

Dr. Mohammed Ahmed Hassan

Assistant Professor



Personal Data:

Nationality | Egyptian
Date of Hire | October 2021
Date Rank Obtained | January 2015
Department | Electrical Engineering
Email |
Office No | 2117
Office Phone No |

Education:

Academic Degree	Major	specialty	Place of Issue	Address	Date
Doctorate (PhD)	Electrical Engineering	Signal Processing	University of South Carolina	Columbia, SC, USA	August 2013
Masters (M.Sc.)	Electrical Engineering	Electronics	Cairo University	Cairo, Egypt	December 2004
Bachelor (B.Sc.)	Electrical Engineering	Electronics and communication	Cairo University	Fayoum, Egypt	May 2001

PhD, Master or Fellowship Research Title: (Academic Honors or Distinctions):

PhD	Polyspectral Signal Analysis Techniques for Condition-Based Maintenance of Helicopter Drive-Train
Master	Digitally Controlled CMOS Analog Building Blocks Using New Current Division Networks

Experiences:

Title of Job	Address of Work	Country	Date	
Assistant professor	Fayoum University	Egypt	From	2015
			To	2021
Visiting research scholar	Centre of Excellence in Predictive Maintenance, British University in Egypt	Egypt	From	2015
			To	2019
Post-doctoral Fellow	CBM Research Center, University of South Carolina	USA	From	2013
			To	2014
Research Assistant	CBM Research Center, University of South Carolina	USA	From	2009
			To	2013
Teaching Assistant	Fayoum University	Egypt	From	2001
			To	2009

Research Interests:

1. Signal processing applications in predictive maintenance
2. Feature extraction, fault detection and classification using machine learning
3. Modeling and simulation of electrical and mechanical systems
4. Smart grid and PV systems

Publications:

#	Name of author(s)	Title of Publication	Publisher and Date of Publication	Link of Publication
1	Mohamed A. Hassan, Micheal R. Habib, Abdel Moez Bayoumi	Detection and Classification of Helicopter Drive Shaft Faults Using Neuro-Fuzzy Based on Wavelet Power Spectrum Algorithm	In: Ball A., Gelman L., Rao B. (eds) Advances in Asset Management and Condition Monitoring. Smart Innovation, Systems and Technologies, vol 166. Springer, Cham, August 2020	Click Here
2	A. A. Abdelfatah, M. A. Hassan, M. Lotfy, A. Dimitri	Health Monitoring of Centrifugal Pumps Using Digital Models	Journal of Dynamic Systems, Measurement, and Control, vol. 141, no. 9, September, 2019	Click Here
3	M. A. Hassan, M. R. Habib, R. A. Abul Seoud, and A. M. Bayoumi	Wavelet-based Multiresolution Bispectral Analysis for Detection and Classification of Helicopter Drive-shaft Problems	Journal of Dynamic Systems, Measurement, and Control, vol. 140, no. 6, June, 2018.	Click Here
4	K. M. Gouda, J. A. Tarbutton, M. A. Hassan, D. Coats, and E-M. E. Bayoumi	A wavelet-based index for fault detection and its application in condition monitoring of helicopter drive-train components	International Journal of Manufacturing Research. vol. 10, pp. 87-106, January 2015	Click Here
5	M. A. Hassan, J. Tarbutton, A. Bayoumi, and Yong-June Shin	Condition Monitoring of Helicopter Trail-Rotor Drive-Shafts Using Quadratic-Nonlinearity Metric Based on Cross-Bispectral Analysis"	IEEE Transactions on Aerospace and Electronic Systems vol. 50, no. 4, pp. 2819-2829, October 2014.	Click Here
6	M. A. Hassan, A. Bayoumi, and Yong-June Shin	Quadratic-Nonlinearity Index Based on Bicoherence and Its Application in Condition Monitoring of Drive-Train Components	IEEE Transactions on Instrumentation and Measurement, vol. 63, no. 3, pp. 719-728, March 2014	Click Here

7	M. A. Hashiesh, S. A. Mahmoud, A. M. Soliman	New Four-Quadrant CMOS Current-Mode and Voltage-Mode Multipliers	Analog Integrated Circuits and Signal Processing, vol. 45, no. 3, pp. 295-307, December 2005.	Click Here
8	S. A. Mahmoud, M. A. Hashiesh, and A. M. Soliman	Low Voltage Digitally Controlled Fully Differential Current Conveyor	IEEE Transactions on Circuits and Systems I: REGULAR PAPERS, vol. 52, no. 10, pp. 2055-2064, October 2005	Click Here
9	M. R. Habib, M. A. Hassan, A. M. Bayoumi	Effect of Tail-Rotor Torque Variation on Vibration at Helicopter Tail-Rotor Drive-Train,	Proceeding of the IEEE Aerospace Conference, Big Sky, Montana, USA, March 2018	Click Here
10	A. A. Abdel Fatah, M. A. Hassan, M. Lotfy, A. S. Dimitri	Using Digital Models For Condition Based Maintenance Of High Pressure Pumps in SWRO Desalination Plants	Proceedings of the Asia Turbomachinery and Pump Symposium, Singapore, March 2018.	Click Here
11	M. A. Hassan, A. A. Fatah, and A. M. Bayoumi	Cross-bispectral analysis for detection and diagnosis of helicopter trail-rotor drive-shaft problems,"	Proceeding of the IEEE Aerospace Conference, Big Sky, Montana, USA, March 2016.	Click Here
12	M. A. Hassan, D. Coats, and A. Bayoum	Condition Monitoring of Helicopter Drivetrain Components Using Bispectral Analysis	Proceeding of the AHS International 70th Annual Forum & Technology Display, Montreal, Canada, May 2014.	Click Here
13	M. A. Hassan, Yong-June Shin, A. Bayoumi, and L. Eisner	Nonlinear Vibration-Interaction Metric for Health Assessment of Helicopter Drivetrain Systems	Proceeding of the Technical Specialists Meeting on Airworthiness, Condition Based Maintenance (CBM), and Health and Usage Monitoring (HUMS), February 2013	Click Here
14	M. A. Hassan, D. Coats, K. Gouda, Yong-June Shin, and A. Bayoumi	Analysis of Nonlinear Vibration-Interaction Using Higher Order Spectra to Diagnose Aerospace System Faults	Proceeding of the IEEE Aerospace Conference, March 2012.	Click Here
15	M. A. Hassan, D. Coats, Yong-June Shin, and A. Bayoumi	Quadratic-Nonlinearity Power-Index Spectrum and Its Application in Condition Based Maintenance (CBM) of Helicopter Drive Trains	Proceeding of the IEEE International Instrumentation and Measurement Technology Conference, pp. 1456-1460, May 2012.	Click Here
16	D. Coats, M. A. Hassan, N. Goodman, V.	Design of Advanced Time-Frequency Mutual	Proceeding of the IEEE Aerospace Conference, March 2011.	Click Here

	Blechertas, Yong-June Shin, and A. Bayoumi	Information Measures for Aerospace Diagnostics and Prognostics,		
17	M. A. Hassan, D. Coats, Yong-June Shin, A. Bayoumi, and A. Barry, \	Bicoherence Analysis for Condition Assessment of Multi-Faulted Helicopter Drivetrain Systems	Proceeding of the AHS International 68th Annual Forum & Technology Display, May 2012.	Click Here
18	S. A. Mahmoud, M. A. Hashiesh, A. M. Soliman,	Digitally Controlled Fully Differential Current Conveyor: CMOS Realization and Applications	Proceeding of the IEEE International Symposium on Circuits and Systems, ISCAS2005, vol. 2, pp. 1622-1625, May 2005.	Click Here
19	M. A. Hashiesh, S. A. Mahmoud, A. M. Soliman	Digitally controlled CMOS Balanced Output Transconductor Based on Novel Current-Division Network and its Applications	Proceeding of the 47th IEEE International Midwest Symposium on Circuits and Systems, MWCAS2004, vol. 3, pp. 323-326, July 2004	Click Here

Language Proficiency:

1. Arabic
2. English