



Moez Allouche

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About me

Dr. Moez Allouche is an Associate Professor of Electrical Engineering at the Higher Institute of Industrial Management of Sfax (ISGI-Sfax), Tunisia. His teaching and research focus on control systems, renewable energy integration, and intelligent fault-tolerant control. He has extensive experience in academic supervision, project coordination, and international collaboration with research teams in France and Spain. His work contributes to the advancement of robust and predictive control strategies for renewable energy systems.

Work experience

Associate Professor in Electrical Engineering | Higher Institute of Industrial Management of Sfax (ISGI-Sfax), Tunisia | 12/09/2016 - Current | sfax, Tunisia

Teaching, research, and supervision activities in control and renewable energy systems.

coordinator and head of the professional master's in Electrical Engineering entitled "Management, Technologies and Applications of Green Energies."

Member of the Laboratory of Sciences and Techniques of Automatic Control & Computer Engineering (Lab-STA), National Engineering School of Sfax.

Associate Professor | Higher Institute of Industrial Systems of Gabes (ISSI-Gabes), Tunisia | 12/09/2011 - 31/08/2016 | Gabes, Tunisia

Senior Research Assistant | Higher Institute of Technological Studies of Mahdia (ISET-Mahdia), Tunisia | 12/09/2004 - 31/08/2011 | Mahdia, Tunisia

Technical Education Teacher | High School of Kairouan, Tunisia | 15/09/1997 - 31/08/2002 | Kairouan,, Tunisia

Education & Training

Bachelor's Degree in Electrical Engineering | Higher Teacher Training College for Technical Education | 15/09/1993 - 30/06/1997 | Tunis, Tunisia

Field of study: Electrical Engineering

Certificate of Specialized Higher Studies | National Engineering School of Sfax (ENIS), Tunisia. | 01/09/2002 - 30/06/2004 | Sfax, Tunisia

Field of study: Electrical Engineering

Master's Degree in Electrical Engineering | National Engineering School of Sfax (ENIS), Tunisia | 15/09/2004 - 30/06/2006 | Sfax, Tunisia

Field of study: Electrical Engineering

Ph.D. in Electrical Engineering | National Engineering School of Sfax (ENIS), Tunisia. | 01/01/2007 - 30/12/2010 | Sfax, Tunisia

Field of study: Electrical Engineering

Habilitation (HDR) in Electrical Engineering | National Engineering School of Sfax (ENIS), Tunisia | 01/01/2015 - 30/05/2018 | Sfax, Tunisia

Field of study: Electrical Engineering

Projects

Digital Twin Project (CRNS, Sfax): Optimization and management of hybrid renewable energy systems. | 01/01/2025 - 31/12/2028

Digital Twin Project (CRNS, Sfax): Development of digital twin models for the optimization and intelligent management of hybrid renewable energy systems.

Certifications

- **CDOSS Machine Learning with Python** | Center for Data Oriented Systems and Solutions | presential | 16/10/2023

CDOSS Deep Learning with Python | Center for Data Oriented Systems and Solutions, 16/10/2023 | presential | 17/11/2023

Skills

MATLAB/Simulink, Python, renewable energy modeling, power electronics, system optimization. | Fault detection and diagnosis, fuzzy logic control, robust control design | Project management, academic supervision, scientific communication, teamwork.

Language Skills

Mother tongue(s): **Arabe**

	Understanding		Speaking		Writing
	Listening	Reading	Spoken production	Spoken interaction	
Français	C1	C1	C1	C1	C1
Anglais	C1	C1	C1	C1	C1

Conferences & Seminars

Chairs of the 22nd International conference on Sciences and Techniques of Automatic control & computer engineering (STA'2025). | 22/12/2025 - 24/12/2025 | Hammamet, Tunisia.

13th International Conference on Systems and Control ICSC2025 | 20/10/2025 - 22/10/2025 | Marrakech, Morocco

Chair of the International Conference on Sciences and Techniques of Automatic Control (STA 2022),. | 19/12/2022 - Current | Sousse

Member Scientific Committee of the International Conference on Systems and Control (ICSC 2023) | 18/12/2023 - Current | Sousse

Hobbies and Interests

Research interest

Renewable energy technologies (wind, solar, hybrid systems)

Intelligent control and automation

Scientific research and innovation in sustainable energy

Supervising and mentoring engineering students

International academic cooperation

Teaching Experience

Teaching Experience | 12/09/2006 - Current

Fuzzy Logic and Neural Networks in Control Systems (Research Master Degree)

Modeling and Control of Robotic Systems (Bachelor's Degree)

Wind Power Systems (Professional Master's Degree)

Renewable Energy I: Solar and Wind (M.Sc. Program)

Linear Dynamic Systems, Machine Control ((Bachelor's Degree)

Publications

Fault tolerant tracking observer-based controller design for DFIG wind turbine with ITSC faults

Y. Sayahi, M. Allouche, M. Ghamgui, S. Moreau, F. Tadeo, D. Mehdi. Fault tolerant tracking observer-based controller design for DFIG based wind turbine affected by stator inter-turn short circuit. *Symmetry*, 17, 1343, pp. 1-26, 2025.

MPPT control of a variable speed wind turbine via a T-S fuzzy model-based approach

Moez Allouche, Karim Dahecha and Jean-Paul Gaubertb. Maximum Power Point Tracking control of a variable speed wind turbine via a T-S fuzzy model-based approach. *Journal of Intelligent & Fuzzy Systems*. Vol.46 (2024), pp. 8529–8541.

A robust non-singular fast terminal sliding mode controller for optimising a wind energy process

Karim Dahech, Moez Allouche and Tarak Damak. A robust non-singular fast terminal sliding mode controller for optimising a wind energy process. *Int. J. Industrial and Systems Engineering*, Vol. 46, No. 1, 2024.

Intelligent power control of wind conversion system based on Takagi–Sugeno fuzzy model

Sahbi Abderrahim, Moez Allouche, Mohamed Chaabane, Intelligent power control of wind conversion system based on Takagi–Sugeno fuzzy model. *International Journal of Circuit Theory and Applications* 51 (5), pp. 2247-2265, 2023.

Energy Management of an hybrid pumping system (PV/Wind/Battery) based on TS fuzzy logic control

Zeineb Ben Safia, Moez Allouch, Mohamed Chaabane, Energy Management of an hybrid pumping system (PV/Wind/Battery) based on TS fuzzy logic control. *Optimal Control, Application and Methods*. Vol. 44 pp.373–390, 2023.

TS Fuzzy Fault-Tolerant Tracking Control of a PV Pumping System Based on an Induction Motor

Zeineb Ben Safia, Maher Kharrat, Moez Allouche & Mohamed Chaabane, TS Fuzzy Fault-Tolerant Tracking Control of a PV Pumping System Based on an Induction Motor, *IETE Journal of Research*, Vol. 69, (7), 2023. .

Robust H2-Optimal TS Fuzzy Controller Design for a Wind Energy Conversion System.

Maher Kharrat, Sahbi Abderrahim and Moez Allouche, Robust H2-Optimal TS Fuzzy Controller Design for a Wind Energy Conversion System. *Advances in Materials Science and Engineering* Volume 2022.

Power Optimization of wind energy conversion system using T-S Fuzzy approach.

Sahbi Abderrahi, Moez Allouche and Mohamed Chaabane. Power Optimization of wind energy conversion system using T-S Fuzzy approach. *Int. J. of Industrial and Systems Engineering*. Vol. 38, No. 1, pp. 35-58, 2021.

Decentralized T-S Fuzzy Control for Solar PV Powered Water Pumping System Drive by Induction Motor

Zeineb Ben Safia, Moez Allouch, Mohamed Chaabane, Decentralized T-S Fuzzy Control for Solar PV Powered Water Pumping System Driving by Induction Motor. *European Journal of Electrical Engineering*. Vol. 22, No. 4-5, October, pp. 301-311, 2020. .

A New Robust Control Strategy for a Wind Energy Conversion System Based on a T-S Fuzzy Model

Sahbi Abderrahim, Moez Allouche, Mohamed Chaabane, A New Robust Control Strategy for a Wind Energy Conversion System Based on a T-S Fuzzy Model. *International Journal of Smart Grid*. Vol.4, No.2, pp. 88-99, June, 2020.

The above publications represent the most recent articles published over the past five years.