

Dr Enrique Alabort Martinez

enriquealabort@gmail.com | <http://enriquealabort.me>

Executive Summary

- Strategic thinker and PhD engineer with strong academic background and 8 years experience in developing engineering designs, processes, and materials for high-performance applications.
- Expertise in analytical and numerical modelling techniques for improved engineering design; demonstrated problem-solving expertise with impact at both an academic and a commercial level.
- Co-founder and programme leader at a technology start-up: skill managing people and projects in a fast-paced, constantly-changing environment.

Professional Experience

- Jul. 2017– Present **OxMet Technologies Limited, UK**
Co-founder, Programme Leader
- I am leading the titanium, biomedical and consumer research and development programmes, conducting materials design, process modelling, and engineering design
 - The technical aim is to couple alloy design, additive manufacturing, and topological optimisation of structures to enable the next generation of bio-medical implants
- Oct. 2017– Jun. 2018 **Department of Materials, University of Oxford, UK**
Senior Research Fellow
- Responsible to lead, manage and deliver high value research programmes at Oxford, within a collaborative effort with Ishikawajima Heavy Industry (IHI) company of Japan
 - Technical responsibilities include the experimentation and the numerical modelling of processing and behaviour of materials for gas turbine engines
- Jan. 2016– Sept. 2017 **Impact Engineering Laboratory, Dept. Engineering Science, University of Oxford, UK**
Postdoctoral Research Associate
- Documented technical summaries of investigation results for our industrial customers; provided best advice based on data analysis and experimental data interpretation
 - Characterised, analysed and modelled the mechanical performance of novel materials
- Oct. 2011– Oct. 2015 **Rolls-Royce University Technology Centre in Solid Mechanics (UTC), UK**
Rolls-Royce plc Doctoral Researcher
- Lead technical presenter at multiple project review meetings; liaised with stakeholders
 - Developed methods have improved the fan blade production efficiency; advised Rolls-Royce in their exploitation to accelerate the introduction of new process developments
- 2014–2017 **Department of Engineering Science, University of Oxford, UK**
Undergraduate Laboratory Demonstrator
- Responsible for co-ordinating a series of laboratory-scale experiments to introduce critical aspects of the mechanical performance of solids to third-year undergraduate engineering students

Education

- 2012–2016 **University of Oxford, United Kingdom**
D.Phil. in Engineering Science (St. Anne's College)
- Modelled and optimised using finite element methods a series of manufacturing processes crucial for the aerospace industry – *i.e.* superplastic fan blade forming
 - Experimental analysis and numerical modelling for material behaviour based on the high-temperature micromechanics of titanium and its alloys
- 2005–2011 **Polytechnic University of Valencia, Spain**
Five-year degree in Aeronautical Engineering, Equivalent B.Eng. and M.Sc. (2:1 honours)
- 2009–2010 **Sapienza University of Rome, Italy**
- Erasmus scholarship at the School of Aerospace Engineering

Research Contribution

Peer-reviewed publications

- 2019
- E. Alabort, D. Barba, R. Reed, *Design of metallic bone by additive manufacturing*, *Scripta Materialia*, (2019)
 - D. Barba, R. Reed E. Alabort, *Ultrafast miniaturised assessment of high-temperature creep properties of metals*, *Materials Letters*, (2019)
- 2018
- E. Alabort, R. Reed, D. Barba, *Combined modelling and miniaturised characterisation of high-temperature forging in a nickel-based superalloy*, *Materials and Design*, 160, 683-697, (2018)
 - M Lißner, E Alabort, B Erice, H Cui, N Petrinic, *A rate dependent experimental and numerical analysis of adhesive joints under different loading directions*, *The European Physical Journal Special Topics* 227 (1-2), 85-97, (2018)
 - E. Alabort, D. Barba, S. Sulzer, M. Lißner, N. Petrinic, R. Reed, *Grain boundary properties of a nickel-based superalloy: Characterisation and modelling*, *Acta Materialia*, 151, 377-394, (2018)
 - D. Barba, E. Alabort, D. Garcia, J. Moverare, R. Reed, A. Jerusalem, *A thermodynamically consistent constitutive model for diffusion-assisted plasticity in Ni-based superalloys*, *International Journal of Plasticity* 105, 74-98 (2018)
 - M. Lißner, E. Alabort, H. Cui, A. Pellegrino, N. Petrinic, *On the rate dependent behaviour of epoxy adhesive joints: experimental characterisation and modelling of mode I failure*, *Composite Structures*, (2018)
 - E. Alabort, D. Barba, R.C. Reed, *Mechanisms of Superplasticity in Titanium Alloys: Measurement, In Situ Observations and Rationalization*, *Defect and Diffusion Forum* 385, 65-71, (2018)
 - K. Kageyama, F. Adziman, E. Alabort, T. Sui, A. Korsunsky, R. Ree, *In Situ Diagnostics of Damage Accumulation in Ni-Based Superalloys Using High-Temperature Computed Tomography*, *Metallurgical and Materials Transactions A*, 1-16, (2018)
 - S. Sulzer, E. Alabort, A. Németh, B. Roebuck, R. Reed, *On the Rapid Assessment of Mechanical Behavior of a Prototype Nickel-Based Superalloy using Small-Scale Testing*, *Metallurgical and Materials Transactions A*, 1-22, (2018)
- 2017
- D. Barba, E. Alabort, S. Pedrazzini, D. Collins, A. Wilkinson, P. Bagot, R. Reed, *On the microtwinning mechanism in a single crystal superalloy*, *Acta Materialia*, 135, 314-329, (2017)
 - P. Kontis, E. Alabort, D. Barba, D. Collins, A. Wilkinson, R. Reed, *On the role of boron on improving ductility in a new polycrystalline superalloy*, *Acta Materialia*, 95, (2017)
- 2016
- W. Summers, E. Alabort, P. Kontis, F. Hofmann, R. Reed, *In-situ high-temperature testing of a polycrystalline nickel-based superalloy*, *Materials at High Temperatures*, 33 (2016)
 - E. Alabort, P. Kontis, D. Barba, K. Dragnevski, R. Reed, *On the mechanisms of superplasticity in Ti-6Al-4V*, *Acta Materialia* 105, 449-463, (2016)
- 2015
- E. Alabort, D. Putman, R. Reed, *Superplasticity in Ti-6Al-4V: Characterisation, modelling and applications*, *Acta Materialia* 95, 428-442, (2015)
 - D. Collins, D. Crudden, E. Alabort, T. Connolley, R. Reed, *Time-resolved synchrotron diffractometry of phase transformations in high strength nickel-based superalloys*, *Acta Materialia*, 94, 244-256, (2015)
- 2018
- E. Alabort, *A bio-compatible titanium alloy for additive manufacturing*, PCT/GB2018/053461
 - E. Alabort, *An alpha titanium alloy for additive manufacturing*, GB1815536.6
 - E. Alabort, *A beta titanium alloy for additive manufacturing*, GB1815532.5
- 2016
- E. Alabort, Y. Gong, R. Reed, *A Titanium-Based Alloy*, WO Patent WO/2018/138,502

Honours and Awards

- 2016 **Zwick Science Award 2015 – 1st Place and Paul Roell Medal (€5,000)**
- Honoured for most innovative use of material testing methods for ground-breaking research
- 2013 **Best Presentation Award at an International Conference**
- Awarded at the EuroSPF 2013 Conference in Speyer, Germany
- 2011 **Undergraduate Team Engine Design Competition (second position, €1,200).**
- Awarded by the American Institute of Aeronautics and Astronautics (AIAA) for the design of an innovative propulsion system (7-month student-led team project)
- 2010 **1-Year Erasmus Scholarship (€6,000)**

Skills and Other Information

- Communication
- Confident presentation skills delivered to project review boards, project sponsors and at international conferences.
- Management
- Strong organisational skills with the ability to meet multiple deadlines. Structured working style with an independent professional working manner
- Languages
- Native in Spanish and Catalan. Fluent in English. Basic knowledge of Italian