

PhD position in metamorphic petrology and processes (Carleton University, Ottawa, Canada)

Title Conditions, timing, and mechanisms of metamorphic microstructure development during the Grenvillian Orogeny (SE Ontario, Canada)

Description Understanding the origin of rock microstructure is of fundamental importance for refining models of the geodynamic behaviour of our planet. The goal of this research is to unravel the conditions, timing and mechanisms of metamorphic microstructure development experienced by rocks of the Grenville Province in SE Ontario (Canada). The roots of this ancient mountain belt are remarkably well preserved in the study area and provide insight into fundamental rock-forming as well as large-scale geodynamic processes that operated during the Proterozoic. Particular focus will be on the better understanding of metamorphic rock microstructure development using a combination of modern petrographic, geochemical, and crystallographic techniques (e.g., XR- μ CT, LA-ICP-MS, EBSD), and metamorphic reaction modelling.



A comprehensive petrographic (rock samples and thin sections), geochemical (whole-rock and mineral chemical, isotopic compositions), and microstructural (XR- μ CT and EBSD) dataset is already present and can be used by the student during the first year to overcome potential research barriers caused by the Covid-19 pandemic.

Qualifications Highly motivated candidates with a MSc or equivalent degree in the Earth Sciences are encouraged to apply. Preference will be given to a student with a strong background in petrology and geochemistry and the ability to integrate field and laboratory analyses. Experience in the use of analytical instrumentation, such as EPMA, XRF, XRD, as well as a keen interest in the quantitative modelling of metamorphic processes will be an asset.

Benefits This research is funded by a research assistantship and a teaching assistantship for up to five years, starting in **May 2021**. This position is open until filled.

Application The application deadline is **March 1, 2021**. Please send your application, including a current CV, a statement of research experience and interests, as well as the contact details of two referees to fred.gaidies@carleton.ca. International students for whom English is not their first language are also required to submit their official Language Proficiency (ESL) test scores (TOEFL/IELTS).

For additional information, please contact Fred Gaidies (fred.gaidies@carleton.ca).