

## NASER S. AL-HUNITI

### Professor of Mechanical Engineering

Mechanical Engineering Department  
The University of Jordan  
Amman 11942-Jordan  
E-mail: [alhuniti@ju.edu.jo](mailto:alhuniti@ju.edu.jo)  
Tel: (Work) +962 6 5355000 Ext. 22800  
**Mobile: +962 7 77499008**



**Date of Birth** 1966  
**Nationality** Jordanian  
**Marital Status** Married – Three children

### PRESENT APPOINTMENT

11/2006- present Professor, Mechanical Engineering Department, The University of Jordan, Amman, Jordan  
9/2016 – present Vice Dean of Academic Research, The University of Jordan

### ACADEMIC QUALIFICATIONS

9/1992-4/1996 **Ph.D.**, University of Cincinnati, Cincinnati, OH, USA. Department of Aerospace Engineering and Engineering Mechanics. Major: Solids and Structures. Minor: Dynamics and Control. GPA: 4.0/4.0. Dissertation: Micromechanical Modeling of Woven and Textile Composites.  
9/1989-12/1991 **M.Sc.**, The University of Jordan, Amman, Jordan. Mechanical Engineering Department. Major: Applied Mechanics. Average: 92.7% (Excellent). Thesis: Experimental Investigation of Thermal Spray of Metals with Particular Reference to Wear Resistance.  
9/1985-6/1989 **B.Sc.**, The University of Jordan, Amman, Jordan. Mechanical Engineering Department. Major: Mechanical Engineering. Average: 85.9% (Excellent) 1<sup>st</sup> Class Honors. Graduation Project: Drag Reduction in Conduits.

### PREVIOUS ACADEMIC APPOINTMENTS

9/2009 – 8/2011	Professor, Mechanical Engineering Department, Prince Mohammad Bin Fahd University, Al Khobar, Saudi Arabia.
11/2001-11/2006	Associate Professor, Mechanical Engineering Department, The University of Jordan, Amman, Jordan
9/1996-11/2001	Assistant Professor, Mechanical Engineering Department, The University of Jordan, Amman, Jordan
9/2002-9/2003	Visiting (Sabbatical), Mechanical Engineering Department, The Hashemite University, Zarqa, Jordan
9/1991-9/1992	Lecturer, Philadelphia University, Jerash, Jordan

### **PREVIOUS ADMINISTRATIVE APPOINTMENTS**

10/2012 – 1/2016	Director, Arab Council for Training Students of Arab Universities (ACTSAU)
9/2011 – 9/2012	Vice-Dean for Academic Affairs, Faculty of Engineering & Technology, The University of Jordan, Amman-Jordan
9/2009 -9/2011	Chairman, Mechanical Engineering Department, Prince Mohammad Bin Fahd University, Al Khobar, Saudi Arabia
9/2007-9/2009	Vice-Dean of Academic Research, The University of Jordan, Amman, Jordan
2/2008 -9/2009	Chairman, Central Tenders Committee, The University of Jordan, Amman, Jordan
9/2006-9/2007	Chairman, Mechanical Engineering Department, The University of Jordan, Amman, Jordan.
9/2003-9/2005	Chairman, Mechanical Engineering Department, The University of Jordan, Amman, Jordan.
9/2001-9/2002	Vice-Dean for Students, Research and Development Affairs, Faculty of Engineering and Technology, The University of Jordan, Amman, Jordan.

### **RESEARCH ACTIVITIES AND PUBLICATIONS**

**Research Interests:** Composite Materials, Thermo-Elasticity, Machinery Dynamics and Failure Analysis, Vibrations, Maintenance Techniques, Finite Element Modeling, Dental Strength and Failure Analysis.

#### **Research-Related Positions and Activities:**

- Vice-Dean of Academic Research, The University of Jordan (9/2007-9/2009, and 9/2016-present)
- Member of the Engineering and Nanotechnology Committee, Scientific Research Fund, Ministry of Higher Education, Jordan (5/2014-present).

- Member of the general committee of accrediting scientific journals, the University of Jordan.
- Chairman of the Eight Jordanian International Mechanical Engineering Conference (JIMEC 2014), 22-23/9/2014, Amman, Jordan.
- Member of the editorial board of the Jordan Journal of Mechanical and Industrial Engineering (JJMIE), (9/2012-present).
- Member of the scientific committee of the Third International Conference on Composite Materials and Structures, Oran, Algeria, December, 2014.
- Liaison Officer of the SRTD (Support to Research and Technological Development & Innovation Initiatives & Strategies in Jordan) funded by the European Union (8/2008-9/2009)
- A member of the scientific committee of the Seventh International Conference on Composite Science and Technology (ICCST/7), Sharjah, UAE, 2009.
- A reviewer for a number of journals including: Journal of Sound and Vibration, Journal of Composite Materials, Applied Composite Materials, Journal of Vibration and Control, Journal of Mechanics of Materials and Structures, Journal of Heat and Mass Transfer, Heat Transfer Engineering, Dirasat Journal, Al-Yarmouk Research Journal, Mutah Journal for Research and Studies.

#### **Research Fellowships:**

- German (DFG) fellowship (6/2005-9/2005): Finite Element Micro-Mechanical Damage of Composites. Institute for Material Testing, Material Science and Strength of Materials, University of Stuttgart, Germany.
- German (DFG) fellowship (6/2008-8/2008): FEM study on the residual stresses in aircraft stringers produced by compound extrusion, Institut fuer Werkstoffkunde I, University of Karlsruhe, Karlsruhe, Germany.

#### **Funded Projects:**

- Middle Eastern Partnership in Sustainable Engineering. TEMPUS project, supported by European Commission, 2011-2014.
- Modeling, Design and Construction of a Composite Material Body Armor Plate Prototype (supervisor of a group of students). Funded by King Abdullah II Design & Development Bureau – KADDB, 2012-2013.
- Design and Construction of a Composite Material Chassis for a Formula Racing Car (supervisor of a group of students). Funded by King Abdullah II Design & Development Bureau – KADDB, 2011-2012.
- Design and Construction of a Compressed Air Vehicle (part of a team of researchers). Funded by the Deanship of Academic Research (DAR), The University of Jordan, 2009-2012.

- Thermal Stresses in a Composite Slab Due to a Rapid Dual-Phase-Lag Laser Heating (single researcher). Funded by the Deanship of Academic Research (DAR), The University of Jordan, 1999-2001.

#### **Publications:**

1. Ahmad Y. Al-Maharma, **Naser Al-Huniti**, A Review on the Factors Affecting the Fracture Toughness of CNTs Based Polymeric Composites Nanocomposites. Submitted to Composite Structures.
2. **Naser Al-Huniti**, A Generalized Approach for Composite Beam Deflections, *Composites: Mechanics, Computations, Applications*. An International Journal, Volume 8(3), 2017, pp. 1-18.
3. **Naser Al-Huniti** and Sami Alahmad, Transient Thermo-Mechanical Response of a Functionally Graded Beam under the Effect of a Moving Heat Source. *Advances in Materials Research, An International Journal*, Volume. 6(1), 2017, pp. 27-43.
4. Ahmad Y. Al-Maharma, **Naser Al-Huniti**, The Effect of Nano-Sized Air Bubbles on the Mechanical Properties and Natural Frequencies of a Multi-Cracked Composite Bar. *International Journal of Engineering Research in Africa*, Vol. 30, 2017, pp. 65-84.
5. **Naser S. Al-Huniti**, Nonlinear Large Deflection Analysis of Laminated Composite Beams, 2017 Eleventh International Conference on Composite Science and Technology (ICCST/11), American University of Sharjah, Sharjah, UAE.
6. Adnan I. O. Zaid, **N. S. Al-Huniti** and K. Y. S. Eyal-Awwad, Effect of molybdenum addition to ZA22 grain refined by titanium in the cast and after pressing by ECAP, *IOP Conf. Series: Materials Science and Engineering*, 146 (2016).
7. Firas Jarrar, Reem Jafar, Olga Tulupova, Farid Enikeev and **Naser Al-Huniti**, Constitutive Modeling for the Simulation of the Superplastic Forming of AA5083. *Materials Science Forum*, Vols. 838-839 (2016), pp. 512-517.
8. Reem A. Jafar, Firas S. Jarrar, **Naser S. Al-Huniti**, Two-Stage Approach for Improving the Thickness Distribution in Superplastic Forming. *Journal of Materials Science Research*. Volume 4 (1), 2015, pp. 12-27.
9. Ahmad Y. Al-Maharma, **Naser Al-Huniti**, The Effect of Carbon Nanotubes Enforcement on the Effective Elastic and Dynamic Properties of a Composite Blade. The 8<sup>th</sup> Jordanian International Mechanical Engineering Conference, 22-23 September, 2014, Amman-Jordan.
10. Wala Majid Amin, **Naser S Al-Huniti**, Ushtar W Amin, Motasum A Abu-Awad, Sheyar W Amin, Yousef A Abousy. Influence of Root Posts and Retained Coronal Dentin on

Fracture Resistance and Failure Pattern of Endodontically Treated Maxillary Incisors. *Journal of Current Surgery*, Volume 3 (2), 2013, pp. 73-81.

11. Wala Majid Amin, **Naser S. Al-Huniti**, Noor I. Hasan, Dina W. Al-Nimri, Saba A. Al-Najdawi, Ushtar W Amin, Sheyar W. Amin. Effect of Ferrule Location on Fracture Resistance and Failure Pattern of Endodontically Treated Maxillary Incisors Restored with Quartz Fiber Posts. *Journal of Medicine and Medical Sciences*. Volume 4(9), 2013, pp. 343-352.
12. Feras H. Darwish, M. A. Al-Nimr, and **Naser S. Al-Huniti**. Transient Response of a Clamped Slab under Pressure and Thermal Loads. *Journal of Thermal Stresses*, Volume 35, 2012, pp. 470-484.
13. **Naser S. Al-Huniti**, Fadi Al-Faqs and Osama Abu Zaid. Finite Element Dynamic Analysis of Laminated Viscoelastic Structures. *Applied Composite Materials*, Volume 17, Issue 5, 2010, pp. 489-498.
14. Abu Sneineh, A., AlSharif, A., Khatib, M. AmerShennak, Mustafa M.Chakik, Refaat M., **Al Huniti, Naser S.**, Assessment of gastric emptying in normal Jordanians individuals, *Journal of Bahrain Medical Society*, Volume 22, Number 2, 2010, pp.1-12.
15. **Naser S. Al-Huniti**, Fadi Al-Faqs and Osama Abu Zaid, Finite Element Dynamic Analysis of Laminated Viscoelastic Structures, *Seventh International Conference on Composite Science and Technology (ICCST/7)*, January 20-22/1/2009, Sharjah, UAE.
16. Firas S. Jarrar and **Naser S. Al-Huniti**. Buckling behavior of laminated metal-matrix composite plates with cutouts. *The sixth Jordanian International Mechanical Engineering Conference (JIMEC'6)*, October, 2007, Amman-Jordan.
17. **Naser S. Al-Huniti** and M. A. Al-Nimr. Steady-State Thermoelastic Behavior of a Two-Anisotropic Layer Thick Plate Strip. *International Journal of Computational Methods in Engineering Science and Mechanics*, Vol. 7, No. 5, 2006, pp. 381-388.
18. **Naser S. Al-Huniti** and Osama M. Al-Habahbeh. **Composite LPG Cylinders as an Alternative to Steel Cylinders: Finite Element Approach**. *International Conference on Manufacturing and Material Processing (ICMM2006)*, Kuala Lumpur, Malaysia, March, 2006, pp. 363-368.
19. **Naser S. Al-Huniti**. Computation of Member Stiffness in Bolted Connections Using Finite Element Analysis. *Mechanics Based Design of Structures and Machines*, Vol. 33, No. 3, 2005, pp.331-342.

20. S. Masoud and **Naser S. Al-Huniti**. Effect of Support Stiffness on the Stability of a Rotor System with Blade Flexibility. *International Journal of Modeling and Simulation*, Vol. 25, No. 2, 2005, pp. 127-134.
21. **Naser S. Al-Huniti** and M. A. Al-Nimr. Dynamic Thermoelastic Response of a Heated Thin Composite Plate using the Dual-Phase-Lag Heat Conduction Model. *Heat Transfer Engineering*, Vol. 26, No. 9, 2005, pp. 41-49.
22. Osama Al-Habahbeh and **Naser S. Al-Huniti**. **Composite Pressure Vessels in Petroleum Industry: Status and Outlook**. *Proceedings of the 5<sup>th</sup> International Conference on Composite Science & Technology*, Sharjah, UAE, February 2005, pp. 401-406.
23. **Naser S. AL-Huniti**. Dynamic Behavior of a Laminated Beam Under a Moving Heat Source. *Journal of Composite Materials*, Vol. 38, No. 23, 2004, pp. 2143-2160.
24. **Naser S. Al-Huniti** and M. A. Al-Nimr, Thermoelastic Response of a Heated Thin Composite Plate using the Hyperbolic Heat Conduction Model: Lumped analysis. *International Journal of Thermal Sciences*, Vol. 43, No.10, 2004, pp 959-965
25. **Naser S. Al-Huniti**, M. A. Al-Nimr, and Maher Daas. Transient Variations of Thermal Stresses and the Resulting Residual Stresses within a Thin Plate During Welding Processes. *Journal of Thermal Stresses*, Vol. 27, No. 8, 2004, pp. 671-689.
26. **Naser S. Al-Huniti** and M. A. Al-Nimr. Thermoelastic Behavior of a Composite Slab under the Dual-Phase-Lag Model. *Journal of Thermal Stresses*, Vol. 27, No. 7, 2004, pp. 607-623.
27. **Naser S. Al-Huniti** and M. A. Al-Nimr. Dynamic Thermoelastic Response of a Heated Thin Composite Plate under the Hyperbolic Heat Conduction Model. *International Journal of Heat and Technology*, Vol. 22, No. 1, 2004, pp. 179-185.
28. **Naser S. Al-Huniti** and Adnan I. O. Zaid. Simulation of the Free Upsetting of a Metallic Ring Using Finite Element Analysis. *3<sup>rd</sup> International Conference on Advanced Manufacturing Technology (ICAMT 2004)*, Kuala Lumpur, Malaysia, (11-13) May, 2004, pp. 687-692.
29. **Naser S. AL-Huniti**, M. A. Al-Nimr and M. M. Meqdad. Thermally Induced Vibration in a Thin Plate under the Wave Heat Conduction Model. *Journal of Thermal Stresses*, Vol. 26, No. 10, 2003, pp. 943-962.
30. Osama Abu-Hammad and **Naser Al-Huniti**. The out of Alignment Dental Implants. The Behavior of the System. *Egyptian Dental Journal*, Vol. 47, No. 4, 2001, pp. 1657-1664.

31. MalakNaji, M. Al-Nimr and **Naser S. Al-Huniti**. Thermal Stresses in a Rapidly Heated Plate Using the Parabolic Two-Step Heat Conduction Model. *Journal of Thermal Stresses*, Vol. 24, No. 5, 2001, pp. 399-410.
32. **N. S. Al-Huniti**, M. A. Al-Nimr and M.Naji, Dynamic Response of a Rod Due to a Moving Heat Source Under the Hyperbolic Heat Conduction Model. *Journal of Sound and Vibration*, Vol. 242, No. 4, 2001, pp. 629-640.
33. M. I. Qaisi and **N. S. Al-Huniti**. Large Amplitude Free Vibration of a Conservative System with Inertia and Static Non-Linearity. *Journal of Sound and Vibration*, Vol. 242, No. 1, 2001, pp. 1-7.
34. Mohammad H. F. Dado, **Naser S. Al-Huniti**, and A. Karim Eljabali. Dynamic Simulation Model for Mixed-Loop Planar Robots with Flexible Joint Drives. *Mechanism and Machine Theory*, Vol. 36, No. 4, 2001, pp. 547-559.
35. **Naser S. Al-Huniti** and Nesreen Hasan. Analytic Geometry Formulation of the Kinematic Equations of a Seven-Degree-of-Freedom Robot Manipulator. *First International Conference on Mechatronics*, Kuala Lumpur, Malaysia, 2001, pp. 162-172.
36. Mohammad H. F. Dado and **Naser S. Al-Huniti**. A Compliant Four-Bar Mechanism Synthesis using the Pseudo-Rigid-Body Model. *Seventh International Conference on Production Engineering, Design and Control*, Alexandria, Egypt, 2001, pp. 913-923.
37. M. A. Al-Nimr and **Naser S. Al-Huniti**. Transient Thermal Stresses in a Thin Elastic Plate Due to a Rapid Dual-Phase-Lag Heating. *Journal of Thermal Stresses*, Vol. 23, No. 8, 2000, pp. 731-746.
38. **Naser S. Al-Huniti** and M. A. Al-Nimr. Behavior of Thermal Stresses in a Rapidly Heated Thin Plate. *Journal of Thermal Stresses*, Vol. 23, No. 4, 2000, pp. 293-307.
39. **Naser Al-Huniti** and Adnan Nayfeh. Constitutive Relation Modeling of Woven and Textile Composites. *Fifth International Conference on Composites Engineering*, Las Vegas, USA, 1998, pp. 85-94.
40. A. I. Zaid and **N. Al-Huniti**. Experimental Investigation of Hot and Cold Spraying of Metals with Particular Reference to Wear Resistance. *Fifth International Conference on Petroleum, Mining, & Metallurgical Engineering*, Suez, Egypt, 1997, pp. 204-215.

#### **Master Theses Supervised:**

- Otman Khaled, Thermoelastic Analysis of Bi-directional Functionally Graded Beams.

- Laith Alnsour, The Effect of the Thermo-Mechanical Coupling Terms in Beams and Plates
- Amro Mohammad, Damping Characteristics of Viscoelastic Composite Laminates in a Hygrothermal Environment.
- Mohammad Al-Saqarat, Reliability, Preventive Maintenance, Risk and Availability Analysis of a Container Gantry Crane
- Ala'a Alstary, Composite Robotic Arm Design, Analysis and Control
- Hedaya Salaheen, Implementating Total Productive Maintenance (TPM) Approach at Neonate Intensive Care Unit (NICU)
- Abdullah Alibrahim, Dynamic Response of a Composite Wind Turbine Blade Reinforced with Carbon Nano Tubes Due to Impact Loading
- Zaid AL-Atari, Mechatronic Design of Solar Tracking System for Compact Linear Fresnel Reflectors
- Ahmad Al-Maharmeh, Structural Health Monitoring of Wind Turbine Blades Fabricated From Composite Materials Reinforced with Carbon Nanotubes
- Duaa Jilani, Energy Saving and Structural Safety of a Composite Vessel of Nuclear Power Reactor
- Khaled Eyal-Awwad, Effect of Molybdenum Addition to Zinc-Aluminum Alloy (ZA22), Grain Refined By Ti or Ti+ B, on Its Mechanical Characteristics After Extruding in the Equal Channel Angular Pressing (ECAP)
- Reem Jafar, Using Finite Element Simulation to Predict the Effect of the Preform Cavity in Two-stage Superplastic Forming
- Fatima Al-Abtah, Simulation-Based Optimization of the Hybrid Superplastic Forming of AZ31
- Sami Al-Ahmad, Investigation of the Thermo-Mechanical Behavior of a Functionally Graded Beam under the Effect of a Moving Heat Source
- Hani Daradkeh, Hygrothermal Effects on the Deflection –Induced Voltage and Stresses in Composite Piezoelectric Structures
- Fadi Faqs, Dynamic Behavior of Composite Structures with Visco-Elastic Damping Layer
- Osama M. Al-Habahbeh, Composite LPG Cylinders as an Alternative to Steel Cylinders Used in the Local Market
- Maher Da'as, Transient Variations of Thermal Stress and the Resulting Residual Stresses within a Thin Plate During Welding Processes
- Meqdad Meqdad, Thermally Induced Vibration in a Thin Plate under the Wave Heat Conduction Model

**Samples of the award winning graduation projects in the annual Jordanian competition organized by the Jordanian Engineers Association**

- Design and Modification of an Automobile Steering and Suspension Systems
- Design and Manufacturing of Base Displacement Meter
- Design and Construction of a Composite-Material Chassis for a Formula Racing Car



- Design and Modeling of an Automobile Regenerative Braking System
- Energy Generation from Road Bumps

## **TEACHING EXPERIENCE**

**Undergraduate Courses:** Dynamics, Vibrations, Strength of Materials, Mechanics of Machines, Machine Design I, Machine Design II, Elements of Machine Design, Finite Element Method, Vibrations lab., Strength of Materials lab., Graduation Project (supervision).

**Graduate Courses:** Research Methodology, Advanced Engineering Mathematics, Continuum Mechanics, Theory of Elasticity, Theory of Plasticity, Theory of Plates, Composite Materials, Advanced Solid Mechanics, Advanced Measurements, Maintenance Methods and Techniques.

## **Accreditation Experience**

- Chairman of the national committee to revise the accreditation criteria of Mechanical Engineering and related programs (Aerospace, Nuclear, Mechatronics, Materials, Fire Fighting) in Jordan (2017-present)
- Team Coordinator, ABET Accreditation Engineering preparation for the Mechanical Engineering program, University of Jordan (9/2003- 9/2007).
- ABET accreditation preparation committee member (2011-2015).

## **COMPUTER SKILLS**

MS Office applications (Word, Power Point, Excel,...), ANSYS (Finite Element), Matlab, Mathematica, AutoCAD.

## **TECHNICAL EXPERIENCE**

### **Consultancy and Professional Committees:**

- A Certified Consultant Engineer in the area of Mechanical Engineering, Jordan Engineers Association.
- A member of the Engineering and Nano Technology Committee (Scientific Research Fund).
- Faculty-For-Factory (FFF) program of collaboration between the University of Jordan and Jordanian industries. Second round of the FFF program (Summer 2004). The project

was concerned with the design and manufacturing of the Shell-and-Tube Heat Exchanger and was jointly supported by the Jordan-United States Business Partnership (JUSBP) and Petra Engineering Industries Company.

- Faculty-For-Factory (FFF) program of collaboration between the University of Jordan and Jordanian industries. Participated in the first round (Summer 2003) was supported by the Industrial Research Fund – the Higher Council for Science and Technology and hosted by Petra Engineering Industries Company. The project was concerned with the development of some of the company’s production stages, mainly sheet metal works, punching and pressing processes.
- A member of the technical team for the design and construction of a vacuum dehydrating malaxer to reduce moisture content of olive paste to improve oil separation in conventional or Sinolea systems. Prince Ali Bin Nayef olive oil extractors (2003-2004).
- Reviewer for project proposals and final project reports for the Higher Council for Science and Technology.
- Member of technical committees in the Jordan Standards and Metrology Organization

#### **Short Courses:**

1. Machinery Failure Analysis and Prevention.
2. Gears: Design and Manufacturing
3. Technical Writing for Engineers in the Field

#### **Workshops and Training Attended**

1. Follow-up training for the development of the MSc program in Maintenance Engineering, Tempus IV project “Middle Eastern Partnership in Sustainable Engineering”, University of Ljubljana, Ljubljana, Slovenia, June 14-21, 2014.
2. EU-Industry-Specific Seminar: Higher Education Institutes (HEI)-Industry Partnership and Long Life Learning (LLL) Courses targeting Industry. Tempus IV project “Middle Eastern Partnership in Sustainable Engineering”, Technical University of Berlin, Berlin, Germany, 25-28 September 2013.
3. Training for the development of a new MSc program in Maintenance Engineering, Tempus IV project “Middle Eastern Partnership in Sustainable Engineering”, University of Ljubljana, Ljubljana, Slovenia, 26 May-8 June 2013.
4. Productive Business Conversation. Organized by Prince Mohammad Bin Fahd University, AlKhobar, Saudi Arabia, 18-19 May 2010.
5. FP7 Funding and Partnership. Organized by the European Commission, Brussels, Belgium, 6-13 June 2009.
6. Grant Writing and Funding Sources Workshop. The National Center for Biotechnology, Amman-Jordan, 10 Nov 2007.

7. Application challenges of NDT in Jordan Industries. The Hashemite University, Zarqa, Jordan. 17 May 2007.
8. ABET Accreditation Workshops: Three workshops organized by the University of Jordan, 2005-2007
9. Rules and Goals of University Teaching. Organized by the University of Jordan. September 1996.

**Membership of Professional Organizations:**

Jordan Engineers Association (JEA)