

Name: Prof. Mostafa Ibrahim Mohamed Marei Current Title (including department and university): Professor at Electrical Power and Machines Department, Faculty of Engineering, Ain Shams university. Address: 1 El-Sarayat St., Abdo Basha sq., Abbassya, Cairo, 11517, Egypt Phone: 01006957052 Email: mostafa_ibrahim@eng.asu.edu.eg

FIELDS OF SPECIALIZATION

Power electronics, distributed and renewable generation, microgrids, power quality, custom power, electrical drives, and artificial intelligence applications in power systems.

DEGREES

- **Ph.D.**, Degree (Electrical and Computer Engineering), University of Waterloo, Canada, 2004, Novel control algorithms for inverter-based custom power conditioners.
- M.Sc., Degree (Electrical Power and Machines), Ain Shams University, 2000, Intelligent AC Drive.
- B.Sc., Degree (Electrical Power and Machines), Ain Shams University, 1997.

ACADEMIC AND INDUSTRIAL POSITIONS

Oct 2016-current	Professor Ain Shams university, Faculty of Engineering, Electrical power and Machines Dept.
Sept. 2017-August 2020	Visiting Professor Arab Academy for Science, Technology & Maritime Transport, College of engineering and technology, Cairo, Egypt.
Feb. 2014-Jan2015	Visiting Associate Professor Arab Academy for Science, Technology & Maritime Transport, College of engineering and technology.
June 2011-Jan 2014	Associate Professor Ain Shams university, Faculty of Engineering, Electrical power and
Feb 2015-Sept 2016	Machines Dept.
Winter term of	Unit head of Energy & Renewable Energy (ERGY) undergraduate program at Ain Sham
2009/2010	University.
May 2004 – April 2006	Post doctoral fellow, University of Waterloo, Electrical & Mechanical Engineering
	Departments, Canada. (NSERC grant).
Apr 2003 – Mar 2004	Research Associate, Electrical & Mechanical depts., University of Waterloo, Ontario, Canada.
Sept 2001 – Apr 2004	Teaching Assistant, University of Waterloo, Electrical and Computer Engineering Department, Canada.
May 2001 – Mar 2004	Research Assistant, University of Waterloo, Electrical and Computer Engineering Department, Canada. (NSERC grant)
Mar 2000 – Apr 2001	Assistant Lecturer, Ain Shams University, Electric Power and Machines Department.
Dec 98 – Apr 2001	Research Assistant, Ain Shams University, Electric Power and Machines Dept., Egypt.
Dec 98 – Mar 2000	Demonstrator, Ain Shams University, Electric Power and Machines Department.
Oct 97 – Dec 98	Engineer, Egyptian Armed Forces.

RESEARCH PROJECTS

- 2021/2022, "A smart electric-vehicle battery charging system". (TS-21-09). This is a joint-research project with College of Technological Studies PAAET, Kuwait, funded by Kuwait Foundation for the Advancement of Sciences (KFAS).
- 2019/2020, "Integrated BESS and PV interface system for power smoothing and voltage regulation". (TS-19-11). This is a joint-research project with College of Technological Studies – PAAET, Kuwait, funded by Kuwait Foundation for the Advancement of Sciences (KFAS).
- 2018/2019, "A Modular Multi-Terminals PV Interfacing System". (PN17-15EE-01). This is one year joint-research project with College of Technological Studies PAAET, Kuwait, funded by Kuwait Foundation for the Advancement of Sciences (KFAS).
- 2010 2013, "Connection of Power From Wind Energy to National Grid". This is a two years research project, funded by Science and Technology Development Fund (STDF) Egypt. Oct.
- 2004 2006, "Development of an Energy management unit for Hybrid Electric Vehicles using Ultracapaciors for regenerative braking". NSERC, Canada. The aim of this project is to investigate the most efficient and economic use of the energy resources available for the hybrid vehicles to maximize the efficiency of the IC engine, reduce the fuel consumption and hence the emission. Ultracapacitor unit is used to store the braking energy and then utilize it back for accelerating the vehicle using the electric motor. This management unit is responsible for coordinating the operation of both the electric motor and the IC engine utilizing different energy sources such as batteries, ultracapacitor and fuel.

CONSULTANT

- 2005, "Design of a medium voltage (MV) single phase inverter for the insulation testing of electric motor drives" For the high voltage research group at university of Waterloo. I designed and developed a MV inverter that can generate PWM signals to mimic the switching pulses of the MV drive systems. This system is utilized to test the insulation failure in high power AC drives that works at 6.6 KV with power inverters. This projected is funded from General Electric Company through University of Waterloo.
- 2004, "Development of an eddy current absorber controller" For Cycle Improvement Ltd., Canada. The eddy current absorber is utilized for testing the dynamic behavior of any engine under different loading conditions. I developed an efficient 20 KW buck DC/DC power electronic converter for regulating the absorber loading for the company mentioned above. The control system is based on a PIC micro-controller (16F73), one of the cheapest microcontroller in the world.
- 2003, "*Power Quality Monitoring and Standards*" For KFPUM University Sauidi Arabia. This proposal has been prepared in response to a request from the Research Institute of King Fahd University of Petroleum & Minerals to conduct a study on the different power quality standards, equipment and mitigation devices.
- 2003, "Design and implementation of a scaled down experimental prototype model for an electric vehicle" For Auto21 team at university of waterloo, Canada. I developed a digital controller for a 2KW three phase induction motor using DSP (TMS320LF2407A) system. The inverter's switches and their driving circuits are implemented on the same board. The energy source was a battery back rated at 36 volt. I developed a boost DC/DC converter to generate a 300 volt from the batteries at the motor controller terminals. The electronic system is designed using the highest technologies to mimic the behavior of electric vehicles in roads.

- 2000, "Design of the electricity system in El-Tebeen water plant" For Ministry of Public Works and Water Resources, Egypt. The aim of this project is to upgrade the electrical system in the water planet. The electrical specification of the equipment such as pumps, motors, contactors, relays,... etc are designed based on calculating the loads for the water plant. The wiring diagram is revised and modified to fulfill the required demand of the plant.
- 1999, "Development of stepper motor controller" For Cleopatra ceramic, Egypt. The objective of this project was to design power electronic converters for two stepper motors used for controlling 2D movements of a robot. This robot is a main unit in one of the production lines at Cleopatra ceramic factory. Its function is to paint and glaze ceramics. I designed and developed the control algorithm for the Intel (80C51) microcontroller that is used to control the operation of the power converters.

AWARDS

- December 2022, Shield of the Graduates Association of the Faculty of Engineering Ain Shams University to honor scholars who hold scientific production awards.
- 2013, Encouraging State Prize (State Incentive Award) in Engineering Sciences- Academy of Scientific Research and Technology Egypt.
- June 2013, Shield of Faculty of engineering Ain Shams University to honor young researchers seeking the Department of Power and Electrical Machines Engineering.
- 2008-2023, International publications award from Ain Shams University.
- May 2004 April 2006, Natural Sciences and Engineering Research of Canada (NSERC): Post Doctoral Fellowship funded by the Canadian Government.
- May 2003–April 2004: Ontario Graduate Scholarship (OGS): Ph.D. is funded by the Canadian Government.
- May 2001–April 2003: University of Waterloo, Canada, E&CE Graduate Scholarship.
- Sept. 2001–Sept 2003: Faculty of Engineering Scholarship (FOE), University of Waterloo (5 times)
- 1997: Medal of Academic Distinction, Ain Shams University, Cairo, Egypt.

PROFESSIONAL RECOGNITION

- October 2022, Listed in the world's top 2% scientists list by Stanford University.
- Reviewer for the Permanent Committee for Academic Promotion, Supreme Council of Universities, Egypt since 2020
- Reviewer for the Permanent Committee for Academic Promotion, King Abdulaziz University, Saudi Arabia since 2020
- Vice Chair of Egypt Section Chapter of the IEEE Power Electronics Society (PELS) since 2018.
- Member of the Scientific Council of Ain Shams University: 2015-2017.
- Reviewer for funded projects offered by Information Technology Academia Collaboration (ITAC), Information Technology Industry Development Agency (ITIDA), since 2017.
- Reviewer for Science and Technological Development Fund (STDF), Egyptian Ministry for Scientific Research, since 2015.
- August 2012, My biography is listed in the 2013 Edition of Marquis Who's Who in the World.

- August 2008, My biography is listed in the 2009 Edition of Marquis Who's Who in the World.
- Senior Member at the Institute of Electrical and Electronics Engineers (IEEE) since 2011.
- Member in the editorial board
 - Electric Power Components and Systems Journal, Taylor & Francis
 - Engineering Ain Shams Journal, Elsevier
- Reviewer for many international journals: IEEE, IET, Elsevier, Taylor & Francis, MDPI, and Wiely.
- Track chair for the following international conferences:
 - 2nd IEEE Conference on Power Electronics and Renewable Energy (CPERE), Luxor, Egypt, 19-21 Feb. 2023
 - 23rd IEEE Middle East Power System Conference (MEPCON), organized by Kafrelsheikh University, Cairo, Egypt, 13-15 Dec. 2022.
 - 22nd EPE Energy Conversion Congress and Expo (EPE-ECCE), Lyon, France, 7-11 Sept. 2020.
 - 1st IEEE Conference on Power Electronics and Renewable Energy (CPERE), Aswan, Egypt, 23-25 Oct. 2019
 - o 21th EPE Energy Conversion Congress and Expo (EPE-ECCE), Genova, Italy, 2-5 Sept. 2019.
 - 19th IEEE Middle East Power System Conference (MEPCON), organized by Menoufia University, Cairo, Egypt, 19-21 Dec. 2017.
- Member of the Technical Program Committee of the many international and local conferences.

PATENTS, PUBLICATIONS

https://scholar.google.com/citations?hl=en&user=TPK2nmcAAAAJ