

Abbas Shiri

[CURRICULUM VITAE]



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Publons:

<https://publons.com/researcher/3163260/ab>

Scopus Author ID: 24367194000

<https://www.scopus.com/authid/detail.uri?>

Research Interests:

- **Electrical Machine Design and Modeling**
- **Linear Electric Machines**
- **Electromagnetic Systems and actuators**
- **Design of Electrical Insulations for High Voltages**

Publications:

- 1 Book
- 25 Journal papers
- 31 International Conference Papers

Book

No.	Title	Authors	Publication
1	Linear induction motors, investigation, design and modeling (in Persian)	A. Shiri and A. Shoulaie	Shahid Rajae University Press, 2016

Journal Papers

No.	Title	Authors	Journal
1	Design optimization and analysis of single-sided linear induction motor, considering all Phenomena	A. Shiri and A. Shoulaie	IEEE Transactions on Energy Conversion, Vol. 27, No. 2, June 2012
2	Rotor/Stator Inter-Turn Short Circuit Fault Detection for Saturable Wound-Rotor Induction Machine by Modified Magnetic Equivalent Circuit Approach	P. Naderi and A. Shiri	IEEE Transactions on Magnetics, Vol. 53, No. 7, July 2017
3	Sensitivity Analysis and Optimization of Railguns Using Circuit Model	A. Shiri and M. Allahyari	IEEE Transactions on Plasma Science, Vol. 47, No. 11, November 2019
4	Design and Optimization of Linear Induction Motor to Improve Starting Conditions	S. Ghanadi and A. Shiri	Iranian Electrical and Electronics Engineering, Vol. 16, No. 3, Fall 2019(in Persian)

Honors and Awards:

- **Ranked 2nd** in B. Sc. in Electrical Engineering Department, Tabriz University, among over 50 Student.
- **Best Researcher Award** at Iran University of Science and Technology, 2010-2011.
- **Top Student Award** at School of Electrical Engineering, Iran University of Science & Technology, 2007-2008.
- **Ranked 4th** in Ph.D. Entrance Examination of Iran University of Science & Technology, 2006.
- **Ranked 384th** in Nation-wide Entrance Exam for Graduate Study in Electrical Engineering, 2004.
- **Ranked 185th** in Nation-wide Universities Entrance Examination, 2000.

Professional Activities:

- Assistant Professor at School of Electrical Engineering, Shahid Rajae University
- Head of Power Engineering Department, 1396-1398

Referee for Journals

- Reviewer of IEEE Transactions on Energy Conversion
- Reviewer of IEEE Transactions on Applied Superconductivity
- Reviewer of IEEE Transactions on Magnetics
- Reviewer of the Applied Computational Electromagnetics Society Journal
- Reviewer of Progress in Electromagnetics Research
- Reviewer of International Transactions on Electrical Energy Systems
- IEEE Sensors Journal

5	Modeling of Electromagnetic Railgun and Analysis of its Performance	M. Allahyari and A. Shiri	Journal of Applied Electromagnetics, Vol. 7, No. 1, Spring 2019
6	A new methodology for magnetic force calculations between planar spiral coils	A. Shiri and A. Shoulaie	Progress in Electromagnetics Research, PIER, Vol. 95, pp: 39-57, 2009
7	Modeling of Ladder-Secondary-Linear Induction Machine Using Magnetic Equivalent Circuit	P. Naderi and A. Shiri	IEEE Transactions on Vehicular Technology, Vol. 67, No. 12, pp. 11411-11419, Dec. 2018
8	A New Combined Method for Future Energy Forecasting in Electrical Networks	K. Hassanpour B. and A. Shiri ,	International Transactions on Electrical Energy Systems, Vol. 29, No. 3, March 2019.
9	End effect braking force reduction in high-speed single-sided linear induction machine	A. Shiri and A. Shoulaie	Energy Conversion and Management, Elsevier, Volume 61, 2012
10	Pole Arc Skewing Analysis of Synchronous Reluctance Machine, Using Discrete Method Combined with Winding Function Approach	P. Naderi and A. Shiri	The Applied Computational Electromagnetics Society Journal, Vol. 30, No. 7, July 2015
11	Investigation of frequency effects on the performance of single-sided linear induction motor	A. Shiri and A. Shoulaie	The Applied Computational Electromagnetics Society Journal, Vol. 27, No. 6, June 2012
12	Multi-objective optimal design of low-speed linear induction motor using genetic algorithm	A. Shiri and A. Shoulaie	Journal of Electrical Review, Vol. 88, No. 3b, pp: 185-191, March 2012
13	Investigation of the ambient temperature effects on transformer's insulation life	A. Shiri , A. Gholami and A. Shoulaie	Electrical Engineering, Springer, No. 93, pp: 193-197, 2011
14	Calculation of magnetic forces between spiral coils using concentric rings	A. Shiri and A. Shoulaie	The Applied Computational Electromagnetics Society Journal, Vol. 25, No. 5, May 2010
15	Optimal design of low-speed secondary-sheet single-sided linear induction motor	A. Shiri and A. Shoulaie	Journal of Electrical Engineering and Technology, Vol. 8, No. 3, pp.: 581-587, 2013
16	A new and fast procedure for calculation of the magnetic forces between cylindrical coils	A. Shiri , M. R. Alizadeh Pahlavani and A. Shoulaie	International Review of Electrical Engineering, Vol. 4, No. 5, September/October 2009
17	Analytical and FEM based calculation of electromagnetic forces exerted on cylindrical coils due to their own current	A. Shiri and D. E. Moghadam	The Applied Computational Electromagnetics Society Journal, Vol. 27, No. 11, November 2012

Membership:

- Member of Tehran Construction Engineering Organization
- Student Member of IEEE, 2007-2013.
- Member of IEEE, since 2013.

18	Inductance measurement and magnetic flux density analysis of modular toroidal coil using FEM approach applicable to tokamak reactors	M. R. Alizadeh Pahlavani, A. Shiri , H. A. Mohammadpour and A. Shoulaie	International Review of Electrical Engineering, Vol. 5, No. 1, Jan./Feb. 2010
19	Robust sliding mode control of electromagnetic suspension system with parameter uncertainty	A. Shiri	Research Journal of Applied Sciences, Engineering and Technology, Vol. 4, No. 12, June 2012
20	Analysis of the frequency effects on design and back-iron characteristics of double-layer secondary single-sided linear induction motors	A. Shiri and A. Shoulaie	Amirkabir Journal of Science and Technology, Electrical and Electronics Engineering, Vol. 43, No. 1, Fall 2011
21	Experimental and analytical parameter sensitivity analysis of indirect field oriented control of induction machine	A. Shiri , H. P. Nabi and A. Shoulaie	International Journal on Technical and Physical Problems of Engineering, Vol. 4, No. 2, June 2012
22	Secondary back-iron saturation effects on thrust and normal force of single-sided linear induction motor	A. Shiri , M. R. Alizadeh Pahlavani and A. Shoulaie	Advanced Computational Techniques in Electromagnetics, Vol. 2012, May 2012
23	Finite element based analysis of magnetic forces between planar spiral coils	A. Shiri , D. Esmail Moghadam, M. R. Alizadeh Pahlavani, A. Shoulaie	Journal of Electromagnetic Analysis and Applications, Vol. 2, No. 5, May 2010
24	Impact of dimensional parameters on mutual inductance of individual toroidal coils using analytical and finite element methods applicable to tokamak reactors	M. R. Alizadeh Pahlavani, A. Shiri	Progress In Electromagnetics Research B, Vol. 24, 2010
25	Numerical and experimental analysis of electromagnetic torque for modular toroidal coil applicable to tokamak reactors	M. R. Alizadeh Pahlavani, A. Shiri , and A. Shoulaie	Progress In Electromagnetics Research M, Vol. 12, 2010

International Conference Papers

No.	Title	Authors	Conference
1	A New Method for Designing DC-Excited Linear Synchronous Motor	S. Fattahpour and A. Shiri	<i>11th Power Electronics, Drive Systems and Technologies Conference, Tehran, Iran, February 2020</i>
2	Modeling and Analysis of Linear Primary Permanent Magnet Vernier Machine	M. Rostami, P. Naderi, and A. Shiri	<i>11th Power Electronics, Drive Systems and Technologies Conference, Tehran, Iran, February 2020</i>
3	The effect of parameter variations on the performance of indirect vector controlled induction motor drive	A. Shiri , A. Vahedi and A. Shoulaie	<i>IEEE International Conference on Industrial Electronics, Vol. 3, July 2006</i>

4	Modeling of wheel and rail slip and demonstration of the benefit of maximum adhesion control in train propulsion system	S. Sadr, D. Arab Khaburi, A. Shiri , D. E. Moghadam	<i>IEEE International Conference on Industrial Electronics, Istanbul, June 2014</i>
5	3-D analysis of magnetic flux density in modular toroidal coil using cubic meshing	M. R. alizadeh Pahlavani, A. Shiri and A. Shoulaie	<i>Progress In Electromagnetics Research Symposium, Xian, China, March 2010</i>
6	Magnetic flux density analysis of helical toroidal coil using finite element approach	M. R. alizadeh Pahlavani, A. Shiri , H. A. Mohammadpour and A. Shoulaie	<i>Progress In Electromagnetics Research Symposium, Xian, China, March 2010</i>
7	Electromagnetic force distribution on cylindrical coils' body	A. Shiri , M. R. alizadeh Pahlavani, H. A. Mohammadpour and A. Shoulaie	<i>Progress In Electromagnetics Research Symposium, Xian, China, March 2010</i>
8	A practical method for calculation of overexcited region in the synchronous generator capability curves	D. E. Moghadam, A. Shiri , S. Sadr, D. Arab Khaburi	IEEE International Conference on Industrial Electronics, Istanbul, June 2014
9	Near optimum control of large scale systems: Synchronous turbo generator system as a case study	S. E. Razavi, M. R. Jahedmotlagh, A. Shiri , and H. Amin Elahi	<i>The 42nd International University's Power Engineering Conference, University of Brighton, Brighton, UK, September 2007</i>
10	Power quality issues in multi – module gate-controlled series capacitor (MGCS) considering SSR phenomenon	H. A. Mohammadpour, A. Shiri , R. Ghandehari and A. Naghashpour	<i>IEEE International Conference on Electric Power and Energy Conversion Systems, Sharjah, UAE, November 2009</i>
11	Voltage sag mitigation by means of gate-controlled series capacitor (GCSC)	H. A. Mohammadpour, M. R. alizadeh Pahlavani, A. Shiri , and A. Shoulaie	<i>IEEE International Conference on Electric Power and Energy Conversion Systems, Sharjah, UAE, November 2009</i>
12	Magnetic Force Calculation between spiral coils using mesh-matrix method	A. Shiri and A. Shoulaie	<i>24th Int. International Power System Conf, Tehran, Iran, October 2009(in Persian)</i>
13	Optimal Design of Single-Sided Linear Induction Motors Using Genetic Algorithm	A. Shiri and A. Shoulaie	<i>19th Iranian Electrical Engineering Conference, Tehran, Iran, May 2011(in Persian)</i>
14	New Results in Calculation of the Magnetic Force between Cylindrical coils using mesh-matrix method	A. Shiri and A. Shoulaie	<i>24th Int. International Power System Conf, Tehran, Iran, November 2008(in Persian)</i>
15	Independent Load-Frequency Control in Deregulated Power Systems	A. Shiri and S. Jadid	<i>24th Int. International Power System Conf, Tehran, Iran, October 2007(in Persian)</i>
16	Voltage Sag Mitigation in Power Systems Using Series Static Compensator Employing PQR Algorithm	H. Nasir Aghdam, A. Jalilian and A. Shiri	<i>15th Iranian Electrical Engineering Conference, Tehran, Iran, May 2007(in Persian)</i>

17	Magnetic Bearing Robust Control Using Fuzzy Logic	A. Shiri and A. Shoulaie	<i>2nd Iranian Power Plants Conference, Tehran, February 2009(in Persian)</i>
18	Investigation of the Effect of Preheating and Pressure on Insulation Quality in VPI Process	D. Esmail Moghadam and A. Shiri ,	<i>19th Iranian Electrical Engineering Conference, Tehran, Iran, May 2011(in Persian)</i>
19	Calculation and Plot of Capability curves Based on Synchronous Generator Operating Conditions	D. Esmail Moghadam, A. Shiri and A. Khanyabi	<i>2nd Iranian Power Plants Conference, Tehran, February 2009(in Persian)</i>
20	Non-Uniform Distribution of Voltage among Bar Turns in Electrical Feed Drive Motors Due to Short Rise Time Surges	D. Esmail Moghadam and A. Shiri ,	<i>3rd Iranian Power Plants Conference, Tehran, February 2010(in Persian)</i>
21	Investigation of the effect of important indices in insulation process on stator winding capacitance	D. Esmail Moghadam, A. Shiri and M. Ali Mohammadi	<i>3rd Conference on Rotating Equipments in Oil and Power Industries, Tehran, January 2012(in Persian)</i>
22	Investigation for Short Rise Time Surges Effects on Electric Motors Stator Insulation Condition	D. Esmail Moghadam and A. Shiri	<i>3rd Conference on Rotating Equipments in Oil and Power Industries, Tehran, January 2012(in Persian)</i>
23	Design Optimization of Single-Sided Linear Induction Motors for Optimized Performance and Reduced End Effect Breaking Force	A. Shiri and A. Shoulaie	<i>27th Int. International Power System Conf, Tehran, Iran, October 2012(in Persian). Selected for the "Best Paper Award" by the conference technical committee</i>
24	A New Dynamic Model for Linear Induction Motors, Considering End Effect	A. Shiri , D. E. Moghadam	<i>The 10th International Symposium on Linear Drives for Industry Applications, Aachen, Germany, July 2015</i>
25	Normal Force Analysis in Secondary Sheet Single-Sided Linear Induction Motor	A. Shiri , D. E. Moghadam	<i>The 10th International Symposium on Linear Drives for Industry Applications, Aachen, Germany, July 2015</i>
26	Electromagnetic Force Analysis in Linear Induction Motors, Considering End Effect	A. Shiri	<i>7th Power Electronics, Drive Systems and Technologies Conference, Iran University of Science and technology, Tehran, Iran, February 2016</i>
	and 5 Other Conference papers in Persian		

Education:

- ✓ **Ph.D. in Electrical Engineering**
Iran University of Science & Technology, Tehran, Iran **2006- 2012**
Thesis Title: "Design and Optimization of Linear Induction Motor, Considering End Effect "
Supervisor: Prof. Abbas Shoulaie.
- ✓ **M. Sc. in Electrical Engineering**
Iran University of Science & Technology, Tehran, Iran **2004- 2006**
Dissertation Title: "Calculation of Magnetic Forces between Current Carrying Coils"
Supervisor: Prof. Abbas Shoulaie.

- ✓ **B. Sc. in Electrical Engineering**
Tabriz University, Tabriz, Iran **2000- 2004**
Thesis Title: "Investigation of DC/DC Converter Topologies and their Soft Switching Possibilities"
Supervisor: Prof. Seyyed Hossein Hosseini

Teaching Experiences:

University:

M. Sc. courses:

- ✓ Generalized Theory of Electrical Machines (at Azad University)
- ✓ Control of Electric Drives (at Azad University)
- ✓ Advanced High Voltage and Electrical Insulation Engineering (at Shahid Rajaei T.T. University and Azad University)
- ✓ Linear Electric Motors (at Shahid Rajaei T.T. University and Azad University)
- ✓ Design of Linear Electric Motors (at Shahid Rajaei T.T. University)

B. Sc. courses:

- ✓ Electrical Measurement (at Sahand University of Technology and at Azad University)
- ✓ Industrial Electronics (at Azad University)
- ✓ Electrical circuit 2 (at Shahid Rajaei T.T. University and Azad University)
- ✓ Electrical Machine 1 , 2 and 3 (at Shahid Rajaei T.T. University and Azad University)
- ✓ Special Electrical Machines (at Shahid Rajaei T.T. University and Azad University)
- ✓ High Voltage and Electrical Insulation Engineering (at Shahid Rajaei T.T. University and Azad University)
- ✓ Industrial Electronics Lab. (at Azad University)
- ✓ Fundamentals of Electrical Engineering 1 and 2 (at Iran University of Science and Technology and Shahid Rajaei T.T. University)
- ✓ Electrical Machine Lab

Short Period Courses in Industries:

- ✓ Variable Frequency Drives at Ilam Gas Refining Company
- ✓ Emergency Generators at Parsian Gas Refining Company
- ✓ Synchronous Generators at Tabriz Petrochemical Company
- ✓ USB and Battery Chargers at Asalooe Gas refining Company
- ✓ Emergency Generators at Asalooe Gas refining Company

Work Experience:

Researcher:

- ✓ Tabriz Regional Electric Company, 1 year, 2004.
- ✓ Niroo Research Institute, 2 years, 2008-2009.
- ✓ Research Assistant of Prof. Abbas Shoulaie at Power Electronics and Magnetic systems Research Lab., since 2005.

Research Projects:

- ✓ Design and Construction of Linear Induction Motor, 5 Different Projects (Single-sided, Double-Sided, Sheet-Secondary, Ladder-Secondary, and Single-phase), Shahid Rajaei Teacher Training University
- ✓ Design and Construction of Compact Marx Generator
- ✓ Design and Construction of Single-sided Linear Induction Motor at Iran University of Science and Technology and Azad University
- ✓ Investigation and Simulation of Multi-Level Inverters for Electric Motor Drives
- ✓ Control of Magnetic Levitation Systems
- ✓ Control of Magnetic Bearings
- ✓ Design of Power Transformers

Biography

Abbas Shiri was born in Hashtrood, Iran in 1980. He received the B.Sc. degree from Tabriz University and M.Sc. and Ph.D. degrees from Iran University of Science and Technology all in electrical engineering in 2004, 2006 and 2013, respectively. He is currently an assistant professor at Shahid Rajaei Teacher Training University, Tehran, Iran. His areas of research interests include linear electric machines, electromagnetic systems and actuators, electrical machine design and modeling.