CURRICULUM VITAE

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SHORT BIOGRAPHY

I have been an academic member in the department of power engineering, Faculty of Electrical and Computer Engineering in the University of Kashan, since February 2017. I received my Ph.D., M.Sc. and B.Sc in Electrical Engineering from the Iran University of Science and Technology, University of kashan, and Khaje Nasir Toosi University of Technology in 2016, 2009 and 2007, respectively all in power electrical engineering. Following graduation, I joined University of Kashan, Kashan, Iran, as an Academic Member (Assistant Professor) of the Electrical Power Group. My research interests are magnetic gears, analytical methods, finite-element-method-based simulation techniques, optimization methods, electrical machine design, PM synchronous machine, and applied superconductors in power systems and electrical machines.

FIELDS OF INTEREST

- Electrical Machine Design
- Magnetic Gears
- Analytical Methods
- Finite Element Methods
- Superconductors and Their Application
- Optimization Methods
- Distribution Networks
- FACTS
- Ferroresonance

EDUCATION

- PhD., **Iran University of Science and Technology**, Tehran, Iran (Sep.2011-Sep. 2016)**,** GPA= 18.1 out of 20.
  Thesis Title: "Design and Analysis of Arcuate Double Sided Magnetic Gear for Torque Density Enhancement ".
  Supervisor: **Dr. H. Heydari**

- M.Sc., **University of Kashan**, Kashan, Iran (Sep.2007- Feb. 2010)**,** GPA= 18.52 out of 20.
  Thesis Title: "Optimal Location and Tuning of D-STATCOM in Distribution Networks with DGs Using Immune Algorithm ".
  Supervisor: **Dr. S.A. Taher**

- B.Sc., **Khaje Nasir Toosi University of Technology**, Tehran, Iran (2003-2007), GPA = 16.2 out of 20.
  Supervisor: **Dr. M.A. Golkar**

PUBLICATIONS

- S.A. Afsari, **Cogging Torque Reduction Using Axial Pole Shaping in IPM Coaxial Magnetic Gear**, *Journal of Applied Electromagnetics*, Earlier Access, 2022.
- S.A. Afsari, **Design and Optimization of Coaxial Reluctance Magnetic Gear with Different Rotor Topologies**, *IEEE Transaction on Industrial Electronics*, Vol. 69, no. 1, pp. 101-109, 2022.
- S.A. Afsari, **Optimal Design of Magnetic Geared PM Synchronous Motor Pole Shape to Improve Magnetic Field Distribution and reduce Cogging Torque**, *Journal of Applied Electromagnetics*, Vol. 8, no. 1, pp. 53-59, 2020.
- S.A. Afsari, **Optimal Design and Analysis of a Novel Reluctance Axial Flux Magnetic Gear**, *Journal of Scientia Iranica*, Earlier Access, 2020.
- S.A. Afsari, **Rotor Pole Design of Radial Flux Magnetic Gear for Reduction of Flux Density Harmonics and Cogging Torque**, *IEEE Transactions on Applied Superconductivity*, Vol. 28, no. 8, pp. 1-8, 2019.
- S.A. Afsari, **Performance Analysis and Optimization of a Novel Arcuate Double-sided Magnetic Gear using Quasi 3-D Analytical Modeling for Wind Power Application**, *Journal of Applied Electromagnetics*, Vol. 6, no. 2, pp. 1-9, 2019.
- B. Dianati, H. Heydari, and S.A. Afsari, **Analytical Computation of Magnetic Flux Distribution in Superconductive Coaxial Magnetic Gear**, *IEEE Transaction on Applied Superconductivity*, Vol. 26, no. 6, pp. 5205612, Sep. 2016.
- S.A. Afsari, H. Heydari, and B. Dianati, **Cogging Torque Mitigation in Axial Flux Magnetic Gear System Based on Skew Effects Using an Improved Quasi 3D Analytical Method**, *IEEE Transaction on Magnetics*, Vol. 51, no. 9, pp. 1-11, Sep. 2015.
- S.A. Afsari, H. Heydari, and E. Bashar, **Viable Arcuate Double-sided Magnetic Gear for Competitive Torque Density Transmission Capability**, *Journal of Scientia Iranica*, Vol. 22, no. 3, pp. 1045-1051, D 2015.

- H.R. Abbasi, H. Heydari, nad S.A. Afsari, **A new Approach to eliminating of chaotic ferroresonant oscillations in power transformer, International Journal of Electrical Power and Energy System**, *International Journal of Electrical Power and Energy Systems*, Vol. 68, pp. 132-141, 2015.
- S.A. Taher, and S.A. Afsari, **Optimal location and sizing of DSTATCOM in distribution systems by immune algorithm**, *International Journal of Electrical Power and Energy Systems*, Vol. 60, pp. 34-44, 2014.
- S.A. Taher, and S.A. Afsari, **Optimal Allocation and Sizing of D-STATCOM by Immune Algorithm in Distribution Networks Including Distribution Generation**, *Soft Computing Journal* , Vol. 2, 2013.
- S.A. Taher, and S.A. Afsari, **Optimal location and sizing of UPQC in distribution networks using differential evolution algorithm**, *Mathematical Problems in Engineering*, Vol. 2012, Article ID 838629, 2012.
- Design and Performance characteristics of magnetic gears, 6th Conference on rotating equipment in oil and power industries, 2015.
- Skew effects on cogging torque mitigation in radial flux magnetic gears, 6th Conference on rotating equipment in oil and power industries, 2015.
- Cogging Torque Reduction in Double sided Axial Flux Magnetic Gears using Skew Techniques, 6th Power Electronics, Drive Systems & Technologies Conference, 2015.
- Implementation of Wounded Stator Magnetic Gear for Speed Control of Wind Turbines, 29th International Power System Conference, 2015.
- Optimal Design of Double Layer Axial Flux Electrical Machine, 32nd PSC conference 1 (1), 1, 2017.
- Load Stall Control in Wounded Stator Magnetic Gear, 32nd PSC conference 1 (1), 1, 2017.
- Cogging Torque Minimization in Coaxial Magnetic Gear, 32nd PSC conference 1 (1), 1, 2017.
- A new Magnetic Gear Topology with Double Layer Modulator, 33rd PSC conference 1 (1), 2018.
- Reluctance Axial Flux Magnetic Gear with Single Layer PM Rotor, 33rd PSC conference 1 (1), 2018.
- Performance Analysis and Optimization of a Novel Arcuate Double-sided Magnetic Gear using Quasi 3-D Analytical Modeling for wind power application, Journal of Applied Electromagnetics 5 (2), 1-9, 2019.

WORK EXPERIENCES

- **University of Kashan**, Assistant Professor of Electrical Engineering, from 2016.
- **Azad University of Kashan,** Lecturer (2012-2016).
- **Research Center of High Voltage and Magnetic Materials**, (2011-2016).
- **Esfahan Province Electricity Distribution Company (Daneshmand Consulting Engineering Co.)**, (2008-2011).

COMPUTER SKILLS

- **Programming Languages**
- **Electrical Engineering Software**
  Maxwell, Matlab, PSPICE, …

LANGUAGES

- Persian: Native
- English (Writing, Speaking and Listening)