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Moez ALLOUCHE - Assistant professor

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Short CV

Moez Allouche received the Certificate of Specialized Higher Studies (2004) and the Master degree (2006) from the National Engineering School of Sfax, Tunisia, the PhD thesis from the National Engineering School of Sfax, with the collaboration of Poitiers National School of Engineering (ENSIP) France (2010), his habilitation in 2018 at the National Engineering School of Sfax, Tunisia. From 1997 to 2002, he was an Technical Teacher at the High School of Kairouan. From 2004 to 2011, he was an Associate Professor at the Higher Institute of Technological Studies of Mahdia (ISET-Mahdia). Since 2011, he has been an Assistant Professor at the Higher Institute of Industrial Management of Sfax (ISGI-Sfax). He was a Visiting searcher at the Laboratory of Computer and Automatic for System (LIAS), Poitiers National School of Engineering (ENSIP), France (2015 and 2016) and the Department of Systems Engineering, University of Valladolid, 47011 Valladolid, Spain (2012). Dr. Allouche was a Co-Organization Chairs at the international conference on Sciences and Techniques of Automatic control and computer engineering and member of The Tunisian Association of Digital Techniques and Automatic. His research interests include, on the theoretical side, analysis and control of fuzzy/LPV polytopic models, multiple model approach, robust control, fault detection and isolation (FDI), fault tolerant control (FTC), analysis and control via LMI optimization techniques and Lyapunov methods. On the application side he is mainly interested in renewable energy (photovoltaic and wind turbine system). He published over 30 journal/conference papers.

Education & Degrees

- 2004: Certificate of Specialized Higher Studies from National Engineering School of Sfax (ENIS).
- 2006: Master degree from ENIS.
- 2010: Ph.D. Degree in Electrical Engineering from ENIS.
- 2018: HDR in Electrical Engineering, Automatic and informatics industrial from ENIS.

Research interests

His research interests include, on the theoretical side, analysis and control of fuzzy/LPV polytopic models, multiple model approach, robust control, fault detection

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and isolation (FDI), fault tolerant control (FTC), analysis and control via LMI optimization techniques and Lyapunov methods. On the application side he is mainly interested in renewable energy (photovoltaic and wind turbine system).

Academic Positions

- 1997-2002: Technical Teacher at the High School of Kairouan.
- 2004-2011: Associate Professor at the Higher Institute of Technological Studies of Mahdia (ISET-Mahdia)
- 2011-2016: Assistant Professor at the Higher Institute of Industrial Systems of Gabes (ISSI-Gabes).
- From 2016: Assistant Professor at the Higher Institute of Industrial Management of Sfax (ISGI-Sfax).

Academic Organisations

- Co-Organization Chairs of the international conference on Sciences and Techniques of Automatic control and computer engineering.
- Member of The Tunisian Association of Digital Techniques and Automatic.

Teaching Experience

- M.Sc. degree: developing and teaching course on Multimodel and Multicommand Approaches, Search Master in Automatic and Robotic System. Higher Institute of Industrial Systems of Gabes (ISSI-Gabes).
- M.Sc. degree: developing and teaching course on Fault Tolerant Control, Search Master in Automatic and Robotic System. Higher Institute of Industrial Systems of Gabes (ISSI-Gabes).
- M.Sc. degree: developing and teaching course on renewable energy 1 (Solar and wind energy). Master Professional in Electrical Systems Control. Higher Institute of Industrial Systems of Gabes (ISSI-Gabes).
- License Course in Industrial Maintenance level 3: developing and teaching course on Machine Control. Higher Institute of Industrial Management of Sfax.

Journal Publications

[1] **Allouche, M.**, Chaabane, M., Souissi, M. and Mehdi, D. Takagi-Sugeno Fuzzy Control of Induction Motor. International Journal of Electrical and Computer Engineering (IJECE), 5(3):167-173, 2010.

[2] **Allouche, M.**, Chaabane, M., Souissi, M. and Mehdi, D. Fuzzy tracking control for indirect field-oriented induction machine using integral action performance. The

Institution of Electronics and Telecommunication Engineers (IETE) Journal of research, 57(3):443-450, 2011.

[3] **Allouche, M.**, Chaabane, M., Souissi, M., Mehdi, D. and Tadeo, F. Takagi-Sugeno Fuzzy Observer Design for Induction Motors with Immeasurable Decision Variables: State Estimation and Sensor Fault Detection. International Journal of computer applications (IJCA), 23(4):44-51, 2011.

[4] **M. Allouche**, M. Chaabane, M. Souissi, D. Mehdi, F. Tadeo, State Feedback Tracking Control for Indirect Field-oriented Induction Motor Using Fuzzy Approach. International Journal of Automation and Computing . 10(2), April 2013, 99-110.

[5] **Allouche, M.**, Chaabane, M., Souissi, M., Mehdi, D. and Tadeo, F. Fuzzy Sensor Fault-Tolerant Control of an Induction Motor. Journal of Intelligent & Fuzzy Systems, 29 (2015) 713–723.

[6] **M. Allouche**, K. Dahech, M. Chaabane. Multiobjective Maximum Power Tracking Control of Photovoltaic Systems: T-S Fuzzy Model-Based Approach. June 2017, Soft Computing Journal. April 2018, Volume 22, Issue 7, pp 2121–2132.

[7] **M. Allouche**, K. Dahech, M. Chaabane, M. Driss. Fuzzy Observer-based Control for Maximum Power Point Tracking of a Photovoltaic System. International Journal of Systems Science, 2018, Vol.49, N0.5, 1061-1073.

[8] **M. Allouche**, K. Dahech, M. Chaabane, M. Driss. T-S Fuzzy Control for MPPT of Photovoltaic Pumping System. Journal of Intelligent & Fuzzy Systems, vol. 34, no. 4, pp. 2521-2533, 2018

[9] Habib Ben Zina, **Moez Allouche**, Mansour Souissi, Mohamed Chaabane and Larbi Chrifi-Aloui. Robust Sensor Fault Tolerant Control of Induction Motor Drive. International Journal of Fuzzy Systems (IJFS). (2017) 19:155-166.

[10] Habib Ben Zina, **Moez Allouche**, Mansour Souissi, Mohamed Chaabane, Larbi Chrifi-Aloui and Maha Bouattour. Descriptor Observer Based Fault Tolerant Tracking Control for Induction Motor Drive. Automatika-Journal for control, Measurement, Electronics, Computing and Communications, 57(3), 703–713 (2016).

[11] K. Dahech, **M. Allouche**, T. Dammak, and Fennando Tadeo. Backstepping sliding mode control for maximum power pointtracking of a photovoltaic system. Electric Power Systems Research 143 (2017) 182–188.

[12] **Allouche, M.**, Chaabane, M., Souissi, M., Mehdi, D. and Tadeo, F. Takagi-Sugeno Fuzzy State Feedback Tracking Control for Indirect Field-oriented Induction Motor

Using Fuzzy Approach. International Journal of Automation and Computing (IJAC), 10(2):99-110, 2013.

[13] Habib Ben Zina, **Moez Allouche**, Mansour Souissi, Mohamed Chaabane, Larbi Chrifi-Aloui and Maha Bouattour. A Takagi-Sugeno fuzzy control of induction motor drive: experimental results. International journal of Automation and Control, Vol. 12, No. 1, pp:44-61, 2018.

[14] Habib Ben Zina, **Moez Allouche**, Mansour Souissi, Mohamed Chaabane and Larbi Chrifi-Aloui. Fault Tolerant Control for Induction Motor Drive Using Descriptor Approach. Wseas Transactions on Systems and Control. V 10, 624-631, 2015.

[15] Habib Ben Zina, **Moez Allouche**, Mansour Souissi, Mohamed Chaabane, Larbi Chrifi-Aloui and Maha Bouattour. Robust fuzzy fault tolerant control for induction motor subject to sensor fault. International journal of Automation and Control, Vol. 12, No. 2, pp:271-290, 2018.

Conferences Publication

[1] **Allouche, M.**, Chaabane, M., Souissi, M. and Mehdi, D. Fuzzy tracking control for induction motor via T-S fuzzy model. 9th international conference on Sciences and Techniques of Automatic control & computer engineering STA'2008, Sousse, Tunisia. December 20-23, 2008.

[2] **Allouche, M.**, Chaabane, M., Souissi, M. and Tadeo, F. Unknown input observers design of induction motor using Takagi-Sugeno fuzzy approach. 11th international conference on Sciences and Techniques of Automatic control & computer engineering STA'2010, Monastir, Tunisia. December 19-21, 2010.

[3] **Allouche, M.**, Chaabane, M., Souissi, M. and Mehdi, D. Robust D-stability analysis of an induction motor. 16th Mediterranean Conference on Control and Automation, Med08. Congress Centre, Ajaccio, France. June 25-27, 2008.

[4] **Allouche, M.**, Chaabane, M., Souissi, M., Mehdi, D. And Hajjaji, A. Takagi-Sugeno Fuzzy Sensor Faults Estimation of an induction motor. 18th Mediterranean Conference on Control & Automation, Med10. Congress Palace Hotel, Marrakech, Morocco June 23-25, 2010.

[5] **Allouche, M.**, Chaabane, M., Souissi, M. and Mehdi, D. Tracking control for uncertain induction motor with external disturbances. 6th International Conference on Electrical Systems And Automatic Control JTEA2010, Hammamet, Tunisia. March 26-28, 2010.

[6] **Allouche, M.**, Chaabane, M., Souissi, M. and Mehdi, D. Takagi-Sugeno Fuzzy Control of DC-DC Boost Converter in PV Systems. Proceedings of the 2nd

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International Conference on Systems and Control ICSC12, Marrakech, Morocco, June 20-22, 2012.

[7] H. Zayani , **M. Allouche** , M. Kharrat, M. Chaabane. T-S Fuzzy Maximum Power Point Tracking Control of Photovoltaic conversion System. 16eme International Conference on Sciences and Techniques of Automatic Control & Computer Engineering STA'2015, Monastir, Tunisia. December 21-23, 2015.

[8] Habib Ben Zina, **Moez Allouche**, Mansour Souissi, Mohammed Chaabane. Fuzzy Tracking Control for Field-Oriented Induction motor. Proceedings of the 3rd International Conference on Systems and Control ICSC13, Algeria, October 29-31, 2013.

[9] Habib Ben Zina, **Moez Allouche**, Mansour Souissi, Mohammed Chaabane. Takagi-Sugeno Fuzzy Observer Based Fault Tolerant Tracking Control For Induction Motor Drive. Proceedings of the 4th International Conference on Systems and Control ICSC15, Sousse, Tunisia, April 28-30, 2015.

[10] Habib Ben Zina, **Moez Allouche**, Mansour Souissi, Mohammed Chaabane. Tracking Control For Induction Motor Using Takagi-Sugeno Approach. 14th International Conference on Sciences and Techniques of Automatic Control & Computer Engineering - STA'2013, Sousse, Tunisia, December 20-22, 2013.

Selection of internationals journal with their impact factor

Journal (number of publications)	Impact Factor
International Journal of Electrical and Computer Engineering	0.56
The Institution of Electronics and Telecommunication Engineers (IETE) Journal of research (IETE) Journal of research	0.49
International Journal of computer applications (IJCA)	0.36
Journal of Intelligent & Fuzzy Systems	1.426
International Journal of Automation and Computing	1.7
Soft Computing Journal	2.36
International Journal of Systems Science	2.185
International Journal of Fuzzy Systems	2.396
Automatika-Journal for control, Measurement, Electronics, Computing and Communications	0.311
Electric Power Systems Research-Journal	2.76

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Wseas Transactions on Systems and Control	0.85
International journal of Automation and Control	0.91