Curriculum Vitae

Juan Carlos Afonso

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PERSONAL INFORMATION

- **Marital status**: married with children
- **Citizenship** (multiple): Australian, Spanish, Argentinian

EDUCATION

- October 2002 - October 2006, **Ph.D. in Geophysics**, Carleton University, Ottawa (***University medal awardee***). Thesis title: "Thermal, density, seismological and rheological structure of the lithospheric-sublithospheric mantle from combined petrological-geophysical modelling: Insights on lithospheric stability and the initiation of subduction"

- 1997-2002 Lic. (**M.Sci. equivalent**) Geology, Universidad Nacional de la Patagonia San Juan Bosco (U.N.P.S.J.B.), Comodoro Rivadavia (***University award, highest marks of class 2002***)

EMPLOYMENT/ACADEMIC HISTORY

- 2026-current. i) **A/Professor,** School of Natural Sciences (Earth Science), University of Tasmania, Australia.
  ii) **Visiting Professor**, Faculty ITC, University of Twente, the Netherlands.
  iii) **Visiting Professor**, Dept. Earth and Space Sciences, SUSTech University, China
- 2022 – 2025. i) **A/Professor** (**UH1**), Faculty ITC, University of Twente, the Netherlands.
  ii) **Visiting Professor**, Dept. Earth and Space Sciences, SUSTech University, China.
  iii) **Honorary Professor**, Macquarie University, Australia.

- 2018 - 2021. **Full Professor**, **Head of the Geophysics and Geodynamics Group**, Department of Earth and Environmental Sciences, Macquarie University, Sydney, Australia.

- 2016 - 2020. **Adjunct Professor**, Centre of Excellence for Earth Evolution and Dynamics (CEED), University of Oslo, Norway.

- 2017 - 2018. **Head of Department** of Earth and Planetary Sciences, Macquarie University, Sydney, Australia.

- 2016 - 2017. **Associate Professor and Deputy Head of Department**, Department of Earth and Planetary Sciences, Macquarie University, Sydney, Australia.

- 2014 - 2015. **Senior Lecturer**, Department of Earth and Planetary Sciences, Macquarie University, Sydney, Australia.
- 2010 - **Collins Lecturer** (Honorary), Department of Earth Sciences, Carleton University, Ottawa, Canada.
- 2009 - 2014. **Lecturer**, Department of Earth and Planetary Sciences, Macquarie University, Sydney, Australia.
- 2007 - 2009. **Post-doctoral Fellow** (CSIC), Institute of Earth Sciences "Jaume Almera", Barcelona, Spain.

AWARDS AND HONORS RECEIVED

2024 - Advisor to the Dutch Ministry of Foreign Affairs (Critical Minerals and Energy Sections)
2024 - Elected member of the ITC Faculty Academic Board (by invitation), University of Twente.
2024 - Conferred *ius promovendi honour* by the Academic Board of the University of Twente.
2024 - EU Parliament contributor in "Unlocking Geothermal Potential in the EU" Panel.
2022 - Visiting Professor in the Dept. Earth and Space Sci., SUSTech University (by invitation).
2022 - Elected member of the Advisory Board (by invitation) of the AES Department, ITC, University of Twente.
2022 - Visiting Professor, Dept. Earth and Space Sciences, SUSTech University, China (by invitation).
2021 - Elected member of the Anton Hales medal committee (by invitation) of the Australian Academy of Sciences.
2019 - Early Career Scientist Award from the International Union of Geodesy and Geophysics (IUGG). (https://lighthouse.mq.edu.au/article/may-2019/Diamonds,- volcanos-and-a-rock-star-what-a-new-map-of-the- earths-interior-will-reveal)
2019 - Leadership in Research Award, Faculty of Science and Engineering, Macquarie University.
2019 - Keynote (honorary) lecturer, Department of Astronomy and Geophysics, La Plata, Argentina.
2017 - Anton Hales Medal from the Australian Academy of Sciences.
(https://www.science.org.au/supporting-science/awards-and-opportunities/anton-hales-medal)
2016 - Elected member of the editorial board for Geophysical Journal International (by invitation).
2016 - Adjunct Professor in the Centre of Excellence CEED, University of Oslo (by invitation).
2015 - Member of the Big History Program, Macquarie University (by invitation).
2014 - Member of the UNCOVER Geoscience Committee, Australia (by invitation).
2014 - Member of the Australian ANSIR/AuScope Access Committee, Australia (by invitation).
2014 - Member of the Solid Earth Geophysics Committee; Specialist Group of the Geol. Soc. Australia (by invitation).
2013 - Outstanding Young Scientist Award of the European Geosciences Union (Geodynamics Division)
(https://www.egu.eu/awards-medals/division-outstanding-ecs-award/2013/juancafonso/)
2010 - Collins (honorary) Lecturer, Department of Earth Sciences, Carleton University, Ottawa, Canada.
2010 - Finalist of the Tectonics Division Outstanding Young Scientist Award at EGU Union level.
2006 - Carleton University Medal for outstanding graduate work at doctoral level (only one medal awarded at each convocation ceremony, when merited, to a graduating student for outstanding academic

achievements at the Ph.D. level).
2003/2004 - 2004/2005 - 2005/2006 - Ontario Graduate Scholarship (OGS) for international students (only 60 scholarships for all universities in Ontario).
2006 - European Science Foundation under the EUROCORES Programme EUROMARGINS (travel grant).
2004 - GAC-MAC Graduate Scholarship endowed by the Geological Association of Canada and the Mineralogical Association of Canada for excellence in graduate studies ($900).
2002/2003 - Indira Gandhi Memorial Fellowship. This award is awarded annually to the most outstanding international student entering or enrolled in a graduate program at Carleton University (including all departments).
2002/2005-2005/2006 - Carleton University Scholarship, Dean of Graduate Studies.
2002/2003 - 2003/2004 - 2004/2005 -Carleton University Academic Excellence Scholarship for International students in recognition of the excellent academic record.
2002 - Repsol - YPF Academic Excellence National Scholarship (only one scholarship per University)in recognition of an outstanding academic performance and participation as a student in the XV Congreso Geol´ogico Argentino (XV Argentinean Geological Congress), El Calafate, Santa Cruz, Argentina.
2002 - University Award from the Universidad Nacional de la Patagonia San Juan Bosco (U.N.P.S.J.B.) for having reached the second highest score of the 2002 class (including all departments) and the highest score of the 2002 Geology class (9.35 out of 10).

SELECTED GRANTS AND FUNDING SUCCESS

Competitive grant schemes

- As Chief Investigator (**CI**) in the NWO DeepNL Programme; Project INTEGRATION (2024)
- As Partner Investigator (**PI**) in DeepGEO Project, Spanish Ministry of Science (2024)
- As CI and coordinator in the Marie Skłodowska-Curie Actions Doctoral Networks, European Union (2023).
- As Partner Investigator (**PI**) in 4D Earth Programme, European Space Agency (2023).
- As PI in NWO-Netherlands Space Office project 'Netherlands Planetary Science Network on Observables of Planetary Habitability' (2023).
- As PI in SCPP Seed Funding Scheme for international research collaboration, IIT Bombay (2023).
- As PI in DeepNL Programme, Project DICTUM (2021).
- As PI in Task Force CoLibri of the Int. Lithosphere Program (2020).
- As CI in Australian Research Council (ARC) DP Project DP190102940 (2019)
- As CI in ARC Linkage Project LP170100233 (2018)
- As PI in Research and Innovation Staff Exchange (RISE) Call:H2020MSCARISE2017 (2017)
- As PI in European Space Agency ITT AO/1-8422/15/NL/SW: STSE 3D-Earth (2016)
- As CI in ARC Discovery Project 160103502 (2015)
- As CI in DAAD-Australia Research Cooperation Scheme (2015)

- As CI in the competitive MQ Research Infrastructure Block Grants scheme, Macquarie University (2014).
- As CI in the competitive MQ Research Development Grants scheme, Macquarie University (2014).
- As CI in the competitive MQ Research Infrastructure Block Grants scheme, Macquarie University (2013).
- As CI in ARC Discovery Project 120102372 (2012)
- As CI in the competitive MQ Research Infrastructure Block Grants scheme, Macquarie University (2012).
- As CI in ARC Discovery Project 110104145 (2011).
- As CI in MQ New Staff Grant scheme, Macquarie University (2010).
- As CI in MQ University Safety Net Grant (2010).
- As PI in CSIC Fundamental Research Grants scheme, Spain (2012)
- As CI in CCFS Project Two-phase flow within Earth's mantle: modelling, imaging and application to flat subduction settings (2011-2017)
- In 2010, I was part (as Associate Investigator) of the successful bid for the multi-million ARC Centre of Excellence for Core to Crust Fluid Systems (CCFS).
- As CI in Acciones Complementarias, Consejo Superior de Investigaciones Cientficas (CSIC), Spain (2008).

Industry/government funding

In addition to the competitive funding schemes mentioned above, my research has been and still is supported by numerous industry and government partners (multi-million funds). Some of these include: *De Beers Consortium, Newmont Corporation, OroPlata S.A., Canadian Geological Survey, AngloGold, European Space Agency, Equinor, CSIRO, Geoscience Australia, Te Pū Ao GNS Science, Clean Air Task Force, MTI Inc. and BHP.*

PRESTIGIOUS AWARDS IN 2013, 2017 AND 2019

In 2013, the Geodynamic Division of the European Geoscience Union (EGU) selected me as the recipient of the prestigious **OUTSTANDING YOUNG SCIENTIST AWARD (OYSA)** (http://www.egu.eu/news/45/eguannounces-2013-awards-and-medals/) for *"outstanding contributions to the understanding of the complex connections between the Earths physical state and its signatures on geophysical, petrological, and geochemical observations through time"* (EGU Division Media Release).

In 2017, the Australian Academy of Sciences announced that I was the recipient of the **ANTON HALES MEDAL** (https://www.science.org.au/opportunities- scientists/recognition/honorific-awards/honorific-awardees/2017-awardees#hales), the most prestigious award bestowed by the Australian Academy of Science to Australian early-career geoscientists. This medal was awarded to me based on my work on multi-observable inversion for the physical state of the Earth's interior.

In 2019, the *International Union of Geodesy and Geophysics* (IUGG) announced that I was the recipient of

the prestigious **IUGG EARLY CAREER SCIENTIST AWARD** (https://iugg.org/awards/iugg-early-career-scientist-award/) for "*outstanding contributions to seismology and physics of the Earth".* This award is given every four years to a maximum of ten ECSs across all the disciplines of Geodesy and Geophysics. ***I am the only Australian scientist to have received this award.***
Media cover: https://lighthouse.mq.edu.au/article/may-2019/Diamonds,-volcanos-and-a-rock-star-what-a-new-map-of-the-earths-interior-will-reveal?fbclid=IwAR2wfp5tmqcp9Ev6zhYpvRc9Ls1BnU4saRU9uTnpszrv2uJ0Gp2kaj--VdA

I have also received a number of other awards during my career, most of which are listed above in Section Awards and Honors Received

SELECTED PROFESSIONAL EXPERIENCE AND SERVICE

2025: Co-convenor Symposium S.19, IASPEI Meeting, Lisboa.
2025: Co-convenor Session GD1.1, EGU Meeting, Vienna, Austria.
2024: Organiser of the First EarthSafe Doctoral School, Enschede, the Netherlands.
2024: Co-organiser of the GEUS' *Greenland's Lithosphere Workshop* in Copenhagen, Denmark
2024: Co-convenor of International Geological Congress Session T37 Deep-Time Digital Earth, Korea.
2023: Co-convenor International Union Geodesy and Geophysics (IUGG) Conference, Berlin, Germany.
2023: Co-convenor Session 2FO1, Goldschmidt Conference, Lyon, France.
2023: Co-convenor Session GD1.1, EGU Meeting, Vienna, Austria.
2021: Co-convenor S17 IASPEI symposium, IAGA-IASPEI Joint Scientific Assembly.
2019: Guest Editor of *Sensors* Special Issue "Space and Airborne Remote Sensing for Geo-hazards, Tectonics, and Earth Structure and Composition"
2019: Co-convenor IUGG JA9 Session, Montreal, Canada.
2019: Co-convenor AGU 81186 Session, San Francisco, US.
2017: Co-convenor or IAG-IASPEI 2017, Kobe, Japan.
2016-2023: Editor of Geophysical Journal International, Oxford.
2016: Co-organizer of workshop Anisotropy and Dynamics of the Lithosphere- Asthenosphere System, Prague.
2016: Main Organizer of the EMCG Symposium, Australian Earth Science Convention, Adelaide.
2016: Co-organizer of the UNCOVER Workshop; Lithospheric Architecture Theme.
2009-2021: Editor of EGU Journal Solid Earth.
2013-2022: leader of Macquarie's Geophysics and Geodynamics Group (MG3).
2014- 2022: Member of the UNCOVER Geoscience Committee, Australia.
2014-2022: Member of the ANSIR/AuScope Access Committee, Australia.
2014-2016: Member of the Solid Earth Geophysics Committee; Specialist Group of the Geol. Soc.Australia.
2014: Main organiser of the 1st Australian Workshop for Early and Mid-Career Geoscientists.
2013: Convenor of Session SM4.7, EGU, Vienna.
2013: Convenor of Session MR43A, AGU, San Francisco.
2013: Guest Editor of Lithos, Special Issue "The Lithosphere and Beyond: a multidisciplinary spotlight".

2012: Convenor of symposium 16.5, 34th Int. Geol. Congress, Brisbane.
2009-2012: EGU Division Officer (OSP Coordinator), Geodynamics Division.
2011: Main organizer of workshop ThermoDynaMix III, Dublin.
2010: Convenor of session GD6.5, EGU, Vienna, Austria.
2010: Guest Editor of Lithos, Special Issue Vol 120 "The Lithosphere - Asthenosphere boundary: nature, formation and evolution from Hadean to now".
2008: Main organizer of workshop ThermoDynaMix II, Barcelona.
2008: Convener of session SM8, EGU, Vienna.
2008: Convenor of symposium EIL-03, 33rd Int. Geol. Congress, Oslo.

Developer, provider, and maintainer of open-source computational tools for geoscientific re-search *LitMod, LitMod3D, LitMod_seis, LitMod_4INV* among others (Please refer to https://www.juanafonso.com/software for a complete list). Much of my current research includes the development of geophysical methodologies and in-house computational tools that I make available to the Earth Science community under open-source license (commercial licenses are also available). These include e.g. 2D finite element codes for integrated petrological-geophysical modelling (static and dynamic) of the lithosphere and upper mantle (e.g. LitMod), a 3D fully interactive code (LitMod3D) for the same purposes, a multi-observable probabilistic inversion code (LitMod_4INV) and finite- element codes for advection-diffusion-reaction processes and multi-phase multi-component re-active flow for geochemical and thermomechanical simulations of geological processes.

Serve regularly as reviewer for *Earth and Planetary Science Letters, Nature Geoscience, Nature Communications, Geology, Journal of Geodynamics, Lithos, Tectonophysics, Geophys. Res. Lett., G-cubed, J. Geophys. Res., Geophys. J. Int., Terranova, Geol. Soc. London.,* among others.

I regularly serve as external examiner of PhD theses from institutions around the world (e.g. ETH Zurich, University of Western Australia, Australian National University, University of Copenhagen, Roma Tre University, University of Catalonia, University of Twente, University of Melbourne, University of Trieste, to name a few).

SELECTED ACADEMIC SERVICE

- Coordinator/Leader of the multi-institution MCSA Doctoral Network *EarthSafe*
- Member of the ITC Faculty Academic Board, University of Twente
- Member of the AES Advisory Board, University of Twente
- Director of Research Department of Earth and Environmental Sciences, Macquarie University
- Member of the Dean's Advisory Committee, Faculty of Science, Macquarie University

- *Head of Department* of Earth and Planetary Sciences, Macquarie University
- Deputy Head of Department of Earth and Planetary Sciences, Macquarie University
- Leader/coordinator of the Geophysics and Geodynamics Gorup, Macquarie University

RECENT TEACHING EXPERIENCE AS CONVENOR OR CO-CONVENOR

Macquarie University

- GEOS125 The Dynamic Earth (1st year undergraduate)
- GEOS209 Marine Depositional Environments (2nd year undergraduate)
- GEOS205 Introduction to Geophysics (2nd year undergraduate)
- GEOS2311 Geophysical Methods for Earth and Environmental Sciences (2nd year undergraduate)
- GEOS309 Liquid Fuels and Energy Security (3rd year undergraduate)
- GEOS385 Global Tectonics (3rd year undergraduate)
- GEOS345 Solid Earth Geophysics (3rd year undergraduate)
- Thermodynamics of the Earth (Graduate level)
- Advanced Geophysical Theory (Graduate level)
- Numerical Methods for Science (Graduate level)

University of Twente (ITC)

- Geophysics: Imaging the unseen (Graduate level)
- Geological Remote Sensing (Graduate level)
- Energy Transition Perspectives (2nd year undergraduate)
- Modern Geodata Integration, Modelling and Inversion for Subsurface Exploration (post-graduate)

Dr. Afonso has delivered educational workshops in geodynamics and geophysics for/at:

- China University of Geosciences, Wuhan (China)
- Department of Earth Sciences, IIT-Bombay (India)
- Ludwig-Maximilians-Universität München (Germany)
- De Beers – Anglo America Exploration Group (Canada)
- Universidad Nacional de La Plata (Argentina)
- Universidad de Barcelona (Spain)
- Polytechnic University of Catalonia (Spain)
- Ludwig Maximillian's University (Germany)
- Universidad Nacional de la Patagonia (Argentina)
- University of Oslo (Norway)
- Carleton University (Canada)

- Macquarie University (Australia)
- Dublin Institute of Advanced Studies (Ireland)
- Society of Exploration Geophysicists Conference (Canada)
- Kiel University (Germany)

Supervision of MRes, PhDs and Postdocs

- Elyse Schinella (PhD completed)
- Chris J. Grose (PhD completed, University Award)
- Mehdi Qashqai (PhD completed)
- Javier Fullea (PhD, completed)
- Olga Galabert (PhD completed)
- Chengxin Jiang (PhD completed, University Award)
- Kai Wang (PhD completed)
- Jun Xie (PhD completed)
- Benat Oliveira Bravo (PhD completed, University Award, La Caixa Award)
- Constanza Manassero (PhD completed)
- Anqi Zhang (PhD completed)
- Xiaoyu Yang (PhD completed)
- Farshad Salajegheh (PhD completed)
- Lucas Gamertsfelder (MRes completed)
- Anthony Lanati (MRes completed)
- Byron Gear (MRes completed)
- Thomas Connell (MRes, completed)
- Alice Van Tilburg (MRes, completed)
- Kelly Vaughn-Taylor (MRes, completed)
- Nasir Lukman (MSc candidate ITC, completed)
- Marti Burcet (PhD candidate, Macquarie)
- Muhammad Jawal (PhD candidate ITC)
- Sandra Samantela (PhD candidate ITC)
- Luis Simoes Da Silva (PhD candidate – cosupervision with UPC, Barcelona)
- Nima Hosseinian (PhD candidate – cosupervision with UPC, Barcelona)
- Lulu Lei (PhD candidate, cosupervision with CUG, Beijing)
- Bowen Li (PhD candidate, cosupervision with Tsinghua Univ., Beijing)
- Fatimah Abdulghafur (PhD candidate, Macquarie)
- Ali Jamasb (PhD candidate, ITC)
- Daniel Aranguren (PhD candidate, ITC)
- Dr. Bin Shan (Postdoc, now professor at Wuhan University, China)

- Dr. Zhen Guo (Postdoc, now professor at Southern University of Science and Technology, China)
- Dr. Mehdi Qashqai (Postdoc, now researcher at CSIRO)
- Dr. Benat Oliveira Bravo (Postdoc – now senior data scientist at the NSW Ministry of Health, Australia)
- Dr. Ilya Fomin (Postdoc – 2019-2024)
- Dr. Walid Mansour (Postdoc - now researcher at Washington State University)
- Dr. Constanza Manassero (Postdoc, now researcher at the University of Tasmania, Australia)
- Dr. Marthe Klocking (DAAD Postdoc – now researcher at the University of Munster, Germany)
- Dr. Chongzhi Dong (CSC Postdoc, 2019)
- Dr. Guangliang Yang (CSC Postdoc, 2019)
- Dr. Jiakwan Wan (Postdoc – current)
- Dr. Janekke da Laat (postdoc - current)
- Dr. Mark Jefferd (postdoc – current)

PUBLICATIONS

Total number of publications: 101 + 4 submitted/in review, including multiple articles in *Nature Geoscience*, *Geology, PNAS and Earth and Planetary Science Letters*

Total citations: 6620; H-index: 42; i-10-index: 76 (Google Scholar)

Publications in review

Tao, L., Muixí, A., Zlotnik, S., Zyserman, F., **Afonso, J.C**., Diez, P, (2026) Accelerating 3D Magnetotelluric Forward Modelling with Domain Decomposition and Order-Reduction Methods (EarthArxiv)

Li, B., **Afonso, J.C**., Liu, M., Dong, X., Xu, X. (2026) Imaging lithosphere-asthenosphere interactions beneath the North China Craton: Implications for intraplate volcanism and anomalous basin subsidence (accepted pending revision)

Abdulgahfur, F., **Afonso, J.C**., Rao, S. (2026) Thermochemical Sate of the Indian Shield from Multi-observable Probabilistic Inversion: Insights into its tectonic evolution and preservation

Zhang, A., Chu, R., Ni, S., Yang, Y., Xu, Y., **Afonso, J.C.,** Zhang, J., He, H. (2026) Origin and geologic significance of dual seismic discontinuities in the upper mantle

Book chapters

Ball, P., Banks, G., Montgomery, M., **Afonso, J.C.,** Rogers, T. (2025), Global screening for superhot rock

geothermal energy: geodynamic settings, prospective heat endowments and extraction techniques. In: Livescu, S. and Dindoruk, B. (eds.). *Geothermal Energy Engineering*, Elsevier.

Afonso, J.C., Moorkamp, M. and Fullea, J. (2016), Imaging the Lithosphere and Upper Mantle: Where we are at and where we are going (invited chapter). In "*Integrated imaging of the Earth*", M. Moorkamp, P. Lelievre, N. Linde, and A. Khan (Editors), AGU Monograph 218, Wiley, AGU book.

Afonso, J.C. and Zlotnik, S. (2011), The subductability of continental lithosphere: the before and after story (invited chapter). In Brown, D. and Ryan, P. (eds), "*Arc-continent collision*", Springer's series Frontiers in Earth Sciences, Berlin.

Brown, D., Ryan, P., **Afonso, J.C.**, Boutelier, D., Burg, J.P., Byrne, T., Calvert, A., Cook, F., DeBari, S., Dewey, J.F., Gerya, T.V., Harris, R., Herrington, R., Konstantinovskaya, E., Reston, T. and Zagorevski, A. (2011), Arc-continent collision: The making of an orogen. In Brown, D. and Ryan, P. (eds), "*Arc-continent collision*", Springer's series Frontiers in Earth Sciences, Berlin.

I am currently writing a book on numerical methods and inversion for Earth and planetary scientists.

Refereed publications

Fomin, I., **Afonso, J.C**., et. al. (2026) Multi-Observable Thermochemical Tomography: New Advances and Applications to the Superior and North Australian Cratons, *J. Geophys. Res.*, 131, e2025JB031939. https://doi.org/10.1029/2025JB031939.

Afonso, J.C. (2026), A Multiscale MCMC Approach to Joint Geophysical Inversion: Tackling Dimensionality, Solver Integration, and Multiscale Data Fusion. *Authorea.* September 09, 2025. doi: 10.22541/au.175743557.79555552/v1

Yang, X., Li, Y., **Afonso, J.C.** (2026), Distinct destruction mechanism in the North China Craton: Insights from high-resolution thermochemical structure, *Tectonophysics*, 231042

Ajourlou, P., Milne, G., Love, R., **Afonso, J.C.,** et al., (2025) Upper mantle temperatures illuminate Iceland hotspot track and understanding of ice-earth interactions in Greenland. *PNAS, 122, e2504752122*

Afonso, J. C., A. Wansing, P. Ajourlou, J. Hopper, and J. Ebbing (2025**),** Beneath Greenland, insights for energy transitions and climate models, *Eos, 106,* https://doi.org/10.1029/2025EO250019.

Ebbing, J. et al. (2025), Importance of Solid Earth Structure for Understanding the Evolution of the Greenland Ice Sheet, *J. Geol. Soc.,* doi: https://doi.org/10.1144/jgs2024-291,

Salajegheh, F., **Afonso, J.C.**, Miniakov, A., Ajourlou, P., Gaina, C., Ortega, O. (2024), The lithosphere-asthenosphere system beneath the North Atlantic and surroundings, *Geochem, Geophys, Geosys, 26, e2024GC011724. https://doi.org/10.1029/2024GC011724*

Dave, R., Darbyshire, F., **Afonso, J.C.**, Fomin I. (2024), Thermochemical structure of the Superior craton and environs: Implications for the evolution and preservation of cratonic lithosphere, *Geochemistry, Geophysics, Geosystems, 25, doi:10.1029/2024GC011454*

Akinremi, S., van der Meijde, M., Thomas, C., **Afonso, J.C.**, Ruigrok, E., Fadel, I. (2024), Waveform fitting of receiver functions for enhanced retrival of crustal structure in the presence of sediments, *J. Geophys. Res.,* 129, doi:10.1029/2023JB02839.

Manassero, M.C., Ozaydin, S., **Afonso, J.C.**, Shea, J., Thiel, S., Kikby, A., Fomin, I., Czarnota, K. (2024) Lithospheric structure and melting processes in southeast Australia: new constraints from joint probabilistic inversions of 3D magnetotelluric and seismic data. *J. Geophys. Res*., 129, e2023JB028257. https://doi.org/10.1029/2023JB028257.

Zhang, A., Guo, Z., **Afonso, J.C.**, Shellnutt, G., Yang, Y. (2024), Mantle plume-lithosphere interactions beneath the Emeishan Large Igneous Province, *Geophys. Res. Lett.,* doi.org/10.1029/2023GL106973.

Burcet, M., Oliveira, B., **Afonso, J.C.**, Zlotnik, S. (2023), A Face-Centred Finite Volume approach for coupled transport phenomena and fluid flow, *Applied Mathematical Modelling*, 125, 293-312, https://doi.org/10.1016/j.apm.2023.08.031.

Salajeghegh, F., **Afonso, J.C.** (2023), The upper mantle geoid for lithospheric structure and dynamics, *J. Geophys. Res.,* 128, e2023JB026397.

Sellars, J., Ball, P., Gould, K., **Afonso, J.C.** (2023) Mapping the 450 oC isotherm: Exploring the potential of deep, superhot, geothermal in Canada. *Reservoir*, 4, 50, 16-20.

Ball, P. and **Afonso, J.C.** (2023), Superhot rock for sustainable power generation. *Geoscientist*, 33, 38-41, Geol. Soc. London.

Zhang, Y., Lü, Q., Shi, D., Yang, Y., **Afonso, J.C.**, Xu, Y., Yan, J., Gong, X., Xu, T. (2023) The crustal and uppermost mantle Vs structure of the Middle and Lower reaches of the Yangtze River Metallogenic belt: implications for metallogenic processes, *J. Geophys. Res.,* 128, e2023JB026817.

Wu,S. Yang, Y., Xu, X., **Afonso, J.C.**, Zhang, A. (2022), A fossil oceanic lithosphere preserved in the middle of a continent, *Geology*, https://doi:10.1130/G50656.1.

Tauzin, B, Waszek, L., Ballmer, M., **Afonso, J.C.**, Bodin, T. (2022), Basaltic reservoirs in the Earth's mantle transition zone, *PNAS*, 119, 48, https://doi.org/10.1073/pnas.2209399119.

Afonso, J.C., Ben-Mansour, W., Griffin, W.L. et al. (2022), Thermochemical structure and evolution of cratonic lithosphere in central and southern Africa, *Nature Geoscience*, 15, 405-410.

Manassero, M.C., **Afonso, J.C.**, Zyserman, F., Zlotnik, S., Fomin, I. (2021), A Reduced Order Approach for Probabilistic Inversions of 3D Magnetotelluric Data II: Joint inversion of MT and Surface-Wave Data, *J. Geophys. Res.* 126, e2021JB021962. https://doi.org/10.1029/2021JB021962

Oliveira, B., **Afonso, J.C.**, Klocking, M. (2021), Melting conditions and mantle source composition from probabilistic joint inversion of major and rare earth element concentrations, *Geochimica et Cosmochimica Acta*, 315, doi.org/10.1016/j.gca.2021.09.008.

Zhang, A., Guo, Z., **Afonso, J.C.**, Handley, H., Dai, H., Yang, Y., Chen, J. (2021), Lithosphere-asthenosphere interactions beneath Northeast China and the origin of its intraplate volcanism, *Geology,* doi: https://doi.org/10.1130/G49375.1.

Waszek, L., Tauzin, B., Schmerr, N., Ballmer, M., **Afonso, J.C.** (2021), A poorly mixed mantle and itsthermal state inferred from seismic waves, *Nature Geoscience*, https://doi.org/10.1038/s41561-021-00850-w.

Yang, X., Li, Y., **Afonso, J.C.**, Yingjie, Y., Zhang, A. (2021), Thermochemical State of the Upper Mantle Beneath South China From Multi-Observable Probabilistic Inversion, *J. Geophys. Res*., 126, e2020JB021114. https://doi.org/10.1029/2020JB021114

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Abstracts and presentations in conferences

Over 450 presentations in national and international geoscience meetings.

Selected solicited talks and invited seminars

2025 - Invited keynote speaker, DICL-2025 Workshop, IIT-Bombay, India.
2024 - Invited DeFord speaker, Jackson School of Geosciences UT Austin, Texas, US.
2024 - Invited keynote speaker at the Earth Planet. Sci. Colloquium, ETH – Zurich.
2024 - Invited keynote speaker at the First Brazilian Geothermal Workshop, Sao Paulo.
2024 - Invited keynote speaker at the International Conference “Unlocking Geothermal Potential in the EU”, organized by the European Geothermal Energy Council and the European Parliament, Poznan, Poland.
2023 - Keynote speaker at the Soc. Economic Geologists (SEG) 2023 Conference, London, UK.
2023 - Keynote speaker at the LMU Workshop ‘The ambiguity of the current understanding in geophysics’,

Munich, Germany.
2023 - Invited speaker Severo Ochoa Seminar Series, CIMNE, UPC, Barcelona, Spain.
2023 - EGU Meeting, Vienna, Austria (solicited presentation)
2022 - XXI Congreso Geologico Argentino, Puerto Madryn, Argentina (Keynote speaker)
2022 - Gordon Conference Mineral Systems, Barcelona, Spain (Keynote speaker)
2021 - DEEP 2021 International symposium on deep Earth exploration and practices, Nanjing, China (keynote speaker)
2021 - MTNet webinars series "EMinars" (invited lecturer)
2021 - GEOTOP, UQAM, Montreal, Canada (invited seminar)
2020 - Earth Observatory of Singapore, Singapore (invited seminar)
2020 - Gordon Conference Mineral Systems, Barcelona, Spain (Keynote speaker)
2019 - European Space Agency 3D Earth meeting, Dublin, Ireland (two invited talks)
2019 - 27th General Assembly IUGG, Montreal, Canada (keynote lecture, ECS Award)
2019 - La Plata International School of Astronomy and Geophysics, Argentina (invited lecturer)
2019 - Laboratory of Numerical Analysis, Univ. Polytech. Catalunya (invited seminar)
2019 - Prospectors and Developers Association of Canada Convention, Toronto (invited course presenter)
2018 - Goldschmidt Conference, Boston (two invited talks)
2018 - Solomon Conference, Adelaide (keynote speaker)
2018 - Geophysical Fluid Dynamics Group, ETH Zurich, (invited seminar)
2018 - EGU, Union Symposia, Vienna, Austria (solicited presentation)
2018 - Resources for Future Generations Conference, Vancouver (invited course presenter)
2017 - Science at the Shine Dome, Australian Academy of Sciences (acceptance presentation for the Anton Hales Medal)
2017 - University of Kiel (invited seminar)
2017 - Bullard Labs, Cambridge University (invited seminar)
2017 - EGU, Union Symposia, Vienna, Austria (solicited presentation)
2016 - EGU, Union Symposia, Vienna, Austria (keynote presentation)
2016 - 25th ASEG-PESA-AIG Conference, Adelaide, Australia (keynote presentation)
2016 - 17th International Seismix Symposium, Aberdeen, Scotland (keynote presentation)
2015 - AGU Fall Meeting, San Francisco, USA (keynote presentation w/ A. Jones)
2015 - 12th Annual Meeting of the Asia-Oceania Geosciences Society, Singapore (keynote presentation)
2014 - AGU Fall Meeting, San Francisco, USA (solicited presentation w/ F. Darbyshire)
2014 - Geoscience Australia, Canberra, Australia.
2013 -EGU General Assembly, Vienna, Austria (keynote presentation Outstanding Young Scientist Award)
2013 - Goldschmidt Conference, Florence, Italy (keynote presentation)
2013 - Dublin Institute for Advanced Studies, Dublin, Ireland (invited seminar)
2013 - Institute of Geophysics, Chinese Academy of Science, Wuhan, China (invited seminar)
2013 - University of Science and Technology of China, Hefei, China (invited seminar)
2013 - China University of Geosciences, Beijing, China (invited seminar)
2012 - EGU General Assembly, Vienna, Austria (solicited presentation)

2012 - Dublin Institute for Advanced Studies, Dublin, Ireland (Workshop on LitMod modeling)
2011 - EGU General Assembly, Vienna, Austria (keynote presentation)
2011 - AGU, Fall Meeting, San Francisco, USA (solicited presentation)
2010 - Goldschmidt Conference, Knoxville, USA (keynote presentation; declined due to teaching commitments)
2010 - Collins honorary lectures, Carleton University, Ottawa, Canada.
2009 - University of Sydney, Australia (invited seminar)
2009 - FIST-GeoItalia, Rimini, Italy (keynote presentation)
2009 - Dublin Institute for Advanced Studies, Dublin, Ireland (invited seminar)
2009 - AGU, Fall Meeting, San Francisco, USA (keynote presentation; declined due to teaching commitments)
2009 - Monash University, Melbourne, Australia (invited seminar)
2009 - Invited contributor for Springers Book Series Frontiers in Earth Sciences Arc- continent collisions

SELECTED MEDIA COVERAGE OF MY RESEARCH

- https://lighthouse.mq.edu.au/article/may-2019/Diamonds,-volcanos-and-a-rock-star-what-a-new-map-of-the-earths-interior-will-reveal?fbclid=IwAR2wfp5tmqcp9Ev6zhYpvRc9Ls1BnU4saRU9uTnpszrv2uJ0Gp2kaj--VdA
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- https://www.geodrillinginternational.com/geothermal/news/1465185/catf-modelling-highlights-true-potential-geothermal-energy
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green-metal-resources/

- https://www.msn.com/en-us/news/technology/superhot-rock-geothermal-may-unlock-vast-amounts-of-clean-energy/ar-BB1kmRkE
- https://www.newsweek.com/superhot-rock-geothermal-unlock-vast-amounts-clean-energy-1882436
- https://www.utoday.nl/science/71896/unraveling-earths-deep-secrets
- https://blogs.egu.eu/geolog/2014/03/27/geotalk-the-mantle-and-models-and-measurements-oh-my-talking-geophysics-with-juan-carlos-afonso/
- http://newslocal.smedia.com.au/hills-shire-times/?href=NLHST-2019-07-30
- http://www.fcaglp.unlp.edu.ar/articulo/2019/4/10/escuela_lapis_2019_sobre_geofisica__el_prof__juan_afonso_cuenta_sobre_su_area_de_investigacion
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PROFESSIONAL SOCIETY MEMBERSHIP

- Member, American Geophysical Union 2003-present
- Member, European Geophysical Union 2005-present
- Member, Geological Society of Australia 2014-present