CURRICULUM VITAE

FOR

GABRIELE ZAFFIRO

(Last update June 2017)

I. Personal details and contacts

Date of birth:	May 22th 1992
City of birth:	Piacenza, Italy
Nationality:	Italian
E-mail:	Gabriele.zaffiro@gmail.com
Current Employee:	Department of Earth and Environmental Sciences- University of Pavia, Via Ferrata, 1. Pavia, Italy.
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II. Academic record and career

October 2016:
Ph. D. Research:
Elastic geobarometry combining X-ray diffraction and micro-tomography into a unique instrument
Place: Department of Earth and Environmental Sciences, University of Pavia, Italy.
Advisor: M. Alvaro

July 2016:
Master degree-Applied geological sciences (109/110)
Dissertation: Synthesis of host inclusion systems: validation of elastic geobarometry
Place: Department of Earth and Environmental Sciences, University of Pavia, Italy.
Advisors: Prof.ssa M.C. Domeneghetti, M. Alvaro

February 2015:
Bachelor degree – Geology (98/110)
Dissertation: Development of a new furnace for in situ high-temperature single-crystal X-ray diffraction measurements.
Place: Department of Earth and Environmental Sciences, University of Pavia, Italy.
Advisors: Prof.ssa M.C. Domeneghetti, M. Alvaro

2011:
High school degree (65/100)
Liceo scientifico A. Volta
Place: Castel S. Giovanni

III. Scientific activity

A. Main research topics:

My research is mainly focused to the determination of the chemical and physical properties of mineral phases relevant for the Earth sciences.

During my bachelor degree I have focused my attention on a thesis with title "Development of a new furnace for in situ high-temperature single-crystal X-ray diffraction measurements". The project was aimed to the development of a new micro furnace for in situ single-crystal X-ray diffraction at high-temperature, including a newly proposed method for calibrating the temperature using a single-crystal of known thermal expansion. The performances of the device have been assessed either during the calibration and with two experiments on synthetic and natural garnets (pure synthetic grossular and natural almandine).

During the master degree (MSc) thesis I've worked on the synthesis of host-inclusion systems for a project with title "In situ geothermobarometry for host-inclusion systems". The project is mainly aimed to test the elastic geobarometer method developed in collaboration with the University of Padua on real geological cases (e.g. garnet inclusions in diamonds, quartz inclusions in garnets). The project is focused on thermal expansion and compressibility measurements together with the determination of the residual pressure on garnet inclusions in diamonds and quartz inclusions in garnets. For this project, I have made use of piston-cylinder apparatus followed by single-crystal X-ray diffraction measurements for the determination of lattice parameters.

B. Main collaborations

National:

Fabrizio Nestola (University of Padua, Italy)
Matteo Alvaro (University of Pavia, Italy)
M. Chiara Domeneghetti (University of Pavia, Italy)
Ross J. Angel (Visiting professor, University of Padua, Italy)
Simone Tumiati (University of Milan, Italy)
Stefano Poli (University of Milan, Italy)

International:

C. Publications accepted, submitted, and in preparation for peer reviewed journals

1. M. Alvaro, R.J. Angel, C. Marciano, S. Milani, **G. Zaffiro**, L. Scandolo, M.L. Mazzucchelli, G. Rustioni, M.C. Domeneghetti, F. Nestola (2015) A new micro-furnace for "in situ" high-temperature single crystal X-ray diffraction measurements. *Journal of Applied Crystallography,* 48 (4), 1192-1200.

D. Workshops, courses and conferences

2015

1. International Diamond School "The nature of diamonds and their use in Earth's study". Bressanone-Brixen, 27-31st January 2015.

2. M.Alvaro, R.J. Angel, C. Marciano, **G. Zaffiro**, L. Scandolo, M. L. Mazzucchelli, S. Milani, G. Rustioni, C. M. Domeneghetti, and F. Nestola. Development of a new micro-furnace for "in situ" high-temperature single crystal X-ray diffraction measurements **EGU 2015**, April 12th 17th 2015. Wien, A
3. Elasticity course, within the framework of the PhD programme of the university of Pavia (3 CFU).
4. M. Alvaro, R.J. Angel, C. Marciano, S. Milani, L. Scandolo, M.L. Mazzucchelli, **G. Zaffiro**, G. Rustioni, M. Briccola, M.C. Domeneghetti, F. Nestola. A new micro-furnace for "in situ" high-temperature single crystal X-ray diffraction measurements **ECM 2015,** August 22nd – 29th 2015, Rovinj, HR.
5. EosFit Workshop at **ECM 2015,** August 28th 2015, Rovinj

6. **G. Zaffiro**, R.J. Angel, M. Alvaro, F. Nestola, M.C. Domeneghetti, L. Scandolo, M.L. Mazzucchelli, S. Milani, G. Rustioni, C. Marciano. New micro-furnace for "in situ" high-temperature single crystal X-ray diffraction measurements. **Congresso congiunto SIMP-AIV-SoGeI-SGI**. September 2nd - 4th 2015. Florence, I
7. S. Milani, L. Scandolo, **G. Zaffiro**, M. Di Prima, M.L. Mazzucchelli, M. Alvaro, M.C. Domeneghetti, F. Nestola. On the determination of the entrapment pressure for garnet inclusions in diamond. **Congresso congiunto SIMP-AIV-SoGeI-SGI**. September 2nd - 4th 2015. Florence, I

2016

1. High-Pressure Short Course, Bayerisches Geoinstitut, Universität Bayreuth. February 22nd - 26th 2016
2. M. Alvaro, R.J. Angel, C. Marciano, **G. Zaffiro**, L. Scandolo, M.L. Mazzucchelli, S. Milani, G. Rustioni, C.M. Domeneghetti, and F. Nestola. Development of a new micro-furnace for "in situ" high-temperature single crystal X-ray diffraction measurements. DGK