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ZIYAD N MASOUD

Country of Citizenship: **Jordan**

Date of Birth: **October 23, 1969**

Marital Status: **Married** (two children)

EDUCATION

1998 – 2000, **Ph.D.**, Engineering Mechanics, Virginia Tech, Blacksburg, Virginia, USA

1993 – 1995, **M.Sc.**, Mechanical Engineering, University of Jordan, Amman, Jordan

1987 – 1991, **B.Sc.**, Mechanical Engineering, Garyounis University, Benghazi, Libya

PROFESSIONAL EXPERIENCE

1/2011 – present, GERMAN JORDANIAN UNIVERSITY, Amman, Jordan

10/2017 – 10/2019 *Dean of Graduate Studies and Scientific Research & Professor of Mechanical Engineering, School of Applied Technical Sciences*

8/2016 – date *Professor of Mechanical Engineering, School of Applied Technical Sciences*

3/2016 – 8/2016 *Associate Professor of Mechatronics Engineering, School of Applied Technical Sciences*

3/2012 – 3/2016 *Dean of School of Applied Technical Sciences & Associate Professor of Mechatronics Engineering*

1/2011 – 3/2012 *Vice Dean of School of Applied Technical Sciences & Associate Professor of Mechatronics Engineering*

Major Achievements:

- Established a new Applied Mechanical and Maintenance Engineering program (2013)
- Devised new and enhanced plans of study for the Applied Industrial Engineering and Applied Mechatronics Engineering programs at GJU (2014)
- Leading a team of academic and industrial partners in charge of establishing a research center for Robotics Engineering along with a graduate program under the umbrella of the Department of Mechatronics Engineering at GJU

Research:

- Nontraditional approach to the control of multi-mode under-actuated systems
- Nontraditional control of flexible structures

- Hybrid control systems for cranes

9/2010 – 1/2011, NUR ENERGY, Amman, Jordan

Senior Consultant

Responsibilities:

- Smart Building Technology, consultation and training

9/2006 – 9/2010, THE HASHEMITE UNIVERSITY, Zarqa, Jordan

9/2009 – 9/2010 *Associate Professor & Department Head, Department of Mechanical Engineering*

11/2008 – 9/2009 *Associate Professor, Department of Mechanical Engineering*

9/2006 – 11/2008 *Assistant Professor, Department of Mechanical Engineering*

Research:

- Nontraditional approach to the control of multi-body under-actuated systems
- Nonlinear control of flexible beams
- Heat transfer enhancement using Nanofluids
- Nontraditional control of quay-side container cranes. The work involved computer simulations and experiments

8/2005 – 8/2006, SuperDYN, LLC, Blacksburg, VA, USA

Research & Development Department, Director

Research:

- Development of an Anti-Sway Control System (SSC) for Super Panamax quay-side container cranes, which was installed on a 65-ton quay-side container crane at Jeddah Islamic Port, Kingdom of Saudi Arabia. The system was successfully installed in the summer of 2006 with outstanding performance

1/1998 – 8/2005, VIRGINIA TECH, Blacksburg, VA, USA

8/2001 – 8/2005 *Assistant Professor, Department of Engineering Science and Mechanics*

1/2001 – 7/2001 *Visiting Assistant Professor, Department of Engineering Science and Mechanics*

1/1998 – 12/2000 *Research Assistant, Department of Engineering Science and Mechanics*

Research:

- Design of Infinitely Variable Transmissions for Hybrid Automobiles. The work included computer simulations, fabrication, and tests on a scaled model
- Nontraditional control approach to the problem of payload oscillation control on quay-side container cranes
- Cargo oscillation control of quay-side container cranes using a nonlinear delayed feedback control system. The work involved computer simulations and tests on a 1/10th experimental model of a 65-ton crane at the research facilities of Ishikawajima-Harima Heavy Industries (IHI) in Yokohama, Japan
- Control of ship-mounted cranes. Three-dimensional nonlinear modeling of ship-mounted cranes. Design and construction of a ship-motion simulator. Design and

implementation of a nonlinear feedback control system for payload oscillation reduction on ship-mounted cranes

- Control of rotary cranes. Design and construction of a scaled model. Development and testing of a nonlinear feedback control system for payload oscillation reduction

1/1997 – 12/1997, UNIVERSITY OF WISCONSIN, Milwaukee, WI, USA

Teaching Assistant, Department of Mechanical Engineering

1/1994 – 12/1996, TANTOURA DEVELOPMENT CORP, Amman, Jordan

Senior Design Engineer

Responsibilities:

- Design of machinery for pharmaceutical industry
- Engineering solutions for production machines in pharmaceutical industry

HONORS AND AWARDS

- DAAD award for distinguished practical engineering experience, March, 2012
- Named “VT Scholar of the Week” by the Vice President of Research, Virginia Tech, November, 2004
- National Science Foundation (NSF) Award, Summer Institute for Nano-Mechanics and Materials, 2003
- Certificate of Excellence in Teaching, Virginia Tech, 2003
- Certificate of Excellence in Teaching, Virginia Tech, 2002
- Top of the class Award, Class of 1991, College of Engineering, Garyounis University, 1991
- Dean’s list, College of Engineering, Garyounis University, 1988, 1989, 1990, and 1991

TEACHING EXPERIENCE

- Undergraduate-level course on *Statics*, Virginia Tech
- Undergraduate-level course on *Dynamics*, Virginia Tech
- Graduate-level course on *Advanced Vibrations*, Virginia Tech
- Undergraduate-level course on *Statics*, Hashemite University
- Undergraduate-level course on *Dynamics*, Hashemite University
- Undergraduate-level course on *Numerical Methods for Engineers*, Hashemite University
- Undergraduate-level course on *Control Systems*, Hashemite University
- Undergraduate-level course on *Mechanical Vibrations*, University of Jordan
- Undergraduate-level course on *Statics and Dynamics*, German Jordanian University
- Undergraduate-level course on *Dynamics and Vibration*, German Jordanian University
- Undergraduate-level course on *Automatic Control Systems*, German Jordanian University
- Undergraduate-level course on *Numerical Analysis*, German Jordanian University
- Undergraduate-level course on *Building Automation*, German Jordanian University
- Undergraduate-level course on *Control Systems I*, German Jordanian University

GRADUATE STUDENT ADVISING

Supervisor:

- *Mohammed Daqaq*, Ph.D., Virginia Tech, 2006
- *Nader Nayfeh*, M.Sc., Virginia Tech, 2002

Committee Member:

- *Yasser El-Okda*, Ph.D., Virginia Tech, 2005
- *Mohamed Elsayed*, Ph.D., Virginia Tech, 2005
- *Konda Chevva*, Ph.D., Virginia Tech, 2005
- *Mohammad Younis*, Ph.D., Virginia Tech, 2004
- *Zhongfu Ge*, Ph.D., Virginia Tech, 2004
- *Xiaopeng Zhao*, Ph.D., Virginia Tech, 2004
- *Mohammed Daqaq*, M.Sc., Virginia Tech, 2003
- *Khaled Alhazza*, Ph.D., Virginia Tech, 2002

PRACTICAL EXPERIENCE

- Design and installation of an Anti-Sway Control System (SSC) for Super Panamax quay-side container cranes, 2005 – 2006, Jeddah, KSA
- Setup and programming of a scaled three-dimensional experimental model of gantry crane in the Control laboratory in the Department of Mechanical Engineering, Kuwait University, 2009
- Design and construction of large scale experimental setups
- DSP hardware for data acquisition and control of mechanical systems
- Digital and analog sensors technology
- Design of motion control systems

RESEARCH INTERESTS

- Vibration control of multi-mode systems
- Multi-body dynamics, linear and nonlinear dynamics, mechanical vibrations
- Nontraditional control, digital control, linear and nonlinear control of mechanical systems
- Nonlinear modeling and control of all types of commercial cranes
- Experimental validation of nonlinear mechanical systems models and experimental testing of nonlinear control systems

RESEARCH PROJECTS

1. Demonstrated a Crane Control System, which I developed at Virginia Tech, on a 1/10th scaled model of a 65-ton quay-side container crane, at the research facilities of Ishikawajima-Harima Heavy Industries (IHI). With A. H. Nayfeh and Nader A. Nayfeh, Yokohama, \$50,000.00, Japan, June 2002
2. “High Capacity Alongside Sea Base Sustainment (HiCASS)”. The project focused on the development of cargo transfer systems between ships under high seas conditions. With A.

- H. Nayfeh and E. Abdel-Rahman, Lockheed Martin, \$525,000, August 1, 2004 – January 31, 2005
3. Designed and built an anti-sway control system for quay-side container cranes, “Smart Sway Controller (SSC)”. Installed the SSC controller on a 65-ton ZPMC quay-side container crane at Jeddah port, KSA. November 1, 2005 – February 1, 2006. The system installation was a success
 4. “Effect of Dynamic Stretch of the Hoisting Cables of Container Cranes on the Payload Dynamics and Oscillation Frequency”, the Hashemite University, \$1,059, December 1, 2006 – November 30, 2007
 5. “Nonlinear Modeling and Control of Quay-Side Container Cranes: A Scaled Experimental Model, Theory, and Experiments”, the Hashemite University, \$27,366, May 1, 2007 – April 30, 2010
 6. “Heat Transfer Enhancement Using Nanofluids; Experimental and Computational Investigation”, The Hashemite University, \$17,655, June 1, 2007 – November 30, 2008
 7. “Design of Remotely Operated Underwater Vehicle (ROUV)”, German Jordanian University, \$2,000, February 1, 2011 – December 31, 2011
 8. “Design of an Automated Landing and Takeoff Control System for Quadrotor Aircraft”, King Abdullah II Design and Development Bureau (KADDB), \$4,000, January 1, 2012 – May 31, 2012
 9. “Design of an experimental setup for the control of multimode flexible structures using frequency-modulation input shaping technique newly developed at GJU”, German Jordanian University, \$36,700, March 1, 2016 – February 28, 2018
 10. “Design of Mist-Cooling Green Canpoy Powered by Thermally Regulated Photovoltaic System”, German Jordanian University, \$67,800, June 1, 2016 – May 31, 2018

PROFESSIONAL MEMBERSHIPS

- Member, of the American Society of Mechanical Engineers, ASME
- Member, of the American Institute of Aeronautics and Astronauts, AIAA
- Member, Society of Experimental Mechanics, SEM

PROFESSIONAL SERVICE

- *Computing Resources Committee*, Department of Engineering Science and Mechanics, Virginia Tech, 2003 – 2005
- *Laboratory Committee*, Department of Engineering Science and Mechanics, Virginia Tech, 2003 – 2005
- *Scientific Research Committee*, Department of Mechanical Engineering, the Hashemite University, 2006 – 2008
- *Examination Committee*, Department of Mechanical Engineering, the Hashemite University, 2006 – 2007
- *Practical Training Committee*, College of Engineering, the Hashemite University, 2006 – 2007
- *E-learning Committee*, College of Engineering, the Hashemite University, 2008 – 2009

- *College of Engineering Development Committee*, College of Engineering, the Hashemite University, 2008 – 2010
- *Central Tenders committee*, The Hashemite University, 2008 – 2009
- *Scholarship committee*, The German Jordanian University, 2012 – 2014
- *Scientific Research Council*, The German Jordanian University, 2012 – 2016

CONFERENCES ORGANIZED

- Member of the Organizing Committee of the “3rd International Conference on Thermal Engineering: Theory and Applications,” Amman, Jordan, May 21 – 23, 2007
- Member of the Scientific Committee of the “2011 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies,” Amman, Jordan, December 6 – 8, 2011
- Member of the Executive Committee of the “Engineering, Energy, Science & Technology Congress: Together for a Better Research,” Amman, Jordan, May 18 – 21, 2015

REVIEWER

- Journal of Sound and Vibrations
- ASME Journal of Dynamic Systems, Measurement and Control
- AIAA Journal
- Journal of Vibration and Control
- Nonlinear Dynamics
- International Journal of Modelling and Simulation
- IET Control Theory and Applications Journal
- Jordan Journal of Mechanical and Industrial Engineering
- Mechatronics
- Journal of Mechanical Systems and Signal Processing
- Mechanisms and Machine Theory
- Journal of Systems and Control Engineering
- Asian Journal of Control
- Advances in Mechanical Engineering

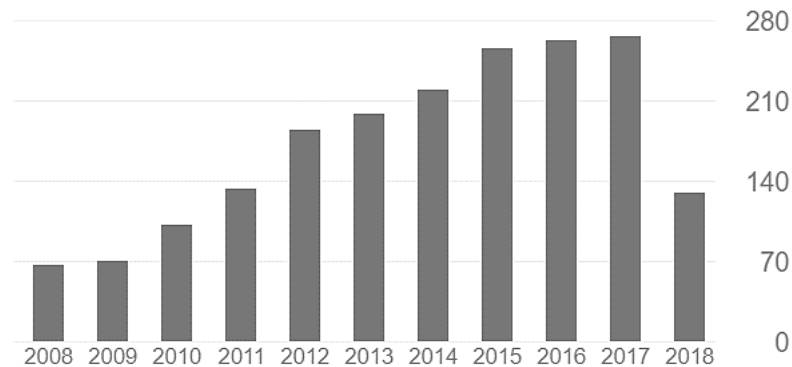
PATENTS

Nonlinear Active Control of Dynamical Systems

- US Patent No. 6,631,300 B1, October 7, 2003
- Japanese Patent 3442-001 PCT/EP-1, 2003
- European Patent No. 1,235,735, March 13, 2005
- Chinese Patent No. ZL 00815340.X, February 15, 2006
- US Patent No. 7,044,314, May 16, 2006

PUBLICATIONS

- *h*-index: 16 (Google Scholar, July, 2018)
- Google Scholar citations (2108, July, 2017)



PUBLICATIONS: BOOK CHAPTERS

1. Control of Structures: Control of Cargo Pendulation for Ship-Mounted Cranes, “Mechanics for a New Millennium,” Springer, 2001, pp. TF1, ISBN-10: 0792371569
2. A Delayed-Position Feedback Controller for Cranes, “Proceedings of the Third World Conference on Structural Control,” Wiley, 2003, pp. 143 – 155, ISBN 978-0-471-48980-8
3. Control of Ship-Mounted Cranes, “Solid Mechanics and Its Applications: IUTAM Symposium on Vibration Control of Nonlinear Mechanisms and Structures,” Springer, 2005, pp. 21 – 35, ISBN 978-1-4020-4160-0
4. A Delayed-Position Feedback Controller for Cranes, “IUTAM Symposium on Chaotic Dynamics and Control of Systems and Processes in Mechanics,” Springer, 2005, pp. 385 – 395, ISBN 978-1-4020-3267-7
5. A Smart Sway Controller for Cranes – From Theory to Laboratory to Industry, “Vibration Problems ICOVP 2011 supplement: The 10th International Conference on Vibration Problems,” Springer, 2011, pp. 14 – 29, ISBN 978-80-7372-759-8
6. A Novel Optimization Strategy for Command Shaping Control, “Topics in Modal Analysis II,” Volume 6, Chapter 58, Springer, 2012, pp. 581 – 588, ISBN 978-1-4614-2418-5

PUBLICATIONS: JOURNAL PAPERS

7. Henry, R., **Masoud, Z.**, Nayfeh, A., and Mook, D., “Cargo Pendulation Reduction on Ship-Mounted Cranes via Boom-Luff Angle Actuation,” *Journal of Vibration and Control*, Vol. 7, No. 8, 2001, pp. 1253 – 1264. [#1 most cited JVC article, October 2008]
8. **Ziyad N. Masoud**, Ali H. Nayfeh, and Amjed Al-Mousa, “Delayed Position-Feedback Controller for the Reduction of Payload Pendulations of Rotary Cranes,” *Journal of Vibration and Control*, Vol. 9(1-2), 2003, pp. 257 – 277. [#3 most cited JVC article, October 2008]
9. E. M. Abdel-Rahman, A. H. Nayfeh, and **Z. N. Masoud**, “Dynamics and Control of Cranes: A Review,” *Journal of Vibration and Control*, Vol. 9, No. 7, 2003, pp. 863 – 908. [#1 most cited JVC article, September 2011]

10. **Z. N. Masoud** and A. H. Nayfeh, "Sway Reduction on Container Cranes Using Delayed Feedback Controller," *Nonlinear Dynamics*, Vol. 34, No. 3-4, 2003, pp. 347 – 358
11. **Z. N. Masoud**, A. H. Nayfeh, and D. T. Mook, "Cargo Pendulation Reduction of Ship-Mounted Cranes," *Nonlinear Dynamics*. Vol. 35, No. 3, 2004, pp. 299 – 311
12. **Ziyad N. Masoud**, Mohammed F. Daqaq, and Nader A. Nayfeh, "Pendulation Reduction on Small Ship-Mounted Telescopic Cranes," *Journal of Vibration and Control*, Vol. 10, No. 8, 2004, pp. 1167 – 1179
13. **Ziyad N. Masoud**, Ali H. Nayfeh, and Nader A. Nayfeh, "Sway Reduction on Quay-Side Container Cranes Using Delayed Feedback Controller: Simulations and Experiments," *Journal of Vibration and Control*, Vol. 11, No. 8, 2005, pp. 1103 – 1122. [#24 most cited JVC paper, October 2008]
14. Mohammed F. Daqaq and **Ziyad N. Masoud**, "Nonlinear Input-Shaping Controller for Quay-Side Container Cranes," *Nonlinear Dynamics*, Vol. 45, No. 1-2, 2006, pp. 149 – 170
15. **Ziyad N. Masoud** and Mohammed F. Daqaq, "A Graphical Approach to Input-Shaping Control Design for Container Cranes with Hoist," *IEEE Transactions on Control Systems Technology*, Vol. 14, Issue 6, 2006, pp. 1070 – 1077
16. **Ziyad N. Masoud**, "Oscillation Control of Quay-Side Container Cranes Using Cable Length Manipulation," *ASME Journal of Dynamic Systems, Measurement and Control*, Vol. 129, Issue 2, March 2007, pp. 224 – 228
17. **Ziyad N. Masoud** and Mohammed F. Daqaq, "A Graphical Design of an Input-Shaping Controller for Quay-Side Container Cranes with Large Hoist: Theory and Experiments," *Jordan Journal of Mechanical and Industrial Engineering*, Vol. 1, No. 1, 2007, pp. 57 – 67
18. Khaled A. Alhazza, **Ziyad N. Masoud**, and Mohammed Alajmi, "Nonlinear Free Vibration Control of Beams Using Acceleration Delayed-Feedback Control," *Journal of Smart Materials and Structures*, Vol. 17, (2008) 015002
19. Eiyad Abu-Nada, **Ziyad Masoud**, and Ala Hijazi, "Natural Convection Heat Transfer Enhancement in Horizontal Concentric Annuli Using Nanofluids," *International Communications in Heat and Mass Transfer*, Vol. 35, No. 5, 2008, pp. 657 – 665
20. **Ziyad Masoud**, "Effect of Hoisting Cable Elasticity on Anti-Sway Controllers of Quay-Side Container Cranes," *Nonlinear Dynamics*, Vol. 58, 2009, pp. 129 – 140
21. Eiyad Abu-Nada, **Ziyad Masoud**, Hakan Oztop, and Antonio Campo, "Effect of Nanofluids Variable Properties on Natural Convection in Enclosures," *International Journal of Thermal Sciences*, Vol. 49, 2010, pp. 479 – 491
22. Khaled A. Alhazza and **Ziyad Masoud**, "A Novel Wave-Form Command Shaper for Overhead Cranes," *Journal of Engineering Research*, Vol. 1, No. 3, 2013, pp. 181 – 209
23. **Ziyad N. Masoud**, Khaled A. Alhazza, Eiyad A. Abu-Nada, and Majed Majeed, "A Hybrid Command-Shaper for Double-Pendulum Overhead Cranes," *Journal of Vibration and Control*, Vol. 20, No. 1, 2014, pp. 24 – 37
24. **Ziyad N. Masoud** and Khaled A. Alhazza, "Frequency-Modulation Input Shaping Control of Double-Pendulum Overhead Cranes," *ASME Journal of Dynamic Systems, Measurement and Control*, Vol. 136, No. 2, 2014, doi:10.1115/1.4025796
25. K. A. Alhazza, A. M. Hassan, K. A. Alghanim, and **Z. N. Masoud**, "An Iterative Learning Control Technique for Point-to-Point Maneuvers Applied on an Overhead Crane," *Shock and Vibration*, vol. 2014, Article ID 261509, 2014. doi:10.1155/2014/261509

26. Khaled A. Alghanim, Khaled A. Alhazza, and **Ziyad N. Masoud**, “Discrete-Time Command Profiles for Simultaneous Travel and Hoist Maneuvers of Overhead Cranes,” *Journal of Sound and Vibration*, Vol. 345, 2015, pp. 47 – 57
27. **Ziyad N. Masoud** and Khaled A. Alhazza, “Frequency-Modulation Input Shaping for Multimode Systems,” *Journal of Vibration and Control*, Vol. 22, No. 15, 2016, pp. 3439 – 3451
28. Khaled Alhazza, **Ziyad Masoud**, and Nehal Alotaibi, “A Smooth Wave-Form Shaped Command with Flexible Maneuvering Time: Analysis and Experiments,” *Asian Journal of Control*, Vol. 18, No. 4, July 2016, pp. 1376 – 1384
29. Khaled A. Alhazza and **Ziyad N. Masoud**, “Waveform Command Shaping Control of Multimode Systems,” *Journal of Sound and Vibration*, Vol. 363, 2016, pp. 126 – 140
30. **Ziyad Masoud**, Mohammad Nazzal, and Khaled Alhazza, “Multimode input shaping control of flexible structures using frequency-modulation,” *Jordan Journal of Mechanical and Industrial Engineering*, Vol. 10, No. 3, September 2016, pp. 179 – 188
31. **Ziyad Masoud** and Khaled Alhazza, “A smooth multimode waveform command shaping control with selectable command length,” *Journal of Sound and Vibration*, Vol. 397, 9 June 2017, pp. 1 – 16
32. Sameer Arabsi and **Ziyad Masoud**, “Simultaneous Travel and Hoist Maneuver Input Shaping Control Using Frequency Modulation,” *Shock and Vibration*, Vol. 2017, Article ID 5703820, 12 pages, <https://doi.org/10.1155/2017/5703820>.

PUBLICATIONS: CONFERENCE PAPERS

33. **Z. Masoud**, A. Nayfeh, R. Henry, and D. Mook, “Cargo Pendulation Reduction on Ship-Mounted Cranes via Boom-Luff and Slew Angles Actuation,” 41st AIAA Structures, Structural Dynamics, and Materials Conference, AIAA paper no. 2000-1543, Atlanta, Georgia, April, 2000
34. Ali H. Nayfeh and **Ziyad N Masoud**, “Delayed Position-Feedback Controller for the Reduction of Payload Pendulation of Rotary Cranes”, 18th Biennial ASME Conference on Mechanical Vibrations and Noise, DETC2001/VIB-21601, Pittsburgh, Pennsylvania, September 9 – 13, 2001
35. **Ziyad N. Masoud** and Ali H. Nayfeh, “Sway Reduction on Container Cranes Using Delayed Feedback Controller,” 43rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, AIAA paper no. 2002-1279, Denver, Colorado, April, 2002
36. Nayfeh, A.H., **Masoud, Z.N.** “A Supersmart Controller for Commercial Cranes”, *Newsletter, International Association for Structural Control*, Vol. 6, No. 2, 4-6, 2002
37. **Ziyad N. Masoud** and Nader A. Nayfeh, “Pendulation Reduction on Small Ship-Mounted Telescopic Cranes”, 44th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics, and Materials Conference, AIAA paper no. 2003-1687, Norfolk, Virginia, April, 2003
38. **Ziyad N Masoud**, Nader A. Nayfeh, and Ali H. Nayfeh, “Sway Reduction on Container Cranes Using Delayed Feedback Controller: Simulations and Experiments,” 19th Biennial ASME Conference on Mechanical Vibrations and Noise, DETC2003/VIB-21601, Chicago, Illinois, September 2 – 6, 2003

39. Day, D. L., Grandrino, R., Nayfeh, A. H., **Masoud, Z. N.**, Abdel-Rahman, E. H., McKinney, R. A., 2005, "Overview of HiCASS Cargo Transfer Method", ASNE Joint Sea Basing Conference, Arlington, Virginia, January 27 – 28, 2005
40. Mohammed F. Daqaq, **Ziyad N. Masoud**, and Ali H. Nayfeh, "Nonlinear Modeling and Control of Quay-Side Container Cranes," IMAC XXIII, Paper No. 223, Orlando, Florida, January 31 – February 3, 2005
41. M. Daqaq and **Z. Masoud**, "A Graphical Phase Plane Approach for Controlling Cargo Transfer on Quay-Side Container Cranes with Hoisting," 46th AIAA/ASME/ASCE/AHS/ASC Structural Dynamics and Materials Conference, AIAA paper no. 2005-1841, Austin, Texas, April 18 – 21, 2005
42. **Ziyad N. Masoud**, "Differential Cable Length Manipulation for Oscillation Control of Quay-Side Container Cranes," 20th Biennial ASME Conference on Mechanical Vibration and Noise, DETC2005-85320, Long Beach, California, September 24 – 28, 2005
43. Nader A. Nayfeh, **Ziyad N. Masoud**, and William Baumann, "A Comparison of Three Feedback Controllers for Container Cranes," 20th Biennial ASME Conference on Mechanical Vibration and Noise, DETC2005-85235, Long Beach, California, September 24 – 28, 2005
44. **Z. Masoud**, "Effect of Hoisting Cable Elasticity on the Oscillation Period of Quay-Side Container Cranes," 49th AIAA/ASME/ASCE/AHS/ASC Structural Dynamics and Materials Conference, AIAA paper no. 2008-2269, Schaumburg, Illinois, April 7 – 10, 2008
45. **Ziyad N. Masoud**, Khaled A. Alhazza, Majed A. Majeed, and Eiyad A. Abu-Nada, "A Hybrid Command-Shaping Control System for Highly Accelerated Double-Pendulum Gantry Cranes," ASME 2009 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, DETC2009-87501, San Diego, California, August 30 – September 2, 2009
46. Khaled A. Alhazza and **Ziyad N. Masoud**, "A Novel Wave-Form Command-Shaping Control with Application on Overhead Cranes," 2010 ASME Dynamic Systems and Control Conference, DSCC2010-4132, Cambridge, Massachusetts, September 13 – 15, 2010
47. **Ziyad N. Masoud** and Khaled A. Alhazza, "Command-Shaping Control System for Double-Pendulum Gantry Cranes," ASME 2011 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, DETC2011-48400, Washington, DC, August 28 – 31, 2011
48. Khaled A. Alhazza, Asmahan Al-Shehaima, and **Ziyad N. Masoud**, "A Continuous Modulated Wave-Form Command-Shaping for Damped Overhead Cranes," ASME 2011 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, DETC2011-48336, Washington, DC, August 28 – 31, 2011
49. Khaled A. Alghanim, Khaled A. Alhazza, and **Ziyad N. Masoud**, "A Novel Optimization Strategy for Command Shaping Control," IMAC XXX, Jacksonville, Florida, January 30 – February 2, 2012
50. **Ziyad N. Masoud** and Khaled A. Alhazza, "A Frequency-Modulation Command-Shaping Strategy for Multi-Mode Systems," ASME 2013 International Design Engineering

- Technical Conferences & Computers and Information in Engineering Conference, DETC2013-13355, Portland, Oregon, August 4 – 7, 2013
51. Khaled A. Alhazza, **Ziyad N. Masoud**, and Nehal Alotaibi, “A Smooth Wave-Form Command Shaping Control,” ASME 2013 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, DETC2013-12768, Portland, Oregon, August 4 – 7, 2013
 52. Khaled A. Alghanim, Khaled A. Alhazza, and **Ziyad N. Masoud**, “A Discretized Optimization Strategy for Rest-to-Rest Maneuvers Considering the effect of Damping,” ASME 2015 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, DETC2015-46250, Boston, Massachusetts , August 2 – 5, 2015
 53. Khaled Alhazza, **Ziyad Masoud**, and Abdulsalam Alhazza, “A Multimode Wave-Form Command Shaping Control Applied on A Double Pendulum,” ASME 2015 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, DETC2015-46757, Boston, Massachusetts, August 2 – 5, 2015
 54. Khaled Alhazza and **Ziyad Masoud**, “A Multi-Mode Smooth Command Shaper with an Adjustable Maneuver Time,” ASME 2015 Dynamic Systems and Control Conference, DSCC2015-9700, Columbus, Ohio, October 28 – 30, 2015
 55. **Ziyad Masoud**, Khaled Alhazza and Mohammad Nazzal, “Multimode input shaping control of flexible structures using frequency modulation,” International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, IDETC2016-59537, Charlotte, North Carolina, August 21 – 24, 2016

PRESENTATIONS AT PROFESSIONAL MEETINGS

1. W. Lacarbonara, R. Soper, **Z. Masoud**, J. Pratt, and Ali H. Nayfeh, “Towards a hybrid variable-geometry-truss architecture for pendulation control in ship-mounted cranes,” MURI on Nonlinear Active Control of Dynamical Systems, Blacksburg, Virginia, 1998
2. **Z. Masoud**, A. Nayfeh, R. Henry, and D. Mook, “Cargo Pendulation Reduction on Ship-Mounted Cranes via Boom-Luff and Slew Angles Actuation,” MURI on Nonlinear Active Control of Dynamical Systems, Blacksburg, Virginia, October 1999
3. **Z. Masoud**, A. Nayfeh, and D. Mook, “Cargo Pendulation Reduction on Ship-Mounted Cranes via Boom-Luff and Slew Angles Actuation,” MURI on Nonlinear Active Control of Dynamical Systems, Blacksburg, Virginia, March 2000
4. **Z. Masoud** and A. H. Nayfeh, “Cargo Pendulation Reduction on Ship-Mounted Cranes,” Invited Lecture, 3rd International Workshop on Structural Control, Paris, France, July 6 – 8, 2000
5. **Z. N. Masoud**, A. H. Nayfeh, and D. T. Mook, “Control of Cargo Pendulation for Ship-mounted Cranes,” IUTAM, Chicago, Illinois, August 27 – September 2, 2000
6. **Z. Masoud**, A. Nayfeh, and D. Mook, “Cargo Pendulation Reduction on Ship-Mounted Cranes via Boom-Luff and Slew Angles Actuation,” MURI on Nonlinear Active Control of Dynamical Systems, Blacksburg, Virginia, October 2000

7. **Z. Masoud** and A. Nayfeh, “Control of Cargo Pendulation on Ship-Mounted Cranes,” MURI on Nonlinear Active Control of Dynamical Systems, Blacksburg, Virginia, July 2001
8. **Z. Masoud** and A. H. Nayfeh, “Control of Crane-Cargo Pendulation,” 3rd World Conference on Structural Control, Como, Italy, April 7 – 12, 2002
9. A. H. Nayfeh and **Z. N. Masoud**, “A Supersmart Controller for Commercial Canes,” 12th International Workshop on Dynamics and Control, Los Angeles, California, August 19 – 21, 2002
10. A. H. Nayfeh, **Z. N. Masoud**, and N. A. Nayfeh, “A Supersmart Controller for Commercial Cranes,” International Advisory Committee of the MDP-8 Conference, Cairo, Egypt, January 4 – 6, 2003
11. A. H. Nayfeh, **Z. N. Masoud**, and N. A. Nayfeh, “A Delayed-Position Feedback Controller for Cranes,” IUTAM Symposium on Chaotic Dynamics and Control of Systems and Processes in Mechanics, Universita di Roma La Sapienza, Roma, Italy, June 8 – 13, 2003
12. A. H. Nayfeh, **Z. N. Masoud**, N. A. Nayfeh, and E. Abdel-Rahman, “Control of Ship-Mounted Cranes,” IUTAM Symposium on Vibration Control of Nonlinear Mechanisms and Structures, Munich, Germany, July 18 – 22, 2005
13. **Z. N. Masoud**, “Smart Sway Control,” Invited seminar, Department of Mechanical Engineering, Kuwait University, January, 2009
14. **Z. N. Masoud**, “Frequency-Modulation Command-Shaping Control System for Highly Accelerated Double-Pendulums,” Invited seminar, Department of Mechanical Engineering, Kuwait University, June, 2010