

Ludmila M. Fonseca Teixeira

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SUMMARY

I am PostDoctoral fellow, with focus on petrology and geochemistry of silicic systems. I possess a deep passion for science, a strong aptitude for learning, and a track record of delivering high-quality results. Having embraced multicultural environments, I thrive in international settings. I am deeply passionate about promoting respect and diversity, committed to collaborate to an environment where individuals from diverse backgrounds and perspectives can come together, cultivating an atmosphere of inclusivity and collaboration that ensures the delivery of high-quality work.

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

WORK EXPERIENCE

- PostDoc at the Smithsonian National Museum of Natural History (USA)** Since June 2024
- Investigating magmatic-hydrothermal processes in the formation pegmatites and Cu-porphyry deposits
 - Geochemical analyses via EPMA, SEM, FTIR, cold CL
 - Numerical modelling (Python, MATLAB)
- PhD Candidate/Research assistant at ETH Zürich (Switzerland)** Oct 2019 - May 2024
- Lab manager: Fluid inclusions lab
 - Lab assistant: SEM
 - Teaching assistant: Fluid inclusions short-course
 - Instruments/methods: SEM, EPMA, LA-ICP-MS, ID-TIMS, cold CL, FTIR, RAMAN, optical microscopy, fluid inclusions thermal analyses
 - Sample preparation techniques: jaw breaker, selfrag, hydraulic press, heavy liquid separation, Frantz magnetic separation, thin section polishing, mineral picking, epoxy mounting and polishing
 - Modelling skills: MATLAB, rhyolite-MELTS
 - Analyses of diverse granitic, pegmatitic, volcanic, and sedimentary rocks

- Research and teaching assistant at LMU Munich (Germany)** Feb 2018 - Jun 2019
- Application of the principal component analysis to visualise geochemical data
 - Tracking experimentally produced particle velocity
 - Teaching assistant: MATLAB course
- Research assistant at Durham University (UK)** Jan 2015 - Jul 2015
- Rhyolite-MELTS P-T modelling conditions of the Ischia Volcano magma chamber, Italy
- Intern at Technological Research Institute of São Paulo (Brazil)** Aug 2013 - Jan 2014
- Thin section description
 - Report writing
 - Budget preparation
- Research and teaching assistant at University of São Paulo (Brazil)** Jun 2012 - Oct 2016
- LA-ICP-MS analysis on the pyroxenes of the Pocos de Caldas Alkaline Massif
 - Textural analyses of allanites in selected granites
 - Lithology of A-type Granites of São Paulo
 - Teaching assistant: Igneous petrology (field course)
 - Teaching assistant: Tectonics

AWARDS, GRANTS, AND MEREDIT-BASED SCHOLARSHIPS

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|---------------|-----------------------------------------------------------------------------------------------------------------------------|
| June 2024 | Peter Buck fellowship (\$144,500)
Smithsonian Institution |
| May 2022 | Outstanding Student and PhD candidate Presentation Award
Awarded after EGU General Assembly 2022 |
| July 2021 | Fix the leaky pipeline (\$2,000)
ETH grant for small groups of female scientists to foster career development |
| 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 in the year of their thesis |
| 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. (2024). “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.

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 Wotzlaw, 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.

- Fonseca Teixeira, L. M., Bachmann, O., and Allaz, J. (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, Lucas, Allaz, Julien, Fonseca Teixeira, Ludmila Maria Fonseca, Bachmann, Olivier, and Chelle-Michou, Cyril (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 lujauritos e chibinitos do corpo lujaurítico-chibinítico 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 Iniciação Científica*. Sao Carlos, Brazil.

LANGUAGES

English - fluent
Portuguese - mother tongue
German - proficient
Spanish - proficient
French - elementary knowledge

MISCELLANEOUS

- 2024 Workshop Presenter: Open Access Science, Politecnico di Milano
2024 Workshop Attendee: Resolving Workplace Conflicts
2022 Workshop Attendee: Racism and Unconscious Bias; Impostor Syndrome
2013 Student Representative, University of São Paulo
2012 BSc Geology Representative at Career Fair, University of São Paulo