**Alberto Vitale Brovarone — Curriculum Vitae**

(April 2025 - https://www.unibo.it/sitoweb/alberto.vitaleb/cv-en)

Italian nationality

Full Professor of Petrology, Alma Mater Studiorum Università di Bologna, Italy

alberto.vitaleb@unibo.it

**Spoken languages:**

 *- Italian (native)*

*- English (speaking, writing)*

*- French (speaking, writing)*

**PROFESSIONAL AND ACADEMIC ACHIEVEMENTS**

**From 2020:** Full Professor of Petrology, Alma Mater Studiorum Università di Bologna, Italy

**2018 – 2020:** “Levi Montalcini” research position, Italy (“Brain-gain” Excellence program by the Italian Ministry of Education, University and Research).

**From 2014 :** CNRS researcher (CR2) at *Institut de Minéralogie et de Physique des Milieux Condensés* (IMPMC), Paris, France. On secondment from 2018.

**2017:** Italian National Scientific Habilitation for Associate and Full Professor (Professore Ordinario 04/A1).

**2017:** French HDR (Habilitation à la Direction de Recherche HDR).

**2012 – 2014**: postdoc at IMPMC-UPMC and Ecole Normale Supérieure(ENS), Paris (France). Laboratoire d’excellence (LabEx) Matisse fellowship. HP fluid-rock interactions and C cycling.

***2011-2012****:* post-doc at ISTeP, Paris VI, CNRS, Paris (France), on the tectono-metamorphic evolution of New Caledonia.

**EDUCATION**

***2008-2011***: PhD Thesis, Torino-Montpellier (bi-national). “From rifting to orogen: structure of Alpine Corsica and inheritance of rifting-related architectures in HP terranes”.

***2007****:* MSc in Geological Sciences, note 110/110 magna cum laude. “Distribution and tectono-metamorphic evolution of metabasalts from low-grade to lawsonite-bearing eclogite in the area of Morosaglia, Alpine Corsica, France”, declared “worth of printing”.

**HONORS AND AWARDS**

**2024: Feltrinelli Giovani award by Accademia dei Lincei, Italy.**

**2019: Joubin James award, University of Toronto, Canada.**

**2018: “Giuseppe and Paolo Gatto” award by Accademia dei Lincei, Italy.**

**2017:** **Deep Carbon Observatory (DCO) Emerging Leader Award**, to early career scientists for distinguished performance and unique potential as leaders of the deep carbon sciences.

**2015 – 2018: Prime d’Excellence Scientifique** (allowance for Scientific Excellence) CNRS for Research and doctoral supervision.

**2008:** Winner of the “**Ugo Pognante**” 2008 prize: best MA thesis on Alpine geology.

**RESEARCH GRANTS**

**2023**: **PRIN2022, MUR** grant “Competing geological and biological processes in underground carbon and hydrogen storage” **(PI, 224.000€)**

**2023**: **AlmaAtrrezzature** grant for the construction of analytical facilities, Alma Mater Studiorum **(PI, 400.000€)**

**2022-2027: FARE, MUR grant** “Unconventional water forms from DRY hydrogeN and rocKs (DRYNK)” **(PI, 494.873€)**

**2021-2026:** ERC Consolidator grant “Deep serpentinization, H2, and high-pressure abiotic CH4” (PI, 2.470.000€)

**2020**: Richard Lounsbery Foundation “Deep Degassing of abiotic hydrocarbons” (co-PI, 100.000$)

**2018-2020:** MIUR – Rita Levi Montalcini grant “High-pressure serpentinites and abiotic methanogenesis” (PI, 247.000€)

**2018:** ANR (Agence Nationale des Recherches) T-ERC grant (PI, 150.000€)

**2017-2018**: Institut National de Sciences de l’Univers (INSU), CNRS « High-pressure abiotic methane in metamorphic serpentinites” (PI, 7.000€)

**2017-2018:** Institut National de Sciences de l’Univers (INSU), CNRS « Les inclusions de diamant des grenatites des massifs Basiques et Ultrabasiques du nord-est algérien » (Participant, 12.000€)

**2017-2018:** Musée National d’Histoire Naturelle de Paris « High-pressure serpentinites and abiotic methanogenesis” (PI, 14.000€)

**2014-2017:** Deep Carbon Observatory (DCO) field studies (Participant, 150.000€)

**2016-2017:** Deep Carbon Observatory (DCO) “High-pressure carbonation” (PI, 5.000$)

**SUPERVISION OF GRADUATE and UNDERGRADUATE STUDENTS**

***Post-Docs***

**2024-2026:** Orlando Sébastien Olivieri. H2-CH4 characterization in Precambrian basements (ERC-funded position).

**2024-2026:** Claudia Isabel Roig Gonzáles. H2-carbon interactions in metasedimentary rocks (PRIN-funded position).

**2023-2025:** Ritabrata Dobe. H2-mediated deformation in crustal rocks (ERC-funded position). **Now MSCA fellow, Liverpool, UK**.

**2022-2025:** Kevin Wong. Global H2 fluxes from mantle wedge hydration: a numerical simulation (ERC-funded position). **Now PostDoc at Cambridge, UK; from late 2025: PostDoc at Carnegie, Washington D.C., USA.**

**2022-2024:** Veronica Peverelli. Geochronological study of H2-CH4 formation and migration at subduction zones (ERC-funded position). **Now PostDoc at Trinity College, Dublin, Ireland.**

**2021-202023:** Guillaume Siron. Development of numerical codes for coupled thermodynamic and isotope modeling (ERC-funded position). **Now Assistant Professor, Besancon, France**.

**2021-2012:** Francesco Giuntoli. Petrological and microstructural study of rocks deformed under reducing conditions (ERC-funded position). **Now Assistant Professor, Bologna, Italy.**

**2021-2023:** Zeudia Pastore. Unravelling redox variations and natural H2 formation in subduction zones through rock magnetism. Finanziato da Research Council of Norway. **Now PostDoc in Bologna.**

**2018-2020:** Pauline Bacle (co-sup. F. Pietrucci, IMPMC). Molecular dynamic simulations of HP CH4-producing reaction rates.

**2018-2019:** Francesco Giuntoli. Quantitative microstructural study of fluid-mediated HP abiotic methanogenic processes. **Now Assistant Professor, Bologna, Italy**.

***PhD students***

**2024-2027:** Ella Do Hanh-Tu. H2-rock interactions in the crust and upper mantle(FARE-funded position).

**2021-2024:** Francesco Ressico. Formation, transformation, and distribution of magnetite in high-pressure serpentinites (ERC-funded position).

**2021-2024:** Orlando Olivieri. Genesis and mobility of H2 at subduction zone conditions (ERC-funded position). **Now PostDoc in Bologna.**

**2018-2021:** Han Hu, Peking University, China (“foreign supervisor”). **Now PostDoc in Beijing.**

**2018-2021:** Antoine Boutier, DST, Torino University.

**2014-2017:** Francesca Piccoli, IMPMC, UPMC-DCO. **Now Research Assistant at Bern Univeristy, Switzerland.**

***ERASMUS+ (post M2)***

**201**7: Giulia Consuma, University of Padova. *Analytical and experimental study on serpentine reduction at high-pressure conditions.* Now PostDoc at ESA.

***Undergraduate students***

Supervision of more than 18 undergraduate students.

**COMMUNITY SERVICE**

**2023:** Co-oconvener Goldschmidt 2023 session “Competing carbon and hydrogen storage processes” (Lyon, France).

**2021:** Member of Lithos Editorial Board.

**2019-:** Evaluator for the Horizon2020 Marie Sklodowska-Curie action.

**2019-:** Member of Results in Geochemistry Advisory Board.

**2019-2021:** Councilor, European Association of Geochemistry (EAG).

**2016-2020:** Co-organizer of the Serpentine Days 2020, Sestri Levante, Italy.

**2019:** Co-organizer of the 2019 FORSTERITE workshop (Pyrenees, France).

**2017:** French candidature committee for the 2022 International Eclogite Conference.

**2018:** Co-organizer of the Goldschmidt 2018 session “Linking the Lithosphere, Hydrosphere, and Biosphere Through Serpentinization Reactions”.

**2017:** Co-organizer of the Goldschmidt 2017 session “Metamorphic and melting processes: from subduction zones to ultra-high temperature terranes”.

**2014:** Co-convener of the AGU fall meeting session “Processes, pathways, and properties along the subduction interface”

**2013**: Co-convener of the AGU fall meeting session “Fluids in Slabs: Chemical and Physical Studies of Volatile-Bearing Minerals in Subduction Zones” (V013).

**2013**: Associate editor of the Lawsonite special issue, Journal of Metamorphic Geology, in progress (ISI Journal Citation Reports © Ranking: 2011: 2/47 -Geology).

**2011**: Field leader of the pre-meeting field trip, CorseAlp2011, Monte San Petrone, Corsica, France, 10-11/4/2011.

**2011**: Co-organizer of the international CorseAlp2011 meeting (Alpine Workshop), Saint Florent, Corsica, France, 10-16/4/2011.

**Reviewer of manuscripts for**: Science, PNAS, Nature Geoscience, Nature Communications, Scientific Reports, Science Advances, Geology, Journal of Petrology, Journal of Metamorphic Geology, LITHOS, Tectonophysics, International Journal of Earth Sciences, Tectonics, European Journal of Mineralogy, Earth Planets and Space, Lithosphere, Applied Geochemistry ...

**INVITED SEMINARS & COMMUNICATIONS**

***Invited and keynote presentations***

**2024 –** SGTSG**,**Armidale, Asutralia, **Keynote**.

**2023 –**Goldschmidt 2023, Lyon, Francia. **Keynote**.

**2023 –**Yale University, New Haven, USA. Invited seminar.

**2023 –**National Museum of Natural History, New York, USA. **Invited seminar**.

**2019** – Deep Carbon 2019, National Academy of Science, Washington D.C., USA. **Invited**.

**2019** – Goldschmidt 2019, Barcelona, Spain. **Invited**.

**2018** – Goldschmidt 2018, Boston, USA. **Invited**.

**2018** – Metamorphic Studies Group meeting, Plymouth, UK. Serpentinization and abiotic methanogenesis from oceanic detachment faults to subduction: structural inheritance and deep C cycling. **Keynote**.

**2017** – Third DCO international symposium 2017, St. Andrews, Scotland. High-pressure serpentinization, deep H2 and abiotic methanogenesis. **Invited**.

**2017** – Goldschmidt 2017, Paris, France; High-pressure serpentinization, deep H2 and abiotic methanogenesis. **Keynote**.

**2017** – SGI-SIMP international meeting, Pisa, Italy. Deep abiotic hydrocarbons: subduction zones are undisclosed reservoirs. **Keynote**.

**2015** – SGI-SIMP international meeting, Firenze, Italy. Limits in modeling organic carbon-bearing rocks in upper crust and forearc slab conditions. **Invited**.

***Invited seminars***

NTU Taipei, Taiwan (2011), NCKU Tainan, Taiwan (2011), ISTeP Paris VI (2012), ENS Paris (2012), ETH Zurich (2012), Lausanne (2013), IMPMC Paris VI (2013), IPGP (2014), Orléans BRGM (2014), Clermont-Ferrand (2015), Orléans ISTO (2015), Kyoto (2016), St Andrews, Scottland, DCO meeting (2017); Bern, (2109); Padova (2019), Toronto (2019), Napoli (2020).

**TEACHING**

**2024- :** Geoscineces for the Energy Transition, BiGeA, Bologna University

**2021- :** Petrography, BiGeA, Bologna University

**2020- :** Applied Petrology, BiGeA, Bologna University

**2018 - :** Introduction to rocks and minerals, DST, Torino University.

**2014 - 2017:** Tectonics, Université Paris Diderot, Paris, France.

**2016:** Student camp, Western Alps, Université Paris Diderot, Paris, France.

**2016** Geochemical cycling at convergent margins, Ecole Normale Supérieure, Paris, France.

**2013:** Petrology, Ecole Normale Supérieure, Paris, France.

**2011:** Student camp, Taiwan, University of Montpellier, France.

**2009:** Student camp, Corsica, University of Montpellier, France.