

**IVAN RODOLFO PEREIRA GARCIA DE GALVÃO**

**CURRICULUM VITAE**

*COIMBRA, 2014*

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## 1 - PERSONAL INFORMATION

**Name** - Ivan Rodolfo Pereira Garcia de Galvão

**Date of Birth** - 15/12/1986

**Place of Birth** - Sé Nova

**Citizen Card** - 12991492, expiry date 09/05/2014

**Address** - Rua Nossa Senhora do Pranto no 51  
3140 - 304 Pereira

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## 2 - EDUCATION

**1992/1993 to 1995/1996:** Basic education (1<sup>st</sup> cycle). *Escola n° 2 da Vila de Pereira.*

**1996/1997 to 2000/2001:** Basic education (2<sup>nd</sup> and 3<sup>rd</sup> cycles). *Colégio da Rainha Santa Isabel, Coimbra.*

**2001/2002 to 2003/2004:** Secondary education. *Colégio da Rainha Santa Isabel, Coimbra.* Classification: 17.3 (out of 20).

**2004/2005 to 2008/2009:** Integrated Master in Mechanical Engineering - Production Systems speciality. Faculty of Sciences and Technology, University of Coimbra (FCTUC). Classification 16 (out of 20).

**2012/2013:** Executive Master in Business Management. ISCTE - Lisbon University Institute/INDEG Business School. Classification 17 (out of 20).

**2009/2010 to 2013/2014:** PhD in Mechanical Engineering - Production Technology speciality. Faculty of Sciences and Technology, University of Coimbra (FCTUC). To be concluded in July 2014.

### 3 - TRAINING

***9th Course for Updating Training in Health, Hygiene and Safety at Work***, a partnership between the *Associação para o Desenvolvimento de Aerodinâmica Industrial* (Association for the Development of Industrial Aerodynamics) and the *Centro de Estudos de Condições e Ambientes de Trabalho* (Centre for the Studies of Work Environment and Conditions), from September to December 2008, Coimbra, Portugal, with the length of 42 hours.

***FSWP 2010 - International Conference on Scientific and Technical Advances on Friction Stir Welding and Processing***, organised by the *École Polytechnique de l'Université de Lille* (Polytechnic School of Lille), from 28<sup>th</sup> to 29<sup>th</sup> January 2010, in Lille, France.

***Training Course in Professional Ethics and Deontology***, organised by the Board of the *Região Centro da Ordem dos Engenheiros* (Chartered Engineers for the Centre of Portugal), from 15<sup>th</sup> to 16<sup>th</sup> October 2010, in Coimbra, Portugal, with the length of 9 hours.

***Descobrir a Ciência na FCTUC (To Discover Science in FCTUC – National Week for Science and Technology 2010)***, organised by Faculty of Sciences and Technology, University of Coimbra (FCTUC), on 23rd November 2010, in Coimbra, Portugal.

***English B1.2***, British Council, from September 2010 to January 2011, in Coimbra, Portugal.

***AMPT 2011 - 14<sup>th</sup> International Conference on Advances in Materials & Processing Technologies***, organised by the Yildiz Technical University, from 13<sup>th</sup> to 16<sup>th</sup> July 2011, Istanbul, Turkey.

***CIBEM 10 - X Congresso Ibero-Americano em Engenharia Mecânica (10th Ibero-american Congress in Mechanical Engineering)***, a partnership between the Faculty of Engineering of the University of Porto (FEUP), the Institute of Mechanical Engineering

and Industrial Management (INEGI), and by the Iberoamerican Federation of Mechanical Engineering (FeIbEM), from 4<sup>th</sup> to 7<sup>th</sup> September 2011, in Porto, Portugal.

*FSWP 2012 - 2<sup>nd</sup> International Conference on Friction Stir Welding & Processing*, organised by the *École Nationale Supérieure des Mines de Saint-Étienne* and by the *École Nationale d'Ingénieurs de Saint-Étienne*, from 26<sup>th</sup> to 27<sup>th</sup> January de 2012, in Saint-Étienne, France.

*I Jornada Ibérica de Aplicación Industrial de la Técnica “Friction Stir Welding”*, organised by the AIMEN Technological Centre, on 1st February 2012, in O Porriño, Spain.

*9<sup>th</sup> International Friction Stir Welding Symposium*, organised by The Welding Institute, from the 15<sup>th</sup> to 17<sup>th</sup> May 2012, in Huntsville, Alabama, United States of America.

*Teambuilding*, organised by the ISCTE - Lisbon University Institute/INDEG Business School, on 21st September 2012, Lisbon, Portugal.

*Materiais 2013 International Conference*, organised by the Portuguese Materials Society (SPM), from 25<sup>th</sup> to 27<sup>th</sup> March 2013, in Coimbra, Portugal.

*THERMEC' 2013 - International Conference on Processing & Manufacturing of Advanced Materials*, organised by TMS e ASM International (EUA), in partnership with Japanese, Canadian, Korean, German, French, Italian, Dutch, Brazilian and Indian professional institutions, from 02<sup>nd</sup> to 06<sup>th</sup> December 2013, in Las Vegas, Nevada, United States of America.

## 4 - SCIENTIFIC WORK

### Research

*Caracterização de Soldaduras Al/Cu por Fricção Linear (Characterisation of Al/Cu welds produced by Friction Stir Welding)* - Research work at the Faculty of Sciences and Technology, University of Coimbra (FCTUC), in the coursework of the Dissertation for the Master's Degree in Mechanical Engineering, with the research supervisor Professor Altino de Jesus Roque Loureiro (PhD). Dissertation oral defence 23rd July 2009, classification 19 (out of 20).

*Analysis of Friction Stir Weldability of Aluminium to Copper* - Research work to be concluded soon, at the Faculty of Sciences and Technology, University of Coimbra (FCTUC), in the coursework of the Dissertation for the PhD in Mechanical Engineering, with the research supervisors Professor Altino de Jesus Roque Loureiro (PhD) and Professor Dulce Maria Esteves Rodrigues (PhD).

### Publications

#### *Publications in International Scientific Journals*

Galvão, I., Leal, R. M., Loureiro, A. & Rodrigues, D. M. (2010). Material flow in heterogeneous friction stir welding of aluminium and copper thin sheets. *Science and Technology of Welding and Joining*, 15 (8), 654-660.

Galvão, I., Oliveira, J. C., Loureiro, A. & Rodrigues, D. M. (2011). Formation and distribution of brittle structures in friction stir welding of aluminium and copper: Influence of process parameters. *Science and Technology of Welding and Joining*, 16 (8), 681-689.

Galvão, I., Oliveira, J. C., Loureiro, A. & Rodrigues, D.M. (2012). Formation and distribution of brittle structures in friction stir welding of aluminium and copper: Influence of shoulder geometry. *Intermetallics*, 22, 122-128.

Leitão, C., Galvão, I., Leal, R. M. & Rodrigues, D. M. (2012). Determination of local constitutive properties of aluminium friction stir welds using digital image correlation. *Materials and Design*, 33, 69-74.

Galvão, I., Loureiro, A. & Rodrigues, D. M. (2012). Influence of process parameters on the mechanical enhancement of copper-DHP by FSP. *Advanced Materials Research*, 445, 631-636.

Galvão, I., Leitão, C., Loureiro, A. & Rodrigues, D.M. (2012). Friction stir welding of very thin plates. *Soldagem & Inspeção*, 17 (1), 2-10.

Galvão, I., Leitão, C., Loureiro, A. & Rodrigues, D.M. (2012). Study of the welding conditions during similar and dissimilar aluminium and copper welding based on torque sensitivity analysis. *Materials and Design*, 42, 259-264.

Galvão, I., Loureiro, A., Verdera, D., Gesto, D. & Rodrigues, D. M. (2012). Influence of tool offsetting on the structure and morphology of dissimilar aluminum to copper friction-stir welds. *Metallurgical and Materials Transactions A*, 43A, 5096-5105.

Galvão, I., Leal, R. M., Rodrigues, D. M. & Loureiro, A. (2013). Influence of tool shoulder geometry on properties of friction stir welds in thin copper sheets. *Journal of Materials Processing Technology*, 213, 129-135.

Galvão, I., Verdera, D., Gesto, D., Loureiro, A. & Rodrigues, D. M. (2013). Influence of aluminium alloy type on dissimilar friction stir lap welding of aluminium to copper. *Journal of Materials Processing Technology*, 213, 1920-1928.

#### *Publications in National Technical/Scientific Journals*

Rodrigues, D., Leitão, C., Galvão, I. & Loureiro, A. (2012). Friction stir welding - Uma nova fonte de possibilidades em construção metálica?. *Construção Magazine*, (50), 35-39.

*Papers/Abstracts Published in Proceedings of Scientific Conferences*

Rodrigues, D. M., Loureiro, A., Galvão, I., Leitão, C., Ramalho, A., Louro, R. & Gouveia, H. (2009, July). Influence of the hardening behaviour of the base material on FS weldability. Proceedings from 62<sup>nd</sup> Annual Assembly of the International Institute of Welding, Singapore.

Galvão, I., Loureiro, A. & Rodrigues, D. M. (2010, January). Material flow in heterogeneous friction stir welding of aluminium and copper thin sheets. Proceedings from FSWP 2010 - International Conference on Scientific and Technical Advances on Friction Stir Welding and Processing, Lille, France, 49.

Leitão, C., Galvão, I., Loureiro, A. & Rodrigues, D. M. (2010, January). Friction stir welding of very thin plates. Proceedings from FSWP 2010 - International Conference on Scientific and Technical Advances on Friction Stir Welding and Processing. Lille, France, 53.

Galvão, I., Loureiro, A., Leal, R. M., & Rodrigues, D. M. (2010, May). Dissimilar welding of very thin aluminium and copper plates. Proceedings from 8<sup>th</sup> International Symposium on Friction Stir Welding, Timmendorfer Strand, Germany.

Galvão, I., Loureiro, A. & Rodrigues, D. M. (2011, July). Influence of process parameters on the mechanical enhancement of Cu-DHP copper by FSP. Proceedings from AMPT 2011 - 14<sup>th</sup> International Conference on Advances in Materials & Processing Technologies, Istanbul, Turkey, 308.

Galvão, I., Oliveira, J. C., Loureiro, A. & Rodrigues, D. M. (2011, September). Formação de compostos intermetálicos durante friction stir welding de alumínio a cobre: Um fenómeno térmico ou mecânico?. Proceedings from CIBEM 10 - X Congresso Ibero-Americano em Engenharia Mecânica, Porto, Portugal, 1859-1864.

Rodrigues, D. M., Leitão, C., Galvão, I. & Loureiro, A. (2011, October). Characterization of local plastic properties of aluminium friction stir welds. Actas de



International Congress on Advances in Welding Science and Technology for Construction, Energy and Transportation Systems, Antalya, Turkey.

Galvão, I., Leitão, C., Loureiro, A. & Rodrigues, D. M. (2012, January). Study of the welding conditions during similar and dissimilar aluminium and copper welding based on torque sensitivity analysis. Proceedings from FSWP 2012 - 2<sup>nd</sup> International Conference on Friction Stir Welding & Processing, Saint-Etienne, France, 71-72.

Galvão, I., Leal, R. M., Loureiro, A. & Rodrigues, D. M. (2012, January). Influence of tool shoulder geometry on properties of F. S. welds on thin copper sheets. Proceedings from FSWP 2012 - 2<sup>nd</sup> International Conference on Friction Stir Welding & Processing, Saint-Etienne, France, 133-135.

Galvão, I., Verdera, D., Gesto, D., Loureiro, A. & Rodrigues, D. M. (2012, May). Analysing the challenge of aluminium to copper FSW. Proceedings from 9<sup>th</sup> International Friction Stir Welding Symposium, Huntsville, Alabama, United States of America.

Rodrigues, D. M., Galvão, I., Verdera, D., Loureiro, A. & Gesto, D. (2012, May). Cladding of aluminium with copper plates by friction stir processing. Proceedings from VI Aluminium Surface Science & Technology - ASST 2012, Sorrento, Italy.

Rodrigues, D. M., Galvão, I., Gesto, D. & Verdera, D. (2013, February). Aluminium to copper lap joining using friction stir welding. Proceedings from 9<sup>th</sup> International Trends in Welding Research Conference, Chicago, Illinois, United States of America, 689-694.

Galvão, I., Verdera, D., Gesto, D., Loureiro, A. & Rodrigues, D. M. (2013, March). Analysis of aluminium and copper microstructural evolution during friction stir lap welding. Proceedings from Materiais 2013 International Conference, Coimbra, Portugal, 32.

Galvão, I., Verdera, D., Gesto, D., Loureiro, A. & Rodrigues, D. M. (2013, December). Study of new joint design solutions for friction stir welding aluminium to copper. Proceedings from de THERMEC' 2013 - International Conference on Processing &

Manufacturing of Advanced Materials, Las Vegas, Nevada, United States of America, 195.

### **Dissemination of Works in Scientific Conferences**

#### *Oral Presentations at Scientific Conferences, by invitation*

Galvão, I. Soldadura por Fricção Linear - Uma Ligação ao Futuro. Descobrir a Ciência na FCTUC (To Discover Science in FCTUC - National Week for Science and Technology 2010), organised by Faculty of Sciences and Technology, University of Coimbra (FCTUC), on 23rd November 2010, in Coimbra, Portugal

Galvão, I., Verdera, D., Gesto, D., Loureiro, A. & Rodrigues, D. M. Study of new joint design solutions for friction stir welding aluminium to copper. THERMEC' 2013 - International Conference on Processing & Manufacturing of Advanced Materials, organised by TMS e ASM International (EUA), in partnership with Japanese, Canadian, Korean, German, French, Italian, Dutch, Brazilian and Indian professional institutions, on 4<sup>th</sup> December 2013, in Las Vegas, Nevada, United States of America.

#### *Oral Presentations at Scientific Conferences, by abstract submission*

Galvão, I., Loureiro, A. & Rodrigues, D. M. Material flow in heterogeneous friction stir welding of aluminium and copper thin sheets. FSWP 2010 - International Conference on Scientific and Technical Advances on Friction Stir Welding and Processing, organised by *École Polytechnique de l'Université de Lille (Polytechnic School of Lille)*. On 28<sup>th</sup> January 2010, in Lille, France.

Galvão, I., Loureiro, A. & Rodrigues, D. M. Influence of process parameters on the mechanical enhancement of copper-DHP by FSP. AMPT 2011 - 14<sup>th</sup> International Conference on Advances in Materials & Processing Technologies, organised by the Yildiz Technical University. On 14<sup>th</sup> July 2011, in Istanbul, Turkey.

Galvão, I., Oliveira, J. C., Loureiro, A. & Rodrigues, D. M. Formação de compostos intermetálicos durante friction stir welding de alumínio a cobre: Um fenómeno térmico

ou mecânico?. CIBEM 10 - X Congresso Ibero-Americano em Engenharia Mecânica, (*10th Iberoamerican Congress in Mechanical Engineering*), a partnership between the Faculty of Engineering of the University of Porto (FEUP), the Institute of Mechanical Engineering and Industrial Management (INEGI), and by the Iberoamerican Federation of Mechanical Engineering (FeIbEM), on 5<sup>th</sup> September 2011, in Porto, Portugal.

Galvão, I., Leitão, C., Loureiro, A. & Rodrigues, D. M. Study of the welding conditions during similar and dissimilar aluminium and copper welding based on torque sensitivity analysis. FSWP 2012 - 2<sup>nd</sup> International Conference on Friction Stir Welding & Processing, organised by the *École Nationale Supérieure des Mines de Saint-Étienne* and by the *École Nationale d'Ingénieurs de Saint-Étienne*, on 26<sup>th</sup> January de 2012, in Saint-Étienne, France.

Galvão, I., Verdera, D., Gesto, D., Loureiro, A. & Rodrigues, D. M. Analysis of aluminium and copper microstructural evolution during friction stir lap welding. Materiais 2013 International Conference, organised by the Portuguese Materials Society (SPM), on 25<sup>th</sup> March 2013, in Coimbra, Portugal.

*Presentations with Posters in Scientific Conferences*

Leitão, C., Galvão, I., Loureiro, A. & Rodrigues, D. M. Friction stir welding of very thin plates. FSWP 2010 - International Conference on Scientific and Technical Advances on Friction Stir Welding and Processing, organised by the *École Polytechnique de l'Université de Lille (Polytechnic School of Lille)*, from 28<sup>th</sup> to 29<sup>th</sup> January 2010, in Lille, France.

Leitão, C., Galvão, I., Loureiro, A. & Rodrigues, D. M. Soldadura por fricção linear - optimização do processo e caracterização mecânica e microestrutural das ligações. Descobrir a Ciência na FCTUC (To Discover Science in FCTUC - National Week for Science and Technology 2010), organised by Faculty of Sciences and Technology, University of Coimbra (FCTUC), on 23<sup>rd</sup> November 2010, in Coimbra, Portugal.

Galvão, I., Verdera, D., Gesto, D., Loureiro, A. & Rodrigues, D. M. Analysing the challenge of aluminium to copper FSW. 9<sup>th</sup> International Friction Stir Welding

Symposium, organised by The Welding Institute, from the 15<sup>th</sup> to 17<sup>th</sup> May 2012, in Huntsville, Alabama, United States of America.

### **Session Chairman in Scientific Conferences**

Galvão, I. SEO Session 2. AMPT 2011 - 14<sup>th</sup> International Conference on Advances in Materials & Processing Technologies, organised by the Yildiz Technical University, on 14<sup>th</sup> July 2011, Istanbul, Turkey.

### **Reviewer in International Scientific Journals**

Journal *Composites Part B: Engineering* - since 2012.

Journal *Metallurgical and Materials Transactions A* - since 2012.

### **Participation in Examination Panels of Masters Dissertations**

Master Dissertation in Mechanical Engineering, Faculty of Sciences and Technology, University of Coimbra (FCTUC), graduate student Miguel Silva Teixeira, with the title *Ferramentas para Friction Stir Welding: Ligas Al-Cu (Tools for Friction Stir Welding: Al-Cu Alloys)*. On 25<sup>th</sup> September 2013.

Master Dissertation in Mechanical Engineering, Faculty of Sciences and Technology, University of Coimbra (FCTUC), graduate student Gonçalo Filipe Ferreira da Silva Pinto Guedes, with the title *Estudo de soldaduras heterogéneas de Alumínio-Aço por Friction Stir Welding (Study of aluminium-steel dissimilar welds produced by Friction Stir Welding)*. On 25<sup>th</sup> September 2013.

## **5 - PROFESSIONAL QUALIFICATIONS**

**December 2009 to March 2012:** Intern member at the *Ordem dos Engenheiros* (Chartered Engineers Association).

**Since March 2012:** Full member of the *Ordem dos Engenheiros* (Chartered Engineers Association), no 63506.

## **6 - HONOURS & AWARDS**

**1997 a 2004** - Excellence Diploma for the exemplary participation in all the cultural and curricular activities. Awarded by the *Colégio da Rainha Santa Isabel*, Coimbra.

Attained the diploma every year.

**2005** - Award for the best grade in the application to the Degree in Mechanical Engineering. Awarded by the University of Coimbra.

**2006 a 2009** - Annual Award for the ranking in the 3% Best Students of the Degree/Integrated Master in Mechanical Engineering. Awarded by the University of Coimbra. Distinction attained every year.

**2009** - Attained the PhD Grant SFRH/BD/60545/2009, through the national call for grants by the Portuguese Foundation for Science and Technology (FCT).

**2011** - Editor's Choice: the top 10 best articles recently published in STWJ - FREE to download. Awarded by the publishers of *Science and Technology of Welding and Joining* journal for the publication of *Material flow in heterogeneous friction stir welding of aluminium and copper thin sheets*, published in 2010. Considered one of the 10 most relevant recent publications of the journal.

**2013** - Best Student Award at the Executive Master in Business Management. Awarded by ISCTE - Instituto Universitário de Lisboa/INDEG Business School.

**2013** - Award for the Best Intern to the Ordem dos Engenheiros (Chartered Engineer Association) in the scope of the Mechanical Engineering area, at the regional level.

Awarded by the Regional Board of the Chartered Engineer Association (OE).

**2013** - Award for the Best Intern to the *Ordem dos Engenheiros* (Chartered Engineer Association) in the scope of the Mechanical Engineering area, at the national level.

Awarded by the National Board of the Chartered Engineer Association (OE).

## **7 - LANGUAGES**

**English, spoken and written - Very Good.**

Attended International House, from September 1997 to July 2002.

*Training Course in English B1.2*, British Council, from September 2010 to January 2011.

**French, spoken and written - Very good.**

**Spanish, spoken - Basic knowledge.**

## **8 - INFORMATICS SKILLS**

Very good skills in the following software:

- Autodesk Inventor;
- SolidWorks;
- SPSS;
- Fortran;
- Photoshop;
- Fireworks;
- Microsoft Word, Excel, PowerPoint, Publisher, Visio.