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Google Scholar Link: https://scholar.google.co.uk/citations?user=rCx_1woAAAAJ&hl=en

Academic Qualification

Ph.D in Applied Sciences, Cranfield University, United Kingdom, 2013.
M. Eng. (Manufacturing), Universiti Malaysia Pahang, 2007.
B. Eng. Mechanical (Industry) Engineering, Universiti Teknologi Malaysia, 2003.

Brief Profile

Mohd Fadzil Faisae Ab. Rashid received the Bachelor Degree in Mechanical (Industry) from Universiti Teknologi Malaysia in 2003, M. Eng (Manufacturing) from Universiti Malaysia Pahang in 2007 and Ph.D in Applied Sciences from Cranfield University, United Kingdom in 2013. During the early of his career, he works in a multi-national company as a Production Engineer. Later, he was appointed as a Tutor and Lecturer in Universiti Malaysia Pahang. During that period, he was awarded scholarships to pursue Master and Doctoral degrees. Currently, he is a Senior Lecturer in Faculty of Mechanical Engineering, Universiti Malaysia Pahang. He is also a Chartered Engineer under the Institution of Mechanical Engineers. His research interests are in engineering optimization, particularly focus on manufacturing system, metaheuristics and discrete event simulation techniques.

Working Experiences

1. Oct 2013 – Present: Senior Lecturer – Universiti Malaysia Pahang, Malaysia.
2. May 2007 – Sept 2013: Lecturer – Universiti Malaysia Pahang, Malaysia.
3. Aug 2004 – Apr 2007: Tutor – Universiti Malaysia Pahang, Malaysia.
4. Jan 2004 – July 2004: Researcher – KUKTEM, Malaysia.
5. Mar 2003 – Dec 2003: Production Engineer – Shimano Comp. (M) Sdn. Bhd., Pontian, Malaysia.

Managerial Experience

1. Nov 2013 – Oct 2015: Head of Diploma Programme, Faculty of Mechanical Engineering, UMP
2. Nov 2008 – May 2010: Head of Programme (Industrial Training), Universiti Malaysia Pahang

Research Interest

- Manufacturing System & Industrial Engineering
- Engineering Optimisation
- Operational Research

Selected Research Project and Grant

1. Modelling and Optimization of Assembly Sequence Planning for Automotive Subassembly, Apr 2018 – Mar 2020, UMP Research Grant (RDU180331), RM28,000, **Leader** (Ongoing).
2. Modelling and Optimization of Mixed Model Assembly Line Problem with Resource Constraints, Mar 2017 – Mar 2018, UMP PGRS Grant (PGRS170318), **Leader** (Ongoing).
3. Optimization of Double Sided Assembly Line Balancing with Resource Constraints, Mar 2017 – Mar 2018, UMP PGRS Grant (PGRS170319), **Leader** (Ongoing).
4. Optimization Of Assembly Sequence Planning Using Ant Colony Optimization Algorithm, Mar 2017 – Mar 2018, UMP PGRS Grant (PGRS1703107), **Leader** (Ongoing).
5. Modeling and Optimization of Multi-holes Drilling Path using Particle Swarm Optimization, Jun 2016 – May 2018, UMP Research Grant, RM30,500, **Leader** (Completed).
6. Modelling and Optimization of Assembly Line Balancing with Multi-Resource Constraints, Jul 2014 - Jun 2017, FRGS, RM117,600, **Leader** (Completed).
7. Modelling and Optimization of Automotive Manufacturing Layout to Enhance Productivity, 2013-2015 UMP Research Grant, RM24,000, **Leader** (Completed).
8. Development of Low-Cost Pneumatic Controller For Industrial Application, 2009-2010, UMP Research Grant, RM25,000, **Leader** (Completed).
9. Robust Supply Chain Risk Management Models to Optimize Total Supply Chain Cost in An Uncertain Environment Through Soft Computing, UMP Research Grant, RM31,400, **Member** (2018-2020).
10. Development of Knowledge Based Ergonomics Assessment System at Workplace in Automotive Assembly Plan, UMP Research Grant, RM21,500, **Member** (Ongoing).
11. Ergonomics Study on Musculoskeletal Disorders (MSD) Related Problems among Workers in Electronics Assembly Line, UMP Research Grant, RM26000, **Member** (Ongoing).
12. Embedded Ergonomic in Design for Assembly of Automotive Body Sub-Components, UMP Research Grant, RM25,750, **Member** (Ongoing).

13. Investigation of The Rigidity of CoCrMo Cellular Structure Fabricated by Selective Laser Melting Process for Potential Dental Applications, RAGS Grant, RM49,985, **Member** (Ongoing).
14. A Study of Lean Manufacturing Implementation in SME - Automotive component Industry, 2015-2017, UMP Research Grant, RM20,450, **Member** (Ongoing).
15. Pemandangan Teknologi Sistem Kawalan, Rekabentuk Percetakan Plastik dan Pengurusan Kejuruteraan Dalam Industri Plastik, Sep 2014 – Aug 2016, Knowledge Transfer Programme (KTP) Research Grant, RM135,915, **Member** (Completed).
16. Peningkatan Produktiviti Pengeluaran Kilang Baja Cecair Melalui Penambahbaikan Sistem Operasi dan Pengurusan Bahan Mentah, Knowledge Transfer Programme (KTP) Research Grant, 2014-2016, RM117,426.56, **Member**, (Completed).

Professional Qualification / Membership / Affiliation / Experience

- Chartered Engineer, Institute of Mechanical Engineers (IMechE), Registration No. 651928
- Graduate Member Board of Engineer Malaysia (51236R)

Awards/Achievements

- CITREX 2018 (Silver Medal) – IoT Based Fish Feeder
- The International Competition and Exhibition on Computing Innovation, iCE-CInno 2016 (Silver Medal) - NSGA-II Algorithm for Assembly Line Balancing with Multi-Resource Constraints
- CITREX 2016 (Bronze Medal) – Algorithm to Optimize ALBE-RC using NSGA-II
- ITEX 2015 (Silver Medal) - Internally Cooled Cutting Tool For Sustainable Machining
- CITREX 2015 (Bronze Medal) – Intelligent Production Scheduling System for SMI
- CITREX 2015 (Gold Medal) – Sustainable Cutting Tool Design
- ITEX 2010 – Bronze medal – CNC Laser Machine
- PECIPTA 2009 (BRONZE MEDAL) - New Technique For Laser- Micromachining Of MEMS Components
- PAMERAN R&D IPTA EXPO 2005 (GOLD MEDAL)- Design & Simulation Of Robotic Welding System For Automotive Manufacturing

Selected Publications

Journal

1. Abdullah, M.A., **Ab Rashid, M.F.F.** & Ghazalli, Z. (2018), "Optimization of Assembly Sequence Planning Using Soft Computing Approaches: A Review", Archives of Computational Methods in Engineering, In Press. (IF = 5.061).
2. Zainal Abidin, N.W., **Ab Rashid, M.F.F.** and Nik Mohamed, N.M.Z. (2017), "A Review of Multi-holes Drilling Path Optimization Using Soft Computing Approaches", Archives of Computational Methods in Engineering, In Press. (IF = 4.214).
3. **Ab Rashid, M.F.F.** (2017), "A Hybrid Ant-Wolf Algorithm to Optimize Assembly Sequence Planning Problem", Assembly Automation, Vol. 37 Issue: 2, pp. 238-248. (IF=1.176).
4. **Ab. Rashid, M.F.F.**, Hutabarat, W. and Tiwari, A (2018), "Multi-objective discrete particle swarm optimisation algorithm for integrated assembly sequence planning and assembly line balancing", Proc IMechE Part B: J Engineering Manufacture, Vol. 232, Issue 8, pp. 1444-1459 (ISI IF=0.987).
5. Abdullah Make, M.R., **Ab. Rashid, M.F.F.** and Razali, M.M. (2017), "A Review of Two-Sided Assembly Line Balancing Problem", The International Journal of Advanced Manufacturing Technology, vol. 89, Issue 5, pp. 1743-1763 (ISI IF=1.568).
6. **Ab. Rashid, M.F.F.**, Hutabarat, W. and Tiwari, A. (2012), "Development of Tuneable Test Problem Generator for Assembly Sequence Planning and Assembly Line Balancing", *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture*, vol. 226, no. 11, pp.1900-1913. (ISI IF = 0.770)
7. **Ab. Rashid, M.F.F.**, Hutabarat, W. and Tiwari, A. (2012), "A Review on Assembly Sequence Planning and Assembly Line Balancing Optimisation using Soft Computing Approaches", *International Journal of Advanced Manufacturing Technology*, vol. 59, no. 1-4, pp. 335-349. (ISI IF = 1.205).
8. AN Rose, **M.F. Ab Rashid**, NMZ Mohamed, I Rosli, A Mohd, H Ahmad (2018), "Part Counts Reduction in Car's Side Mirror by Using Design for Assembly Method", *Advanced Science Letters* 24 (6), 4223-4226.
9. **Ab. Rashid, M.F.F.**, Jusop, M., Nik Mohamed, N.M.Z. and Romlay, F.R.M. (2018), "Optimization of Travelling Salesman Problem with Precedence Constraint Using Modified GA Encoding", *Advanced Science Letters*, Vol. 24(2), 1484 – 1487.
10. Abdullah Make, M.R., **Ab. Rashid, M.F.F.**, Razali, M.M., and Perumal, M. (2018), "Assembly Line Balancing using Heuristic Approaches in Manufacturing Industry", *Journal of Mechanical Engineering*, Vol. 4(2), pp. 171 – 185.
11. Razali, M.M., **Ab. Rashid, M.F.F.** and Abdullah Make, M.R. (2017), "Optimization of Automotive Manufacturing Layout for Productivity Improvement", *Journal of Mechanical Engineering*, Vol. SI, No. 4(1), pp. 171-184.
12. **Ab. Rashid, M.F.F.**, Tiwari, A. and Hutabarat, W. (2017), "Comparison of Sequential and Integrated Optimisation Approaches for ASP and ALB", *Procedia CIRP*, Vol. 63, pp. 505-510.
13. Jusop, M. and **Ab. Rashid, M.F.F.** (2017), "Optimization of Assembly Line Balancing with Resource Constraint using NSGA-II: A Case Study", *International Journal of Applied Engineering Research* 12 (7), 1421-1426.
14. **Ab Rashid, M.F.F.**, Nik Mohamed, N.M.Z. and Mohd Rose, A.N. (2017), "Multi-objective optimisation of CNC milling process for Al 6061 using modified NSGA-II", *Advances in Smart Systems Research*, Vol. 5, No. 1, pp.30-38.
15. Zakaria, N.H., Mohamed, N.M.Z.N., Rose, A.N.M., **Ab. Rashid, M.F.F.** (2016), "Lean Manufacturing Implementation in Small and Medium Industry", *Advances in Smart Systems Research*, ISSN 2050-8662, Vol. 5, No. 1, pp.17-29.
16. Jusop, M. and **Ab. Rashid, M.F.F.** (2016), "Optimisation of Assembly Line Balancing Type-E with Resource Constraints using NSGA-II", *Key Engineering Materials*, vol. 701, pp 195-199.

17. **Ab. Rashid, M.F.F.**, Nik Mohamed, N.M.Z. and Mohd Rose, A.N. (2015), "Optimisation of Traveling Salesman Problem with Precedence Constraint using Particle Swarm Optimisation", *Journal of Scientific Research and Development*, Vol. 2 (13), pp. 212-216.
18. **Ab Rashid, M.F.F.**, Nik Mohamed, N.M.Z., Mohd Rose, A.N. and Kor, K.Y. (2015), "Simulation Study of A Vehicle Production Line For Productivity Improvement", *Journal of Mechanical Engineering and Sciences*, Vol. 8, pp. 1283-1292.
19. Nik Mohamed, N.M.Z., **Ab. Rashid, M.F.F.**, Mohd Rose, A.N. and Woh, Y.T. (2015), "Production Layout Improvement for Steel Fabrication Works", *Journal of Industrial and Intelligent Information* Vol. 3, No. 2, pp. 133-137.
20. **Ab Rashid, M.F.F.**, Nik Mohamed, N.M.Z., Mohd Rose, A.N., Ghani, S.A.C., Wan Harun, W.S. (2015), "Implementation of Ant Colony Optimization Algorithm to Minimize Cost of Turning Process", *Applied Mechanics and Materials*, vol. 695, pp. 558-561.
21. **Ab Rashid, M.F.F.**, Harun, W.S.W., Ghani, S.A.C., Nik Mohamed, N.M.Z. and Mohd Rose, A.N. (2014), "Optimization of Multi-Pass Pocket Milling Parameter using Ant Colony Optimization", *Advanced Materials Research*, Vol. 1043, pp. 65-70.
22. **Ab Rashid, M.F.F.** (2015), "An Improved Mathematical Model to Predict Surface Roughness Using Hybrid Method", *International Journal of Materials, Mechanics and Manufacturing*, Vol. 3, No. 1, pp. 36-39.

Conference

1. Kamarudin, N.H. and **Ab. Rashid, M.F.F.** (2018), "Modelling of Simple Assembly Line Balancing Problem Type 1 (SALBP-1) with Machine and Worker Constraints", *IOP Conference Series: Journal of Physics*, Vol. 1049, No. 012037, pp. 1-10.
2. NWZ Abidin, **M.F.F. Ab. Rashid**, NMZN Mohamed (2018), "Optimization of Multi-holes Drilling Path Using Particle Swarm Optimization", *Lecture Notes in Mechanical Engineering: Intelligent Manufacturing & Mechatronics*, pp. 101-107.
3. Ismail, M.N., Rose, A.N.M., Mohammed, N.Z. and **Ab. Rashid, M.F.F.** (2017), "Development of Six Sigma Methodology for CNC Milling Process Improvements", *IOP Conference Series: Materials Science and Engineering*, Vol. 257, No. 012009, pp. 1-15.
4. Kamarudin, N.H. and **Ab. Rashid, M.F.F.** (2017), "Assembly Line Balancing with Resource Constraints Using New Rank-Based Crossovers", *IOP Conference Series: Journal of Physics*, Vol. 908, No. 012059, pp. 1-7.
5. Zakaria, N.H., Nik Mohamed, N.M.Z., **Ab Rashid, M.F.F.** and Mohd Rose, A.N. (2017), "Lean Manufacturing Implementation in Reducing Waste for Electronic Assembly Line", *MATEC Web of Conferences*, Vol. 90, No. 01048.
6. Mohd Fazi, H., Nik Mohamed, N.M.Z., **Ab Rashid, M.F.F.** and Mohd Rose, A.N. (2017), "Ergonomics Study for Workers at Food Production Industry", *MATEC Web of Conferences*, Vol. 90, No. 01003.
7. Mohd Rose, A.N., **Ab. Rashid, M.F.F.**, Nik Mohamed, N.M.Z. and Ahmad, H. (2017), "Similarities of Lean Manufacturing Approaches Implementation in SMEs Towards the Success: Case Study in the Automotive Component Industry", *MATEC Web of Conferences*, Vol. 87, No. 02024.
8. Razali, M.M., **Ab. Rashid, M.F.F.** and Abdullah Make, M.R. (2016), "Mathematical Modelling of Mixed-Model Assembly Line Balancing Problem with Resources Constraints", *IOP Conference Series: Materials Science and Engineering*, Vol. 160, No. 1, pp. 1-10.
9. Abdullah Make, M.R., **Ab. Rashid, M.F.F.** and Razali, M.M. (2016), "Modelling of Two-sided Assembly Line Balancing Problem with Resource Constraints", *IOP Conference Series: Materials Science and Engineering*, Vol. 160, No. 1, pp. 1-9.
10. **Ab Rashid, M.F.F.**, Jusop, M., Nik Mohamed, N.M.Z. and Romlay, F.R. (2016), "Optimization of Travelling Salesman Problem with Precedence Constraint using Modified GA Encoding", *International Conference on Information Systems and Technology (ICIST 2016)*, 28 – 30 November 2016, Kota Kinabalu, Malaysia.
11. Azidin, A, Mat Taib, ZA, Harun WSW, Che Ghani SA, **Ab. Rashid, M.F.F.**, Omar, MA, Ramli H. (2015), "Investigation of Mechanical Properties for Open Cellular Structure CoCrMo Alloy Fabricated by Selective Laser Melting Process", *IOP Conference Series: Materials Science and Engineering*, vol. 100-1, 012033.
12. Jusop, M. and **Ab. Rashid, M.F.F.** (2015), "A Review On Assembly Line Balancing Type-E Problem", *IOP Conf. Series: Materials Science and Engineering*, vol. 100, 012005.
13. Razman, M.A., Priyandoko, G., Yusoff, A.R. and **Ab Rashid, M.F.F.** (2014), "Optimizing Hysteresis Parameters Of Magneto-Rheological Fluid Damper Using Particle Swarm Optimization" *Proceedings of the 1st International Conference on Automotive Innovation and Green Energy Vehicle (AiGEV 2014)*, 26-27 August 2014, Swiss Garden Resort & Spa, Kuantan, Pahang.

Book/Module

1. Razali, A.R.R, **Ab. Rashid, M.F.F.**, Maarof, R., Ahmad, A.H., Razak, N.H., Chang, T.A. and Shariff, H.M. (2017), *The Advancement in Manufacturing Processes and Technology*. Lambert Academic Publishing. ISBN: 978-620-2-08072-9.
2. **Ab. Rashid, M.F.F.**, Ahmad Shah, L.H. and Mansor, M.H. (2015) *BMM4703 Hydraulics and Pneumatics. Examination Solution Manual (2010 – 2014)*. UMP Publisher. ISBN: 987-967-0691-59-6.

Postgraduate Supervision

1. M Jusop, "Multi-Objective Optimisation of Assembly Line Balancing Type-E Problem", M.Sc. in Mechanical Engineering, Main Supervisor, (Graduated).
2. AS Jamalulail, "Implementation of Moon Crossover in Genetic Algorithm to Optimize Assembly Sequence Planning", M.Eng. (Mechanical), (Graduated).
3. A Lawrence, "Modelling and Optimization of Resistance Spot Welding using Non-Traditional Approach", M.Eng. (Mechanical), (Graduated).

4. NH Kamaruddin, "Optimization of Assembly Line Balancing with Machine and Tool Constraints", M.Sc. in Mechanical Engineering, Main Supervisor, (Ongoing).
5. MR Abdullah Make, "Optimisation of Two-Sided Assembly Line Balancing with Resource Constraints", M.Sc. in Mechanical Engineering, Main Supervisor, (Ongoing).
6. MM Razali, "Optimisation of Mixed-Model Assembly Line Balancing with Resource Constraints", M.Sc. in Mechanical Engineering, Main Supervisor, (Ongoing).
7. AQ Basri, "SMED in Production Stamping Proton Shah Alam", Ph.D, Co-Supervisor, (Ongoing).
8. NW Zainal Abidin, "Optimization of Multi-holes Drilling Path using Particle Swarm Optimization", M.Sc. in Mechanical Engineering, Main Supervisor, (Ongoing).
9. MA Abdullah, "Optimization of Assembly Sequence Planning using Ant Colony Optimization", M.Sc. in Mechanical Engineering, Main Supervisor, (Ongoing).
10. MKHC Mohamad Khalib, "Modelling and Optimization of Energy Efficient Assembly Line for Sustainable Manufacturing", PhD, Main Supervisor (Ongoing).
11. MA Nik Mu'tasim, "Optimization of Energy Utilization in Flow-shop Scheduling using Metaheuristics Approach", PhD, Main Supervisor (Ongoing).
12. RM Yaacob, "Optimization Approach to Finite Element Model Updating of Dissimilar Thin Plate Structure", PhD, Co-Supervisor (Ongoing).

Undergraduate Supervision

1. Nornasrah Salim, "Optimization of Drilling Toolpath using Particle Swarm Optimization", 2017~2018.
2. Muhammad Fikri Othman, "Optimization of Scheduling System in Vehicle Service Centre", 2017~2018.
3. Siti Nur Azeemah Azeman, "Development of Simulation Model for Scheduling System in Vehicle Service Center", 2016~2017.
4. Nurul Jannatunnaim Shaharuddin, "Optimization of Line Balancing using Artificial Intelligence", 2016~2017.
5. Mageshvaran Muthu Krisnan, "Design and Fabrication of Innovative Drinking Bottle", 2016~2017.
6. Manugari Perumal, "Assembly Line Balancing for Former Holder Servicing in Glove Manufacturing", 2015~2016.
7. Shamsu Ain Hassan, "Production Line Improvement in Small and Medium Enterprise using Line Balancing Approach", 2015~2016.
8. Ng Wei Ming, "A Study on Production Scheduling System in a Small and Medium Industry", 2015~2016.
9. Loo Fu Hong, "Development of Computerized Precedence Matrix for Assembly Purpose", 2015~2016.
10. Nur Fateen Naquiah Roslan, "Optimization of Spot Welding Process for Automotive Application", 2014~2015.
11. Muhammad Razif Abdullah Make, "Optimization of Assembly Sequence Planning Problem", 2014~2015.
12. Muhamad Magffierah Razali, "Simulation of Automotive Manufacturing Assembly for Productivity Improvement", 2014~2015.
13. Purshothman Masalamany, "Modelling of Micro EDM Process for Cobalt Chromium", 2014~2015.
14. Nurul Najwa Fakruddin, "Study of Assembly Line Balancing Type-E Problem using Artificial Intelligence Approach", 2014~2015.
15. Huzairi Hashim, "Development of Mechanical System for Automated Guided Vehicle (AGV)", 2008~2009.
16. Abu Harfiz Hassan, "Development of Control System for Automated Guided Vehicle (AGV)", 2008~2009.
17. Mohammad Rizal Abdul Lani, "Modeling of Milling Process to Predict Surface Roughness Using Artificial Intelligent Method", 2008~2009.
18. Panirchelvan Ramanathan, "Quality Control in Manufacturing Company Using Statistical Process Control (SPC)", 2008~2009.
19. Yazid Yahya, "Optimization of Micro EDM Drilling Process using Taguchi Approach", 2008~2009.
20. Azizie Asmawi, "Development of Remotely Operated Vehicle (ROV) for Underwater Exploration", 2008~2009.
21. Gan Sin Yi, "Mathematical Modeling of Milling Operation to Predict Surface Roughness", 2007~2008.
22. Nazri bin Semoin, "Optimization of Turning Process using Ant Colony Optimization", 2007~2008.
23. Mohd Saupi bin Mohd Sauki, "Optimization of Milling Process using Ant Colony Optimization", 2007~2008.
24. Shah Izwandi bin Mohd Zawawi, "Optimization of Turning Parameter using Genetic Algorithm", 2007~2008.
25. Mohd Zaini bin Jamak, "Development of Production Sequencing Software for Industry", 2007~2008.

Teaching Experience

Diploma

1. DMM1523 Engineering Materials
2. DMM3623 Hydraulics & Pneumatics Technology

Bachelor Degree

1. BMM4703 Hydraulics and Pneumatics
2. BMM1811 Mechanical Laboratory I
3. BMM2521 Engineering Mechanics Lab II
4. BMM2613 Computer Aided Design
5. BMM2421 Electrical & Electronics Lab

6. BMM3633 Industrial Engineering
7. BMM1543 Strength of Materials
8. BMM3611 Manufacturing Processes Lab

Master Degree

1. MKM1433 Optimization Techniques
2. MKM2316 Dissertation
3. MME6184 Optimization Techniques

Training and Consultancy

1. Production Planning and Control (3 – 7 September 2018)
2. Engineering Optimization using Genetic Algorithm (7 – 8th August 2017)
3. Engineering Optimization using Artificial Intelligence (1 – 2nd August 2016)