

**Curriculum vita**  
**Dr. Fatemeh Afsharnia**  
Researcher

*Postdoc in Reliability and Maintenance Engineering, Ferdowsi University of Mashhad, Mashhad, Iran*

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Fatemeh Afsharnia completed her Ph.D. in Mechanization Engineering from Agricultural Sciences and Natural Resources University of Khuzestan in 2021 and postdoctoral studies from Ferdowsi University of Mashhad. She was also a visiting scholar at the Condition Monitoring Center at the Sharif University of Technology in 2018-2019. She was awarded the "Top Student Award" in 2010, the "Best Research Student of University Award" in 2019, and the "Outstanding Reviewer Award" in the 2024 Emerald Literati Awards, selected by the editorial team of International Journal of Quality & Reliability Management. Dr. Afsharnia's fields of study are Reliability engineering and analysis, Maintenance management, Maintenance planning, Regression modelling, Reliability theory, Risk assessment and analysis, Safety management and engineering, Probabilistic risk analysis, Maintenance optimization, Condition-based maintenance, etc. She is a member of the Iranian Maintenance Association (IRMA) and has published over 30 publications in several reputed journals and books. Moreover, she has been serving as a reviewer of the Operations Management Research, Journal of the Brazilian Society of Mechanical Sciences and Engineering, Environment, Development and Sustainability, and Scientific Reports journals published by Springer.

## Education

- **Ph.D.** Agricultural Sciences and Natural Resources University of Khuzestan, Ahvaz. 2021  
Reliability estimation by Bayesian networks, fault tree analysis and failure mode and effect analysis of sugarcane harvester machine
- **MSc.** Agricultural Sciences and Natural Resources University of Khuzestan, Ahvaz. 2013  
Regression analysis of affected factors on tractor's failure rate modeling in Khuzestan province
- **BSc.** Agricultural Sciences and Natural Resources University of Khuzestan, Ahvaz. 2010

## Work Experiences

- Postdoctoral Researcher of Reliability and Maintenance Engineering, Department of Biosystems Engineering, Ferdowsi University of Mashhad, Mashhad, Iran (2021/08/23-2023/03/20).
- Visiting Researcher, Condition Monitoring Center, Mechanical Engineering Department, Sharif University of Technology, Tehran, Iran (October 2018-April 2019).
- Sessional Lecturer, Biosystems Engineering Department, Agricultural Sciences and Natural Resources University of Khuzestan, Ahvaz, Iran (2014-2024).
- Sessional Lecturer, Biosystems Engineering Department, Ferdowsi University of Mashhad, Mashhad, Iran (2021-2022).
- Sessional Lecturer, Biosystems Engineering Department, Shahrekord University, Shahrekord, Iran (2022-2023).

## Journal Articles

- **Afsharnia, F.**, Asoodar, M.A., Abdeslahi, A. and Marzban, A., 2013. Failure rate analysis of four agricultural tractor models in southern Iran. *Agricultural Engineering International: CIGR Journal*, 15(4), pp.160-170.
- **Afsharnia, F.**, Asoodar, M. and Abdeslahi, A., 2014. Regression analysis and modeling of failure rate and its effective factors on tractors in some cities of Khuzestan province. *Journal of Agricultural Engineering Soil Science and Agricultural Mechanization, (Scientific Journal of Agriculture)*, 36(2), pp.49-58.
- **Afsharnia, F.**, Asoodar, M.A. and Abdeslahi, A., 2014. The effect of failure rate on repair and maintenance costs of four agricultural tractor models. *International Journal of Agricultural and Biosystems Engineering*, 8(3), pp.286-290.
- **Afsharnia, F.**, Asoodar, M.A., Abdeslahi, A. and Marzban, A., 2014. Technical and economical comparison of different maintenance conditions for MF 399 tractor in southwest of Iran. *Agric Eng Int: CIGR Journal*, 16(4), pp.43-50.
- **Afsharnia, F.**, 2014. Predicting Failure Rate in Different Maintenance Conditions for MF 399 Tractor, a case study in southwest of Iran. *Agricultural Engineering International: CIGR Journal*, 16(4), pp.43-50.
- **Afsharnia, F.**, Asoodar, M.A., Abdeslahi, A. and Marzban, A., 2015. Repair and Maintenance Capability and Facilities Availability for MF 285 Tractor Operators in North of Khuzestan Province. *International Journal of Mechanical and Mechatronics Engineering*, 9(6), pp.1153-1156.
- **Afsharnia, F.** and Marzban, A., 2017. The effect of usage and storing conditions on John deere 3140 tractor failures in Khuzestan province, Iran. *Journal of Biosystems Engineering*, 42(2), pp.75-79.
- **Afsharnia, F.**, Mehdizadeh, S.A., Ghaseminejad, M. and Heidari, M., 2017. The effect of dynamic loading on abrasion of mulberry fruit using digital image analysis. *Information Processing in Agriculture*, 4(4), pp.291-299.
- **Afsharnia, F.** and Marzban, A., 2018. Investigating the long-term effect of preventive maintenance strategy on the operational efficiency and failure rate of sugarcane harvester using time series. *Journal of Agricultural Machinery*, 10(2), pp.347-359.

- **Afsharnia, F.**, 2018. Selection of the suitable model for prediction of MF399 tractor failure rate in different maintenance policies. *Journal of Researches in Mechanics of Agricultural Machinery*, 7(1).
- Asoodar, M.A., Marzban, A. and **Afsharnia, F.**, 2018. Effect of different planting methods on wheat yield in north of Ahvaz city. *Journal of Agricultural Engineering Soil Science and Agricultural Mechanization, (Scientific Journal of Agriculture)*, 41(3), pp.85-96.
- **Afsharnia, F.**, Marzban, A. and Abdesahi, A., 2018. Sugarcane transportation process modeling by time series approach. *Iran Agricultural Research*, 37(2), pp.117-126.
- **Afsharnia, F.**, Asaei, H. and Marzban, A., 2018. Investigation the effect of mechanization intervention on musculoskeletal disorders risk level among workers of an edible mushroom producing unit. *Occupational Medicine*, 9(4), pp. 8-20.
- **Afsharnia, F.** and Marzban, A., 2019. Risk analysis of sugarcane stem transportation operation delays using the FMEA-ANP hybrid approach, 9(2), p.577.
- **Afsharnia, F.** and Marzban, A., 2019. Evaluation of manpower productivity in repair shop taking into account the reliability of the system (case study: flour factory). *Journal of Researches in Mechanics of Agricultural Machinery*, 8(1).
- **Afsharnia, F.** and Marzban, A., 2019. Analysis of sugarcane stems transportation process from farm to factory using queuing theory. *Agricultural Mechanization and Systems Research*, 20(72), pp.109-122.
- **Afsharnia, F.**, Marzban, A., Asoodar, M.A. and Abdesahi, A., 2020. Availability Modeling of Sugarcane Harvesting System by Using Markov Chain. *Journal of Biosystems Engineering*, 45, pp.145-154.
- **Afsharnia, F.**, Marzban, A., Asoodar, M. and Abdesahi, A., 2021. Preventive maintenance optimization of sugarcane harvester machine based on FT-Bayesian network reliability. *International Journal of Quality & Reliability Management*, 38(3), pp.722-750.
- **Afsharnia, F.**, Ghasemi Nejad Raeini, M., Barzegar, H. and Ghasemi, P., 2021. Texture estimation model for mulberry fruit from linear measurements. *Journal of Horticulture and Postharvest Research*, 4(3), pp.263-276.
- **Afsharnia, F.** and Moosavi, S.A., 2021. Effects of diesel-engine exhaust emissions on seed germination and seedling growth of Brassicaceae family using digital image analysis. *Journal of Environmental Health Science and Engineering*, 19(2), pp.1887-1900.
- **Afsharnia, F.** and Mousavi, A., 2022. Risk assessment of gas pollutants on seed germination of Canola by Grey theory and image Analysis. *Plant Productions*, 45(3), pp.347-359.
- **Afsharnia, F.**, 2023. Optimization of in vitro and in vivo antifungal effects of trehalose coating included Artemisia sieberi essential oil on mulberry (*Morus alba* var. nigra) fruits using the hybrid RSM-GRA method. *Food Science and Biotechnology*, pp.1-15.
- **Afsharnia, F.** and Rohani, A., 2025. Risk assessment of sugarcane bagasse pellet plant equipment using hybrid multi-criteria decision-making techniques to reduce environmental hazards. *Clean Technologies and Environmental Policy*, pp.1-18.
- Abdolkhani, H., Raeini, M.G.N., Faregh, S.M., Mehrnia, M.A. and **Afsharnia, F.**, 2025. Study on the production of powdered sugarcane pith as a novel approach and its application in the confectionery industry (A case study). *Results in Engineering*, 26, p.104782.

- **Afsharnia, F.**, Marzban, A., Asoodar, M.A. and Abdeslahi, A., 2025. Sugarcane green and sustainable harvest by demand management of the sugarcane harvester machine's spare parts. *Sustainable Futures*, p.100920.
- Faregh, S. M., **Afsharnia, F.** and Memar Dastjerdi, R. 2025. Optimizing the factors affecting the quality condition of 4WD tractors' engine oil using the hybrid RSM-GRA method. *Scientific Reports*, 15:41681.
- Pandey S, **Afsharnia F**, Pattnaik D, Kumari R. 2026. Preventive to intelligent maintenance: uncovering research frontiers of maintenance using BERTopic modeling. *Journal of Quality in Maintenance Engineering*, 32(2): 510–540, doi: <https://doi.org/10.1108/JQME-01-2026-0015>

## International and National Conferences Articles

- **Afsharnia, F.**, Asoodar, M.A. and Zare, A. Z. 2012. Importance of food security of sugarcane crop in Iran. The 5<sup>th</sup> National Conference of Iran's Sugarcane Technologists - Iran's Sugarcane Technology Scientific Community. Ahvaz. Iran.
- **Afsharnia, F.**, Asoodar, M.A. and Abdeslahi, A., 2013. The effect of duration parameters and type of service and maintenance on failure rate of Messer Ferguson 399 tractors in Khuzestan province. 7<sup>th</sup> Condition Monitoring & Fault Diagnosis Conference (CMFD 2013) - Sharif University of Technology. Tehran, Iran.
- **Afsharnia, F.**, Asoodar, M.A. and Abdeslahi, A., 2013. Predicting failure rate in different maintenance conditions for MF 399 tractor. 7<sup>th</sup> Condition Monitoring & Fault Diagnosis Conference (CMFD 2013) - Sharif University of Technology. Tehran, Iran.
- **Afsharnia, F.**, Asaei, H. 2016. Measuring the potential of planting jatropha plant in order to rehabilitate the lands of Khuzestan province. The first national conference to study the dimensions of the implementation of the 550,000-hectare agricultural development plan. Ahvaz. Iran.
- **Afsharnia, F.**, and Asoodar, M.A. 2016. The effect of planting pattern in conservation agriculture on the efficiency of water consumption for land restoration in Khuzestan province. The first national conference to study the dimensions of the implementation of the 550,000-hectare agricultural development plan. Ahvaz. Iran.
- Asoodar, M.A., Marzban, A., and **Afsharnia, F.**, 2016. The effect of planting methods on the growth and yield of wheat in North Khuzestan. The 2<sup>th</sup> National Conference on Agricultural Mechanization and New Technologies. Ahvaz. Iran.
- Jamalpoor, Z., Ghaseminejad, M., **Afsharnia, F.**, 2016. Investigating greenhouse gas emissions from dryland wheat production based on farm size in Lali city. The 2<sup>th</sup> National Conference on Agricultural Mechanization and New Technologies. Ahvaz. Iran.
- Bogari, E., Asoodar, M.A., Abdeslahi, A., Goodarzi, B., Yaghoobi, M. and **Afsharnia, F.**, 2016. Examining the realization of some goals of the agricultural mechanization and bottlenecks in its development in Iran. The 2<sup>th</sup> National Conference on Agricultural Mechanization and New Technologies. Ahvaz. Iran.

- **Afsharnia, F.**, Marzban, A., and Abdeshahi, A., 2016. The role of agricultural mechanization in increasing the productivity of rural production cooperatives in Khuzestan province: challenges and solutions. The first national conference on the development and increase of productivity in cooperatives of Khuzestan province- General Administration of Cooperatives Labor and Social Welfare of Khuzestan province. Ahvaz. Iran.
- Kazemi, N. and **Afsharnia, F.**, 2017. Introduction and analysis of conventional and modern indices of agricultural mechanization. 1<sup>st</sup> National Conference on Applied Researches in science and engineering. Mashhad, Iran.
- **Afsharnia, F.**, Alekajbaf, Y. and Marzban, A. 2017. The pattern of sustainable production of biogas and electric power from the waste processing plants. 11<sup>th</sup> National Congress of Progressive Pioneers. Tehran, Iran.
- **Afsharnia, F.**, Marzban, A., and Abdanan, S., 2019. Detection of wear debris in engine oil using statistical color analysis. 13<sup>th</sup> Condition Monitoring & Fault Diagnosis Conference February, Sharif University of Technology, Tehran, Iran.
- **Afsharnia, F.**, Marzban, A., Asoodar, M.A. and Abdeshahi, A., 2019. Checking and Prioritizing the Sensitivity Rate of machine Subsystems for Preventive Maintenance using Fuzzy Analytic Hierarchy Process. 13<sup>th</sup> Condition Monitoring & Fault Diagnosis Conference February, Sharif University of Technology, Tehran, Iran.
- **Afsharnia, F.**, Moosavi, A. 2020. Investigation of the Role of Sunflower Seed Shell on Germination Damage Affected by Tractor Pollutants. 16<sup>th</sup> National Iranian Crop Science Congress, Ahvaz. Iran.
- **Afsharnia, F.**, Rohani, A. 2022. Designing a Conceptual Model for Implementing a Reliability Centered Maintenance (RCM) System in an Animal Feed Production Unit. 14<sup>th</sup> National Congress of Mechanical Engineering of Biosystems and Mechanization of Iran, Kermanshah, Iran.

## Book Chapter

- **Afsharnia, F.**, 2017. Failure rate analysis. In Failure Analysis and Prevention. IntechOpen.
- **Afsharnia, F.**, 2022. Reliability Approach for Enhancing System's Performance. In Operations Research (pp. 167-180). CRC Press.
- **Afsharnia, F.**, 2023. Risk and Reliability Analysis in the Era of Digital Transformation. In Advances in Reliability, Failure and Risk Analysis (pp. 269-284). Singapore: Springer Nature Singapore.
- **Afsharnia, F.**, Behzad, M. and Arghand, H.A., 2023. An Application of Soft Computing in Oil Condition Monitoring. In Advances in Reliability, Failure and Risk Analysis (pp. 117-129). Singapore: Springer Nature Singapore.
- **Afsharnia, F.** and Rohani, A., 2023. Repair and Maintenance Management System of Food Processing Equipment. In Advances in Reliability, Failure and Risk Analysis (pp. 357-375). Singapore: Springer Nature Singapore.
- **Afsharnia, F.** 2026. Development of a novel mathematical model to forecast the spare parts demand. In Reliability Assessment of Flow Networks and Industrial Systems (pp. 255-272). Elsevier.

## Membership

- Editorial Board Member of the journal of "Strategic Business Research", Elsevier.
- Reviewer of the "Journal of Industrial Information Integration", (Published by Elsevier), ISI, JCR, IF: 10.4
- Reviewer of the Journal of "ISA Transactions", (Published by Elsevier), ISI, JCR, IF: 6.3
- Reviewer of the Journal of "Computers & Industrial Engineering", (Published by Elsevier), ISI, JCR, IF: 6.7
- Reviewer of the Journal of "Measurement", (Published by Elsevier), ISI, JCR, IF: 5.2
- Reviewer of the "International Journal of Quality & Reliability Management", (Published by Emerald), ISI, JCR, IF: 2.7
- Reviewer of the "Decision Analytics Journal"(Published by Elsevier)
- Reviewer of the Journal of "Signal, Image and Video Processing", (Published by Springer), ISI, JCR, IF: 2
- Reviewer of the "International Journal of Productivity and Performance Management", (Published by Emerald), ISI, JCR, IF: 8.2
- Computers and Electronics in Agriculture
- Reviewer of the Journal of "Fruits", ISI, JCR, IF: 0.8
- Reviewer of the Journal of the "Brazilian Society of Mechanical Sciences and Engineering", (Published by Springer), ISI, JCR, IF: 2.36
- Reviewer of the Journal of "Operations Management Research", (Published by Springer), ISI, JCR, IF: 7.2
- Reviewer of the Journal of "Agricultural Machinery", Ferdowsi University of Mashhad, Mashhad, Iran.
- Reviewer of the Journal of "Researches in Mechanics of Agricultural Machinery", Shahrekord University, Shahrekord, Iran.
- Member of Iran's "Maintenance Association", Tehran, Iran.
- Member of Iran's "Society of Agricultural Machinery Engineering and Mechanization", Ahvaz, Iran.
- Member of Iran's "Agricultural and Natural Resources Engineering Organization", Tehran, Iran.

## Lectures

- **BSc.**

- Decision Support System
- Repair and Maintenance Engineering
- Application of computer software in mechanization
- Project management and control
- Project analysis and evaluation
- Analysis and planning
- Agricultural Machinery

- Supply chain management
- Operations Research

- **MSc.**

- Information technology in agriculture

## Workshops

- Participate in more than 30 National and International Workshops

## Courses

- Robotics Course
- Software Testing on Satellite Course
- Matlab I
- Matlab II
- ICDL

## Defended Master Thesis

- Feasibility Study of Sugarcane Stem Pith Powder Extraction and Investigation of Product Development Potential Using It (Case Study: Production of Cakes), Hamid Abdolkhani, MSc thesis, Advisor: Fatemeh Afsharnia (**2024**).

## Honors & Awards

- **Outstanding Reviewer Award**, Emerald Literati Awards (2024)
- **Postdoctoral Fellowship Award**, National Elite Foundation (2021)
- **Top researcher** at Agricultural Sciences and Natural Resources University of Khuzestan (2019)
- **Top student** selected by the National Elite Foundation (2016-2020)
- **Third Ranked PhD Graduate** (2021)
- **Third Ranked MSc Graduate** (2013)
- **First Ranked BSc Graduate** (2010)

## Software Skills

- SPSS
- Matlab
- Latex
- Image J
- Eviews
- Minitab
- Weibull++

- Arena
- Design expert
- Grapher
- Expert Choice
- MSBNX
- NCSS