science for Women, Perambalur, Tamilnadu, 24 and 25, February 2005.
8. UGC Sponsored National Seminar on Development in Mathematical Applications, K.N. Govt. Arts College for Women, Thanjavur, Tamilnadu, 08 & 09, April, 2005.
9. UGC sponsored State level seminar on stochastic processes and its applications, A.V.V.M. Sri Pushpam College, Poondi, Thanjavur, Tamilnadu, 16 & 17 March, 2006.
10. State Level Seminar on Computer Oriented Mathematical Techniques 2007, Shrimati Indira Gandhi College, Tiruchirappalli, Tamilnadu, 10 & 11 August, 2007.
11. National Conference on Frontiers of Mathematics and Applications, Sona College of Technology, Salem, Tamilnadu, 15 February, 2008.
12. State Level Seminar on "Fuzzy Mathematical Structures" V.V.Vanniaperumal College for Women, Virudhunagar, Tamilnadu, 27<sup>th</sup> February 2008.
13. National Conference on Optimization Techniques in Engineering and Technology, Vinayaka University, Salem, Tamilnadu, 28 & 29 March 2008.
14. Seminar on "Fuzzy sets and its application" under UGC-SAP Programme, Gandhigram Rural University, Gandhigram, Tamilnadu, 16, April 2008.
15. One day Symposium "Fuzzy Applications", 1<sup>st</sup> November 2008, Oxford Engineering College, Tiruchirappalli.
16. National Conference on Recent Advancement in Pure and Applied Mathematics, D.D.G.Vaishnav College, Chennai, 23<sup>rd</sup> and 24<sup>th</sup> January 2009.
17. UGC-SAP(DRS) Sponsored National Workshop on Mathematical Modeling and Computational Mathematics, Gandhigram Rural University, Gandhigram, 23<sup>rd</sup> – 28<sup>th</sup> February, 2009.

18. UGC Sponsored National Seminar on Fuzzy Mathematical Modeling in Agriculture and Waste Land Development, Khadir Mohideen College, Adirampattinam, Thanjur Dist., Tamilnadu, 28<sup>th</sup> & 29<sup>th</sup> March 2009.
19. National Conference on Fuzzy Mathematics, Graph Theory and Applications, Mepco Schlenk Engineering College, Sivakasi, 17<sup>th</sup> & 18<sup>th</sup> April 2009.
20. DRDO Sponsored National Level Workshop on "Recent Developments in Computational Systems Simulation and Modeling", V.L.B.Janakiammal College of Engineering & Technology, Kovaipudur, Coimbatore, 29<sup>th</sup> April 2009.
21. The Orientation Course for the newly recruited Government College Teachers, D.G.Vaishnav College, Chennai, 1<sup>st</sup> August, 2009.
22. UGC Sponsored National Seminar On Applications of Mathematics in Fuzzy Environment, Meenakshi College for Women, Chennai, 11<sup>th</sup> & 12<sup>th</sup> August 2009.
23. UGC Sponsored National Conference on Advances in Mathematics: Scientific Developments and Engineering Applications, Kunthavai Naachiyar Govt. Arts College for Women, Thanjavur, Tamil Nadu, 31<sup>st</sup> August and 1<sup>st</sup> September, 2009.
24. UGC Sponsored National Conference on Recent Trends in Fuzzy and Discrete Mathematics, Union Christian College, Aluva, Kerala, November 19-21, 2009.
25. UGC Sponsored National Seminar on Applications of Algebra and Number Theory, National Colllege, Tiruchirappalli, Tamilnadu, December 4-5, 2009.
26. DST Sponsored National Conference on Discrete and Fuzzy Mathematics, Karunya University, Coimbatore, 9<sup>th</sup> & 10<sup>th</sup> December 2009.
27. TANSCHER Sponsored National Conference Government Arts College (Autonomous), Kumbakonam, 21 & 22, December 2009.
28. National Symposium on Research Areas in Mathematics and Computer Science, Chevalier T.Thomas Elizabeth College for Women, Chennai, 12<sup>th</sup>, February 2010.
29. UGC Sponsored State Level Seminar on Recent Developments in Mathematics, A.V.C. College (Autonomous) Mannampandal, Nayiladuthurai, Tamilnadu, 2<sup>nd</sup> & 3<sup>rd</sup> March, 2010.
30. UGC-SAP (DRS II) Supported Seminar, Gandhigram Rural Institute – Deemed University, Gandhigram, Tamilnadu, 13<sup>th</sup> March 2010.
31. UGC Sponsored National Level Seminar on Recent Trends in the Application of Mathematical Modelling in Information Technology and Business, 26<sup>th</sup> & 27<sup>th</sup> March, 2010.
32. National Seminar on Graph Theory and its Application, Department of Mathematics, Periyar Maniammai University, Vallam, Tamilnadu, 26<sup>th</sup> & 27<sup>th</sup> March 2010.
33. AICTE Sponsored Staff Development Programme on Current Trends and Application of Resource Management Techniques in Engineering and Technology, Department of Mathematics, Mepco Schlenk Engineering College, Sivakasi, 24.05.2010 to 05.06.2010.
34. UGC Sponsored One Day Seminar on A Mathematical Investigation of Experimental Observations, Department of Mathematics, Periyar E.V.R. College (Autonomous), Tiruchirappalli, 23<sup>rd</sup> September 2010.

35. International Conference on Emerging Trends in Mathematics and Computer Applications, Department of Mathematics and Computer Applications, Mepco Schlenk Engineering College, Sivakasi, Tamilnadu, 16.12.2010 to 18.12.2010.
36. UGC Sponsored National Conference on Recent Advances in Pure and Applied Mathematics, Department of Mathematics, Government Arts College for Women (Autonomous), Pudukkottai, Tamilnadu, 28<sup>th</sup> and 29<sup>th</sup> January 2011
37. TANCHE Sponsored Workshop on Art of Scientific Article Writing, Department of Mathematics, Chemistry, Zoology and Geography, Periyar E.V.R. College (Autonomous), Tiruchirappalli, Tamilnadu, 11<sup>th</sup> and 12<sup>th</sup> March 2011.
38. AICTE Sponsored National Conference on Current Researches on Fuzzy Logic and Its Applications, 23<sup>rd</sup> – 25<sup>th</sup> June, 2011, Department of Mathematics, M.A.M College of Engineering, Siruganur, Tiruchirappalli.
39. One Day National Level Workshop on Fuzzy set Theory and Applications / Queuing Theory and Applications, 6<sup>th</sup> August 2011, Department of Mathematics, K.Ramakrishnan College of Technology, Samayapuram, Tiruchirappalli-621 112.
40. State Level Seminar on Application of Mathematics in Advanced Fields, 19<sup>th</sup> December 2011, Department of Mathematics, Ethiraj College for Women (Autonomous), Chennai-600 008.
41. UGC and DST – Curie Sponsored International Conference “Mathematics and its Application – A New Wave (ICMANW-2011), 21<sup>st</sup> and 22<sup>nd</sup> December 2011, Department of Mathematics, Avinashilingam University, Coimbatore-641043.
42. National Conference on Fuzzy Optimization and Graph Theory With Applications, 23 – 24 February, 2012, Mepco Schlenk Engineering College, Sivakasi -626 005.
43. Workshop for college students on “Scope on Higher Studies in Mathematics”, 15<sup>th</sup> march 2012, Tamilnadu Science & Technology Centre, Chennai and Anaa Science Centre – Planetarium, Tiruchirappalli.
44. UGC Sponsored National Seminar on Stochastic Finance and Fuzzy Decision Theory, 15<sup>th</sup> – 17<sup>th</sup> March 2012, Department of Mathematics, St. Peter’s College, Kolenchery, Ernakulam Dist., Kerela.
45. International Conference on “Artificial Neural Networks and e-Mathematical Learning”, 23<sup>rd</sup> – 25<sup>th</sup>, July 2012, Department of Mathematics, Loyola College, Chennai.
46. National Board for Higher Mathematics (NBHM) sponsored National Level Seminar on “Mathematical Modelling and Scientific Computation”, 30<sup>th</sup> – 31<sup>st</sup>, August 2012, Department of CT-PG, Kongu Engineering College(Autonomous), Perundurai-638 052, Tamilnadu INDIA.
47. National level workshop on Recent Advances in Mathematics and its Applications, December 13 and 14, 2012, Department of Methematics, L. N. Government College (Autonomous), Ponneri-601 204, Thiruvallur District, Tamilnadu.
48. National Conference on Fuzzy sets and its applications, 9<sup>th</sup> February 2013, Department of Mathematics, P.K.R. Arts College for Women, Gobichettipalayam-638476, Erode Dist., Tamil Nadu.

49. Two Days National Seminar on Fuzzy sets & Fuzzy Logic with its applications, 14<sup>th</sup> & 15<sup>th</sup> February 2013, Department of Mathematics, KNM Govt. Arts & Science College, Kanjiramkulam, Thiruvananthapuram, Kerela.
50. UGC-SAP (DRS II) Supported Seminar, Gandhigram Rural Institute – Deemed University, Gandhigram, Tamilnadu, 22<sup>nd</sup> February 2013.
51. National Seminar on Modern Techniques and Applications in Mathematics, Sree Saraswathi Thyagaraja College, Pollachi, Tamil Nadu, 4<sup>th</sup> March 2013.
52. AICTE Sponsored National Level Workshop on Computational and Applied Mathematics, Sona College of Technology, Salem, Tamil Nadu, 8<sup>th</sup> and 9<sup>th</sup> March 2013.

#### **15. Guest Lecture:**

1. Current Trends & Dotnet, Chidambaram Pillai College for Women, Tiruchirappalli, Tamilnadu, 17, August, 2004.
2. Application of Fuzzy set, National College, Trichy, 05, January, 2006.
3. Fuzzy sets and Fuzzy logic applications, Govt. Women's College, Pudukkottai, Tamilnadu, 18, January, 2006.
4. Fuzzy Logic and its applications, St. Joseph's College (Autonomous), Tiruchirappalli-02, Tamilnadu, 16, February, 2007.
5. Fuzzy applications, Srimad Andavar College, Tiruchirappalli, Tamilnadu, 07, March, 2007.
6. Fuzzy Decision Making, Bishop Heber College, Tiruchirappalli, Tamilnadu, 17 August, 2007.
7. Recent Trend in Mathematics, Holy Cross College, Tiruchirappalli, Tamilnadu, 13 February, 2008.
8. Fuzzy Transportation Problem, PRIST University, Thanjavur, 23 December 2009.
9. Intuitionistic Fuzzy sets, Department of Mathematics(Women Section), Jamal Mohamed College, Tiruchirappalli, 16<sup>th</sup> October, 2012

#### **16. Details of Seminars / Conferences / Workshops Attended:**

1. Quality Enhancement and sustenance in Higher Education, Jamal Mohamed College, Tiruchirappalli, Tamil Nadu, 27, March, 2002.
2. TANSCHER and UGC sponsored three day workshop on "Curriculum development and Evaluation" organized by UGC-Academic staff college, Bharathidasan University, Conducted by Jamal Mohamed College, Tiruchirappalli, Tamil Nadu, 2-4, March, 2006.
3. Residential Programme on "Training of College Teachers on Soft – Skill Development (TCTSD)" organized by Bharathidasan University Technology Park & Confederation of Indian Industry, Tiruchirappalli, Tamilnadu, 6.02.2007 to 10.02.2007.
4. Three Day workshop on "e-Governance" Sponsored by Tamilnadu State Council for Higher Education, Academic Staff College, Bharathidasan University from 29.03.2007 to 31.03.2007.
5. Five Days workshop on "Software Tools", Jamal Mohamed College (Autonomous), Tiruchirappalli, from 28.02.2009 to 04.03.2009

6. UGC Sponsored State Level Seminar on Examination Reforms, Jamal Mohamed College (Autonomous), Tiruchirappalli, 12<sup>th</sup> March, 2010.
7. NAAC Sponsored National Level Seminar on Quality Enhancement in Teaching, Research and Extension in Higher Education Institutions – Prospects and Problems, Jamal Mohamed College (Autonomous), Tiruchirappalli, Tamilnadu, 15<sup>th</sup> & 16<sup>th</sup> April 2010.
8. Seminar on Creating Competitiveness to excel in Higher Education – a TQM Approach, Organised by Internal Quality Assurance Cell, Jamal Mohamed College (Autonomous), Tiruchirappalli on 8<sup>th</sup> December 2010.
9. The Heber International Conference on Applications of Mathematics and Statistics (HICAMS-2012), 5<sup>th</sup> to 7<sup>th</sup> January 2012, Tiruchirappalli,
10. UGC Sponsored All India Workshop on Research Methodology and Technology Management in Higher Education, 14<sup>th</sup> & 15<sup>th</sup> March, 2013, Academic Staff College, Pondicherry University, Pondicherry

#### **17. Details of Seminars / Conferences / Workshops Organized:**

1. UGC sponsored State level seminar on “Mathematical methods & Fuzzy Applications”, Jamal Mohamed College (Autonomous), Tiruchirappalli, 27<sup>th</sup> February 2006– **Convenor**
2. National Conference on “Fuzzy Mathematics & Graph Theory”, Jamal Mohamed College (Autonomous), Tiruchirappalli, 27<sup>th</sup> 28<sup>th</sup> March 2008– **Organizing Secretary**
3. UGC Sponsored International Conference on Mathematical Methods and Computation, Jamal Mohamed College (Autonomous), Tiruchirappalli, 24<sup>th</sup> & 25<sup>th</sup> July 2009 - **Organizing Secretary**
4. UGC sponsored (Under Autonomous Grant) One Day National Level Seminar on Graph Theory, Algorithms and Modelling, Jamal Mohamed College (Autonomous), Tiruchirappalli, 19<sup>th</sup> March 2010 - **Organizing Secretary**

#### **18. Details of Orientation / Refresher Courses Attended:**

##### **Orientation Course**

Attended Orientation course from 20-05-2000 to 16-06-2000, Academic Staff college, Bharathidasan University, Tiruchirappalli.

##### **Refresher Course**

1. Attended Refresher Course in Mathematics from 05-06-2003 to 26-06-2003 at Annamalai University, Annamalai Nagar, Tamilnadu.
2. Attended Refresher Course in Mathematics from 31-10-2003 to 20-11-2003 at Annamalai University Faculty of Engg. and Technology Maths Section, Annamalai Nagar, Tamilnadu.

**19. Details of Books Written and Published:**

1. A First Look at Fuzzy Graph Theory, Published by Allied Publishers PVT. LTD. 2010
2. Proceedings of National Conference on Fuzzy Mathematics & Graph Theory, Gigo Publishers, - Editor
3. Proceedings of the UGC Sponsored International Conference on Mathematical Methods and Computation, Allied Publishers - Editor

**20. Details of Incharge / Membership in Committees for Autonomous Programme Implementation:**

1. A.D.M. College for Women (Autonomous), Nagapattinam, Tamilnadu, 2006- Till date
2. St. Joseph's College (Autonomous), Tiruchirappalli, Tamilnadu, 2008-Till date
3. Holy Cross College (Autonomous), Tiruchirappalli, Tamilnadu, 2008-Till date
4. Kundavai Nachiar Government Arts College for Women (Autonomous), Thanjavur, 2008 – Till date
5. National College (Autonomous), Tiruchirappalli-620 001.

**21. Details of Membership in Academic Bodies:**

1. M.E. Computer science & Engineering in Madurai Kamaraj University, Madurai, 1999– 2002 – Board of Studies
2. A.D.M. College for Women (Autonomous), Nagapattinam, Tamil nadu, 2006- 2009 – Board of Studies
3. St. Joseph's College (Autonomous), Tiruchirappalli, Tamilnadu, 2008-2010 – Board of Studies
4. Holy Cross College (Autonomous), Tiruchirappalli, Tamilnadu, 2008-2009 – Board of Studies
5. Kundavai Nachiar Government Arts College for Women (Autonomous), Thanjavur, 2008 – 2010 – Board of Studies
6. Academic Council Member, AVVM Sri Pushpam College (Autonomous), Poondi, Thanjavur, 2009- Till date.
7. Academic Council Member, National College (Autonomous), Tiruchirappalli-620 001. 2010- Till date – Board of Studies
8. Sri G.V.G.Visalakshi College for Women (Autonomous), Udumalpet-642 128, 2010- Till date – Board of Studies
10. Raja Serfoji Government Arts College (Autonomous), Thanjavur, 2011 – 2014 – Board of Studies.
11. Bharathidasan University, UG (Mathematics) Board of studies from 01.04.2012 to 31.03.2015.

**22. Ph.D., Thesis Adjudicated:**

<b>Year</b>	<b>Name of the University</b>	<b>Title of the Thesis</b>
2010	University of Mysore	A Study on Some Topics in the Theory of Fuzzy Graphs
2011	Kuvempu University	Studies in Fuzzy Automata
2011	Anna University, Coimbatore	A Study on Generalized Regular Fuzzy Matrices
2011	University of Mysore	A Study on Theory of Graphs and Its Applications



**23. Member in Editorial Board:**

1. International Journal of Algorithms, Computing and Mathematics, Chennai, India
2. Bulletin of Pure and Applied Sciences, New Delhi, India
3. Jamal Academic Research Journal: An Interdisciplinary, Tiruchirappalli, India
4. Antarctica Journal of Mathematics, Andhra Pradesh, India
5. International Journal of Fuzzy Mathematical Archive, India.

**24. Reviewer of the following journal:**

1. Journal of Information Sciences (Science Direct)
2. Journal of Optimization Letters (Springer)
3. Annals of Fuzzy Mathematics
4. Journal of King Saud University (Science) (Science Direct)

**25. Details of Membership of Professional Bodies:**

- i). Life member in the Indian Society for Technical Education
- ii) Life member in Operational Research Society of India

**26. Countries visited:**

Malaysia, Singapore, Brunei, Sri Lanka