

## CV - Francesco P. VETERE

### PERSONAL INFORMATIONS

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Family  
status: Married, two children.  
Born: Cosenza Italy, March 30, 1975

Mobile: +39 347 4950383  
Email: [francesco.vetere@unisi.it](mailto:francesco.vetere@unisi.it)

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### EDUCATION

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- **Jun. 2002 - Jan. 2006:** Ph.D. “Viscous flow of magmas from Unzen volcano, Japan – implication for magma mixing and ascent, (University of Hanover), Hanover, Germany
- **October-10-2003** geology qualification. “esami di Stato di abilitazione all’esercizio della professione di Geologo” Italy.
- **March 2002** graduates in Geology with thesis work: DTM (Digital Terrain Model) analysis of complex volcanoes of: Deception, Pantelleria, Salina and Vulcano islands. UNICAL – INGV.

### RESEARCH EXPERIENCE

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- **Mar. 2022 ....–RTDb** Department of Physical sciences Earth and environment – University of Siena, Italy
- **December 1<sup>st</sup> 2019 – February 2022.** Research fellowship - Department of Engineering and Geology, University of Chieti, Italy.
- **September 1<sup>st</sup> 2019 – August 31 2020.** Research fellowship - Department of Physics and Geology, University of Perugia, Italy.
- **September 1<sup>st</sup> 2014 – August 31 2019.** Researcher - RTD A) - Department of Physics and Geology, University of Perugia, Italy.
- **July 1<sup>st</sup> 2012 – August 31 2014.** FP7-PEOPLE-2011-IEF Marie Curie Intra-European Fellowships for Career Development (IEF)December 2011 – the project, on the volatiles solubility in magma (SolVoM) – Leibniz Universität Hannover, Germany.
- **July 2010 – June 2012.** Post Doc fellowship at the University G. d’Annunzio of Chieti Pescara, Italy. Kinetics experiments on the crystallization processes in silicate melts
- **February 2006 – January 2008.** Post Doc fellowship at the University of Calabria and INGV Rome, Italy. Study on H<sub>2</sub>O e CO<sub>2</sub> solubility in melts at 1250°C and 50-100-200-300-400 MPa.

- **PhD student, June 2002 – January 2006.** The “Viscous flow of magmas from Unzen volcano, Japan – implication for magma mixing and ascent” The thesis work focused on the 1991-1995 eruptions at Unzen volcano, Japan. – Leibniz Universität Hannover, Germany.
- **MsC (2002):** DTM (Digital Terrain Model) analysis of complex volcanoes of: Deception, Pantelleria, Salina and Vulcano Islands, University of Calabria, Italy.

## TEACHING EXPERIENCE

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### March 2003 - Today:

- 2004-2005 - Visit of the high pressure high temperature for first year students.
- April-June 2009-2010 Physical Volcanology course at University of Calabria. Teaching and lab simulation of the physical behaviours of magmas ascent and emplacement.
- 2010-2012 short course on glass materials at the University of Chieti Pescara, Italy Non-crystalline material course; teaching: history, techniques, chemistry, physical properties and experimental apparatus for glass and glass-ceramic materials.
- 2013 June, short course on glass materials at the University of Hannover in cooperation with Prof. H. Behrens.
- 2014 April, short course on transport processes at the University of Hannover in cooperation with Prof. H. Behrens.
- 2015 March 23-25, Short Course on Magmas, Eruptions and Risks at University of Perugia together with Dr. Cardaci (Italian Civil Protection) and Dr. Taddeucci (INGV-Roma)
- 2015-2016 - “*Experimental petro-volcanology: an introduction*” at University of Perugia. Teaching and lab simulation of the physico-chemical properties of glasses, melts and magmas.
- 2016 March 15-17, Short Course on Magmas, Eruptions and Risks at University of Perugia in cooperation with Dr. Cardaci (Italian Civil Protection) and Dr. Taddeucci (INGV-Roma)
- 2016 May 20, Invited lecture at the Dep. Mineralogy, University of Hannover: Viscous flow and diffusion in silicate melts.
- 2016-2017 - “*Experimental petro-volcanology: an introduction*” University of Perugia. Teaching and lab simulation of the physico-chemical properties of glasses, melts and magmas. Corso di laurea in Scienze e tecnologie geologiche [LM-74] D. M. 270/2004. Further information at [www.unipg.it](http://www.unipg.it)
- 2017 March 28-31, Short Course on Magmas, Eruptions and Risks at University of Perugia in cooperation with Italian Civil Protection, INGV-Roma, and University of Hannover, DE.
- 2018 March 20-22. Short Course on Magmas, Eruptions and Risks at University of Perugia in cooperation with INGV-Roma, and University of Hannover, DE.
- 2018 Nov. 29, Invited lecture at the Institute of Earth and Environmental Sciences, University of Freiburg: “*Experimental petrology as a window to discover Earth interior*”.
- 2018-2019 - “*Experimental petro-volcanology: an introduction*” University of Perugia. Teaching and lab simulation of the physico-chemical properties of glasses, melts and

magmas. Corso di laurea in Scienze e tecnologie geologiche [LM-74] D. M. 270/2004. Further information at [www.unipg.it](http://www.unipg.it)

- 2019 February. 14, Invited lecture at the Institute of Earth and Environmental Sciences, University of Pavia: "*Experimental petrology as a window to discover Earth interior*".

### **Supervisors BsC, MsC and PhD (2010 – today)**

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- 5 BsC – 11 MsC – 2PhD

### **Faculty services**

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#### **From 01-03-2022**

- Member of the council of the Department of Physical sciences Earth and environment – University of Siena, Italy
- Member of the MsC and Bsc Commission of the Department of Physical sciences Earth and environment – University of Siena, Italy.

#### **Until 31-08-2020**

- Member of the teaching activity advisory Department of Physics and Geology University of Perugia.
- Member of the council of the Department of Physics and Geology University of Perugia.
- Member of the MsC and Bsc Commission of the Department of Physics and Geology University of Perugia.

### **International Conferences and Meetings (2013-Today).**

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- December 2013 - AGU fall meeting – San Francisco. Session V44A. Volcanic Flow and Magma Properties: Field, Laboratory and Hazard Assessment II Conveners: Benoit Cordonnier, Alan Whittington, and **F. Vetere**.
- Dicembre 2014 – AGU fall meeting – San Francisco – Glass Forming Ability **F.Vetere**.
- Sept. 2014 - DMG meeting in Jena, Germany. Session: Magmatic Petrology - from melt to rock: **F. Vetere** et al. \_Phase relation and solubility of CO<sub>2</sub> in shoshonitic melts: an experimental approach.
- August 2015 - Goldschmidt 2015 – Prague, Czech Republic, session16g: Crystallization Processes in Magmatic Systems. Conveners: **Francesco Vetere**, Gianluca Iezzi, Silvio Mollo.  
1)-Glass Stability of Silicate Glasses with Sub-Alkaline Compositions: Misiti V, Elbrecht A, Davis M, Iezzi G, **Vetere F**, Cavallo A & Mollo S  
2)-The Roles of Decompression Rate and Volatiles (H<sub>2</sub>O+Cl±CO<sub>2</sub>±S) on Crystallization in Basaltic Magma. **Vetere F**, Fiege A, Iezzi G, Simon A & Holtz F
- June 2016 - Goldschmidt 2016 – Yokohama, Japan –session 08d: Linking Magma Ascent Processes to Volcanic Phenomena, Eruption Dynamics and Eruptive Deposits. Conveners: Atsushi Toramaru, Antonio Costa, **Francesco Vetere**, Harald Behrens.  
1)-NVP melt/magma viscosity: insight on Mercury lava flows. **Vetere et al.**
- November 17 2016. American Museum of Natural History Earth and Planetary Sciences Central Park West New York, USA, invited lecture on: Interplay between

rheology and crystallization kinetics in magmatic systems: toward a unifying conceptual model

- American Geophysical Union Fall Meeting, New Orleans, December 2017. Convener V23B session: Processes of Magma Crystallization from Depth to Surface. Primary Convener: Francesco Vetere. Talk on Shear thinning behaviors in magmas. From 11-12-2017 to 15-12-2017.
- August 2019 - Goldschmidt 2019 – Barcelona, Spain –session 06j: Do Magmatic Systems Play by our Rules? Translating from an Equilibrium Rulebook into a Kinetic Playbook - **Francesco Vetere**, Pier Paolo Giacomoni, Matt Pankhurst, Tom Shea, Megan Newcombe, John Maclennan

## TECHNICAL SKILLS

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- **Magmatic systems' rheology** and evolution of silicate melts under high pressure, temperatures and variable deformation rates;
- **Interdiffusion processes** of major and trace elements for the understanding of natural kinetic processes. Use of major and trace elements in the study of the composition and evolution of the mantle-crust system.
- **Petrological studies on volatile** compounds and elements (H<sub>2</sub>O, CO<sub>2</sub>, S, Cl, F) to understand the evolution processes of the mantle-crust system, using innovative analytical techniques such as medium and near infrared (FTIR, MIR-NIR), LA-ICP - MS;
- **High T high P apparatus**: Internally Heated gas Pressure Vessels -IHPVs, Cold Seal Pressure Vessels CSPVs, Piston cylinder PC, Creep, Vertical Dilatometer, chamber furnaces, Anton Paar Viscometer;
- **Electron microprobe** (matrix glasses analysis in major and volatiles elements: - CAMECA SX-100);
- **SEM** (photograph, chemical analyses);
- **KFT** (Karl – Fisher –Titration) for volatile (mainly water) quantification;
- **ELTRA CS800** for the total carbon content measurements by combustion and subsequent IR spectroscopy analyzer;

## FIELD EXPERIENCE

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- 2 weeks, September 2003, at Aeolian Islands volcanic complex, Italy. Sampling of shoshonite scorias and lava.
- 1 week, September 2003, at Vesuvio volcanic complex, Italy.
- 2 weeks, September 2004, at Elba Island, Italy.
- 2 weeks, March 2005, at Unzen volcanic complex, Japan.
- 1 week, September 2007, at Vulcano, Lipari, Stromboli Islands (Aeolian Islands, Italy)
- 1 week, September 2013, at Vulcano, Lipari, Stromboli Islands (Aeolian Islands, Italy) and Phlegrean Field, Naples.
- 1 week, October 2014, at Vulcano, Lipari, Stromboli Islands (Aeolian Islands, Italy).
- 2015-2019 UNIPG escursions for BsC and MsC students and PhD students: volcanic complex Amiata, Vico, Valentano, Latera.

## COOPERATIONS

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- Institut für Mineralogie, Universität Hannover, Callinstr. 3, 30167 Hannover, Germany. Prof. Francois Holtz, Prof. Harald Behrens, Dr. Roman Botcharnikov, Renat Almeev.
- Département des Géométries, Institut de Physique du Globe, France. Prof. Pascal Richet and Dr. Daniel Neuville.
- Institute für Nichtmetallische Werkstoffe Technische Universität Claustal, Germany Prof. Joachim Deubener.
- University of Washington, USA: Prof. A. Whittington.
- University of Calabria: Prof. Rosanna De Rosa, Dr. Paola Donato.
- Istituto Nazionale di Geofisica e Vulcanologia INGV, ROME: Dr. Guido Ventura, Dr. Scarlato Piergiorgio, Dr. Carmela Freda, Dr. Valeria Misiti, Dr. Laura Spina.
- University of Chieti-Pescara: Prof. Gianluca Iezzi, Prof. Brent Poe.
- University of Kobe Japan: prof. H. Sato
- Università di Schizuoka, Giappone: Dr. H. Ishibashi
- American Museum of Natural History - Earth & Planetary Sciences AMNH, New York, NY: Prof. Jim Webster and Dr. Adrian Fiege
- University of Catania (IT). Prof. Marco Viccaro, Dr. Giuffrida.
- University of Perugia (IT). Prof. Diego Perugini, Dr. Maurizio Petrelli, Dr. Daniele Morgavi.
- SCHOTT North America, New York, USA, Dr. Mark Davis and Dr. Aubrey Elbrecht
- KU Leuven, Belgium, Dr. Olivier Namur.
- University of Freiburg, DE, Dr. Lennart Fisher

## ONGOING PROJECTS

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- Kinetics experiments on the crystallization processes in silicate melts in cooperation with University of Chieti-Pescara (IT), University of Hannover (DE) and Istituto Nazionale di Geofisica e Vulcanologia (INGV) Roma.
- C-H-O-S fluxing volatiles from basalt to rhyolite - Leibniz Universität of Hannover (DE) - University of Catania (IT).
- Volcanic glass structure and eruption dynamics: a multidisciplinary approach integrating geological and physical methods. Dep. Physics and Geology, University of Perugia.
- Time Evolution of isothermal crystallization in Andesitic magmas – TESLA. Dep. Physics and Geology, University of Perugia.
- Magma rheology on different stress and cooling rate. Università di Perugia.
- Study of magmatic activity on extraterrestrial planets and related implications in terms of planetary differentiation processes. In collaboration with the Dept of Physics and Geology – University of Perugia.

## **FUNDED AND SUBMITTED PROJECTS AND AWARDS**

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- Marie Curie Award 2011: SolVoM – Solubility of volatile in magmas. **P.I.**
- Fondo Ricerca di Base 2015 Dep. of Physics and Geology at University of Perugia Volcanic glass structure and eruption dynamics: a multidisciplinary approach integrating geological and physical methods (funded).
- Fondo Ricerca di Base 2016 Dep. of Physics and Geology at University of Perugia – TESLA Project, **P.I.** (funded)
- “DAAD-MIUR joint mobility project 2016 Germany-Italy” - Magma mixing and its role in volcanic eruptions – **P.I.** (funded)
- real Time Observations of the Crystallization Kinetics in natural and sYnthetic materials (TRICKY). ERC SyG **Principal P.I.** (Not financed – B score)
- Finanziamento delle attività base di ricerca (MIUR) (funded)
- AvHumboldt Award 2018 – Senior research Fellowship: Rejuvenation of silicic magma chambers **P.I.**

## **EDITOR/REVIEWER**

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- Editor of WILEY – American Geophysical Union.
- Reviewer of the “Deutsche Forschungsgemeinschaft (German Research Foundation)” and “Icelandic Research Fund (IRF)” – High competitive scientific projects.
- Reviewer of the Italian minister of educations University and research (MIUR)
- Reviewer of: Earth and Planetary Science Letters, Geology, Geochimica et Cosmochimica Acta, Chemical Geology, Lithos, Contrib. to Min. and Petrol., J. of Volc. and Geoth. Res., Bulletin of Volcanology, Am. Min..

## **ASN (2017)**

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Italian qualification to an **associated professor** in the field of geochemistry, mineralogy, petrology, volcanology and geo-resources.

since 10-04-2017. <https://asn16.cineca.it/pubblico/miur/esito-abilitato/04%252FA1/2/1>

## **FURTHER INFORMATIONS:**

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ORCID - <http://orcid.org/0000-0002-0723-1990>

SCOPUS - <https://www.scopus.com/authid/detail.uri?authorId=55901521000>

Siena, Italy

01-03-2022

Signature

*Francesco P. Vetere*