



TO THE RECTOR OF UNIVERSITA' DEGLI STUDI DI MILANO

ID CODE __A052__

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type A fellowship at **Dipartimento di Scienze della terra**

Scientist- in - charge: **Enrico Cannaò**

BIGET Théo

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	BIGET
Name	Théo

PRESENT OCCUPATION

Appointment	Structure
PhD student	University Clermont-Auvergne (UCA), Laboratoire Magmas et Volcans (LMV)

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
PhD	<u>Title</u> : “Partial melting processes and crustal differentiation: new constraints from the study of accessory minerals and the Sm-Nd isotopic system” under the supervision of Emilie BRUAND (CNRS, LGO) and Maud BOYET (CNRS, LMV)	University Clermont-Auvergne (UCA)	December 2024
Master (Magmas and Volcanoes)	<u>Research project</u> entitled “Iron isotopes fractionation in the Piton des Neiges differentiation series (Reunion Island)” under the supervision of Ivan VLASTELIC (CNRS, LMV) and Pierre BONNAND (Post-Doc, LMV) <u>Relevant Coursework</u> : Volcanology and Risks, Magmatic Geochemistry, Physics of Magmas,	University Clermont-Auvergne (UCA)	June 2021 Obtained with a 1 st grade



	Data Analysis and Processing, Subsurface Geophysics, Numerical Modelling, Remote sensing. Field trips in volcanic areas (Monts Dore (France), Southern Italy)		
Bachelor of Earth Sciences	<u>Relevant coursework:</u> Geochemistry, Igneous and Metamorphic Petrology, Volcanology, Sedimentology, Climate and Atmospheric Sciences, Mathematics/IT applied to geology, Tectonics and Geophysics. Numerous field trips in various French geological areas (Massif central, Alps, Pyrenees, Brittany...)	University Clermont-Auvergne (UCA)	June 2019 Obtained with a 1 st grade

FOREIGN LANGUAGES

Languages	level of knowledge
French	Mother tongue
English	C1 level
Italian	A2 level
Spanish	A2 level

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award

TRAINING OR RESEARCH ACTIVITY

My current research activity focuses on the study of crustal differentiation and anatexis using the chemical and isotopic study of accessory minerals (e.g. apatite, monazite, allanite, titanite). For this, I use a broad spectrum of analytical tools both on solutions and *in-situ* modes. In particular, I am trained for Scanning Electron Microscope (Back-scattered and cathodoluminescence), microprobe, LA-(MC)-ICP-MS, TIMS and clean laboratory. Part of my PhD thesis was devoted to the Sm-Nd isotopic analysis of REE-bearing minerals from a wide variety of rocks including migmatites and granitoids. In this thesis, a large Sm-Nd dataset was collected on WR and accessory minerals for two different geological contexts:

- A paleo-accretionary prism (Chugach Metamorphic Complex, Alaska) with a short-lived metamorphic episode and partial melting at low temperature (650-700 °C) that exhibits homogeneous Nd isotopic compositions.
- A mature crustal section in Calabria (Italy) characterized by a long and complex geological history with a protracted late-Variscan episode of anatexis, which shows strong multi-scale Nd isotopic compositions heterogeneities in the lower crust, whereas the mid-crustal granitoids are more homogeneous. In this crustal section, *in-situ* analyses on accessory minerals can help tracking hybridisation processes, isotopically invisible at the WR scale. Preliminary results based on these Sm-Nd isotopic results tend to show that the mantle contribution involved in the genesis of the batholith is underestimated



Part of these results have been recently published in *Contributions to Mineralogy and Petrology* (Biget et al., 2024; attached) and another article on the study of the Calabria crustal section from Sm-Nd isotopic analyses is under preparation and will be submitted in the next few months to *Geochemical Perspective Letters*. I am also trained for Fe isotopes in solution mode and *in-situ* U(-Th)-Pb analyses.

PROJECT ACTIVITY

2021-2024	ANR AMNESIA (PI,: BRUAND Emilie): Using underexplored accessory minerals to treat the AMNESIA of the Earth's continental crust history
-----------	--

PATENTS

Patent

CONGRESSES AND SEMINARS

Date	Title	Place
10/07/2023	Biget T. , Bruand, E., Pereira, I., Boyet, M., Gasser, D., Stüwe, K. Goldschmidt conference : presentation of a poster entitled "Trace elements behaviour and Nd isotopic ratios in REE-bearing accessory minerals along a metamorphic gradient: new insights from the Chugach Metamorphic Complex (Alaska)"	Lyon, France
21/09/2023	Biget T. , Bruand, E., Pereira, I., Boyet, M., Gasser, D., Stüwe, K., Langone, A. The Geoscience paradigm: Resources, Risks and future perspectives : talk entitled "Trace elements behaviour and Nd isotopic ratios in REE-bearing accessory minerals along a metamorphic gradient: new insights from the Chugach Metamorphic Complex (Alaska)"	Potenza, Italy
21/09/2023	Di Minno, B., Corvò, S., Biget, T. , Bruand E., Caggianelli A., Langone A. The Geoscience paradigm: Resources, Risks and future perspectives: Poster entitled "Temperature estimates from the lower continental crust exposed in Calabria: application of the Zr-in-rutile thermometer to migmatites and granulites.	Potenza, Italy
03/09/2024	Bruand, E., Biget, T. , Langone, A., Boyet M. and Caggianelli, A. Granulite and Granulite conference: invited talk entitled "How does the crust differentiate and magmas hybridize in a	Verbania, Italy



	collisional/post-collisional environment? A view from the Serre crustal section (Calabria, Southern Italy)."	
16/01/2025	Biget, T. Seminar entitled "Partial melting processes and crustal differentiation: new constraints from the study of accessory minerals and the Sm-Nd isotopic system"	Brest, France

PUBLICATIONS

Articles
Biget, T., Bruand, E., Pereira, I., Boyet, M., Gasser, D., Stüwe, K., Langone, A., 2024. The chemical and Sm-Nd isotopic behaviour of accessory minerals in metasediments along the LP-HT Chugach Metamorphic Complex (Alaska). <i>Contrib. Mineral. Petrol.</i> 179 , 108. https://doi.org/10.1007/s00410-024-02185-2 .

Articles in preparation
Biget, T., Bruand, E., Langone, A., Boyet, M. In preparation. Differentiation of the Variscan Calabria crust: a view from whole-rock and <i>in-situ</i> Sm-Nd isotopic analyses. <i>Geochemical Perspective Letters</i> .

Congress proceedings

OTHER INFORMATION

<u>Field experience:</u> Bachelor: Numerous fieldtrips in various French geological areas (French Massif Central, Alps, Pyrenees, Brittany...) Master: Fieldtrips in volcanic areas (Monts Dore (France), volcanoes of Southern Italy) PhD: 2 weeks in Calabria <u>Teaching experience:</u> ~50 hours of teaching for Bachelor of Earth Sciences students: tutorials in general geology (paleontology, sedimentology) and volcanology (fieldwork) for 1 st year Bachelor students of the University Clermont-Auvergne (UCA) and one week fieldtrip (study of magmatic and volcanological processes) in Chaîne des Puy-Monts Dore area (France) for 3 rd year Bachelor students of the University of Western Brittany (UBO). Co-supervision of one Master 1 student (Lisa Lebrun; subject entitled "Is garnet a good recorder of continental crust formation?") and one Master 2 student (Lisa Lebrun; subject entitled "Study of the Sm-Nd isotopic system in Archean gneisses: from rock to mineral") Participation in the winter school "Understanding deep crustal processes" in Padua (January 2023)
--



Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Please note that **CV WILL BE PUBLISHED** on the University website and It is recommended that personal and sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

Please DO NOT SIGN this form.

Place and date: Clermont-Ferrand, 22/01/2025