CURRICULUM VITAE

PERSONAL INFORMATION

Name	**MOHAMED, MAHMOUD ABDELWAHAB MOSSA**
Address	**ELECTRICAL ENGINEEPRING DEPARTMENT,MINIA UNIVERSITY,EGYPT,61111**
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Nationality	**Egyptian**
Date of birth	**01/08/1986**

WORK EXPERIENCE

• Dates (from – to)	From January 2010 to February 2013.
• Name and address of employer	Faculty of Engineering-Minia University-Egypt.
• Type of business or sector	Governmental Teaching Universities [Ministry of Higher Education].
• Occupation or position held	Teaching Assistant.
• Main activities and responsibilities	Teaching and helping professors at the department of electrical engineering in teaching undergraduate courses for undergraduate students. In addition, supervising the laboratories activities for the students. Moreover, carrying out the research duties during the master degree. Some of the projects that I participated in supervising the students activities during it are listed as follows:

- Direction and speed detection of metallic test objects in free warehousing and conveyor systems. (Co-supervisor)- (Supported by Siemens company and ITC-Egypt government)-(March 2010).
- Water stations monitoring and controlling using wireless data communication based on GPRS system.(Co-supervisor)-(Supported by Siemens company and ITC-Egypt government)-(March 2010).
- Color detection and making for painting industry.(Co-supervisor)-(Supported by Siemens company and ITC-Egypt government)-(October 2011).
- Error inspection and quality assurance using RFID.(Co-supervisor)-(Supported by Siemens company and ITC-Egypt government)-(October 2011).
- RFID-based Automated Warehouse.(Co-supervisor)-(Supported by Siemens company and ITC-Egypt government)-(October 2011).

• Dates (from – to)	From March 2013 to October 2014.
• Name and address of employer	Faculty of Engineering-Minia University-Egypt.
• Type of business or sector	Governmental Teaching Universities [Ministry of Higher Education].
• Occupation or position held	Assistant lecturer.
• Main activities and responsibilities	Teaching and helping professors at the department of electrical engineering in teaching undergraduate courses for undergraduate students. In addition, supervising the laboratories activities for the students. Moreover, supervising and helping the master students in their researches.
• Dates (from – to)	From November 2014 to April 2018.
• Name and address of employer	Department of Industrial Engineering-University of Padova-Italy.
• Type of business or sector	Research Institution.
• Occupation or position held	PhD researcher.
• Main activities and responsibilities	Carrying out PhD research activities mainly in the department of industrial engineering at the electric drives laboratory (EDLAB) in the field of controlling of induction machine drives. In addition, helping the master students in their research duties and introduces advices to them.
• Dates (from – to)	From May 2018 till now.
• Name and address of employer	Faculty of Engineering-Minia University-Egypt.
• Type of business or sector	Governmental Teaching Universities [Ministry of Higher Education].
• Occupation or position held	**"Associate Professor"**
• Main activities and responsibilities	Teaching undergraduate courses for the Bachelor students mainly the 'Electric Machines' and 'Electric Traction System' and 'Electric Circuits theorem', 'Applications of software programming in electric power systems'. For the postgraduate students(Master and PhD students), I am teaching a course titled of 'Variable Speed Drives'.
• Master and PhD theses under my supervision	**1-Optimal Load Frequency Control of Multi-Area InterConnected Power System with Renewable Energy Sources (Defended, October 2020).** **2-Design and Implementation of a Digital Control System for electric Vehicle Applications (Defended, December 2022).** **3-Dynamic Analysis of a Variable Speed Permanent Magnet Synchronous Generator (PMSG) Used For Renewable Energy Applications (Defended, April 2024).** **4-Modeling, Control and Performance Evaluation of a Self-Excited Induction Generator Driven By a Wind Turbine System (In progress).** **5-Enhancing the dynamic performance of a Wind Driven Stand-alone Doubly Fed Induction Generator (DFIG) Using Advanced Control Techniques (Defended, February 2023).** **6-Control of sensorless brushless motor drives for domestic applications (Schedudled).** **7- Design and Modeling of a Power Management and Control Technique for a Standalone Wind Based Generator Feeding a Water Pumping system (In progress).**
• Dates (from – to)	From 01-10-2021 to 31/03/2022.
• Name and address of employer	Department of Industrial Engineering- University of Padova- Italy
• Occupation or position held	**Postdoctoral fellow**
• Memberships in journals editorial staff	- **I am an asscoiate editor in the following journals** **"International Journal of Robotics and Control Systems". e-ISSN: 2775-2658.** **"Journal of Robotics and Mechanical Engineering". e-ISSN: 2770-4122.** **"International Journal of Agriculture, Engineering Technology and Social Sciences". e-ISSN: 2835-1215.** - **I am a guest editor in Energies (MDPI) Journal. e-ISSN:1996-1073.** - **I am a guest editor in Machines (MDPI) Journal. e-ISSN:2075-1702.** - **I am a guest editor in Contemporary Mathematics (UWP) Journal. e-ISSN: 2705-1064.**

EDUCATION AND TRAINING

• Dates (from – to)	From September 2003 to June 2008.
• Name and type of organization	Faculty of Engineering-Minia University-Egypt.
• Principal subjects/occupational	Some of the subjects that had been taught during my Bachelor degree can be addressed as follows: Electrical Circuits, Electrical Measurements, Basics of Electromagnetism, Mathematics for Engineers, Electrical Machines, Electrical Machine Design, Power electronics, High Voltage Engineering, Electric Power System Analysis, Optimization, Programmable Logic Controllers (PLC), Electrical Drawing, Programming Languages (Matlab, Fortran and C).
• Skills Covered	- Programming with (MATLAB/SIMULINK) - Programming with Languages (C and Fortran) - AUTOCAD 2D. - PLC and SCADA System. - PLC Microcontroller programming.
• Trainings	- Taking a summer training in Upper Egypt electrical company (Qenasector,October 2007, four weeks). - Taking a summer training in Suez-Gulf petroleum company (Gases location, July 2007, two weeks). - AAUTOCAD (2D) course in AFAQ center for training and development (Minia 2007). - Microsoft office, Data base, Front page & Internet (Computer center, Minia 2007). - Taking a summer training in Qenacement company (Qena cement factory, July 2006, four weeks). - Taking a summer training in Sugar company (Qena,Quos sugar factory, October 2006, four weeks). - Taking a summer training in ''HU-Qena'' Company for liquid gases production (''HU-Qena'' factory,July 2005, four weeks).
• Title of qualification awarded	Bachelor of Electrical Engineering (Power and Machines)
• Level in national classification	Very good with honor (84.75%).

• Dates (from – to)	From January 2010 to January 2013.
• Name and type of organisation	Faculty of Engineering-Minia University-Egypt.
• Principal subjects/occupational	Some of the subjects that had been taught during the master degree are specified as follows: Advanced power electronics, Advanced control of electrical machines, Advanced electromagnetism, Optimization, Special Electrical Machines.
• Skills Covered	- Programming with (MATLAB/SIMULINK) - Programming with Languages (C and Fortran) - AUTOCAD 2D. - PLC and SCADA System. - PLC Microcontroller programming.
• Trainings	- Taking a training course in Siemens company in cairo branch from February to March 2010. The main activities during the training were specified as: • (Programmable Logic Controller ''STEP 7 PLC course'' • HMI SCADA ''WINCC course'' • Process Instrumentation ''PI introduction course'' • Human Machine Interface ''WINCC Flexible course'' • Computerized Numerical Control basic ''CNC basic course''
• Title of qualification awarded	Master in Electrical Engineering (Power and Machines). The title of the Master thesis is '' Control of a Wind Driven Doubly Fed Induction Generator During Grid Faults''
• Level in national classification	Distinction.

• Dates (from – to)	From November 2014 to April 2018 acting as a PhD student.
• Name and type of organisation	Department of Industrial Engineering-University of Padova-Italy.
• Principal subjects/occupational	Some of the subjects that had been taught during my PhD degree are specified as follows: Non Ideal Behavior of Components, Technological Advancements in the Electro Mobility, Stochastic Methods for Single and Multi-Objective Optimization, Statistics for Engineers.
• Skills Covered	- Programming with (MATLAB/SIMULINK) - Programming with C Language. - Performing experimental tests using dSpace 1104 prototyping control board. - Developing Effective and new sensorless control schemes for different topologies of IM drives used in industrial applications.
• Research title	''Model Predictive Control: An Effective Control Approach for High Performance Induction Machine Drives''
• Research Activities	- Attending several scientific seminars. - Attending and presenting research papers in highly reputed international conferences, which are listed as: • IEEE International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM), Anacapri-Italy,2016. • IEEE International Conference on Electrical Machines (ICEM), Lausane-Switzerland,2016. • IECON-42nd Annual Conference of the IEEE Industrial Electronics Society, Florence-Italy,2016. • IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), Trivandrum-India,2016. • IEEE Symposium on Sensorless Control for Electrical Drives (SLED), Catania-Italy,2017. • MEPCON-19th IEEE International Middle East Power Systems Conference, Cairo-Egypt 2017. • MEPCON-20th IEEE International Middle East Power Systems Conference, Cairo-Egypt 2018. • IEEE Conference on Power Electronics and Renewable Energy (CPERE), ASWAN, Egypt, 2019. • MEPCON-21st IEEE International Middle East Power Systems Conference, Cairo-Egypt 2019. • IEEE 12th Energy Conversion Congress & Exposition - Asia (ECCE-Asia), 2021, Singapore. • MEPCON-23rd IEEE International Middle East Power Systems Conference, Cairo-Egypt 2022. • IEEE Conference on Power Electronics and Renewable Energy (CPERE), Luxor, Egypt, 2023.

PUBLICATIONS

• **Orcid ID:** **[0000-0002-0308-3038]**

• Conference Papers (Peer reviewed)

-**M. A. Mossa** and S. Bolognani, "Effective model predictive direct torque control for an induction motor drive," 2016 International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM), Anacapri, 2016, pp. 746-754.

-**M. A. Mossa** and S. Bolognani, "A novel sensorless direct torque control for a doubly fed induction machine," 2016 XXII International Conference on Electrical Machines (ICEM), Lausanne, 2016, pp. 942-948.

-**M. A. Mossa** and S. Bolognani, "High performance Direct Power Control for a doubly fed induction generator," IECON 2016 - 42nd Annual Conference of the IEEE Industrial Electronics Society, Florence, 2016, pp. 1930-1935.

-**M. A. Mossa** and S. Bolognani, "Effective sensorless Direct Torque Control for an induction motor drive with reduced ripple contents," 2016 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), Trivandrum, 2016, pp. 1-6.

-**M. A. Mossa** and S. Bolognani, "Effective model predictive current control for a sensorless IM drive," 2017 IEEE International Symposium on Sensorless Control for Electrical Drives (SLED), Catania, 2017, pp. 37-42.

-**M. A. Mossa** and S. Bolognani, "A new formulation of model predictive direct torque control for a sensorless IM drive," 2017IEEE Nineteenth International Middle East Power Systems Conference (MEPCON), Cairo, 2017, pp. 664-670.

-**M. A. Mossa** and S. Bolognani, "Effective sensorless model predictive direct torque control for a doubly fed induction machine," 2017IEEENineteenth International Middle East Power Systems Conference (MEPCON), Cairo, 2017, pp. 1201-1207.

- **M. A. Mossa** and S. Bolognani, "Model predictive instantaneous power control for a sensorless induction motor drive," 2017IEEE Nineteenth International Middle East Power Systems Conference (MEPCON), Cairo, 2017, pp. 385-391.

-**M. A. Mossa** and S. Bolognani, "Model Predictive Phase Angle Control for an Induction Motor Drive," 2018 IEEE Twentieth International Middle East Power Systems Conference (MEPCON), Cairo, Egypt, 2018, pp. 128-134.

- **M. A. Mossa** and S. Bolognani, "Predictive Control for an Induction Motor Drive Based on a Quasi-Linear Model," 2018 IEEE Twentieth International Middle East Power Systems Conference (MEPCON), Cairo, Egypt, 2018, pp. 242-248.

-**M. A. Mossa** and S. Bolognani, "Robust Predictive Current Control for a Sensorless IM Drive Based on Torque Angle Regulation," 2019 IEEE Conference on Power Electronics and Renewable Energy (CPERE), Aswan City, Egypt, 2019, pp. 302-308.

-**M. A.Mossa**, O. M. Kamel and S. Bolognani, "Explicit Predictive Voltage Control for an Induction Motor Drive," 2019 21st International Middle East Power Systems Conference (MEPCON), Cairo, Egypt, 2019, pp. 258-264, doi: 10.1109/MEPCON47431.2019.9008029.

- O. M. Kamel, **M. A.Mossa** and A. A. Z. Diab, "Evaluating Dynamic Performance of DTC under Grid Disturbance for a Wind Driven DFIG," 2019 21st International Middle East Power Systems Conference (MEPCON), Cairo, Egypt, 2019, pp. 213-219, doi: 10.1109/MEPCON47431.2019.9008231.

- **M. A. Mossa** and S. Bolognani, "Predictive Power Control for a Linearized Doubly Fed Induction Generator Model," 2019 21st International Middle East Power Systems Conference (MEPCON), Cairo, Egypt, 2019, pp. 250-257.

-M. A. Mossa, T. D. Do, H. Echeikh and A. A. Z. Diab, "A New Formula of Predictive Control for an Induction Motor:Comparative Study with MP DTC," 2021 IEEE 12th Energy Conversion Congress & Exposition - Asia (ECCE-Asia), 2021, pp. 1498-1504.

-M. A. Mossa, T. D. Do, H. Echeikh and A. A. Z. Diab, "A Predictive Voltage Control Scheme For A Variable Speed Doubly Fed Induction Generator," 2021 IEEE 12th Energy Conversion Congress & Exposition - Asia (ECCE-Asia), 2021, pp. 1491-1497.

- M. I. A. E. Ali, A. A. Z. Diab, A. A. Hassan, **M. A. Mossa** and K. A. Denis, "Comprehensive Comparison of the Application of Dynamic Optimization Algorithms for LFC of a Double Area System With the Penetration of Renewable Energy Sources," *2022 4th International Youth Conference on Radio Electronics, Electrical and Power Engineering (REEPE)*, 2022, pp. 1-8.

- M. A. Mossa, N. E. Ouanjli, O. Gam and O. M. Kamel, "Performance improvement of a hybrid energy system feeding an isolated load," 2022 23rd *International Middle East Power Systems Conference* (MEPCON), Cairo, Egypt, 2022, pp. 1-8.

- **M. A. Mossa**, M. K. Abdelhamid and A. A. Hassan, "Enhancing the Dynamic Performance of a Wind Driven Grid Connected DFIG Using an Effective Control Approach," 2023 *IEEE Conference on Power Electronics and Renewable Energy* (CPERE), Luxor, Egypt, 2023, pp. 1-7.

•Journal papers (Peer reviewed)

-**Mossa, M.A**. and Bolognani, S. (2018)'Effective model predictive instantaneous power control for a sensorless induction motor drive',Int. J. Industrial Electronics and Drives, Vol. 4, No. 1, pp.44–55.

- Hassan A. A., Yehia S., Mohamed A. M., El-Sawy and **Mahmoud A.Mossa** (2011), Control of a Wind Driven DFIG Connected to the Grid Based on Field Orientation, Wind Engineering, Vol.35,No. 2,2011,pp. 127-143.

-**M. Mossa** and Y. Mohamed, Novel Scheme for Improving the Performance of a Wind Driven Doubly Fed Induction Generator During Grid Faults, Wind Engineering, Vol. 36,Issue 3,pp.305-334,2012.

- **Mahmoud A.Mossa**,'' Field Orientation Control of a Wind Driven DFIG Connected to the Grid,'' in WSEAS Transactions on Power System, Vol. 7, October 2012.

- A. M. El-Sawy, and **Mahmoud A.Mossa**,'' Enhancement of Fault ride through Capability of a Wind Driven DFIG connected to the Grid,'' Journal of Engineering Sciences, Assiut University, March 2012, Vol. 40, No 2,pp.503-531.

-**Mahmoud A.Mossa** , Y. Mohamed and A. M. El-Sawy, and,'' Field Orientation Control of a Wind Driven DFIG Connected to the Grid,'' Journal of Engineering Sciences, Assiut University, January 2012, Vol. 40, No 1,pp.235-253.

-**M. A. Mossa**, "Effective Predictive Flux Control for a Five Phase Induction Motor Drive with Inverter Output Filter," International Review of Electrical Engineering (IREE), Praise Wise Publisher, *Vol 13(5):373-384*.

-**M. A. Mossa**, "Effective Predictive Flux Control for an Induction Motor Drive with an Online Estimation Procedure for Stator Transient Inductance," International Review on Modeling and Simulations (IREMOS), Praise Wise Publisher, *Vol11(6):366-376.*

-**M. A. Mossa**"Effective Predictive Current Control for a Sensorless Five-Phase Induction Motor Drive," International Journal of Power Electronics (IJPElec), Inderscience Publisher.*DOI: 10.1504/IJPELEC.2021.10020183.*

-**M. A. Mossa,** A.A.Zaki"Effective Model Predictive Control Approach for a Faulty IM Drive," International Review of Electrical Engineering (IREE), Praise Wise Publisher, *Vol 14(5)*.

-**M. A. Mossa**, A. Saad Al-Sumaiti, T. Duc Do and A. A. ZakiDiab, "Cost-Effective Predictive Flux Control for a Sensorless Doubly Fed Induction Generator," in IEEE Access, vol. 7, pp. 172606-172627, 2019.

-O. M. Kamel, A. A. Z. Diab, T. D. Do and **M. A. Mossa**, "A Novel Hybrid Ant Colony-Particle Swarm Optimization Techniques Based Tuning STATCOM for Grid Code Compliance," in IEEE Access, vol. 8, pp. 41566-41587, 2020, doi: 10.1109/ACCESS.2020.2976828.

-**Mossa, M.A**.; Echeikh, H.; Iqbal, A.; Duc Do, T.; Al-Sumaiti, A.S. A Novel Sensorless Control for Multiphase Induction Motor Drives Based on Singularly Perturbed Sliding Mode Observer-Experimental Validation. Appl. Sci. 2020, 10, 2776.

- M. Issam,A. A. Z. Diab, **M. A. Mossa,** A.A.Hassan, " Dynamic Optimized Load Frequency control of Multi-Source Power System using Jaya Algorithm," International Journal of Advanced Science and Technology, vol. 29 (6), pp. 3372 - 3392, 2020.

- A. A. Z. Diab, H. M. Sultan, T. D. Do, O. M. Kamel and **M. A. Mossa**, "Coyote Optimization Algorithm for Parameters Estimation of Various Models of Solar Cells and PV Modules," in IEEE Access, vol. 8, pp. 111102-111140, 2020.

-**Mossa, Mahmoud A**.; Vu Quynh, Nguyen; Echeikh, Hamdi; Do, Ton Duc, "Deadbeat-Based Model Predictive Voltage Control for a Sensorless Five-Phase Induction Motor Drive". Mathematical Problems in Engineering, Vol 2020, ID 4164526, pp.30.
- **Mossa, M.A.**, Bolognani, S. Implicit predictive flux control for high-performance induction motor drives. ElectrEng (2020). https://doi.org/10.1007/s00202-020-01081-9.
- **A. Mossa, M.**; Echeikh, H.; Diab, A.A.Z.; Quynh, N.V. Effective Direct Power Control for a Sensor-Less Doubly Fed Induction Generator with a Losses Minimization Criterion. Electronics 2020, 9, 1269.
- **M. A. Mossa**, T. Duc Do, A. Saad Al-Sumaiti, N. V. Quynh and A. A. Z. Diab, "Effective Model Predictive Voltage Control for a Sensorless Doubly Fed Induction Generator," in IEEE Canadian Journal of Electrical and Computer Engineering, vol. 44, no. 1, pp. 50-64, winter 2021.
- **M. A. Mossa**, O. M. Kamel, H. Sultan, A. A. Diab" Parameter Estimation of PEMFC Model Based on Harris Hawks' Optimization and Atom Search Optimization Algorithms," Neural Comput&Applic (2020). https://doi.org/10.1007/s00521-020-05333-4.

- **M. A. Mossa**; Echeikh, H.; Quynh, N.V. A Novel Sensorless Predictive Voltage Control for an Induction Motor Drive Based on a Back-Stepping Observer-Experimental Validation. In IEEE Access, vol. 9,https://doi.org /10.1109/ACCESS.2021.3051436.

- **M. A. Mossa**, H. Echeikh and N. V. Quynh, "A Novel Sensorless Predictive Voltage Control for an Induction Motor Drive Based on a Back-Stepping Observer-Experimental Validation," in

IEEE Access, vol. 9, pp. 11921-11942, 2021.

- **M. A. Mossa**, Hamdi Echeikh**,** "A Novel Fault Tolerant Control Approach Based on Backstepping controller for a Five Phase Induction Motor Drive: Experimental Investigation," in ISA Transactions (https://doi.org/10.1016/j.isatra.2020.11.031).

- A.A. Diab, M. Mohammed, A. Alsumaiti, H. Sultan, **M. A. Mossa,** "A Novel Hybrid Optimization algorithm for Maximum Power Point Tracking of Partially Shaded Photovoltaic Systems," (Published chapter in the Sringer nature book entitled (**Advanced Technologies for Solar Photovoltaics Energy Systems**),**(ISBN 978-3-030-64564-9)**

- **M. A. Mossa**, Hamdi Echeikh, Atif Iqbal "Comparative Study Between Hysteresis Controller,Resonant Controller and Direct Torque Control of Five-phase IM Under Open-Phase Fault Operation," in Energies, 14(5),1317. (MDPI).

- **M. A. Mossa**, Hamdi Echeikh.; Ali, Z.M.; Ahmed, M.; Al-Gahtani, S.F.; Sultan, H.M. Design and Modeling of a Robust Sensorless Control System for a Linear Permanent Magnet Synchronous Motor. Electronics 2021, 10, 966 . (MDPI).

-Hamdi Echeikh, **M. A. Mossa**, N. V. Quynh, Abdelsalam Ahmed, *Hassan H. Alhelou* " Enhancement of Induction Motor Dynamics Using a Novel Sensorless Predictive Control Algorithm", in Energies, 14(14):4377. (MDPI).

- Hassan, Mohamed R.M., **M. A. Mossa**, and Gamal M. Dousoky. 2021. "Evaluation of Electric Dynamic Performance of an Electric Vehicle System Using Different Control Techniques" *Electronics* 10, no. 21: 2586.

- Ahmed, Abdelsalam A., Abualkasim Bakeer, Hassan H. Alhelou, Pierluigi Siano, and **M. A. Mossa**. 2021. "A New Modulated Finite Control Set-Model Predictive Control of Quasi-Z-Source Inverter for PMSM Drives" *Electronics* 10, no. 22: 2814.

- **M. A. Mossa**, Olfa Gam, and Nicola Bianchi. 2022. "Dynamic Performance Enhancement of a Renewable Energy System for Grid Connection and Stand-Alone Operation with Battery Storage" *Energies* 15, no. 3: 1002.

- **M. A. Mossa**, Mahmoud K. Abdelhamid, Ahmed A. Hassan, and Nicola Bianchi. 2022. "Improving the Dynamic Performance of a Variable Speed DFIG for Energy Conversion Purposes Using an Effective Control System" *Processes* 10, no. 3: 456.

- **M. A. Mossa**, H. Echeikh, and A. Iqbal, "Enhanced control technique for a sensor-less wind driven doubly fed induction generator for energy conversion purpose," *Energy Rep.*, vol. 7, pp. 5815–5833, 2021.

- **M. A. Mossa**, Olfa Gam, and Nicola Bianchi. 2022. " Performance Enhancement of a Hybrid Renewable Energy System Accompanied with Energy Storage Unit Using Effective Control System" IJRCS 2, no. 1: 599.

- **M. A. Mossa**, O. Gam, N. Bianchi and N. V. Quynh, "Enhanced Control and Power Management for a Renewable Energy-Based Water Pumping System," in *IEEE Access*, vol. 10, pp. 36028-36056, 2022.

- Mahfoud, Said, Aziz Derouich, Najib El Ouanjli, Nguyen V. Quynh, and **M. A. Mossa**. 2022. "A New Hybrid Ant Colony Optimization Based PID of the Direct Torque Control for a Doubly Fed Induction Motor" *World Electric Vehicle Journal* 13, no. 5: 78.

- **M. A. Mossa**, Hamdi Echeikh, Alfian Maarif, " Dynamic Performance Analysis of a Five-Phase PMSM Drive Using Model Reference Adaptive System and Enhanced Sliding Mode Observer," in Journal of Robotics and Control, vol. 3, no. 3,pp:289:308.

- Aref, M.; **Mossa, M.A**.; Lan, N.K.; Quynh, N.V.; Oboskalov, V.; Ali, A.F.M. Improvement of Fault Current Calculation and Static Security Risk for Droop Control of the Inverter-Interfaced DG of Grid-Connected and Isolated Microgrids. Inventions 2022, 7, 52.

- Mahfoud, Said, Aziz Derouich, Najib El Ouanjli, **M. A. Mossa**, Nguyen V. Quynh,. "A New Robust Direct Torque Control Based on a Genetic Algorithm for a Doubly Fed Induction Motor-Experimental Validation" .in Energies, 15(15):5384.

- Mahfoud, S.; Derouich, A.; Ouanjli, N.E.; **Mossa, M.A.**; Motahhir, S.; Mahfoud, M.E.; Al-Sumaiti, A.S. Comparative Study between Cost Functions of Genetic Algorithm Used in Direct

Torque Control of a Doubly Fed Induction Motor. Appl. Sci. 2022, 12, 8717.

- **M. A. Mossa**, Houari Khouidmi, Alfian Maarif, " Dynamic Performance Analysis of a Five-Phase PMSM Drive Using Model Reference Adaptive System and Enhanced Sliding Mode Observer," in Journal of Robotics and Control, vol. 3, no. 4,pp:464-475.

- **M. A. Mossa**, Nicola Bianchi, N. V. Quynh " Performance Dynamics Improvement of a Hybrid Wind/Fuel cell/Battery System for Standalone Operation'', IET renewable power generation. (10.1049/rpg2.12603).

- **M. A. Mossa**, Hamdi Echeikh, Hassan Alhelou, "A Novel Adaptive Second Order Sliding Mode Controlof Five-Phase Induction Motor-," in International transactions on electrical energy systems (Wiley/Hindawi), (doi: 10.1155/2022/8215525)

- Mahmoud K. Abdelhamid**, M. A. Mossa**, Ahmed A. Hassan " Enhancing the Dynamic Performance of a Wind Driven Standalone DFIG Using an Advanced Control Approach " Journal of robotics and control. (doi: 10.18196/jrc.v3i4.16046)

- Hassan, Mohamed R.M., **M. A. Mossa**, and Gamal M. Dousoky. 2022. "Dynamic Performance Analysis of An Electric Vehicle System Using Different Control Algorithms" Journal of advanced engineering trends. (doi: 10.21608/JAET.2022.138420.1202)

- Mahmoud K. Abdelhamid**, M. A. Mossa**, Ahmed A. Hassan " Enhancing the Dynamic Performance of a Wind Driven Standalone DFIG Using an Advanced Control Approach " Journal of advanced engineering trends. (doi: 10.21608/JAET.2022.140242.1177)

- El idrissi, Abderrahman, Aziz Derouich, Mahfoud, Said, Najib El Ouanjli, Ahmed Chantoufi, Ameena S. Al Sumaiti, **M. A. Mossa**,. " Bearing Fault Diagnosis for an Induction Motor Controlled by an Artificial Neural Network—Direct Torque Control Using the Hilbert Transform " . Mathematics (MDPI) journal.(doi:10.3390/math10224258)

- Hilali, A.; El Ouanjli, N.; Mahfoud, S.; Al-Sumaiti, A.S.; **Mossa, M.A**. Optimization of a Solar Water Pumping System in Varying Weather Conditions by a New Hybrid Method Based on Fuzzy Logic and Incremental Conductance. Energies 2022, 15, 8518.

- Abro, G.E.M.; Zulkifli, S.A.B.M.; Kumar, K.; El Ouanjli, N.; Asirvadam, V.S.; **Mossa, M.A**. Comprehensive Review of Recent Advancements in Battery Technology, Propulsion, Power Interfaces, and Vehicle Network Systems for Intelligent Autonomous and Connected Electric Vehicles. *Energies* **2023**, *16*, 2925.

- Khadar, S.; Abdelaziz, A.Y.; Elbarbary, Z.M.S.; **Mossa, M.A**. An Improved Sensorless Nonlinear Control Based on SC-MRAS Estimator of Open-End Winding Five-Phase Induction Motor Fed by Dual NPC Inverter: Hardware-in-the-Loop Implementation. *Machines* **2023**, *11*, 469.

- Loulijat, A.; Chojaa, H.; El marghichi, M.; Ettalabi, N.; Hilali, A.; Mouradi, A.; Abdelaziz, A.Y.; Elbarbary, Z.M.S.; **Mossa, M.A**. Enhancement of LVRT Ability of DFIG Wind Turbine by an Improved Protection Scheme with a Modified Advanced Nonlinear Control Loop. Processes 2023, 11, 1417.

- Rasha Abdelazeem, **Mossa, M.A**, Ahmed A. Elgaafry. Performance Enhancement of a Variable Speed Permanent Magnet Synchronous Generator Used For Renewable Energy Application. IJRCS 2023, vol.3, no.3.

- **M. A. Mossa**, Najib ElOuanjli, Olfa Gam, T. Duc Do, " Enhancing the Performance of a Renewable Energy System Using a Novel Predictive Control Method,'' Electronics. 2023; 12(16):3408.

- N. El Ouanjli, S. Mahfoud, A.S. Al-Sumaiti, S. El Daoudi, A. Derouich, M. El Mahfoud, **M. A. Mossa**, ''Improved twelve sectors DTC strategy of Induction motor drive using Backstepping speed controller and P-MRAS stator resistance identification-Design and Validation,'' Alexandria Engineering Journal, vol. 80, pp. 358-371, 2023/10/01.

- H. Chojaa, A. Derouich, O. Zamzoum, A. Watil, M. Taoussi, A.Y.Abdealziz, Elbarbary, Z.M.S.; **Mossa, M.A**., "Robust Control of DFIG-Based WECS Integrating an Energy Storage System With Intelligent MPPT Under a Real Wind Profile," in IEEE Access, vol. 11, pp. 90065-90083, 2023.

Under review and preprints

1] Clotaire Thierry, Godpromesse Kenne, **M. A. Mossa** " Performance Enhancement of A Grid Connected-Self Excited Induction Generator Using Robust Predictive control Strategies" . Energy Systems (Springer). (**Submitted**)

2] M. E. marghichi, A. Loulijat, S. Dangoury, Y. Zahrou , H. Chojaa, A. Y. Abdelaziz, Z. M. S. Elbarbary, **M. A. Mossa** " Battery capacity estimation using the Bald eagle search Optimization algorithm'', Energy Reports (Elseveir). (**Submitted**)

3] A. Loulijat, A. Hilali, M. E. marghichi, H. Chojaa, Ettalabi, N., A. Y. Abdelaziz, **M. A. Mossa** " A comparison between two crowbar scheme configurations with PI controller for a DFIG-based wind farm against the excessive current flow in the rotor circuit'', **Submitted to** Electric Power Components and Systems (Taylor & Francis).

4] A. Loulijat, H. Chojaa, M. E. marghichi, N. Ettalabi, A. Hilali, A. B. Barnawi, Z.M.S. Elbarbary, **M. A. Mossa** "Application of a Modified Protection Scheme with PI Controller to Improve the Behavior of DFIG-Wind Farm During Balanced Voltage Dip", **Submitted to** Processes (MDPI).

5] M. Chabani, M. Benchoia, A. Golea, A. Y. Abdelaziz **, M. A. Mossa** "A New Sensor-less voltage and frequency control of stand-alone DFIGs based deadbeat direct-rotor flux control-Experimental Validation", **Submitted to** ISA Transactions (Elseveir).

6] H. Sultan, A. Y. Abdelaziz , **M. A. Mossa** " Parameters Identification of Solar Cells Mathematical Models Using Metaheuristic Algorithms,''**Submitted to** BOOK: Advances in Solar Photovoltaic Energy Systems (IntechOpen, UK).

• **Books**

- **M. A. Mossa**, "Control of a Wind Driven Doubly Fed Induction Generator During Grid Faults," Grin Verlag Publisher, Germany (**Published**). DOI:10.3239/9783656367765.

- Najib El Ouanjli, **M. A. Mossa**, Mariya Ouaissa, Mariyam Ouaissa, " Soft Computing in Renewable Energy Technology ", CRC Press Taylor&Francis (**ISBN: 9781032611914**).

- M. K. Abdelhamid, **M. A. Mossa**, and A. A. Hassan, "Advanced Controls for Wind Driven Doubly Fed Induction Generators", submitted to (CRC Press Taylor&Francis). **(ISBN:9781032572901)**.

- Almoataz Y. Abdealziz, **M. A. Mossa**, Najib El Ouanjli, '' Advances in solar photovoltaic energy systems''. in IntechOpen, UK. **ISBN: 978-0-85466-070-4**.

- Almoataz Y. Abdealziz, **M. A. Mossa**, Mohit Bajaj, '' Energy Storage Devices: A Comprehensive Review''. Under processing in IntechOpen, UK. **ISBN: 978-0-85014-720-9**.

- **M. A. Mossa**, Najib El Ouanjli, Mariya Ouaissa, Mariyam Ouaissa, " Energy Conversion Systems based Artificial Intelligence: Applications and Tools ", Springer Nature Book Series (**Under Processing**).

JOURNAL AND CONFERENCES REVIEW ACTIVITIES

- **Served as technical session chair in 2021 IEEE 12th Energy Conversion Congress & Exposition - Asia (ECCE-Asia), Singapore.**
- **Serves as a member of technical committee of the 2nd International Conference on POWER, ENERGY AND CYBERNETICS (ICPEC 2023), Veitnam.**
- **I served as a recognized reviewer for more than 35 international journals and conference proceedings with more than 93 reviewed articles (https://www.webofscience.com/wos/author/record/213957).**

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