



Abbas Nazari Marashi

Electromagnetic Design Engineer

Electric Machines Design and Analysis, Thermal and Electromagnetic Analysis,  
Electrical Steel & Permanent Magnet Expert, Iron-Loss Expert

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## RESEARCH INTERESTS

### Electrical Machines

- + Permanent Magnet (PM) Machines
- + Synchronous Reluctance Motors
- + High Temperature Electrical Motors
- + Linear Electrical Motors and Generators
- + Packaging and Frequency Behavior of Electrical Motors

### Magnetic Materials

- + Eddy current and hysteresis loss in Magnetic Materials
- + Fault detection (demagnetization faults) in PMs
- + Radial and axial magnetic gears
- + Properties and Application of Magnetic Materials

## EDUCATION

### PhD Candidate in Electrical Engineering, Electrical Machines

Iran University of Science & Technology

Sep 2023

### M.Sc. in Electrical Engineering, Power Electronics & Electrical Machines

K. N. Toosi University of Technology

Sep 2010 Feb 2013

Research Area

- Modelling and reduction of eddy current losses in permanent magnet materials of PM motors.

### B.Sc. in Electrical Engineering, Power

Zanjan University

Sep 2016 Sep 2010

Research Area

- Placement and implementation Phasor Measurement Units (PMU) in Electric distribution network.

## PUBLICATIONS

### Journal Papers

- Rezaee-Alam, F., **Nazari Marashi, A.**, Roozbehani, S.: Modified magnetic equivalent circuit model for magnetic field analysis of one cage-rotor induction motor used in electric submersible pumps. IET Electr. Power Appl. 1– 11 (2023). <https://doi.org/10.1049/elp2.12305>
- Rezaee-Alam, F., **Nazari Marashi, A.**, et al.: Analytical modelling of one cage rotor induction motor for electric submersible pumps. IET Electr. Power Appl. 16(11), 1273– 1285 (2022). <https://doi.org/10.1049/elp2.12223>
- Babaei, M., Feyzi, M., **Nazari Marashi, A.**: Extended Poincaré model and non-linear analysis of permanent-magnet synchronous motor scalar drive system. IET Power Electron. 15, 855– 864 (2022). <https://doi.org/10.1049/pel2.12273>
- Babaei, M., Feyzi, M., **Nazari Marashi, A.** Study of bifurcation and chaos in scalar drive systems of permanent magnet synchronous machines. Int Trans Electr Energ Syst. 2021; e13023. <https://doi.org/10.1002/2050-7038.13023>
- Babaei, M., Feyzi, M., **Nazari Marashi, A.**: Incorporating the coupled effects of slot opening, armature reaction and saturation in the model of the airgap flux density distribution of permanent magnet synchronous machines. IET Electr. Power Appl. 1–12 (2023). <https://doi.org/10.1049/elp2.12384>

- ❑ Babaei M, **Marashi AN**, Liasi SG. Optimizing DFIG-DC system performance via model predictive control: torque ripple, DC voltage drop, and THD reduction. Energy Sci Eng. 2024; 1-22.  
[doi:10.1002/ese3.1837](https://doi.org/10.1002/ese3.1837)

## Conference Papers

- ❖ Arvin hojati , **Abbas Nazari Marashi** , Kh Kanzi, "Analysis of Magneto-hydro-dynamics Thruster with Linear and Helical Channel", Iranian Conference on Electrical Engineering (ICEE2017).
- ❖ Seyyedmahdi Jafarishiadeh, Mohammad Ardebili, **Abbas Nazari Marashi** "Investigation of Pole and Slot Numbers in Axial-Flux PM BLDC Motors with Single-Layer Windings for Electric Vehicles". Iranian Conference on Electrical Engineering (ICEE2016).
- ❖ **Abbas Nazari Marashi**, Kh Kanzi, "Thermal Analysis of BLDC Motor With Propose New Arrangement for Permanent Magnets to Magnet Eddy Current Loss Reduction". Iranian Conference on Electrical Engineering (ICEE2016).
- ❖ **Abbas Nazari Marashi**, K. Abbaszadeh "Analysis and Reduction of Magnet Eddy Current Losses in Surface Mounted Permanent Magnet Machines", Iranian Conference on Electrical Engineering, ICEE 2014 (**best paper**).

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## WORK EXPERIENCE

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### Electrical Machines Research Group Manager

ACECR (The Academic Center for Education, Culture and Research is an Iranian private non-governmental higher education institution)

01/2017 - present

#### Achievements

- Design, analysis and construct **13.5 KW Synchronous Reluctance** Electrical motor for roller table application
- Design, analysis and construct an **Induction Motor for Oil Wells Electrical Submersible Pump (ESP)** application, 130Hp, 2450V, 540 Series
- Design and Construct a **Test Setup for ESP Induction Motor** with Considering IEEE112 Standards.
- Design and Construct a **four bag (BPBSBPB) Protector for ESP Motor**.
- Design, analysis, construct and field test Two **Direct-Drive PMSM for Gearless Elevator Application**, 5.8 & 6.7KW, 168 rpm.
- Design and Analysis and Construct a **7.5 Kw,1500rpm, PMSM motor with Considering mechanical and thermal issues**.

### Research Assistant

ACECR

09/2013 - 12/2016

#### Achievements

- Thermal Analysis of 30KW BLDC Motor with Lumped-Parameters.
- design and analysis of Magneto-hydro- dynamics (MHD) Thruster.
- design and analysis of radial and axial Magnetic Gears.
- Design, analysis and **construct a high speed BLDC motor with internal V-shape magnets**, 1.1KW, 12000rpm.

### Research Assistant

K. N. Toosi University of Technology

02/2012 - 09/2013

#### Achievements

- Calculation of parasitic capacitance of 5KW synchronous Generator with Finite Element Method (FEM).
- Design and optimization of Linear induction motor with GA in Ansys Maxwell software.
- Faults modelling of synchronous machines with winding function method.

### The chief engineer

Alborz Sanat

04/2010 - 01/2012

#### Achievements

- Maintenance of Electrical Motors

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## TEACHING EXPERIENCE

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### Lecturer in Thermal and Mechanical Analysis and Prototyping of Electrical Machines

Workshop at ICEE2023 Amir Kabir University of Technology

May 2023

### Lecturer in Electrical Machines Lab1

K. N. Toosi University of Technology and University of Science and Culture

2016- present

### Lecturer in Design Optimization of Permanent magnet motors using Ansys Maxwell

Workshop at ICEE2017 K. N. Toosi University of Technology

May 2017

### Lecturer in Electrical Machines I and II Laboratory

K.N.Toosi University of technology

2022 to 2023

### Lecturer in Electrical Machines I and II Laboratory

University of Science and Culture

2016 to 2022

### Lecturer in Three Phase Electrical Machines

University of Allameh Majlesi

2015 to 2016

### Lecturer in English for Student of Electrical Engineering

University of Adiban

2013 to 2014

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## SKILLS

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MATLAB (m-file)

MATLAB (Simulink )

MATLAB (pde tools )

SIMPLORER

Ansys Maxwell

COMSOL

JMAG

Microsoft Office

Project Management

Technology Management

Public speaking

Proposal Writing

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## LANGUAGES

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English ●●●●○

Farsi ●●●●●

Azeri ●●●●●

Turkish ●●●○○

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## CERTIFICATES

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Strategic Management (2022)

Technology Management (2021)