

CURRICULUM VITAE

Farag Omar, Ph.D.

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1. Education

- Ph.D., Mechanical Engineering (Dynamics, automation, and control), University of British Columbia, Vancouver, BC, Canada, 2000.
- M.A.Sc., Mechanical Engineering, University of Waterloo, Waterloo, ON, Canada, 1995.
- B.A.Sc., Mechanical Engineering, University of Garyouns, Benghazi, Libya, 1989.

2. Professional Experience

- **Associate Professor**, Department of Mechanical Engineering, UAEU, Al-Ain, UAE, September 2011 – Present
- **Unit Head**, College Requirement Unit, College of Engineering, United Arab Emirates University, Al-Ain, UAE. September 2005 – Aug. 2010
Assistant Professor, Department of Mechanical Engineering, UAEU, Al-Ain, UAE. Sep. 2003 – Aug. 2011
- **Research & Development Engineer**, Intelligent Mechatronics Systems Inc., Waterloo, ON, Canada, January 2002 – July 2003
- **Post-doctoral Research Fellow**, Department of Mechanical Engineering, University of British Columbia, Vancouver, BC, Canada, July 2000 - Nov. 2001
- **Teaching & Research Assistant**, Department of Mechanical Engineering, University of British Columbia, Vancouver, BC, Canada, January 1995 - June 2000
- **Teaching & Research Assistant**, Department of Mechanical Engineering, University of Waterloo, Waterloo, ON, Canada, May 1992 – December 1994
- **Consultant Engineer**, Brown & Root Overseas, Ltd., Benghazi, Libya, May 1989 – December 1991

3. Curriculum and Course Developments

- Led major curriculum enhancements for the College Requirement Unit courses to fulfill ABET requirement. The enhanced curriculum was launched on September 2006.
- Contributed significantly in the Mechanical Engineering curriculum enhancement at the UAEU launched on September 2007.
- Developed two new courses, introduction to mechatronics and dynamic systems lab, as a part of the curriculum enhancement in the ME program.

4. Courses Taught at UAEU

- Advanced dynamics and control MECH 615
- Dynamic systems and control, MECH 409
- Introduction to mechatronics, MECH 350

- Fundamentals of engineering III (System dynamics), GENG 310
- Engineering control, MECH 506
- Dynamics and vibrations, MECH 310
- Dynamic systems lab, MECH 450

5. Research and Scholarly Activities

a. Articles in Refereed Journals

1. A.M. Gaouda, A.M. Abdrabou, O.A. Abuzeid and Farag K. **Omar**, "Modelling Nonconductive Coating Based on EIS and WMR Tools", *Frontiers in Aerospace Engineering (FAE)*, Accepted, April 2013.
2. K. A. F Moustafa, K. H. Harib, and **F Omar**, "Optimum controller design of an overhead crane: Monte Carlo versus pre-filter-based designs", *Transactions of the Institute of Measurement and Control*, Vol. 35, No. 2, PP 219-226, 2012.
3. A. M. Gaouda, A. M. Abdrabou, O. A. Abuzeid, **Farag K Omar**, "Integrating EIS and Wavelet Multi-Resolution Analysis; Part 1: Enhancing Monitoring of Nonconductive Coatings", *Applied Mechanics and Materials*, Vol. 110, PP 1065-1071, 2012.
4. K. A. F. Moustafa, Y. Haik, S. Aldajah, and **F. Omar**, "Leak Localization in Pipelines via Computational Pipeline Monitoring", submitted for publication in the *Journal of Pressure Vessel Technology*, 2011 (accepted with revisions).
5. Emad Elnajjar, Mohamed Y. E. Selim, **Farag Omar**, "Comparison Study of Dual Fuel Engine Performance and Overall Generated Noise under Different Dual Fuel Types and Engine Parameters", *International Journal of Basic & Applied Sciences, IJBAS-IJENS* Vol. 11, No. 03, June 2011.
6. **F. Omar** and A. Gaouda, "Dynamic Wavelet-Based Tool for Gearbox Diagnosis", submitted for publication in the *Journal of Mechanical Systems and Signal Processing*, Elsevier Ltd., Vol. 26, pp 190, 2012.
7. **Farag Omar**, Kamal Moustafa, and Samir Emam, "Mathematical Modeling of Gearbox Including Defects with Experimental Verification", the *Journal of Vibration and Control*, SAGE Publications, Vol. 18, No. 9, 2011.
8. **F. Omar** and A. Gaouda, "Gear Tooth Diagnosis using Wavelet Multi-Resolution Analysis Enhanced by Kaiser's Windowing", *Transactions of the Institute of Measurement and Control*, Vol. 33, No. 5, PP 573, 2011.
9. **F. Omar**, K. Mustafa, and K. Harib, "Control of Interval Parameter Overhead Cranes via Monte Carlo Simulation", *Transactions of the Institute of Measurement and Control*, Vol. 33, No. 2, PP 260, 2011.
10. **F. Omar**, F. Karray, O. Basir, and L. Yu, "Autonomous Overhead Crane System Using a Fuzzy Logic Controller for Load Transfer and Sway Damping", *Journal of Vibration and Control*, Vol. 10, No. 9, pp 1255-1270, Sep 2004.

b. Articles in Refereed Conference Proceedings

1. A.M. Gaouda , A.M. Abdrabou, O.A .Abuzeidand, **Farag K. Omar** , "Integrating EIS and Wavelet Multi-resolution Analysis; Part 1: Enhancing Monitoring of Nonconductive Coatings", *The 2011 2nd International Conference on Mechanical, Industrial, and Manufacturing Technologies (MIMT 2011)*, Singapore, 26 to 28 February, 2011.
2. Emad Elnajjar, Mohamed Y. E. Selim, and **Farag Omar**, "Effect of Dual Fuel Engine Parameters and Fuel Type on Engine Noise", *The ASME 2010 10th Biennial Conference*

on Engineering Systems Design and Analysis (ESDA 2010), Istanbul, Turkey, July 12-14 2010.

3. **F. Omar** and A. Gaouda, "Gearbox Diagnostics Using Wavelet-Based Windowing Technique" the 7th International Conference on Modern Practice in Stress and Vibration Analysis conference, organized by the Stress and Vibration Group of the Institute of Physics in Cambridge, UK, September 8-10, 2009.
4. Kamal A.F. Moustafa, **Farag Omar**, Khalifa H. Harib, "On Control of a Class of Overhead Cranes via Monte Carlo Simulation", International Conference on Automation, Robotics and Control Systems, ARCS-09, Orlando, Florida, USA, July 13-16, 2009.
5. **F. Omar** and K. Harib, "Mechatronics Syllabus Inclusion in the Mechanical Engineering Curriculum at UAE University", Proceedings of the 3rd International Conference on Mechatronics, ICOM'08, Kuala Lumpur, Malaysia, December 18-20, 2008.
6. W. Ahmed, **F. Omar**, Y. Haik, "The Effect of Nano-Circular Inclusion on the Interfacial Stresses of Nano-Composite", First Sharjah International Conference on Nanotechnology and its Applications, American Institute of Physics, DOI:10.1063/1.2776685, Sharjah, UAE, April 10-12, April, 2007.

c. Grants and Supported Research Projects

- Emirates Foundation grant, "Development and experimental implementation of control strategies for hexapodic machine tools, Co-PI with Dr. Khalifa Hareb and Dr. Kamal Mustafa, started on 2008.

d. Unfunded Research Projects

- Effect of dual fuel engine parameters and fuel type on engine noise and vibration generation. Co-PI with Dr. Mohamed Younes, Dr. Samir Emam, and Dr. Emad Al-Najjar, 2009.
- Design of an optimal controller for overhead cranes. Co-PI with Dr. Kamal and Dr. Khalifa Hareb. Project is ongoing since 2008.
- Gearbox damage detection using Wavelet analysis. PI with Dr. Ahmad Gaouda. Project is ongoing since 2007.

6. Professional Services

a. Consultation and Original Designs

- Performed a vibration analysis for Doha North pumping station PS70 (full capacity of 10,000 liter/sec) of Doha North Sewerage and Sewage treatment system, Qatar, 2006 & 2007. This work is performed for Hyder Consulting Middle East LTD.
- Performed a vibration analysis for Abu-Dhabi pumping station 5A, for DAFF Electromechanical Est., Abu-Dhabi, 2005.
- Developed an online diagnostic system for quality control of one cylinder gasoline engine production line. The system developed for Linamar Engines Canada, 2002.
- Developed an intelligent controller for overhead cranes. The crane developed for Intelligent Mechatronics Systems Inc. Canada, 2002.

b. Committee Services

- Chair of the ME program outcomes assessment committee, 2005-present

- Member of the ME and college curriculum committee, 2003 – present
- Chair of the ME dynamics and control focus group, 2003 – present
- Member of the College academic performance improvement committee /ABET 2005 –2010

7. Fellowships and Awards

- Jan. '98 – Aug.'00 Canadian Bureau for International Education Scholarship.
- Jan. '95 – Apr.'98 Research Assistantship, University of BC.
- Sep. '96 – Aug.'97 University of BC Graduate Fellowship.
- Sep. '95 – Aug.'96 University of BC Graduate Fellowship.
- Sep. '94 University of Waterloo Faculty of Engineering Graduate Scholarship.
- May '92 – Dec.'94 Canadian Bureau for International Education Scholarship