

# MAZIN H OBAIDAT

Department of Industrial Engineering  
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Al Zarqa - Jordan

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## OBJECTIVE

*To find an educational opportunity with a University in an established firm with long term career growth possibilities.*

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## SUMMARY

- Lean Six Sigma Green Belt
- Applying different engineering tools such as Design of experiments(DOE), Statistical analysis, Multivariate data analysis, Root cause analysis, Failure modes and effects analysis(FMEA) in reliability evaluation of different electronic and solar products
- Reliability evaluation and modeling for electronic components.
- Failure analysis for electronic components
- Development of test methods for reliability assessment and failure prediction methodology
- Developed an artificial intelligence based technique to accelerate electronic packages reliability testing

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## EDUCATION

**2010 - 2013**    **PhD. in Industrial System Engineering (ISE)**, Binghamton University , NY, USA.

**Dissertation Title** “*Reliability Of Lead-Free Solders Under Realistic Service Conditions*”

**2005 - 2008**    **M.S. in Industrial Engineering**, Jordan University of Science and Technology, Irbid, Jordan

**Thesis Title** “*Measuring The Performance Of Vehicles’ Maintenance Using a Modified Balanced Scorecard Approach*”.

**1992 - 1996**    **B.S. in Mechanical Engineering**, Anbar University, Ramadi, AL-Anbar, Iraq.

**Project Title** “*Stress Analysis Using Finite Element Method*”.

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## PROFESSIONAL EXPERIENCE

**14'-Present**    **Hashemite University (Industrial Engineering department)**

- Teaching of various B.Sc. courses which include Manufacturing process 1, Manufacturing process 2, laps of manufacturing process 1, Technology of material and manufacturing process , and Engineering Workshops.

**13**                **Watson Institute of Systems Excellence (WISE)**

- Research Associate with regard the reliability of electronic packaging with the co-operation with the U.S. Department of Defense, through the Strategic Environmental Research and Development Program (SERDP), IEEC, and by the AREA Consortium.
- Teaching assistant for Applied Multivariate techniques and Manufacturing Systems courses.

### **12' –13Research Associate, Watson Institute of Systems Excellence (WISE)**

- Research Associate with regard the reliability of electronic packaging with the co-operation with the U.S. Department of Defense, through the Strategic Environmental Research and Development Program (SERDP), IEEC, and by the AREA Consortium.
  - Teaching assistant for Processes for Electronic Manufacturing and Advanced Topics in integrated Manufacturing courses.
- Application of different engineering and data analysis tools such as DOE, SPC, root cause analysis, multivariate analysis, artificial neural network (ANN) in reliability evaluation for different products
- Established a correlation between fatigue life of lead free solder in electronics and strain energy density
- Developed a systematic study for understanding the life of lead free under isothermal cycling
- Reliability of solder (Pad cratering)
- Presenting posters during a tri-annual (specify the area) AREA Consortium meeting
- Studied the Intermetallic compound (IMC) growth in small solder joints with Copper and Nickle pads of different thicknesses and diameters at different temperature and time.

**2011 -2012**

#### **Research Assistant, Universal Instruments Corporation**

Reliability analysis and modeling for Electronic components under mechanical tests such as bending. :  
Emphasis on solder ball stress and survivability analysis.

Microstructure evolution for different soldering alloys under thermal and isothermal cycling.

Using the following tools: Dage, Instron, differential scanning calorimeter, cross sectioning, and optical microscopy

**2007 – 2010**

#### **Amman and Irbid Courts of Justice**

“Vehicles Experts” my job is to make accurate estimation of vehicles damages in addition to estimating the value of vehicle before and after the accident.

**Fall 2005`**

#### **Teacher Assistant, Industrial Engineering Department Jordan University of Science and Technology**

Teacher Assistant in industrial engineering department.

**1998 - 2010**

#### **Maintenance Engineer, Ministry of Municipality**

maintenance engineer from 1998 Until 2010-in service and engineering works department as mechanical engineer in the field of evaluating of bid, contracting and controlling engineer.

**1997 - 1998**

#### **Sales Engineer, Al-Tayseer Company**

Sale engineer / to sell blue pipe and super pex product and I used to supervise the construction of this product.

**1996 - 1997**

#### **Maintenance Engineer, Al Riyadh Group**

Maintenance Engineer in Maintenance Section.

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## **GENERAL INTEREST AND FAMILIARITY**

*Manufacturing Automation, Reliability Engineering, Processes for Electronic Manufacturing, Statistical Quality Control, Designing with Experiments, Applied Multivariate Data Analysis, Engineering Economics, Production and Schedule Control, Stochastic Systems, Modeling and Simulation, Applied Soft Computing*

## **TECHNICAL SKILLS**

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- *Operating System: Windows Vista/Xp, Dos*
  - *Packages: Ms Office, Ms Project*
  - *International Computer Driving License (ICDL)*
  - *Lean Six Sigma*
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## **EQUIPMENT KNOWLEDGE**

*Thermal cycling chambers, CSZ liquid to liquid thermal shock system, Dagemicrotester, Instron micro-tensile tester 5848, DEK stencil printers, Universal GSM placement machine, Vitronics-Soltec forced convection ovens, Dage X-ray imaging system, Cross-sectioning equipments, Optical microscopes, Shadow Moiré, Anatech 256 STD event detector*

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## **TRAINING COURSES AND WORKSHOPS**

- **Modern Automotive Technology Certificate:**
    - *Fundamental & Engine Repair.*
    - *Engine Diagnosis and Inspection.*
    - *Basic Automotive Electricity.*
    - *Ignition Systems.*
    - *Electronic Fuel Injection.*
    - *Electronic Engine Control Systems.*
    - *Antilock Braking Systems and Traction Control.*
    - *Supplemental Restraints Systems (Air Bag).*
    - *Automotive Air Conditioning.*
  - **HVAC Systems Certificate.**
  - **Fundamental of Autotronics Al-Bulga University.**
  - **Lean Six Sigma Green Belt Certification: Thayer School of Engineering at Dartmouth College, 2011**
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## **POFESSIONAL ASSOCIATION**

- **Member of Jordan Engineers Association (JEA).**
  - **Member, Alpha Pi Mu: Industrial Engineering Honor Society**
  - **Member, Institute of Industrial Engineering (IIE)**
  - **Member, Surface Mount Technology Accociation (SMTA)**
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## **HONORS**

- **Alpha Pi Mu (Industrial Engineering Honor Society)**
- **Winning 3<sup>rd</sup> place for my poster in GE global research center (2012 Electronic Packaging Symposium Technology Advances in small Scale Systems and Microelectronics Packaging)**

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## Publications

- S. Joshi, B. Arfaei, M. Obaidat, A. Alazzam, M. Meilunas, L. Yin, M. Anselm, and P. Borgesen, “LGAs vs. BGAs – Lower Profile and Better Reliability”, Proc. SMTAI 2012
- Alazzam, M. Obaidat, E. Perfecto, M. Lu, S. Kentner, N. O’Brien, B. Arfaei, and P. Borgesen, “Design and Process Development Concerns for the Assembly of Very Small Solder Joints”, Proc. IMECE 2012
- M. Obaidat, S. Hamasha, Y. Jaradat, A. Qasaimeh, B. Arfaei, M. Anselm, and P. Borgesen, “Effects of Varying Amplitudes on the Fatigue Life of Lead Free Solder Joints”, ECTC 2013
- S. Hamasha, M. Obaidat, A. Qasaimeh, Y. Jaradat, and P. Borgesen, “A Quantitative Correlation Between Isothermal Fatigue Life and Accumulated Work or Entropy for Lead Free Solder Joints”, journal paper accepted
- M. Obaidat, S. Hamasha, Y. Jaradat, and P. Borgesen, “A Phenomenological Model for the Prediction of Solder Joint Fatigue Life Under Realistic Isothermal Cycling Conditions”, journal paper submitted
- P. Borgesen<sup>a,\*</sup>, S. Hamasha<sup>a</sup>, M. Obaidat<sup>a</sup>, V. Raghavan<sup>a</sup>, X. Dai<sup>a</sup>, M. Meilunas<sup>b</sup>, M. Anselm<sup>b</sup>, “Solder joint reliability under realistic service conditions”<sup>a</sup> Department of Systems Science & Industrial Engineering, Binghamton University, Binghamton, NY 13902, USA<sup>b</sup> Universal Instruments Corporation, Conklin, NY 13748, USA, *Microelectronics Reliability* 53 (2013) 1587–1591

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## Recent Publications

- Mazin H. Obaidat, Osama T. Al Meanazela, Mohammad A. Gharaibehb, Hesham A. Almomania, “Pad Cratering: Reliability of Assembly Level and Joint Level” *Volume 10 Number 4, December.2016, ISSN 1995-6665, Pages 000-000.*
- "Modeling energy consumption of the Jordanian transportation sector: the application of multivariate linear regression and adaptive neuro-fuzzy techniques" to be published
- "Energy and Exergy Analyses of the Different Aluminum Reduction Technologies" to be published.
- "Decomposition Analysis of Electricity Use in the Jordanian Industrial Sector Between Years 2006 and 2014" to be published

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### Note:

Our paper: M. Obaidat, S. Hamasha, Y. Jaradat, A. Qasaimeh, B. Arfaei, M. Anselm, and P. Borgesen, “Effects of Varying Amplitudes on the Fatigue Life of Lead Free Solder Joints”, Proc. 63rd ECTC 2013, pp. 1308-1314 has been selected as Outstanding Session Paper of the 63rd ECTC (May-June 2013).