

Curriculum Vitae

INFORMAZIONI PERSONALI

Nome SILVIO GIUSEPPE
Cognome ROTOLO
Recapiti Dip. Scienze della Terra e del Mare (DISTEM)
E-mail silvio.rotolo@unipa.it
silroto@gmail.com

FORMAZIONE TITOLI

1992 PhD in Geochemistry

1995 permanent position at the University of Palermo, researcher in Petrology.

2006 Associate Professor in Petrology,

2021 Full Professor in Petrology

2011-2025: Research Associate at Istituto Nazionale di Geofisica e Vulcanologia (Sez. di Palermo)

ATTIVITA' DIDATTICA

2000-2007 Course of "Regional Petrography"

2003-2005 Course of "Mineralogy"

2005-2025 Course " Petrology of volcanism with fieldwork".

2005-2009 Course of "Petrology"

2010-2025 Course " Petrography with lab."

Tutorship of 11 PhD Theses and > 95 Master level theses

PUBBLICAZIONE

CARNEVALE G., CARACAUSI A., COLTORTI M., FACCINI B., MARRAS G., PATERNOSTER M., ROTOLO S.G., STAGNO V., ZANON V., ZUMMO F., (2024) CO₂-rich xenoliths at Mt. Vulture volcano (Southern Italy) : new constraints on the volcano plumbing system. Terra Nova 24, 0 (1-8)

LO FORTE F.M., BOUDOIRE G., FREZZOTTI M.L., ROTOLO S.G., SANDOVAL VELASQUEZ A., VIVEIROS F., ZANON V., AIUPPA A., RIZZO A.L. (2024) The helium and carbon isotopic signature of Ocean island basalts: Insights from Pogo volcano (Cape Verde archipelago). *Earth Planetary Sci. Lett.* 645 (13 pp) 118930 DOI : 10.1016/j.epsl.2024.118930

BARTH A., PORTNYAGIN M., MIRONOV N., HOLTZ F., MOUSSALAM Y., ROSE-KOGA E. F., RASMUSSEN D., TOWBIN H., GONNERMANN H., EUAN J., MUTCH F., ROTOLO S.G., PLANK T. (2024) Fast, furious and gassy: Etna's explosive eruption from the mantle. *Earth Planetary Sci. Lett.* 643 118864

LO FORTE F.M., SCHIAVI F., ROSE-KOGA E., ROTOLO S.G., VERDIER-PAOLETTI M., AIUPPA A. (2024) High CO₂ in the mantle source of ocean island basanites. *Geoch. Cosmoch. Acta* 368 (93-111)

CORREALE A., CORSARO R.A., MIRAGLIA L., PAONITA A., ROTOLO S.G. (2024) The December 2018 eruption at Etna volcano: a geochemical study on melt and fluid inclusions. *Frontiers in Earth Science*

MARRAS G., CARNEVALE G., CARACAUSI A., ROTOLO S.G., STAGNO V. (2023) First measurements of the Fe oxidation state of spinel inclusions in olivine single crystals from Vulture (Italy) with the in situ synchrotron micro-Mössbauer technique. *Europ. Journal of Mineralogy*. 35 / 4, 665-678.

BRANCA S., CINQUEGRANI A., CIONI R., CONTE A.M., CONTICELLI S., DE ASTIS G., DE VITA S., DE ROSA R., DI VITO M.A., DONATO P., FORNI F., FRANCALANCI L., GAETA M., GIACCIO B., GIORDANO G., GIUFFRIDA M., ISAIA R., LUCCHI F., MARRA F., MASSARO S., NICOTRA E., PALLADINO D.M., PERINELLI C., PETROSINO P., PISTOLESI M., SEPULVEDA-BIRKE J.F., SOTTILI G., ROMAGNOLI C., ROTOLO S., ROBERTO SULPIZIO R., TRANNE C.A., VICCARO M. (2023) The Italian Quaternary volcanism. *Alpine and Mediterranean Quaternary (AIQUA)* vol. 36 issue 2 pp 221- 284

SCARANI A., FARANDA C. F., VONA A., SPERANZA F., GIORDANO G., ROMANO C., ROTOLO S.G. (2023) Timescale of emplacement and rheomorphism of the Green Tuff ignimbrite (Pantelleria, Italy). Submitted to *Journal of Geophysical Research* 128/7

LO FORTE F.M., AIUPPA A., ROTOLO S.G., ZANON V. (2023) Volcano magma storage system (Cape Verde Archipelago): a fluid inclusions perspective. *Journal of Volcanology and Geothermal Research* 433, <https://doi.org/10.1016/j.jvolgeores.2022.107730> (14 pp)

CARNEVALE G., CARACAUSI A., ROTOLO S.G., PATERNOSTER M., ZANON V. (2022) New inferences on magma dynamics in melilitite-carbonatite volcanoes: the case study of Mt. Vulture (Southern Italy). *Geoph. Res. Lett.* 49, 21, art. Number e2022GL099075

ROMANO P., WHITE J.C., ROTOLO S.G., JORDAN N.J., CIRRINCIONE R., DE GIORGIO G., FIANNACCA P., VACCARO E. (2022) Contrasting Styles of Inter-Caldera Volcanism in a Peralkaline System: Case Studies from Pantelleria (Sicily Channel, Italy). *Minerals* 2022 (12/4) 406 <https://doi.org/10.3390/min12040406> (15 pp)

ROMANO P., DI CARLO I., ANDUJAR J., ROTOLO S.G. (2021) Water solubility in trachytic and pantelleritic melts: an experimental study. *Comptes Rendus Geosciences* vol 353 pp 1-22. doi.org/10.5802/crgeos.75. Vol 353, S2, p 315-331

CARNEVALE G., CARACAUSI A., CORREALE L., ITALIANO L., ROTOLO S.G. (2021). An overview of the geochemical characteristics of oceanic carbonatites: new insights from Fuerteventura carbonatites (Canary Islands) *Minerals* 11/2, 203 (1-31)

JORDAN N.J., WHITE J.C., MACDONALD R., ROTOLO S.G., (2021) Evolution of the magma system of Pantelleria (Italy) from 190 ka to present. *Comptes Rendus Geosciences* <https://doi.org/10.5802/crgeos.50>.

ROTOLO S.G., SCAILLET S., SPERANZA F., WHITE J.C., WILLIAMS R., JORDAN N.J. (2021) Volcanological evolution of

Pantelleria Island (Strait of Sicily) peralkaline volcano: a review. *Comptes Rendus Geosciences* vol 353 pp 1-22. <https://doi.org/10.5802/crgeos.51>

WHITE J.C., NEAVE D.A., ROTOLO S.G., PARKER D.F. (2020). Geochemical constraints on basalt petrogenesis in the Strait of Sicily Rift Zone (Italy): Insights into the importance of short lengthscale mantle heterogeneity. *Chemical Geology*, 545

ROTOLO SG, CARAPEZZA M.L., CORREALE A., FORESTA MARTIN F., HAHN G., HODGETTS A.G.E., LA MONICA M., NAZZARI M., ROMANO P., SAGNOTTI L., SIRAVO G., SPERANZA F. (2020). Obsidians of Pantelleria (Strait of Sicily): a petrographic, geochemical and magnetic study of known and new geological sources. *Open Archaeology* 2020; 6: 434–453

ROMANO P., SCAILLET B., WHITE J. C., ANDUJAR J., DI CARLO I., ROTOLO S.G. (2020) Experimental and thermodynamic constraints on mineral equilibrium in pantelleritic magmas. *Lithos* Vol. 376-377

ROMANO P., WHITE J.C., CIULLA A., DI CARLO I., D'ORIANO C., LANDI P., ROTOLO S.G. (2019). Volatiles and trace elements content in melt inclusions from the zoned Green Tuff ignimbrite (Pantelleria, Sicily): petrological inferences. *Annals of Geophysics* Vol 62,1,

LA MONICA M., ROTOLO S.G., FORESTA MARTIN F. (2019) Petrographic and spectroscopic (FT-IR) study of Western Mediterranean obsidians geological sources and of a lithic collection from Ustica Island (Sicily). *Annals of Geophysics* Vol 62, 1.,

GENNARO E., IACONO-MARZIANO G., PAONITA A., ROTOLO S.G., MARTEL C., RIZZO A.L., PICHAVANT M., LIOTTA M. (2019) Melt inclusions track melt evolution and degassing of Etnean magmas in the last 15 ka. *Lithos* 324-325 (716-732)

ROMANO P., ANDUJAR J., SCAILLET B., DICARLO I., ROMENGO N., ROTOLO SG. JPET (2018) Phase equilibria of Pantelleria trachytes (Italy): constraints on pre-eruptive conditions and on the metaluminous to peralkaline transition in silicic magmas. *J. Petrology* 59 (3), 559- 588

JORDAN NJ., ROTOLO S.G., WILLIAMS R., SPERANZA F., MCINTOSH WC. BRANNEY MJ., SCAILLET S. (2018). Explosive eruptive history of Pantelleria, Italy: repeated caldera collapse and ignimbrite formation at a peralkaline volcano. *Jour. Volc. Geoth. Res.* 349, (47-73)

ROBIDOUX P., ROTOLO S.G., AIUPPA A., LANZO G., HAURI E.H., (2017) Geochemistry and volatile content of magmas feeding explosive eruptions at Telica volcano (Nicaragua). *Journal of Volcanology and Geothermal Research* 341 (131-148) (25 ISI), 15 mag 17 8online) (25 ISI),

ROBIDOUX P., AIUPPA A., ROTOLO S.G., RIZZO A.L., HAURI E.H., FREZZOTTI M.L. (2017) Volatile contents of mafic-to-intermediate magmas at San Cristóbal volcano in Nicaragua. *Lithos* 272-273 (147-163) (24 ISI), feb 2017

LANZO G., DI CARLO I., PICHAVANT M., ROTOLO SG., SCAILLET B (2016) Origin of primitive ultra-calcic arc melts at crustal conditions -Experimental evidence on the La Sommata basalt, Vulcano, Aeolian Islands. *Journal of Volcanology and Geothermal Research* 321, 85-101.

LANDI P., ROTOLO SG (2015) Cooling and crystallization recorded in trachytic enclaves hosted in pantelleritic magmas (Pantelleria, Italy): Implications for pantellerite petrogenesis. *Journal of Volcanology and Geothermal Research* 301, 169-179.

CORREALE A., PAONITA A., MARTELLI M., RIZZO A., ROTOLO S.G., CORSARO R.A., DI RENZO V. (2014) A two-component mantle source feeding Mt. Etna magmatism; insights from the geochemistry of primitive magmas. *Lithos* 184-187 (243-258)

CORSARO R.A., ROTOLO S.G., COCINA O., TUMBARELLO G.V. (2014) Cognate xenoliths in Mt. Etna lavas: witnesses of the high-velocity body beneath the volcano, *Bulletin of Volcanology* 76: 772

LANZO G., LANDI P, ROTOLO S.G. (2013) Volatiles in pantellerite magmas: a case study of the Green Tuff Plinian eruption. Journal of Volcanology and Geothermal Research 262, 153-163

SCAILLET S, VITA -SCAILLET G. , ROTOLO S:G (2013) Millennial-scale phase relationships between ice-core and Mediterranean marine records: insights from high-precision $^{40}\text{Ar}/^{39}\text{Ar}$ dating of the Green Tuff of Pantelleria, Sicily Strait Quaternary Science Reviews 78 (141-154)

ROTOLO S.G., SCAILLET S., LA FELICE S., VITASCAILLET G. (2013) A revision of the structure and stratigraphy of pre-Green Tuff ignimbrites at Pantelleria (Strait of Sicily). Journal of Volcanology and Geothermal Research , 250 (61-74) .

SPERANZA F., DI CHIARA A., ROTOLO S.G. (2012) Correlation of welded ignimbrites on Pantelleria, using paleomagnetism. Bull of Volcanology 73: DOI 10.1007/s00445-011-0521-9.

CALO' M., DORBATH C. LUZIO D., ROTOLO S.G., D' ANNA (2012) Seismic velocity structures of Southern Italy from tomographic imaging of the Ionian slab and petrological inferences. Geophysical Journal International 91: 751–764

SCAILLET S., ROTOLO S.G., LA FELICE S., VITA G. (2011) *High-resolution $^{40}\text{Ar}/^{39}\text{Ar}$ chronostratigraphy of the post-caldera (< 20 ka) volcanic activity at Pantelleria, Sicily Strait.* Earth Planetary Science Letters 309: 280-290

DI CARLO I., ROTOLO S.G., SCAILLET B, BUCCHERI V., PICHAVANT M., (2010) *Phase equilibrium constraints on pre-eruptive conditions of recent felsic explosive volcanism at Pantelleria Island, Italy.* Journal of Petrology 51: 2245-2276.

PICHAVANT M., DI CARLO I., LE GAC, Y., ROTOLO S.G., SCAILLET B. (2009) *Experimental constraints on the deep magma feeding system at Stromboli volcano, Italy.* Journal of Petrology 50 (601-624)

ROTOLO S.G., LA FELICE S., MANGALAVITI A., LANDI P. (2007) *Geology and petrochemistry of recent (<25 ka) silicic volcanism at Pantelleria Island.* Boll. Soc Geol.It. 126/2 (191-208).

DI CARLO I., PICHAVANT M., ROTOLO S.G., SCAILLET B. (2006) *Experimental crystallization of a high-K Arc Basalt: the Golden Pumice, Stromboli Volcano (Italy).* Journal of Petrology 47 (1317-1343).

ROTOLO S.G., CASTORINA F., CELLURA D., POMPILIO M. (2006) *Petrology and Geochemistry of submarine volcanism in the Sicily Channel Rift* Journal of Geology 114/3 (355-365)

ALLETTI M., POMPILIO M., ROTOLO S.G. (2005). *Mafic and ultra-mafic enclaves from Ustica island lava: inferences on deep magmatic processes.* Lithos, 84 (151-167).

ATTIVITA' SCIENTIFICHE

- 2000-2003 INGV-Dip. Protezione Civile, Coordinator of the RU “ The role of volatiles in arc volcanism: inferences on magma evolution and eruptive dynamics.”

- 2004 - 2005 Responsible of the International Cooperation project between University of Palermo CNRS-ISTO (Francia).
Argument : “*Esperimenti ad alta pressione e temperatura sulle lave del vulcano Stromboli: implicazioni sulla genesi dei magmi*”

~~antelleria: implications for volcanic hazard~~

2005-2007 INGV-Dip. Protezione Civile, Coordinator of the RU "*Experimental constraints on magma storage conditions at*

2007-2009 INGV-Dip. Protezione Civile, Coordinator of the RU "*Paroxysm.*".

AMBITI DI RICERCA

- Petrology of Quaternary volcanism in Sicily (Etna, Ustica, Pantelleria, Sicily Channel).
- Experimental petrology on mafic and felsic peralkaline volcanic rocks focused on pre-eruptive conditions.
- Tephrostratigraphy, Ar/Ar geochronology and petrology of pyroclastic formations at Pantelleria .