

Ludmila M. Fonseca Teixeira

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EDUCATION

- 2019 - 2024 PhD in Geochemistry at **ETH Zürich (Switzerland)**
PhD thesis title: Geochemical and petrological investigations of selected magmatic systems: insights into the evolution of volcanic, plutonic, and pegmatitic environments
Advised by Olivier Bachmann
- 2023 - 2023 6-month PhD Sandwich Period at **RWTH Aachen University (Germany)**
- 2017 - 2019 MSc Geology at **LMU Munich (Germany)**
MSc thesis title: Experimental generation of fulgurites
Advised by Corrado Cimarelli
- 2014 - 2015 Year abroad at **Durham University (United Kingdom)**
- 2011 - 2016 BSc Geology at **University of São Paulo (Brazil)**
BSc thesis title: Cathodoluminescence analysis on alkali feldspars of the lujavrites and khibinites of the Pocos de Caldas
Advised by Silvio Vlach

RESEARCH EXPERIENCE

- Since June 2024 PostDoc at the **Smithsonian National Museum of Natural History (USA)**
- Oct 2019 - May 2024 PhD Candidate/Research assistant at **ETH Zürich (Switzerland)**
- Mar 2023 - Aug 2023 Research assistant at **RWTH Aachen University (Germany)**
- Mar 2022 Guest researcher at **Paul Sabatier University, Toulouse (France)**
- Feb 2018 - Jun 2019 Research assistant at **LMU Munich (Germany)**
- Jan 2015 - Jul 2015 Research assistant at **Durham University (UK)**
- Aug 2013 - Jan 2014 Intern at **Technological Research Institute of São Paulo (Brazil)**
- Jun 2012 - Oct 2016 Research assistant at **University of São Paulo (Brazil)**

TEACHING EXPERIENCE

- Teaching assistant at ETH Zurich** Jan 2023
– Fluid and melt inclusions
- Teaching assistant at LMU Munich** Jul 2018
– Mathematical Geology (MATLAB for Geosciences)
- Teaching assistant at University of São Paulo** Feb 2014 - Jun 2014
– Igneous Petrology (field course)
– Tectonics
- Private tutor** 2010-2014
– Mathematics, physics

AWARDS, GRANTS, AND SCHOLARSHIPS

June 2024	Peter Buck fellowship (\$144,500) Smithsonian Institution
May 2022	Outstanding Student and PhD candidate Presentation Award EGU General Assembly 2022
April 2019	DAAD Completion of studies scholarship (~ \$2,500) Scholarship to support MSc students finishing their thesis
July 2018	LMU Studiforscht (~ \$1000) Scholarship for small MSc research projects (not related to the thesis)
July 2018	Bayernstipendium (~ \$7,000) Scholarship to support international MSc students
February 2016	FAPESP (São Paulo state funding for science) (~ \$2,000) Scholarship to support BSc students thesis research
July 2014	Science Without Borders (~ \$40,000) Full ride scholarship for year abroad in Durham, UK
August 2012	Santander Scholarship (~ \$1,000) Scholarship to support BSc students starting research

PUBLICATIONS

- Fonseca Teixeira, L. M., Laurent, O., Troch, J., Siddoway, C. S., Tavazzani, L., Deering, C., and Bachmann, O. (2024). “Tracking quartz and zircon provenance in sedimentary rocks using Ti distributions: unlocking the volcanic-plutonic connection in old igneous systems”. In: *Earth and Planetary Science Letters* 643. DOI: [10.1016/j.epsl.2024.118906](https://doi.org/10.1016/j.epsl.2024.118906).
- Fonseca Teixeira, L. M., Troch, J., and Bachmann, O. (2023). “The dynamic nature of a TiO₂: Implications for Ti-based thermometers in magmatic systems”. In: *Geology* 52, pp. 92–96. DOI: [10.1130/G51587.1](https://doi.org/10.1130/G51587.1).
- Fonseca Teixeira, L. M., Troch, J., Allaz, J., and Bachmann, O. (2022). “Magmatic to hydrothermal conditions in the transition from the A-type Pikes Peak granite (Colorado) to its related pegmatite”. In: *Frontiers in Earth Science* 10. DOI: [10.3389/feart.2022.976588](https://doi.org/10.3389/feart.2022.976588).

CONFERENCE CONTRIBUTIONS

- Fonseca Teixeira, L. M., Ackerson, M., and Bachmann, O. (2024a). “K-feldspar Megacrysts: Notes from the Bergell Intrusion (Switzerland)”. In: *AGU Fall Meeting*. Washington, DC, USA.
- (2024b). “The curious case of the Bergell intrusion (Switzerland): insights into the magmatic-hydrothermal transition in I-type plutons”. In: *GSA Connects*. Anaheim, CA, USA.
- Fonseca Teixeira, L. M., Troch, J., and Bachmann, O. (2024). “The aTiO₂ problem: current limitations to Ti-based thermometers in magmatic systems”. In: *GSA Connects*. Anaheim, CA, USA.
- Navarro, D., Fonseca Teixeira, L. M., Velasquez, D. I. A., Pulido, D. C. H., Alegria, M. E. O., Arismendi, G. G., and Caballero-Gill, R. P. (2024). “GeoLatinas Initiatives: Co-leadership and Peer Mentoring Practices for Leadership Building in Geosciences”. In: *AGU Fall Meeting*. Washington, DC, USA.
- Fonseca Teixeira, L. M., Laurent, O., Troch, J., Siddoway, C. S., and Bachmann, O. (2023). “Tracking volcanic, plutonic, and pegmatitic sources in sediments: implications for the Early Earth history”. In: *EGU General Assembly Conference Abstracts*. Vienna, Austria.

- Fonseca Teixeira, L. M., Laurent, O., Troch, J., Siddoway, C. S., Tavazzani, L., and Bachmann, O. (2023). “Investigating the volcanic-plutonic connection: insights from sedimentary layers”. In: *Hutton symposium*. Abstract. Baveno, Italy.
- Troch, J., Fonseca Teixeira, L. M., Bachmann, O., Huber, C., Laurent, O., Ackerson, M. R., and Allaz, J. (2023). “Pegmatites as recorders of the magmatic-hydrothermal transition in silicic magma reservoirs”. In: *Hutton symposium*. Baveno, Italy.
- Fonseca Teixeira, L. M., Laurent, O., Troch, J., Siddoway, C. S., and Bachmann, O. (2022). “Tracking volcanic, plutonic, and pegmatitic environments in sediments: A case study from the Pikes Peak batholith, Colorado”. In: *Swiss Geoscience Meeting*. Lausanne, Switzerland.
- (2022). “Linking CL screening and Ti-in-quartz temperatures: A new tool for tracking volcanic, plutonic, and pegmatitic sources in sediments”. In: *Geological Society of America Abstracts with Programs*. Denver, CO, USA: Geological Society of America. DOI: [10.1130/abs/2022am-381533](https://doi.org/10.1130/abs/2022am-381533).
- Fonseca Teixeira, L. M., Troch, J., Allaz, J., and Bachmann, O. (2022a). “Subsolidus crystallisation in the A-type Pikes Peak batholith”. In: *EGU General Assembly Conference Abstracts*. Vienna, Austria.
- (2022b). “Subsolidus crystallisation in the A-type Pikes Peak batholith”. In: *Magma and Fluids workshop*. Magma and Fluids workshop. Orleans, France.
- Troch, J., Huber, C., Kueter, N., Bachmann, O., Fonseca Teixeira, L. M., and Ackerson, M. R. (2022). “From Niggli’s gas mineralisators to extraction from crystal mushes: Linking pegmatites with their host granites”. In: *Swiss Geoscience Meeting*. Lausanne, Switzerland.
- Fonseca Teixeira, L. M., Allaz, J., and Bachmann, O. (2021). “Evolution of the crystallisation conditions in the Wellington Lake Pegmatite in the Pikes Peak Granite, Colorado (USA)”. In: *EGU General Assembly Conference Abstracts*. EGU General Assembly Conference Abstracts. Online.
- Fonseca Teixeira, L. M., Allaz, J., Bachmann, O., and Wotzlav, J-F. (2021). “The zircon petrochronological record of a REE-enriched pegmatite and its source pluton in the Pikes Peak Batholith (Colorado, USA)”. In: *Goldschmidt*. Online.
- Fonseca Teixeira, L. M., Bachmann, O., and Allaz, J. (2021a). “Magmatic to hydrothermal conditions in the transition from an A-type granite to a pegmatite in the Pikes Peak Batholith”. In: *AGU Fall Meeting Abstracts*. Vol. 2021. Online.
- (2021b). “Magmatic to hydrothermal conditions in the transition from an A-type granite to a pegmatite in the Pikes Peak Batholith”. In: *Swiss Geoscience Meeting*. Vol. 2021. Online.
- Simian, L., Allaz, J., Fonseca Teixeira, L. M., Bachmann, O., and Chelle-Michou, C. (2021). “Petrology, mineralogy, and dating of granites in Northern Pikes Peak batholith, Colorado (USA)”. In: *Swiss Geoscience Meeting*. Online.
- Fonseca Teixeira, L. M. and Cimarelli, C. (2019). “Experimental production of fulgurites”. In: *Physics of Volcanoes*. Abstract. Mendig, Germany.
- Fonseca Teixeira, L. M. and Vlach, S. R. F. (2016). “Análise textural e microestrutural de lujaúritos e chibinitos do corpo lujaúritico-chibinitico do anel norte do maciço alcalino Poços de Caldas”. In: *Congresso Brasileiro de Geologia*. Porto Alegre, Brazil.
- Fonseca Teixeira, L. M. and Ulbrich, H (2013). “Litogeoquímica e química mineral em granitóides contrastados do estado de São Paulo: exemplo dos turmalina granitos de Perus e do maciço Atibaia”. In: *Simposio Internacional de Iniciacao Cientifica*. Sao Carlos, Brazil.

INVITED LECTURES AND WORKSHOPS

- 2025 *From Melts to Fluids: Sourcing Critical Minerals from Granitic Magmas*. Invited talk at University of British Columbia (Canada).
- 2025 *How to find volcanoes that no longer exist? A perspective from Ti distributions in sedimentary rocks*. EGU GMPV Campfire (online)
- 2024 *Volcanic hidden stories - How to find volcanoes that no longer exist?* Invited talk for the Volunteer Enrichment at the Smithsonian Natural History Museum (USA)
- 2024 *Pegmatites*. Invited lecture at George Washington University (USA)
- 2024 *How to find volcanoes that no longer exist? A perspective from Ti distributions in sedimentary rocks*. Mineral Sciences weekly seminar at the Smithsonian Institution (USA)
- 2024 *Using SEM-CL images to solve geological problems*. Invited talk the GFZ Potsdam (Germany)
- 2024 *The dynamic nature of aTiO₂: implications for Ti-thermometers in magmatic systems*. MineRS lunch seminar at ETH Zurich (Switzerland)
- 2024 *Open Access Science*. Workshop at Politecnico di Milano (Italy)

SERVICE

- 2025 Expert is In - outreach action at the Smithsonian National Museum of Natural History
- Since 2024 Volunteer reviewer: Journal of Petrology, G-cubed, Chemical Geology, Contributions to Mineralogy and Petrology, International Geology Review, Mineralium Deposita
- 2024 OSPA judge: AGU Fall meeting
- 2024 Drop-in CV mentor: GSA connects

LANGUAGES

English - fluent | Portuguese - mother tongue | German - proeficient | Spanish - proeficient