



CATERINA BATTIFORA

PhD student in Earth Science

Birthday: 1998/05/05

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I am a second-year PhD student in Science and Technologies for the Earth and Environment (curriculum: Earth Science), at D.I.S.T.A.V. - University of Genoa. My research aims at studying the petrological and microstructural evolution of mantle peridotites exposed in the lithospheric mantle portion of the Oman ophiolite. My project is centered on understanding the magmatic processes involving the Oman oceanic lithosphere during its formation and evolution from spinel- to plagioclase facies conditions. To achieve my goal, I use a multidisciplinary and multi-scale approach combining field work with detailed microstructural analysis and in situ geochemistry.

EDUCATION AND TRAINING

2019

BSc degree in Geological Science

University of Genova - D.I.S.T.A.V. - Genoa - IT

"Geological mapping and structural analysis of brittle deformation in the metaophiolites of the Voltri Massif: Piancastagna area (Ponzzone-AL)" - 106/110

Tutors: Prof. Laura Crispini; Prof. Laura Federico; Prof. Michele Piazza

2022

MSc degree in Geological Science

University of Genova - D.I.S.T.A.V. - Genoa - IT

"Reactive porous-flow and melt impregnation processes in the Depleted Mantle peridotites from Wadi Tayin Massif, Oman ophiolite (Oman Drilling Project)" - 110/110 with honors

Tutors: Prof. Elisabetta Rampone; Prof. Laura Crispini; Doc. Valentin Basch

Co-tutor: Prof. Paola Cianfarra

ACADEMIC EXPERIENCE

2022 - ONGOING

PhD student in Earth Sciences

University of Genova - D.I.S.T.A.V. - Genoa - IT

"Diffusive reactive percolation and impregnation processes in the Oman peridotites (Samail Ophiolite): a multidisciplinary and multiscale investigation"

Supervisors: Prof. Elisabetta Rampone (UniGE); Prof. Laura Crispini (UniGE); Doc. Carlotta Ferrando (UniGE)

SCIENTIFIC PUBLICATION

Basch, V., Crispini, L., **Battifora, C.** & Rampone, E. (2022)
"EVIDENCE OF LITHOSPHERIC COOLING PRIOR TO MELT INFILTRATION HISTORY AT THE OMAN PALEO-SPREADING CENTRE (WADI TAYIN MASSIF)". *Ofioliti*, 48(1). 1-12.
<https://doi.org/10.4454/ofioliti.v48i1.558>

TEACHING EXPERIENCE

Teaching experience at University of Genova

2023/2024: Teaching of 32 hours of practical courses in macroscopic and microscopic identification of magmatic and metamorphic rocks and minerals, in the frame of PETROGRAPHY course for 2-year bachelor students in Earth Sciences, and of GEOLOGY FUNDAMENTALS (LITHOLOGY MODULE) 2-year students in Environmental Sciences.

Supervisor of Earth Sciences research theses

2023-2024: Supervisor of bachelor research thesis of Giovanni Gattuso (University of Genoa) Research project: "Petrographic features of gabbroic rocks from the Crust-Mantle Transition zone (CM Sites, Oman Drilling Project)".

ATTENDED WORKSHOPS, COURSES AND SEMINARS

PhD courses - University of Genoa

- 07/2023:** "Introduction to ore microscopy". (Prof. Roberto Cabella) (4 CFU).
- 03/2023 - 05/2023:** "TECTONOPHYSICS". (Prof. Massimo Verdoya) (4 CFU)
- 11/2023:** "GIS, mapping and spatial analysis". (Dr. Andrea Mandarino) (4 CFU)
- 12/2023:** "Introduction to Raman spectroscopy with application to Earth and Environmental sciences". (Dr. Nicola Campomenosi) (4 CFU)
- 06/2024:** "Dynamic evolution of the oceanic lithosphere at mid-ocean ridges" (Dr. Carlotta Ferrando) (2 CFU)

Additional courses

- 01/2023:** "Microtectonics of fault rocks". Held at the Earth Sciences Department of the University of Turin (Prof. Renée Heilbronner) (2 CFU).
- 03/2023:** "Introduction to XMapTools: calibration of compositional maps with spot analysis". Held at the University of Pisa, (Dr. Maria Di Rosa) (1 CFU).

Advanced training courses

- 03/2023:** ECORD Training Course 2023. Held at the MARUM, University of Bremen, Germany (Dr. Ursula Rohl and Prof. Dierk Hebbeln) (5 CFU)

Seminars

9/02/2023: "A glimpse at earthquake physics: field, experimental and numerical studies". Held at the University of Genoa, (Prof. Giulio Di Toro) (0,33 CFU)

3/03/2023: "Behind the scenes in a Natural History Museum". Held at the University of Genoa, (Dr. Laura J. Cotton) (0,33 CFU).

28/07/2023: "Microscopia automatizzata e correlativa nelle geoscienze". Held at the University of Bologna - ZEISS (1 CFU).

15/03/2024: "Bio-geo interaction in mining-impacted environments". Held at the University of Cagliari, (Patrizia Onnis) (0,33 CFU)

4/04/2024: "How writing a scientific paper?". Held at the University of Genoa, (Springer Nature) (1 CFU).

8/04/2024: "Phase diagrams and thermoelastic properties of planet-forming materials: a key to understanding planetary diversity". Held at the University of Genoa, (Daniele Antonangeli) (0,33 CFU).

ATTENDED CONFERENCES (1ST AUTHOR)

19 – 21/09/2022: Joint Congress SGI-SIMP, Torino (Italy).

8/02/2023: GLOM 2023 Winter Meeting, Milan (Italy).

18/09/2023: PhD Day Joint Congress SGI-SIMP-SOGEI-AIV, Potenza (Italy).

19 – 21/09/2023: Joint Congress SGI-SIMP-SOGEI-AIV, Potenza (Italy).

1/02/2024: GLOM 2024 Winter Meeting, Genoa (Italy).

PUBLISHED ABSTRACTS

- **Caterina Battifora***, Valentin Basch, Laura Crispini, Elisabetta Rampone - *Melt-rock interactions and evolution of the upper mantle at an Oman paleo-spreading centre (OmanDP, Wadi Tayin)* Abstract book p. 344. Joint Congress SGI-SIMP (19th – 21st September 2022, Torino). *Poster contribution.*
- **Caterina Battifora***, Valentin Basch, Carlotta Ferrando, Laura Crispini, Elisabetta Rampone - *SPINEL-FACIES EVOLUTION OF THE OMAN LITHOSPHERIC MANTLE (WADI TAYIN MASSIF)*. Ofioliti abstract book, p. 4. GLOM 2023 Winter Meeting (8th February 2023, Milan). *Oral presentation.*
- **Caterina Battifora***, Carlotta Ferrando, Laura Crispini, Elisabetta Rampone - *Reactive melt percolation and impregnation processes through the Oman lithospheric mantle (Wadi Tayin Massif)*. Abstract book, p. 642. Joint Congress SGI-SIMP-SOGEI-AIV (19th – 21st September 2023, Potenza). *Oral presentation.*
- **Caterina Battifora***, Carlotta Ferrando, Laura Crispini, Elisabetta Rampone - *Petrographic and microstructural characterization of the lithospheric mantle exposed in the Wadi Tayin Massif, Oman ophiolite (Oman Drilling Project, CM Sites)*. Abstract book, p. 998. PhD Day Joint Congress SGI-SIMP-SOGEI-AIV (18th September 2023, Potenza). *Oral presentation.*
- **Caterina Battifora***, Carlotta Ferrando, Laura Crispini, Elisabetta Rampone - *MICROSTRUCTURAL AND GEOCHEMICAL EVIDENCE OF MELT IMPREGNATION AND*

INTRUSION AT PLAGIOCLASE FACIES CONDITIONS IN THE OMAN UPPER MANTLE HARZBURGITE (WADI TAYIN MASSIF). GLOM 2024 Winter Meeting (1st February 2024, Genoa). Oral presentation.

LANGUAGE SKILLS

Italian: Mother tongue

English: B2

DIGITAL SKILLS

Office softwares

- Microsoft Office
- MATLAB
- Global Mapper

Graphical softwares

- Adobe Illustrator
- Adobe Photoshop
- ImageJ
- XMapTools

Analytical softwares

- AZtec Oxford Instruments
- Channel5 Oxford Instruments
- GLITTER
- ZEISS ZEN

MEMBERSHIPS IN SCIENTIFIC SOCIETIES

- 27th April 2022 – ongoing: Italian Society of Mineralogy and Petrology (**SIMP**)
- 10th May 2022 – ongoing: Italian Geological Society (**SGI**)

RESEARCH INTERESTS

My research interests revolve around the fields of structural geology, petrology and geochemistry, with specific focus on ophiolitic sequences and mantle rocks from ophiolite association (mantle peridotites, gabbros, basalts) of Oman. I am also interested in the magmatic processes including: *i*) melt migration and melt-rock interaction acting in the lithospheric mantle at oceanic condition, *ii*) melt percolation and impregnation at different depth within the shallow oceanic mantle, and *iii*) accretion processes of the oceanic crust.

31/07/2024

