

EDUCATION

American University of Beirut

Masters of Engineering in Mechanical Engineering

May 2013

Manufacturing, Materials and Design
Cumulative GPA : 4/4 (94/100)

Bachelor in Mechanical Engineering with Distinction

June 2011

Awards:

- Dean's Award for Best Creative Achievement 2010-2011
- Distinguished List 2007-2008
- Dean's Honor Lists for Excellent Academic Achievement.

National Protestant College

Beirut, Lebanon

June 2007

Lebanese Baccalaureate in General Sciences with Distinction.

LANGUAGES

- English and Arabic: Excellent writing and speaking skills.
- French and Italian: Basic knowledge.

PROFESSIONAL EXPERIENCE

Teaching

March 2010 – Now

- Worked as a instructor assistant for mechanical engineering lab courses at the American university of Beirut.

Internship at Sensorize, Italy

June 2010 – August 2010

- Designed validation and calibration experiments for 3D MEMS accelerometers, 3D MEMS gyroscopes and GPS data.
- Developed MATLAB and LabVIEW codes that aim to analyze athlete's effort starting from row GPS and accelerometers data. The codes include filtering data and correcting it by correlating the sensors data.
- Developed a Graphical user interface application using C++ and Qt that takes sensors data as an input then outputs parameters that helps in evaluating athlete performance. This application was part of a joint project between Sensorize and YCCC (Yorkshire County Cricket Club).

RESEARCH INTEREST

Research at the American University of Beirut

September 2010 – Now

- Experimental and Finite Element Analyses of Friction Stir Welding
- Experimental and Finite Element Analyses of Cryogenically Cooled Drilling
- Design and Implementation of a Snakeboard Robot
- Intelligent Car Communication Framework for Accident and Traffic Minimization

ACTIVITIES

- **Member in the American Society of Mechanical Engineers (ASME) since 2008**
The latest event was when we participated in the ASME robotics and mechatronics design competition and in the founding conference of the SDOB (Student District Operating Board) for District J (Africa and Middle East) held in Notre Dame University, May 2010.
- **Member in the Society of Manufacturing Engineering (SME) since 2009**
Participated in the SME electrical micro car Gee Whiz contest. And won the first place in the contest, held in the American University of Beirut, June 2009.
- **Co-founder of the Aerotronix Club**
A volunteering club that develops radio controlled planes projects and organize competitions related to the design and manufacture of RC planes.
- **Member in the Skiing Society since 2007**
A Lebanese club that aims to socialize with all the students from different universities by providing them with activities.

TECHNICAL SKILLS

Programming Languages

C, C++, MATLAB, Assembly, LabVIEW, Simulink, G-CODE For CNC Machining

Software

AutoCad, AutoCad Plant, CADworx, SAP2000, Pro/Engineer, Mechanica, FloEFD, Fluent, Ansys, ArcGIS, ArcMap, CNCsim, DEFORM, Abaqus

Tools

L^AT_EX 2_ε, Tecplot, Microsoft Office, Visio, Adobe Photo-shop, Visual Studio, MPLAB, Qt GUI

FINAL YEAR PROJECT

Design and Implementation of SUAV: The project involved the design and implementation of a modular, low cost, and small unmanned aerial vehicle. SUAV design was optimized based on aerodynamic CFD and structural FEM analyses. Furthermore, instrumentation and control features are embedded to enhance navigation automation. The project won the best creative achievement award.

RECENT PUBLICATIONS

Journal Articles

- **Kheireddine, A.H.**, Ammouri, A.H , Lu, T., Hamade, R.F., Jawahir, I.S., An Experimental and Numerical Study of the Effect of Cryogenic Cooling on the Surface Integrity of Drilled Holes in AZ31BMg Alloy. *Journal of Materials Processing Technology* 2013 (Submitted)

Refereed Conference Articles

- **Kheireddine, A.H.**, Ammouri, A.H., Kridli, G.T., Hamade, R.F., “Fem Analysis of The Effects Of Cooling Techniques On The Microstructure Of Aluminum 7075 Friction Stir Welded Joints *Proceedings of the ASME 2012 International Mechanical Engineering Congress & Exposition IMECE 2012*. November 9-15, 2012, Houston, Texas, USA.
- **Kheireddine, A.H.**, A.H., Ammouri, A.H , Lu, T., Jawahir, I.S., Hamade, R.F., “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 *The 10th Global Conference on Sustainable Manufacturing GCSM2012*. June, 2012, Istanbul, Turkey.
- Ammouri, A.H., **Kheireddine, A.H.**, Hamade, R.F., “Model-Based Optimization of Process Parameters in the Friction Stir Processing of AZ31b with Active Cooling. *The 10th Global Conference on Sustainable Manufacturing GCSM2012*. June, 2012, Istanbul, Turkey.
- **Kheireddine, A.H.**, Khalil, A.A., Ammouri, A.H., Hamade, R.F., “An Experimentally Validated thermo-mechanical Finite Element Model for Friction Stir Welding in Carbon Steels. *International Conference on Automation and Intelligent Manufacturing ICAIM2013*. April, 2013 Johannesburg, South Africa. (Final Draft submitted)
- **Kheireddine, A.H.**, A.H., Ammouri, A.H , Lu, T., Jawahir, I.S., Hamade, R.F., “ An FEM Analysis with Experimental Validation to Study the Hardness of In-Process Cryogenically Cooled Drilled Holes in Mg AZ31b”, *14th CIRP International Conference on Modeling of Machining Operations CMMO2013*. June, 2013, Turin, Italy.
- **Kheireddine, A.H.**, Ammouri, Kridli, G.T., A.H., Hamade, R.F., “Experimentally Validated Thermo-mechanically Coupled FE Simulations of Al/Mg Friction Stir Welded Joints *Proceedings of the ASME 2013 International Mechanical Engineering Congress & Exposition IMECE 2013*. November, 2013, San Diego, California, USA. (Abstract Accepted)
- Ammouri, A.H., **Kheireddine, A.H.**, Kridli, G.T., Hamade, R.F., “FEM Optimization of Process Parameters and in-process Cooling in the Friction Stir Processing of Magnesium Alloy AZ31b *Proceedings of the ASME 2013 International Mechanical Engineering Congress & Exposition IMECE 2013*. November, 2013, San Diego, California, USA. (Abstract Accepted)
- **Kheireddine, A.H.**, Khalil, A.A., Ammouri, A.H., Hamade, R.F., “Finite Element Modeling of Laser Assisted Friction Stir Welding in Carbon Steels to Enhance Sustainability of Welded Joints. *The 11th Global Conference on Sustainable Manufacturing GCSM2013*. September, 2013, Berlin, Germany. (Abstract Accepted)
- Ammouri, A.H., **Kheireddine, A.H.**, Hamade, R.F., “Evaluating the Performance of Selected Constitutive Laws in the Modeling of Friction Stir Processing of AZ31b Toward a More Sustainable Process. *The 11th Global Conference on Sustainable Manufacturing GCSM2013*. September, 2013, Berlin, Germany. (Abstract Accepted)

RELEVANT COURSES

Technical Courses:

Manufacturing Process
Instrumentation and Measurements
Computer Vision
Mobile wheeled Robots
Advanced Manufacturing Automation

Mechanical Design
Control Systems
Micro Electro-Mechanical Systems
Mechatronics System Design
Quality Control in Manufacturing Systems

Non-Technical Courses:
Micro and Macro Economics
Technical Communication

Engineering Economy
Engineering Ethics

REFEREES

Available upon request.