

Paola Stabile



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Abilitata alle funzioni di professore universitario di Seconda Fascia nel Settore Concorsuale **04/A1** - GEOCHIMICA, MINERALOGIA, PETROLOGIA, VULCANOLOGIA, GEORISORSE ED APPLICAZIONI (a decorrere dal **6/2/2023**)

WORK EXPERIENCE

- | | |
|-----------------|---|
| 06/2023-ONGOING | <p>Researcher (RTDA) GEO/09 Dipartimento di Scienze della Terra, dell' Ambiente e della Vita University of Genova</p> |
| 2021-2022 | <p>Adjunct Professor <i>Synthesis and Characterization of Geomaterials (3CFU)</i> PhD course in "Physics, Earth and Material Sciences" DOCSM017 (XXXVI ciclo) University of Camerino</p> |
| 10/2020-03/2023 | <p>Research Fellow <i>Cinetica di cristallizzazione e dinamica eruttiva di magmi alcalini evoluti: implicazioni per l'industria del vetro – PRIN 2017 (prof. M.R.Carroll).</i> Geology Division, University of Camerino</p> <ul style="list-style-type: none"> ▪ We focused on two topics: volcano-petrology and design of glass and glass-ceramic materials: the former issue is to discriminate textures and crystal-chemical features of phases solidified during main eruptions of Etna and Stromboli rocks; the second one results to be a green process in order to offer new alternatives for the extraction of strategic elements from natural rocks or from industrial wastes. |
| 2020-2021 | <p>Adjunct Professor <i>Petrography (8 CFU)</i> Geology Division, University of Camerino</p> |
| 04/2018-04/2020 | <p>Research Fellow <i>Materiali di scarto vetrosi/ceramici e CDW per la produzione di materiali innovative per l'edilizia ecosostenibile - EU-LIFE Project Ecotiles (prof. E.Paris).</i> Geology Division, University of Camerino</p> <ul style="list-style-type: none"> ▪ The project' s aim was to fully characterize ceramics and glass wastes in order to be reused for the production of new eco-sustainable materials. I was particularly involved in the CDW chemical and petro-mineralogical characterization along with different sets of vitrification experiments, useful |

to immobilize potentially hazardous components of the waste materials and for further studying their potential to be reused in new recycled building products.

- 2016-2018 **Adjunct Professor**
Geochemistry and Petrogenesis (6 CFU)
Geology Division, University of Camerino
- 10/2015-03/2018 **Research Fellow**
Studio di geomateriali e materiali da recupero vetrosi e ceramici per la produzione di materiali innovativi per l'edilizia ecosostenibile –EU LIFE Project Ecotiles (prof. E.Paris).
Geology Division, University of Camerino
- The European Life ECOTILES project had the objective of studying and producing high-grade cement-based tiles using glass, ceramics, and construction and demolition waste. At the end of the work, we fully demonstrated its feasibility producing fully recycled (up to 77 %) products with a substantial less (-20%) environmental impact than traditional tiles.
- 02/2015-09/2015 **Research assistant**
Glass/melt synthesis of different peralkaline composition with varying alkali ratio for various P-T- fO₂ conditions.
Geology Division, University of Camerino
- 10/2013-03/2014 **DAAD award/grant**
Fe redox in pantelleritic melts.
Institute of Mineralogy, University of Hannover (D)
- 11/2012-03/2013 **Visiting researcher**
High- pressure and high-temperature experiments.
Institute of Mineralogy, University of Hannover (D)
- 06/2012-09/2012 **Erasmus placement grant**
High-T experiments under controlled redox conditions.
Institute of Mineralogy, University of Hannover (D)

EDUCATION AND TRAINING

- 2015 PhD in Science and Technology: Earth Sciences XXVII ciclo
University of Camerino

- *Pantelleritic magmas: experimental study on the effect of [Na/(Na+K)] ratio and fO₂ on iron redox and viscosity. Supervisors: Prof. G. Giuli, Prof. E. Paris, prof. H. Behrens.*

2011

MSc (110/110 cum laude) in Geology (Laurea specialistica, 86/s)

University of Calabria

- *Study of melt inclusions in basaltic magma (Mutnovsky volcano). Supervisors: Dr. F. Vetere, Prof. R. De Rosa, prof. H. Behrens.*

2008

BSc in Geology (Laurea Triennale, L-34)

University of Calabria

- *Distribution coefficients of trace elements in shoshonitic rocks of Vulcanello-Aeolian Islands. Supervisors: Dr. P. Donato, Prof. R. De Rosa.*

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

| | UNDERSTANDING | | SPEAKING | | WRITING |
|---------|---------------|---------|--------------------|-------------------|---------|
| | Listening | Reading | Spoken interaction | Spoken production | |
| English | C1 | C1 | C1 | C1 | C1 |

Communication skills ▪ Good communication skills gained through my research career

Organisational / managerial skills

- Organization of scientific meetings:
- Convener- 5th Conferenza Rittmann, AIV-IAVCEI, 2022, Catania “Equilibrium/disequilibrium processes during magma ascent: new insights from laboratory and modelling studies and observations of the natural system”.
 - Co-convener -Conferenza della Società Italiana di Mineralogia e Petrologia, Parma “Experimental and theoretical studies of magmatic processes”.
 - Convener-Congresso congiunto SIMP, SGI, SOGEI, AIV , Potenza “Mineral science for waste recycle and circular economy”

Students responsibility/supervision:

- 4 PhD students and 7 Master students (2014-present)

Job-related skills

- **Editorial committee member of** International Journal of Science, Technology and Society.
- **Reviewer** for: Lithos, Waste Management, Materials, Sustainability, Comptes Rendus -Geoscience, Frontiers in Earth Sciences.

Computer skills

- Good command of Microsoft Office™ tools for Windows and MacOs, Kaleidagraph, Origin, ECDL certification. IgPet, Melts, VolatileCalc, Corel Draw, Table curve, Graphpad, GraphClick.

Other skills

- Experimental and analytical skills (not exhaustive list): sample and rock preparation, high T-high P experiments (IHPV-CSPV), Optical Microscope (OM), Scanning Electron Microscope (SEM), Electron MicroProbe (EMP), Laser-ablation inductively-coupled-plasma mass- (LA-ICP-MS) spectrometry, Fourier-transform Infrared spectroscopy (FTIR), Raman spectroscopy (RM), X-ray absorption spectroscopy (XAS)

ADDITIONAL INFORMATION
Publications

total citations Scopus:
139; h-index:8

In preparation or in press:

- Stabile P., Abudurehman A., Carroll M.R., Paris E., Vitrification of Construction and Demolition-mixed waste: effect of mineralogical and chemical composition, *in preparation*
- Jablonska D., Stabile P., Zambrano M., Haynes J. T. Mineral characterization of fault cores hosted in heterolytic succession and CO₂ sequestration, *in preparation*

Published:

- Volpintesta F., Ossoli E., Reggiani A., **Stabile P.***, Santulli C., Paris E. **2023**. Geopolymers-based application for the up-cycling utilization of construction and demolition waste from the 2016 central Italy earthquakes, *Materials Letters*, Volume 336, 1 April 2023, 133849.
- Ossoli E., Volpintesta F., Reggiani A., **Stabile P.***, Santulli C., Paris E. **2023**. Upcycling of composite materials waste into geopolymer-based mortars for applications in the building sector, *Materials Letters*, Volume 333, 2023, 15 Feb 2023, 133625.
- Koeberl, C., Glass B.P., Schulz T., Wegner W., Giuli G., Cicconi M.R., Trapananti A., **Stabile P.**, et al., **2022**. Tektite-like glasses from Belize, Central America: Petrography, geochemistry, and search for a possible meteoritic component, *Geochim. Cosmochim Acta Volume 325, Pages 232-257*.
- Zucchini A., Gavryushkin P. V., Golovin A. V., Bolotina N.B., **Stabile P.**, Carroll M., et al., **2022**. New insights into the nyerereite crystal structure: a link to the stability of alkali carbonates. *American Mineralogist (2022) 107*

(11): 2054–2064.

- **Stabile P.**, Radica F., Ranza L., Carroll M.R., Santulli C., and Paris E., **2021**. Dimensional, Mechanical and LCA Characterization of Terrazzo Tiles along with Glass and Construction and Demolition Waste (CDW). *Recent Progress in Materials*, 3(1).
- Abudurehman A., **Stabile P.***, Carroll M.R., Santulli C., Paris E., **2021**. Mineralogical and chemical characterization of CDW as function of particle size and thermal treatments for potential recycling. *Detritus J.*, 15 (40-50).
- **Stabile P.**, Sicola S., Giuli G., Paris E., Carroll M.R., Deubener J., Di Genova D., **2021**. The effect of iron and alkali on the nanocrystal-free viscosity of volcanic melts: A combined Raman spectroscopy and DSC study. *Chemical geology*, 559, 119991.
- **Stabile P.**, Arzilli F., Carroll M.R., **2021**. Crystallization of peralkaline rhyolitic magmas: Pre- And syn-eruptive conditions of the Pantelleria system. *Comptes Rendus-Geoscience*, 353(S2).
- **Stabile P.**, Appiah E., Bello M., Giuli G., Paris E. and Carroll M.R., **2020**. New IR spectroscopic data for determination of water abundances in hydrous pantelleritic glasses. *American Mineralogist* 105, 1060-1068 (10.2138/am-2020-7363).
- Arzilli F., **Stabile P.**, Fabbriozio A., Landi P., Scaillet B., Paris E. and Carroll M.R., **2020**. Crystallization kinetics of alkali feldspar in peralkaline rhyolitic melts: implications for Pantelleria volcano. *Frontiers in Earth Sciences* 8 (10.3389/feart.2020.00177).
- **Stabile P.**, Bello M., Petrelli M., Paris E. and and Carroll M., **2019**. Vitrification treatment of Municipal Solid Waste Bottom Ash. *Waste Management* 95, 250-258 (10.1016/j.wasman.2019.06.021).
- **Stabile P.** and Carroll M.R., **2019**. Petrologic Experimental Data on Vesuvius And Campi Flegrei Magmatism: A Review. Chapter in Book "Vesuvius, Campi Flegrei, and Campanian Volcanism" (edited by De Vivo B., Belkin H. E. and Rolandi G.), Elsevier ([10.1016/B978-0-12-816454-9.00013-4](https://doi.org/10.1016/B978-0-12-816454-9.00013-4)).
- Ansaloni F., Radica F., **Stabile P.**, Paris E., **2018**. Ecological tiles from Urban Waste Glass and Construction & Demolition Waste. The 24th International Sustainable development research society conference. *ISDRS conference* (Messina, ISBN 978-88-943228-1-1; edited by the Organizing Committee of the ISDRS 2018).
- **Stabile P.**, Radica F., Bello M., Behrens H., Carroll M.R., Paris E. and Giuli G., **2018**. H₂O solubility in pantelleritic glasses: pressure and alkali effect. *Journal of Mineralogy and Geochemistry* 195/1.
- **Stabile P.**, Giuli G., Cicconi M.R, Paris E., Trapanati A. and Behrens H., **2017**. The effect of oxygen fugacity and Na/(Na+K) ratio on iron speciation in pantelleritic glasses. *Journal of Non-Crystalline Solids* 478, 65-74.
- **Stabile P.**, Webb S., Knipping J., Behrens H., Paris E., and Giuli G., **2016**. Viscosity of pantelleritic and alkali silicate melts: effect of Fe redox state and Na/(Na+K) ratio. *Chemical Geology* 422, 73-82.
- **Stabile P.**, **2016**. Pantelleritic magmas: experimental study on the effect of [Na/(Na+K)] ratio and fO₂ on iron redox and viscosity. *PLINIUS n.42* (10.19276/plinius.2016.01013).
- **Stabile P.**, Giuli G., Behrens H., Knipping J., Webb S., Cicconi M.R., and

Paris E., **2015**. Experimental study on the effect of alkali ratio and oxygen fugacity on Fe redox and viscosity in pantelleritic glasses. *Rendiconti Online della Società Geologica Italiana*, Suppl. 2, Vol 35 (<https://doi.org/10.3301/ROL.2015.131>).

- Knipping J.L., Behrens H., Wilke M., Gottlicher J. and **Stabile P.**, **2015**. Effect of oxygen fugacity on the coordination and oxidation state of iron in alkali bearing silicate melts. *Chemical Geology* 411, 143-154.

Presentations (Invited talks), seminars

- 2022- Seminario ad invito “Classificazione delle rocce da materiali da scarto: geomateriali al microscopio petrografico” nell’ambito del corso “materiali e rifiuti da costruzione” per la Laurea Magistrale (LM-74) in SCIENZE E TECNOLOGIE GEOLOGICHE DELLA TERRA E DEI PIANETI, Università degli studi “Gabriele d’Annunzio”, Chieti- Pescara.
- **2022**- 4th Global Webinar on **Applied Science, Engineering and Technology** “Mineralogical-chemical characterization of Bottom Ash for potential industrial application”.
- **2021**- Workshop telematico: **Vetrificazione delle ceneri pesanti da rifiuti solidi urbani** “*Bottom ashes, da problema a risorsa: analisi, gestione, riciclo*”.
- **2021**- Seminario per “**Tecnologie innovative per i beni culturali**”_Ascoli “Il microscopio ottico a luce polarizzata per lo studio delle rocce e dei materiali litoidi applicati ai beni culturali”
- **2020**- **Cities on Volcanoes 11**, Crete (postponed to 2022) Crystallization kinetics in peralkaline rhyolitic melts simulating magma ascent toward Earth’s surface”.

Projects

- **2022**- FAR2022 PNR Geological Carbon capture and Green Energies Storage (GeoCaGes) (PI: Miller Zambrano)
- **2019-present**- POR Marche FESR 2014/20 NUOVA VITA project (PI: E. Paris) *Economia circolare post-sisma per costruzioni ed opere*.
- **2017-present**- PRIN17 project “*Time scales of solidification in magmas: Applications to Volcanic Eruptions, Silicate Melts, Glasses, Glass-Ceramics*” (PI: M.R. Carroll).
- **2015-2018**- EU-LIFE Project LIFE14 ENV/ IT/000801 “*Metodologie ECO-innovative per la valorizzazione di rifiuti edilizi ed urbani in terrazzo-TILES*” (PI: E. Paris).
- **2015**- FAR project, University of Camerino “REEWARE: Rare Earth Elements: from resource to waste, from waste to resource” (PI: G. Giuli).

Conferences

List of last national and international conferences:

- Appiah E, Krasheninnikov SP, Holtz F, **Stabile P.**, Arzilli F & Carroll MR, **2022**. Crystallization Kinetics in Anhydrous and Hydrous Trachytic to Latitic Melts Subjected to Variable Degrees of Undercooling. Goldschmidt

Conference 2022.

- **Stabile P.**, Sicola S., Giuli G., Paris E., Carroll M.R., Deubener J., Di Genova D., **2021**. A combined Raman spectroscopy and DSC study on the nanocrystal-free viscosity of volcanic melts. EMPG – XVII -17th International Symposium on Experimental Mineralogy, Petrology and Geochemistry.
- Carroll M.R., Arzilli F., **Stabile P.**, Appiah E., **2020**. Alkali Feldspar Crystallization Kinetics in Phonolites and Peralkaline Rhyolites. Goldschmidt Conference 2020.
- **Stabile P.**, Arzilli F., Carroll M.R., **2020**. Crystallization of peralkaline rhyolitic magmas: Rheological implications for the Pantelleria system. Rittmann Giovani Ricercatori 2020.
- **Stabile P.**, Abudureheman A., Bello M., Carroll M.R and Paris E., **2020**. Characteristics of c&d waste prior to and after thermal treatments. SUM2020 / 5th Symposium on Urban Mining and Circular Economy, 18-20/52020, Bologna, Italy.
- **Stabile P.**, Appiah H. and Carroll M., **2020**. The role of syn-eruptive crystallization on pantelleritic eruptive dynamics. EGU2020: Sharing Geoscience Online.
- **Stabile P.**, Appiah E., Behrens H., Giuli G., Paris E., and Carroll M.R. **2019**. Experimental petrology data on pantelleritic melts/glasses. Rittmann Giovani Ricercator 2019.
- **Stabile P.**, Arzilli F., Paris E. and Carroll M.R, **2019**. Role of kinetics of nucleation and crystal growth of alkali feldspar in a peralkaline pantelleritic melt. Congresso SIMP-SGI-SOGEI, Parma.
- **Stabile P.**, Arzilli F., Carroll MR., **2019**. Crystallisation Kinetics of Alkali Feldspar in a Peralkaline Melt of Pantelleritic Composition. Goldschmidt Conference, Barcellona.
- **Stabile P.**, Appiah E., Carroll M.R. **2018**. Water solubility in pantelleritic glasses. Goldschmidt Conference, Boston.
- Carroll M.R., **Stabile P.**, Appiah E., Behrens H., Giuli G., Paris E. **2017**. Water solubility in Pantelleritic glasses: New experiments with Karl-Fischer, FTIR and Raman spectroscopic measurements. AGU Fall Meeting 2017.

Memberships

- Società Italiana Mineralogia e Petrografia (2015-present), IAVCEI-AIV (2018-present), European Geosciences Union (2020-present).

06/06/2023

