

CURRICULUM VITAE

MARA MURRI

● PERSONAL DETAILS

Nationality: Italian

E-mail: mara.murri@unipv.it

Date of Birth: 04/02/1992

Gender: Female

ORCID ID: orcid.org/0000-0002-7149-9940

Scopus ID: 57192276871

● EDUCATION

- 2011 – 2014 Bachelor degree – Geology, (110/110 with honors): “Critical reassessment of the thermoelastic properties for diamond”. Department of Earth Sciences, University of Pavia, Italy. Advisor: M.C. Domeneghetti.
- 2014 – 2016 Master degree in Applied Geological Sciences (110/110 with honors): “The role of Fe content on the Fe-Mg exchange reaction in augite”. Department of Earth Sciences, University of Pavia, Italy. Advisor: M.C. Domeneghetti.
- 2016 – 2020 Ph.D. degree in Earth and Environmental Sciences (passed final PhD exam 20th January 2020): “From Raman elastic geobarometry to impact structures: the role of oriented stresses”. Department of Earth Sciences, University of Pavia, Italy. Advisor: M.C. Domeneghetti
- 2022-2033 National Scientific qualification as associate in the Italian higher education system, in the call 2021/2023 (Ministerial Decree n. 553/2021 and 589/2021) for the disciplinary field of 04/A1 - Geochemistry, mineralogy, petrology, volcanology, Earth resources and applications. (Academic Recruitment Field 04/A - Earth sciences, according to the national classification).

● POSITIONS

- 2019 – 2020 Post-graduate Fellowship at the University of Pavia, Italy.
- 2020 – 2022 Post-doctoral Fellowship at the University of Milano-Bicocca, Italy. (Apr 2020-Oct2022)
- Nov 2022 – Researcher (RTDa) at the University of Pavia, Italy.
- 2023 – 2024 Visiting period at the Leibniz University of Hannover in the framework of the Alexander Von Humboldt fellowship (6 months)
- 2024- Erasmus Representative for Geological Sciences, University of Pavia, Italy.

- **AWARDS and HONORS**

- 2016 Student helper grant to attend the European Mineralogical Conference, 11th -15th September 2016, Rimini.
- 2017 AIC grant to attend the Italian Crystallographic Association (AIC) 26th-29th June 2017, Perugia.
- 2018 Congress Grant to attend the XIV National Congress of Planetary Sciences 5th -9th February 2018, Bormio.
- 2018 AIC grant to attend the SGI-SIMP congress 11th -14th September 2018, Catania.
- 2018 EPSC 2018 Early Career Researcher (ECR) Bursary to attend the Europlanet Science Congress (EPSC) 16th – 21st September 2018, Berlin.
- 2019 Grant SIMP to attend the XV National Congress of Planetary Sciences 4th -8th February 2019, Firenze.
- 2019 SIMP grant to attend the 9th European Conference on Mineralogy and Spectroscopy 10th -13th September 2019, Prague.
- 2020 SIMP grant to attend the XVI National Congress of Planetary Sciences 3rd -7th February 2020, Padova.
- 2020 SIMP Award for best PhD thesis in mineralogy.
- 2021 EPSC 2021 Bursary supported by the Europlanet 2024 Research Infrastructure (RI) project to attend the Europlanet Science Congress (EPSC) 13th-24th September 2021.
- 2022 SIMP Award “Fiorenzo Mazzi” (ex Panichi) for the quality of ISI publications from 16 June 2020 to 16 June 2022

- **FUNDED RESEARCH PROPOSALS as Principal Investigator**

- 2016 Barringer Family Fund for Meteorite Impact Research "Stacking Disorder in Diamonds as a Tool for Investigating Impact Craters." (\$5000) [*Principal Investigator*]
- 2018 Europlanet 2020 RI for a Europlanet Transnational Access (TA) project to use the Petrology-Mineralogy Characterisation Facility (PMCF) at the Natural History Museum “Cathodoluminescence as a Tool for Unravelling Shock Features of Diamonds from Impact Craters” (London, 8th – 12th October 2018). [*Principal investigator*]
- 2022 Humboldt Research Fellowship for Post Docs: “The development of Raman intracrystalline geothermospeedometry to unravel the thermal history of magmatic rocks” [*Principal investigator*]

- **SUPERVISION ACTIVITIES**

2018 – 2024 Co-supervisor of: 1 Bachelor student and 3 Master students, Department of Earth and Environmental Sciences, University of Pavia, Italy.

- **TEACHING ACTIVITIES**

2015 – 2020 Tutoring activity for Mineralogy: optics & crystallography (B.Sc, 12 CFU) Geological Sciences, University of Pavia.

2019 – 2023 Tutoring activity for Physics (B.Sc, 12 CFU) Geological Sciences, University of Milano-Bicocca.

2020 – 2022 Contract Professor for Extraterrestrial Materials (M.Sc, 6 CFU), University of Pavia. (12 hours)

2020 – 2022 Contract Professor for Analytical Methodologies applied to geosciences (M.Sc, 6 CFU), University of Pavia. (24 hours)

2022 – 2024 Professor for Gemology (M. Sc, 6 CFU), Geosciences for Sustainable Development, University of Pavia. (1 CFU)

2023 – 2024 Professor for Mineralogy (B.sc, 6CFU), Natural Sciences, University of Pavia. (1 CFU)

2023 – 2024 Course “Advanced microanalyses” in the framework of the PhD program at the Department of earth and Environmental Sciences, University of Pavia.

- **PUBLIC ENGAGEMENT**

2018 Dissemination activity at “Settimana del Pianeta Terra”, national scientific festival in Geosciences

2019 Member of the “Dinamoterra” stand activity at the European Researchers’ Night (23-28 September 2019)

2019 – 2020 Member of the crowdfunding project Lunatic (<https://universitiamo.eu/en/campaigns/lunatic/>)

2023- Member of the communication committee of the Department of Earth and Environmental Sciences at the University of Pavia, Italy.

- **ORGANIZATION OF SCIENTIFIC MEETINGS**

2019 Convener for the session “Planetary evolution: new insights from remote sensing, in-situ, terrestrial analogues and meteorite studies” at SIMP-SGI-SOGEI 16th-19th September 2019, Parma, Italy.

2022 Convener for the session “Solar system materials - studies of landed, orbital, and returned mission samples and meteorites / Understanding planetary materials and processes via analog, simulated, and theoretical studies on Earth” at IMA 18th-22nd July 2022, Lyon, France.

- 2022 Convener for the session “A petrographic and mineralogical journey through the extraterrestrial bodies: from differentiated to undifferentiated materials” at SGI-SIMP 19th-21st September 2022, Torino, Italy.
- 2022 Organizer of the Climate Journal Club at the Department of Earth and Environmental Sciences, University of Milano-Bicocca, Italy.
- 2023 Member of the Communication Committee of the SIMP-SGI-SoGeI-AIV Congress “The Geoscience paradigm: Resources, Risks and future perspectives”, 19th -21st September 2023, Potenza, Italy.
- 2023 Convener for the session “Extraterrestrial materials: from meteorites to planetary bodies” at SIMP-SGI-SoGeI-AIV Congress, 19th -21st September 2023, Potenza, Italy.
- 2024 Convener for the session “Impattiti ed effetti di shock in materiale extraterrestre” XIX National Congress of Planetary Sciences, 5th -9th February 2024, Bormio, Italy.
- 2024 Convener for the session “Solving geoscience problems using mineralogy” at EGU General Assembly 2024, 14th -19th April 2024, Vienna, Austria.

- **COMMISSIONS OF TRUST**

- Reviewer for *Lithos*, *Rendiconti Lincei*, *Nature Geoscience*, *Diamond and Related Materials*, *American Mineralogist*, *Minerals*, *Geosciences*, *European Journal of Mineralogy*
- 2022 – *Member of the Editorial Board of Lithos*

- **ROLES AND MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

- 2015 – Member of the Italian Society of Mineralogy and Petrology (SIMP).
- 2020 – Member of the Communication Committee for the Italian Society of Mineralogy and Petrology (SIMP).
- 2022-2023 Elected councillor of the Italian Society of Mineralogy and Petrology (SIMP).

- **PUBLICATION SUMMARY**

- 22 Research publications in ISI journals.
- H-index= 8 [scopus] ; 11 [google scholar]
- Citations: 470[scopus]
- >80 scientific communications to national and international conferences.

● **PUBLICATIONS IN PEER-REVIEWED JOURNALS [doi]**

2016

1. **M. Murri**, L. Scandolo, A. Fioretti, F. Nestola, M.C. Domeneghetti and M. Alvaro (2016). The role of Fe content on the Fe-Mg exchange reaction in augite. *American Mineralogist* 101 (12), 2747-2750. [10.2138/am-2016-5717]

2018

2. **M. Murri**, F. Cámara, J. Adam, M.C. Domeneghetti, M. Alvaro (2018). Intracrystalline “geothermometry” assessed on clino and orthopyroxene bearing synthetic rocks. *Geochimica et Cosmochimica Acta*, 227, 133-142. [10.1016/j.gca.2018.02.010]
3. **M. Murri**, M.L. Mazzucchelli, N. Campomenosi, A.V. Korsakov, M. Prencipe, B.D. Mihailova, M. Scambelluri, R.J. Angel, M. Alvaro (2018). Raman elastic geobarometry for anisotropic mineral inclusions. *American Mineralogist* 103(11), 1869-1872. [10.2138/am-2018-6625CCBY]

2019

4. **M. Murri**, M.C. Domeneghetti, A. M. Fioretti, F. Nestola, F. Vetere, D. Perugini, A. Pisello, M. Faccenda, M. Alvaro (2019). Cooling history and emplacement of a pyroxenitic lava as proxy for understanding Martian lava flows. *Scientific Reports*, 9(1), 17051. [10.1038/s41598-019-53142-0]
5. **M. Murri**, R. L. Smith, K. McColl, M. Hart, M. Alvaro, A. P. Jones, P. Németh, C. G. Salzmann, F. Corà, M. C. Domeneghetti, F. Nestola, N. V. Sobolev, S. A. Vishnevsky, A. M. Logvinova, P. F. McMillan (2019). Quantifying hexagonal stacking in diamond. *Scientific Reports*, 9(1), 10334. [10.1038/s41598-019-46556-3]
6. F. Vetere, **M. Murri**, M. Alvaro, M. C. Domeneghetti, S. Rossi, A. Pisello, D. Perugini, F. Holtz (2019). Viscosity of pyroxenite melt and its evolution during cooling. *Journal of Geophysical Research – Planets*, 124 (5), 1451-1469. [10.1029/2018JE005851]
7. **M. Murri**, M. Alvaro, R.J. Angel, M. Prencipe, B.D. Mihailova (2019). The effects of non-hydrostatic stress on the structure and properties of alpha-quartz. *Physics and Chemistry of Minerals*, 46(5), 487-499. [10.1007/s00269-018-01018-6]
8. R.J. Angel, **M. Murri**, B. Mihailova, M. Alvaro (2019). Stress, strain and Raman shifts. *Zeitschrift für Kristallographie-Crystalline Materials* 234 (2), 129-140. [10.1515/zkri-2018-2112]

2020

9. P. Németh, K. McColl, L.A.J. Garvie, C. G. Salzmann, **M. Murri**, P.F. McMillan (2020). Complex nanostructures in diamond. *Nature Materials* 19 (11), 1126-1131. [10.1038/s41563-020-0759-8]
10. P.Németh, K. McColl, R.L. Smith, **M. Murri**, L.A.J. Garvie, M. Alvaro, B. Pécz, A.P. Jones, F. Corà, C.G. Salzmann, P.F. McMillan (2020). Diamond-graphene composite nanostructures *Nano Letters* 20 (5), 3611-3619. [10.1021/acs.nanolett.0c00556]
11. M. Alvaro, M.L. Mazzucchelli, R.J. Angel, **M. Murri**, N. Campomenosi, M. Scambelluri, F. Marone, A. Korsakov, M. Morana (2020). Fossil subduction recorded by quartz from the coesite stability field. *Geology*, 48(1), 24-28. [10.1130/G46617.1]

2021

12. **M. Murri** and M. Prencipe (2021). Anharmonic effects on the thermodynamic properties of quartz from first principles calculations. *Entropy*, 23, 1366. [10.3390/e23101366]

13. K. A. Musiyachenko, **M. Murri**, M. Prencipe, R.J. Angel, M. Alvaro (2021). A Grüneisen tensor for rutile and its application to host-inclusion systems. *American Mineralogist* 106(10), 1586-1595. [10.2138/am-2021-7618]

2022

14. **M. Murri**, J.P. Gonzalez, M.L. Mazzucchelli, M. Prencipe, B. Mihailova, R.J. Angel, M. Alvaro (2022). The role of symmetry-breaking strains on quartz inclusions in anisotropic hosts: Implications for Raman elastic geobarometry. *Lithos* 422-423, 106716 [10.1016/j.lithos.2022.106716]
15. A. Barbaro, F. Nestola, L. Pittarello, L. Ferrière, **M. Murri**, K. Litasov, O. Christ, M. Alvaro, C.M. Domeneghetti (2022). Characterization of carbon phases in Yamato 74123 ureilite to constrain the meteorite shock history. *American Mineralogist*, 107, 377-384. [10.2138/am-2021-7856]
16. **M. Murri**, G. Capitani, M. Fasoli, A. Monguzzi, A. Calloni, L. Bussetti, N. Malaspina, M. Campione (2022). Laboratory simulation of space weathering on silicate surfaces in water environment. *ACS Earth and Space Chemistry*, 6, 197-206. [10.1021/acsearthspacechem.1c00349]
17. P Németh¹, H.J. Lancaster, C.G. Salzmann, K. McColl, Z. Fogarassy, L.A.J. Garvie, L. Illés, B. Bécz, **M. Murri**, F. Corà, R.L. Smith, M. Mezouar, C.A. Howard, P.F. McMillan (2022). Shock-formed carbon materials with intergrown sp³- and sp²-bonded nanostructured units. *Proceedings of the National Academy of Sciences*, 119, e2203672119. [10.1073/pnas.2203672119]
18. M. Campione, **M. Murri**, V. Cerantola, D. Bessas, A. Rosenthal, A. Chumakov, M. Scambelluri, N. Malaspina (2022). Magnetic ordering of magnetite inclusions in olivine at mantle depths in subduction zones. *ACS Earth and Space Chemistry*, 6, 12, 2755-2759. [10.1021/acsearthspacechem.2c00190]

2023

19. N. Malaspina, M. Campione, S. Tumati, **M. Murri**, P. Fumagalli, V. Cerantola, M. La Fortezza, M. Scambelluri (2023). Epitactic magnetite growth in fluid inclusions as driving force for olivine oxidation coupled with hydrogen production at high pressure. *Chemical Geology*, 629. [10.1016/j.chemgeo.2023.121495]
20. C. Carli, A. Barbaro, **M. Murri**, C.M. Domeneghetti, A. Langone, E. Bruschini, A. Stephant, M. Alvaro, S. Stefani, T. Cuppone, M. Casalini, A. Migliorini, T. Roush, G. Pratesi (2023). Al Huwaysah 010: the most reduced brachinite, so far. *Meteoritics & Planetary Science* [10.1111/maps.13998]
21. O. Gianola, B. Costa, F. Ferri, M. Gilio, M. Petrelli, **M. Murri**, A. Barbaro, M. Alvaro, A. Rodriguez-Vargas, S. Poli, B. Cesare (2023). Melt inclusions in lower continental arc xenoliths from the Northern Volcanic Zone (SW Colombia). *Journal of Petrology*, 64, 6. [10.1093/petrology/egad038]
22. **M. Murri**, A. Bossi, T. Recca, M. Campione (2023). Experimental simulations of cosmic impacts on rubrene nanoparticles in the water environment reveal the potentiality of condensed phases of polycyclic aromatic hydrocarbons to generate prebiotic molecules. *Icarus*, 115727. [10.1016/j.icarus.2023.115727]