

Samer Abedallah Masoud Al-Said
Professor

<p>EDUCATION <i>Sep.91-Dec.94</i></p> <p><i>Feb.87-Jan.90</i></p> <p><i>Sep.83-Jan.87</i></p>	<p>Ph.D. in Mechanical Engineering (Design & stress analysis/Dynamics & vibration) at the University of Cincinnati (Cincinnati, Ohio). The Ph.D. dissertation utilized new methods to improve the surface contact and bending fatigue stresses in spur-gear. G.P.A. is 3.9 out of 4.</p> <p>M.Sc. in Mechanical Engineering (Applied Mechanics) at Jordan University of Science and Technology, Irbid/Jordan. The M.Sc. thesis tackles the mistuning in gas turbine engine fans and its effect on the engine's structural dynamics. I graduated top of the class with a G.P.A. of 85.2%.</p> <p>B.Sc. in Mechanical Engineering (Aerospace) from Yarmouk University Irbid/Jordan. Graduated in the top 2% of the class with G.P.A. of 84.2% (rating of excellent).</p>
<p>RESEARCH <i>Stress Analysis & Design</i></p> <p><i>Dynamics & Vibration</i></p> <p><i>Applied Mechanics</i></p> <p><i>Google scholar</i></p> <p><i>ResearchGate</i></p> <p><i>Scopus</i></p>	<p>A research concerned with improving the spur-gears performance. New methods to reduce the fillet stresses as well as the contact stresses were proposed. Design and analysis are carried out using the Finite Element, and the results were enhanced using Boundary Element Method. Moreover, a new stress/deflection computation approach is proposed, where The Assumed Mode method is used to calculate stresses/Deflections in beam like structures subjected to side pressure wave. The structural dynamics of a tuned and mistuned bladed-disk in a gas turbine was studied using modal analysis. The work was extended to investigate the effect of support flexibility and asymmetry on the system characteristic and stability. The effect of a crack depth on system characteristic for prestressed column is investigated; theoretical analyses and experimental work are carried out. The work is extended for cracked rotating Timoshenko beam. Utilizing vibration, crack identification algorithms were proposed to identify crack in beam like structures (like: stepped beam carrying rigid disks and rotating cracked beam). The algorithms are verified experimentally and/or using FEA.</p> <p>Crack identification using vibration-induced heat “Vibrothermography” Participated in two different areas of research, fluid mechanics, and path planning</p> <p>https://scholar.google.com/citations?hl=en&user=RiDyRMAAAAAJ</p> <p>https://www.researchgate.net/profile/Samer_Al-Said</p> <p>https://www.scopus.com/authid/detail.uri?authorId=57202134908</p>

<p>EXPERIENCE <i>Sep. 2019- Cur.</i> <i>Jan. 2008-Cur.</i> <i>Aug 2015-Aug 2016</i> <i>Sep. 2011-Sep 2012</i> <i>Sep. 2003-2007</i> <i>Sep. 2002-2003</i> <i>Feb.2000-Jan.2008</i> <i>Feb.95-Feb 2000</i></p>	<ul style="list-style-type: none"> • Professor in Mechanical Engineering Department at Alfaisal University/ Riyadh KSA • Professor in Mechanical Engineering Department at Jordan University of Science and Technology Irbid/Jordan. • Visiting professor in Mechanical Engineering Department at American University of Sharjah, Sharjah, United Arab Emirate. • Professor in Mechanical Engineering Department at University of Hail, Hail/ Saudi Arabia. (Sabbatical year) • Visiting Associate Professor in Mechanical Engineering Department at King Saud University, Riyadh-Saudi Arabia • Head of the Mechanical Engineering Department, Jordan University of Science & Technology, Irbid-Jordan. • Associate Professor in Mechanical Engineering Department at Jordan University of Science and Technology Irbid/Jordan. • Assistant Professor in Mechanical Engineering Department at Jordan University of Science and Technology Irbid/Jordan. <p><i>Taught the following courses:</i> <u>Graduate</u> <u>courses:</u> Perturbation Techniques, Analytical Vibration Methods, Continuum Mechanics, Applied Engineering Mathematics <i>Supervised five master thesis</i> <i>Committee Member for many M.Sc. Theses</i> <u>Under Graduate Courses</u> Mechanics of Machine, Mechanical Vibrations, Mechanical Engineering Design (I & II), Computer Aided Design, Finite Element, Vibration lab, Mechanics of Material, Instrumentation (Course & its lab), Engineering Mechanics (Statics & Dynamics), Engineering Drawing, Mechanical Drawing, Introduction to Applied Engineering, Numerical Methods in Engineering <i>Supervised several senior design projects.</i></p> <p><i>Dec. 93-Jul. 94</i> Research Assistant in Mechanical Engineering Department at Univ. of Cincinnati. Ohio-USA</p> <p><i>Oct. 91-Feb. 92</i> Research Assistant in Aerospace Engineering Department at Univ. of Cincinnati. Ohio-USA</p> <p><i>Sep. 89-Apr. 91</i> Research Assistant in Mechanical Engineering Department at Jordan University of Science and Technology (J.U.S.T) Irbid/Jordan.</p>
<p>GRANTS <i>Jun. 2008</i> <i>Jun. 2006-Oct. 2007</i> <i>May .2006-Mar. 2007</i> <i>Aug. 2004- Dec. 2005</i> <i>Sep. 1996-1997</i> <i>Dec. 1993-1994</i> REVIEWER for</p>	<p>Teaching Assistant in Mechanical Engineering Department at J.U.S.T.</p> <ul style="list-style-type: none"> • Stress Analysis for Sama aircraft wing using Finite Element. Jordan Aerospace Industry (JAI), Amman, Jordan. • Dynamic Characteristics of Two Elastically Coupled Cracked Beams. Saudi Basic Industrial Corporation (SABIC). Riyadh-Saudi Arabia. • New Algorithm for Crack Localization in Rotating Timoshenko Beam. College of Engineer Research Center, King Saud University, Riyadh-Saudi Arabia • Crack identification in stepped beam carrying concentrated masses. Saudi Basic Industrial Corporation (SABIC). Riyadh-Saudi Arabia • Stress analysis of concrete pan mixer structure, using Finite Element. Technical Industrial Group Company, Amman - Jordan • Improving Spur Gear performance. USA Department Of Defense/Central State Univ. Xenia, Ohio-USA • Journal of The Franklin Institute

	<ul style="list-style-type: none"> • Mechanical Systems and Signal Processing • Jordan Journal of Mechanical and Industrial Engineering • NED University Journal of Research • Journal of Vibration and Control • Meccanica • International Journal of Mechanical Sciences • Journal of Mechanical Design, Transactions of ASME • Session Chair for Sensor & Measurement THE 3rd INTERNATIONAL CONFERENCE ON MECHATRONICS (ICOM'08), Kuala Lumpur, Malaysia 18-20 December, 2008 • 2010 IEEE/ASME International Conference on Advanced Intelligent Mechatronics. • Journal of Mechanical Engineering Science, Proceedings of the Institution of Mechanical Engineers Part C • International Journal on Advanced Steel Construction • Mechanics Research Communications • International Journal of Applied Engineering Research • Mu'tah Journal for Research & Studies (MJRS) • 13th Mediterranean Conference on Control and Automation (2005 ISIC-MED) • ASME, International Gas Turbine and Aeroengine Congress and Exposition (IGT), Jun, 2003. Atlanta, Georgia. • Session Chair for Modelling and Simulation Methods I, at the IASTED international conference on Applied Simulation and Modelling, June 25-28, 2002, Crete, Greece • IEEE Transaction on System, Man and Cybernetics • Journal Finite Elements in Analysis and Design • Yarmouk Research Journal
<p><i>AWARDS & HONORS</i> <i>Jan.92-Dec.94</i> <i>Sep.94-Dec.94</i> <i>Sep.93-Jun.94</i> <i>Sep.91-Aug.93</i></p>	<p>Scholarship from Jordan University of Science and Technology. University Graduate Scholarship (University of Cincinnati) Doctoral University Scholarship (University of Cincinnati) University Graduate Scholarship (University of Cincinnati) Honor list (B.Sc. at Yarmouk University Irbid/Jordan) <i>Member of Jordan Engineers Association</i></p>
<p><i>COMPUTER EXPERIENCE</i></p>	<p>FORTRAN, MATLAB.</p>
<p><i>FINITE ELEMENT SOFTWARE</i></p>	<p>ANSYS 10, COSMOS/M ver. 2.5</p>

PUBLISHED WORK

Refereed Journals (Almost all journals are Science Citation Index)

1. Bassam A. Abu-Nabah, **Samer M. Al-Said**, Rim Gouia-Zarrad " A simple heat diffusion model to avoid singularity in estimating a crack length using sonic infrared inspection technology", *Sensors and Actuators A: Physical* Volume 293, 1 July 2019, Pages 77-86, [DOI:10.1016/j.sna.2019.03.001](https://doi.org/10.1016/j.sna.2019.03.001)
2. Bassam A. Abu-Nabah & **Samer A. M. Al-Said** (2018) Sonic IR crack size estimation using 2D heat diffusion model with arbitrary heat source function along the crack, *Quantitative InfraRed Thermography Journal*, 15:2, 271-290, [DOI: 10.1080/17686733.2018.1463011](https://doi.org/10.1080/17686733.2018.1463011)
3. **Samer A. M. Al-Said** "Crack Influence on the Dynamic Characteristics of Elastically Coupled Beams", *Applied Mechanics and Materials Vols. 110-116 (2012) pp 328-336*
[DOI: 10.4028/www.scientific.net/AMM.110-116.328](https://doi.org/10.4028/www.scientific.net/AMM.110-116.328) (**not ISI**)
4. **Ahmad A. Masoud and Samer Al-Said** "A New Algorithm for Crack Localization in a Rotating Timoshenko Beam", *Journal of Vibration and Control*, 15(10): 1541–1561, 2009.
[DOI: 10.1177/1077546308097272](https://doi.org/10.1177/1077546308097272)
5. **Samer Masoud Al-Said**, "Crack Detection in Stepped Beam Carrying Slowly Moving Mass". *Journal of Vibration and Control* 14 (12) 1903-1920, 2008,
[DOI: 10.1177/1077546307081321](https://doi.org/10.1177/1077546307081321)
6. **S.A.M. AL-Said and A.A. AL-Qaisia**, "Influence Of Crack Depth And Attached Masses On Beam Natural Frequencies". *International Journal of Modelling and Simulation*, Vol. 28, No. 3, 2008
[DOI: 10.1080/02286203.2008.11442474](https://doi.org/10.1080/02286203.2008.11442474)
7. **Samer Masoud Al-Said**, "Crack Identification in a stepped Beam carrying a rigid disk". *Journal of Sound and Vibration*, 300 (2007) pp. 863-876
[DOI: 10.1016/j.jsv.2006.09.011](https://doi.org/10.1016/j.jsv.2006.09.011)
8. **Samer Masoud Al-said**, Mohammad Qasim,"Tooth Stress Redistribution to Improve Bending Fatigue Strength of Spur-Gear". *International Journal of Engineering Simulation*. Vol. 7 No. 3, 2006
9. **Samer Masoud**, Malk Naji, Adnan Al-shukry, "Flexural vibration of Rotating Cracked Timoshenko Beam". *Journal of Vibration and Control*, 12 (11), 2006, pp. 1271-1287
[DOI: 10.1177/1077546306071694](https://doi.org/10.1177/1077546306071694)
10. **Samer Masoud** and Naser Al-Huniti, "Effect of support flexibility on the stability of bladed disk attached to unsymmetrical continuous shaft". *International Journal of Modelling and Simulation*, 205-4046 Issue 2, Vol. 25, (2005)
[DOI: 10.1080/02286203.2005.11442327](https://doi.org/10.1080/02286203.2005.11442327)
11. **Masoud A.S.S.A.** and Qasim, M. 'Increasing spur gear durability: two-material spur gear', *international journal of Computer Applications in Technology*, Vol. 24, No. 3, 2005, pp. 171–179. (**Not ISI**)
12. **Masoud, Samer A. Masoud, Ahmad A.** "Motion planning in the presence of directional and regional avoidance constraints using nonlinear, anisotropic, harmonic potential fields: A physical metaphor" *IEEE Transactions on Systems, Man, and Cybernetics Part A: Systems and Humans.*, v 32, n 6, November, 2002, p 705-723
[DOI: 10.1109/TSMCA.2002.807030](https://doi.org/10.1109/TSMCA.2002.807030)
13. M. Al-Nimr, A. M. Hassan and **Samer Masoud**, "Diffusion bonding in multi- layers systems", *Heat and Mass Transfer* Volume 37 Issue 2/3 (2001) pp 271- 273
[DOI: 10.1007/s002310000137](https://doi.org/10.1007/s002310000137)
14. **Samer A. Masoud** and Ahmad A. Masoud , "Constrained Motion Control Using Vector Potential Fields", *IEEE IEEE Transactions on Systems, Man, and Cybernetics Part A: Systems and Humans*, v. 30, n. 3, MAY 2000 251-272
[DOI: 10.1109/3468.844352](https://doi.org/10.1109/3468.844352)
15. **Samer Masoud**, A. M. Hassan and M. Al-Nimr, "Mass diffusion into Two-layer media" *Heat and Mass Transfer*, Volume 36 Issue 2 (2000) pp 173-176
16. **S. A. Masoud**, M. A. Al-Nimr and M. K. Alkam "Transient Film Condensation on a Vertical Plate Imbedded in Porous Medium" *Transport in Porous Media*, Sept. 2000, Vol. 40, Issue 3, pp. 345-354.
[DOI: 10.1023/A:1006606426819](https://doi.org/10.1023/A:1006606426819)
17. M. Naji, M. Al-Nimr, **S. Masoud** "Transient thermal behavior of a cylindrical brake system," *Heat and Mass Transfer* 36 (2000) pp 45-49
18. **Samer Masoud**, Mohammed Al-Jarrah, Majed Al-Maamory, "Effect of Crack Depth on The Natural Frequency of a Prestressed Fixed-Fixed Beam", 1998, *Journal of Sound and Vibration*, 214(2), pp201-212.
[DOI: 10.1006/jsvi.1997.1541](https://doi.org/10.1006/jsvi.1997.1541)
19. M. A. Al-Nimr, **S. Masoud**, "Unsteady free convection flow over a vertical flat plate immersed in a porous medium", 1998, *Fluid Dynamics Research* (23) pp153-160
[DOI: 10.1016/S0169-5983\(97\)00059-2](https://doi.org/10.1016/S0169-5983(97)00059-2)

20. Mohammed Al-Nimr, **Samer Masoud**, "Nonequilibrium Laser Heating of Metal Films", *Journal of Heat Transfer ASME*, vol. 119, February 1997 pp. 188-190.
DOI: 10.1115/1.2824088
21. Naim Khader, **Samer Masoud**, "Vibration of Mistuned Bladed Disks Supported by Flexible Continuous Shafts", 1991, *Journal of Sound and Vibration*, 149(3), pp 471-488.
DOI: 10.1016/0022-460X(91)90448-S

Refereed Conference

1. Jin-Hyuk Lee, **Samer Masoud Al-Said**, (2016) "Flow-Induced Vibration Analysis of Supported Pipes with a Crack", COMSOL CONFERENCE MUNICH, October 12-14, The Westin Grand München, Munich Germany
2. **Samer A. M. Al-Said** "Crack Influence on the Dynamic Characteristics of Elastically Coupled Beams" 2nd International Conference on Mechanical, Industrial, and Manufacturing Technologies MIMT 2011, Singapore 26-28 Feb. 2011
3. **Samer Masoud Alsaid and Max Brown** "Strengthening Spur Gears by Altering Stress Distribution" THE 3rd INTERNATIONAL CONFERENCE ON MECHATRONICS (ICOM'08), Kuala Lumpur, Malaysia 18-20 December, 2008
4. Ahmad A. Masoud, **Samer A. Masoud**, "A Modified, Hybrid, PDE-ODE Controller with Integrated directional and Region Avoidance Constraints," IEEE **Conference** on Decision and Control, Tampa, Florida, USA, 1998.
5. Ahmad A. Masoud, **Samer A. Masoud**, "A Self-Organizing, Hybrid, PDE-ODE Structure for Motion Control in Informationally-deprived Situations," IEEE **Conference** on Decision and Control, Tampa, Florida, USA, 1998.
6. Ahmad A. Masoud, **Samer A. Masoud**, "Evolutionary Action Maps for Navigating a Robot in an Unknown Multidimensional, Stationary Environment, Part II: Implementation and Results", 1997, IEEE International **Conference** on Robotics and Automation, April 21-27 Albuquerque, New Mexico, USA
7. **Samer Masoud**, Naim Khader, "Stability Analysis for Unsymmetrical Shaft With Flexible Bladed-Disk", presented at the gas turbine and aeroengine **congress** and exposition June 2-5, 1997 Orlando, Florida USA, ASME Paper No. 97-GT-201.
8. Ahmad Masoud, **Samer Masoud**, Mohamed Bayoume, "Robot Navigation Using a Pressure Generated Mechanical Stress Field: The Biharmonic Potential Approach", 1994 IEEE International **Conference** on Robotics and Automation, May 8-13, San Diego, California.
9. Naim Khader, **Samer Masoud**, "The Assumed Mode Method in Structural Dynamic of Bladed Disk Shaft Systems", presented at the gas turbine and aeroengine **congress** and exposition June 11-14, 1990 Brussels Belgium, ASME Paper NO. 90-GT-315