Nadim I. Shbeeb, Ph.D.
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Irbid, Jordan, 21110   **(0799109002)**

EXPERIENCE

10/09-present   Assistant Professor,   Jordan University of Science and Technology/Civil Eng. Dept.

8/08-10/09   Senior Development/Research Engineer;   Caterpillar Inc.,
- Development of Tire Soil Interaction Models for Multi-Body Dynamics Simulations.

1/99-8/08   Senior Development Engineer/Project Manager, The Goodyear Tire & Rubber Company,
- Developed lab tests to simulate product durability in the field. Cost savings approximately $500,000 annually in adjustments reduction.
- Developed algorithms for data analysis and acquisition. Time saving in post processing estimated at 85% over past methods.
- Structural and foundation evaluations of Lab buildings for future machine upgrades (increased load capacity) and new machine installations
- Stress and fatigue analysis of several machines (i.e. Balance, Force, Flywheel and steel cutter machines)
- Conducted several design of experiments and statistical analysis for machine acceptance, diagnosis and Six Sigma projects support.
- Conducted a multivariate non-linear analysis to extract correlations between mechanical characteristics of tires and measures of non-uniformity to improve the manufacturing process. Using a devised experimental program, Fourier analysis, image processing, and non-linear regression. Results of this study were implemented in the manufacturing process.
- Lead Project Engineer for procurement and installation of several tire uniformity machines to various locations within North America, Europe and Latin America. Projects were delivered on time and within budget most of the time (average budget per project 2.5 million dollars). Leading an international cross-functional team including marketing, engineers, designers, manufacturing, purchasing, and quality.
- Algorithm Development and C++ Programming
- Use of Photo-Elasticity to Measure Strains
- Developed the process for the design of contoured grindstones using image-processing techniques, Matlab and Pro/E. Time saving 94% over past method.

8/95-12/98   Research Associate; The University of Akron
- Development of Fracture Models for Damage Progression in Non-homogeneous Materials
- Development of Filament Winding Fabrication Process
- Supervision of Composite-Processing Group
- Finite Element Analysis of 2-D and 3-D structures

                  Teaching Assistant; The University of Akron
- Engineering Materials and Computer lab
- Computer Methods for Structural Engineers
- Theory of Structures
- Statics

2/95-8/95   Design Engineer; Massar/Consolidated Consultants, Amman, Jordan.

- Performed bridge design (Mujeb Bridge)
- Executed roadway design and layout. (Slope stability analysis of highway embankments and general surveying)
- Plan Development and Preparation

6/91-2/95 Geotechnical and Materials Engineer; Karasneh Engineering Office, Irbid, Jordan.
- Soil exploration, testing, data analysis and preparing reports
- Asphalt and Concrete mix design
- Material tests for pavement

EDUCATION

Ph.D. Civil Engineering - The University of Akron, Akron, Ohio. December 1998 **GPA: 4.0.**
  Dissertation "**General Crack Problem in a Sandwiched Functionally Graded Material**"
  NASA Lewis Research Center Award # NAG3-2069

MSc. Civil Engineering-Jordan University of Science and Technology, Irbid, Jordan. June 1994.
  Thesis "**Dynamic Modeling of Low and High Velocity Projectile Penetration of Soil**"

BSc. Civil Engineering-Jordan University of Science and Technology, Irbid, Jordan. June 1992.
  Senior Project "**Design of Embankment Dam-Case Study: Karameh Dam**"

AREAS OF EXPERTIES

1. Project Management.
2. Linear Elastic Fracture Mechanics in polymeric composites.
3. Numerical Methods.
4. Algorithm development and C/C++, FORTRAN programming.
5. Symbolic Computations (Computer analysis, MATHEMATICA).
6. Micro and macro-mechanics analysis and design of composites.
7. Impact problems in heterogeneous media and stress analysis.
8. Testing of Materials
9. Image Processing

CERTIFICATES

- Goodyear Six Sigma Black Belt Education Program
- Introduction to ABAQUS/Standard & ABAQUS/Explicit
- Contact in ABAQUS/Standard
- Best Practice Tire Modeling in ABAQUS
- Introduction to Pro/Engineer/Mechanica
- Advanced Project Management
- Becoming an Agent of Change: Tools & Strategies for Change Management.

SKILLS

1. Languages: Fluent in both Arabic & English
2. Computer Languages: C/C++, FORTRAN.
3. FEM codes: ABAQUS, Pro/Mechanica.
4. MINITAB Statistical Software, SAS jmp, Matlab.
5. Microsoft Office products

PUBLICATIONS

1. Shbeeb, N. I. and Binienda, W. K., 1998, "Analysis of an Interface Crack in a Functionally Graded Strip Sandwiched Between Two Homogeneous Layers of Finite Thickness" NASA CR 208874.
2. Shbeeb, N. I., Binienda, W. K., and Kreider, K. L., 1998,"Analysis of Multiple Cracks in an Infinite Functionally Graded Plate" NASA CR 208676.
3. Shbeeb, N. I., Binienda, W. K., and Kreider, K. L., 1999,"Analysis of the Driving Forces for Multiple Cracks in an Infinite Non-homogeneous Plate, Part I: Analysis" ASME Journal of Applied Mechanics, Vol. 66, pp. 492-500.
4. Shbeeb, N. I., Binienda, W. K., and Kreider, K. L., 1999,"Analysis of the Driving Forces for Multiple Cracks in an Infinite Non-homogeneous Plate, Part II: Parametric Study" ASME Journal of Applied Mechanics, Vol. 66, pp. 501-506.
5. Shbeeb, N. I. and Binienda, W. K., 1999, "Analysis of an Interface Crack in a Functionally Graded Strip Sandwiched Between Two Homogeneous Layers of Finite Thickness" Journal of Engineering Fracture Mechanics, Vol. 64, pp. 693-720.
6. Shbeeb, N. I., Binienda, W. K., and Kreider, K. L., 1999," Analysis of a general crack in a functionally graded strip sandwiched between two homogeneous half planes" NASA CR 209166.
7. Abdallah I. Husein (Malkawi), Adnan A. Basma and Nadim Shbeeb, 1999, "Projectile Penetration in Soil – Theoretical Model", Journal for Natural and Applied Sciences Research, Vol. 14, No. 1, pp. 59-83.
8. Shbeeb, N. I., Binienda, W. K., and Kreider, K. L., 2000,"Analysis of a General Crack in a Functionally Graded Strip Sandwiched Between Two Homogeneous Half Planes" Journal of International Fracture Mechanics, 104, pp. 23-50.
9. Shbeeb, N. I., and Binienda, W. K., 2000,"Analysis of the Driving Forces for Multiple Cracks in an Infinite Non-homogeneous Plate" Proceedings of International Congress of Theoretical and Applied Mechanics (ICTAM) 2000 Congress (Chicago, Illinois) (August 2000).
10. A number of propriety internal Goodyear reports.
11. Goodyear Trade Secret ID 2000-318
12. Goodyear Trade Secret ID 2002-254
13. Goodyear Trade Secret ID 2006-115
14. Nadim I. Shbeeb, Nabil M. Al-khras, M.Jamal Shannag & Hatem R.Alfendi, 2012, "Strengthening of lightweight reinforced concrete slabs using different techniques." The IES Journal Part A: Civil & Structural Engineering, Vol. 5, No. 1, 16–27.
15. Rajai Z Al-Rousan, Nadim I Shbeeb and Rund Al-Masri, 2016, "Nonlinear finite element analysis of thermoplastic railroad bridge." Journal of Thermoplastic Composite Materials, 2016, Vol. 29(6) 850–866.
16. Nadim I. Shbeeb and M. T. Abu Safaqah, 2017, "Mixed-Mode Analysis of A General Oriented Crack for a Functionally Graded Strip Sandwiched Between Two Homogeneous Layers of Finite Thickness." International Conference Coordinating Engineering for Sustainability and Resilience, Dead Sea Jordan, pp. 235-248.
17. Nadim I. Shbeeb and Rajai Z. Al-Rousan, 2018, "Vibration Analysis of Thermoplastic Railroad Bridge." Jordan Journal of Civil Engineering, Volume 12, No. 1.
18. Nadim I. Shbeeb, 2018, "Impact of bonded carbon fibre composite on the shear strength of reinforced concrete beams." Proceedings of the Institution of Civil Engineers: Structures and Buildings, Ahead of Print, http://dx.doi.org/10.1680/jstbu.16.00145.

NATIONALITY:
U.S./Jordanian