

CURRICULUM VITAE

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1. Personal Data

Date of Birth: 17th, December, 1964

Nationality: Jordanian

2. Education

- Ph.D., Applied Mechanics, Mechanical Vibrations, 1997, University of Bologna, Bologna, Italy.
- B.Sc., Mechanical Engineering, 1987, Yarmouk University, Irbid, Jordan.

3. Ph.D. Dissertation

Structural Damage Identification using Vibration Analysis, University of Bologna, Bologna, Italy.

4. Employment

Academic Positions

- Professor “Visiting”, Mechanical Engineering Department, Al-Zaytoonah University of Jordan, Amman, Jordan, February, 2018 – Now.
- Professor, Mechanical Engineering Department, University of Jordan, Amman-Jordan, June 2009 – February 2018.



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- Professor “Visiting”, Mechanical Engineering Department, Tabuk University, Tabuk, Saudi Arabia, Spring Semester 2015
- Professor “Visiting”, Department of Mechanical and Industrial Engineering, Applied Science University, Amman-Jordan, Sept. 2010 – Sept. 2011
- Associate Professor, Department of Mechanical Engineering, University of Jordan, Amman-Jordan, July 2004 – June 2009
- Associate Professor “Visiting”, Department of Mechanical Engineering, Jordan University of Science and Technology, Irbid-Jordan, Sept. 2005 - Sept. 2006
- Assistant Professor, Department of Mechanical Engineering, University of Jordan, Amman-Jordan, October 1997 - July 2004
- Teaching Assistant, Department of Mechanical Engineering University of Jordan, Amman, Jordan, 1990-1992

Administrative Positions

- Director, Arab Council for Training (ACTSAU), The University of Jordan, Amman, Jordan, January 2016 –Present.
- Chairman of Mechanical Engineering Department, School of Engineering, The University of Jordan, Amman, Jordan, Sept. 2007 – Sept -2009.
- Director, Outreach Consultation Unit, The University of Jordan, Amman, Jordan, Sept. 2003 – Sept. 2005.
- Assistant Dean, Faculty, School of Engineering, The University of Jordan, Amman, Jordan, Oct. 1999 – Sept -2002
- Director, Center for xxxxxx, University, City, Country, Period

5. Research Interests

Nonlinear Vibrations, Vibrations of Rotating Beams and Blades, Stability and Control of Nonlinear Systems, Vibrations of Carbon Nano Tubes

6. Membership in Scientific Societies and Associations

American Society of Mechanical Engineers (ASME)
Jordan Engineers Association (JEA)

7. Honors and Awards

8. Fellowships and Scholarships

9. Teaching Experience

- ***Graduate Courses***

Advanced Vibrations
Nonlinear Dynamics
System Dynamics and Modeling
Advanced Mathematics

- ***Undergraduate Courses***



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Statics
 Dynamics
 Mechanical Vibrations
 Fluid Mechanics
 Theory and Dynamics of Machinery
 Noise and Vibration Control
 Mechanical Engineering Design
 Engineering Drawing

10. Supervision of Graduate Research

- 1) Steady State Response and Stability of a Restrained Beam Partially Immersed in a Fluid and Carrying an Intermediate Mass and Rotary Inertia (June 2000).
- 2) Estimation of Mesh Stiffness and Dynamic Behavior of a Spur Gear System. (May 2002).
- 3) Chaotic Behavior of Elastically Restrained Beam Partially Immersed in a Fluid and Carrying an Intermediate Mass and Rotary Inertia. (May 2002).
- 4) Electromechanical Dynamic Model of a Rotating Flexible Arm Driven By Stepper Motor. (August 2003).
- 5) Dynamics and Control of a Rotating Flexible Arm with Root Flexibility. (August 2003).
- 6) Nonlinear Natural Frequencies of a Rotating Beam on an Elastic Foundation. (September 2005).
- 7) Identification of Mechanical Vibrations through Monitoring of Electrical Parameters: A Tool for Predictive Maintenance. (January 2006)
- 8) Modal Analysis of Flexible Disk on a Flexible shaft. (June 2006)
- 9) Control of Robotic Arm using Fuzzy Logic (August 2007)
- 10) Experimental Investigation of Cylindrical Magneto Rheological Fluid Brake (April 2009)
- 11) Parametric Excitation of a Beam with Initial Imperfection (June 2013)
- 12) Numerical and Experimental Study of a Vortex Tube with a Conical Control Valve (July 2014)

11. Grants

12. Patents

13. Membership of Committees

- **National**
 - Scientific Research Fund, June – 2017 - Present
- **University**
 - Academic and Scientific Research Committee, Sept. – 2014 – Sept., 2017

14. Professional and Scientific Meetings

Scientific Meetings Organized



Participation in Scientific meetings

15. Participation in or organization of curricular and/or extra-curricular activities

16. Publications

PUBLICATIONS:

1. JOURNAL PUBLICATIONS:

Mu'tasim S. Abdel-Jaber, **A. A. AL-QAISIA**, Nasim K. Shatarat [2017] "Nonlinear Vibrations of a SWCNT with Geometrical Imperfection Using Nonlocal Elasticity Theory", *Modern Applied Science (MAS)*. **11**, (10), 91–109.

M. S. SARI and **A. A. AL-QAISIA** [2016] "Nonlinear Natural Frequencies and Primary Resonance of Euler-Bernoulli Beam with Initial Deflection Using Non-local Elasticity Theory", *Jordan Journal of Mechanical and Industrial Engineering (JJMIE)*. **10**, (3), 161–169.

A. SALEEM, B. TAHA, T. TUTUTNJI, **A. A. AL-QAISIA** [2015] "Identification and cascade control of servo-pneumatic system using particle swarm optimization", *simulation modeling practice and theory*, 52, 164–179.

M. S. ABDEL-JABER, **A. A. AL-QAISIA**, M. ABDEL-JABER and R. G. BEALE [2014] "Steady State Response and Stability of an Elastically Restrained Tapered Beam". *Advanced Steel Construction Journal*, **10**, (1), 408–426

A. A. AL-QAISIA and M. N. HAMDAN [2013] "On Nonlinear Frequency Veering and Mode Localization of a Beam with Geometric Imperfection Resting on Elastic Foundation". *Journal of Sound and Vibration*, **332**, (15), 4641-4655.

M. N. HAMDAN, **A. A. AL-QAISIA** and S. ABDALLAH [2012] "Parametric Study of Dynamic Wrinkling in a Thin Sheet on Elastic Foundation". *International Journal of Modern Nonlinear Theory and Application*. **1**, (3), 55–66

S. AL-HOURANI, M. N. HAMDAN, **A. A. AL-QAISIA** and M. S. ASHHAB [2011] "Fabrication and Analysis of Valve-less Micro-pumps". *Jordan Journal of Mechanical and Industrial Engineering (JJMIE)*. **5**, (2), 145–148

A. A. AL-QAISIA and M. N. HAMDAN [2010] "Primary Resonance Response of a Beam with a Differential Edge Settlement Attached to an Elastic Foundation". *Journal of Vibration and Control*, **Vol. 16** (6), 853-877.



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M. N. HAMDAN, S. ABDALLAH and A. A. AL-QAISIA [2010] “Modeling and Study of Dynamic Performance of a Valveless Micro-pump”. *Journal of Sound and Vibration*, **329**, (15), 3121–3136.

A. A. AL-QAISIA and M. N. HAMDAN [2009] “Non-Linear Frequency Veering in a Beam Resting on Elastic Foundation”. *Journal of Vibration and Control*. **Vol. 15** (11), 1627-1647.

M. ABDEL-JABER, A. A. AL-QAISIA and M. S. ABDEL-JABER [2009] “Non-Linear Natural Frequencies of a Tapered Cantilever Beam”. *Advanced Steel Construction*. **Vol. 5** (3), 259-272.

A. A. AL-QAISIA [2008] “Dynamics of a Rotating Beam with Flexible Root and Flexible Hub”, *Structural Engineering and Mechanics Journal*. **Vol. 30** (4), 427-444.

S. A. MASOUD and A. A. AL-QAISIA [2008] “Influence of Crack Depth and Attached Masses on Beam Natural Frequencies”. *International Journal of Modeling and Simulation*. **Vol. 28** (3), 239-247.

M. S. ABDEL-JABER, A. A. AL-QAISIA, M. ABDEL-JABER and R. G. BEALE [2008] “Nonlinear Natural Frequencies of an Elastically Restrained Tapered Beam”. *Journal of Sound and Vibration*, **313** (3-5), 772–783.

A. A. AL-QAISIA and M. N. HAMDAN [2007] “Subharmonic Resonance and Transition to Chaos of Nonlinear Oscillators with a Combined Softening and Hardening Non-Linearities”. *Journal of Sound and Vibration*, **305**, (4-5), 772-782.

A. M. HARB, A. A. ZAHER, A. A. AL-QAISIA and M. A. ZOHDY [2007] “Recursive Backstepping Control of Chaotic Duffing Oscillators”. *Chaos, Solitons & Fractals*. **34**, (2), 639–645.

S. Z. ISMAIL , A. A. AL-QAISIA and B. O. AL-BEDDOOR [2006] “Dynamic Model of a Rotating Flexible Arm-Flexible Root Mechanism Driven by a Shaft Flexible in Torsion”. *Shock and Vibration*. **13** (6), 577-593

B. O. AL-BEDDOOR and A. A. AL-QAISIA [2005] “Stability Analysis of Rotating Blade Bending Vibration Due to Torsional Excitation”. *Journal of Sound and Vibration*. **282**, (3-5), 1065-1083

A. A. AL-QAISIA and B. O. AL-BEDDOOR and [2005] “Evaluation of Different Methods for the Consideration of the Effect of Rotation on the Stiffening of Rotating Beams”. *Journal of Sound and Vibration*, **280**, (3-5), 531-553.



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A. A. AL-QAISIA [2004] “Non-Linear Dynamics of a Rotating Beam Clamped with an Attachment Angle and Carrying an Inertia Element”. *The Arabian Journal for Science and Engineering*, **29** (1C), 81-97.

A. A. AL-QAISIA, G. CATANIA and U. MENEGHETTI [2003] “Crack Localization in Non-Rotating Shafts Coupled to Elastic Foundation Using Sensitivity Analysis Techniques”. *Journal of Quality in Maintenance Engineering*, **9** (2), 176-201.

A. A. AL-QAISIA, A. A. HARB, A. A. ZAHER and M. A. ZOHDY [2003] “ Robust Estimation-Based Control of Chaotic Behavior in an Oscillator with Inertial and Elastic Symmetric Nonlinearities”. *Journal of Vibration and Control*, **9** (6), 665-684.

A. A. AL-QAISIA and M. A. SHEHADEH [2002] “Steady State Response of a Restrained Immersed Beam”. *DIRASAT Journal; Engineering Sciences*, **29** (2), 150-175.

A. A. AL-QAISIA and M. N. HAMDAN [2002] “Bifurcation and Chaos of an Immersed Cantilever Beam in a Fluid and Carrying an Intermediate Mass”. *Journal of Sound and Vibration*, **253** (4), 859-888.

A. A. AL-QAISIA and M. N. HAMDAN [2001] “Bifurcation of Approximate Harmonic Balance Solutions and Transition to Chaos in an Oscillator with Inertial and Elastic Symmetric Nonlinearities”. *Journal of Sound and Vibration*, **244** (3), 453-479.

M. N. HAMDAN, A. A. AL-QAISIA, and B. O. AL-BEDDOOR [2001] “Comparison of Analytical Techniques for Nonlinear Vibrations of a Parametrically Excited Cantilever”. *International Journal of Mechanical Sciences*, **43**, (6), 1521-1542

A. A. AL-QAISIA, M. N. HAMDAN and B. O. AL-BEDDOOR [2000] “On the Steady State Response of a Cantilever Beam Partially Immersed in a Fluid and Carrying an Intermediate Mass”. *Shock and Vibration*, **7**, 179-194.

A. A. AL-QAISIA and M. N. HAMDAN [1999] “On the Steady State Response of Oscillators with Static and Inertia Non-Linearities”. *Journal of Sound and Vibration*, **223** (1), 49-71.

A. A. AL-QAISIA and U. MENEGHETTI [1997] “Crack Localization in Stepped Beams”. *International Journal of the Italian Association of Theoretical and Applied Mechanics ‘Meccanica’*, **32** (4), 315-325.

2. CONFERENCE PUBLICATIONS:

M. ABDEL-JABER and A. A. AL-QAISIA [2013] “Effect of Supports Flexibility on Frequency Veering in Imperfect Beams Resting on Elastic Foundation”. *The Fourteenth*



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International Conference on Civil, Structural and Environmental Engineering Computing (CC2013), Sept. 3-6, 2013, Cagliari, Sardinia, Italy.

A. A. AL-QAISIA, A. SHATNAWI, M. ABDEL-JABER and M. ABDEL-JABER [2007] “Non-Linear Natural Frequencies of a Tapered Cantilever Beam”. *The Sixth International Conference on Steel and Aluminum Structures (ICSAS'07)*, July 24-27, 2007, Oxford, UK.

N. KHADER, A. ATOUM and **A. AL-QAISIA**, [2007] “Theoretical and Experimental Modal Analysis of Multiple Flexible Disk-Flexible Shaft System”. *2007 SEM Annual Conference on Experimental and Applied Mechanics (Society of Experimental Mechanics)*, June 4-6, 2007, Springfield, Massachusetts, USA.

S. Z. ISMAIL, A. A. AL-QAISIA and B. O. AL-BEDOOR [2004] “On The PD Control of Rotating Flexible Arms Driven by Stepper Motor”. *ASME 2004 Pressure Vessels & Piping Conference 488*, PVP2004..

A. ABED, B. O. AL-BEDOOR and A. A. AL-QAISIA [2004] “Model for Vibration of Rotating Beams Supported by Flexible Foundation and Driven by DC Motor”. *ASME 2004 Pressure Vessels & Piping Conference 488*, PVP2004.

A. A. AL-QAISIA [2003] “Effect of Fluid Mass on Non-Linear Natural Frequencies of a Rotating Beam”. *ASME 2003 Pressure Vessels & Piping Conference 468*, PVP2003.

A. A. AL-QAISIA [2002] “ Nonlinear Free Vibration of a Rotating Beam Carrying a Tip Mass with Rotary Inertia”. *ASME 2002 Pressure Vessels & Piping Conference 447*, PVP2002-1510, 1-8.

B. O. AL-BEDOOR and **A. A. AL-QAISIA** [2002] “Analysis of Rotating Blade Forced Vibration Due to Torsional Excitation Using the Method of Harmonic Balance”. *Proceedings of ASME 2002 Pressure Vessels & Piping Conference 447*, PVP2002-1512, 17-22.

S. A. MASOUD and **A. A. AL-QAISIA** [2002] “Effect of Concentrated Masses on Dynamic Behavior of a Cracked Beam”. *Proceedings of IASTED International Conference on Applied Simulation and Modeling (ASM 2002)*, 363-060, 108-113.

B. O. AL-BEDOOR, M. N. HAMDAN and **A. A. AL-QAISIA** [1999] “Nonlinear Natural Frequencies of a Cantilever Beam Partially Immersed in a Fluid and Carrying an Intermediate Mass”. *ASME Pressure Vessels and Piping Conference PVP99*, Boston, MA, USA. August 1-5. PVP-Vol. 396, 261-267.

A. AL-QAISIA and U. MENEGHETTI [1997] “Crack Detection in Plates by Sensitivity Analysis”. *Proceedings of the XV International Modal Analysis Conference IMAC*, Orlando-Florida, USA. February, Volume 2, 1831-1837.



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A. AL-QAISIA and U. MENEGHETTI [1993] “Crack Localization in a Stepped Beam”, *Proceedings of XXII Conference of the Italian Association for Stress Analysis*, pp.143-51.