Curriculum Vitae (C.V)

General Information

Esmaeil Mehdizadeh, Ph.D.,

Professor (Full),

Department of Industrial Engineering,

Faculty of Industrial & Mechanical Engineering,

Islamic Azad University, Qazvin Branch (QIAU University), Qazvin, Iran.

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Educational background

- 2005-2009, **PH.D**. in Industrial Engineering, Islamic Azad University, Science & Research Branch, Tehran, Hesarak, Iran

- 1997-1999, **MSc** in Industrial Engineering, Islamic Azad University, Tehran south Branch, Tehran, Keshavarz Bol., Iran

- 1993-1997, **BSc** in Industrial Engineering, Islamic Azad University Qazvin Branch(QIAU), Barajin, Qazvin, Iran

- 1989-1993, **High School** Shahid Beheshti High School, Azadegan, Rasht, Iran.

Awards

- The Second grade (Top student) of B.S$_C$. from QIAU University, Qazvin, Iran.

- The First grade (Top student) of Ph.D. from Islamic Azad University, Science & Research Branch, Tehran, Iran.

Research Interests

- Operation Research and Optimization

- Engineering Economy

- Production Planning Optimization

- Fuzzy Sets, Logic and Theory

- Sequencing and Scheduling problems

- Artificial Intelligent Systems and Meta-Heuristic Algorithms

- Cellular Manufacturing Systems

Training Courses

Application of Information Technology in Training, Iranian Standard for Electrical keys, English writing of papers, Motivation and efficiency in training, Digital library, lessons planning and Patterns of lesson plan designed, Educational Psychology, patterns of group learning and Teaching, Assessment and evaluation academic progress.

Professional memberships

- Managing Editor of Optimization in Industrial Engineering

- Iranian Fuzzy Systems Society

- Iranian Operation Research Society

Funded Research Projects

- Designing of maintenance planning information system for facility residential Shahid Montazeri,

- Advisor of Training- Engineering project for National Iranian Industries Organization.

- Designing of more than 8 different quality systems projects for different company.

- Designing of three feasibility study (FS) projects in Tehran Industrial City's Company.

Research Positions

- Member of Scientific Committee of National Conference on Entrepreneurship 1404

- Member of Executive Committee of National Conference on Entrepreneurship 1404

- Head of University Library since 1999 until 2001

- Research Assistant Faculty of Mechanical and Industrial Engineering since 2009 until 2010

- Director General Research since 2010 until 2016

- Deputy of Research since 2020 until 2021

- Deputy of Education and Skills from 2022 until now

Academic Executive Positions

• Academic Faculty Member of QIAU University

• Head of the University Library of QIAU University

• Director of Industrial Engineering Department of QIAU University

• Deputy Director of Industrial Engineering Department of QIAU University

• Research Deputy of Faculty of Industrial and Mechanical Engineering, QIAU University

• General Research Director of QIAU University

• Head of Research Deputy of Qazvin Province Islamic Azad University

• Research Deputy of Qazvin Province Islamic Azad University

• Educational and Skill Deputy of Qazvin Province Islamic Azad University

Teaching

Since 1999, I teach at Industrial Engineer department at QIAU University:

- Production planning since 1999 until now

- Maintenance Planning since 1999 until now

- Engineering Economy since 2000 until now

- Project Control since 2001 until now

- Inventory Control since 2003 until 2008

- Feasibility Study since 2008 until now

- Advance Production planning since 2009 until now

Language

My native language is Persian and I can read, write and speak English.

Journal Papers

1. R. Tavakkoli-Moghaddam and **E. Mehdizadeh**, (2007), A New ILP Model for Identical Parallel-Machine Scheduling With Family Setup Times Minimizing the Total Weighted Flow Time by a

Genetic Algorithm, *International Journal Of Engineering*, Vol. 20, No. 2, pp. 183-194.(**SCOPUS - ISC**- علمی پژوهشی وزارت علوم)

2. **E. Mehdizadeh** and R. Tavakkoli-Moghaddam, (2008), Fuzzy particle swarm optimization algorithm for a supplier clustering problem" *Journal of Optimization in industrial engineering*, *V*ol. 1/Pri No.1, pp. 17-24. (علمی پژوهشی وزارت علوم - **ISC**)

3. *E. Mehdizadeh*, S. Sadi-Nezhad and R. Tavakkoli-Moghaddam, (*2008),* Optimization of Fuzzy Clustering Criteria by a Hybrid PSO and Fuzzy C-Means Clustering *Algorithm. Iranian Journal Of fuzzy Systems, Vol. 5, No. 3, pp. 1-14, (ISI-WOS- SCOPUS – ISC, Q3)*

4. **E. Mehdizadeh**, (2009) A fuzzy clustering PSO algorithm for supplier base management, *International Journal of Management Science and Engineering Management*, Vol. 4 No. 4, pp. 311-320 (**International- Taylor & Francis**)

5. **E. Mehdizadeh** and R. Alami, (2009), Fuzzy Centroid-Based Method Applied to Customer Requirements Ranking in Diba Fiberglass Company, *Journal of optimization in industrial engineering, V*ol. 1, No.4, pp. 29-36. (**ISC -** علمی پژوهشی وزارت علوم)

6. **E. Mehdizadeh**, (2010), Ranking of customer requirements using the fuzzy centroid-based method, *International Journal of Quality & Reliability Management*, Vol. 27 No. 2, pp. 201-216. (**International-Emerald & SCOPUS**).

7. **E. Mehdizadeh** and R. Tavakkoli- Moghaddam, (2011), A genetic algorithm approach for $P / ST_{si,b} / \sum w_j f_j$ problem, **journal of industrial engineering international**, Vol. 7, No. 13, pp. 35-43. (**International- Springer - ISC &** علمی پژوهشی وزارت علوم).

8. **E. Mehdizadeh**, M. R. Tavarroth and V. Hajipour, (2011), A New Hybrid Algorithm to Optimize Stochastic-fuzzy Capacitated Multi-Facility Location-allocation Problem, Journal **of Optimization in Industrial Engineering**, Vol.4, No. 7, pp. 71-80. (**ISC -** علمی پژوهشی وزارت علوم)

9. S. Moradpour, S. Ebrahimnejad, **E. Mehdizadeh** and A. Mohamadi, (2011), Using Hybrid Fuzzy PROMETHEE II and Fuzzy Binary Goal Programming for Risk Ranking: A Case Study of Highway Construction Projects, *Journal of Optimization in Industrial Engineering*, Vol. 4, No. 9, pp. 47-55, (**ISC -** علمی پژوهشی وزارت علوم)

10. M. Aliabadi, F. Jolai, **E. Mehdizadeh** and M. Jenabi, (2011), Flow shop Production Planning Problem with basic period policy and Sequence Dependent set up times, *Journal of Industrial and Systems Engineering*, Vol. 5, No. 1, pp. 286-304. (**ISC -** علمی پژوهشی وزارت علوم)

11. **E. Mehdizadeh** and F. Afrabandpei, (2012), Design of a Mathematical Model for Logistic Network in a Multi-Stage Multi-Product Supply Chain Network and Developing a Metaheuristic Algorithm, **Journal** *of Optimization in Industrial Engineering* ,Vol. 5, No. 10, pp: 35-43, (**ISC -** علمی پژوهشی وزارت علوم)

12. S. M. Mousavi, S. T. Akhavan Niaki, **E. Mehdizadeh** and M. R. Tavarroth, (2012), The capacitated multi-facility location–allocation problem with probabilistic customer location and demand: two hybrid meta-heuristic algorithms, *International Journal of Systems Science*, Vol. 44. No. 10, pp.1–16. (**ISI-WOS & SCOPUS, Q1**)

13. B. Afshar-Nadjafi, H. Najjarbashi and **E. Mehdizadeh**, (2012), A branch-and-bound procedure for resource leveling in multi-mode resource constraint project scheduling problem, Research Journal of Recent Sciences, Vol. 1, No. 7, pp. 1-8. (**ISI – Listed**)

14. **E. Mehdizadeh**, V. Hajipour and Amin Mahmoodi, (2012), A Hybrid Approach to Analyze Productivity by using Drum-Buffer-Rope Concept and Fuzzy Expert System, *American Journal of Scientific Research*, No. 53, pp. 101-111, **(ISI – Listed)**

15. **E. Mehdizadeh**, S. Valizadeh and H. R. Pasandideh, (,(2013), A multi-Product Inventory Capacity Warehouse Constraints, Budgeted and Minimum Service Level in Partial Backlogging Shortage, *Sharif Industrial Engineering and Management Journal*, Vol. 29, No. 1, pp. 101-111, (**ISC - **علمی پژوهشی وزارت علوم - **In Persian**)

16. **E. Mehdizadeh** and O. Mohsenian, (2013), Solving Project Scheduling Problem through Multi-Objective Stochastic Programming, *Sharif Industrial Engineering and Management Journal,* Vol. 28 (1), No. 2, pp. 103-111. (**ISC - **علمی پژوهشی وزارت علوم - **In Persian**)

17. **E. Mehdizadeh**, F. Afrabandpei, S. Mohaselafshar and B. Afshar-Nadjafi, (2013), Design of a multi-stage transportation network in a supply chain system: Formulation and efficient solution procedure, **Scientia Iranica E**, Vol. 20, No. 6, pp: 2188-2200, (**ISI-WOS, Q4**)

18. P. Salimi, **E. Mehdizadeh** and B. Afshar Nadjafi, (2013), Cost-Oriented Assembly Line Balancing by Considering Resource Constraint, *Australian Journal of Basic and Applied Sciences*, Vol. 7, No. 6, pp: 433-446 **(ISI – Listed)**

19. B. Afshar-Nadjafi, Z. Khalaj, and **E. Mehdizadeh**, (2013), A Branch and Bound Approach to Solve the Preemptive Resource Leveling Problem, **International Journal of Manufacturing Engineering**, pp:1-7 (**International-Hindawi**)

20. **E. Mehdizadeh**, M. Mohammadizadeh, (2013), A multi-level capacitated lot-sizing problem with safety stock deficit and production manners: A revised simulated annealing, *Journal of Optimization in Industrial Engineering*, Vol. 6, No.13, pp. 55-64 (**ISC - **علمی پژوهشی وزارت علوم)

21. **E. Mehdizadeh**, and A. Fatehi Kivi, (2013), The Multi-Item Capacitated Lot-Sizing Problem With Safety Stocks In Closed-Loop Supply Chain, International Journal of Mining, Metallurgy & Mechanical Engineering (IJMMME), Vol.1, No. 5, pp. 336-340. **(International)**

22. V. Hajipour, **E. Mehdizadeh** and R. Tavakkoli-Moghaddam, (2014), A novel Pareto-based multi-objective vibration damping optimization algorithm to solve multi-objective optimization problems, *Sharif University of Technology, Scientia Iranica, Transactions E: Industrial Engineering*, Vol. 21, No. 6, pp. 2368-2378 (**ISI-WOS, Q4**)

23. **E. Mehdizadeh,** S. Jalili and M. Eghbali, (2014), Presenting a Heuristic Algorithm to Integrated Product Mix-Outsourcing Problem under Theory of Constraint, *Sharif Industrial Engineering and Management Journal, Vo*l.30-1, No. 1/2, pp. 101-107.(**ISC - **علمی پژوهشی وزارت علوم - **In Persian- Research Note**)

24. **E. Mehdizadeh**, S. Nezhad Dadgar, (2014), Using Vibration Damping Optimization Algorithm for Resource Constraint Project Scheduling Problem with Weighted Earliness-Tardiness Penalties and Interval Due Dates, *Economic Computation and Economic Cybernetics Studies and Research (ECECSR),* , Vol. 48, No. 1, pp. 331-343. (**ISI-WOS, Q4**)

25. **E. Mehdizadeh** and A. Fatehi Kivi, (2014), Three meta-heuristics algorithms for the single-item capacitated lot-sizing problem, *International Journal of Engineering*, Vol. 27, No. 8, pp.1223-1232 (**SCOPUS - ISC- **علمی پژوهشی وزارت علوم)

26. M. Omidi R, R. Tavakkoli-Moghaddam, A. Ghodratnama and **E. Mehdizadeh**, (2014), Solving a novel supply chain network design problem by simulated annealing, *Applied mathematics in Engineering, Management and Technology,* Vol. 2, No. 3, pp: 404-415. (**ISI – Listed)**

27. **E. Mehdizadeh,** and A. Fatehi Kivi, *(2014),* Three metaheuristic algorithms for solving the multi-item capacitated lot-sizing problem with product returns and remanufacturing, *Journal of Optimization in Industrial Engineering*, Vol. ,No. *16,* pp*: 41-53,* **(ISC -** علمی پژوهشی وزارت علوم)

28. **E. Mehdizadeh,** A. Atashi Abkenar, (2014), An Integrated Aggregate Production Planning Model with Two-Phase Production System and Maintenance Costs, **International Journal of Applied Operational Research**, VOL. 4, NO. 4, PP. 87-106 **(ISC)**

29. **E. Mehdizadeh**, A. Moalemian and V. Hajipour, (2015), A Vibration Damping Optimization to Maximize Net Present Value for Resource-constrained Project Scheduling Problem under Fuzzy Environment, **International Journal of Industrial Engineering & Production Research,** Vol. 25, No 4, pp. 389- 401 **(ISC -** علمی پژوهشی وزارت علوم **, In Persian)**

30. **E. Mehdizadeh**, V. Hajipour and A. Mahmoudi, (2015), Optimizing Bi-objective Pricing-Queuing-Location Problem, *Sharif Industrial Engineering and Management Journal*, Vol. 31(1), No. 1, pp: 93-105. **(ISC -** علمی پژوهشی وزارت علوم **- In Persian)**

31. N. Aghajani-Delavar, **E. Mehdizadeh**, S. A. Torabi, R. Tavakkoli-Moghaddam, (2015), Design of a New Mathematical Model for the Integrated Dynamic Cellular Manufacturing System and Production Planning, *International Journal of Engineering, TRANSACTIONS B: Applications,* *Vol. 28*, NO. 5, PP: 746-754.**(SCOPUS - ISC -** علمی پژوهشی وزارت علوم)

32. **E. Mehdizadeh**, and S. Keshavari, (2015), Solving A multi-objective model for the location routing problem with fuzzy travel times and due dates, *Supply chain management journal*, Vol 47, No 17, pp: 42-61. (علمی ترویجی وزارت علوم), In Persian)

33. **E. Mehdizadeh,** R. Tavakkoli-Moghaddam, M. Yazdani, (2015), A vibration damping optimization algorithm for a parallel machine scheduling problem with sequence-independent family setup times, **Applied Mathematical Modelling,** Vol. 39, pp: 6845–6859. **(ISI-WOS, Q1)**

34. **E. Mehdizadeh**, V Hajipour, M. R. Mohammadizadeh, (2015), A bi-objective multi-item capacitated lot-sizing model: Two Pareto-based meta-heuristic algorithms, **International Journal of Management Science and Engineering Management**, pp: 1-15. **(International- Taylor & Francis, ISI-WOS-ESCI**)

35. **E. Mehdizadeh**, V. Rahimi, (2015), An Integrated Mathematical Model for Solving Dynamic Cell Formation Problem Considering Operator Assignment, Inter-cell and Intra-cell Layouts and Solving by Simulated Annealing, **Journal of industrial management study**, Vol. 13, No. 37, pp: 123-159 **(ISC -** علمی پژوهشی وزارت علوم **- In Persian)**

36. P. Azimi; F. Goldar; **E. Mehdizadeh**, (2015), A hybrid model for suppliers' selection based on clustering method using NRGA and NSGA-II algorithms, **Journal of industrial management study**, Vol. 13, No. 36, pp: 115-142. **(ISC -** علمی پژوهشی وزارت علوم **- In Persian)**

37. **E. Mehdizadeh,** V. Rahimi, (2016), An integrated mathematical model for solving dynamic cell formation problem considering operator assignment and inter/ intra cell layouts, **Applied Soft Computing**, Vol. 42, 325–341. **(ISI-WOS, Q1)**

38. M Keshtzari, B Naderi, **E Mehdizadeh, (**2016), An improved mathematical model and a hybrid metaheuristic for truck scheduling in cross-dock problems, **Computers & Industrial Engineering**, Vol. 91, pp: 197-204. **(ISI-WOS, Q1)**

39. **E. Mehdizadeh**, A. Golabzaei, (2016), Electrical Fuzzy C-means: A New Heuristic Fuzzy Clustering Algorithm, **Journal of OAEN Cogent Engineering**, 3: 1208397, DOI: 10.1080/23311916.2016.1208397. **(International- Taylor & Francis- ISI-WOS –ESCI, SCOPUS)**

40. M. Farhangi, **E. Mehdizadeh**, (2016), A Multi-supplier Inventory Model with Permissible Delay in Payment and Discount, **International Journal of Industrial Mathematics (IJIM)**, Vol. 8, No. 3, pp 241-254 **(ISC -** علمی پژوهشی وزارت علوم)

41. **E. Mehdizadeh**, S. V. Daei Niaki, V. Rahimi, (2016), A vibration damping optimization algorithm for solving a new multi-objective dynamic cell formation problem with workers training, **Computers & Industrial Engineering(CAIE)**, Vol. 101, pp: 35-52. **(ISI-WOS, Q1)**

42. **E. Mehdizadeh,** M. Teimouri, A. Zaretalab, (2017), Presenting a hybrid electromagnetism-like mechanism and K-means for data clustering, *Sharif Industrial Engineering and Management Journal*, Vol. 33(1), No. 1, pp: 13-19. **(ISC -** علمی پژوهشی وزارت علوم - **In Persian)**

43. B. Mirkhanzadeh and **E. Mehdizadeh**, (2016), Optimal routing in the Milk Run logistics with time constraint and incompatibilities demand, **International Journal of Industrial Engineering &Production Research,** Vol. 26, No. 4, pp 455-471. **(ISC -** علمی پژوهشی وزارت علوم **, In Persian)**

44. M. Ramyar, **E. Mehdizadeh**, M. Hadji Molana, (2017),Optimizing Reliability and Cost of system for Aggregate Production Planning in Supply Chain, **Scientia Iranica E**, Vol. 24, No 6., pp: 3394-3408, **(ISI-WOS, Q4)**

45. **E. Mehdizadeh** and N. Payami, (2017), A Mathematical Model in Hybrid Make to Stock and Make to Order Environments with Maintenance Activities and Solving by Meta-heuristic Algorithms, *Sharif Industrial Engineering and Management Journal*, Vol. 33(1), No. 2, pp: 3-13. **(ISC -** علمی پژوهشی وزارت علوم- **In Persian)**

46. **E. Mehdizadeh** and R. Ghazizadeh, (2016), Solving a fuzzy multi-objective aggregate production planning model with learning and deterioration effects by using Genetic and Tabu search algorithms, *Journal of Industrial Engineering*, Vol. 50, No. 2, pp. 341-354. **(ISC -** علمی پژوهشی وزارت علوم- **In Persian)**

47. **E. Mehdizadeh**, M. Teimouri, A. Zaretalab, S.T.A. Niaki, (2017). A combined approach based on K-means and modified electromagnetism-like mechanism for data clustering, *International Journal of Information Technology & Decision Making*, VOL. 16, NO. 5, 1279–1307 DOI: 10.1142/S0219622017500262. **(ISI-WOS, Q2).**

48. **E. Mehdizadeh and** A. Fatehi-Kivi, (2017), A Vibration Damping Optimization Algorithm for Solving the Single-item Capacitated Lot-sizing Problem with Fuzzy Parameters**, International Journal of Industrial Engineering & Production Research**, Vol. 28, No. 1, pp. 33-45. . **(SCOPUS, ISC -** علمی پژوهشی وزارت علوم **)**

49. **E. Mehdizadeh**, H. Akbari, **(**2017), A NOVEL VIBRATION DAMPING OPTIMIZATION ALGORITHM FOR RESOURCE CONSTRAINED MULTI- PROJECT SCHEDULING PROBLEM, *Economic Computation and Economic Cybernetics Studies and Research (ECECSR)*, Vol. 51, No. 2, pp. 291-309. **(ISI-WOS, Q4)**

50. F. Soleimani and **E. Mehdizadeh**, (2017), Presenting a Mathematical Model for Flexible job-shop Production Scheduling Problem with Reverse Flows and Solving by Using Genetic Algorithm, *Journal of Industrial Engineering*, Vol. 52, No. 1, , pp.87-96 . **(ISC -** علمی پژوهشی وزارت علوم **- In Persian)**

51. **E. Mehdizadeh**, A. A, Atashi Abkenar, (2018), *Preventive Maintenance Effect on the Aggregate Production Planning Model with Two-Phase Production Systems: Modeling and Solution Methods,* **Engineering Review**, . 38, No. 1, pp: 30-50. **(ISI-WOS-ESCI, SCOPUS)**

52. **E. Mehdizadeh**, S.T.A. Niaki, M. Hemati**,** (2018), A Bi-Objective Aggregate Production Planning Problem with Learning Effect and Machine Deterioration: Modeling and Solution, **Computers & Operation Research (COR)**, Vol. 91, pp.21-36. **(ISI-WOS, Q1).**

53. *E. Mehdizadeh*, S. Jalili, (2019). An Algorithm Based on Theory of Constraints and Branch and Bound for Solving Integrated Product-Mix-Outsourcing Problem. *Journal of Optimization in Industrial Engineering,* Vol. 12, No. 1, pp.167-172 . **(SCOPUS, ISC -** علمی پژوهشی وزارت علوم **).**

54. *E. Mehdizadeh,* M. Shamoradifar, S.T.A. Niaki, (2020), An Integrated Mathematical Programming Model for a Dynamic Cellular Manufacturing System with Limited Resources, *International Journal of Services and Operations Management*, *VOL. 37, NO. 1,* pp. 1-26. **(SCOPUS)**

55. H. R. Gholami, , **E. Mehdizadeh**, B. Naderi, (2020), Mathematical models and an elephant herding optimization for multiprocessor-task flexible flow shop scheduling problems in the manufacturing resource planning (MRPII) system, **Scientia Iranica E**, Vol. 27, No. 3, pp. 1562 - 1571, **(ISI-WOS, Q4)**

56. **E. Mehdizadeh,** Habibreza Gholami, Bahman Naderi, (2018), A robust Optimization model for Multi-product Production Planning in Term of Uncertainty of Demand and Delivery Time, *Economic Computation and Economic Cybernetics Studies and Research (ECECSR)*, Vol. 52, No. 4, pp. 227-240. **(ISI-WOS, Q4).**

57. M. Ramyar, **E. Mehdizadeh**, S. M. Hadji Molan, (2020), A Bi-objective Model to Optimize Reliability and Cost of System for the Aggregate Production Planning in a Supply Chain Network, *Journal of Optimization in Industrial Engineering,* Vol. 13, No. 1, pp. 81-98. (**SCOPUS, ISC -** علمی پژوهشی وزارت علوم)

58. **H. R. Gholami, , E. Mehdizadeh, B. Naderi,** (2018), A Mathematical Modeling and a Colonial Competition Algorithm for assembly Line flow shop Problem, *Industrial management Vision Journal,* No. 29, pp. 93-111. (**ISC** -علمی پژوهشی وزارت علوم)

59. A. Fatehi-Kivi, **E. Mehdizadeh**, R. Tavakkoli Moghaddam, (2019), A New Mathematical Model for a Multi-product Supply Chain Network with a Preventive Maintenance Policy, **IJE TRANSACTIONS A: Basics** Vol. 32, No. 10, pp. 1446-1453. **(SCOPUS - ISC-** علمی پژوهشی وزارت علوم)

60. Maraghi, M., Adibi, M., **Mehdizadeh, E.** (2020). Using RFM Model and Market Basket Analysis for Segmenting Customers and Assigning Marketing Strategies to Resulted Segments. **Journal of Applied Intelligent Systems and Information Sciences,** 1(1), 35-43. doi: 10.22034/jaisis.2020.102488

61. A. Fatehi-Kivi, **E. Mehdizadeh,** R. Tavakkoli-Moghaddam, E. Najafi, (2021), Solving a Multi-Item Supply Chain Network Problem by Three Meta-heuristic Algorithms, *Journal of Optimization in Industrial Engineering, Vol.14, Issue 2, pp. 145-151.* (**SCOPUS, ISC -** علمی پژوهشی وزارت علوم)

62. Aghajani-Delavar, N., **Mehdizadeh, E.**, Tavakkoli-Moghaddam, R., Haleh, H. (2022). A multi-objective vibration damping optimization algorithm for solving a cellular manufacturing system with manpower and tool allocation. *Scientia Iranica, Vol. 29, No. 4, pp.2041-2068*, -. doi: 10.24200/sci.2020.52419.2706 (**ISI-WOS, Q4)**

63. Alamiparvin, R., **Mehdizadeh, E.**, Soleimani, H. (2021). A New mathematical Model for Stochastic Dynamic Unequal Area Facility Layout Problems. *Journal of Quality Engineering and Production Optimization*, *Vol. 6, No. 1, pp. 147-164,* doi: 10.22070/jqepo.2021.5101.1124 (**ISC -** علمی پژوهشی وزارت علوم)

64. S. Aghighi, S. T. A. Niaki, **E. Mehdizadeh** & A. A. Najafi, (2021). Open-shop production scheduling with reverse flows. *Computers & Industrial Engineering, 153*, 107077. **(ISI-WOS, Q1)**

65. A. Hemmati, B Afshar-Nadjafi, **E. Mehdizadeh,** (2022), Optimal procurement decisions for food products in a retailing system with variety dependent demand, *Int. J. of Procurement Management, Vol. 15, Issue 5, pp.* 679-702. doi.org/10.1504/IJPM.2022.125681 (**SCOPUS**)

66. F. Kangi, S. H. R. Pasandideh, **E. Mehdizadeh**, H. Soleimani, (2021), The optimization of a multi-period multi-product closed-loop supply chain network with cross-docking delivery strategy, Industrial & Management Optimization, *Vol. 18, No. 5, pp. 3393–3431 doi:10.3934/jimo.2021118* (**ISI-WOS, Q3**)

67. R. Ruhbakhsh; **E. Mehdizadeh**; M. A. Adibi, (2022), Presenting a Model for Solving Lot-streaming Hybrid Flow Shop Scheduling Problem by Considering Independent Setup time and Transportation Time, *Journal of Decisions and Operations research*, Vol. 8, No. 2, pp. 307-332 *doi:*10.22105/DMOR.2022.296154.1450 (**ISC** -علمی پژوهشی وزارت علوم)

68. N. Shamami; **E. Mehdizadeh**; M. Yazdani; F. Etebari, (2022), Proposing a Stackelberg mathematical model for weapon-target assignment considering both air and ground attacks, *Military Science and Tactics journal*, Vol. 18. No. 59, pp. 245-270, 10.22034/QJMST.2022.543952.1628 1124 (**ISC** -علمی پژوهشی وزارت علوم)

69. A. Ariyazand , H. Soleimani, F. Etebari, **E. Mehdizadeh,** (2022), Improved satisfaction of university faculty by utilizing the Bat metaheuristic algorithm (Case study of the faculty of humanities, Islamic Azad University, Parand Branch), *Journal of Industrial Engineering and Management Studies*, Vol. 9, No. 8, Pages 95-108, doi: 10.22116/jiems.2022.316347.1468.

70. V. Bahmani, M. A. Adibi, **E. Mehdizadeh**, (2023), Integration of two-stage assembly flow shop scheduling and vehicle routing using Improved Whale Optimization Algorithm, *Journal of Applied Research on Industrial Engineering, Vol.10, No.1, pp.56-83* (**ISC -** علمی پژوهشی وزارت علوم)

71. H. R. Aghamiri, **E. Mehdizadeh**, H. R. Gholami, (2023), EVALUATION OF EMPLOYEES' PERFORMANCE BY TYPE-2 FUZZY RANKING, *Journal of Industrial Engineering and Management Studies*, *Vol.10, No.1, pp.53-68* (**ISC** -علمی پژوهشی وزارت علوم)

72. A. Osati, **E. Mehdizadeh**, S. Ebrahimnejad, (2022), Lot-Sizing and Scheduling in a Flexible Job-Shop Environment Considering Energy Efficiency, *Journal of Industrial Engineering and Management Studies*, *Vol.9, No. 2, pp.129-147* (**ISC** -علمی پژوهشی وزارت علوم)

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MSc. Thesis

Title: Designing a Just-In-Time (JIT) system for auto part manufacturers.

Ph.D. Thesis

Title: Solving a new mathematical model for a parallel machine scheduling problem with family setup time by an efficient metaheuristic method.

MSc. Supervisors

- Prof. Dr. Rasol Norossana

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- Prof. Dr. Mohammad Saeidi Mehrabad

MSc. Thesis Abstract

Practitioners have always tried to gain maximum profit for industry organizations with limited resources. For this purpose, many methods and ideas have been proposed and used, when a better way is emerged, the old method set aside and are forgotten. One approach that has recently been emerged and can find his position in the manufacturing world in short time is just-in-time (JIT) system. In fact, this system has revolutionized the management of production by eliminating wastes and makes maximum use of limited resources in order to meet the needs and increases productivity at all levels of the organization. Preventive maintenance, total quality control, setup time reduction, multi skill workers and the establishment of machine cells are the main precedence for the implementation of JIT systems. Production control system used in this system is called Kanban which pulls parts and materials from different production stages and seller process and minimize the Work In Progress (WIP).

Desire to reduce inventory, emphasizing to high-quality, timely delivery importance and pay lower capital are reasons that are JIT implementation in the auto part industry will be justified. More importantly, JIT system flexibility makes the auto part industries can easily adjust their plans with automakers companies' plans.

In order to design a JIT system in the auto part industry the present thesis is provided in 4 chapters:

In the first chapter, the problem described, auto part industry introduced and fundamental of JIT explained.

In the second chapter, a summary of studied articles and literature are presented in five sections: JIT fundamental, MRPII and JIT combination, production balancing and smoothing, setup time reduction and number of Kanban calculations.

In the third chapter, an algorithm presented for JIT system implementation, and a simple but efficient system for each of the predecessors of JIT system presented.

Finally in the fourth chapter, a proposed production and control model which is combination of MRP2 and JIT has been described. This model has included the following:

1. Aggregate planning

2. Aggregate planning breakdown to part family

3. Part family breakdown to product

4. Production smoothing and balancing (production scheduling)
5. Calculating the number of Kanban

Ph.D. Thesis Abstract

This study proposes a novel integer-linear programming (ILP) model for an identical parallel-machine scheduling problem with family setup times that minimizes the total weighted flow time (TWFT). Some researchers have addressed parallel-machine scheduling problems in the literature over the recent decades. However, the existing researches have been limited to the study of independent jobs and most classical optimization methods are focused on parallel-machine scheduling problems without considering setup times and related between jobs. This problem is shown to be NP-hard in the strong sense. Obtaining an optimal solution for this type of complex, large-sized problems in reasonable computational time is extremely difficult. Thus, two meta-heuristic algorithms, genetic algorithm (GA) and Vibration damping optimization algorithm (VDO), is proposed and applied to the given problem, which obtain good and near-optimal solutions, especially for large sizes. There is a useful connection between vibrations damping and combinatorial optimization. When energy source of an oscillator is cut, its amplitude reduced and gently converges to zero, because energy is dissipated by friction and other resistances. A detailed analogy with vibrations damping in mechanical vibration provides a framework for optimization (finding the minimum of a given objective function) of properties of very large and complex systems. In this study the central constructs in combinatorial optimization and vibration damping reviewed and then developed the similarities between the two fields. One of the most important steps in scheduling problem with family setup times is job assignment to families In this study to assign jobs to families, Group technology (GT) concepts is used. Group technology (GT) is a useful way to increase productivity with high quality in cellular manufacturing systems (CMSs), in which family formation/ cell formation (CF) is a key step in the GT philosophy. When boundaries between groups are fuzzy, fuzzy clustering has been successfully adapted to solve the CF problem; however, it may result uneven distribution of parts/machines where the problem becomes larger. In this case, meta-heuristic algorithms such as particle swarm optimization (PSO) can be used to tackle such a hard problem. This study proposes a hybrid fuzzy particle swarm optimization (FPSO) algorithm based on the fuzzy c-means (FCM) algorithm and particle swarm optimization to assign the jobs to families in scheduling problem with family setup times.