

Bassam J Alshaer
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EDUCATION

Doctor of Philosophy in Mechanical Engineering (May 2000)

Wichita State University, Wichita, KS, USA

Specialty: Applied Mechanics/Multi-Body Dynamics

Dissertation: Dynamically Loaded Lubricated Journal Bearings in Multi-Body Mechanical Systems. The research was conducted on analytical evaluation of dynamic forces and pressures produced by the lubricant in a lubricated journal bearing under dynamic loading in multi-body mechanical systems.

Master of Science in Mechanical Engineering (May 1994)

Jordan University of Science and Technology, Irbid, Jordan

Specialty: Thermal Power

A research was conducted on evaluation the mixed convection from bodies embedded in a porous medium.

Bachelor of Science in Mechanical Engineering (May 1991)

Jordan University of Science and Technology, Irbid, Jordan

A graduation project was conducted on computer simulations of the dynamic response of multi-body mechanical systems.

EXPERIENCE

Associated Professor, (2015 - present)

Assistant Professor, (2009 - 2015)

Mechanical Engineering Department

Jordan University of science and Technology, Jordan.

Research interest includes: Modeling, Control and Simulation of heavy construction Machines. Autonomous heavy vehicle systems and operators assist functions. Modeling and simulation of multi-body mechanical systems with imperfect joints. Large Tires Modeling and simulation.

Courses taught: Engineering Mechanics, Advanced Engineering Mathematics, Advanced Computational Dynamics, Modeling and Simulation of Multi-body Mechanical systems, Solid Modeling Lab. (Pro/E), Theory of Machines, Kinematics and Dynamic of mechanisms, Design Machine Elements, Mechanical Vibrations, and advising on undergraduate and master theses.

Engineering Specialist / Senior Development and Research Engineer (2001 - 2009)

Technical and Solutions Division, Caterpillar Inc. Peoria, IL, USA

I served as an experienced, individual contributor on projects and assignments that are complex in nature and that support and enhance Caterpillar product performance. My job included executing research projects and supporting business units in the area of Virtual Product Development (VPD) tools. Duties include Modeling and simulating multi-body

and hydro-mechanical systems in order to spot problems in machines before iron actually built or solving problems arise afterward. Contributing to the identification, analysis and resolution of needs and problems in machines performance. Performs complex analysis work, identifies and resolves machine systems performance problems. Working on projects significantly impact Machine performance and leveraging new technologies.

Engineering systems Analyst (2000 - 2001)

Aerotek, Peoria, IL, USA

Aerotek Position Description: Aerotek is contracting agency provides high quality technical professionals to a wide range of industries. I was offered a position by Aerotek to perform engineering research tasks for caterpillar Inc.

Teaching Fellowship (1996 - 2000)

Wichita State University, Wichita, KS, USA

Position Description: Research assistance and Instructor of different courses including: Machine Design, Computer Aided Design, Instrumentation, and AutoCAD

Sales and Marketing Engineer (1994 - 1996)

Alghanem Company for Trading and Contracting, Amman, Jordan

Position Description: Responsible for leading a team of engineers for marketing different types of instruments, mechanical equipment and heavy machinery such as forklifts, overhead cranes, mobile cranes, pumps, generators, hydraulic systems, biomedical instruments.

ACHIEVEMENTS

Patents: (United States Patent and Trade Mark Office)

<http://patft.uspto.gov/netahtml/PTO/search-bool.html>

1. "Automatic Digging and Loading System for a Work Machine" Ref. No. 7,555,855, issued July 7, 2009.
2. "Velocity based control process for a machine digging cycle" Ref. No. 7,979,181, issued July 12, 2011
3. "Control system and method for capturing partial bucket loads in automated loading cycle" Ref. No. 8,340,872, issued December 25, 2012.

Awards

1. Caterpillar President 2007 Annual Quality Improvement Award -: Moving the Mountain (team member)
2. Illinois Governor's Pollution Prevention Award – " Creation of a New Visual Proving Ground to Test New Designs" Received: October 25, 2001(team member)

Certifications

Certified 6 Sigma DMEDI and DMAIC Green belt.

PROFESSIONAL PUBLICATIONS

Patents

1. Bassam Alshaer, Richard Ingram, John Krone, Jeffrey Berry, Jared Harris, "Automatic digging and loading system for a work machine", United States Patent and Trademark Office, Patent No. 7,555,855, July 7, 2009.
2. Megan Clark, Chad Magstadt, Gregory Mettlach, Robert Price, Bassam Alshaer, "Velocity based control process for a machine digging cycle", United States Patent and Trademark Office, Patent No. 7,979,181, July 12, 2011.
3. Brian Mintah, Bassam Alshaer, John Krone, Jeffrey Berry, "Control system and method for capturing partial bucket loads in automated loading cycle", United States Patent and Trademark Office, Patent No. 8,340,872, December 25, 2012.

Journals

4. Bassam Alshaer, Adnan Al-Ghasem, Ahmad Al-Shyyab, Muhammed Alhanouti, "Tyre Modelling for an Autonomous Articulated Wheel Loader Conducting a V-Shape Loading Cycle Simulation", International Journal of Heavy Vehicle Systems, , Volume 24, Issue 3, 2015.
5. B.J. Alshaer, T.T. Darabseh, M. A. Alhanouti, " Path planning, modeling and simulation of an autonomous articulated heavy construction machine performing a loading cycle ".Applied Mathematical Modelling, Volume 37, Issue 7, pages 5315-5325, 2013.
6. B.J. Alshaer, T.T. Darabseh and A.Q. Momani, "Modelling and control of an autonomous articulated mining vehicle navigating a predefined path", Int. J. Heavy Vehicle Systems, Vol. 21, No. 2, 2014.
7. Ahmad Al-Shyyab, Feras Darwish, Mohammad Al-Nimr and BassamAlshaer, "Analytical Study of Conjugated Heat Transfer of a Micro Fluid Flow between Two Parallel Plates", Journal of Engineering Thermophysics, Accepted March 2015.
8. T.T. Darabseh, B.J. Alshaer, S. Khrais, "Thermoelastic analysis of 2D-FGM hollow circular cylinder with finite length by finite element method". Int. J. Computer Applications in Technology, Vol. 46, No. 2, pages 175-186, 2013.
9. Alshaer, B.J., Nagarajan, H., Beheshti, H.K., Shivaswamy, S., and Lankarani, H.M., "Dynamics of a Multibody Mechanical System with Lubricated Long Journal Bearings," ASME Journal of Mechanical Design, Vol. 127, pp. 493-498, May 2005.
10. Ravn, P., Shivaswamy, S., Alshaer, B. and Lankarani, H.M., "Joint Clearances with Lubricated Long Bearings in Multibody Mechanical Systems" ASME Journal of Mechanical Design, Vol. 122, No. 4, pp. 484-488, 2000.
11. Aldoss, T.K; Jarrah, M.A.; Al-Sha'er, B.J. " Mixed Convection from Vertical Cylinder Embedded in a Porous Medium: Non Darcy Model" Int. J. Heat Mass Transfer. Vol. 39, No. 6, pp 1141-1148, 1996.
12. Aldoss, T.K. ; Al-Nimr, M.A.; Jarrah, M.A.; Al-Sha'er, B.J. "Magneto Hydrodynamic Mixed Convection from Vertical Plate Embedded in a Porous Medium". Numerical Heat Transfer. Part A, 28:635-645, 1995.

Conferences

1. Alshaer, B.J., and Lankarani, H.M., "Formulation of Dynamic Loads Generated by Lubricated Long Journal Bearings". Proceedings of the ASME Design Engineering Technical Conference, v 2, 2001, p 749-756
2. Shivaswamy, S., Alshaer, B., Khadem, H., and Lankarani, H.M., "Dynamics of Multibody Systems with Lubricated Short and Long Journal Bearings," 6th US National Congress on Computational Mechanics, Symposium on Computational Multibody Dynamics, Dearborn, Michigan, August 2001.
3. Alshaer, B.J., and Lankarani, H.M., "Dynamics of a Multibody Mechanical System with Lubricated Long Journal Bearings". Proceedings of the ASME Design Engineering Technical Conference, v 2, 2001, p 757-762
4. Alshaer, B.J., and Lankarani, H.M. "Dynamics of a Multibody Mechanical System with Lubricated Long Journal Bearings II". Proceedings of 27th Design Automation Conference, 2001 ASME Design Engineering Technical Conference, Paper No. DAC-21091, Pittsburgh, Pennsylvania, USA, September 2001.
5. Alshaer, B.J., and Lankarani, H.M. "Formulations of Dynamic Loads Generated by lubricated Journal Bearings II". Proceedings of 27th Design Automation Conference, 2001 ASME Design Engineering Technical Conference, Paper No. DAC-21090, Pittsburgh, Pennsylvania, USA, September 2001
6. Alshaer, B.J., and Lankarani, H.M., "Dynamics of a Multibody Mechanical System with Lubricated Long Journal Bearings". Presented at the 2000 ASME Design Automation Conference, Paper No. DAC-14256 , Baltimore, Maryland, September 2000.
7. Alshaer, B.J., and Lankarani, H.M., "Lubricant Forces Evaluation in Dynamically-Loaded Lubricated Journal Bearings," 8th Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures," Blacksburg, Virginia, July 2000.
8. Alshaer, B.J., and Lankarani, H.M. "Dynamic Response of Multibody Mechanical Systems with Lubricated Journal Bearings". Second International Symposium on Impact and Friction of Solids, Structures and Intelligent Machines. August 8-12, 2000, Montreal, Quebec, Canada. ICANOV2K (ISIFSM-33), ThP-III.
9. Alshaer, B.J., and Lankarani, H.M. "Dynamically-Loaded Lubricated Long Journal Bearings in Multibody Mechanical Systems". Poceedings of the 20th International Congress of Theoretical and Applied Mechanics (ICTAM 2000), Chicago, Illinois, September 2000. ISBN 0-7923-7156-9.
10. Alshaer, B.J., and Lankarani, H.M., "Formulation of Dynamic Loads Generated by Lubricated Long Journal Bearings," presented at the 2000 ASME Design Automation Conference, Paper No. DAC-14255, Baltimore, Maryland, September 2000.

SKILLS

- C & C++
- DYNASTY
- CLINK
- Rocks3D
- MathCAD
- Matlab
- Simulink
- StateFlow
- XPC
- Tomahawk

- DATK (PV-Wave)
- AutoCad 2000
- Microsoft Office

- PRO/E
- FORTRAN

Caterpillar Internal Training Courses

- Building Positive Relationships
- Conflicts of Interest
- Effective Communications
- Electronic Communications
- Fraud Detection and Prevention
- Information Security Awareness
- Insider Trading: Guidelines and Considerations
- Prohibited Harassment Awareness
- Managing Our Information
- Code of Conduct
- Introduction to TSD Shared Values
- OSHA 1 / Right to Know
- Records Management Fundamentals
- SMART Goals

OTHERS

Citizenship: Jordan/ United States of America (USA)
Marital Status: Married, two daughters and a son.