Gustavo Quino

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Education

2013 - 2018 **DPhil in Engineering Science**, *University of Oxford*, United Kingdom.
Topics: mechanics of materials, composites, characterisation, ageing, constitutive modelling.

2011 - 2013 **MSc in Mechanical Engineering**, *King Abdullah University of Science and Technology*, Saudi Arabia, *GPA:3.88/4.*
Strengths: continuum mechanics, solid mechanics, fracture mechanics, composite materials.

2005 - 2009 **BSc in Mechanical Engineering**, *Universidad Nacional de Ingeniería*, Peru, *Top one student.*

Experience

Research

2018 - Present **Postdoctoral research associate**, Impact Engineering Composite Materials for Aerospace Applications, University of Oxford.
- Designed and performed an experimental campaign to study the effects of strain rate, humidity and temperature on advanced aerospace composite materials.
- Designed and built thermal chambers with controlled temperature (-55°C – 90°C).

2013 - 2018 **Doctoral researcher**, Hydrothermal aging and strain rate dependency of fibre reinforced composites, University of Oxford.

Thesis title: *Effects of water absorption on the strain rate sensitive properties of glass fibre reinforced polymers.*

Supervisor: Prof. Nik Petrinic

- Designed and implemented experimental campaigns to assess the effects of water exposure and strain rate on epoxy resin, glass fibres, and composites. Performed and analysed quasi-static and dynamic mechanical tests.
- Developed a novel technique named *Sound Measurements* applied to fibres and granular materials.
- Collaborated with other academics to execute dynamic experiments on foams and ceramics.

2011 - 2013 **Master Student**, Hygrothermal aging of polymer-based composites, King Abdullah University of Science and Technology, Saudi Arabia.
- Developed a methodology to characterise fracture toughness of a hygrothermally aged resin.
- Designed rigs for compact tension fracture toughness tests.

2009 - 2011 **Research Assistant**, Chasqui I, 1ST peruvian nanosatellite, Universidad Nacional de Ingeniería, Peru.
- Designed and 3D sketched the entire nanosatellite. Manufactured some mechanical parts.
- Designed, manufactured and instrumented an electrodynamic shaker for random vibration testing.

Teaching

2015 - 2019 **Departmental tutor and laboratory demonstrator**, *Engineering Science Department*, University of Oxford, UK.
- Gave tutorials and revision classes on the module of Materials Science (B8).
- Marked and wrote end of term reports on OxCORT.
- Conducted lab demonstrations in P5 Design and B5 Solid mechanics.
- Created new content for the Solid Mechanics B5 laboratory: Digital Image Correlation (DIC) experiment.

2017 **Student co-supervisor**, *Engineering Science Department*, University of Oxford, UK.
- Co-supervised the work of a final year student from the Department of Engineering Science.
- Discussed with other co-supervisors the progress and directions of the project.

2016 **Mentor**, Mentor Peru.
- Volunteered to mentor a high school student from Peru for 6 months, as part of the program *Mentor Peru*.
- Gave a Q&A session to a group of 50 selected students about the results of the program.

2008 - 2009 **Course organiser and instructor**, Universidad Nacional de Ingeniería, Peru.
- Organised and taught courses for first and second year students: CAD/CAE and programming.

Admin

2019 - Present **Laboratory coordinator**, *Impact Engineering Laboratory*, University of Oxford.
- Run weekly meetings to discuss topics relevant to lab users.
- Implemented a system to plan the use of lab equipment.

2017 - 2018 **Founder**, *Meer-e-Karwan*, Blog/podcast platform on topics such as environment, education, women in society, *etc.*

2017 - 2018 **Founder**, *Oxford AR & VR Oxford Hub*, A network of researchers and enthusiasts on Virtual and Augmented reality, University of Oxford.
- Organised talks, seminars around the university, with internal and external speakers.
- Met and gathered around 200 researchers and entrepreneurs to create links and promote knowledge transfer.

2016 **Founding President**, *Oxford Peruvian Society*, University of Oxford.
- Lead the student organisation to organise academic and cultural events.
- Represented the organisation in meetings with the University and with the Embassy of Peru.

2008 - 2017 **Organiser of engineering talks and symposiums**, Lima, Peru.
- Approached potential speakers to invite them to take part on the events.
- Scheduled and moderated over 20 talks.

2006 - Present **Organiser of cultural and artistic events**, *Lima and Oxford.*
- Organised live music performances and cultural events in the university and city.
- Head Organiser of a folkloric dance competition with over 200 contestants and more than 800 attendees (Peru, 2009).

Industry

2009 - 2010 **Short-term engineering design projects for several companies**, Peru.
- Drew plans and made quantity estimates of steel structures.
- Gave assistance in the design of: movie theatres, roofs, scraper, a mini plant for processing of minerals and a *mototaxi* (a three wheeled vehicle).
- Gave assistance in the structural design of a telecommunications tower, platforms for fans and other structures using specialised FEM software.

2009 **Summer Intern, Design/Project Engineer**, D.G.C. Contratistas, Peru.
- Drew plans and supervised implementation strategy for bridge crane project.
- Created 3D model of a bridge crane, roofs, and other steel structures.

Awards

2018 1st place OxTALENT 2018, Innovation Challenges Students, University of Oxford.

2018 £7000 funding to run the *Summer School on Immersive Technologies*. University of Oxford.

2017 £15000 funding from the IT Services Innovation Challenge to develop the *AR & VR Oxford Hub*. University of Oxford.

2017 Poster award in the conference II Sinapsis, Berlin.

2013 Departmental Studentship. Department of Engineering Science, University of Oxford.

2013 Peruvian-Russian prize for innovative projects of young scientists. CTIC, Peru.

2011 KAUST Fellowship and Provost Award, Saudi Arabia.

2011 Opportunity Grant Award, provided by Fulbright Commission.

2010 1st Place. The best thesis project related to *Chasqui I* among 20 entries.

2009 2nd Place in the Project Competition of the National Congress of Students of Mechanical and Electrical Engineering among 150 projects across Peru.

2005 - 2009 1st in class during 5 consecutive years of undergraduate studies (1/28).

2005 2nd place in the entrance exam to Universidad Nacional de Ingeniería among 4500 applicants.

Selected publications

Articles.

G. Quino*, F. De Cola, V. L. Tagarielli, and N. Petrinic. *"Exploring the application of sound measurements to assess the structural integrity of fibre bundles.* Procedia Struct. Integr., vol. 18, pp. 507–515, Sep. 2019.

F. De Cola, G. Quino*, K. Dragnevski, N. Petrinic. *An extended in-situ method to improve the understanding of fracture mechanics of granular materials using sound measurements.* Eur. J. Mech. - A/Solids, vol. 76, pp. 1–12, Jul. 2019.

G. Quino, V. Tagarielli*, N. Petrinic. *Measurements of the effects of pure and salt water absorption on the rate-dependent response of an epoxy matrix.* Comp. Part B, vol. 146, pp. 213–221, Aug. 2018.

G. Quino, J. El Yagoubi, and G. Lubineau*. *Characterizing the toughness of an epoxy resin after wet aging using compact tension specimens with non-uniform moisture content.* Polym. Degrad. Stab., vol.109, pp.319–326, Nov.2014.

Conferences.

G. Quino, V. Tagarielli, N. Petrinic. *Water ageing effects upon the mechanical properties of E-glass fibre reinforced epoxy and its constituents*, in Engineering Mechanics Institute Conference, 18-21 June 2019. Pasadena, USA.

G. Quino, V. Tagarielli, N. Petrinic. *Glass fibre bundles in extreme environments: high strain rates and water exposure*, in 55th Annual Technical Meeting of the Society of Engineering Science, 10-12 October 2018. Madrid, Spain.

G. Quino, F. De Cola, K. Dragnevsky, N. Petrinic. *Quartz grain mechanics: in-situ testing and sound measurements*, in Microscience Microscopy Congress, 3-6 July 2017. Manchester, UK.

Posters.

G. Quino, F. De Cola, K. Dragnevsky, N. Petrinic. *In-situ testing of sand grains and sound measurements*, in II Sinapsis, 5-7 October 2017. Berlin, Germany.

Technical skills

Experimental mechanics: Quasi-static and dynamic characterisation of materials. High speed photography. Micro-mechanical testing. Microscopy. SEM. Digital image correlation. Mechanical design. Strain gauges. Electronics. Instrumentation.

CAD, CAE: Proficient skills Abaqus (subroutines), Comsol, AutoCAD, Solidworks, Catia, SAP 2000.

Programming: Capable in creating and editing code in Python, Fortran, Matlab, C++ and HTML. Created my own plotting library and scripts to analyse mechanical tests.

Languages

English: Full professional proficiency.

Spanish: Mother tongue.

Other activities

Professional musician. Quena, zampoña (Peruvian panflute), charango and guitar player.

Website designer and administrator using Joomla, WordPress, Blogger and Gatsby.