



ALI AKBAR MOTI BIRJANDI

Faculty member

Head of Power Electronics and Renewable Energy Research Laboratory (PeRe lab)

PROFILE

I am an Associate Professor in the Department of Electrical Engineering, Shahid Rajaei Teacher Training University of Iran. My research interests include the design and control of Microgrids and distributed generation and dc-dc converter for renewable energy sources, the power electronics application for flexible AC transmission systems (FACTS), renewable energy systems & applications. I am a member of IEEE and the Iranian Power Electronics society (PESI).

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EDUCATION

Doctor of Philosophy in Electrical Power Engineering

Moscow Power Engineering Institute, GPA - 5

09/2001 – 02/2005

Thesis: Analysis of operational characteristics of flexible AC transmission lines with the account of technical constrains

Master's Degree

Iran University of Science and Technology, GPA – 17.01

09/1991 – 07/1994

Bachelor of Science

Babol Noshirvani University of Technology, GPA – 19.16

09/1987 – 06/1991

COURSES OFFERED

Flexibility AC transmission systems (FACTS)

Microgrids

Power Electronics I, II

Industrial Electronics

Electric Circuit I, II

Electronic I, II

Electrical Machine I, II

Relay & Protection

Engineer Mathematics

LABORATORIES

Circuit & Megerment Lab

Industrial Electronics lab

RESEARCH INTERESTS

- Microgrids
- Distributed Generation
- DC – DC Converter
- Flexible AC Transmission Systems (FACTS),
- Renewable Energy System
- Power Electronics
- Relay & Protection

Articles:

1. Hamed Agha Bigi, **Ali Akbar Moti Birjandi**, **Amin Yazdani Nejadi**." An Enhanced Auto-Reclosing Scheme for Preserving Transient Stability in AC Microgrids Based on Adaptive Dead Time", IET Smart grid /2025 / <https://doi.org/10.1049/stg2.70044>.
2. Mohammad Lotfi-Nejad, Amir Abbas Aghajani , Hossein Hajisadeghian, Ali Akbar Moti Birjandi, Ehsan Adib,"A high step-up double-dual-boost converter with continuous output current", e-Prime - Advances in Electrical Engineering, Electronics and Energy, Volume 13, September 2025.
3. Mojtaba Eldoromi, Ali Akbar Moti Birjandi, Nima Mahdian Dehkordi , "Anti-windup control strategy for interlinking converters in hybrid AC/DC microgrids with EV charging stations", Electric Power Systems Research ,2025/ <https://doi.org/10.1016/j.epsr.2025.111800>.
4. Mohammad Lotfi-Nejad, Hossein Hajisadeghian, Amir Abbas Aghajani, Ali Akbar Moti Birjandi, Ehsan Adib,, "New single-switch buck-boost converter with continuous input/output currents and a wide conversion range", Heliyon, 2024/ <https://doi.org/10.1016/j.heliyon.2024.e37236>.
5. Moslem Salehi, Ali Akbar Moti Birjandi, "Traveling wave - based transmission line fault location using mathematical morphology without synchronization system and line parameters", Iranian Electric Industry Journal Quality and Productivity, No. 2, Vol 13, Aug 2023.
6. A. Norozpour Niazi, N. Vasegh, A. A. Motie Birjand, "An Improved Hierarchical Control Structure for Robust Microgrid Operation and Seamless Mode Transfer under Linear and Nonlinear Loads conditions", International Journal of Engineering(IJE TRANSACTIONS), Vol. 34, No. 09, 2021.
۷. پیمان نادری ، آرمان رمضان نژاد ، علی کبر مطیع بیرجندی " طراحی یک گیربکس مغناطیسی محوری جدید "، نشریه علمی الکترومغناطیس کاربردی، سال نهم ، شماره ۱، بهار و تابستان ۱۴۰۰ (2021).
8. Ebrahim Alizadeh1 Aliakbar Motie Birjandi1 Mohsen Hamzeh,"Triple Harmonic Droop Control Strategy for Accurate Harmonic Power Sharing in Low-Voltage Islanded Microgrids", IET Generation Transmission and Distribution, 2021/ <https://doi.org/10.1049/gtd2.12130>
9. Hossein Hajisadeghian, Ali Akbar Motie Birjandi, Mehdi Asadi, Hossein Vazini,"Small Signal Based Study of Battery Dynamic Effect on Controllers of a Two Stage AC/DC and DC/DC Battery Charge", IET Power Electronics", 2021/ <https://doi.org/10.1049/iet-pel.2020.0877>.
10. Moslem Salehi, Ali Akbar Motie Birjandi , Xinzhou Dong, "Determining minimum number and placement of fault detectors in transmission network for fault location observability / International Journal of Electrical Power and Energy Systems", 2021/ <https://doi.org/10.1016/j.ijepes.2020.106386>Get rights and content.
11. Faramarz Faraji, Ali Akbar Motie Birjandi, S.M. Mousavi G, Jianhua Zhang, Baocheng Wang, Xiaoqiang Guo, "An Improved Multilevel Inverter for Single-Phase Transformerless PV System", IEEE Transactions on Energy Conversion, Volume: 36, Issue: 1, March 2021.
12. Davood FATEH , **Ali Akbar Moti Birjandi** and Josep M. GUERRERO, "Safe Sub Synchronous Oscillations Response for Large DFIG-Based Wind Farms", IEEE Access, 2020/ <https://doi.org/10.1109/ACCESS.2020.3019234>.
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14. **Motiebirjandi**, D. Fateh," Analysis and Damp of Oscillations Caused by SSR Mode in DFIG Based Wind Farm by Controlling of Stator Voltage in Conditions of Maintaining MPPT" (In Persian), TABRIZ JOURNAL OF ELECTRICAL ENGINEERING Vol 49, No 3,pp. 1307-1316, 2019.
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17. **Ali Akbar Motiebirjandi**, Davood Fateh," Optimal placement method of multi UPFCs to damp power system oscillations", International Transactions on Electrical Energy Systems(ETEP), Volume27, No 9,2017.
18. Faramarz Farajia, S.M.Mousavi, G.b Aliasghar Hajirayatcd, **Ali Akbar Moti Birjandi**, KamalAl-Haddad, "Single-stage single-phase three-level neutral-point-clamped transformerless grid-connected photovoltaic inverters: Topology review", Renewable and Sustainable Energy Reviews, Vol 80, pp. 197-214,2017.
19. Majid Kazemi Khafri, Ali Badri, **Ali akbar Motie Birjandi**," Demand Response based model for optimal decision making for distribution networks", Journal of Operation and Automation in Power Engineering (JOAPE), Volume 5, No 2, pp. 139-149, 2017.
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23. **Ali A. Motie Birjandi** and Sayed Ahmad E.Shoushtari," Equalizing the use of voltage sources in multi – level structures", Bulletin de la Societe Royal des Sciences de Liege, Vol. 85, 2016.
24. **Motiebirjandi**,D.Dateh,M. Abbasi," Voltage Stability Margin Improvement By Using Multi Upfcs", Jee(Journal of Electrical Engineering),Vol 16, No 4, 2016.
25. **Ali Akbar Moti**, Mojtaba Eldoromi, "Optimal structural design and implementation to increase the focus of solar energy on photovoltaic cells" (In Persian), Electronics Industries Quarterly, Vol 7, No 2, 2016.
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27. Moslem Salehi, Aliakbar Motie Birjandi, "Optimal Selection of UPFC Parameters and Input Controlling Signal for Damping Power System Oscillations", Indonesian Journal of Electrical Engineering and Computer Science, Vol. 2, No. 1, pp. 61 - 68 , 2016.
28. Esmael Hassani and **Ali-Akbar Motie Birjandi**," Induction Motor Drive Performance Improvement of Indirect Vector Control using Fuzzy PID controller", Modares Journal of Electrical Engineering Special Issue on Power Electronics, Vol 15, No 3, 2015.
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33. **Ali Akbar Motiebirjandi**, Davood Fateh, Ali Reza Mohammad Jafari, Hesamoddin Arab Bafrani, " Optimal Placement Of Upfc to enhance voltage Stability Margin By Using Loading Factor", Indian Journal of Scientific Research, Vol 2, No 1, pp. 126-131, 2014.
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8. Moein Aldin Parazdeh, Mojtaba Eldoromi, Ali Akbar Moti Birjandi, "Tan-Sun Transformation based Virtual Inductance Control Loop for Unbalanced Power Sharing of Islanded AC Microgrids", 13th Annual International Conference on Power Electronics, Drive Systems and Technologies (PEDSTC 2022), Tehran, Iran, 2022.
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11. Moein Aldin Parazdeh - Zeinab Barzanouni - Mojtaba Eldoromi - Ali Akbar Moti Birjandi - Reza Beiranvand, "A Comprehensive Analysis and Modeling of The Bidirectional Three-Level DC-DC Converter with Auxiliary Control Scheme for Balancing Voltages of Its Capacitors", Proceedings of the 12th Power Electronics, Drive Systems, and Technologies Conference (PEDSTC), Tabriz. Iran, 2021.
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15. Hajisadeghian, Hossein, **Birjandi, Ali A Moti**, "Sliding Mode Controller (SMC) For Sinusoidal Ripple Current (SRC) Charge of Li-ion Battery", Proceedings of the 10th Annual International Conference on Power Electronics, Drive Systems and Technologies (PEDSTC 2019), Shiraz, Iran, 2019.
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17. Hossein Hajisadeghian, Mehdi Asadi, **Ali A. Moti Birjandi** Hassan Moghbeli, "Design of a 60 kW Electric Vehicle Fast Charger Using Active Current Sharing", Proceedings of the 32th Annual International Power System Conference (PSC 2017), Tehran, Iran, 2017.

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23. **Moti Birjandi Ali Akbar** ,Rahimi Ashjordi Behrouz, "Sensorless BLDC motor control using adaptive reference model-based estimator reactive power (Q-MRAS) "(In Persian), 1st International Conference on Electrical Engineering and Computer Science, Tehran, Iran, 2015.
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25. **Moti Birjandi Ali Akbar**, Fateh Davood, Rajabimoghadam Sajad, "Training using simulation to facilitate understanding of DC to DC converters" "(In Persian),),7th National Conference on Education, Tehran, Iran, 2015.
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29. Hassani Esmaeil, **Moti Birjandi Ali Akbar**, "Improving the performance of the indirect induction motor control drive using fuzzy PID controller" "(In Persian), 21th Iranian Conference on Electrical Engineering (ICEE 2013),Mashhad,Iran,2013.
30. **Moti Birjandi Ali Akbar**, Fateh Davood, "Determining the place UPFC with use loading coefficient in order to Increasing the voltage margin "(In Persian),1st National Conference on Electrical and Computer, Bandar Anzali, Iran,2013.
31. **Moti Birjandi Ali Akbar**, Ebrahimpoor Reza, Fateh Davood, "Determining the optimal location of UPFC based on voltage stability index and optimizing UPFC model parameters"(In Persian), 1st National Conference on Electrical and Computer, Bandar Anzali, Iran,2013.
32. Kazemi Majid, Zanganeh Ali, Badri Ali, **Moti Birjandi Ali Akbar**, "Priority of demand response programs in electricity markets with fuzzy TOPSIS method"(In Persian), 2nd Conference on Smart Electrical Grids Technology, Tehran, Iran, 2013.

33. Fekeri Valiollah, **Moti Birjandi Ali Akbar**, Hatami Javad, "Teaching the basics of electricity with an approach to increasing creativity" (In Persian), 5th National Conference on Education, Tehran, Iran, 2013.
34. **Moti Birjandi Ali Akbar**, Shayganrad Ali, "Learning to review power systems based on Matpower software" (In Persian), 5th National Conference on Education, Tehran, Iran, 2013.
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36. **Moti Birjandi Ali Akbar**, Poorfalah Mohsen, "Optimal coordination of high current and distillation relays by CAL-PSO hybrid model"(In Persian), Power Systems Protection & Control Conference, Tehran, Iran, 2012.
37. Arjmand Hadi, **Moti Birjandi Ali Akbar**, Jafari Babak, "Provide a practical model for bringing the distance between university and industry closer with using interactive 3D environments" (In Persian), 4th National Conference on Education, Tehran, Iran, 2012.
38. **Moti Birjandi Ali Akbar**, Najibi Atefeh, "Production of electronic content based on program-based training, using modeling of teacher teaching method in face-to-face class" (In Persian), 4th National Conference on Education, Tehran, Iran, 2012.
39. **Moti Birjandi Ali Akbar**, Poorfalah Mohsen, "Use of Smart Optimal Combination Method Algorithm for Particle Optimization and Linear Planning Algorithm for Solving Nonlinear Problems" (In Persian), 4th Conference on Information and Knowledge Technology, Babul, Iran, 2012.
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41. Ghandehari Reza, Ghafari Nematollah, **Moti Birjandi Ali Akbar**, "Provide a new pattern switching for three-phase AC / AC matrix converter to reduce switching losses and improve the harmonic distortions "(In Persian), Congress on Electrical, Computer and Information Technology, Mashhad, Iran, 2012.
42. Aref Ali Akbar, Afsharnia Saeed, **Moti Birjandi Ali Akbar**, "Simulation and study of the effects of Binalood wind farm on the distribution network connected to it "(In Persian), 16th Electric Power Distribution Conference, Bandar Abbas, Iran, 2011.
43. **Moti Birjandi Ali Akbar**, Ghamari Hadi. "Reducing the adverse effects of a teacher's lack of distance learning (e-learning) using comparative animation "Iran's first national conference on education in 1404, Tehran, Iran, 2011.
44. **Moti Birjandi Ali Akbar**, Ghamari Hadi "Investigating the Effect of Alcoholism on Alcoholism (Direct Comparison) in Improving Learning Concepts in Electrical and Magnetic Physics"(In Persian), 10th Annual Physics Conference of Iran, Tehran, Iran, 2011.
45. Aref Ali Akbar, **Moti Birjandi Ali Akbar**, Afsharnia Saeed, "Modeling and simulation of Binalood wind farm and study of its effects on Khorasan distribution network" (In Persian), 19th Iranian Conference on Electric Engineering, Tehran, Iran, 2011.
46. **Moti Birjandi Ali Akbar**, Soltani Anvar, Sadoughi Jamil, "The need to teach Renewable Energy to students with a project-based learning approach (PBL)" (In Persian), 3rd National Conference on Education, Tehran, Iran, 2011.
47. **Moti Birjandi Ali Akbar**, Ahmadi Gholamali, Ghamari Hadi, "The function of auxiliary poles in electric machines and the use of analogy to improve its performance training" (In Persian), 3rd National Conference on Education, Tehran, Iran, 2011.
48. Ahmadi Gholamali, **Moti Birjandi Ali Akbar**, Ghamari Hadi, "Incorporating a model of innovation into the curriculum of training the technical secretary in order to use this model in teaching abstract concepts (a case study of electrotechnics field)" (In Persian), 10th Iranian Curriculum Studies Association conference, Tehran, Iran, 2011.

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Books:

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Research projects:

1. **Moti Birjandi Ali Akbar**, Emadifar Reza, Eldoromi Mojtaba, "New way to increase the efficiency of solar cells", Shahid Rajaee Teacher Training University, Tehran, Iran, 2012- 2013.
2. **Moti Birjandi Ali Akbar**, Nazaryan Fathollah, "Design and manufacture of Variable Frequency Drive training (set model is7) for industrial electronics laboratory", Shahid Rajaee Teacher Training University, Tehran, Iran, 2010- 2011.

3. **Moti Birjandi**, Rajaei, Kavehvasht, Alirezaei, "Increase solar energy based on light concentrators with converter", Shahid Rajaei Teacher Training University, Tehran, Iran, 2009- 2011.
4. Kaviani, Amani, Nazaryan, **Moti Birjandi**, "Improving the electrical Machine lab operating and update methods", Shahid Rajaei Teacher Training University, Tehran, Iran, 2008- 2010.
5. Khodadadi, **Moti Birjandi**, Dameshghi, "Design and construction of electrical cars", Shahid Rajaei Teacher Training University, Tehran, Iran, 2008- 2009.
6. **Moti Birjandi Ali Akbar**, "Improving the structure and updating of the Electronic Industrial Laboratory", Shahid Rajaei Teacher Training University, Tehran, Iran, 2015- 2016.
7. **Moti Birjandi Ali Akbar**, "Production of e-content for teachers and students and virtual education (in two stages)", Vice President for Science and Technology Tehran, Iran, 2012-2014.
8. **Moti Birjandi Ali Akbar**, "Simulation, design and manufacture of 60 kW fast charger battery for lithium-ion battery", Niroo Research Institute (NRI), 2017-2020.

Invention:

- **Moti Birjandi Ali Akbar**, Emadifar Reza, Eldoromi Mojtaba, "Simultaneous production of solar electricity and heat with compound share", Iranian Research Organization for Science and Technology 2012- 2013.

Journal Reviewer

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- Electronics Letters
- Technology of Education Journal (TEJ)
- Tabriz Journal of Electrical Engineering (TJEE)
- Iranian Journal of Electrical and Electronic Engineering(IJEEE)
- Iranian Journal of Electrical and Computer Engineering (IJECE)
- Journal of Electrical and Computer Engineering Innovations (JECEI)

HONORS AND AWARDS

- Received Honorary Letter from Minister of Education and President of University for the Best Teacher in Country, 2011.
- Received Honorary Letter from Deputy Ministry of Science, Research and Technology for Education, for the Activities regarding Vice President of Education and Graduate Programs Shahid Rajaei Teacher Training University, 2012.
- Received Honorary Letter from Minister of Education and President of University for the Best Teacher in Tehran Capital, 2010.
- Received Honorary Letter from President of Shahid Rajaei Teacher Training University for the activities regarding Dean of Faculty of Electrical and Computer Engineering, 2009.
- Received Honorary Letter from Dean of Faculty of Electrical and Computer Engineering for Research and Scientific Activities, 2014.
- Received Honorary Letter from President of University for the Best Teacher in Shahid Rajaei Teacher Training University, 2010.
- Received Honorary Letter from President of University for the Best Teacher in Shahid Rajaei Teacher Training University, 2007.
- Received Honorary Letter from Dean of Electrical Engineering Department of Iran University of Science and Technology for Best M.Sc. Thesis, 1994.
- Awarded First Rank in B.Sc. At University of Mazandaran, 1991.

ACADEMIC POSITIONS

- Vice President of Education and Graduate Programs, Shahid Rajae Teacher Training University, 2010-2014.
- Dean of Faculty of Electrical and Computer Engineering, Shahid Rajae Teacher Training University, 2005-2010.
- Vice-Chancellor for Education and Research of Faculty of Electrical and Computer Engineering, Shahid Rajae Teacher Training University, 1995-2001.
- Head of Electronic Education Department SRTTU, 2010- 2016.
- Member of Commission Electro technical Curriculum Planning Council Ministry of Education, 2007-
- Associate Professor in Shahid Rajae Teacher Training University (SRTTU), Faculty of Electrical and Computer Engineering, 2016 -
- Assistant Professor in Shahid Rajae Teacher Training University (SRTTU), Faculty of Electrical and Computer Engineering, 2005-2015.
- Instructor of Shahid Rajae Teacher Training University (SRTTU), Faculty of Electrical and Computer Engineering, 1997-2004.