



## Resume



First name: Akbar

Last name: Rahideh

Academic title: Professor

Area of Specialty: Electrical Engineering-Electric Machines

Areas of Interest: Electric Machine Design, Electric Drive Control, Fault Detection of Electric Machines

Projects & Research Activities:

- 1) Contribution in conducting a funded project on "Noise Reduction and Optimizing of an Electric Vehicle".
- 2) Contribution in conducting a funded project on a "Hybrid Electric Minibus".
- 3) Contribution in conducting a funded project by NHSIL and Heptagon (UK) on "heart assist device with minimally invasive approach: design and implementation".
- 4) Contribution in conducting a funded project by i4i (UK) entitled TurboCardia.
- 5) Leading a funded project by Fars Regional Electric Company on "Fuzzy based Voltage & Reactive Power Control in Fars regional electric network".
- 6) Leading a funded project by Fars Regional Electric Company on "Faults in Grounding Transformers".
- 7) Leading a funded project by Region 2 of Gas Transmission Company on "Fault Detection of Induction Motors".

- 8) Leading a funded project by Fars Electricity Distribution Company on “AC-DC Insulation Test of High Voltage Gloves”.
- 9) Leading a funded project on “Design and manufacturing a high speed (20000 rpm) permanent magnet brushless motor”.
- 10) Leading a funded project on “Design and manufacturing a 3kW outer rotor permanent magnet brushless motor for hub-drive of electric cars”.
- 11) Leading a funded project on “Design and manufacturing a 10kW iner rotor permanent magnet brushless motor for mid-drive of electric cars”.
- 12) Leading a funded project by MAPNA Group on “Induction Motor Harmonic Loss Calculation”.

## **Selected publication**

1. G.R. Agah, **A. Rahideh**, V.Z. Faradonbeh, S.H. Kia, “Stator Winding Inter-Turn Short-Circuit Fault Modeling and Detection of Squirrel-Cage Induction Motors,” *Transactions on Transportation Electrification*, In Press, 2023.
2. M.H. Javanmardi, **A. Rahideh**, “2-D Analytical Electromagnetic Modeling for Slotless Tubular Surface Magnet Machines Considering End-Effect,” *IEEE Transactions on Energy Conversion*, In Press, 2023.
3. V.Z. Faradonbeh, **A. Rahideh**, E. Amiri, “Analytical Modeling of Steel Shielding Cylinder in Surface Mounted Permanent Magnet Machines,” *IEEE Journal of Emerging and Selected Topics in Industrial Electronics*, In Press, 2023.
4. V.Z. Faradonbeh, **A. Rahideh**, E. Amiri, G.A. Markadeh, “General 2-D Analytical Framework for No-load Analysis of Interior Permanent Magnet Machines,” *IEEE Transactions on Transportation Electrification*, In Press, 2023.
5. R. Alimardani, **A. Rahideh**, S. Hedayati-kia, “Mixed Eccentricity Fault Detection for Induction Motors based on Time Synchronous Averaging of Vibration Signals,” *IEEE Transactions on Industrial Electronics*, In Press, 2023.

6. M.H. Javanmardi, **A. Rahideh**, “Analytical modelling of a slotless tubular interior permanent magnet machine considering iron poles permeability,” *IET Electric Power Applications*, Vol. 17, No. 5, pp. 607-627, 2023.
7. A.A. Vahaj, **A. Rahideh**, V.Z. Faradonbeh, A.R. Salehi, A. Ghaffari, M. Shahnazari, T. Lubin, “2-D analytical magnetic model for optimal design of an outer rotor permanent magnet synchronous machine”, *IET Electric Power Applications*, Vol. 17, No. 1, pp. 1-13, 2023.
8. G. Mirzavand, **A. Rahideh**, “Two-dimensional analytical model for five-phase fault-tolerant permanent-magnet vernier machines”, *The International Journal for Computation and Mathematics in Electrical and Electronic Engineering*, Vol. 41, No. 5, pp. 1788-1810, 2022.
9. G.R. Agah, **A. Rahideh**, H. Khodadadzadeh, S.M. Khoshnazar, S.H. Kia, “Broken Rotor Bar and Rotor Eccentricity Fault Detection in Induction Motors Using a Combination of Discrete Wavelet Transform and TeagerKaiser Energy Operator”, *IEEE Transactions on Energy Conversion*, Vol. 37, No. 3, pp. 2199-2206, 2022.
10. V.Z. Faradonbeh, **A. Rahideh**, “2-D analytical on-load electromagnetic model for double-layer slotted interior permanent magnet synchronous machines,” *IET Electric Power Applications*, Vol. 16, No. 3, pp. 394-406, 2022.
11. E. Shirzad, **A. Rahideh**, “Analytical Model for Brushless Double Mechanical Port Flux-Switching Permanent Magnet Machines,” *IEEE Transactions on Magnetics*, Vol. 57, No. 10, pp. 1-13, 2021.
12. V.Z. Faradonbeh, **A. Rahideh**, S.T. Boroujeni, G.A. Markadeh, “2-D Analytical No-Load Electromagnetic Model for Slotted Interior Permanent Magnet Synchronous Machines”, *IEEE Transactions on Energy Conversion*, Vol. 36, No. 4, pp. 3118-3126, 2021.
13. Z. Hashemi, **A. Rahideh**, “Electrical Rotor Fault Detection in Induction Generator under the Influence of Low Frequency Oscillations Caused by Wind Turbine Tower Shadow Effect”, *Tabriz Journal of Electrical Engineering*, Vol. 50, No. 4, pp. 1873-1883, 2021.

14. A.R. Hoseinpour, M. Mardaneh, **A. Rahideh**, “Two-Dimensional Analysis of Hybrid Electric Vehicle with Double field Excitation,” *IET Generation, Transmission & Distribution*, Vol. 15, No. 6, pp. 1081-1093, 2021.
15. V.Z. Faradonbeh, **A. Rahideh**, M.M. Ghahfarokhi, E. Amiri, A.D. Aliabad, G.A. Markadeh, “Analytical Modeling of Slotted, Surface Mounted Permanent Magnet Synchronous Motors with Different Rotor Frames and Magnet Shapes,” *IEEE Transactions on Magnetics*, Vol. 57, No. 1, pp. 1-13, 2021.
16. Z. Delirani, **A. Rahideh**, M. Mardaneh, “Analytical Calculations of Electromagnetic Quantities for Wound Rotor Salient-Pole Synchronous Machines,” *The International Journal for Computation and Mathematics in Electrical and Electronic Engineering*, Vol. 40, No. 3, pp. 325-357, 2021.
17. V.Z. Faradonbeh, **A. Rahideh**, M. Mardaneh, S.T. Boroujeni, “Analytical Modeling of Flux-Reversal Permanent-Magnet Machines,” *IEEE Transactions on Energy Conversion*, Vol. 36, No. 2, pp. 1121-1130, 2021.
18. V.Z. Faradonbeh, **A. Rahideh**, G.A. Markadeh, “An Analytical Model for Slotted Stator Brushless Surface Inset Permanent Magnet Machines Using Virtual Current Theory,” *IET Electric Power Applications*, Vol. 14, No. 14, pp. 2750-2761, 2020.
19. A.P. Masoumi, A.R. Tavakolpour-Saleh, **A. Rahideh**, “Applying a genetic-fuzzy control scheme to an active free piston Stirling engine: Design and experiment”, *Applied Energy*, Vol. 268, 115045, 2020.
20. M. Mokarram, M.J. Mokarram, M.R. Khosravi, A. Saber, **A. Rahideh**, “Determination of the optimal location for constructing solar photovoltaic farms based on multi-criteria decision system and Dempster–Shafer theory”, *Scientific Reports*, Vol. 10, No. 1, pp. 1-17, 2020.
21. A. Ghaffari, **A. Rahideh**, H. Ghaffari, A. Vahaj, A. Mahmoudi, “Comparison between 2D and 0D analytical models for slotless double-sided inner armature linear permanent magnet synchronous machines”, *International Transactions on Electrical Energy Systems*, Vol. 30, No. 9, e12509, 2020.
22. T. Lubin, A.A. Vahaj, **A. Rahideh**, “Design Optimization of an Axial-Flux Reluctance Magnetic Coupling based on a Two-Dimensional Semi-Analytical Model”, *IET Electric Power Applications*, Vol. 14, No. 5, pp. 901-910, 2020.

23. Z. Hashemi, **A. Rahideh**, "Rotor Electrical Fault Detection of Wind Turbine Induction Generators Using an Unscented Kalman Filter", *Iranian Journal of Science and Technology, Transactions of Electrical Engineering*, Vol. 44, pp. 979–988, 2020.
24. F. Zarei, M.H. Shafiei, **A. Rahideh**, "Implementation of Event-Triggered based Model Predictive Control", *Journal of Control*, Vol. 14, No. 1, pp. 11-24, 2020. (In Persian)
25. A.R. Ghaffari, **A. Rahideh**, H. Moayed-Jahromi, A.A. Vahaj, A. Mahmoudi, W.L. Soong, "2-D Analytical Model for Outer-Rotor Consequent-Pole Brushless PM Machines", *IEEE Transactions on Energy Conversion*, Vol. 34, No. 4, pp. 2226-2234, 2019.
26. A.A. Vahaj, **A. Rahideh**, T. Lubin, "General Analytical Magnetic Model for Partitioned-Stator Flux-Reversal Machines with Four Types of Magnetization Patterns", *IEEE Transactions on Magnetics*, Vol. 55, No. 11, 2019.
27. F. Ebadi, M. Mardaneh, **A. Rahideh**, N. Bianchi, "Analytical Energy-based Approaches to Cogging Torque Calculation in Surface Mounted PM Motors", *IEEE Transactions on Magnetics*, Vol. 55, No. 5, 2019.
28. A.A. Vahaj, **A. Rahideh**, H. Moayed-Jahromi, A.R. Ghaffari, "Exact Two-Dimensional Analytical Calculations for Magnetic Field, Electromagnetic Torque, UMF, Back-EMF, and Inductance of Outer Rotor Surface Inset Permanent Magnet Machines", *Mathematical and Computational Applications*, Vol. 24, No. 1, pp. 1-25, 2019.
29. A.H. Gheisari, A.R. Roosta, **A. Rahideh**, "A General Analytical No-Load Magnetic Model for Axial Flux Permanent Magnet Synchronous Machines", *Iranian Journal of Science and Technology, Transactions of Electrical Engineering*, Vol. 43, pp. 403-410, 2019.
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35. E. Taherzadeh, M. Dabbaghjamanesh, M. Gitizadeh, **A. Rahideh**, "A New Efficient Fuel Optimization in Blended Charge Depletion/Charge Sustainance Control Strategy for Plug-in Hybrid Electric Vehicles", *IEEE Transactions on Intelligent Vehicles*, Vol. 3, No. 3, pp. 374-383, 2018.
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37. F. Shakibapour, **A. Rahideh**, M. Mardaneh, "2-D Analytical Model for Heteropolar Active Magnetic Bearings Considering Eccentricity", *IET Electric Power Applications*, Vol. 12, No. 5, pp. 614-626, 2018.
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39. A. Hoseinpour, M. Mardaneh, **A. Rahideh**, "Investigation of the Effects of Different Magnetization Patterns on the Performance of Series Hybrid Excitation Synchronous Machines", *Progress In Electromagnetics Research M*, Vol. 64, pp. 109-121, 2018.

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41. F. Zarei, M.H. Shafiei, **A. Rahideh**, “Event-Triggered based Sliding Mode Control of Uncertain Linear Systems”, *Journal of Control*, Vol. 11, No. 3, pp. 14-25, 2017. (In Persian)
42. **A. Rahideh**, A.A. Vahaj, M. Mardaneh, T. Lubin, “2-D Analytical Investigation of the Parameters and the Effects of Magnetization Patterns on the Performance of Coaxial Magnetic Gears,” *IET Electrical Systems in Transportation*, Vol. 7, No. 3, pp. 230-245, 2017.
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44. R. Hemmati, **A. Rahideh**, “Optimal Design of Slotless Tubular Linear Brushless PM Machines Using Metaheuristic Optimization Techniques,” *Journal of Intelligent & Fuzzy Systems*, Vol. 32, pp. 351-362, 2017.
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46. T. Korakiantis, M.A. Rezaenia, G. Paul, **A. Rahideh**, M.T. Rothman, S. Mozafari, “Optimization of Centrifugal Pump Characteristic Dimensions for Mechanical Circulatory Support Devices,” *American Society for Artificial Internal Organs (ASAIO) Journal*, Vol. 62, No. 5, pp. 545-551, 2016.
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