

## Ernestina Appiah - Curriculum Vitae

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### Education

- 11/2019 – present (expected – July 2023) **PhD** in Physical and Chemical Processes in Earth Systems, University of Camerino. Experimental thesis in “*Crystallization of alkaline magmas - Implications for pre- and syn-eruptive conditions of Pantelleria and Campi Flegrei volcanic systems*” supervised by Prof. Michael Robert Carroll, Dr Fabio Arzilli
- 11/2015 – 06/2018 **MSc (110/110 e lode)** in Geoenvironmental Resources and Risks, University of Camerino (**English**). Experimental thesis in Geochemistry and Petrogenesis “*A spectroscopic study of water solubility in pantelleritic melts*” supervised by Prof. Michael Robert Carroll and Dr Paola Stabile
- 08/ 2005 – 08/2009 **BSc** in Diagnostic Radiography (second class upper), School of Allied Health Sciences, University of Ghana (**English**). Thesis in “Occupational health hazards among radiographers in the Accra Metropolis”

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### Languages

English (excellent-spoken & written), Italian (A1)

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### Academic and Professional Experience

- 11/2019 – present (expected – July 2023) Doctoral position in Physical and Chemical Processes in the Earth Systems. *Time-scales of solidification in magmas: Applications to Volcanic Eruptions, Silicate Melts, Glasses, Glass-Ceramics* in the frame of the PRIN project (PI: M.R. Carroll)
- 11/2019 – 02/2023. Participant in PRIN project 2017 and 2020
- 09-12/2021, 10-12/2022 Visiting researcher at Leibniz University Institute of Mineralogy, Hannover. Conducted cooling and decompression experiments using internally-heated pressure vessels to reproduce conditions prevailing in magma reservoirs at depth (high temperature and high pressure) and to understand eruptive processes by simulating magma ascent. Analyzed experimental products with scanning

	electron microscope (SEM) and electron microprobe analyzer (EMPA)
20-22/04/2021	Raman analyses of silicate glasses at Roma Tre University
23-24/06/2021	Raman data treatment at Roma Tre University
09/2020-07/2021	Thesis co-supervisor in experiments and data analyses. MSc student Dominique Nintidem Mafolemofouet. Thesis titled <i>“An infrared spectroscopic study of the effect of sample thickness on analysis of H<sub>2</sub>O concentration and speciation in rhyolitic glasses”</i> . University of Camerino
2020-2022	Co-supervisor; Geochemistry & Petrogenesis oral & written exams
03-06/2020 - 03-06/2021	Teaching Assistant; Masters Students Petrography laboratory lessons
03-06/2018	Petrography practical teaching assistant, University of Camerino, Italy
23-24/01/2018.	Electron Microprobe Analyses of pantelleritic glasses, University of Milan, Italy
7- 30/07/2017	Raman and FTIR spectroscopic analyses of silicate glasses, Geophysical Laboratory, Carnegie Institution for science Washington, DC, USA

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### Scholarships

09/2015 – 03/2018	ERSU scholarship
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### Webinars and training activities - participant

Presentation of my research project to the Petrology group at the Institute of Mineralogy, Hannover. **October 20, 2021 at 13:00**

Institute hybrid- seminar, **November 9, 16, 30, 2021** and **December 7,14, 2021**. Institute of Mineralogy, Leibniz University, Hannover-**2 hours each day**

ECR meeting on dissemination of information to the public (using social media)-expert and non-expert. Dr Samuel from University of Bristol-**November 25, 2021. 9:30-11:00** (Hannover webinar)

PhD and Career Development, Good Year practices Benoît Duez, Open Innovation Expert and Academic Liaison, Goodyear (Luxembourg). January 25 (15.00)

*Women in Science: lights and shadows*, Chemical and Pharmaceutical Sciences and Biotechnology: Pharmaceutical Sciences, Aleix Marti Navia, 27 January

*The post-earthquake revitalization: Criticalities and perspectives*, legal and social sciences: civil law and constitutional legality, Karina Zabrodina e Silvia Montecchiari, 3 February

Transferable skills training SAS Activities February 22 to February 26, 2021.

*Self-branding: your experience and your skills as a researcher*, by Lucia Salto February, 22

*Science communication against rising infodemic*, by Federica Demicheli and Ermete Mariani February, 23

*Developing your career by networking. Networking: why and how* by Lucia Salto February 25

*Thinking outside the box - Creative Thinking and Innovation* February 23 to February 26, 2021. Speakers: Federica Demicheli, Freelance Consultant Ermete Mariani, Knowledge and Communication manager (consultant) UNIMED – Mediterranean Universities Union, Rome, Italy

*Career paths for PhDs working as climate change expert at the United Nations* 4 March (15.00) Speaker: Andrea Camponagara, PhD, Climate Change Expert, Programme Officer UNFCCC Secretariat, ONU, Bonn **-certificate of participation**

*Design-based Security Study of SPLs - A possible Alignment Approach* by Danillo Sprovieri. 17 March at 5 pm

Building a career in Regulatory Affairs; leaving the lab. for EMA pm Speaker: Stefania Ragone, PhD, Scientific Administrator/Inspection Office. European Medicine Agency/EMA, Amsterdam. 17th march 4.00 pm-5.15 **-certificate of participation**

CV & LinkedIn Career service Unicam April 2 & 7, 2021 (15.00-16.30)

Students` representation in an international context- the potential of Ph.D. students April 14, 5pm

Nov.18, 2020 “*Introducing the Electron Microscopy Platform at University of Milano-Bicocca*”-G Capitani

Nov.18, 2020 “*Exploring the spatio-temporal dynamics of low-dimensional nano-materials by Ultrafast Electron Microscopy*”- G. M. Vanacore (Milano-Bicocca)

July 31, 2020 “*Ever wondered what happens to your proposal when you submit it?*” -Dr Siân Astley (organized by NUGO)

June 25, 2020 “*Geophysical & Geological Exploration of High Enthalpy Geothermal Systems*”-Massimo Verdoya (Geology, UNICAM)

May 19, 2020 “*From Fossil to active Geothermal Systems: A New Methodological Approach*” Martina Zucchi (Geology, UNICAM)

May 4, 2020 “*Geothermal Energy-Blue energy*”- Prof. Chiara Invernizzi & Dr Marco Bello (Geology, UNICAM)

April 27, 2020 “*Energy from biomass, how does it work?*”- Enrico Cristofanneli (Geology, UNICAM)

April 22, 2020 “*World Energy outlook 2019-2040*”- Enrico Cristofanneli (Geology, UNICAM)

April 20, 2020 *Gas, Coal, renewables & CO<sub>2</sub> Emission Scenarios*- Enrico Cristofanneli (Geology, UNICAM)

Apr16, 2020 “*General Framework & Oil Scenarios*” (Geology, UNICAM)

Apr 8, 2020 “*Ethical Considerations in Scholarly Publishing-Best Practices to Promote Integrity*” Dr Richard de Grijns and Dr Sabina Alam (organized by Enago Academy)

Feb., 2020 “*Open Science: la Scienze fatto bene*” - Paola Masuzzo

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## Workshops Attended

Presentation on” *Crystallization kinetics in anhydrous and hydrous trachytic to latitic melts*” to the Petrology group at the Institute of Mineralogy, Hannover. **December 6, 2022 at 14:00 - presenter**

11-12/2022 *Institute seminar* Institute of Mineralogy, Leibniz University, Hannover-**2 hours each day**

2021 Safety guidelines in the laboratory, Hannover

2020 Crystallization Kinetics in basalts, Camerino

2020 “*A new vision of kinetic processes in geosciences: 3D and in situ 4D X-ray microtomography*”- Dr Fabio Arzilli, University of Manchester, (Geology dept., UNICAM)

2018 Final Conference Eu Life Ecotiles, Camerino

2017	Seminar on Deep Sea Drilling, Camerino
2017	Seminar on Loess and Soil Deposits, Camerino geoscience Department, Italy
2017	Seminar on The Earth Rhythms: Geodynamics, Seismicity& Volcanism, Camerino
2017	Interplay Between Rheology & Crystallization Kinetics in Magma, Camerino
2016	Seminar on Rock Physics & Modelling Camerino

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### Courses taken

UNICAM Corso di Formazione Generale sulla Sicurezza per i Lavoratori - 4 ore - A.A. 2021/2022

Environmental Sustainability (52hrs, 7 CFU)                      2020/2021

Material Science (52hrs, 7 CFU)                                      2020/2021

Introduction to Crystallography (24 hrs, 3 CFU)                2020/2021

*English for Academic Purposes - Scientific Writing* by Michael Zebrak  
February 23, February 25 and February 26, 2021 (**6 hours**)

*Scientific Writing* course, held by Dr. Cristina Persano and organized by the PhD Program in Earth and Environmental Sciences of the University of Pavia (February 1<sup>st</sup>, 2021) 1 ECTS (4 hours)-**certificate of participation**

UNESCO Lecture Series: Earth Materials for a Sustainable and Thriving Society Earth Materials: The Foundation for Development 26 January 2021 13:00 - 14:30 GMT  
**certificate of participation**

UNESCO Lecture Series: Earth Materials for a Sustainable and Thriving Society Earth Climate Neutrality, the Circular Economy, and Earth Materials 02 February 2021 15:00 - 16:00 GMT **certificate of participation**

UNESCO Lecture Series: Earth Materials for a Sustainable and Thriving Society Earth The neglected minerals and materials of development 09 February 2021 09:00 - 10:00 GMT **certificate of participation**

UNESCO Lecture Series: Earth Materials for a Sustainable and Thriving Society Earth Mineral extraction and communities 16 February 2021 14:00 - 15:00 GMT **certificate of participation**

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## Conferences Attended

**Appiah, E.**, Krasheninnikov S. P., Holtz F., Stabile, P., Arzilli, F., Carroll M.R. (2022): Crystallization kinetics in anhydrous and hydrous trachytic to latitic melts subjected to variable degrees of undercooling *SGI-SIMP Torino 16-21 September 2022-Poster presenter*

**Appiah, E.**, Krasheninnikov S. P., Holtz F., Stabile, P., Arzilli, F., Carroll M.R. (2022): Crystallization kinetics in anhydrous and hydrous trachytic to latitic melts subjected to variable degrees of undercooling *Goldschmidt2022-presenter*

Appiah, E., Stabile, P., Arzilli, F., Fabrizio, A., and Carroll, M. R.: Phase relations and pre-eruptive conditions at low f(O<sub>2</sub>) in Pantelleria peralkaline rhyolites, EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-9650, <https://doi.org/10.5194/egusphere-egu21-9650>, 2021-*submitted abstract & oral presentation*

EMPG-XVII 17<sup>th</sup> International Symposium on Experimental Mineralogy, Petrology and Geochemistry. Potsdam 1-3 March 2021-*participant*

“Principles, Applications and New Frontiers in Isotope Geochemistry” International Summer School PAIG - Milan 14-18 June 2021-*participant*

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## Experimental & Analytical Skills

Sample preparation for experimental work

Handling of high temperature chamber furnace

Handling of cold-seal pressure vessels (CSPV) and internally-heated pressure vessels (IHPV) for experimental synthesis at high temperatures and pressures

Optical petrographic microscope

Electron Microprobe Analyzer (EMP)

Scanning Electron Microprobe

Fourier-transform Infrared spectroscopy (FTIR)

Raman spectroscopy

Kaleidagraph

MS Office

ImageJ

Inkscape

Melts

GraphPad

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## Publications

### Articles

**Appiah, E.**, Krasheninnikov S. P., Holtz F., Arzilli, F., Bamber E.C., Carroll M.R. (*In prep*) Crystallization of trachytic and latitic magmas - Implications for pre- and syn-eruptive conditions of Campi Flegrei volcanic system - for contribution to *Bulletin of Volcanology*

**Appiah, E.**, Stabile, P., Arzilli, F., Fabbrizio, A., and Carroll, M. R. (*In prep*) Pre-Eruptive Conditions of Explosive Eruption in Pantelleria Volcanic Systems - for contribution to *Journal of Petrology*

Stabile P., **Appiah E.**, Bello M., Guili G., Paris E., Carroll M.R. (2020): New IR spectroscopic data for determination of water abundances in hydrous pantelleritic glasses, *American Mineralogist* 105: 1060-1068. DOI: 10.2138/am-2020-7363

### Conference papers

**Appiah, E.**, Krasheninnikov S. P., Holtz F., Stabile, P., Arzilli, F., Carroll M.R. (2022): Crystallization kinetics in anhydrous and hydrous trachytic to latitic melts subjected to variable degrees of undercooling *SGI-SIMP 2022*

**Appiah, E.**, Krasheninnikov S. P., Holtz F., Stabile, P., Arzilli, F., Carroll M.R. (2022): Crystallization kinetics in anhydrous and hydrous trachytic to latitic melts subjected to variable degrees of undercooling *Goldschmidt2022Abstract* <https://doi.org/10.46427/gold2022.12242>

**Appiah, E.**, Stabile, P., Arzilli, F., Fabbrizio, A., and Carroll, M. R.: Phase equilibria and pre-eruptive conditions at low  $f(\text{O}_2)$  of pantellerites from Fastuca pumice fall. BeGeo Scientist Congress 7-10 October 2021, Naples <https://www.begeos.it/quota-di-partecipazione>

**Appiah, E.**, Stabile, P., Arzilli, F., Fabbrizio, A., and Carroll, M. R.: Phase relations and pre-eruptive conditions at low  $f(\text{O}_2)$  in Pantelleria peralkaline rhyolites, EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-9650, <https://doi.org/10.5194/egusphere-egu21-9650>, 2021

Stabile P., Arzilli F., **Appiah E.**, Fabbrizio A., Carroll M.R., Crystallization kinetics in peralkaline rhyolitic melts simulating magma ascent toward Earth's surface *Cities on Volcanoes conference 11, Crete 2020*

Carroll M, Arzilli F, Stabile P & **Appiah E** (2020) Alkali Feldspar Crystallization Kinetics in Phonolites and Peralkaline Rhyolites, *Goldschmidt2020Abstract* <https://doi.org/10.46427/gold2020.328>

Stabile, P., **Appiah, E.**, and Carroll, M. R. (2020) The role of syn-eruptive crystallization on pantelleritic eruptive dynamics, *EGU General Assembly 2020, Online*, 4–8 May 2020, EGU2020-488, <https://doi.org/10.5194/egusphere-egu2020-488>, 2

Stabile P., **Appiah E.**, Behrens H., Giuli G., Paris E., Carroll M.R. (2019): Experimental petrology data on pantelleritic melts/glasses *Miscellanea INGV*, 3a Conferenza Rittmann Giovani Ricercatori, no. 45, pg 36

Stabile P., **Appiah E.**, Carroll M.R. (2018): Water Solubility in Pantelleritic Glasses\_ Goldschmidt Boston 2018 -August 12-17

Stabile P., **Appiah E.**, Carroll M.R. Water solubility in pantelleritic melts- Catania 2018, Convegno SGI-SIMP

Stabile P., **Appiah E.**, Carroll M., Behrens H., Paris E., Giuli G.: Water in Pantelleritic glasses measured by FTIR and Raman spectroscopy, UNICAM- book of abstracts. Camerino, 28/09/2018, **ISBN/ISSN: 9788867680368**.

Carroll M.R., Stabile P., **Appiah E.**, Behrens H., Giuli G., Paris E.: Water solubility in Pantelleritic glasses: New experiments with Karl-Fischer, FTIR and Raman spectroscopic measurements- AGU Fall Meeting Abstracts 2017.