

Curriculum Vitae
Dr. Ahmed M. Massoud
Electrical Engineering
(Power Electronics)

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Dr. Ahmed M. Massoud, Ph.D., SMIEEE

**Electrical Engineering
(Power Electronics)**

PERSONAL DETAILS

Name: Ahmed Mohammed Massoud
Date of birth: 10th of July 1974
Address: A6-1 Mirqab II, El-Waab, Doha, Qatar
E-mail: ahmed.massoud@ieee.org
Ahmed.massoud@qu.edu.qa
Marital status: Married

ACADEMIC PREPARATIONS

- **B.Sc.** in electrical engineering (first class honors) from Alexandria university, Egypt, in 1997.
 - **M.Sc.** in electrical engineering from Alexandria university, Egypt, in 2000
Thesis (drives): ***Vector control of permanent magnet synchronous motors.***
 - **Ph. D.** in electrical engineering from Heriot-Watt University, UK, in 2004
Thesis (power electronics): ***Application of the cascaded multilevel inverter as a shunt active power filter.***
-

RESEARCH SKILLS

- Research activities include: multilevel converters, series connection of semiconductor devices, active filters, power quality, PWM techniques for multilevel converter, current control techniques, AC and DC drives, vector control of PMSM, offshore wind energy.
 - Distributed generation, balancing of capacitors in diode clamped multilevel inverters, medium voltage drives, load commutated converters, current source converters, multiphase machines and their control, dynamic voltage restorer, and DC-DC converters.
-

PROFESSIONAL EXPERIENCE

Demonstrator, 1997-2000

Electrical department, faculty of engineering, Alexandria University, Egypt (teaching machines, power electronics, drives, measurements, and their labs).

Teaching Assistant 2000-2001

Electrical department, faculty of engineering, Alexandria University, Egypt. (Teaching machines, power electronics, drives, measurements, and their labs for undergraduate and FACTS and HVDC for post graduate).

Teaching Assistant, 2001-2004

Electrical department, Heriot-Watt university, Edinburgh, UK. (Assisting in digital logic labs (FPGA and CPLD) and electronic circuits lab)

Assistant professor (on leave from Alexandria University, Egypt), 2005-2012

Associate professor (on leave from Alexandria University, Egypt), 2012

Electrical department, faculty of engineering, Alexandria University, Egypt. (Teaching machines, power electronics, drives, computer applications, and their labs).

Research fellow, 2005-2008

Electrical department, Strathclyde University, Glasgow, UK. (Working on distributed generation "SUPERGEN III" (a project with another 5 British Universities (Oxford, UMIST, Loughburgh, Bath,

Strathclyde) and two industrial partners (Scottish power and Rolls Royce)) and “MANtIS” (management of active networks through intelligent system with UMIST university and Rolls Royce). Teaching FACTS and HVDC course for undergraduate

Research fellow, 2008-2009

Electrical department, Texas A&M University, Qatar (Working on Fuel Cell project funded by Qatar foundation. Working on dynamic voltage restorer for the distribution system. Teaching Power electronics course for undergraduate)

Assistant professor, 2009-2012

Electrical department, College of Engineering, Qatar University, Qatar.

Associate professor, 2012 till now

Electrical department, College of Engineering, Qatar University, Qatar, teaching the following courses

PUBLICATIONS

Journals			Conferences/Patents/Book Chapters		
IEEE&IET	Elsevier	Other Journals	Conferences	IP/Patents	Book Chapters
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Author History

Publication range: 2001 - Present

References: 2318

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IEEE&IET JOURNAL PAPERS

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Permanent-Magnet Synchronous Motor Drive System With Luenberger Observers for Motor Line Current Reconstruction," Industry Applications, IEEE Transactions on , vol.50, no.4, pp.2602,2613, July-Aug. 2014
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BOOKS/BOOK CHAPTERS

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INTELLECTUAL PROPERTY

Disclosures	[1] "Mechanical Motor Drive (MMD)"; A. Abdelkhalik, S. Ahmed, A. Massoud , Disclosure TAMUS, April 2, 2012.
Provisional Patent Applications	[2] "String Voltage Balancing Converters (SVBC)", S. Ahmed, A. Massoud , A. Morsy; provisional application number US 61/860,567; filed Aug. 14, 2014.
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	[4] "Dc side fault isolator for high voltage dc converters", A. Elserougi, S. Ahmed, A. Massoud , A. Abdelkhalik, PCT/US2015/013041, Jul 30, 2015.

AWARDED GRANTS

Project Number/Role	Project Title	Total Funding	Award End Date	Duration	Collaborators	Abstract
NPRP 09 - 1001 - 2 – 391 (LPI)	A Rechargeable Environmentally Friendly Alternative to Lithium Batteries in MWD and LWD Applications	\$1,034,374	01-Oct-2014	Three years	-Texas A&M at Qatar. -Texas A&M at College Station, USA. -Spiretronic, USA.	The harsh environmental conditions faced by electromechanical assemblies used in oil and gas exploration, drilling, and logging pose serious challenges to the development of power sources suitable for such applications. Traditionally, the oil field has been limited to lithium battery technology. Lithium batteries, however, have environmental and safety concerns related to their operation and disposal. In this project we propose to develop a modular high speed flywheel based rechargeable downhole power source. Mud flow driven downhole turbine-generator sets would be used to recharge the system, and the flywheel would then supply power to the load in the absence of mud flow when the rig crew is in the process of connecting/disconnecting a section of drill pipe or when high resolution data is required without the additional disturbances produced during the drilling operation. The application of soft magnetic composites for the electromagnetic design of the high speed motor/generator as well as the magnetic bearings will also be proposed. The possible use of the flywheel control system to damp drill string dynamics will also be investigated. The system is completely electromechanical, and hence eliminates the severe effects temperature has on alternative electrochemical solutions. In addition, the disposal and safety hazards associated with lithium battery technology are eliminated.
UREP 07 - 116 - 2 – 033 (PI)	Robotic Upper Limb Prosthesis - Phase 1	\$60,000	30-Apr-2011	One year		
UREP 08 - 091 - 2 – 031	Grid-connected photovoltaic-based	\$48,581	30-Jun-	One year		

(LPI)	single-phase inverter for Qatar residential loads		2011			
NPRP 4 - 250 - 2 – 080 (Co-LPI)	Active Management of Renewable Energy Sources During Faults	\$915,200	01-Oct-2015	Three years	-Strathclyde University, UK. -Spiretronic, USA. -Sultan Qaboos University, Oman.	In this proposal, active management of renewable energy sources connected to the grid is proposed. The effect of adding more DG on protection schemes in low (practically) and medium (simulation) voltage is explored. In this research proposal, an active island detection technique for renewable energy-fed inverter (REFI) is employed for disturbance detection. A renewable energy-fed boost source inverter (REF-BSI), a converter topology with extended gain having a boosting up characteristic, is proposed. Nearby and remote fault locations with respect to the REFI are addressed proposing static VAR compensation and static Watt compensation to support the voltage in medium and low voltage networks respectively. Control techniques for renewable energy-fed voltage source inverter (REF-VSI), renewable energy-fed boost source inverter (REF-BSI), and renewable energy-fed Z-source inverter (REF-ZSI) are proposed considering their effect on the active management of the inverter during faults. Challenges for the proliferation of the distributed generation and the effect on the protecting schemes are enumerated and solutions are proposed.
NPRP 4 - 941 - 2 – 356 (PI)	HVDC Architectures for Offshore Grid Connected Wind Energy Systems	\$1,018,955	25-Jun-2015	Three years	-Texas A&M at Qatar. -Texas A&M at College Station, USA. -Spiretronic, USA.	This proposal investigates innovative electrical energy capture solutions, ideally suited for offshore wind farms. The project investigates means of overcoming the limitations of the series wind turbine architecture using a novel power conversion system. Additionally, a multi-terminal IGCT current source converter-based HVDC system is proposed. The technology will provide significant advantages over existing conventional voltage source based Light HVDC and HVAC transmission

						systems. The advantages include reduced system losses, enhanced system reliability, reduced capital costs, a simple control system that facilitates the connection of multi-terminal units, improved power quality from the generator side and the grid side with independently controllable active/reactive power, and fault ride through capability. It optimizes the connection between the wind turbines and the connection between the offshore units and the grid. The integrated distribution system can easily incorporate energy storage and additional generation onto the proposed DC link system. The grid management and control of this system will be also be investigated.
UREP 11 - 010 - 2 – 004 (PI)	Investigating and Overcoming the Effects of Harsh Environment on the Performance of Solar PV Technologies in the State of Qatar	\$20,000	20-Jan-2014	One year		
UREP 11 - 138 - 2 – 049 (PI)	Plug and Play Single Phase Photovoltaic AC Module Integrated Converter with Wireless Coordination	\$50,000	20-Jan-2014	One year		
UREP 12 - 082 - 2 – 035 (PI)	Contactless Power/Data Transfer for Electric Vehicles	\$69,998	01-Dec-2013	One year		
GSRA2-1-0609-14027	efficient and reliable drive system for primary, secondary, and enhanced oil and gas recovery	\$491,400	14-Sep-2018	Four years		
Research Project with RasGas (PI)	An Intelligent Open Hole Wireline Tool Conveyance System	\$1,800,000	31-Dec-2017	Three years	-Texas A&M at Qatar. -RasGas	
NPRP9-092-2-045 (LPI)	DC Grid for Empowering PV Penetration in Qatar	\$900,000	01-Oct-2016	Three years	-Strathclyde University, UK. - Texas A&M	The main objectives of the proposal are summarized in the following contributions: 1. A new universal power

					<p>at Qatar.</p> <p>converter (UPC) that can be used as a hybrid hub with multiple dc and ac terminals will be investigated in this proposal. The proposed UPC can be configured as fully isolated front-to-front dc-dc converters with several dc inputs and outputs.</p> <p>2. Although the proposed UPC is topology-independent, the modular multilevel converter (MMC) has been adopted in this proposal for illustration only. This opens opportunities for a multi-vendor approach, where subconverters of the proposed UPC can be constructed using different converter topologies. In such cases, full interoperability between converter topologies will be required. Such a requirement is expected to be a prerequisite for generic dc grids to prevent a monopoly of one manufacturer over the supply chain.</p> <p>3. A partially-isolated version of the proposed UPC with dc terminals and/or ac terminals is proposed.</p> <p>4. A capacitor-tapped multimodule dc-ac converter is proposed for integration of the dc grid to the ac grid.</p> <p>The project is aligned with Qatar National Research Strategy (QNRS) as it addresses the deployment of high power grid-interfaced PV systems for energy security enhancement through dc grid. This project will answer key questions relevant to dc-dc transformers and dc-ac converters. Meanwhile the anticipated research outcomes and raised questions, if the project is funded, will assist in forming a consortium of academia and utility for tackling at a larger scale the dc grid technical and economical challenges. This in turn will reduce the risk of instabilities with high dispersion of PV in the Qatari grid and enhance the efficiency of the network. Beside large-scale PV installations, such a dc grid provides a platform that can be used to facilitate a trans-national</p>
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						power pool for exchanging substantial amount of clean power from solar sources with neighbouring countries at reduced losses and increased control flexibility, where the ac power system of each individual country maintains its autonomy (for example, the impact of ac or dc fault in one country will not propagate to other countries).
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✚ **Starting up grant from Qatar University (PI) (2009) (QR 50,000)**

QUSG-CENG-DEE-09/10-10

The grant was used for PV panels purchasing (22 PV panels each of 120 Watt)

✚ **Student grant from Qatar University (PI) (2009) (QR 10,000)**

QUST-CENG-DEE-09/10-16

Grid-connected single-phase inverter for photovoltaic applications

✚ **Student grant from Qatar University (PI) (2011) (QR 20,000)**

QUST-CENG-Spr-1011-10

Battery-less Solar-Powered Induction Motor Drive System for Water treatment

✚ **Student grant from Qatar University (PI) (2012) (QR 10,000)**

QUST-CENG-FALL-1112-21

Solar Powered Light emitting diodes for Qatar 2022 World Cup Stadiums

✚ **Student grant from Qatar University (PI) (2012) (QR 10,000)**

QUST-CENG-FALL-1112-22

Single Phase Photovoltaic AC Module Integrated Converter

✚ **University Grant from Qatar University (LPI) (2011) (QR 141,000)**

QU_QUUG-ENG-DCE-1011-16

Title: **Voltage Regulation of Low Voltage Distribution Networks Employing Photovoltaic**

Project Description:

Penetration of Solar energy as a renewable energy source is growing rapidly as it reduces CO2 emissions and increases diversity and security of supply. This proposal aims at developing a new concept for the improvement of electrical power delivered by inverter-based distributed generation (IBDG) employing photovoltaic. Voltage regulation at the point of common coupling is one of the major outcomes of such new concept. The research will investigate the effect of aggregating photovoltaic (PV) units at the distribution level of the voltage regulation. This research topic is particularly important because of the expected worldwide proliferation of the distributed generation (DG) into the power system.

✚ University Grant from Qatar University (LPI) (2014) (QR 100,000)

QUUG-CENG-EE-13/14-3

Title: A Single-Stage Three-Phase Buck-Boost Inverter Topology for Grid-Connected Photovoltaic Farm

Project Description:

The project addresses Qatar needs of securing the electrical power supply and supplying a reserve source of energy through solar energy utilization, particularly with the expected increase in the electrical energy demand owing to economic growth and the on-going industrial revolution. The proposal supports improving the sustainability of Qatar energy portfolio and increases Qatar's dependency on renewable energy sources consequently acting in accordance with the 2030 Qatar Vision and complying with the Kyoto protocol for greenhouse gas emissions reduction specifically that the CO₂ emission per capita in Qatar is the highest in the world. The project will also develop additional human resource in the area of power electronics by training and producing highly-qualifying engineers in the field of energy conversion and renewable energy. Initially the technology to be developed will promote the take-up of renewable energy sources which in turn will stimulate several Qatar and worldwide energy sectors including those associated with energy production. Despite the proposal is oriented towards grid connection of PV generators, promoting PV generators in Qatar may serve other required applications for PV in Qatar (e.g. solar-powered pumps for water treatment, refrigeration systems, cathodic protection which is essential for oil/gas industry, and lighting systems).

✚ Student Grant "Dynamic Voltage Restore for Voltage Sag Mitigation in Oil and Gas Industry." (10,000 QR), 28/12/2014 valid until 27/12/2015, QUST-CENG-FALL-14\15-1

✚ Student Grant "Inductive Power Transfer for Qatar Rail." (10,000 QR), 28/12/2014 valid until 27/12/2015, QUST-CENG-FALL-14\15-2

✚ Student Grant "Design of a Highly Efficient PV Power System for Qatar University Campus DC MicroGrid", (10,000 QR) 17/05/2015 valid until 31/03/2016, QUST-CENG-SPR-14/15-13.

SUPERVISION/CO-SUPERVISION/COMMITTEE-MEMBER OF POSTGRADUATE STUDENTS

1. Mohammed AbdElmoneim (M.Sc. 2006, Alexandria University, Egypt)
2. Mohammed Alhawry (Ph.D. 2007, Alexandria University, Egypt)
3. Philip Adam Grain (Ph.D. 2009, Strathclyde University, UK)
4. Fahd AlRafie (M.Sc. 2007, Strathclyde University, UK)
5. Hadi Hotait (Ph.D. 2008, Strathclyde University, UK)
6. Ahmed Alashaibi (Ph.D. 2008, Strathclyde University, UK)
7. Khaled Hani Ahmed (Ph.D. 2008, Strathclyde University, UK)
8. Huibin Zhou (Ph.D. 2009, Strathclyde University, UK)
9. Nick Denniston (M.Sc. 2009, Texas A&M at College Station, USA)
10. Ahmed Darwish (M.Sc. 2011, Alexandria University, Egypt)
11. Medhat Mahni (M.Sc. 2011, Alexandria University, Egypt)
12. Ahmed Salah (M.Sc. 2011, Alexandria University, Egypt)
13. Ahmed Abbas (Ph.D. 2011, Alexandria University, Egypt)
14. Sijoy Raphael (M.Sc. 2011, Bath University, UK)
15. Al-Mutasim Alsamraie (M.Sc. 2013, University of Idaho, USA)
16. Mohammed Daoud (M.Sc. 2013, Alexandria University, Egypt)
17. Ahmed AbdelHakeem (M.Sc. 2014, Alexandria University, Egypt)
18. Ahmed Darwish (Ph.D. ongoing, Strathclyde University, UK)
19. Islam Azzamy (Ph.D. ongoing, Strathclyde University, UK)
20. Faisal Khan (M.Sc. ongoing, Qatar University, Qatar)
21. Hassan Rafie (M.Sc. 2014, Qatar University, Qatar)
22. Hamid Azani (Ph.D. ongoing, Strathclyde University, UK)
23. Eslam Abd Alhameed (M.Sc. 2015, Arab Academy for Science and Technology, Egypt)
24. Nada Ahmed Hussein (M.Sc. ongoing, Qatar University, Qatar)
25. Alaa Mousa (M.Sc. ongoing, Qatar University, Qatar)
26. Mena Fakhry (M.Sc. ongoing, Qatar University, Qatar)
27. Honiada Mahmoud (M.Sc. ongoing, Qatar University, Qatar)
28. Ayat Al-Aswad (M.Sc. ongoing, Qatar University, Qatar)
29. AbdelRahamn Alassi (M.Sc. ongoing, Qatar University, Qatar)
30. Mohammed Daoud (Ph.D. ongoing, Qatar University, Qatar)
31. Mohammed Atef El-Gendy (Ph.D. ongoing, Strathclyde University)

TEACHING

- Electrical engineering 2nd year students: electric machines (2004-2005) (DC Machines (introduction, winding and e.m.f., generators, and motors). Introduction to AC machines
- Electrical engineering 4th year students: computer applications in electric machines and drive systems (2004-2005) (PLC, Matlab/Simulink, microcontrollers (AVR and PIC), DSP, FPGA, CPLD)
- Electrical engineering postgraduate students: FACTS and HVDC (FACTS devices including natural commutated and forced commutated devices e.g. SVC, STATCOM, SSSC, DVR, UPFC, UPQC, APF)
- Fall_2009_ELEC201_11701: (Fall_2009_ELEC201_11701_B02) Electric Circuits B02
- Fall_2009_ELEC333_10269: (Fall_2009_ELEC333_10269_L01) Electronics Engineering L01
- Fall_2009_ELEC334_10270: (Fall_2009_ELEC334_10270_L01) Electronics Engineering Lab L01
- Fall_2009_GENG200_10134: (Fall_2009_GENG200_10134_L01) Probability/Stat for Engineers L01
- Fall_2010_ELEC312_10266: (Fall_2010_ELEC312_10266_L01) Electric Machines L01
- Fall_2010_ELEC313_10268: (Fall_2010_ELEC313_10268_B01) Electric Machines Lab B01
- Fall_2010_ELEC313_13210: (Fall_2010_ELEC313_13210_B02) Electric Machines Lab B02
- Fall_2010_ELEC499_13207: (Fall_2010_ELEC499_13207_L05) Senior Design Project II L05
- Fall_2011_ELEC202_12142: (Fall_2011_ELEC202_12142_L01) Electric Circuits II L01
- Fall_2011_ELEC203_13363: (Fall_2011_ELEC203_13363_B01) Electric Circuits II Lab B01
- Fall_2011_ELEC498_13656: (Fall_2011_ELEC498_13656_L04) Senior Design Project I L04
- Fall_2011_ELEC498_13717: (Fall_2011_ELEC498_13717_L55) Senior Design Project I L55
- Fall_2011_ELEC498_13719: (Fall_2011_ELEC498_13719_L57) Senior Design Project I L57
- Fall_2011_ELEC499_13205: (Fall_2011_ELEC499_13205_L03) Senior Design Project II L03
- Fall_2012_ELEC415_13909: (Fall_2012_ELEC415_13909_L51) Power Electronics & Drives L51
- Fall_2012_ELEC498_13656: (Fall_2012_ELEC498_13656_L04) Senior Design Project I L04
- Fall_2012_ELEC498_13712: (Fall_2012_ELEC498_13712_L51) Senior Design Project I L51
- Fall_2012_ELEC498_13713: (Fall_2012_ELEC498_13713_L52) Senior Design Project I L52
- Fall_2012_GENG200_13389: (Fall_2012_GENG200_13389_L52) Probability/Stat for Engineers L52
- Fall_2013_ELEC438_16078: (Fall_2013_ELEC438_16078_L51) Sel Topics in Electronics L51
- Fall_2013_ELEC438_16107: (Fall_2013_ELEC438_16107_L01) Sel Topics in Electronics L01
- Fall_2013_ELEC498_11756: (Fall_2013_ELEC498_11756_L03) Senior Design Project I L03
- Fall_2013_ELEC498_13656: (Fall_2013_ELEC498_13656_L04) Senior Design Project I L04
- Fall_2013_GENG699_16921: (Fall_2013_GENG699_16921_L07) Master Thesis L07
- Fall_2013_GENG699_16981: (Fall_2013_GENG699_16981_L13) Master Thesis L13
- Spring_2010_ELEC231_23448: (Spring_2010_ELEC231_23448_L51) Fundamentals of Electronics L51
- Spring_2010_ELEC231_23449: (Spring_2010_ELEC231_23449_B51) Fundamentals of Electronics B51
- Spring_2010_ELEC232_22196: (Spring_2010_ELEC232_22196_B51) Lab for Electronics I B51
- Spring_2010_ELEC234_23509: (Spring_2010_ELEC234_23509_L51) Electronics I L51
- Spring_2010_ELEC234_23551: (Spring_2010_ELEC234_23551_L52) Electronics I L52
- Spring_2010_ELEC498_23401: (Spring_2010_ELEC498_23401_L05) Senior Design Project I L05
- Spring_2011_ELEC202_21883: (Spring_2011_ELEC202_21883_L01) Electric Circuits II L01
- Spring_2011_ELEC203_21884: (Spring_2011_ELEC203_21884_B01) Electric Circuits II Lab B01
- Spring_2011_ELEC498_23399: (Spring_2011_ELEC498_23399_L03) Senior Design Project I L03
- Spring_2011_GENG200_23724: (Spring_2011_GENG200_23724_L52) Probability/Stat for Engineers L52
- Spring_2012_ELEC482_24885: (Spring_2012_ELEC482_24885_L01) Selected Topics in Power Elec. L01
- Spring_2012_ELEC482_24892: (Spring_2012_ELEC482_24892_L51) Selected Topics in Power Elec. L51
- Spring_2012_ELEC499_24415: (Spring_2012_ELEC499_24415_L04) Senior Design Project II L04
- Spring_2012_ELEC499_24444: (Spring_2012_ELEC499_24444_L55) Senior Design Project II L55
- Spring_2012_ELEC499_24446: (Spring_2012_ELEC499_24446_L57) Senior Design Project II L57
- Spring_2013_ELEC482_24885: (Spring_2013_ELEC482_24885_L01) Selected Topics in Power Elec. L01
- Spring_2013_ELEC482_24892: (Spring_2013_ELEC482_24892_L51) Selected Topics in Power Elec. L51
- Spring_2013_ELEC499_24415: (Spring_2013_ELEC499_24415_L04) Senior Design Project II L04

- Spring_2013_ELEC499_24440: (Spring_2013_ELEC499_24440_L51) Senior Design Project II L51
 - Spring_2013_ELEC499_24441: (Spring_2013_ELEC499_24441_L52) Senior Design Project II L52
 - Spring_2013_ELEC553_26438: (Spring_2013_ELEC553_26438_L01) Advanced Energy Distrib. Sys. L01
 - Spring_2013_GENG200_21914: (Spring_2013_GENG200_21914_L51) Probability/Stat for Engineers L51
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WORKSHOPS

1. Participating in arranging for and organizing the 2nd workshop for development of power systems and electric drives (13-15 June 2005, Alexandria Egypt)

2. Attendance of the following workshops in “Faculty and Leadership Development Center” at Alexandria University, Egypt (July 2010).

- ✚ Use of technology in teaching (10-12th of July 2010)
- ✚ The credit hours systems (27-30th of July)
- ✚ Quality standards in the education process (13-15th of July 2010)
- ✚ Competing for research funds (20-22nd of July 2010)
- ✚ Research ethics (24-26th of July 2010)
- ✚ Communication skills (17-19th of July 2010)

3. Attendance of the following workshops at Qatar University, OFID

- ✚ Workshop on blackboard new version (basic level) Training Session 24/11/2009
- ✚ Workshop on using the CAPP system for advising Training Session 22/02/2010
- ✚ Symposium on advances and applications of material science and engineering in Qatar 2010 Symposium 18/02/2010 Participant Qatar University and Texas A&M University at Qatar
- ✚ Workshop on blackboard new version (intermediate level) Training session 17/03/2010
- ✚ Workshop in preparation of course portfolio Training session 09/03/2010

4. Chairing and Coordinating for “Electric Power for Qatar’s Industry: A Collaborative Academic-Industrial Initiative” a one-day workshop at Qatar University on 16th of December 2010

The aim of the workshop is to provide a forum for academia and professional engineers. The scheduled presentations by professors and industry experts will form the basis for discussing various technical challenges related to the electric power sector. These discussions will lead to defining collaborative projects to develop solutions to problems specific to Qatar’s industry.

The issues discussed in the workshop are:

- ✚ Industrial applications of electric drives, with emphasis on the LNG industry
- ✚ Problems and challenges with high power electric drives
- ✚ RasGas Common Off Plot (COP) system study
- ✚ Sustained reliability of power supplies
- ✚ Voltage sags: effect and mitigation
- ✚ Harmonics: effect and mitigation using passive and active power filters
- ✚ Opportunities for partnerships and collaboration in Qatar's electrical power sector

5. “Experiential Learning through Collaboration and Interaction” workshop (28-30 of Dec 2010) at Qatar university (OFID). Follow up of this workshop on the 14th of March 2011

6. Assessment workshop: Dr Mary Allen 4/9/2012 one day workshop

7. Assessment workshop: Dr. Ashley Ater Kranov 6/9/2012 one day workshop

8. Assessment Days workshop at Qatar University, February 12-13, 2014

9. Assessment workshop: Dr Adel Gastli June 2014 (ABET) one day workshop

10. ABET Advanced Assessment Workshop took place 8th-10th of September 2014 (delivered by Gloria Rogers).

SHORT COURSE

SHORT COURSE IN FACTS DEVICES FOR THE UTILITY IN LIBYA IN JANUARY 2011 (22nd - 25th of January)

The short course contents are:

POWER SYSTEMS

Conventional System Solutions to Enhance Transmission capability

FACTS definition

Power Electronics Devices For FACTS Controllers

FACTS controllers (line commutated and self-commutated)

Parallel controllers

Series controller

Series-parallel controllers

HVDC

IEEE MEMBERSHIP

Senior Member of IEEE since 2011

EDITORIAL BOARD

Editorial board of the following Journals

- Global Journal of Advanced Engineering Technologies (since 2013)
- International Journal Advances in Power Systems (since 2013)
- American Journal of Electrical and Electronic Engineering (since 2013)
- American Journal of Electrical Power and Energy Systems (since 2014)
- International Journal of Renewable and Sustainable Energy (since 2014)
- International Journal of Energy and Power Engineering (since 2014)

COMMITTEES AND SERVICES

- ✚ A member in the Committee of Qatar General Organization for Standards and Metrology.
- ✚ A member in the Curriculum Committee of the college of engineering, Qatar university
- ✚ A coordinator for the power groups of Qatar University and Texas A&M University at Qatar
- ✚ A member in the Strategic planning committee college of engineering, Qatar university.
- ✚ A chair for the curriculum committee of the EE department at Qatar University.
- ✚ An expert in a committee of three faculty (Qatar University) for a case in the court (2753-2009/م د ك)
- ✚ An expert in a committee of three faculty (Qatar University) for a case in the court (2011/م د -/84)

AWARDS

✚ **In 1997, first class (Honors) in B.Sc., recipient of the following awards:**

1. Prof. Abed El-Sameaa Mostafa's award , Alexandria University, Egypt
2. Alexandria Governor, Egypt
3. Electrical Department, Egypt
4. El-Mohands Company, Egypt

- ✚ In 2011, “the excellence in research” award for the academic year 2010/2011 from the College of Engineering, Qatar University
- ✚ The NPRP project NPRP 09 - 1001 - 2 - 391 (LPI) “A Rechargeable Environmentally Friendly Alternative to Lithium Batteries in MWD and LWD Applications ” has been selected as one of the “success stories” for research projects in Qatar in 2014 where I have been invited for a talk in the 6th annual QNRF forum.
- ✚ TAQA Hybrid Electric Vehicle competition in UAE (February 2014) (winning the first and second place out of 11 participants)
- ✚ Second best paper award in the 26th IEEE International conference on Microelectronics (ICM 2014) (December 2014)
- ✚ The NPRP project NPRP 4 - 941 - 2 - 356 (PI) “HVDC Architectures for Offshore Grid Connected Wind Energy Systems”, has been awarded the best research project in 2015 in Qatar

RESEARCH ACTIVITIES

1. Organizing special session in renewable energy sources in 26th IEEE International Conference on Microelectronics (ICM 2014) December 14-17, 2014, Hilton Doha Hotel, Qatar.

<http://www.ieeeicm2014.org/home/special-topic-sessions#topic3>

Topic 3: Renewable Energy Sources

Session Chairs: Ahmed Massoud (Qatar University) and Shehab Ahmed (Texas A&M University at Qatar)

Renewable energy sources play a pivotal role in reducing the green gas house emissions particularly after Kotoyo protocol. Moreover securing the electric power supply to customers and meeting the skyrocketed energy demand are among the main benefits of renewable energy source deployment. Power electronics are highly demanded for power conditioning and grid integration of renewables in order to comply with the grid voltage and frequency requirements and maximum power point operation. Management of renewable energy sources in smart grid is of paramount importance. This special session aims to discuss renewable energy sources, and their grid integration, including, but not limited to:

- Renewable energy sources modeling
- Management of renewable energy sources in smart grid
- Grid integration and island mode operation of renewable energy sources
- Power conditioning converters and Control of power converter
- Energy management and storage systems

2. Organizing committee of the first workshop on smart grid and renewable energy (SGRE 2015) in Doha, Qatar, March 2015

3. Reviewer in the following transactions

- IEEE Transactions on Industrial Electronics
- IEEE Transactions on Power Electronics

- **IEEE Transactions on Sustainable Energy**
- **IET Transactions on Power Electronics**
- **IET Transactions on Renewable Power Generation**
- **IET Transactions on Electric Power Applications**
- **IEEE Transactions on power delivery**
- **IET Transactions on Transmission and Distribution**

4. Reviewer of the following conferences

- **IEEE APEC Conference**
- **IEEE ECCE Conference**
- **IEEE SPEEDAM Conference**
- **IEEE ISIE conference**
- **IEEE MEPCON conference**
- **IEEE GCC conference**

5. Panel member in the middle-east power-Gen 2010

6. Assessment on research proposals for the Nazarbayev University Research Proposals Review (May 2015). Two proposals have been reviewed

7. Assessment on research proposals for Research Grant Council (RGC) of Hong Kong (under the National Natural Science Foundation of China (NSFC) / RGC Joint Research Scheme (JRS) 2015/16 exercise).

8. Keynote speaker in the first workshop on smart grid and renewable energy (SGRE 2015) in Doha, Qatar, March 2015 with the following title: “flywheel energy systems”

9. Lead Guest Editor in a special call in Journal of Control Science and Engineering Special Issue on Control of Power Converters for Emerging Applications of Power Electronics.
<http://www.hindawi.com/journals/jcse/osi/>