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Ali H. Ammouri

Education 2008 – Current American University of Beirut Beirut, Lebanon

PhD in Mechanical Engineering

- Research area: “Friction Stir Processing”
- Expected graduation in June 2013

2004 – 2008 American University of Beirut Beirut, Lebanon

Masters in Mechanical Engineering

- Thesis title: “A Bi-Directional Ultrasonic Actuator For Vibration Mechanical Micro-Machining”
- GPA: 90.5

1999 – 2004 Beirut Arab University Beirut, Lebanon

Bachelor in Mechanical Engineering

- FYP: Automation of a Hydraulic Lathe
- Ranked 3rd in class
- GPA: 84.5

Academic Experience 2008 – Current American University of Beirut Beirut, Lebanon

Research Assistant

- Conducted research in the fields of materials and manufacturing and published 25+ papers in refereed journals and conference
- Managed awarded grants budgets and procurement of major and minor equipment

2011 (5 months) Texas A&M University in Qatar Doha, Qatar

Research Associate

- Research topic: “Investigating the Superplastic Behavior of Twin-Roll Cast Magnesium Alloys for Effective Use in Automotive Applications”
- Preparation and design of experiments

2006 – 2008 American University of Beirut Beirut, Lebanon

Instructor

- For courses in the following fields: Engineering Materials, Manufacturing processes, Instrumentation, Control systems, and Engineering graphics. (Course codes and description can be provided upon request)
- Preparation of experiments and course material as well as tutoring
- Helped in curriculum design and preparation

2004 – 2006 American University of Beirut Beirut, Lebanon

Graduate Assistant

- For the courses in the fields mentioned above

Consultancy services 2010-2011 **Khayal Production QSTP** **Doha, Qatar**
Mentor and field engineer

- Engineering mentor for young Arab innovators in the Stars of science television show
- Design and implementation of 16 projects (CAD, CAE, CAM, Instrumentation, and control)

2005 – Current **Ammouri Air-conditions** **Beirut, Lebanon**

Consultant Engineer

- Research and development of new equipment related to the HVAC maintenance and operation

1999 – 2005 **Ammouri Air-conditions** **Beirut, Lebanon**

Field Engineer

- Installation and maintenance of Industrial and Commercial and automotive Air-conditions

Projects and Publications

Projects

- Retrofitting a 5-axis CNC to perform Friction Stir processes at AUB (2013)
- Design and build of a “Tool condition monitoring” system with a novel detection criteria (2012)
- Development of a “Torque Control” software used in Tong-Systems (2011)
- Development of a “Carbon footprint calculator” for construction projects (2010)
- Development of a “Sonic Leak Detector” software used in underground fuel tanks (2009)
- Design and build of an “Automatic Combination Cracking” machine for commercial safes (2009)
- Design and fabrication of a novel tool used in mechanical micro-machining at AUB (2008)
- Design and build 3 types of HVAC educational tutor rigs for the UNDP (2008)
- Design and build of a machine for maintenance and diagnostic of air-conditions, AGET (2006)
- Automation of a hydraulic lathe (2004)

Publications (Book Chapters, Journal Articles, and Conferences)

Attached in a separate document

Certifications ▪ Certified LabVIEW Associate Developer from National Instruments (December 2012)

Awards

- CIT Innovation Voucher from The Centre for Innovation and Technology (CIT) (December 2012)
- Recognition award from Lebanese Industrial Research Achievement Program (LIRA) of the graduate level projects for the “BUEVA” (December 3, 2010)
- CCC Doctoral Fellowship in Manufacturing starting October 1, 2009 – present
- PhD scholarship at AUB (Fall 2008- 2009)
- Full Graduate assistantship with tuition coverage throughout the graduate studies at the American University of Beirut (2004-2008)
- 1st Prize award of “The Best Engineering Day project” for a “Golf Aid mechanism” (2001)

Computer skills **Programming Languages:** LabVIEW, MATLAB

CAD/CAM software: SolidWorks, AutoCAD, Creo

FEM software: SFTC DEFORM and SolidWorks

Other software: CadSoft Eagle, MS Office Suite

Languages English and Arabic, Both written and spoken fluently

Publications

Book Chapters and Refereed Journal Articles

- R. F. Hamade, A. H. **Ammouri**, H. Artail (2012). *Toward predicting the performance of novice CAD users based on their profiled technical attributes*. Eng. Appl. Artif. Intel., DOI:10.1016/j.engappai.2012.01.004
- A. H. **Ammouri**, R. F. Hamade, (2012) *BUEVA: a bi-directional ultrasonic elliptical vibration actuator for micromachining*. Int J Adv Manuf Technol (2012) 58:991–1001, DOI 10.1007/s00170-011-3463-7
- Bazi, T., **Ammouri**, A. H., & Hamade, R. F. (2012). *On the relevance of uniaxial tensile testing of urogynecological prostheses: the effect of displacement rate*. International urogynecology journal, 1-7.
- A. H. **Ammouri**, R. F. Hamade (2011) *Indirect Tool-wear Maps for Tool Condition Monitoring in Dry Metal Drilling Operations*, In: Advances in Sustainable Manufacturing, Eds. M. Khraisheh, Günther Seliger, and I.S. Jawahir, Springer.
- A. H. **Ammouri**, I. Srour, R. F. Hamade (2011) *Carbon Footprint Calculator for Construction Projects (CFCCP)*, In: Advances in Sustainable Manufacturing, Eds. M. Khraisheh, Günther Seliger, and I.S. Jawahir, Springer.
- A. H. **Ammouri**, R. F. Hamade (2012) *Current Rise Criterion (CRC): A natural, Process-Independent Method for Tool Condition Monitoring and Prognostics*, Paper submitted.
- A.H. Kheireddine, A.H. **Ammouri**, T. Lu, O.W. Dillon Jr., R.F. Hamade, I.S. Jawahir (2013). *An Experimental and Numerical Study of the Effect of Cryogenic Cooling on the Surface Integrity of Drilled Holes in AZ31BMg Alloy*, Paper submitted.

Refereed Conference Articles

- A. H. Kheireddine, A. H. **Ammouri**, T. Lu, I.S. Jawahir, R.F. Hamade, *An FEM Analysis with Experimental Validation to Study the Hardness of In-Process Cryogenically Cooled Drilled Holes in Mg AZ31b*, CMMO2013, 14th CIRP International Conference on Modeling of Machining Operations, June 2013, Torino, Italy. Paper submitted
- A. H. **Ammouri**, A. H. Kheireddine, R. F. Hamade, G. T. Kridli, *Experimentally Verified Simulations of In-Process Cryogenically Cooled Drilling in Mg AZ31b*, IMECE2013-62468, ASME 2013 International Mechanical Engineering Congress & Exposition, IMECE2013, Nov 15-21,2013, San Diego, USA. Abstract accepted
- A. H. Kheireddine, A. H. **Ammouri**, G. T. Kridli, R. F. Hamade, *Experimentally Validated Thermo-mechanically Coupled FE Simulations of Al/Mg Friction Stir Welded Joints*, IMECE2013-62691, ASME 2013 International Mechanical Engineering Congress & Exposition, IMECE2013, Nov 15-21,2013, San Diego, USA. Abstract accepted
- A. H. Kheireddine, A. A. Khalil, A. H. **Ammouri**, G. T. Kridli, R. F. Hamade, *An Experimentally Validated thermo-mechanical Finite Element Model for Friction Stir Welding in Carbon Steels*, International Conference on Automation and Intelligent Manufacturing, Johannesburg, ICAIM2013, April 2013, Johannesburg, South Africa. Paper submitted
- A. H. **Ammouri**, A. H. Kheireddine, R. F. Hamade, G. T. Kridli, *Evaluating the Performance of Selected Constitutive Laws in the Modeling of Friction Stir Processing of AZ31b – Toward a More Sustainable Process*, GCSM2013, The 11th Global Conference on Sustainable Manufacturing, September 2013, Berlin, Germany. Abstract accepted
- A. H. Kheireddine, A. H. **Ammouri**, R. F. Hamade, G. T. Kridli, *Finite Element Modeling of Laser Assisted Friction Stir Welding in Carbon Steels to Enhance Sustainability of Welded Joints*, GCSM2013, The 11th Global Conference on Sustainable Manufacturing, September 2013, Berlin, Germany. Abstract accepted

- A. H. **Ammouri**, A. H. Kheireddine, T. Lu, I.S. Jawahir, R.F. Hamade, *Model-Based Optimization of Process Parameters in the Friction Stir Processing of AZ31b with Adaptive Cooling*, GCSM2012, The 10th Global Conference on Sustainable Manufacturing, Oct 31-Nov 2, 2012, Istanbul, Turkey
- A. H. Kheireddine, A. H. **Ammouri**, R. F. Hamade, *Experimental and FEM Analyses of the Effect of Liquid Nitrogen Cryogenic Cooling and other Processing parameters on the surface Hardness of Drilled Holes in AZ31b Magnesium*, GCSM2012, The 10th Global Conference on Sustainable Manufacturing, Oct 31-Nov 2, 2012, Istanbul, Turkey
- A. H. Kheireddine, R. F. Hamade, A. H. **Ammouri**, G. Kridli, *FEM Analysis of the Effects of Processing Parameters and Cooling Techniques on the Microstructure of Friction Stir Welded Joints*, IMECE2012-88943, Proceedings of the ASME 2012 International Mechanical Engineering Congress & Exposition, IMECE2012, November 9-15, 2012, Houston, Texas, USA
- T. M. Bazi, A. H. **Ammouri**, R. F. Hamade, *Effect of the Stretch Rate During Uniaxial Testing on the Mechanical Properties of the synthetic Midurethral Tape (MUT)*, IMECE2012-86022, Proceedings of the ASME 2012 International Mechanical Engineering Congress & Exposition, IMECE2012, November 9-15, 2012, Houston, Texas, USA
- N. Harmouche, A. **Ammouri**, I. Srour, G. Chehab, R. Hamade, *Developing a Carbon Footprint Calculator for Construction Buildings*, ASCE2012, Proceedings of Construction Research Congress 2012, West Lafayette, Indiana, May 21-23, 2012
- R. F. Hamade and A. H. **Ammouri**, *Current Rise Index (CRI) Maps of Machine Tool Motors for Tool-wear Prognostics*, IMECE2011-64706, ASME International Mechanical Engineering Congress & Exposition, IMECE2011, November 11-17, 2011, Colorado, US
- R. Hamade, A. H. **Ammouri**, and H. Artail, *Artificial Neural Networks for Predicting the Performance of Novice CAD Users Based on Their Profiled Attributes*, IMECE2011-63409, International Mechanical Engineering Congress & Exposition, IMECE2011, November 11-17, 2011, Colorado, US
- A. H. **Ammouri**, I. Srour, and R. F. Hamade, *Carbon Footprint Calculator for Construction Projects*, IMECE2011-63366, International Mechanical Engineering Congress & Exposition, IMECE2011, November 11-17, 2011, Colorado, US
- A. H. **Ammouri** and R. F. Hamade, *Indirect Tool-wear Maps for the Tool Condition Monitoring in Dry Metal Drilling Operations*, The 8th Global Conference on Sustainable Manufacturing, Abu Dhabi, November 21-24, 2010.
- A. H. **Ammouri**, I. Srour, R. F. Hamade, *Carbon Footprint Calculator for Construction Projects (CFCCP)*, The 8th Global Conference on Sustainable Manufacturing (IGCSM) at Abu Dhabi University Khalifa City Campus and MASDAR Institute of Science and Technology, November 22-24, 2010.
- R. F. Hamade, A. H. **Ammouri**, and H. Artail, *For the Sustainable Development of CAD Expertise: Prediction of Novice Users' Performance based on their Profiled Attributes*, The 8th Global Conference on Sustainable Manufacturing, Abu Dhabi, November 21-24, 2010.
- R. F. Hamade and A. H. **Ammouri**, IMECE2010-38895, *Sensor Fusion for Real-Time Condition Monitoring of Tool Wear in Surfacing with Fly Cutters*, Proceedings of the 2010 ASME International Mechanical Engineering Congress & Exposition, IMECE2010, November 12-18, 2010, Vancouver, British Columbia, Canada
- R. F. Hamade and A. H. **Ammouri**, IMECE2010-38761, *Compose-It: A Computer-Based Tool for the Design and Optimization of Composite Laminates*, IMECE2010-38761, Proceedings of the 2010 ASME International Mechanical Engineering Congress & Exposition, IMECE2010, November 12-18, 2010, Vancouver, British Columbia, Canada.
- R. F. Hamade, A. H. **Ammouri**, and G. Beydoun, *Nested Ripple Down Rules (NRDR) as a Design Assistant in Mechanical Dimensional Tolerancing*, IMECE2010-39773, Proceedings of the 2010 ASME International Mechanical Engineering Congress & Exposition, IMECE2010, November 12-18, 2010, Vancouver, British Columbia, Canada.

- R. F. Hamade and A. H. **Ammouri**, *Sensor Fusion for Automatic Condition Monitoring of Tool Wear in Drilling Operations*, CIRP ICME '10 - 7th CIRP International Conference on Intelligent Computation in Manufacturing Engineering, Innovative and Cognitive Production Technology and Systems, June 22-25, 2010, Capri, Italy.
- A. H. **Ammouri** and R. F. Hamade, *Bi-directional Ultrasonic Elliptical Vibration Actuator for Vibration Mechanical Micro-Machining*, Proceedings of the 2nd International Researchers Symposium 2009 on Innovative Production machines and systems (IPROMS), 22 - 24 July 2009, Ischia, Italy.
- A. H. **Ammouri** and R. F. Hamade, *A Bi-Directional Ultrasonic Elliptical Vibration Actuator (BUEVA) for Micro-Machining*, Proceedings of the 2009 ASME International Mechanical Engineering Congress & Exposition, IMECE09, November 13-19, 2009, Lake Buena Vista, Florida, USA, IMECE2009-10132

Other Conference Articles

- A. **Ammouri** and R. F. Hamade, *A Bi-Directional Ultrasonic Elliptical Vibration Actuator (BUEVA) for Micro-Machining*, Lebanese Industrial & Research Association (LIRA) Conference & Exhibit, Beirut, Lebanon, December 2010.