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EDUCATION

- **Ph. D. in Mechanical Engineering**, March 2016
Polytech Lille, Ecole d'ingénieurs, Villeneuve d'ASCQ, 59655, France.
 - **Master of Science in Mechanical Engineering**, July 2011
Djillali Liabes University, Sidi Bel Abbes, 22000, Algeria.
 - **Bachelor of Engineering in Mechanical Engineering**, September 2009
Djillali Liabes University, Sidi Bel Abbes, 22000, Algeria.
 - **Secondary School Certificate in Natural and Life Sciences**, June 2006
Inal Sidahmed high school, Sidi Bel Abbes, 22000, Algeria.
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EXPERIENCE

Research Associate (2013-2015), Department of Mechanical Engineering, Texas A&M University at Qatar.

- Characterizing the impact loading response of friction-stirred welded (FSW) bimetallic joints at different temperatures and strain rates.
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TECHNICAL SKILLS

- **Testing and characterization** – Uniaxial Tensile Testing at different temperatures, Metallography, Scanning Electron Microscopy (SEM), X-Ray Diffraction, Energy Dispersive Spectroscopy (EDS), optical Microscopy and mounted metallurgical specimen preparation.
- **Heat Treatment** – Heat treatment and annealing of metallic materials.
- **Technical writing** – Writing reports and scientific articles
- **Research & Development** –

PROJECTS

- **Characterizing the impact loading response of friction-stirred welded (FSW) bimetallic joints:** Energy savings requirements and new standards are driving many industries to consider introducing ever lighter engineering materials into their products. This is applicable to both capital goods as well as consumer goods where light metal alloys such as aluminum (2.71 g/cm^3) and magnesium (1.74 g/cm^3) are being considered alongside heavier, more traditional steels. For joining such dissimilar metals, Friction Stir Welding (FSW) has recently become an indispensable joining technique with many advantages claimed by FSW including (1) being a solid state technique (although heavily plasticized, material does not typically melt), (2) superior weld strength and fatigue resistance compared to traditional welding, (3) reduced distortion compared to traditional welding, and (4) improved corrosion resistance compared to traditional welding. My duties included working independently and collaboratively on identifying the processing parameters that will optimize the properties of the bimetallic joint obtained using friction stir welding, and developing design and processing guidelines for the similar and bimetallic joints, and other related duties as assigned.
- **Master's Thesis: Optimization of tool wear in Friction Stir Welding by the method of experiment designs:** Modified and designed machine and house-made tool to produce optimized friction stir welded materials sheets to obtain joints with no defects. At the same time, studying the tool wear after the achievement of several welds by measuring the difference in its weight, significant tool wear will result in reduction of its weight, however it was not observed to conclude that the tool can weld the material sheets several times before wear.

PUBLICATIONS

Journal Papers

- **Dorbane, A.**, Mansoor, B., Ayoub, G., Shunmugasamy, V.C., Imad, A., 2016. Mechanical, microstructural and fracture properties of dissimilar welds produced by friction stir welding of AZ31B and Al6061. *Materials Science and Engineering: A* 651, 720-733.
- **Dorbane, A.**, Ayoub, G., Mansoor, B., Hamade, R.F., Kridli, G., Shabadi, R., Imad, A., 2016. Microstructural observations and tensile fracture behavior of FSW twin roll cast AZ31 Mg sheets. *Materials Science and Engineering: A* 649, 190-200.
- **Dorbane, A.**, Ayoub, G., Mansoor, B., Hamade, R., Kridli, G., Imad, A., 2015. Observations of the mechanical response and evolution of damage of AA 6061-T6 under different strain rates and temperatures. *Materials Science and Engineering: A* 624, 239-249.
- **Dorbane, A.**, Ayoub, G., Mansoor, B., Kridli, G., Imad, A., Effect of temperature on microstructure and fracture mechanisms in Friction Stir Welded Al6061 joints (JMEEP-16-05-10689) (submitted on Mai 25th, 2016).

Books Sections

- Mansoor, B., **Dorbane, A.**, Ayoub, G., Imad, A., 2015. Friction stir welding of AZ31B magnesium alloy with 6061-T6 aluminum alloy: Influence of processing parameters on microstructure and mechanical properties, in: Mishra, R.S., Mahoney, M.W., Sato, Y., Hovanski, Y. (Eds.), Friction Stir Welding and Processing VIII – The Minerals, Metals and Materials Society. Wiley, Somerset, NJ, pp. 259-266.
- **Dorbane, A.**, Ayoub, G., Mansoor, B., Hamade, R., Kridli, G., Imad, A., 2015. Mechanical Response and Evolution of Damage of Al6061-T6 Under Different Strain Rates and Temperatures, TMS Middle East – Mediterranean Materials Congress on Energy and Infrastructure Systems (MEMA 2015). John Wiley & Sons, Inc., pp. 259-265.

Conference Papers

- Mansoor, B., **Dorbane, A.**, Ayoub, G., Imad, A., 2015. Friction stir welding of AZ31B magnesium alloy with 6061-T6 aluminum alloy: Influence of processing parameters on microstructure and mechanical properties, TMS Annual Meeting, pp. 259-266.
- **Dorbane, A.**, Ayoub, G., Mansoor, B., Hamade, R., Kridli, G., Imad, A., 2015. Mechanical Response and Evolution of Damage of Al6061-T6 Under Different Strain Rates and Temperatures, TMS Middle East – Mediterranean Materials Congress on Energy and Infrastructure Systems, pp. 259-265.
- Ammouri, A., Achdjian, H., **Dorbane, A.**, Ayoub, G., Kridli, G., Hmade, R., 2014. Characterization of optimized friction stir welded twin roll cast AZ31B sheets, International Mechanical Engineering Congress and Exposition, Montreal, Canada.

LANGUAGES

English: Spoken and written.

French: Spoken and written.

Arabic: Native language.

SOFTWARE SKILLS

- **Programming:** Matlab
- **Designing:** Solidworks

HONORS

- Best Poster Award, First Place, Research Track. Microstructural and Mechanical Properties of Friction Stirred welded AZ31B Magnesium Alloy Sheets. Material Science and Engineering Symposium 2015, Texas A&M University at Qatar.

REFERENCES

Dr. Georges Ayoub

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Lille, France

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Dr. Bilal Mansoor

Assistant Professor

Texas A&M University at Qatar

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Dr. Ghassan Kridli

Professor and MEEN Program Chair

Associate Dean for Undergraduate Education

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