CURRICULUM VITAE

MATTIA LUCA MAZZUCCHELLI

I. Personal details and contacts

Date of birth:	February 1st 1989
City of birth:	Milan (Italy)
E-mail:	mattialuca.mazzucchelli01@universitadipavia.it
Current position:	Ph.D. student, Department of Earth and Environmental Sciences - University of Pavia, Italy.
Present address:	Via Cairoli, 12, Vigevano (PV), 27029, Italy

II. *Academic records and career*

2015-2016 ***Tutor for mineralogy and laboratory*** *(Assistenza e attività didattica integrativa per gli studenti nelle esercitazioni pratiche dell'insegnamento di Mineralogia)*
Place: Department of Earth and Environmental Sciences - University of Pavia, Via Adolfo Ferrata n.4, Pavia, Italy

October 2015-present ***Ph.D. Student***
Place: Department of Earth and Environmental Sciences - University of Pavia, Via Adolfo Ferrata n.4, Pavia, Italy.
Advisors: Dr Matteo Alvaro, Dr Ross J. Angel, Prof. M.C. Domeneghetti

2015: ***Master degree – Geology (110/110 cum laude)***
Dissertation: Non-linear elastic geobarometry: methods and applications
Place: Department of Earth and Environmental Sciences - University of Pavia, Via Adolfo Ferrata n.4, Pavia, Italy.
Advisor: Prof. M.C. Domeneghetti, Dr Matteo Alvaro, Dr Ross J. Angel

2014 - 2015: ***Tutor for petrography*** *(Assistenza agli studenti nello studio delle rocce in laboratorio e sul terreno)*
Place: Department of Earth and Environmental Sciences - University of Pavia, Via Adolfo Ferrata n.4, Pavia, Italy
Tutor for mineralogy and laboratory *(Assistenza e attività didattica integrativa per gli studenti nelle esercitazioni pratiche dell'insegnamento di Mineralogia)*
Place: Department of Earth and Environmental Sciences - University of Pavia, Via Adolfo Ferrata n.4, Pavia, Italy

2013 - 2014: ***Tutor for mineralogy and laboratory*** *(Assistenza e attività didattica integrativa per gli studenti nelle esercitazioni pratiche dell'insegnamento di Mineralogia)*
Place: Department of Earth and Environmental Sciences - University of Pavia, Via Adolfo Ferrata n.4, Pavia, Italy

2013: ***Bachelor degree – Geology (110/110 cum laude)***
Dissertation: Inclusions in diamonds: new thermoelastic parameters for pyrope
Place: Department of Earth and Environmental Sciences - University of Pavia, Via Adolfo Ferrata n.4, Pavia, Italy.
Advisor: Prof. M.C. Domeneghetti

2008: ***High school degree (100/100)***
Place: Liceo Classico "B. Cairoli"- Vigevano (PV), Italy

III. Scientific activity

A. Main research topics:

1. **NUMERICAL MODELING (FINITE ELEMENTS):** Investigation of the elastic behavior of solid host/inclusion systems using Finite Elements Method (FEM) for geothermobarometric applications.
2. **HIGH TEMPERATURE RESEARCH:** Investigation of crystalline material at high temperature conditions *in situ* by single-crystal X-ray diffraction using micro-furnace mounted on conventional diffractometer (i.e. Philips, Bruker and Huber systems).
3. **HIGH PRESSURE RESEARCH:** Investigation of crystalline material at high pressure conditions by means of single-crystal X-ray diffraction using DAC (Diamond Anvil Cell) apparatus.

B. Main collaborations:

Fabrizio Nestola (Full Professor, University of Padua, Italy)
Ross J. Angel (Visiting Professor, University of Padua, Italy)
Matteo Alvaro (Research Scientist, University of Pavia, Italy)
Pamela Burnley (Associate Research Professor, University of Nevada, Las Vegas)

C. *Seminars & Courses:*

Jan 27th- Jan 31st 2015 Brixen (Italy)	International Diamond School, "The Nature of Diamonds and Their Use in Earth's Study"
Aug 28th- Sep6th 2014, Pavia (Italy)	1st European Crystallography School
Feb 24th – Feb 28th 2014, Bayreuth (Germany)	Short course: High-pressure experimental techniques and applications to the Earth's interior

D. Scientific records:

Peer reviewed papers:

1. Angel R.J., Alvaro M., Nestola F., **Mazzucchelli M.L**. (2015) Diamond thermoelastic properties and implications for determining the pressure of formation of diamond inclusion systems. *Russian Geology and Geophysics Journal*, 56, 225-234.
2. Scandolo, L., **Mazzucchelli, M.,** Alvaro, M., Nestola, F., Pandolfo, F., Domeneghetti, M., 2015. Thermal expansion behaviour of orthopyroxenes: the role of the Fe-Mn substitution. *Mineralogical Magazine* 79, 71-87.
3. Milani, S., Nestola, F., Alvaro, M., Pasqual, D., **Mazzucchelli, M.L.**, Domeneghetti, M.C., Geiger, C.A., 2015. Diamond–garnet geobarometry: The role of garnet compressibility and expansivity. *Lithos* 227, 140-147.
4. Angel, R.J., Nimis, P., **Mazzucchelli, M.L**., Alvaro, M., and Nestola, F. (2015) How large are departures from lithostatic pressure? Constraints from host–inclusion elasticity. *Journal of Metamorphic Geology*, 33, 801–813.
5. M. Alvaro, R.J. Angel, C. Marciano, S. Milani, G. Zaffiro, L. Scandolo, **M.L. Mazzucchelli**, G. Rustioni, M.C. Domeneghetti, F. Nestola (2015) Development of a new micro-furnace for "in situ" high-temperature single crystal X-ray diffraction measurements. *Journal of Applied Crystallography*, in press
6. Angel R.J., **Mazzucchelli M.L**., Alvaro M., Nimis P., and Nestola F. (2014) Geobarometry from host-inclusion systems: the role of elastic relaxation. *American Mineralogist*, 99 (10), 2146-2149

Conference abstracts:

2016

1. **M.L. Mazzucchelli**, R. J. Angel, G. Rustioni, S. Milani, P. Nimis, M.C. Domeneghetti, F. Marone, J. W. Harris, F. Nestola, and M. Alvaro. Elastic geobarometry and the role of brittle failure on pressure release. (*EGU conference, 2016*)
2. R. Angel, M. Alvaro, **M. Mazzucchelli**, P. Nimis, and F. Nestola. Single inclusion piezobarometry confirms high-temperature decompression path for Variscan granulites. (*EGU conference, 2016*)

2015

3. **Mazzucchelli M.L**, Angel R.J., Alvaro M., Nimis P., Domeneghetti M.C. & Nestola F. Host-inclusion geobarometry for ultra high pressure metamorphic (UHPM) rocks **(***SIMP-SGI-So.Ge.I-AIV meeting, 2015*)
4. Zaffiro G., Angel R.J., Alvaro M., Nestola F., Domeneghetti M.C., Scandolo L., **Mazzucchelli M.L**., Milani S., Rustioni G. & Marciano C. New micro-furnace for "in situ" high-temperature single crystal X-ray diffraction measurements (*SIMP-SGI-So.Ge.I-AIV meeting, 2015*)
5. Rustioni G., Angel R.J., Milani S., **Mazzucchelli M.L**., Nimis P., Domeneghetti M.C., Marone F., Alvaro M., Harris J.W. & Nestola F. Elastic geobarometry for host-inclusion systems: Pressure release and the role of brittle failure (*SIMP-SGI-So.Ge.I-AIV meeting, 2015*)
6. Milani S., Scandolo L., Zaffiro G., Di Prima M., **Mazzucchelli M.L**., Alvaro M., Domeneghetti M.C. & Nestola F. On the determination of the entrapment pressure for garnet inclusions in diamonds (*SIMP-SGI-So.Ge.I-AIV meeting, 2015*)
7. Alvaro M., Angel R.J, **Mazzucchelli M.L**., Domeneghetti M.C & Nestola F. Elastic geobarometry for UHPM rocks: A link between mineralogy and petrology **(***SIMP-SGI-So.Ge.I-AIV meeting, 2015*)

8. **Mattia L. Mazzucchellli,** Ross Angel, Matteo Alvaro, Paolo Nimis, Chiara Maria Domeneghetti and Fabrizio Nestola. Elastic geobarometry for ultra high pressure metamorphic (UHPM) rocks (*EGU conference, 2015*)
9. Matteo Alvaro, Ross Angel, **Mattia L. Mazzucchellli**, Paolo Nimis, and Fabrizio Nestola Development of a new micro-furnace for "in situ" high-temperature single crystal X-ray diffraction measurements (*EGU conference, 2015*)

2014

10. Alvaro M., Angel R.J., **Mazzucchelli M.L**., Nestola F. & Nimis P.: A chemically-independent method for geobarometry of UHPM rocks (*SGI-SIMP meeting 2014*)
11. **Mazzucchelli M.L**., Angel R.J., Alvaro M., Nestola F. & Nimis P. Geobarometry for host-inclusion systems: the role of elastic relaxation (*SGI-SIMP meeting 2014*)
12. Scandolo L., **Mazzucchelli M.L**., Domeneghetti M.C., Alvaro M., Nestola F. & Pandolfo F. Thermal expansion behavior of orthopyroxenes: the role of the Fe-Mn substitution (*SGI-SIMP meeting 2014*)
13. **M.L. Mazzucchelli**. High-temperature behaviour of pyrope, Mg3Al2Si3O12: implications for the depth of diamond formation. (*1st European Crystallography School, Pavia, 2014*)
14. Ross Angel, Matteo Alvaro**, Mattia L. Mazzucchellli**, Paolo Nimis, and Fabrizio Nestola. How much differential stress can a rock support? (*EGU conference, 2014*)
15. M. Alvaro, R.J. Angel, **M. L. Mazzucchelli**, F. Nestola, M.C. Domeneghetti. Isomekes: A fundamental tool to determine the formation pressure for diamond-inclusion pairs (*EGU conference, 2014*)

2013

16. Sula Milani, **Mattia Mazzucchelli**, Fabrizio Nestola, Matteo Alvaro, Ross J. Angel, Charles A. Geiger, and Chiara Domeneghetti. The P-T conditions of garnet inclusion formation in diamond: thermal expansion of synthetic end-member pyrope (*EGU conference, 2013*)