

Curriculum Vitae

Khaled E. Addoweesh

Contact Information:

Electrical Engineering Department
College of Engineering
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Education:

B.Sc., King Saud University, Electrical Engineering, 1981
Ph.D., Post Graduate School of Electrical Engineering, Bradford University,
Bradford, England, 1986, Ph.D.
Thesis Title: ***A Microprocessor Based PWM Inverter Drive
Incorporating Three- Phase Induction Motor***
Major: **Power Electronics and Electric Drives**

Employment History:

1999(21/2/1420 H) – present:	Professor, Electrical Engineering Department, College of Engineering, King Saud University, Riyadh, Saudi Arabia.
1990(7/5/1411 H) – 1999(21/2/1420 H):	Associate Professor, Electrical Engineering Department, College of Engineering, King Saud University, Riyadh, Saudi Arabia.
1986(10/8/1406)-1990(7/5/1411 H):	Assistant Professor, Electrical Engineering Department, College of Engineering, King Saud University, Riyadh, Saudi Arabia.
1981(8/1401)-1982(11/1402):	Teaching Assistant, Electrical Engineering Department, College of Engineering, King Saud University, Riyadh, Saudi Arabia.

Research Interests:

- Power electronics
- Electric drives
- Renewable energy
- Solar Energy Integration
- Energy harvesting

Committees, Councils, and Administrative Positions

- Member, College of Engineering Council, 1/9/2012 – 6/2014
- Chairman, Joint Council for Master Program in Renewable Energy 2 /1
/2011 - now

- Chairman, Joint Committee for Developing Master Program in Renewable Energy 7/2/2010- 6/12/2010
- Academic Affairs Supervisor, Sustainable Energy Program, 20/10/2009 – now
- Member, Sustainable Energy Center Council, 20/10/2009 – 2013
- Head of Student Counseling Unit, 1430-1432.
- Member, Graduate Studies Committee, Electrical Engineering Department, 2000-2011.
- Coordinator, Graduate Studies Committee, Electrical Engineering Department, 2012- now
- Computer and Control Committee
- Electric Machines Committee
- Graduate Studies Committee
- Teaching Assistants Committee
- Students Affairs Committee
- Development of Diploma Programs Committee

Professional Certificates:

Certified Peer Consultant, DSD, KSU, Second Semester 2009/2010.

Rewards:

Excellence Award in Teaching 1432/1433

Publications

1. Sher, Hadeed Ahmed and Murtaza, Ali F. and Noman, Abdullah and Addoweesh, Khaled E. and Chiaberge, Marcello, An intelligent control strategy of fractional short circuit current maximum power point tracking technique for photovoltaic applications, Journal of Renewable and Sustainable Energy, 7, 013114 (2015), DOI:<http://dx.doi.org/10.1063/1.4906982>
2. Syed Arslan Abbas Rizvi, Khaled Addoweesh, Abdelrehman El-Leathy, Hany Al-Ansary, "Sun Position Algorithm for Sun Tracking Applications", accepted in Industrial Electronics Society, IECON 2014 - 40th Annual Conference of the IEEE, Oct. 29 - Nov. 1, 2014.
3. Hadeed Sher, Ali Murtaza, Khaled Addoweesh, Kamal Haddad, Marcello Chiaberge, "A New Irradiance Sensorless Hybrid MPPT Technique for Photovoltaic Power Plants", accepted in Industrial Electronics Society, IECON 2014 - 40th Annual Conference of the IEEE, Oct. 29 - Nov. 1, 2014.
4. Hadeed Ahmed Sher, Ali F Murtaza, Khaled E Addoweesh, Marcello Chiaberge, "A two stage Hybrid Maximum Power Point Tracking Technique for Photovoltaic Applications", Power and Energy Society General Meeting (PES), 2014 IEEE, 27-31 July 2014
5. Sher, Hadeed Ahmed; Addoweesh, Khaled E; Khan, Yasin; ",Effect of short circuited DC link capacitor of an AC–DC–AC inverter on the performance of induction motor,Journal of King Saud University-Engineering Sciences, 2014.
6. Hamadi, A; Rahmani, S.; Al-Haddad, K.; Addoweesh, K., "Micro grid based PMSG feeding isolated loads," Applied Power Electronics Conference and Exposition (APEC), 2014 Twenty-Ninth Annual IEEE, pp.3160,3165, 16-20 March 2014.
7. Al-Shamma'a A. A. and Addoweesh K. E. (2014), Techno-economic optimization of hybrid power system using genetic algorithm, Int. J. Energy Res., 38; pages 1608–1623,

doi: [10.1002/er.3191](https://doi.org/10.1002/er.3191), ISI impact factor: 2.737

8. Eltamaly, Ali M., Khaled E. Addoweesh, Umar Bawa, and Mohamed A. Mohamed. "Economic Modeling of Hybrid Renewable Energy System: A Case Study in Saudi Arabia." *Arabian Journal for Science and Engineering* 39, no. 5 (2014): 3827-3839., ISI impact factor: 0.385, link
9. Murtaza, AF.; Sher, H.A; Chiaberge, M.; Boero, D.; De Giuseppe, M.; Addoweesh, K.E., "Comparative analysis of maximum power point tracking techniques for PV applications," *Multi Topic Conference (INMIC), 2013 16th International* , vol., no., pp.83,88, 19-20 Dec. 2013
10. Murtaza, AF.; Sher, H.A; Chiaberge, M.; Boero, D.; De Giuseppe, M.; Addoweesh, K.E., "Optimization of the perturb and observe maximum power point tracker for a distributed photovoltaic system," *Multi Topic Conference (INMIC), 2013 16th International* , vol., no., pp.77,82, 19-20 Dec. 2013
11. Sher, H.A; Murtaza, AF.; Addoweesh, K.E.; Chiaberge, M., "An intelligent off-line MPPT technique for PV applications," *Systems, Process & Control (ICSPC), 2013 IEEE Conference on* , vol., no., pp.316,320, 13-15 Dec. 2013.
12. Vahedi, Hani; Al-Haddad, Kamal; Ounejjar, Youssef; **Addoweesh, Khaled**, "Crossover Switches Cell (CSC): A new multilevel inverter topology with maximum voltage levels and minimum DC sources," *Industrial Electronics Society, IECON 2013 - 39th Annual Conference of the IEEE*, pp.54,59, 10-13 Nov. 2013
13. Hamadi, Ab.; Rahmani, S.; **Addoweesh, Khaled**; Al-Haddad, K., "A modeling and control of DFIG wind and PV solar energy source generation feeding four wire isolated load," *Industrial Electronics Society, IECON 2013 - 39th Annual Conference of the IEEE*, pp.7778,7783, 10-13 Nov. 2013
14. Noman, AM.; Addoweesh, K.E.; Mashaly, H.M., "Simulation and dSPACE hardware implementation of the MPPT techniques using buck boost converter," *AFRICON, 2013* , vol., no., pp.1,9, 9-12 Sept. 2013
15. Noman, AM.; Addoweesh, K.E.; Mashaly, H.M., "An intelligent FLC method for tracking the maximum power of photovoltaic systems," *AFRICON, 2013* , vol., no., pp.1,8, 9-12 Sept. 2013
16. Umar Bawah, Khaled E. Addoweesh, Ali M. Eltamaly, " Comparative Study of Economic Viability of Rural Electrification Using Renewable Energy Resources versus Diesel Generator Option in Saudi Arabia" *J. Renewable Sustainable Energy* 5, 042701 (2013), DOI:10.1063/1.4812646, link, ISI impact factor: 1.51
17. Ali M. Eltamaly, **Khaled E. Addoweesh**, Umar Bawah, Mohamed A. Mohamed, "New Software for Hybrid Renewable Energy Assessment for Ten Locations in Saudi Arabia" *Journal of Renewable and Sustainable Energy* 5, 033126 (2013), DOI:10.1063/1.4809791, link, , ISI impact factor: 1.51
18. Hadeed Ahmed Sher, Khaled E. Addoweesh and Yasin Khan (2013). *Harmonics Generation, Propagation and Purging Techniques in Non-Linear Loads, An Update on Power Quality*, Dr. Dylan Lu (Ed.), ISBN: 978-953-51-1079-8, InTech, DOI: 10.5772/53422. Available from: <http://www.intechopen.com/books/an-update-on-power-quality/harmonics-generation-propagation-and-purging-techniques-in-non-linear-loads>
19. Abdullah M. Noman, Khaled E. Addoweesh, and Hussein M. Mashaly, "DSPACE Real-Time Implementation of MPPT-Based FLC Method," *International Journal of Photoenergy*, vol. 2013, Article ID 549273, 11 pages, 2013. doi:10.1155/2013/549273, ISI impact factor: 1.769 <http://www.hindawi.com/journals/ijp/2013/549273/>
20. Hadeed Ahmed Sher, **Khaled E Addoweesh**, Yasin Khan, Ali F. Murtaza,

- “Harmonic Analysis of Inverter fed Induction Motor under faulted DC link Capacitor”, The 15th IEEE STEM conference, Dhahran, Saudi Arabia on Dec. 17-20, 2012
21. Abdullrahman A. Al Shamma’a, **Khaled E. Addoweesh**, “Optimum Wind Turbine Matching with Wind regime in Saudi Arabia”, The 15th IEEE STEM conference, Dhahran, Saudi Arabia on Dec. 17-20, 2012
 22. Ali F Murtaza, Hadeed Ahmed Sher, Chiaberge M, Boero D, De Giuseppe M and **Khaled E Addoweesh**, “A Novel Hybrid MPPT Technique for Solar PV Applications Using Perturb & Observe and Fractional Open Circuit Voltage Techniques” Proceedings of 15th International Conference on Mechatronics – Mechatronika 2012, Prague, Czech Republic, December 5-7, 2012, p 274-281
 23. Hadeed Sher, Khaled Addoweesh, “Micro-Inverters - Promising Solutions in Solar Photovoltaics”, Energy for Sustainable Development, 16 (2012) 389–400, ISI impact factor: 1.624, link
 24. Hadeed Sher, Khaled Addoweesh, “Power storage options for hybrid electric vehicles - A survey”, Journal of Renewable and Sustainable Energy, 4, 052701 (2012), ISI impact factor: 1.239, link
 25. Abdurahman alshamaa, **Khaled E. Addoweesh**, “Optimum Sizing of Hybrid PV/Wind/Battery/Diesel System Considering Wind turbine Parameters Using Genetic Algorithm”, the 2012 IEEE International Conference on Power and Energy (PECON 2012) 2 - 5 December 2012.
 26. Noman, Abdullah M., Addoweesh, Khaled E.; Mashaly, Hussein M.; , "A fuzzy logic control method for MPPT of PV systems," IECON 2012 - 38th Annual Conference on IEEE Industrial Electronics Society, pp.874-880, 25-28 Oct. 2012, Montreal Canada. link
 27. Sher, Hadeed Ahmed; Addoweesh, Khaled E; Khan, Yasin; Kashif, Syed Abdul Rahman; , "Performance of inverter fed induction motor under open circuit DC link capacitor," IECON 2012 - 38th Annual Conference on IEEE Industrial Electronics Society , vol., no., pp.651-655, 25-28 Oct. 2012, Montreal Canada. link
 28. Abdullah M. Noman, Khaled E. Addoweesh, and Hussein M. Mashaly , A Fuzzy Logic Control Method for MPPT of PV Systems, IECON 2012 - 38th Annual Conference on IEEE Industrial Electronics Society, Montreal Canada from 25 to 28 October 2012
 29. Abdullah Noman, **Khaled Addoweesh**, Hayder Algalban, Maximum Power Point Tracking of Photovoltaic Systems Using Two Different Methods, Workshop on Power Electronics for Industrial Applications and Renewable Energy Conversion PEIA2011, 3-4/11/2011.
 30. Hadeed Sher, **Khaled Addoweesh**, Yasin Khan, Effect of DC Link Capacitor Failure on Free Wheeling Diodes of Inverter Feeding an Induction Motor, Workshop on Power Electronics for Industrial Applications and Renewable Energy Conversion PEIA2011, 3-4/11/2011.
 31. Abdullrahman A. Al-Shamma’a , **Khaled E. Addoweesh** , Ali Eltamaly, " Optimum Wind Turbine Site Matching for Three Locations in Saudi Arabia ", Advanced Materials Research, Vols. 347-353 (2012) pp. 347-353, Oct. 2011, <http://www.scientific.net/AMR.347-353.2130>
 32. Abdullrahman A. Al Shamma’a, **Khaled E. Addoweesh**, Ali M. Eltamaly, " Optimum Wind Turbine Site Matching for Three Locations in Saudi Arabia", 2011 International Conference on Energy, Environment and Sustainable Development (EESD 2011), Shanghai, China, Oct. 2011.
 33. Umar Bawah, Khaled E. Addoweesh, Ali M. Eltamaly, " Economic Modeling of

Site-Specific Optimum Wind Turbine for Electrification Studies ", Advanced Materials Research, Vols. 347-353 (2012) pp. 1973-1986, Oct. 2011,
<http://www.scientific.net/AMR.347-353.1973>

34. Umar Bawah, **Khaled E. Addoweesh**, Ali M. Eltamaly, " Economic Modeling of Site-Specific Optimum Wind Turbine for Electrification Studies", International Conference on Energy, Environment and Sustainable Development (EESD 2011), Shanghai, China, Oct. 2011.
35. Hadeed Ahmed Sher, Zahir J Paracha, Yasin Khan, **Khaled Addoweesh**, " Fault Analysis of an Inverter Fed Induction Motor Under dc Link Capacitor Short Circuit Condition", 5th global conference on Power Control and optimization 2011 (PCO 2011), 1-3/6/2011
36. **K. E. Addoweesh**, "Total Harmonic Distortion Minimization in a Three-Phase AC Chopper" accepted for publication in Journal of King Abdulaziz University [Engineering Sciences]
37. M. A. Abdel-Halim and **K. Addoweesh**, " Control of Single Phase Induction Motor Using AC Chopper" Iastead International Conf. On Applied Simulation and Modeling, Banff, Canada, July 24-26, 2000.
38. S. Foda, M. Abdel-Rahman, and **K. Addoweesh**, " Fault Detection in Large AC Machines", The 13th International Conf. On Microelectronics, Rebat, Moroco, pp. 193-196, Oct. 29-31, 2001.
39. **Khaled E. Addoweesh**, "Dynamic Model of Saturated Induction Motor Using PSPICE" [arabic] Journal of King SAUD , Vol. 11, Eng. Sci.(2), pp. 29-48, 1999.
40. **K. Addoweesh**, "Time Ratio Controlled Three-Phase AC Chopper", Journal of King SAUD University, Vol. 11, Eng. Sci.(2), pp. 233-250, 1999.
41. **K. E. Addoweesh**, "Microprocessor Controlled AC Choppers", Research Report No. E07/07/14, Research Center, College of Eng., KSU, 1998
42. **Khaled E. Addoweesh**, " AC Chopper with Harmonic Elimination and Phase Control", European Trans on Power Eng., Germany, Vol.7, No. 2, pp.115-120, Mar/Apr 1997
43. **Khaled E. Addoweesh**, "Dynamic Model of an Induction Motor Using PSPICE"[arabic] Proc. of the 4th Saudi Engineering Conf., Jeddah, pp.49-56, Nov 1995
44. A. L. Mohamadein and **K. A. Addoweesh**, "Harmonic Minimization in a Chopper-Type AC Voltage Controller" , Journal of King SAUD University, Vol. 6, Eng. Sci(2), pp. 199-216, 1994.
45. **K. E. Addoweesh** and M. S. Al-Khalidi, " AC Chopping Technique With Phase and Voltage Control" IEEE Internat. Symp. on Ind. Electronics ISIE'93 Conf. Rec., Budapest, Hungary, pp. 684-688, June 1993.
46. **K. Addoweesh**, " An Exact Analysis of an Ideal Static AC Chopper" Int.J. Electronics, England, London, Vol. 75, No. 5, pp.999-1013, 1993
47. **Ad'doweesh, K.E.**, Mohamadein, A.L., and Al-Ghalban, H.A., "Time-Ratio Control of Chopper Type AC Voltage Regulators", Journal of King SAUD University, Vol. 3, Eng. Sci(1), pp. 19-43, 1991.
48. **Ad'doweesh, K.E.**, and Mohamadein, A.L., "Microprocessor-Based Harmonic Elimination in Chopper Type AC Voltage Regulators", IEEE Transactions on Power Electronics, Vol.5, No.2, April 1990, pp. 191-200.
49. **K. Ad'doweesh**, "Microprocessor Based Power Factor Improvement of Induction

- Motor", Journal of King SAUD University: Engineering Sciences, Vol. 2, No. 1, 1990.
50. Mohamadein, A.L. and **Ad'doweesh, K.E.**, "Evaluation of the Performance of Chopper-Type AC Voltage Controller", International Journal of Electronics, Vol.67, No.4, pp. 669-683, Oct 1989,.
 51. **K. Ad'doweesh**, M. S. Simiai and S. E. Haque "Power Factor Improvement of Induction Motor Using Microprocessor Controlled FC-TCR Compensator", Journal Engineering Sciences, King SAUD University:, Vol. 15, No. 2, 1989.
 52. **Ad'doweesh, K.E.**, Mohamadein, A.L., and Al-Ghalban, H.A., "Microprocessor Based Controller for AC Chopper", Proc. of the 11th National Computer Conf., Dhahran, Mar 1989, pp. 483-493.
 53. **K. E. Addoweesh**, W. Shepherd and L. Hulley, "Induction Motor Control Speed Control Using Microprocessor Based PWM Inverter", IEEE Transactions on Industrial Electronics, Vol.IA-36, No.4, Nov. 1989, pp.516-522.
 54. **K. Ad'doweesh**, "Microprocessor Based AC voltage control using GTO thyristors", Proc. of ISMM Inter. Sympos. Mini and Micro and Their Applications, Lugano, Switzerland, June 1987, pp. 83-86.

RESEARCH PROJECTS:

Projects funded by Research Center, College of Engineering:

- Three Phase AC Voltage Regulators
- Control of Single Phase IM
- Dynamic Modeling of AC Motors for Simulation Programs
- AC Chopper Contrlled by Microprocessor

Projects funded by National Plan for Science and Technology and Innovation

- PI, Economic Evaluation of Renewable Energy Options for Rural Electrification and Farms in Saudi Arabia, 1/1/2010-30/6/2012, funded by NPST
- CO-PI, Piezoelectric Generator for Self-Powered Micro/Nano devices, 1/1/2011 -30/12/2012, funded by NPST

Courses Taught

Electric Circuits for Computer Engineering
 Power Semiconductor Converters
 Selected Topics in Electrical Machines
 Introduction to Microprocessors
 Solid-state Drive Systems
 Advanced Microprocessors and their Applications
 Electrical Instruments and Measurements
 Electronic Control of Electrical Machines
 Power Electronics
 Power Semiconductor Converters
 Advanced Microprocessors and their Applications

Master Thesis Supervision

Microprocessor based Speed Control of Induction Motor by stator Voltage Regulator Using GTO, Hayder A. Al-Ghalban, june 1989

AC Chopping Technique With Phase and Voltage Control, Marzoug S. Al-Khalidi, 1992

Analysis and Modeling of Hybrid Renewable Power Systems for Rural Electrifications in KSA, Abdullrahman Abdullah Ali Al-Shammaa, 12/6/1432 – 21/6/1434

Smart Maximum Power Point Tracking of Photovoltaic systems, Abdullah Mohammed Ali Noman, 12/6/1432 – 14/6/1434

Membership of Professional Societies

- IEEE Senior Member
- IEEE Power and Energy Society
- IEEE Power Electronics Society
- IEEE Industrial Electronics

Courses Attended

- 1 Modeling & Control Design of DC/DC Converters, Virginia Tech Center for Power Electronics Systems, August 4-8, 2014, Instructors: Professors Fred C. Lee and Dushan Boroyevich
- 2 Professional development certificate, Using technology in higher education program, 24-29 / 6 / 2013 Faculty of education, York University, Toronto, Canada.
- 3 Effective College Teaching, 22/12/2012, , DSD, KSU, Riyadh
- 4 Teaching portfolio development, 26/2/2012, DSD, KSU, Riyadh
- 5 College and University Pedagogy, Auburn Institute for Teaching and Learning Enhancement, Auburn University, Auburn, AL, USA, 5-19 / 7 / 2011 which includes the following courses:
- 6 Students learning Outcomes Assessment, Instructor: Sergio Piccinin, 2-3/4/2011, DSD, KSU, Riyadh
- 7 Course Design and Construction, Instructor: Sergio Piccinin, 29-30/3/2011, DSD, KSU, Riyadh
- 8 Fostering Student Engagement and Participation, Instructor: Sergio Piccinin, 27/3/2011, DSD, KSU, Riyadh
- 9 Students Learning Outcomes Assessment, Instructor: Bill Buskist (Auburn University), 01/03/2011, DSD, KSU, Riyadh
- 10 Solar Photovoltaic Technology, King Saud University, Riyadh, 3-5 /10 /2010
- 11 Global Technology Entrepreneurship Workshop, Intel and Prince Salman Entrepreneurship, King Saud University, Riyadh, 5-9/5/2010.
- 12 Building a world Class program, Ministry Of Higher Education, 15-17/4/1430H, Riyadh.
- 13 Improving Your Teaching Through Assessment, Instructor: Bill Buskist (Auburn University), King Saud University, Riyadh, 27-28/3/2010.
- 14 [Team-Based Learning, Instructor: Larry Michaelsen, King Saud University, 25-26/12/2010 Riyadh.](#)
- 15 Peer Consultation Training and Practicum Program, King Saud University, Riyadh, 2nd semester 2010.
- 16 Academic Leadership in research-intensive Universities, 18/1/2010, Instructor Ian Kichin, DSD, KSU, Riyadh.
- 17 Active Learning Workshop, Instructor: Bill Buskist (Auburn University), 13-14/3/2010, DSD, KSU, Riyadh
- 18 Effective Classroom Management and assessment of Students Learning, Instructor: Bill Buskist (Auburn University) , King Saud University, Riyadh.
- 19 Effective Use of Smart Classrooms,
- 20 Working Towards Program Accreditation, Instructor: Larry Smith, Ministry Of Higher Education , 8-10/4/1430H, Riyadh.

- 21 Being Leading Academic Through Turbulant Times, Instructor: Zahir Irani, King
Saud University, Jeddah, 27-28/2/2010.
- 22 The Use of Concept Mapping in in College Teaching, Instructor: Ian Kichin (King's
College London,UK), King Saud University, Riyadh, 16/1/2010.
- 23 Students Assessments Skills, Instructor: Bill Buskist (Auburn University) , King
Saud University, Riyadh, 2-4/1/2010.
- 24 Active Learning, , King Saud University, Riyadh, 5-7/1/2010.
- 25 Use of Active Learning Techniques Effectively, Instructor: Bill Buskist (Auburn
University) , King Saud University, Riyadh, 13-14/1/2010.
- 26 Learning, Teaching, Assessment & Research, Centre for Academic Practice,
Queen Margaret University,Edinburgh, UK, 12-16/7/2010.
- 27 Learning with Virtual Learning Environments, Centre for Academic Practice,
Queen Margaret University,Edinburgh, UK, 19-23/7/2010.
- 28 Assessment of Performance tasks By Using Rubrics, Ministry Of Higer Education,
22-24/12/2009, Riyadh.
- 29 Effective Communications Skills, 30-31/5/2009, DSD, KSU, Riyadh
- 30 Developing Tests to Assess the Quality of Hiher Education Outcomes, King
Fahad University, Riyadh, 14-16/11/2009.
- 31 Teaching for learning, Center of the Enhancement of Teaching and Learning,
Georgia Institute of Technologh, Atlanta, Georgia, USA, 20-24/7/2009.
- a. What We Know about Learning
 - b. Why Teaching Matters and Faculty Development
 - c. Communication Skills Development
 - d. Learning Styles
 - e. Meet with Academic Specialty Faculty
 - f. Principles of Effective Lecturing
 - g. Technology/Hybrid Teaching
 - h. Motivation for Learning
 - i. Course Design/Evidence-Based Teaching
 - j. Basic Principles of Peer Consultation
 - k. In-Class Observations of Teaching
 - l. In-Class Observations of Teaching
 - m. Follow Up Meetings with Academic Specialty Faculty
 - n. Advanced Peer Consultation Practices
 - o. Scholarship of Teaching and Learning