Curriculum Vitae

INFORMAZIONI PERSONALI

Nome SIMONE
Cognome COSTA
Recapiti Dipartimento di Scienze della Terra e del Mare

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FORMAZIONE TITOLI

POSITIONS:

- **02/2026–Present: Tenure Track Researcher (RTT) in Petrology, University of Palermo (Italy)**

- **10/2025–01/2026: Research Fellowship, University of Catania (Italy):** FIS2 Project – KLARA: “Kinetics of Lava Flows Crystallization”

- **09/2023–09/2025: Research Technologist, Istituto Nazionale di Geofisica e Vulcanologia (INGV) sezione di Pisa (Italy):** *PNRR-MEET (Monitoring Earth's evolution and tectonics) project; WP3 Laboratori integrati per le geoscienze e l’ambiente (ILGE); Development and management of LA-ICP-MS and SEM-EDS laboratories at INGV-Pisa*

- **06/2021-–05/2023: Post Doc fellows, University of Pisa (Italy):** *Petro-chemical and experimental study of eruptive products from Mt. Etna and Stromboli volcanoes. PRIN project 2017: Time scales of solidification in magmas: Applications to Volcanic Eruptions, Silicate Melts, Glasses, Glass-Ceramics.*

EDUACATION:

- **12/2022–07/2023: Master in Data Science and Machine Learning:** www.neuralacademy.it;

- **11/2017–03/2021: PhD in Earth Sciences, University of Florence and University of Pisa (Italy), Dottorato regione Toscana “*Pegaso” XXXIII ciclo:* ***The active plumbing system of La Fossa (Vulcano, Italy): clues to mafic-silicic magma interactions and the link with the magmatic-hydrothermal environment***; **PhD awarded with praise on 19/03/2021**;

- **10/2014 – 07/2017: MSc in Geosciences and Geotechnologies (110/110 with praise), University of Pisa (Italy):** *Indagini petrografiche e geochimiche sui prodotti piroclastici di Pietre Cotte (Vulcano, Isole Eolie). Considerazioni sulla genesi delle rioliti e degli inclusi magmatici mafici;*

- **10/2009 – 07/2014: BSc in Geology (109/110), University of Palermo (Italy):** *Applicazioni di metodi petrologico sperimentali alle eruzioni del vulcano Vesuvio (Italia).*

ATTIVITA' DIDATTICA

- **2025-2026: Teaching activities (40 hours): “The Use of Crystals in the study of magmatic systems and basics of volcanic petrography”; Universidad de El Salvador El Salvador) – CASTES project**

- **2025-2026: Teaching assistant for the course “*Petrography*”, Degree in Geology, University of Palermo (Italy)** ; Practice exercises on observation of thin sections and mineral under polarized light on microscope;

- **2019-2020: Teaching assistant (volunteer) for the course “*Petrography*”, Degree in Geology, University of Pisa (Italy)**; Practice exercises on observation of thin sections and mineral under polarized light on microscope;

- **2018-2019: Teaching assistant with contract for the course "*Petrography*", Degree in Geology, University of Pisa (Italy)**; Practice exercises on observation of thin sections and mineral under polarized light on microscope.

PUBBLICAZIONE

- **2026: Costa S.,** Masotta M., Colle F., Giacomoni P.P., D'Oriano C., Landi P. *Optimization of lithium diffusion modelling in plagioclase: implications for the assessment of pre-eruptive timescales.* Chemical Geology, 123222. https://doi.org/10.1016/j.chemgeo.2025.123222;

- **2025:** D'Oriano C., Montagna C., Colucci S., Del Carlo P., Brogi F., Morgavi D., Musu A., Arzilli F., **Costa S.**, Landi P. *Fe-rich filamentary textures reveal timescales of magmatic interaction before the onset of high-energy explosive events at basaltic volcanoes.* Volcanica, 8(1), 159-174. https://doi.org/10.30909/vol/wytv2139;

- **2025:** Masotta M., Colle F., **Costa S.**, Landi P. *Reactive dissolution of plagioclase in a basaltic melt: A chronometer for pre-eruptive volcanic processes.* Earth and Planetary Science Letters, 656, 119249. https://doi.org/10.1016/j.epsl.2025.119249;

- **2024:** Colle F., Masotta M., **Costa S.**, Giacomoni P.P., Trua T., Marani M. *A micro-scale insight into a back-arc trans-crustal plumbing system: The case of Marsili volcano, Southern Tyrrhenian Sea.* Lithos, Volumes 482–483, October 2024, 107675. https://doi.org/10.1016/j.lithos.2024.107675;

- **2023:** Colle F., Masotta M., **Costa S.**, Mollo S., Landi P., Pontesilli A., Peres S., Mancini L. *Effect of undercooling on clinopyroxene crystallization in a high K basalt: implications for magma dynamics at Stromboli volcano.* Lithos, Volumes 456–457, 1 November 2023, 107327. https://doi.org/10.1016/j.lithos.2023.107327;

- **2023: Costa S.,** Caricchi L., Pistolesi M., Gioncada A., Masotta M., Bonadonna C., Rosi M. *A data driven approach to mineral chemistry unveils magma dynamics of long-lasting, low-intensity volcanic activity.* Scientific Reports 13, 1314. https://doi.org/10.1038/s41598-023-28370-0;

- **2023:** Dallara E., Fulignati P., **Costa S.**, Gioncada A., Langone A., Pistolesi M. *Apatite chemistry in shoshonitic magmas: insights into the volatile evolution at La Fossa volcano (Vulcano Island, Aeolian Arc, Italy).* Lithos, Volumes 454–455, October 2023, 107238. https://doi.org/10.1016/j.lithos.2023.107238;

- **2021: Costa S.**, Masotta M., Gioncada A., Pistolesi M. *A Crystal Mush Perspective Explains Magma Variability at La Fossa Volcano (Vulcano, Italy)*. Minerals, 11(10), 1094. https://doi.org/10.3390/min11101094;

- **2021: Costa S.**, Fulignati P., Campbell. I.H, Gioncada A., Carrasco Godoy C.I, Pistolesi M., Masotta M. *Platinum-group element geochemistry of the shoshonitic igneous suite of Vulcano (Aeolian Arc, Italy): implications for chalcophile element fertility of arc magmas*. Contributions to Mineralogy and Petrology, 176(12), 1-22. https://doi.org/10.1007/s00410-021-01865-7;

- **2021: Costa S.**, Fulignati P., Gioncada A., Pistolesi M., Bosch D., Bruguier O. *Tracking metal evolution in arc magmas: insights from the active volcano of La Fossa, Italy.* Lithos, 105851. https://doi.org/10.1016/j.lithos.2020.105851;

- **2020: Costa S.**, Masotta M., Gioncada A., Pistolesi M., Bosch D., Scarlato P. *Magma evolution at La Fossa volcano (Vulcano Island, Italy) in the last 1000 years: evidence from eruptive products and temperature gradient experiments.* Contributions to Mineralogy and Petrology, 175:31. https://doi.org/10.1007/s00410-020-1669-0;

- **2018:** Fulignati P., Gioncada A., **Costa S.**, Di Genova D., Di Traglia F., Pistolesi M. *Magmatic sulfide immiscibility at an active magmatic-hydrothermal system: The case of La Fossa (Vulcano, Italy).* Journal of Volcanology and Geothermal Research, vol. 358, pages 45-57. https://doi.org/10.1016/j.jvolgeores.2018.06.009;

AMBITI DI RICERCA

Petrology, Petrography, Experimental Petrology, Geochemistry, Volcanology